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Introduction: Telework in the 21st century – an evolutionary perspective

Jon C. Messenger

1. INTRODUCTION

In the summer of 2013 Yahoo's Chief Executive Officer (CEO), Marissa Mayer, gave a public interview at the Twelfth Annual Templeton Lecture for Economic Liberty and Constitution[1] where she explained why the company decided to abandon its popular 'work from home' policy:

> I had heard from lots of people all over the company, who said 'Hey, the fact that our team is distributed, or the fact that we sometimes have to stop and coordinate with someone from home, causes drag. And so we said that, as a general principle . . ., we want people in the office.

Mayer follows this statement later with another related point on the topic:

> By the way, it has also gotten taken to sort of hyperbole, in terms of, like, 'Wait! Are you not even allowed to type an e-mail when you are not in the office?' – No, obviously we all do that, we all work from home all the time. But during normal business hours, generally, we want people to be there.

These two statements describe very succinctly the inner ambiguity of a fast-growing multidimensional phenomenon. The idea of performing work from home with the help of information and communication technologies (ICTs) originated in the US State of California in the mid-1970s (Nilles 1975) and was promoted by California-based companies such as Yahoo in the 1980s under the term telecommuting, which later came to be known as telework. Three decades later, markets have become flooded with cheaper, smaller and increasingly connected devices, so-named new ICTs such as smartphones and tablet computers, accompanied by a vast dispersion of the Internet and the World Wide Web. These devices are now enabling employees to stay connected to their colleagues from any place at any time. Yet, conceptually the two forms of work, telework as described in the first statement, and the use of new ICTs as described in the second, are typically

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not studied or debated in relation to each other. The definition of work from home thus becomes blurred and confusing. Mayer's comments also highlight the changing roles of telework and the use of new ICTs. In recent years, traditional telework has faced stagnation (Hjorthol 2006) or even decline (Brenke 2014), while the spread of new ICTs has accelerated, especially in emerging economies (for example, ITU 2014). Furthermore, there is a need to understand the effects of both traditional telework and work with new ICTs on, for example, on both working life and productivity.

The aim of this volume is to synthesize the analyses of experts from Argentina, Brazil, India, Japan, the United States, and ten countries from the European Union (Belgium, Finland, France, Germany, Hungary, Italy, the Netherlands, Spain, Sweden and the United Kingdom[2]) regarding telework – how it has developed, its various forms and its effects – in their respective countries. These experts were asked to identify, compile and analyse existing information from country-level datasets, research studies and other sources in their countries. For this purpose, telework was broadly defined as using ICTs, such as smartphones, tablets, laptops and/or desktop computers, to perform work from outside the employer's premises. The experts' country reports reviewed and analysed large-scale surveys and company case studies regarding the incidence of telework, as well as its effects on hours of work and work schedules, individual and organizational performance, work–life balance, and occupational health and well-being. These country reports also included information on policy responses by governments, workers' and employers' organizations, and private companies regarding the use of telework. All of this information was collected, carefully compiled and summarized for this volume.

To study telework in the context of new ICTs, we need both a broad understanding of the phenomenon's history and a solid conceptual basis that embraces a wide range of potential research approaches and dimensions on this topic. The next section of this introductory chapter focuses on literature about telework and ICTs from its origins in the 1970s up to the most recent publications. The findings of this analysis then lead to the creation of a conceptual framework of telework in section 3. Section 4 reviews the effects of telework using new ICTs on working conditions, productivity and related issues. The methodology and main data sources used by the country experts to analyse telework and its effects in their respective countries are reviewed in section 5. Section 6 concludes.

2.   THE THREE GENERATIONS OF TELEWORK

The conceptual separation of telework and new ICTs that was mentioned in the introductory section is mirrored in the vast amount of scholarly work on these topics. First, many scholars describe telework as a predecessor or an early form of work with ICTs (for example Bailey and Kurland 2002). Highly flexible cloud-based work[3] accessible through smartphones and tablets from almost anywhere on the planet makes telework in the terms of its original understanding sound old fashioned. It is associated with stationary computers, fixed telephones and fax machines – nothing like the devices used by the 'digital nomads' of today and tomorrow (Makimoto and Manners 1997). The concept of telework is thus either considered to be antiquated (Anderson et al. 2007; Towers et al. 2006) or not even taken into account (Bittman et al. 2009; Cascio 2000; Golden and Geisler 2007; Heijstra and Rafnsdottir 2010; Jones et al. 2008; Tu et al. 2005; Wajcman et al. 2008).

In a second way, telework is inserted in a typological order with other work arrangements. Here the emphasis is less on history and more on variety. Telework is perceived as one of many coexisting modes of work such as traditional office work, mobile work or virtual work (Di Martino and Wirth 1990; Golden and Fromen 2011; Golden et al. 2008; Hill et al. 2001, 2003, 2010; Kurland and Bailey 1999) or as one type of many flexible work schedules together with part-time work, flexi-time[4] and others (Kossek and Michel 2011; Stavrou 2005; Stavrou and Kilaniotis 2010). Either way, historically or typologically, scholars tend to describe telework separately from the use of new ICTs. As we discuss in more detail in section 3, these approaches tend to neglect the definitional potential of telework and limit the possibilities of studying its development over time.

In contrast to the perceptions of telework outlined above, Craipeau (2010) offers a more flexible approach. She describes telework as undergoing an evolutionary process. According to Craipeau, ICTs and their advancement are the main contributors to this development. They enable the transformation of what we generally perceive as office work. Personal computers and telephones initiated the relocation of one part of traditional office work away from the employer's premises and closer to the employees' homes. With the dispersion of mobile devices such as laptops and mobile phones, this part lost its stationary grounds and entered places such as trains, subways and cafés. The dispersion of Internet access then virtualized work and made it accessible on smaller and more powerful devices such as smartphones and tablets. This part of office work is what Craipeau calls *télétravail*. Building on Craipeau's evolutionary perspective, we develop our own chronicle of telework's evolution over three generations: home office, mobile office and virtual office.

2.1   The First Generation of Telework: The Home Office

The term telework can be traced back to Jack Nilles's analysis of the growing information industry in the US state of California and of what the author calls the telecommuting network (Nilles 1975). As the term indicates, the main focus lies on the use of telecommunications for the reduction of commuting time, which was and remains a major issue in the United States, especially in large metropolitan areas such as Los Angeles. The workplace was relocated entirely or partially away from the employer's premises and close to or into the employee's home to avoid the costly and long hours of commuting from home to work and vice versa. New technologies – namely, the coupling of computers and telecommunication tools – enabled such forms of decentralization. The largest scales of cost reduction were created for the growing information industry, owing to its heavy reliance on work in front of computer screens and monitors: 'We anticipate increased use of telecommunications by information industry organizations, particularly of teleconferences supplemented by periodic face-to-face meetings' (Nilles 1975, p. 1143).

In later publications, Nilles (1988) subordinates the term telecommuting to the more general term telework, in order to include all types of work-related activities away from the employer's premises that are supported by ICTs. Here again it is the advancement of technology that transforms the mode of work. Teleconferences, electronic mail and the fast dispersion of the Internet and the World Wide Web began to crowd out traditional means of correspondence in the late 1980s and early 1990s, and enlarged the set of cost-reduction possibilities for organizations (Wellman et al. 1996). In the vein of this chronicle, it thus makes sense to mention the evolution from the term telecommuting to the term telework, despite the two terms mostly being treated as synonyms by contemporary scholars.[5]

Nilles's conceptual and visionary work on what we call first-generation telework in this review inspired many other authors, scientists and politicians to glorify its seemingly infinite possibilities. In the chapter 'the electronic cottage' of Alvin Toffler's *The Third Wave* (1980), these hopes and dreams are densely formulated in a luminous manner: 'the new production system could shift literally millions of jobs out of the factories and offices into . . . where they came from originally: the home' (Toffler 1980, p. 210).

For Toffler, the potential of telework expanded far beyond the mere reduction of commuting time and costs. The author's predictions included greater community stability, a decline in pollution, flourishing new industries and entirely new family structures. All these hopeful visions were nourished by many early studies that underpinned the rising success of telework in these areas (Clutterbuck 1985; Curson 1986; Daniels 1987; Kraut

1989; Nilles 1988; Olson 1982). As a result, telework increased slowly but steadily. First, new organizational telework forms such as satellite centres emerged (Di Martino and Wirth 1990; Handy and Mokhtarian 1995). Then work away from the employer's premises became more sophisticated, causing telework to evolve and spread out to other industries and countries (Haddon and Lewis 1994). Finally, academic debate caught up with the rising new mode of work, and its advantages and disadvantages were discussed across many disciplines (Bailey and Kurland 2002; Cascio 2000; Di Martino and Wirth 1990; Duxbury and Neufeld 1999; Duxbury et al. 1998; Fritz et al. 1994; Haddon and Lewis 1994; Handy and Mokhtarian 1995; Kurland and Bailey 1999; Mokhtarian 1998; Wellman et al. 1996; Zedeck 1992).

Following the evolution of telework, legal regulations on its use were first put into place by the state of California, the birthplace of Jack Nilles's pioneering studies. The California Government Code section 14201 signed in 1990 reflects the nature of these early years. It encourages each state agency to 'review its work operations to determine where in its organization telecommuting can be of practical benefit'. Similar statutes and directives exist today in several other US states.[6]

The literature on first-generation telework is clearly concentrated on one mode of work: the home office.[7] Workplaces in or close to the employees' homes are remote, cheap and ecological, but also stationary. This does not come as a surprise. Computers and telephones at that time, thus first-generation ICTs, were not yet capable of mobilising employees while working. Moreover, these studies have clear sectoral and geographical limits. Before telework spread to other industries, states and countries, the main objects of study were the 1970s' and 1980s' information industries on the West Coast of the United States. In this region, jobs were flexible, commuting costs high and access to ICTs already prevalent enough to create an inspiring new production system. The first government regulations followed these early developments and promoted telework in the public sector.

2.2   The Second Generation of Telework: The Mobile Office

It is difficult to separate out the first from the second generation of telework, the mobile office. Changes were incremental and took place on different stages across organizations, industries and countries. The first and second generations of telework are separated by technological advancements. As Alvin Toffler predicted, ICTs evolved very quickly. Smaller and lighter wireless devices, such as laptops, notebooks and mobile phones, enabled employees to work not just from home, but from almost anywhere they could or had to work. However, research on telework

remained limited. Even towards the very end of the 20th century, and thus at a time when these ICTs where already powerful and cheap enough to replace many stationary workplaces, scholars still focused on the classic form of telework as home-based full-time or part-time employment (Handy and Mokhtarian 1995; Kitamura et al. 1990; Mokhtarian 1998). In one of the first cautious essays on the subject, Di Martino and Wirth (1990) extended the menu of telework options to mobile work, without developing this concept in detail. Others followed with similar short, superficial and often anecdotal pieces (Kurland and Bailey 1999). At this point the image of an evolution of telework driven by the development of ICTs seems interrupted. In a short time ICTs were getting smaller, lighter and wireless, but still the perception of telework seemed to remain rooted in its home-based, stationary grounds.

Nevertheless, the argument for an ICT-driven evolution from the first generation of telework to the second can be made by considering two different but connected developments. First, it is important to mention that telework was constantly evolving towards a flexible work arrangement with, and not as a total substitute to, traditional office work (Duxbury and Neufeld 1999; Duxbury et al. 2006; Hartman et al. 1992; Kurland and Bailey 1999; Venkatesh and Vitalari 1992). Second, the mobile office was located in a different sectoral and organizational context than the home office. From its early beginnings in the 1970s and 1980s, the home office was promoted for clerical workers across industries, while the mobile office tended to be mainly employed by managers and professionals in marketing and finance (Kurland and Bailey 1999, p. 56). Scholars who focused on traditional teleworkers thus overlooked the mobile office as a growing alternative mode of work. Yet, with more and more occasional telework arrangements, these workers were separated from teleworking professionals merely by the types of ICTs they applied. With more technological advancements towards cheaper and more powerful electronic devices, both groups made use of the same new form of work (Bailey and Kurland 2002).

At this time the legal setting for telework changed dramatically. Government regulations were expanded from the mere promotion of the new mode of work to a more balanced perspective. Policymakers increasingly responded to the wide spread of telework and controversial debates around working time regulations, working conditions and occupational safety and health. An important example of this development is the European Framework Agreement on Telework of 2002. This social partner agreement stipulates how telework is defined[8] and that teleworkers are to enjoy the same working standards as their colleagues at the employer's premises.

The second generation of telework was not accompanied by a coherent new research body as the first generation had been, but instead by a new attitude towards working. The mobile office broke with the classic bipolar spatial structure of work. Increasingly scholars had to admit that work could be done at the employers' premises, at home and also at various locations in between. Work now became detached from place: it could be performed 'here, there, anywhere and anytime' (Kurland and Bailey 1999, p. 53). Government regulations reflect this development. They respond to the changing work environments and their conditions. From this time, it needed only the fast-growing dispersion of the Internet and World Wide Web access to take telework to its third generation, the virtual office.

2.3 The Third Generation of Telework: The Virtual Office

There was something important that Alvin Toffler could not foresee in his visionary book *The Third Wave*: the Internet and its effect on the use of ICTs. Toffler saw all workplaces of the information society relocated from the employer's premises to employees' homes, and at the beginning of the 1980s this seemed to be a promising guess. However, towards the turn of the 21st century it became clear that the author's vision had to be adjusted. In *Digital Nomad* (1997), Makimoto and Manners predicted that the work of the future would be neither here nor there, but instead constantly on the move. Access to the Internet via radio links and the shrinking of transistors would, according to Makimoto and Manners, inevitably fuse information technologies and communications technologies together and generate the 'industry's ideal product': 'The industry's ideal product will be both more and less than a laptop computer. It will do more communicating and less computing. And it will be much smaller and lighter than today's laptops' (Makimoto and Manners 1997, p. 30).

Makimoto and Manners's prediction came true. Smartphones and other similar products changed the use of technology so fundamentally that they allow us to describe the third generation of telework in terms of new types of ICTs, or 'new ICTs'. During the previous generation, work was becoming mobile but all information still had to be carried around all the time and information technology could be kept conceptually separate from communications technology. In this new generation of ICTs, information is stored in clouds and networks and only needs a tiny device to be accessed. This ultimately changes our perception of telework. Checking e-mails, recent trades, messages and news can all be done instantaneously in the palm of the hand. This enables work away from the employer's premises within a miniscule time frame.

The clearer these changes seem in retrospective, the less clear they are with regard to empirical data. Virtualized offices have been growing ever since the World Wide Web was created by Tim Berners-Lee at the European Organization for Nuclear Research in 1989. Early work on virtual offices or virtual workplaces thus focused more on computer-supported cooperative work (CSCW) and less on the shrinking and empowerment of ICTs (Cascio 2000; Igbaria and Tan 1998; Orlikowski and Barley 2001; Wellman et al. 1996). The first empirical studies that clearly pinpoint the value of new ICTs for the virtual office are based on surveys conducted within the industry that fed this evolution since the very beginning: the information industry (Hill et al. 2001, 2003). Here the virtual office, accessible through portable devices, is described as an 'emerging work form' (Hill et al. 2001, p. 51), but not yet conceptualized in a coherent way. The major interest in new ICTs as a tool for work away from the employer's premises came into play with a broad and still ongoing discussion about work intensification (Chesley 2005; Dery et al. 2014; Duxbury et al. 2006; Green 2002, 2004; Green and McIntosh 2001; Mahler 2012; Richardson and Benbunan-Fich 2011; Towers et al. 2006; Tu et al. 2005; Van Yperen et al. 2014). This debate is focused on the reorganization of work towards mostly informal work arrangements outside regular working hours. The character of the virtual office, mainly accessibility anywhere at any time, lies at the heart of this debate.

New ICTs enabled the mobile virtual connection of workers and, as in the previous generations, it is precisely this technological advancement that triggered the further evolution of telework. Telework evolved constantly over three decades from the crude initial desire to reduce commuting costs to the mobilization of office work and, finally, virtualization to a whole new mode of work. It has grown into almost every possible aspect of life, and now has become omnipresent. An evolution-based view of telework leads us to acknowledge that every current debate about the effects of ICT use for paid work away from the employer's premises is implicitly or explicitly a debate about telework in one form or another. This, in turn, creates the need to discuss the enigmatic diversity of definitions of this phenomenon that are spread across the literature and to put them into a coherent perspective.

3.   NEW TECHNOLOGIES, NEW CONCEPTS?

Literature on new ICTs and telework is dealing with a rapidly changing technological environment; effects discussed in one publication are often outdated and inapplicable in another. This review therefore focuses mainly on literature during roughly the past decade. This time period is

characterized by an explosive dispersion of neologisms, definitions and concepts all struggling to cope with the many advantages and drawbacks of telework and work with new ICTs. This proliferation profoundly hampers comparability among studies, a problem that has always accompanied research on work with ICTs. In times when scholars more commonly used the term telework, different definitions led to confusion and to a large variation of results. As noted by Kraut (1989), and more recently by Bailey and Kurland (2002), different studies reported different shares of employees who telework regularly simply because they worked with different definitions of the term. Hence, to identify different forms of telework currently, it is necessary to consider a basic categorization which allows us to classify and compare definitions.

At the beginning of research on telework, scholars were concerned with three key elements: technology, location and organization (see, for example, Beer 1985; Di Martino and Wirth 1990). We can use these three elements to create a categorization of the whole spectrum of changes in telework up to the latest developments. Technology is the driving force behind the evolutionary process of telework, rapidly developing from old to new ICTs. This development extended workplaces from the traditional office at the employer's premises to employees' homes and then places such as cars and train stations, and now to almost any place we can imagine. Something similar can be said for the organization of work. Initially, telework was meant to be a total substitute for traditional office work. Over time, however, it was increasingly employed on a partial basis, with employees only taking a few days a month for telework parallel to their main work at the employer's premises. Currently, with the technological possibilities of instantaneous teleworking, more occasional forms have been added to the menu of options.

This categorization helps us to identify basic patterns among the chaotic diffusion of new terms and definitions, and leads us to a choice of the specific definition that best suits our purpose of synthesizing the literature on this topic. Studies focused on telework and/or work with new ICTs are discussed in regard to their terms (section 3.1) and attributes (section 3.2). The results of these discussions are the building blocks for a conceptual framework of telework (section 3.3), which in turn provides a truly novel vantage point from which to view the country-specific analyses that follow and illustrate how telework is being practiced today.

3.1 Terms

As was explained in section 2, the fast-shrinking and powerful new ICTs have led to the emergence of new studies that are to a large extent detached

from the origins of Jack Nilles's early work on the first generation of telework in the 1970s and 1980s. This detachment is reflected by the many neologisms that have been created in sharp contrast to the term 'telework'. A first example was Makimoto and Manners's digital nomad. This term is frequently repeated in public and academic discourse, since it pinpoints the turn from old to new ICTs. It has inspired the creation of a wide range of other neologisms, such as e-nomad (Parent-Thirion et al. 2012), job 2.0 (Williams 2010), new ways of work (new WoW) (Popma 2013), workscapes (Felstead et al. 2005), work-extending technologies (Duxbury et al. 2006), location independent living (LIP living),[9] e-work (Lister et al. 2009), and so on. In these terms we can already identify the three key conceptual elements of telework. Technology is reflected by the term digital, the prefix 'e-' and the upgrade indicator 2.0. The location of workplaces is described with terms such as nomadism, location independency, and so on. New forms of work organization are given with the new ways, the '-scapes' and work extensions.

One could argue that the terms telework and telecommuting have lost their importance because they only emphasized 'tele', the Greek prefix for 'far', and thus the location element. To conclude that this is the only reason why these terms are now often avoided would, however, be incomplete. Research on work with new ICTs is still in its infancy, and most probably has been influenced by the Zeitgeist of the 21st century. Contemporary scholars, together with authors of popular books, bloggers and journalists, may hesitate to use the term telework simply because it does not seem to resonate with a 21st-century perception of technology.

3.2   Attributes

Terms by themselves do not give complete information. It is in combination with attributes that a definition is constituted. In the case of ICT-based work, these attributes mostly follow the focus of the term to the extent that they cover the same key elements. For example, in their report for the fifth wave of the European Working Conditions Survey, Parent-Thirion and her colleagues followed the focus of Makimoto and Manners (1997) on nomadism with their definition of 'e-nomads': 'individuals who use ICT at least sometimes and do not have their employer's premises (or their own premises if self-employed) as their main place of work, or, if they do, they have worked in another location in the three months prior to the survey' (Parent-Thirion et al. 2012, p. 95). These attributes reflect the focus of the term: location and technology.

A different view of the subject is to extend the perspective from a focus only on flexible workplaces to flexible working time arrangements, and

thus to work organization as well. As Duxbury et al. (2006) conclude, in their study of Canadian knowledge workers, new ICTs are often used as work-extending technologies (WETs). Not only is the traditional work-place altered by the new technologies, but so are standard working time policies, work schedules and, consequentially, work–life balance. The main issue from a conceptual perspective is the consideration of working time as, perhaps not the main, but another crucial aspect of the use of new ICTs for work. In a similar vein, Popma (2013) reviews the literature on New WoW, which the author defines briefly as 'place- and time-independent working' (Popma 2013, p. 5). The attributes in these approaches also cover the key element of work organization. However, this comes with a cost. Both terms and attributes are broadened in comparison with other defini-tions to make them fit the breadth of the phenomenon. This leads to less precise and less informative definitions.

A very frequently applied definition that covers all three of these key elements is that used in the European Framework Agreement on Telework of 2002: 'Telework is a form of organising and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employer's premises, is carried out away from those premises on a regular basis' (European Framework Agreement on Telework 2002, p. 15). In this definition, location is included as work away from the employer's premises. Work organization is mentioned explicitly, and specified with telework being carried out away from those premises on a regular basis. In addition, the attribute of technology is covered by information technology. Given the breadth of such a definition, with it telework can be defined across all three generations.

In effect, and in contrast to many other definitions, the European Framework Agreement on Telework definition can potentially cover the third generation of telework as well. New ICTs, especially smartphones, enable employees to check their e-mails and receive telephone calls on a regular basis, away from the employer's premises. Currently, work with new ICTs has reached an extent whereby it can be considered a separate form of work. Hence, working occasionally with new ICTs away from the employer's premises does not imply that telework is carried out on an ad hoc basis, but rather as an integral part of a regular work pattern. A typical example is the checking of e-mails on the smartphone as one's first morning task (Maier et al. 2010).

Another important characteristic of the above definition is its preci-sion for the kind of work that is performed. Telework is often confused with similar-sounding work arrangements. For example, some authors treat industrial *homework* as a predecessor of telework (see, for example,

Kaufman-Scarborough 2006). In this setting production is undertaken at home, often in the form of an independent business and not based on an employment contract. Similar confusion can be created if work is outsourced or offshored with the help of ICTs,[10] which is commonly known as remote work. Here employees perform work remotely from their customers and not remotely from the employer's premises (Messenger and Ghosheh 2010).

The definition in the European Framework Agreement on Telework covers all the forms of telework that have emerged over the past four decades. Even if the term telework itself does not resonate with the perception of current technologies, it is still worth retaining. It stipulates a crucial element that still characterizes the new work arrangements: the location. With a small alteration, the addition of communications technology, telework can be defined in terms of all three key elements without descending into vagueness.

A clarification seems necessary at this stage. This volume is focused on telework, which is a broader, more encompassing concept than telecommuting – although these two terms are often, mistakenly, used interchangeably. In their seminal article providing a meta-analysis of telecommuting and its effects, Allen et al. (2015) draw a clear distinction between telework and telecommuting. They define telework as follows:

> The term telework is generally used to connote a broader form of telecommuting that involves working from a variety of alternative locations outside of the central office (including full-time work from home but not necessarily limited to home-based work) and includes work from home-based businesses, telecenters, and call centers, and even work within an organization's central office between individuals who are interacting through the use of technology. (Allen et al. 2015, pp. 42–3)

In contrast, the same authors define telecommuting as follows:

> Telecommuting is a work practice that involves members of an organization substituting a portion of their typical work hours (ranging from a few hours per week to nearly full-time) to work away from a central workplace – typically principally from home – using technology to interact with others as needed to conduct work tasks. (Allen et al. 2015, p. 44)

This is a very important distinction for understanding the current volume. In particular, this volume provides for a very broad definition of telework, which is, work performed with ICTs from outside the employer's premises.

This broad definition covers telework that supplements, as well as substitutes for, work in the office (purely substitutional telework is telecommuting). As we will see in the next section, this definition also

includes mobile forms of telework, which 'involve working from a variety of alternative locations outside of the central office' rather than working 'principally from home' (see also ILO and Eurofound 2017).

3.3 Conceptual Framework

Based on this evolutionary perspective on telework and the discussions of terms and attributes in the preceding subsections, a conceptual framework of telework can be created that encompasses the entire evolution of telework from the 1970s to date. The framework with its segmentation into the three generations of telework (home office, mobile office and virtual office) and the three key elements (technology, location and organization) is illustrated in Figure I.1 and discussed in the following paragraphs.

As Figure I.1 illustrates, our conceptual framework covers studies
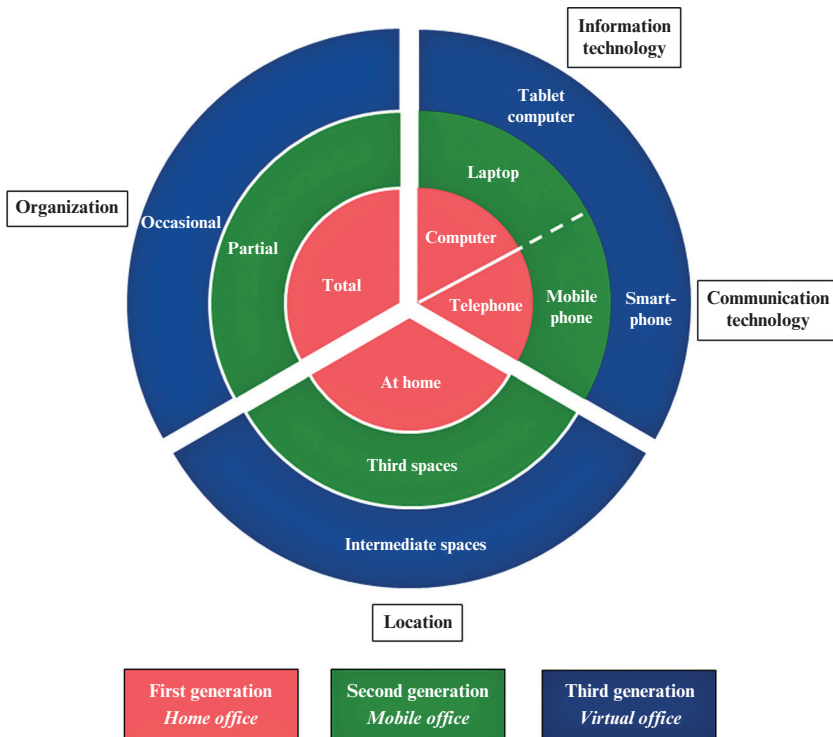
Source: Messenger and Gschwind (2016).

Figure I.1   Conceptual framework of telework

on the latest developments, namely, work with new ICTs away from the employer's premises, together with those that capture more traditional, still-existing forms of telework. The first generation constitutes the core of the framework split into the three key elements – technology, location and organization. It is the model of telework as it was pictured by Jack Nilles in the 1970s: use of fixed computers and telephones, thus stationary old ICTs, at or close to the employee's home as a total substitute for traditional office work. Studies rarely deal exclusively with this form of telework, mainly owing to a relatively scarce use of telework as a person's total and thus only work arrangement.[11] However, some operational definitions include telework as the main employment (see, for example, Parent-Thirion et al. 2012). In these cases it comes down to a determination of whether or not telework is de facto used as a full replacement for traditional office work.

The second generation of telework is layered around the core described above: partial telework with mobile old ICTs, such as laptops and mobile phones, in third spaces. Partial in this case means that a share of working hours at the employer's premises is replaced by telework. In addition, the term indicates that work can be arranged more flexibly, including working hours in the evenings and on weekends. These observations are mirrored in the measurement of partial telework as a share of working time. Characteristic locations of the second generation are spaces such as vehicles, cafés, airports, train stations and the client's premises – any place where work can be done regularly with the help of ICTs and which is neither the employee's home nor the employer's premises. For the purpose of efficient discussion, we call these locations third spaces.

In the third generation of telework, new ICTs such as smartphones and tablet computers enable occasional telework in intermediate spaces as well. It is important to keep intermediate spaces conceptually separate from third spaces, the location of the second generation. Intermediate spaces lie in between the employer's premises, third spaces and the employees' homes (for example, elevators, parking lots and, even, the sidewalk). They are made available for work activities by the special features of new ICTs – the fusion of information technology and communications technology, and the remote access to information. Intermediate spaces complete the coverage of workplaces made available by ICTs to almost anywhere one can imagine. The typical mode of organization in this case is occasional telework. As for other forms, this term also describes organization beyond the mere amount of time that is spent teleworking. Such occasional telework is a less formal and less regulated work arrangement than the others. It is mostly measured in frequency (for example, 'How often do you . . .?'), rather than as a share of working time (for example: 'How much of your regular working time do you . . .?'). Typical forms of occasional telework, such as

responding to telephone calls or e-mails from colleagues or supervisors, are also less of a voluntary arrangement set up by the employee themselves.[12] They also tend to supplement, rather than substitute for, work in the office.

The evolution of telework serves as the conceptual backbone that helps us to categorize and compare the many forms of telework that currently exist. However, to apply our framework to the most recent studies and developments, we need to acknowledge the blurred boundaries between the segments of technology, and thus between old and new ICTs, in reality. Old ICTs, especially stationary computers, now share many of their features with ICTs of the latest generation, such as Internet connections and the fusion of information and communications technology. Furthermore, new ICTs are now powerful enough to fulfil highly complex tasks, a characteristic which was once unique to stationary computers. The blurring of boundaries between technologies is illustrated in Figure I.1. The segments of technology overlap and the separation between information technology and communications technology fades away towards the outer circles, and finally disappears completely.

The hybrid character of technology leads, among other factors, to a whole new set of possible combinations with segments across the key elements and the generations of telework. Powerful smartphones and tablets, for example, are now also used for partial telework at home and in third spaces (Yun et al. 2012), and stationary computers (personal computers – PCs) are also used for occasional e-mail correspondence with colleagues, clients or supervisors (see, for example, Chesley 2010). Furthermore, and quite intuitively, new ICTs can be used anywhere and not only in intermediate spaces (see, for example, Bittman et al. 2009), and partial telework occurs to an even larger extent at home than in third spaces (Pfisterer et al. 2013). Such combinations are an integral part of the evolution of telework. New technologies, and consequentially new forms of telework, did not fully replace the old forms of telework, but instead changed and complemented them. Hence, much like with any other generation-based conceptualization, we need to interpret the different circles of our framework as a typical, rather than an exclusive, combination of segments. Thus, in our model, 21st-century telework is simply the use of ICTs to perform work from anywhere away from the employer's premises.

The review of the literature on direct and indirect effects of telework in the next section is therefore guided by a discussion of telework forms as flexible combinations of these different segments informed by a generation-based perspective.

4. DIRECT AND INDIRECT EFFECTS OF TELEWORK AND THE ROLE OF NEW ICTS

With the discussion of telework and its evolution over three generations, we capture an intense and diverse debate on the advantages and disadvantages of telework which emerged in the 1990s and is still prominent today, albeit using different terms and definitions.[13] The main themes of this debate can guide us to structure our review of contemporary literature on the effects of telework as follows: working hours and work schedules (section 4.1); work–life balance (section 4.2); occupational safety and health (section 4.3); and individual and organizational performance, including job satisfaction (section 4.4).

4.1 Working Hours and Work Schedules

In the early days, Jack Nilles described telecommuting and telework as total substitutes for traditional office work. This picture, however, is only characteristic for the first and, with limits, the second generation of telework enabled by old ICTs. New ICTs, in contrast, are accompanied by partial and occasional work arrangements, entering third spaces and intermediate spaces as well. Scholars are thus increasingly concerned with telework as a supplement to, instead of a substitute for, traditional office work. Central to this concern is the scholarly work of Linda Duxbury and her colleagues on work-extending technology in the Canadian public sector (Duxbury and Neufeld 1999; Duxbury et al. 1998, 2006, 2014). Their results for the effect of partial telework on working time uncover a pattern across personal characteristics and occupations: male professionals and managers who telework from home report the longest working hours. Technical staff emerge with the longest hours for telework in third spaces. These findings are supported by other studies with similar approaches (Hill et al. 2010; Kelliher and Anderson 2010, 2008; Lambert et al. 2008; Noonan and Glass 2012). In contrast, the causal direction is not always as clear: owing to the design of most studies, it is difficult to say whether working time supplements regular working hours through telework or whether employees with long working hours also happen to be teleworkers.

It is important to identify the extent to which teleworking hours are supplemental hours in order to study its effects on work schedules. This occurs, for example, with the concepts of technology-assisted supplemental work (Fenner and Renn 2010) or non-traditional telework (Golden 2012), and with surveys which specifically ask for this form of telework. In a representative US survey, 45 percent of the group of employees who use ICTs for work report that they sometimes telework from home at nights

and on weekends (Madden and Jones 2009). According to a Finnish study, 54 percent of the partial telework in Finland is overtime work without compensation (Ojala 2011). The degree of formality of supplemental telework is important in this case. In another US survey, 78 percent of the respondents say that their supplemental telework is not based on a formal agreement and 21 percent report that they do not get paid for this kind of work (Song 2009). These results are largely supported by surveys and studies in other countries as well (Fenner and Renn 2010; Golden 2012; Natti et al. 2011; Towers et al. 2006; Troup and Rose 2012). Another very important aspect is the gender dimension of partial telework. According to the results of an in-depth analysis in the United Kingdom, women and men tend to telework to the same extent, yet women are more likely to telework as part of their normal work schedule – that is, telework substitutes for work in the office (substitutional telework). Men, in contrast, tend to telework more in addition to their normal work schedule – that is, telework is more likely to supplement work in the office (supplemental telework) (Atkinson and Hall 2009).

Necessary for the analysis of partial telework is its coexistence with other work arrangements. Many studies do not single out the effect of telework, but instead look at the combined effects of different forms of flexible work schedules, including telework.[14] Such work arrangements tend to reduce the 'face time' of workers in their workplaces, either by creating spatial distance between employees and their colleagues/supervisors or by reducing the core hours of work spent jointly at the same workplace (Kelliher and Anderson 2010, p. 97). The effects on individual working time, however, are quite different. In particular, schedules with flexibility in time tend to be related to shorter working hours and thus tend to offset the extended hours effects created by telework (Golden and Wiens-Tuers 2006; Lambert et al. 2008). This is particularly important, since such flexible work schedules are often introduced alongside telework (Golden et al. 2008; Hill et al. 2010; Stavrou 2005; Stavrou and Kilaniotis 2010).

Studies on occasional telework deal almost exclusively with working time outside of regular business hours, and thus with an alteration of regular work schedules. Such work-related contacts in evenings are, however, a marginal phenomenon according to two Australian surveys (Bittman et al. 2009; Wajcman et al. 2008). Respondents were asked to send in logs of their mobile phones to allow studying the use of these devices in the form of a time-use survey. The results indicate that work-related contacts dropped to practically zero after regular business hours. However, it is difficult to generalize such findings. Many case studies show differences created by individual characteristics, such as ambition (Olson-Buchanan and Boswell 2006), self-control (Duxbury et al. 2014) and the personal need for certain

work routines (Van Yperen et al. 2014), but also the expectations of supervisors (Mahler 2012), and the type of electronic device used (Richardson and Benbunan-Fich 2011), are of high importance. Depending on the combination of these conditions, working hours can increase to a large extent. In the study by Madden and Jones (2009), 70 percent of those who use new ICTs for work-related tasks report that they regularly use them for occasional telework in the evening.

There are limits to the comparability of these and other similar studies on telework and working time owing to diverging measurement approaches. However, they indicate that working hours are mostly extended through partial telework at home or in third spaces. The effects of occasional telework in this context depend greatly on individual characteristics and the work environment, but also on the measurement of working time itself. Therefore, it is necessary for any study to consider the potential effect of telework on working hours. Working time recurs as a moderating variable in most of the studies of the other effects of telework reviewed in the following sections.

4.2   Work–Life Balance

By far the broadest and most intensive discussion about the effects of new ICTs and telework is led by scholars who focus on detecting the determinants of work–life balance (WLB). Telework is often employed as a means to balance paid work with personal life,[15] and many studies support its usefulness for that purpose. In their meta-analysis Gajendran and Harrison (2007) find that partial telework has its advantages and disadvantages, but that employees in the included studies report, on average, an overall positive impression about its effects on their WLB. Large surveys in organizations (Maruyama et al. 2009; Robèrt and Börjesson 2006), among national populations (Allen et al. 2013; Pfisterer et al. 2013) and across different Organisation for Economic Co-operation and Development (OECD) countries (Hill et al. 2010) support these mainly positive effects of partial telework on WLB. However, providing practical advice to employees, supervisors or policymakers based on these results is difficult, since they do not uncover the specific advantages and disadvantages of telework regarding the balance between paid work and personal life.

More in-depth analyses reveal a large variation across the different segments of our conceptual framework. Partial telework at home, for example, is often described as beneficial since it facilitates childcare (Allen et al. 2013; Gajendran and Harrison 2007; Maruyama et al. 2009; Pfisterer et al. 2013; Robèrt and Börjesson 2006; Towers et al. 2006). Even though teleworking parents do not necessarily spend more time with their children

(Troup and Rose 2012), they still manage to balance the 'borders and bridges' (Kreiner et al., 2009) between paid work and family responsibilities. Alternatively, some studies report extremely negative experiences with telework, owing to conflicting responsibilities between paid work and personal life (Allen et al., 2013; Olson-Buchanan and Boswell 2006) and an increase in stress, especially for parents who are partial teleworkers in third spaces (Morganson et al., 2010). Here the use of partial telework as a supplement to, rather than substitute for, traditional office work comes into play (see section 4.1).

Largely diverging results for the effects of telework on WLB are even more common for occasional telework, especially if it involves heavy reliance on communications technology. Wajcman et al. (2008) and Bittman et al. (2009) report very low rates of spillover from paid work to personal life with occasional telework, but Chesley (2005) finds that the use of mobile phones – and thus most likely occasional telework – instead of laptop computers leads to a significant decrease in family satisfaction. Such contradictory deterministic findings, however, seem to be the exception rather than the rule. Most studies identify an internal ambiguity of occasional telework. It certainly increases autonomy and the possibility to take care of and stay in contact with family and friends; however, employees struggle with a clear separation between paid work and personal life, and thus also experience some reported decrease in WLB (Boswell and Olson-Buchanan 2007; Duxbury et al. 2014; Fenner and Renn 2010; Gallhofer et al. 2011; Heijstra and Rafnsdottir 2010; Ladner 2008; Yun et al. 2012). This ambiguity is also reflected in a discrepancy between perceived and used workplace flexibility. Individual perceptions of telework as a successful tool explain more of the variation in WLB effects than actual teleworking hours (Heijstra and Rafnsdottir 2010; Hilbrecht et al. 2008; Jones et al. 2008). Such findings can help to explain the contradictory effects of telework on WLB in general. They are not necessarily positive or negative in a deterministic sense, but instead ambiguous.

Occasional telework takes this ambiguity to the extreme. It is mostly employed with the help of small, powerful communications devices such as smartphones, which blur work–life boundaries to a large extent and impede clear deterministic conclusions. Owing to this ambiguity, scholars have increasingly changed their approach to the scrutiny of this topic and now ask how, and not if, telework can be useful for individuals to balance paid work and personal life (Duxbury et al. 2014). Key to successful WLB with the help of new ICTs and telework is an optimal strategy for work–life management (Kreiner et al. 2009) or boundary management (Duxbury et al. 2014). It is thus important to find an appropriate individual combination between the segmentation of paid work and personal life despite

telework, and the integration of paid work into personal life with the help of telework.[16]

Detecting the effects of telework on WLB is a very difficult task. This becomes even clearer as soon as we begin to dissect telework into the different conceptual combinations of our theoretical framework. The effect of telework on WLB is ambiguous for partial, and even more so for occasional, telework. An adequate interpretation and summary of individual choices needs to reflect these ambiguous findings. Employees are typically aware of the many drawbacks of telework and accept them for the sake of the benefits that it provides. Thus, they do not telework because it has mainly positive effects, but rather because it facilitates certain work lifestyle choices (Gallhofer et al. 2011).

4.3   Occupational Safety and Health (OSH)

Studies on occupational safety and health (OSH) and the use of new ICTs are almost exclusively focused on their implications for mental health,[17] which is closely related to the discussions on working time (section 4.1) and on WLB (section 4.3). The findings of these studies can be attributed to one or both of two mediating factors: role ambiguity and lack of rest and recovery.[18] Partial telework blurs the boundaries between paid work and personal life. Integration of work into areas of personal life can lead to a higher amount of autonomy and higher work and life satisfaction, but also to a confrontation between family and work roles. For example, results from a survey in a large US company reveal that partial teleworkers experience positive effects when switching from work to family roles and vice versa; hence they report a lower intensity of role stress. However, they equally feel that the confrontation of the two roles leads to an increased uncertainty about the ability to fulfil each role up to the expected level, which is called role ambiguity (Sardeshmukh et al. 2012). This role ambiguity increases fatigue, and consequentially the risk of burnout. Sardeshmukh et al. find that, overall, neither the positive effects of lowered role stress nor a reduction of working time is able to counterbalance these effects on role ambiguity. Of high importance in this context are the results of Jones et al. (2008) and their survey among workers in Singapore, which was briefly mentioned in the previous subsection. Their findings underline the negative effects of partial telework on mental health. However, they also indicate that it is not actual, but rather perceived workplace flexibility that leads to such effects. Hence, employees might see problems in fulfilling their family and work-related roles, not necessarily because they actually work more outside of their employer's premises, but because the mere possibility of teleworking increases their perception of role ambiguity.

Studies of the effects of occasional telework on mental health are closely focused on rest and recovery. With analyses based on the fourth European Working Conditions Survey (EWCS), in 2005, Arlinghaus and Nachreiner (2013) find that being irregularly contacted by the employer (occasional telework) increases self-reported health impairments and sickness absences more than regular work in the evenings or on weekends away from the employer's premises (partial telework). The mechanism underlying such negative health effects is a chronic lack of rest and recovery from work (Geurts and Sonnentag 2006). This occurs because new ICTs fill up the spaces and times that would normally be used for recovery, either at the workplace (internal recovery) or outside of work (external recovery). Occasional telework is thus more specifically problematic for external recovery: It creates a mode of constant activation which does not allow sufficient rest, as it can be done at any time in any location – at home, in third spaces and, even, in intermediate spaces. Lower levels of rest and recovery, and consequentially higher levels of fatigue, increase the risk of burnout for occasional teleworkers, as shown by a study on intensive smartphone use among Dutch employees (Derks and Bakker 2014). As indicated above, these theorized and measured effects are not necessarily limited to the use of telework. As Thomée et al. (2011) show with their study on smartphone use among young adults in Sweden, new ICTs in general increase constant connectivity, sleep disturbance, depression and the risk of burnout. However, the periods of recovery from work are shortened, particularly by occasional telework.

Thus, telework affects mental health in two ways: it increases role ambiguity and decreases recovery from work. Both of these mediating factors can lead to a higher level of fatigue and thus increase the risk of burnout. Negative effects appear to be poorly compensated by lower role stress and greater autonomy. Such findings are especially important in the case of occasional telework. This situation leaves no room for recovery from work and thus creates a feeling of constant availability, even if actual work-related contacts away from the employer's premises remain low.

4.4 Individual and Organizational Performance

In reference to the framework offered by Kowalski and Swanson (2005) we can identify two levels of performance in relation to telework: individual and organizational. A key to the success of telework is its effect on the first level, the performance of individual employees. Scholars report mainly positive supervisor ratings for partial teleworkers in case studies (Kossek et al. 2006), large surveys (Pfisterer et al. 2013; Stavrou 2005) and meta-analyses (Gajendran and Harrison 2007; Kelly et al. 2008). However,

increasingly they also uncover problems with the causal linkage and the measurement of these effects.

Studied independently from the use of ICTs, work away from the employer's premises tends to impede the performance of individuals and their work groups; the further and the more frequently employees work away from their colleagues, the less they share knowledge among each other (Taskin and Bridoux 2010) and the less their performance is rated positively by their supervisors (Golden et al. 2008). Such negative effects can be counterbalanced either with advanced communication technologies and tools (see, for example, Golden et al. 2008) or with a managerial approach to ICT use that puts more emphasis on information sharing than on work monitoring (see, for example, Lautsch et al. 2009). In contrast, management can also be the source of a biased selection of employees, because telework is never offered equally to all workers (Mahler 2012). Studies thus struggle to hold constant the pre-existing performance differences between teleworkers and their colleagues. Hence, the causal link between telework and individual job performance is not as clear as might be supposed by the studies cited above. Individual performance depends greatly on managerial discretion, teleworker autonomy, and the balance between communication and location that is inherent to all forms of telework. These results do not necessarily question the positive effects of partial telework on individual performance, but they put them into perspective.

Scholarship on occasional telework and its effects on individual job performance is still in its infancy. However, recent studies indicate that occasional telework, especially when it is performed with smartphones, does not appear to have a significant positive effect on individual performance. This can be explained in many different ways. As Yun et al. (2012) argue based on their survey of South Korean workers, occasional telework increases the perceived workload, which in turn has a negative effect on individual performance.[19] Based on the results of different surveys in New York, Chesley (2005, 2010) finds that, in contrast to laptop computers, smartphones do not increase performance, since they are often perceived as a device for handling personal rather than work-related issues. All of these findings are also mirrored in the study by Dery et al. (2014), which finds that occasional telework is employed in order to cope with an increased workload, but that it is directed mainly towards reconnection to family and friends while doing so, and not as a tool to directly increase job performance.

Job satisfaction is another factor that can affect individual performance. The effects of telework on job satisfaction vary widely across personal characteristics and across the different forms of telework. This blurred pattern leads to very unclear results for job satisfaction, especially in

large-scale surveys. According to Morganson et al. (2010), home-based teleworkers do not report higher or lower job satisfaction than their colleagues at the employer's premises. However, telework in third spaces seems to have a significant negative effect. In contrast, the evaluation of an Australian national survey on telework from home indicates significantly higher work satisfaction among teleworking women, but not among teleworking men, largely owing to having more temporal flexibility in balancing paid work and childcare (Troup and Rose 2012). In their meta-analysis on partial telework, Gajendran and Harrison (2007) find evidence for mainly positive effects of telework on job satisfaction, mediated by an increased perception of autonomy.

The discussion around telework and individual performance has already highlighted the importance of management. Telework's success or failure is a product of both individual performance and the competence of supervisors and managers to make use of this new way of working in the proper context. The balance between location and communication as a central managerial tool has already been mentioned. Furthermore, Golden and Fromen (2011) find that telework is more likely to enhance the performance of workers if it is also employed by managers themselves. Managers who partially work from places away from the employer's premises better understand when and why telework is employed by their subordinates, and occasional telework – even though it has a lot of downsides, too – enables contact with managers on a regular basis. Finally, Fenner and Renn (2010) find that the mere provision of electronic devices to employees does not increase individual job performance. To make occasional telework an effective tool, managers need to create a working climate that emphasizes the value of new ICTs as a tool for increasing work autonomy instead of work monitoring.

If implemented correctly in the proper context, telework can increase individual job performance, which in turn can aggregate to better outcomes at the organizational level. In an analysis of over 2000 organizations across the European Union (EU), Stavrou (2005) finds evidence for an overall positive effect of partial telework policies on performance when controlling for sector and number of employees. Organizations largely profit from such arrangements 'since they allow employees to work when it is most suitable for them regardless of time, day and location' (Stavrou 2005, p. 938). However, the aggregation of improved individual performance is just one side of the outcome. In their meta-analysis Kelly et al. (2008) find that organizations also increase their attraction to high-skilled professionals, who are the main demanders of flexible work schedules. Furthermore, as was assumed by the first scholars of telework in the 1970s and 1980s, partial telework reduces costs for office space (Robèrt and Börjesson

2006). Employers can bolster these effects if they support telework policies with monetary incentives.

As with other levels of performance, there are also limits to these results. Neirotti et al. (2013) argue, based on one of the very few comparative studies of effects at the organizational level, that companies only profit from partial telework in third spaces[20] if they are (1) not capital intensive, (2) have a broad geographic scope, (3) rely on human capital and (4) have sufficiently adapted information technology systems. These findings do not apply to telework from home or occasional telework. However, many studies do not mention that their findings are only applicable to a fraction of organizations on a global scale. In contrast, Neirotti et al. (2013) show that organizations typically profit from telework only if their business model is tailored to support a specific combination of location, work organization and technology.

5.   METHODOLOGY AND MAIN DATA SOURCES

This volume is based on country studies that were conducted in five countries – Argentina, Brazil, India, Japan and the United States – plus a chapter for the EU. The EU chapter focuses primarily on ten countries: Belgium, Finland, France, Germany, Hungary, Italy, the Netherlands, Spain, Sweden and the United Kingdom, although some evidence in presented for the EU-28 as a whole. All of the chapters were prepared by telework experts in the respective countries, with the exception of the EU chapter, which was prepared based on reports by national correspondents in each of the European countries and synthesized into a single chapter by telework experts with a pan-European perspective. All of the chapters were prepared in line with a standard expert questionnaire based on a common definition of telework in line with our conceptual model (presented in section 3.3. above). This common definition is as follows: the use of information and communications technologies (ICTs) to perform work outside of the employer's premises.

The standard expert questionnaire was used to structure and compile the available data regarding telework in each country. This questionnaire covers the following topics:

1. the incidence and the intensity (that is, the extent) of telework;
2. the effects of telework on working time (that is, hours of work and the organization of working time, that is, work schedules), WLB, occupational health and well-being, and individual and organizational performance; and

3. policy responses to telework at the national, sectoral, and company levels.

Unfortunately, the breadth and depth of the available data varies substantially across the countries, so the ability to operationalize the above definition of telework varies substantially as well. For some countries (for example, the EU member states) the entire definition can be covered, while for others (for example, Argentina and Brazil) available data is largely limited to home-based teleworkers.

Primary data sources in all of the country reports include large-scale surveys with individuals, households and companies. Additional information sources include in-depth interviews with experts and employers, white papers, laws and company policies on ICT-enabled work outside the employer's premises.

Surveys specifically focused on telework are the main data source for the report from Japan. Comprehensive data on telework is generated on a regular basis in Japan. Central state actors such as the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), the Ministry of Internal Affairs and Communication (MIC) and the Ministry of Health, Labour and Welfare (MHLW) promote and initiate independent research on telework to a large extent. Data sources for the country report from Japan include nationwide representative surveys with employers and employees specifically focused on the incidence of telework and its effects. Those referred to in this report are a company survey conducted by the MIC; a survey among the working-age population conducted by the MLIT; and a range of surveys with so-called *zaitaku*-workers[21] conducted by the Japan Institute of Labour (JIL).

In Europe, a wide variety of different data sources were used in the compilation of the European national reports depending upon the specific country. In addition, the national reports were complemented with data from the sixth wave of the European Working Conditions Survey (EWCS), a representative survey that was carried out across the EU member states in 2015 by the European Foundation for the Improvement of Living and Working Conditions (Eurofound).

Nationwide surveys on work from home and the use of ICTs in a more general sense were the main source for the reports from Argentina and the United States. Official statistics on telework in the United States and Argentina can be found in sources which cover work from home and the use of ICTs separately and in a broad sense. Among those referred to in the report for the United States are the American Community Survey (ACS), the General Social Survey (GSS), the Federal Employment Viewpoint Survey (FEVS), the American Time Use Survey (ATUS) and the Gallup

Work & Education Poll. The only survey with a particular focus on telework was conducted by the market research company, IPSOS, with figures only jointly available for the United States and Canada. The primary data source for the report on telework in Argentina is a nationwide household survey on the use of ICTs conducted by the National Institute of Statistics and Censuses (NISC), Encuesta Nacional de Tecnologías de la Información y la Communication (ENTIC). Additional data stems from interviews with employees in four enterprises completed by the national expert and company-level data on formal telework arrangements collected by the Ministry of Labour.

However, only very limited pre-existing data regarding telework was available in Brazil and India. A lack of official statistics on the incidence or the effects of telework has been the key challenge for research on this topic in these two countries. The national experts in Brazil used proxies such as company-level data on work from home policies to estimate the incidence of telework in this country and synthesized the limited information available from existing studies regarding its effects. In the case of India, the national experts conducted an employee survey on telework themselves specifically for the purposes of this study. The lack of official statistics in these countries corresponds to a growing, but still comparatively low, attention to telework among politicians and relevant public authorities in these two countries.

6.   CONCLUSION

New ICTs and devices, for example, smartphones and tablet computers, have revolutionized everyday work and life in the 21st century. On the one hand, they enable us to constantly connect with friends and family as well as with work colleagues and supervisors; on the other hand, paid work becomes increasingly intrusive into the times and spaces normally reserved for personal life. Crucial to this development is the detachment of work activities from traditional office spaces. Today's office work is largely supported by Internet connections, and can thus be undertaken from basically anywhere at any time. This new spatial independence dramatically changes the role of technology in the work environment, offering both new opportunities and new challenges. Scholars are increasingly concerned with the advantages and the disadvantages of new ICTs for aspects such as working time, WLB and OSH, as well as individual and organizational performance.

A close analysis of the relevant literature reveals that research on the detachment of work from the employer's premises and its effects actually

dates back to the previous century. To fully understand the effects of new ICTs, it is thus important to create a conceptual link between the early days of telecommuting/telework and how telework is practised today. Technological advancement is the motor of change in this context. It fostered the evolution of telework in separable stages or generations, which we call the home office, the mobile office, and the virtual office. Analysing the technological advancements from the 1970s to date sheds a new light on the old term telework. Current location-independent, technology-enabled ways of working – from the full-time employment of a mobile salesperson to the occasional work-related telephone call or e-mail from home – are all part of the same evolutionary process. Drawing upon this evolutionary perspective, the remainder of this volume explores the development, forms and effects of telework in countries from different regions around the world, including Argentina, Brazil, ten of the member states of the EU, India, Japan, and the United States.

NOTES

1. Conference video accessed 27 January 2015 at http://fora.tv/2013/05/07/Yahoo_CEO_Marissa_Mayer_Remaking_An_Internet_Giant.
2. As has been widely reported, the United Kingdom is now in the process of leaving the European Union (known as Brexit). However, they were part of EU at the time that the research for this report was carried out.
3. Cloud computing means that files and applications are stored in and shared by a network of computers and servers accessible through the Internet (Miller 2008).
4. Flexi-time means that employees have the discretion to vary the times they arrive and leave work, within established parameters, to meet their personal needs (Avery and Zabel 2000).
5. Telecommuting has become the most common term used by US scholars. Telework is mainly used in Europe and Asia (Andreev et al. 2010).
6. Arizona, Montana, Connecticut, Florida, North Carolina and Oregon (Goldman 2007).
7. It is important to mention that home office does not necessarily mean that people work at home. The focus here is on reduction of commuting time. In most cases companies simply decentralized their organizational structure, meaning that employees could work in satellite business centres closer to their homes (Nilles 1975, 1988).
8. For a discussion of this definition see section 3.2.
9. http://locationindependent.com/about/ (accessed 15 July 2019).
10. As it is done, for example, with call centres (Messenger and Ghosheh 2010).
11. As mentioned in section 2.2, from the early 1990s on most studies reported that telework was used alongside traditional office work, and not as a total substitute to it. More recent studies support these findings (for example, Welz and Wolf 2010).
12. The conceptualization of partial and occasional telework beyond the mere amount of working time largely embraces the differentiation between formal and informal telework made by Kossek and Lautsch (2007). However, the focus remains on time since partial Telework also often lacks a formal agreement (Kelliher and Anderson 2008).
13. See subsections 2.2 and 2.3.
14. This umbrella term covers a large plethora of work arrangements. For an overview see Kossek and Michel (2011).

15. Depending on context, theoretical background and the common terminology of a discipline, personal life is conceptualized around different definitions, using terms such as home and family that largely overlap in their attributes.
16. The theory on the management of integration and segmentation of work–life boundaries as applied here in the context of telework has been established in work–life balance research by Clark (2000).
17. We could imagine that the physical health and safety standards in cars, on streets and at home differ greatly from those at the employer's premises. The discoveries in this field however, at least as it seems from the literature we could find, are still to be made.
18. The discussion is closely related to what many authors describe as techno-stress (Popma 2013; Riedl et al. 2012; Tarafdar et al. 2007, 2010). It is used as an umbrella term for all kinds of effects the use of new ICTs at the workplace can have on OSH, such as information overload, addiction to technology and so on. Here the specific effects on mental health do not explicitly arise from work outside of the employer's premises, but more broadly from the use of new ICTs at the workplace.
19. The effect of workload on performance is difficult to compare on a global scale. Studies in China for example indicate that a higher workload induced by occasional telework increases productivity (for example, Tu et al. 2005).
20. What the author actually refers to is on-demand non-occasional telework for contact with customers. This excludes telework from home.
21. *Zaitaku*-workers are not employed by any company, but work from home as self-employed freelancers. Their work does not strictly fit the definition of telework used in this chapter because they are not employees. However, some possible effects of such work on Internet-based platforms for working time, occupational health and well-being can be derived for *zaitaku*-workers based on existing studies identified by the Japanese expert, and this information is presented in Chapter 2, on Japan, in this volume.

REFERENCES

Allen, T.D., Golden, T.D. and Shockley, K.M. (2015), 'How Effective is telecommuting? Assessing the Status of our scientific findings', *Psychological Science in the Public Interest*, **16** (2), 40–68.

Allen, T.D., Johnson, R.C., Kiburz, K.M. and Shockley, K.M. (2013), 'Work–family conflict and flexible work arrangements: deconstructing flexibility', *Personnel Psychology*, **66** (2), 345–76.

Anderson, B., Brynin, M., Raban, Y. and Gershuny, J. (2007), *Information and Communications Technologies in Society: E-Living in a Digital Europe*, London: Taylor & Francis.

Andreev, P., Salomon, I. and Pliskin, N. (2010), 'Review: state of teleactivities. Transportation research part C: emerging technologies', *Information/Communication Technologies and Travel Behaviour Agents in Traffic and Transportation*, **18** (1) 3–20.

Arlinghaus, A. and Nachreiner, F. (2013), 'When work calls – associations between being contacted outside of regular working hours for work-related matters and health', *Chronobiology International*, **30** (9), 1197–202.

Atkinson, C. and Hall, L. (2009), 'The role of gender in varying forms of flexible working', *Gender, Work & Organization*, **16** (6), 650–66.

Avery, C. and Zabel, D. (2000), *The Flexible Workplace: A Sourcebook of Information and Research*, Westport, CT: Praeger.

Bailey, D.E. and Kurland, N.B. (2002), 'A review of telework research: findings, new

directions, and lessons for the study of modern work', *Journal of Organizational Behavior*, **23** (4), 383–400.

Beer, A.D. (1985), 'Le travail à distance perspectives et enjeux: une synthèse documentaire' ('Remote work perspectives and issues: a documentary synthesis'), summary of a report by the French government's Commissariat général du Plan, Association Internationale Futurible, Paris.

Bittman, M., Brown, J.E. and Wajcman, J. (2009), 'The mobile phone, perpetual contact and time pressure', *Work Employment Society*, **23** (4), 673–91.

Boswell, W.R. and Olson-Buchanan, J.B. (2007), 'The use of communication technologies after hours: the role of work attitudes and work–life conflict', *Journal of Management*, **33** (4), 592–610.

Brenke, K. (2014),'Heimarbeit: immer weniger Menschen in Deutschland gehen ihrem Beruf von zu Hause aus nach' ('Home work: fewer and fewer people in Germany are pursuing their profession from home'), DIW Wochenbericht No. 8, Deutsches Institut für Wirtschaftsforschung e.V., Berlin.

Cascio, W.F. (2000), 'Managing a virtual workplace', *Academy of Management Executive*, **14** (3), 81–90.

Chesley, N. (2005), 'Blurring boundaries? Linking technology use, spillover, individual distress, and family satisfaction', *Journal of Marriage and Family*, **67** (5), 1237–48.

Chesley, N. (2010), 'Technology use and employee assessments of work effectiveness, workload, and pace of life', *Information, Communication & Society*, **13** (4), 485–514.

Clark, S.C. (2000), 'Work/family border theory: a new theory of work/family balance', *Human Relations*, **53** (6), 747–70.

Clutterbuck, D. (1985), *New Patterns of Work*, Aldershot: Gower.

Craipeau, S. (2010), 'Télétravail: le travail fluide' ('Teleworking: fluid work'), *Quaderni*, **71** (winter), 107–20.

Curson, C. (1986), 'Flexible patterns of work', study report, Chartered Institute of Personnel and Development, London.

Daniels, P.W. (1987), 'Technology and metropolitan office location', *Service Industries Journal*, **7** (3), 274–91.

Derks, D. and Bakker, A.B. (2014), 'Smartphone use, work–home interference, and burnout: a diary study on the role of recovery', *Applied Psychology*, **63** (3), 411–40.

Dery, K., Kolb, D. and MacCormick, J. (2014), 'Working with connective flow: how smartphone use is evolving in practice', *European Journal of Information Systems*, **23** (5), 558–70.

Di Martino, V. and Wirth, L. (1990), 'Telework: A new way of working and living', *International Labour Review*, **129** (5), 529–54.

Duxbury, L. and Neufeld, D. (1999), 'An empirical evaluation of the impacts of telecommuting on intra-organizational communication', *Journal of Engineering and Technology Management*, **16** (1), 1–28.

Duxbury, L., Higgins, C. and Neufeld, D. (1998), 'Telework and the balance between work and family: is telework part of the problem or part of the solution?', in M. Igbaria and M. Tan (eds), *The Virtual Workplace*, Hershey, PA: IGI Global, pp. 218–55.

Duxbury, L., Higgins, C., Smart, R. and Stevenson, M. (2014), 'Mobile technology and boundary permeability', *British Journal of Management*, **25** (3), 570–88.

Duxbury, L., Towers, I., Higgins, C. and Thomas, J.A. (2006), 'From 9 to 5 to 24

and 7: how technology redefined the work day', in W.K. Law (ed.), *Information Resources Management: Global Challenges*, Hershey, PA: Idea Group Inc. (IGI), pp. 305–32.

European Foundation for the Improvement of Living and Working Conditions and the International Labour Organization (Eurofound and ILO) (2017), *Working Anytime, Anywhere: The Effects on the World of Work*, Luxembourg: Publications Office of the European Union and Geneva: ILO.

European Framework Agreement on Telework (2002), 'Implementation of the European Framework Agreement on Telework', report by the European Social Partners, 16 July, accessed 27 January 2015 at http://www.etuc.org/framework -agreement-telework.

Felstead, A., Jewson, N. and Walters, S. (2005), *Changing Places of Work*, Basingstoke: Palgrave Macmillan.

Fenner, G.H. and Renn, R.W. (2010), 'Technology-assisted supplemental work and work-to-family conflict: the role of instrumentality beliefs, organizational expectations and time management', *Human Relations*, **63** (1), 63–82.

Fritz, M.E.W., Higa, K. and Narasimhan, S. (1994), 'Telework: exploring the borderless office', in *1994 Proceedings of the Twenty-Seventh Hawaii International Conference on System Sciences*, Piscataway, NJ: Institute of Electrical and Electronics Engineers (IEEE), pp. 149–58.

Gajendran, R.S. and Harrison, D.A. (2007), 'The good, the bad, and the unknown about telecommuting: meta-analysis of psychological mediators and individual consequences', *Journal of Applied Psychology*, **92** (6), 1524–41.

Gallhofer, S., Paisey, C., Roberts, C. and Tarbert, H. (2011), 'Preferences, constraints and work–lifestyle choices', *Accounting, Auditing and Accountability Journal*, **24** (4), 440–70.

Golden, A.G. and Geisler, C. (2007), 'Work–life boundary management and the personal digital assistant', *Human Relations*, **60** (3), 519–51.

Golden, L. and Wiens-Tuers, B. (2006), 'To your happiness? Extra hours of labor supply and worker well-being', *Journal of Socio-Economics*, **35** (2), 382–97.

Golden, T.D. (2012), 'Altering the Effects of work and family conflict on exhaustion: telework during traditional and nontraditional work hours', *Journal of Business Psychology*, **27** (3), 255–69.

Golden, T.D. and Fromen, A. (2011), 'Does it matter where your manager works? Comparing managerial work mode (traditional, telework, virtual) across subordinate work experiences and outcomes', *Human Relations*, **64** (11), 1451–75.

Golden, T.D., Veiga, J.F. and Dino, R.N. (2008), 'The impact of professional isolation on teleworker job performance and turnover intentions: does time spent teleworking, interacting face-to-face, or having access to communication-enhancing technology matter?', *Journal of Applied Psychology*, **93** (6) 1412–21.

Goldman, A.L. (2007), 'United States of America', in R. Blanpain (ed.), *European Framework Agreements and Telework: Law and Practice: Law and Practice, a European and Comparative Study*, Alphen aan den Rijn: Kluwer Law International, pp. 245–71.

Green, F. (2004), 'Why Has Work Effort Become More Intense?', I*ndustrial Relations: A Journal of Economy and Society*, **43** (4) 709–41.

Green, F. and McIntosh, S. (2001), 'The intensification of work in Europe', *Labour Economics*, **8** (2), 291–308.

Green, N. (2002), 'On the move: technology, mobility, and the mediation of social time and space', *The Information Society*, **18** (4), 281–92.

Geurts, S.A. and Sonnentag, S. (2006), 'Recovery as an explanatory mechanism in the relation between acute stress reactions and chronic health impairment', *Scandinavian Journal of Work, Environment & Health*, **32** (6), 482–92.

Haddon, L. and Lewis, A. (1994), 'The experience of teleworking: an annotated review', *International Journal of Human Resource Management*, **5** (1), 193–223.

Handy, S.L. and Mokhtarian, P.L. (1995), 'Planning for telecommuting', *Journal of the American Planning Association*, **61** (1), 99–111.

Hartman, R.I., Stoner, C.R. and Arora, R. (1992), 'Developing Successful organizational telecommuting arrangements: worker perceptions and managerial prescriptions', S*AM Advanced Management Journal*, **57** (3), 35–42.

Heijstra, T.M. and Rafnsdottir, G.L. (2010), 'The Internet and academics' workload and work–family balance', *The Internet and Higher Education*, **13** (3), 158–63.

Hilbrecht, M., Shaw, S.M., Johnson, L.C. and Andrey, J. (2008), '"I'm home for the kids": contradictory implications for work–life balance of teleworking mothers', *Gender, Work & Organization*, **15** (5), 454–76.

Hill, E.J., Erickson, J.J., Holmes, E.K. and Ferris, M. (2010), 'Workplace flexibility, work hours, and work–life conflict: finding an extra day or two', *Journal of Family Psychology*, **24** (3), 349–58.

Hill, E.J., Ferris, M. and Märtinson, V. (2003), 'Does it matter where you work? A comparison of how three work venues (traditional office, virtual office, and home office) influence aspects of work and personal/family life', *Journal of Vocational Behavior*, **63** (2) 220–41.

Hill, E.J., Hawkins, A.J., Ferris, M. and Weitzman, M. (2001), 'Finding an extra day a week: the positive influence of perceived job flexibility on work and family life balance', *Family Relations*, **50** (1), 49–58.

Hjorthol, R.J. (2006), 'Teleworking in some Norwegian urban areas – motives and transport effects', *Urban Geography*, **27** (7), 610–27.

Igbaria, M. and Tan, M. (eds) (1998), *The Virtual Workplace*, Hershey, PA: Idea Group.

International Telecommunication Union (ITU) (2014), 'ICT – facts and figures', International Telecommunication Union, Geneva.

Jones, B.L., Scoville, D.P., Hill, E.J., Childs, G., Leishman, J.M. and Nally, K.S. (2008), 'Perceived versus used workplace flexibility in Singapore: predicting work–family fit', *Journal of Family Psychology*, **22** (5), 774–83.

Kaufman-Scarborough, C. (2006), 'Time use and the impact of technology: examining workspaces in the home', *Time & Society*, **15** (1), 57–80.

Kelliher, C. and Anderson, D. (2008), 'For better or for worse? An analysis of how flexible working practices influence employees' perceptions of job quality', *International Journal of Human Resource Management*, **19** (3), 419–31.

Kelliher, C. and Anderson, D. (2010), 'Doing more with less? Flexible working practices and the intensification of work', *Human Relations*, **63** (1), 83–106.

Kelly, E.L., Kossek, E.E., Hammer, L.B., Durham, M., Bray, J., Chermack, K., et al. (2008), 'Getting there from here: research on the effects of work–family initiatives on work–family conflict and business outcomes', *Academy of Management Annals*, **2** (1), 305–49.

Kitamura, R., Nilles, J.M., Conroy, P. and Fleming, D.M. (1990), 'Telecommuting as a transportation planning measure: initial results of California pilot project', Transportation Research Record 1285, University of California Transportation Center, Berkeley, CA.

Kossek, E.E. and Lautsch, B.A. (2007), *CEO of Me: Creating a Life That Works in the Flexible Job Age*, Upper Saddle River, NJ: FT Press.

Kossek, E.E. and Michel, J.S. (2011), 'Flexible work schedules', in S. Zedek (ed.), *APA Handbook of Industrial and Organizational Psychology, Vol 1: Building and Developing the Organization*, Washington, DC: American Psychological Association, pp. 535–72.

Kossek, E.E., Lautsch, B.A. and Eaton, S.C. (2006), 'Telecommuting, control, and boundary management: correlates of policy use and practice, job control, and work–family effectiveness', *Journal of Vocational Behavior*, **68** (2), 347–67.

Kowalski, K.B. and Swanson, J.A. (2005), 'Critical success factors in developing teleworking programs', *Benchmarking: An International Journal*, **12** (3), 236–49.

Kraut, R.E. (1989), 'Telecommuting: The trade-offs of home work', *Journal of Communication*, **39** (3), 19–47.

Kreiner, G.E., Hollensbe, E.C. and Sheep, M.L. (2009), 'Balancing borders and bridges: negotiating the work–home interface via boundary work tactics', *Academy of Management Journal*, **52** (4), 704–30.

Kurland, N.B. and Bailey, D.E. (1999), 'The advantages and challenges of working here, there anywhere, and anytime', *Organizational Dynamics*, **28** (2), 53–68.

Ladner, S. (2008), 'Laptops in the living room: mobile technologies and the divide between work and private time among interactive agency workers', *Canadian Journal of Communication*, **33** (3), 465–89.

Lambert, A.D., Marler, J.H. and Gueutal, H.G. (2008), 'Individual differences: factors affecting employee utilization of flexible work arrangements', *Journal of Vocational Behavior*, **73** (1), 107–17.

Lautsch, B.A., Kossek, E.E. and Eaton, S.C. (2009), 'Supervisory approaches and paradoxes in managing telecommuting implementation', *Human Relations*, **62** (6), 795–827.

Lister, K., Harnish, T. and Nilles, J.M. (2009), *Undress for Success: The Naked Truth about Making Money at Home*, Hoboken, NJ: Wiley.

Madden, M. and Jones, S. (2009), 'Networked workers', Pew Research Center's Internet & American Life Project, Pew Research Center, Washington, DC.

Mahler, J. (2012), 'The Telework divide managerial and personnel challenges of telework', *Review of Public Personnel Administration*, **32** (4), 407–18.

Maier, G., Schneider, F. and Feldmann, A. (2010), 'A first look at mobile hand-held device traffic', in A. Krishnamurthy and B. Plattner (eds), *Passive and Active Measurement, Lecture Notes in Computer Science*, Berlin and Heidelberg: Springer, pp. 161–70.

Makimoto, T. and Manners, D. (1997), *Digital Nomad*, Chichester: John Wiley and Sons.

Maruyama, T., Hopkinson, P.G. and James, P.W. (2009), 'A multivariate analysis of work–life balance outcomes from a large-scale telework programme', *New Technology, Work & Employment*, **24** (1), 76–88.

Messenger, J. and Ghosheh, N. (2010), *Offshoring and Working Conditions in Remote Work*, Basingstoke and Geneva: Palgrave Macmillan and International Labour Office.

Messenger, J. and Gschwind, L. (2016), 'Three generations of telework: New ICT and the (r)evolution from home office to virtual office', *New Technology, Work and Employment*, **31** (3), 195–208.

Miller, M. (2008), *Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online*, Carmel, IN: Que.

Mokhtarian, P.L. (1998), 'A synthetic approach to estimating the impacts of telecommuting on travel', *Urban Studies*, **35** (2), 215–41.

Morganson, V.J., Major, D.A., Oborn, K.L., Verive, J.M. and Heelan, M.P. (2010), 'Comparing telework locations and traditional work arrangements', *Journal of Managerial Psychology*, **25** (6), 578–95.

Natti, J., Tammelin, M., Anttila, T. and Ojala, S. (2011), 'Work at home and time use in Finland', *New Technology, Work and Employment*, **26** (1), 68–77.

Neirotti, P., Paolucci, E. and Raguseo, E. (2013), 'Mapping the antecedents of telework diffusion: firm-level evidence from Italy: mapping the antecedents of telework diffusion', *New Technology, Work and Employment*, **28** (1), 16–36.

Nilles, J.M. (1975), 'Telecommunications and organizational decentralization', *IEEE Transactions on Communications*, **23** (10), 1142–7.

Nilles, J.M. (1988), 'Traffic reduction by telecommuting: a status review and selected bibliography', *Transportation Research Part A: General*, **22** (4), 301–17.

Noonan, M.C. and Glass, J.L. (2012), 'Hard truth about telecommuting', *Monthly Labor Review*, **135** (6), 38–45.

Ojala, S. (2011), 'Supplemental work at home among Finnish Wage earners: involuntary overtime or taking the advantage of flexibility?', *Nordic Journal of Working Life Studies*, **1** (2), 77–97.

Olson, M.H. (1982), 'New information technology and organizational culture', *MIS Quarterly*, **6** (5) special issue, 71–92.

Olson-Buchanan, J.B. and Boswell, W.R. (2006), 'Blurring boundaries: correlates of integration and segmentation between work and nonwork', *Journal of Vocational Behavior*, **68** (3), 432–45.

Orlikowski, W.J. and Barley, S.R. (2001), 'Technology and institutions: what can research on information technology and research on organizations learn from each other?', *MIS Quarterly*, **25** (2), 145–65.

Parent-Thirion, A., Vermeylen, G., van Houten, G., Lyly-Yrjänäinen, M., Biletta, I. and Cabrita, J. (2012), 'Fifth European Working Conditions Survey', accessed 27 January 2015 at http://www.eurofound.europa.eu/publications/htmlfiles/ef1182.htm.

Pfisterer, S., Streim, A. and Hampe, K. (2013), 'Arbeit 3.0 – Arbeiten in der digitalen Welt' ('Work 3.0 – Working in the digital world'), BITKOM report, Bundesverband Informationswirtschaft, Telekommunikation und neue Medien e.V., Berlin.

Popma, J. (2013), 'The Janus face of the "New ways of work": rise, risks and regulation of nomadic work', working paper, European Trade Union Institute (ETUI), Brussels.

Riedl, R., Kindermann, H., Auinger, A. and Javor, A. (2012), 'Technostress from a neurobiological perspective: computer crashes lead to an increase in the stress hormone cortisol among computer users', *Business & Information Systems Engineering*, **54** (2), 59–68.

Richardson, K. and Benbunan-Fich, R. (2011), 'Examining the antecedents of work connectivity behavior during non-work time', *Information and Organization*, **21** (3), 142–60.

Robèrt, M. and Börjesson, M. (2006), 'Company incentives and tools for promoting telecommuting', *Environment and Behavior*, **38** (4), 521–49.

Sardeshmukh, S.R., Sharma, D. and Golden, T.D. (2012), 'Impact of telework on exhaustion and job engagement: a job demands and job resources model', *New Technology, Work & Employment*, **27** (3), 193–207.

Song, Y. (2009), 'Unpaid work at home', *Journal of Industrial Relations*, **48** (4), 578–88.

Stavrou, E. and Kilaniotis, C. (2010), 'Flexible work and turnover: an empirical investigation across cultures', *British Journal of Management*, **21** (2), 541–54.

Stavrou, E.T. (2005), 'Flexible work bundles and organizational competitiveness: a cross-national study of the European work context', *Journal of Organizational Behavior*, **26** (8), 923–47.

Tarafdar, M., Tu, Q. and Ragu-Nathan, T.S. (2010), 'Impact of technostress on end-user satisfaction and performance', *Journal of Management Information Systems*, **27** (3), 303–34.

Taskin, L. and Bridoux, F. (2010), 'Telework: a challenge to knowledge transfer in organizations', *International Journal of Human Resource Management*, **21** (13), 2503–20.

Thomée, S., Härenstam, A. and Hagberg, M. (2011), 'Mobile phone use and stress, sleep disturbances, and symptoms of depression among young adults – a prospective cohort study', *BMC Public Health*, **11** (1), 66.

Toffler, A. (1980), *Third Wave*, New York: Bantam.

Towers, I., Duxbury, L., Higgins, C. and Thomas, J. (2006), 'Time thieves and space invaders: technology, work and the organization', *Journal of Organizational Change Management*, **19** (5), 593–618.

Troup, C. and Rose, J. (2012), 'Working from home: do formal or informal telework arrangements provide better work–family outcomes?', *Community, Work & Family*, **15** (4), 471–86.

Tu, Q., Wang, K. and Shu, Q. (2005), 'Computer-related technostress in China', *Communications of the ACM*, **48** (4), 77–81.

Van Yperen, N.W., Rietzschel, E.F. and De Jonge, K.M.M. (2014), 'Blended working: for whom it may (not) work', *PLoS ONE*, **9** (7), e102921.

Venkatesh, A. and Vitalari, N.P. (1992), 'An emerging distributed work arrangement: an investigation of computer-based supplemental work at home', *Management Science*, **38** (12), 1687–706.

Wajcman, J., Bittman, M. and Brown, J.E. (2008), 'Families without borders: mobile phones, connectedness and work–home divisions', *Sociology*, **42** (4), 635–52.

Wellman, B., Salaff, J., Dimitrova, D., Garton, L., Gulia, M. and Haythornthwaite, C. (1996), 'Computer networks as social networks: Collaborative work, telework, and virtual community', *Annual Review of Sociology*, **22** (1), 213–38.

Welz, C. and Wolf, F. (2010), 'Telework in the European Union', European Foundation for the Improvement of Living and Working Conditions, Dublin.

Williams, J. (2010), *Screw Work, Let's Play: How to Do What You Love and Get Paid for It*, Harlow: Pearson Business.

Yun, H., Kettinger, W.J. and Lee, C.C. (2012), 'A new open door: the smartphone's impact on work-to-life conflict, stress, and resistance', *International Journal of Electronic Commerce*, **16** (4), 121–52.

Zedeck, S. (1992), *Work, Families, and Organizations, Frontiers of Industrial and Organizational Psychology*, San Francisco, CA: Jossey-Bass.

2. Telework and its effects in Japan

Akio Sato

EXECUTIVE SUMMARY

A report from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) of Japan estimates that, in 2016, 14.2 per cent of workers in Japan engaged in telework, including mobile telework. The government is eager to promote teleworking as one of the measures by which to increase the size of the workforce while improving work–life balance. Several enterprises, led by some of the largest in Japan, have succeeded in supporting employees – especially women with children – by introducing telework systems; and through these systems, workers have secured employment without imposing an adverse effect on their business career.

However, company or organisational rules frequently do not allow the majority of their employed teleworkers to engage regularly in telework. Many employed workers who are not formally allowed by their employers to telework nonetheless continue working on tasks that cannot be finished within regular work hours by teleworking informally. Therefore, many such 'informal teleworkers' frequently engage in holiday or late-night teleworking, and this practice tends to lengthen their work hours.

1. INTRODUCTION

In Japan, working remotely, including mobile forms of this type of work, is generally called telework. This term encompasses various types of working styles that involve the use of information and communications technology (ICT) equipment, such as telecommuting, mobile work or self-employed home-based work.[1]

In recent decades, the Japanese government and some of its central ministries have been striving to promote teleworking. For example, a statement issued in 2013 by the Cabinet asserts that the promulgation of telework might facilitate the promotion of work–life balance among

workers and the revitalisation of provincial areas. To that end, it endorses the creation of teleworking models that execute 'whole-day own-home teleworking' (Cabinet Secretariat 2013 [2015], p. 16) more than a day per week in cooperation with industrial groups for workers who find it difficult to commute (for example, those who have children or health-care responsibilities).[2] Furthermore, it believes that the popularisation of this model will promote female workers' engagement with society, the security of the workforce in a society that features a declining birth rate and an ageing population, and male workers' childcare responsibilities, while allowing the combination of both work and caregiving responsibilities (Cabinet Secretariat 2013 [2015]).

To promote telework, the Ministry of Internal Affairs and Communications (MIC) has been undertaking the Telewaku Zenkoku Tenkai Purojekuto (Nationwide Development Project for Teleworking) since 2012 and organising seminars to promote telecommuting. The Ministry of Health, Labour, and Welfare (MHLW) has established the Telewaku Sodan Senta (Telework Consultation Centre) in Tokyo and has been providing subsidies to small and medium-sized enterprises that introduce a new 'whole-day own-home teleworking' system or a satellite office system.

The Ministry of Economy, Trade and Industry (METI) has organised many seminars to promote telecommuting. In addition, the MLIT is continually researching telework in Japan and publishes annual reports on the topic (JTA 2013, pp. 99–100).

The eagerness of the Japanese government and its central ministries to promote teleworking may be attributed to their intention to address the issue of the declining size of the workforce. The Japanese labour force reached its peak size of 67.93 million in 1998, and has gradually fallen by more than 2 million in the subsequent decades. Furthermore, during this period, the labour force participation rate dropped by 3.5 per cent (Figure 2.1). Since 2013 the labour force size and participation rate figures have been on the rise, but this is likely caused by a decrease in unemployment owing to recent economic prosperity, and is commonly considered a temporary phenomenon. Most experts agree that the scaling down of the labour force will continue in the future, creating a cause of serious concern with regard to Japan's economy and government.

Decreases in the labour force size and participation rate have resulted from the declining birth rate and ageing population of Japanese society. To compensate for this decline, the government has been undertaking diverse measures to increase the labour force participation rate among women and the elderly. However, emphasis has been placed on the active use of the female labour force, because Japan's labour force participation rate among

Ten thousand   %

Figure 2.1   Labour force and labour force participation rate in Japan

people aged 65 and older is already one of the highest worldwide (Figure 2.2). Thus, it would be very difficult to increase it further.

However, the Japanese female labour force has not been utilised adequately. A graph of Japan's female participation rate (plotted by age group) takes an M shape, as shown in Figure 2.3 – although that of advanced countries generally forms an upturned U (as in the case of France) or a trapezoid (as in the cases of Germany and Sweden). The M shape is thought to derive from an excessive gender-based division of labour in Japan. Japanese husbands, on average, spend only 60 minutes per day on housework, and 33 minutes on childcare (Figure 2.4). In total, they spend only one-third of the time on housework spent by men in other developed countries, and only one-half that spent in other countries on childcare (GEBCO 2012, pp. 82–3).

As a result, it is very difficult for Japanese women to simultaneously manage both their career and household responsibilities. A large proportion of Japanese women aged 25–34 years leave the labour market after marriage or bearing children. Later, when their children grow up and no longer require the same level of care, many of these women resume paid work, mostly as part-timers. These circumstances explain the M shape of
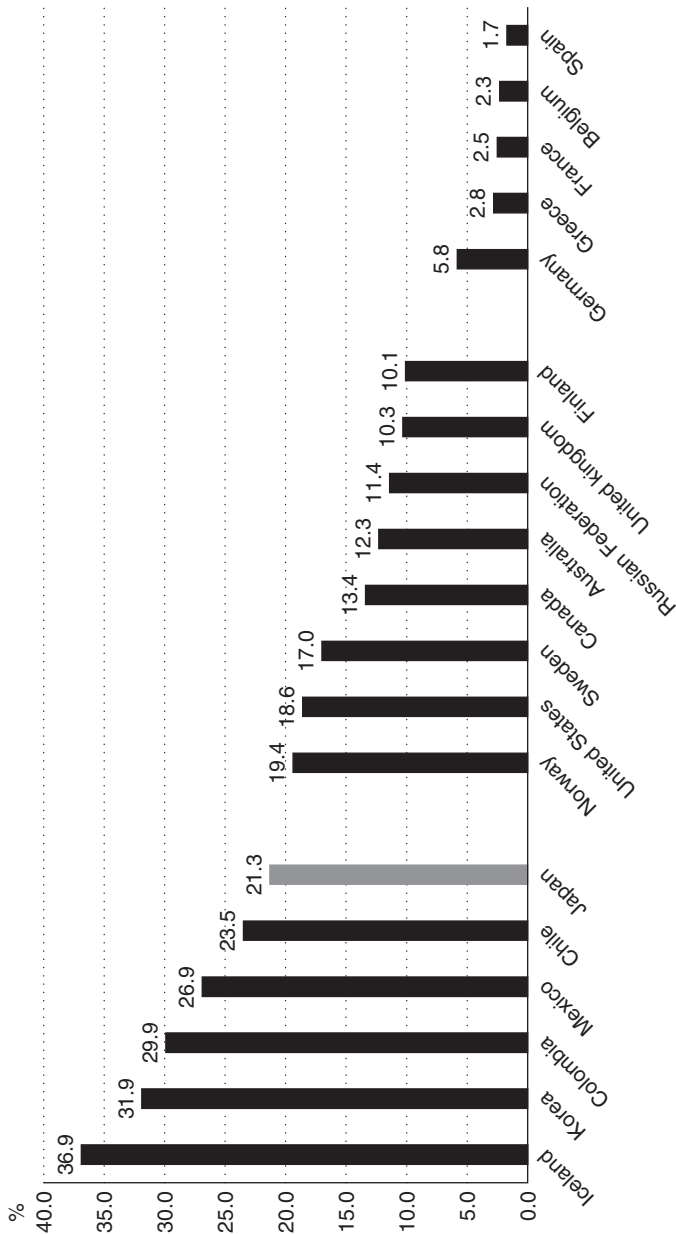
Source: Labour Force Participation Rate (from OECD statistics) website.

Figure 2.2 Labour force participation rate of people aged 65 years and over, 2014

%
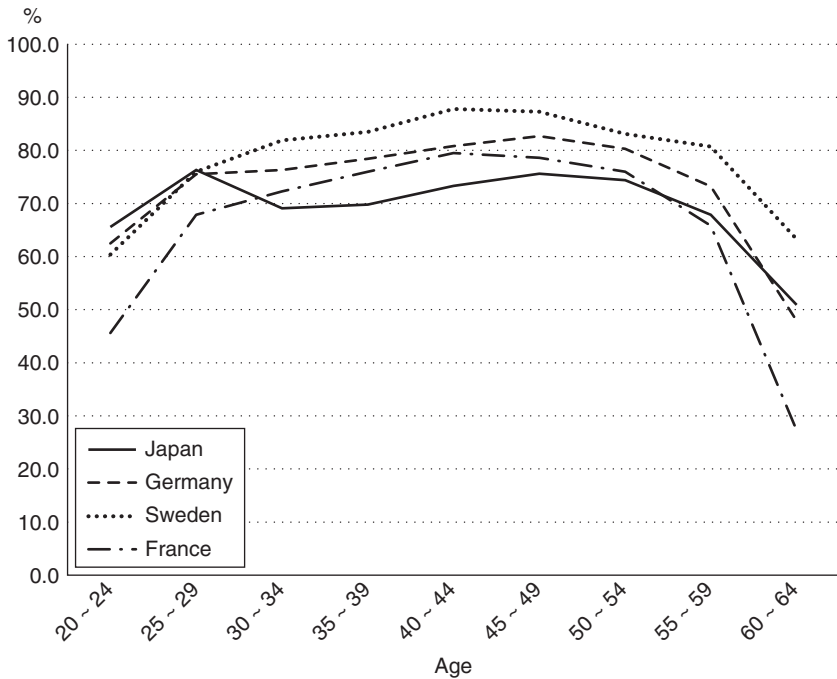
Figure 2.3   Labour force participation rate of women

the graph in Figure 2.3, which features a radical drop in the 30–35-year age (MHLW 2002a, p. 43).

Several factors influence the imbalance in housework between males and females, such as the large pay differential between males and females in the workforce, long working hours among male workers, and a shortage of public childcare facilities, especially for sick children. Nevertheless, the government has concluded that the most practical means of increasing the female labour force participation rate is to promote ways of enabling women to continue in their paid work without impinging upon their domestic responsibilities.

In this context, the promotion of work–life balance has been proposed as a way to increase the size of the Japanese female workforce. The adoption of telecommuting is expected to increase the labour force participation rate of mothers without affecting the fulfilment of their domestic responsibilities. Moreover, it is expected that if women with heavy domestic responsibilities can continue to work through a telecom-

Min.
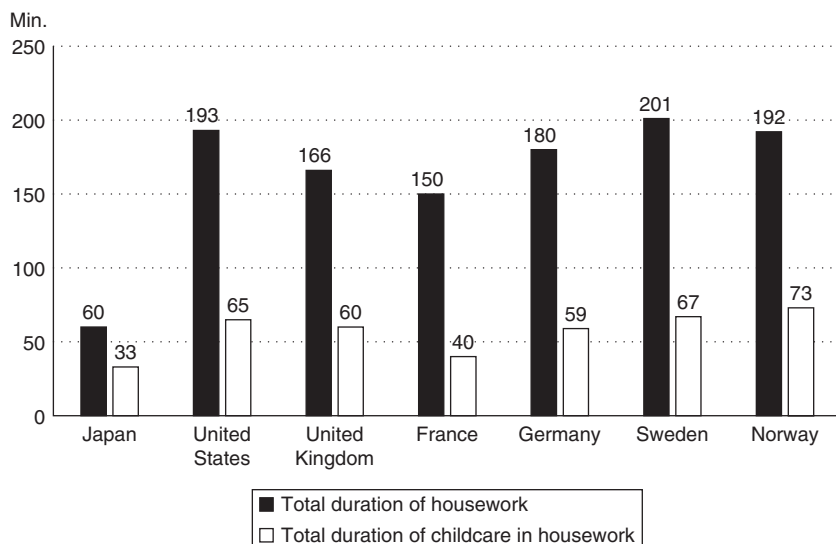
Source: GEBCO (2012, p. 83).

Figure 2.4   Time spent per day on housework by husbands (with children under 6 years old)

muting system, more companies may adopt the system and more women remain in the workforce while also choosing motherhood, thus helping counter the current decline in the birth rate.

Therefore, the Japanese government has implemented several measures by which to promote the 'whole-day own-home' telecommuting system among diverse work styles of teleworking for people who find it difficult to continue to work outside the home because of their childcare or family/elder-care responsibilities.[3]

2.   METHODOLOGY AND MAIN DATA SOURCES

This chapter is based on existing research data pertaining to Japanese telework/mobile work.[4] Among the sources, only data from the MLIT reports are nationwide in scale. The MLIT began to publish its 'Telework Jinko Jittai Chyosa' ('Teleworking population research') in 2002. The ministry published similar results in 2005 and 2008, and then annually thereafter.

The MLIT's research constitutes a project on a larger scale than most other research studies in this field. Although termed population research,

MLIT ceased announcing the estimated population of Japanese teleworkers after the 2014 research report. Further, its questionnaire was significantly changed after 2015, and some important questions were eliminated. Despite these limitations, the surveys cover diverse issues related to teleworking and provide notable insights into the phenomenon within Japan. The annual report provides information on teleworkers' occupation types, working hours, workplaces, willingness to continue in telework, family composition, and other facts. The results of the MLIT research studies are published as reports and data files. Therefore, MLIT's 2015 and 2016 research reports are the most important data sources for this chapter (MLIT 2015a, 2015b, 2017). Nevertheless, descriptions within the MLIT studies are still not sufficient for our purposes, so for the purposes of this chapter some of the data has been recalculated.

The Japan Institute for Labour Policy and Training (JILPT), an independent administrative agency, has continuously published from the latter half of 1980s research reports that relate to teleworking. One of its recent reports is based on research that collected responses from more than 1000 teleworkers (JILPT 2015). The data from that research constitutes another key source for this report.

Among the various types of telework, telecommuting is the most frequently recommended by the government; several related reports have been published annually (MHLW 2014; MIC 2013, 2014). Most of these reports introduce many examples of companies or organisations that have succeeded in adopting telecommuting systems. They detail the reasons for adopting such a system, and offer an outline of the system and the number of employees covered therein; they also relate the advantages and disadvantages experienced by each company.

However, most of these reports never speak to the actual conditions and opinions of telecommuters themselves. Those reports were created from the perspective of the organisations' management or personnel departments and are not suitable for describing the reality of employees' work experiences. Accordingly, the records of interviews from small-scale research are used in this chapter. They are constituted with small numbers of respondents and cannot represent all teleworkers. However, they are the second best way to describe facts pertaining to the telecommuting system from the workers' perspective (Sato 2009).

Similar to other advanced countries, a majority of employed Japanese teleworkers are mobile workers. However, there is no full-fledged research report on this group. Only a few reports based on interviews with a small number of mobile workers exist which describe the nature of their actual work and lives (Sato 2008, 2009).

3. INCIDENCE OF TELEWORK/MOBILE WORK

3.1 Population of Teleworkers

In the 'Teleworking population research 2016' report of the MLIT, the criterion used to distinguish teleworkers was simple. Informants were asked, 'For your present main work, do you work in some places different from your usual workplace with ICT devices?' Those informants who answered 'yes' to this question were deemed teleworkers (MLIT 2017, ch. 1, s. 3, p. 8).

Of 40 000 respondents to this study, 5673 (14.2 per cent) were considered to be teleworkers. Extrapolating from that data, from 2016, there were 9.4 million teleworkers in Japan, as the total working population in 2016 was 66.5 million.

The informants classified as teleworkers consisted of 4020 (70.9 per cent) male workers and 1653 (29.1 per cent) female workers (Table 2.1). Unlike Europe and North America, self-employed workers who work away from their own offices using ICTs are also regarded as teleworkers in Japan. Thus, among the informants in the MLIT research, 4761 (83.9

Table 2.1   Teleworkers' gender and job status

	Gender		Total
	Men	Women	
Regular employee (private sector)	2619	653	3272
	80.0%	20.0%	100.0%
Regular employee (public service)	199	54	253
	78.7%	21.3%	100.0%
Regular employee (other sectors)	207	100	307
	67.4%	32.6%	100.0%
Temporary worker	236	183	419
	56.3%	43.7%	100.0%
Part-time worker	135	375	510
	26.5%	73.5%	100.0%
Self-employment (hire some employees)	179	64	243
	73.7%	26.3%	100.0%
Self-employment (hire no employees)	434	196	630
	68.9%	31.1%	100.0%
Domestic pieceworker and contract worker	11	28	39
	28.2%	71.8%	100.0%
Total	4020	1653	5673
	70.9%	29.1%	100.0%

Source: Telework Population Research 2016, MLIT, recalculated.

per cent) were categorised as employed, while 912 (16.1 per cent) were self-employed teleworkers. However, in accordance with the common definition established for all of the country studies in this volume, the analysis of self-employed teleworkers will be omitted in the body of this chapter; this analysis is included in an Appendix to this chapter.

The MLIT research collected answers from individual respondents; it did not investigate the number of teleworking systems adopted by Japanese companies or organisations. However, since 1990, the MIC has conducted annual research on communications usage trends among Japanese companies, and their questionnaires included some questions related to teleworking.

According to the data captured through the MIC's 2016 study, which reflects replies from 2032 companies, only 13.2 per cent of Japanese companies have adopted some kind of teleworking system; 82.8 per cent have no plans to adopt such a system (Table 2.2).[5] Among the various types of teleworking systems adopted, mobile work constitutes almost two-thirds of all cases, while telecommuting and satellite office work comprise a minority of cases.

The rate at which companies have been adopting mobile work has been gradually increasing in tandem with their scale; however, this tendency is not apparent in the cases of telecommuting and satellite office systems. Therefore, it may be surmised that the majority of Japanese teleworkers are mobile workers. It should also be noted that the rate of companies that indicate 'no plan to adopt teleworking system' is falling in proportion to the scale of surveyed companies.

Even when companies adopt some kind of teleworking system, most employees are not engaging in telework. The MIC report states that in 43.4 per cent of companies, less than 5 per cent of employees are involved in telework (Table 2.3). Further, in only 6.3 per cent of companies do more than one-half of the employees take part in teleworking. The scale of the companies involved seems to scarcely influence this trend.

As mentioned, 14.2 per cent of respondents to the 2016 MLIT study were deemed teleworkers. MIC research shows that 11.3 per cent of Japanese companies have adopted telework systems. If most of their employees engage in teleworking, it is easy to believe that 14.2 per cent of Japanese workers are teleworking. However, MIC's data also shows that even among the companies that most eagerly adopt telework systems, less than 10 per cent of employees are teleworking; thus, it would appear that the total number of teleworking employees does not seem to reach 14.2 per cent of the entire workforce.

It is often thought that such inconsistency is caused by the spread of informal telework. Regardless of the teleworker categories in the MLIT

Table 2.2 *Organisational adoption of telework systems*

Number of employees	Number of companies	Adopting telecommuting	Adopting satellite office	Adopting mobile work	Adopting some types of teleworking system	Plan to adopt teleworking system	No plan to adopt teleworking system	No answer
100–299	1474	1.3	1.4	5.0	8.3	2.5	88.3	0.9
300–499	236	4.0	3.0	14.5	23	4.7	71.7	0.6
500–999	156	8.5	3.0	15.6	23.7	3.3	73.0	–
1000–1999	79	8.7	4.2	25.4	33	5.7	61.3	–
2000–2999	26	0.7	–	24.4	25.1	–	74.9	–
3000–4999	26	26.8	6.3	29.0	49.1	6.6	44.3	–
5,000+	35	17.1	–	25.3	40.3	24.6	30.3	4.8
Total	2032	2.9	1.8	8.4	13.2	3.3	82.8	0.8

Source: Communications Usage Trend Survey 2016 website.

Table 2.3   *Percentage of teleworkers among employees, by workforce size*

Number of employees	Number of companies	Less than 5%	5%–less than 10%	10%–less than 30%	30%–less than 50%	50%–less than 80%	80%+	No answer
100–299	124	38.5	6.6	37.9	3.8	4.4	2.5	6.4
300–499	44	37.4	8.1	25.8	13.7	5.3	3.0	6.7
500–999	34	53.4	5.5	30.6	6.6	0.4	3.5	–
1000–1999	25	64.3	1.0	15.2	8.1	11.3	–	–
2000–2999	6	44.0	46.3	9.7	–	–	–	–
3000–4999	13	27.9	30.4	41.7	–	–	–	–
5000+	16	62.3	2.4	32.8	1.2	–	–	1.2
Total	262	43.4	7.9	31.8	6.2	4.1	2.2	4.4

Source: Communications Usage Trend Survey 2016 website.

research, less than one-third of teleworkers were allowed to engage in teleworking on a regular basis. However, the total percentage of those workers 'not allowed' to engage in telework plus those 'not regularly [allowed], but the company or superior allows' to occasionally engage in telework is higher (Table 2.4). Further, including the 22.3 per cent of teleworkers responding 'don't know/not applicable', it becomes apparent that the main part of Japanese teleworkers engage in teleworking based on a personal decision or informal customs. This chapter refers to these types of workers as informal teleworkers. Most Japanese teleworkers engage in telework outside of their company's regulations.[6]

3.2 Industries and Occupations

The MLIT research investigated the industries to which teleworkers' companies or organisations belong (Figure 2.5). The majority belong to tertiary industries such as services, information and communication, or the wholesaling and retail trade.

However, it is also evident that many companies mentioned by informants participating in the survey belong to secondary industries such as 'manufacturing' or 'construction', totalling more than a quarter of represented organisations. In contrast, only a very small percentage of teleworkers are employed in primary industries: 0.9 per cent of them work in 'agriculture and forestry' or with fisheries.

This trend is supported by the MIC's research data. As shown in Figure 2.6, among the 262 companies or organisations that have formally adopted a teleworking system, most are from tertiary or secondary industries. In the tertiary group, the proportions of wholesaling and retail (19.1 per cent) and finance and insurance (16.4 per cent) together exceed 35 per cent. Meanwhile, manufacturing companies constitute 24.4 per cent of those in the secondary group, and construction, 10.7 per cent. However, primary industry companies are not included in the data.

The balance of occupations differs considerably between men and women (Table 2.5). One of the most important differences appears in the ratio of clerical work and sales employees. The female ratio of 'clerical work' (39.9 per cent) is almost double that of males (21.4 per cent). Inversely, males' ratio of 'sales' (20.8 per cent) is more than double that of females (9.7 per cent). Such differences in occupations between the genders has notable effects on the circumstances of teleworking, such as the times and places of telework (see Table 2.7 later in this section).

Table 2.4 Company approval for teleworking systems

	1. Regularly allowed for all employees	2. Regularly allowed for some employees	3. Not regularly, but the company or superior allows	4. Allowed as a trial system	5. Not applicable 1–4, but allowed	6. Not allowed	7. Don't know/not applicable	Total
Regular employee (private sector)	16.8%	19.8%	24.0%	3.3%	1.6%	16.4%	18.2%	100.0%
Regular employee (public service)	18.2%	9.1%	13.0%	5.1%	2.0%	34.8%	17.8%	100.0%
Regular employee (other sectors)	11.7%	14.3%	23.8%	3.9%	2.0%	21.8%	22.5%	100.0%
Temporary worker	9.8%	14.6%	21.0%	2.1%	1.9%	16.9%	33.7%	100.0%
Part-time worker	7.8%	8.2%	19.6%	1.8%	2.7%	18.0%	41.8%	100.0%
Total	15.0%	17.2%	22.7%	3.2%	1.8%	17.9%	22.3%	100.0%

Source: Telework Population Research 2016, MLIT, recalculated.

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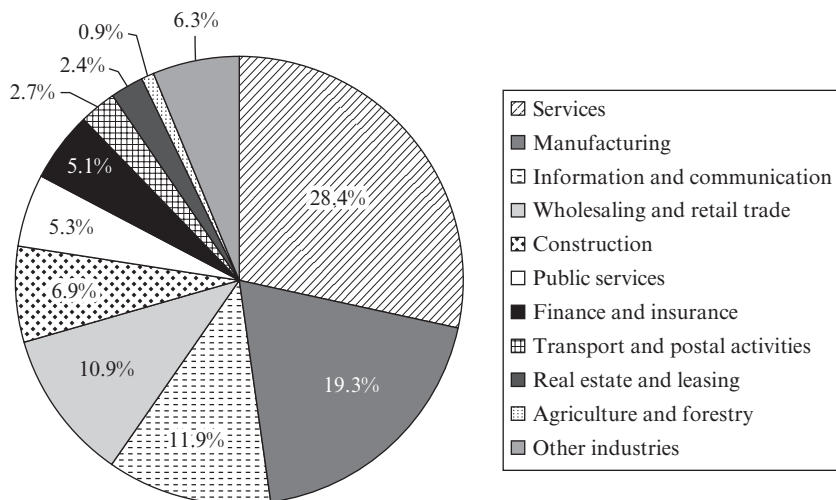
Source: Telework Population Research 2016, MLIT, recalculated.

Figure 2.5 Industries to which teleworkers belong
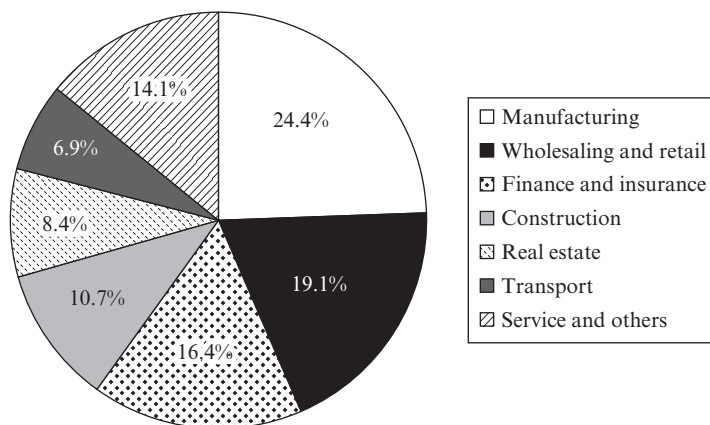
Source: Communications Usage Trend Survey 2016 website.

Figure 2.6 Industries of companies adopting telework system

Table 2.5   Occupations of teleworkers

	Clerical work	Research and development job				Sales	Specialist MD, nurse, teacher	Service, maintenance	Sales	Manufacturing	Design, creative job	Construction, building	Other jobs	Total
		Software	Electric, electronics, machinery	Construction, civil engineering	Material, foods, medical									
Men	727	475	252	112	64	705	384	199	126	145	45	66	96	3396
	21.4%	14.0%	7.4%	3.3%	1.9%	20.8%	11.3%	5.9%	3.7%	4.3%	1.3%	1.9%	2.8%	100.0%
Women	545	71	13	8	27	132	235	113	118	23	47	3	30	1365
	39.9%	5.2%	1.0%	0.6%	2.0%	9.7%	17.2%	8.3%	8.6%	1.7%	3.4%	0.2%	2.2%	100.0%
Total	1272	546	265	120	91	837	619	312	244	168	92	69	126	4761
	26.7%	11.5%	5.6%	2.5%	1.9%	17.6%	13.0%	6.6%	5.1%	3.5%	1.9%	1.4%	2.6%	100.0%

Source: Telework Population Research 2016, MLIT, recalculated.

Table 2.6   Working hours of teleworkers

		Total working hours/week	Teleworking hours/week	Percentage of teleworking
Employed workers (nationwide)	Total	39.3	–	–
	Men	43.7	–	–
	Women	33.1	–	–
Teleworkers	Total	46.2	17.7	38.4%
	Men	48.2	18.5	38.3%
	Women	40.8	15.8	38.7%

Source: Telework Population Research 2016, MLIT, recalculated.

3.3   Times and Places of Teleworking

In MLIT's 2016 study, the teleworking times of informants were investigated in some detail. However, in the research, no questions were asked about the total working time and the percentage of telework time. For that reason, data from the 2015 MLIT survey is considered the most up-to-date for analysing the working time of teleworkers.

As shown in the Table 2.6, Japanese workers, on average, work 39.3 hours per week. Male workers work more than 10 hours more (43.7 hours) than female workers (33.1 hours), likely because more women work as part-timers.

Theoretically, teleworking should neither lengthen nor shorten working times as an inherent feature. However, the numbers in Table 2.6 clearly demonstrate the tendency for telework to result in longer working times in Japan.[7]

In the MLIT's 2016 research, teleworkers were asked about their working times and days at 'places different from your usual workplace' (Table 2.7).

For the teleworkers, the most common alternate workplace is their 'own company's branch office or satellite office' (54.4 per cent). The employee's 'own home' (49.3 per cent) is also frequently used as an alternate workplace, and such employees may be classified as telecommuters. The third most popular alternate workplace is the 'office or co-working space of [a] client' (34.3 per cent), likely because many Japanese companies and organisations offer work space for use by visiting salespeople. Those who telework in the space of a client should be called mobile workers. Since the informants engaging in work 'in motion (in train, station, airport)' (31.6 per cent) or in 'coffee shop, public library, hotel' (26.5 per cent) are also categorised as mobile workers, it is possible to presume that they constitute the majority among Japanese teleworkers.

Table 2.7   Teleworking hours and working locations (multiple answers)

Workplace	Gender	Respondents who work in the place	Percentage	Average teleworking time/day
Own company's	Total	2430	54.4%	4.1
branch office or	Men	1874	55.2%	4.1
satellite office	Women	556	40.7%	4.2
Joint-use type satellite	Total	452	10.1%	3.3
office or	Men	358	11.6%	3.1
co-working space	Women	94	6.9%	4.1
Office or co-working	Total	1532	34.3%	2.9
space of client	Men	1212	35.7%	2.8
	Women	320	23.4%	3.0
Coffee shop, public	Total	1186	26.5%	1.8
library, hotel	Men	905	26.6%	1.8
	Women	281	20.6%	1.8
In motion (in train,	Total	1414	31.6%	1.1
station, airport)	Men	1082	31.9%	1.1
	Women	332	24.3%	0.9
Own home	Total	2204	49.3%	2.7
	Men	1510	44.5%	2.7
	Women	694	50.8%	2.6

Source: Telework Population Research 2016, MLIT, recalculated.

'Joint-use type satellite office or co-working space' refers to a satellite office or workplace that may be utilised by several companies in tandem or may be rented by multiple companies. Relatively few (10.1 per cent) employed teleworkers use 'joint-use type satellite office or co-working space', as Japanese companies seldom prepare joint-use offices or allow their employees to use rented shared offices like co-working spaces.

When analysing the gender data, some differences between the usage rates of each alternate workplace are found. Except in the case of the 'own home' of employed workers, the female informants' usage rates tend to be less than those of males in almost all workplaces.

One of the most important factors contributing to these differences originates from differences in the genders' occupations. The percentage of female informants employed in clerical work is much higher than males, and conversely, their rate of sales employment is only half that of males. It is thought that the female informants whose jobs require less outside work have fewer opportunities for teleworking at branch offices or clients' offices.

When investigating average teleworking hours/days, considerable differences can be found between each alternate workplace. The informants tended to work longest in their 'own company's branch office or satellite office' (4.1 hours). There are few users of 'joint-use type satellite office', but informants who do use this space report working a relatively long time there (3.3 hours).

Table 2.8 shows the distribution of teleworking days at various working spaces. As the bottom right-hand corner box – whose value is well over 100 per cent – makes evident, many teleworkers use two or more working spaces for teleworking. However, the frequencies of teleworking are not becoming daily routines. In all types of workplaces, '1–3 days/week' or '1–3 days/month' are the largest frequencies.

It must be noted that 5.5 per cent of respondents are teleworking a total of '6–7 days/week'. As in other advanced countries, most of the companies, organisations, public offices and schools in Japan are adopting a five-day-week system. Therefore, the data suggest that some teleworkers are working during company days off or holidays.

Unfortunately, in this study respondents were not asked why they work during holidays. However, as a matter of course, most companies do not officially order their employees to work during a holiday. Thus, major parts of their work conducted over a holiday period are considered to be their 'spontaneous' work, which frequently becomes unpaid overtime work (Sato 2013, p. 60).[8]

The number of respondents engaged in this phenomenon (5.5 per cent) may not seem large, especially given that the question has multiple answers. Nevertheless, if someone must continue to work without stopping throughout a week, their human rights are undoubtedly being infringed upon. The problem of telework during holiday periods is discussed again later in this chapter.

4. EFFECTS OF AND PROBLEMS WITH TELEWORKING

4.1 Expectations from Teleworking Systems

Before discussing the effects of and problems with teleworking, it is important to examine the expectations surrounding telework, as diverse stakeholders have different expectations regarding its effects.

As described previously, the Japanese government expects teleworking systems to facilitate an increase in the size of the labour force, and especially the labour force participation rate of mothers. Japanese industrial

Table 2.8 Frequencies of teleworking by working locations (multiple answers)

Workplace	6–7 days/week	4–5 days/week	1–3 days/week	1–3 days/month	6–11 days/year	1–5 days/year	Total
Own company's branch office or satellite office	72 (1.5%)	370 (7.8%)	687 (14.4%)	704 (14.8%)	114 (2.4%)	483 (10.1%)	2430 (51.0%)
Joint-use type satellite office or co-working space	11 (0.2%)	46 (1.0%)	154 (3.2%)	149 (3.1%)	10 (0.2%)	82 (1.7%)	452 (9.5%)
Office or co-working space of client	24 (0.5%)	247 (5.2%)	501 (10.5%)	470 (9.9%)	60 (1.3%)	230 (4.8%)	1532 (32.2%)
Coffee shop, public library, hotel	4 (0.1%)	35 (0.7%)	340 (7.1%)	472 (9.9%)	70 (1.5%)	265 (5.6%)	1186 (24.9%)
In motion (train, station, airport)	26 (0.5%)	194 (4.1%)	417 (8.8%)	464 (9.7%)	61 (1.3%)	252 (5.3%)	1414 (29.7%)
Own home	125 (2.6%)	267 (5.6%)	866 (18.2%)	606 (12.7%)	83 (1.7%)	257 (5.4%)	2204 (46.3%)
Total	262 (5.5%)	1159 (24.3%)	2965 (62.3%)	2865 (60.2%)	398 (8.4%)	1569 (33.0%)	9218 (193.6%)

Note: The modulus of numbers within () is 4761.

Source: Telework Population Research 2016, MLIT, recalculated.

circles that are suffering from labour shortages welcome such government policy, and they are cooperative regarding its implementation.

However, among those private companies that have introduced teleworking systems, a majority have not done so solely to ensure the future security of their employees. Table 2.9 lists the reasons why companies have formally introduced teleworking systems. Their primary aim is an 'improvement in labour productivity' (60.2 per cent), followed by the 'improvement of efficiency for standard work' (59.8 per cent). These reasons are similar across all industries and company sizes.[9]

Private companies naturally wish to increase their profits, and so they are driven by the 'improvement of efficiency'; the 'reduction of commuting time' bears essentially the same meaning in the context of business efficiency, as any time saved can be assigned to other tasks.[10]

The two major expectations, the 'improvement in labour productivity' and the 'improvement of efficiency for standard work', have no relationship to the security of the female workforce. Furthermore, the data in Table 2.9 indicates that 'employment of commuting disadvantaged' (12.3 per cent) and 'realisation of employees' work–life balance' (9.3 per cent) constitute only minor factors in the introduction of teleworking systems to Japanese companies. That is, the prime expectation of the government and industrial circles (that is, enhancing labour force participation) is not the highest priority of private companies in introducing such systems.

4.2   Advantages and Disadvantages of Telework

Table 2.10 is based on nationwide teleworker research data captured by the JILPT.[11] It indicates employees' opinions regarding the advantages of teleworking.

The most frequently cited advantages of teleworking are the 'improvement of business productivity/efficiency' (55.7 per cent) and the 'improvement of customer service' (16.9 per cent). Those two advantages both correspond to companies' primary expectation, namely, the 'improvement of efficiency for standard work'. The third advantage, a 'reduction of physical/mental burden of commuting' (16.7 per cent), is the result of the 'reduction of commuting time'.

Many stated advantages of telework appear to relate to work–life balance, such as an 'increase of time for communication with family' (9.9 per cent), an 'increase of time for housework' (7.4 per cent) and an 'increase of time for childcare/nursing care' (4.9 per cent); however, each of these advantages exhibits a low representational percentage. These data suggest that the expectations of companies for teleworking systems correspond closely with the advantages most frequently cited by employees.[12]

Table 2.9   Reasons for introducing teleworking systems in companies (multiple answers)

	Number of companies	Improvement in labour productivity	Improvement of efficiency for standard work	Reduction of commuting time	Improvement of customer satisfaction	Business continuity at disaster
Construction	28	59.8	59.8	44.4	16.5	21.3
Manufacturing	64	64.1	64.1	51.2	16.9	19.0
Transport and postal activities	18	47.5	42.3	39.1	21.9	21.9
Wholesaling and retail trade	50	62.7	62.7	44.2	29.1	21.6
Finance and insurance	43	59.8	54.0	39.3	35.4	44.9
Real estate and leasing	22	55.2	55.2	29.7	16.2	14.3
Other industries	37	55.6	55.6	36.8	18.1	13.6
100–299	124	61.5	61.0	38.1	22.3	15.4
300–499	44	45.4	45.4	51.5	23.6	8.5
500–999	34	67.3	67.3	43.5	11.0	26.0
1000–1999	25	74.2	74.2	47.0	21.1	21.3
2000–2999	6	70.9	70.9	34.7	9.7	63.9
3000–4999	13	69.9	69.0	67.2	28.7	55.1
5000+	16	50.0	48.8	47.7	21.1	17.4
Total	262	60.2	59.8	43.9	20.8	18.7

Source: Communications Usage Trend Survey 2016 website.

Table 2.10   Advantages of teleworking systems for employees (multiple answers)

	Improvement of business productivity/ efficiency	Improvement of customer service	Reduction of physical/ mental burden of commuting	Reduction of mental stress	Increase of time for communication with family	Improvement of time management awareness	Increase of time for housework
Men	58.0%	19.3%	16.1%	14.0%	9.7%	9.6%	3.9%
Women	48.4%	8.6%	18.8%	18.3%	10.2%	8.6%	19.4%
Total	55.7%	16.9%	16.7%	14.9%	9.9%	9.5%	7.4%

Source: JILPT (2015, p. 298).

Employment of commuting disadvantaged	Improvement of creativity for value-added duties	Realisation of employees' work–life balance	Reduction of office costs	Security for capable employees	Counter measure against global warming	Power saving	Others
15.5	6.1	19.0	3.1	7.8	11.4	2.6	14.3
10.0	9.7	6.6	3.1	3.1	2.5	–	17.4
18.6	12.0	5.2	–	–	–	–	10.5
9.4	11.5	7.8	5.8	3.9	–	2.2	17.4
23.3	27.4	26.5	2.4	16.1	–	–	11.3
16.7	5.4	10.8	4.2	15.0	–	–	13.8
15.1	6.1	11.9	11.5	8.6	–	–	20.5
8.9	6.6	10.3	10.8	6.3	0.5	1.2	18.7
11.6	10.0	8.3	2.3	0.6	–	–	17.9
14.3	13.2	0.4	4.4	9.8	3.8	0.6	13.6
12.3	12.7	15.8	–	1.5	5.3	–	7.2
–	–	–	–	–	–	–	26.4
43.8	27.5	15.2	–	15.2	–	–	35.5
21.5	6.1	17.8	1.2	6.1	–	–	20.9
12.3	9.4	9.3	6.1	5.5	1.2	0.6	17.8

Increase of alternatives for dwelling place	Increase of time for childcare/ nursing care	Increase of time for hobby/ self-enlightenment	Promotion for self-control ability/ demonstrate individuality	Increase of time for community/ volunteer activities	Increase of wage	Other advantages	No advantages
5.0%	2.9%	4.4%	4.1%	1.1%	0.9%	10.3%	16.4%
4.8%	12.4%	4.8%	2.7%	0.5%	0.0%	10.2%	22.0%
5.1%	4.9%	4.4%	3.7%	0.9%	0.7%	10.3%	17.7%

Table 2.11   Disadvantages of teleworking systems for employees (multiple answers)

	Ambiguity of work and time off	Longer work time	Difficulties with evaluation about work	Difficulties with communication with superior/ colleague	Difficulties with access to shared information	Dispersion of documents and materials
Men	39.3%	21.9%	18.0%	10.5%	9.6%	8.9%
Women	36.4%	18.5%	12.5%	12.0%	8.2%	10.3%
Total	38.7%	20.8%	16.8%	10.9%	9.3%	9.2%

Source: JILPT (2015, p. 300).

However, the importance of each advantage is not entirely equal between male and female employees. The 'improvement of business productivity/ efficiency' was selected by 58.0 per cent and 48.4 per cent of male and female employees, respectively. Similarly, the selection of an 'improvement of customer service' saw a gap between the genders that exceeded ten per-centage points. Conversely, a relatively high proportion of women selected an 'increase of time for housework' and an 'increase of time for childcare/ nursing care', particularly in comparison to male respondents.

It is conjectured that one of the most important factors underpinning this gender gap is the difference in time each gender spends on household affairs. As shown in Figure 2.4, most Japanese husbands spend very little time on housework and childcare. Since they were not concerned with housekeeping from the outset, even if they are engaging in telework, their time devoted to housework does not increase.

Another factor is the difference in occupations between the genders (Table 2.5). The percentage of male salespeople is twice that of females and, inversely, the percentage of female clerical workers is twice that of males. As a result of such occupational differences, male teleworkers more frequently work at their clients' offices, whereas many females are working in their own homes (Table 2.7). Therefore, male teleworkers emphasise the 'improvement of customer service' whereas females accentuate an increase of the time available for 'housework' and of 'childcare/nursing care' as notable advantages of teleworking.

In the Japanese labour context, the gender-based division of labour exerts very strong influences in many spheres, and telework is no exception.

Table 2.11 shows the disadvantages of teleworking systems according to JILPT's research respondents. In contrast to the advantages, no major differences were found between the genders in terms of the items selected.

Pressure for result of labour	Disruption from noise in the vicinity	Feeling of solitude/ alienation	Difficulties with health care	Difficulties with potential/ skill development	Decrease of wage	Other dis- advantages	No dis- advantages
6.0%	5.9%	5.1%	5.7%	1.8%	0.9%	10.6%	28.2%
9.8%	4.9%	6.5%	4.3%	2.7%	1.6%	11.4%	27.7%
6.7%	5.7%	5.4%	5.3%	2.0%	1.1%	10.3%	28.3%

'Ambiguity of work and time off' (38.7 per cent) was the worst disadvantage reported by both male (39.3 per cent) and female (36.4 per cent) employees; and 'longer work time' (20.8 per cent) was the second-worst disadvantage for both genders (21.9 per cent and 18.5 per cent, respectively).

For most Japanese workers, 'ambiguity of work and time off' likely signifies that their working time erodes their private life, rather than the opposite. Japanese teleworkers work longer hours than average workers (Table 2.6), and many work even on their holidays or company days off (Table 2.8). Thus, 'ambiguity of work and time off' and 'longer work time' must be considered to have the same root.

Teleworkers feel that teleworking has diverse advantages and disadvantages. In the JILPT research, informants are asked whether they would like to increase or reduce their time for teleworking at each workplace. As shown in Table 2.12, the majority of informants hope to 'preserve' their teleworking time in all workplaces. However, percentages of 'reduce' their time surpass 'increase' their time in all workplaces, and that tendency is similar among male and female respondents.

Though the teleworker's 'own home' is the most frequently used site of teleworking, a reduction in teleworking time at that location is most strongly expected or desired. Also, respondents prefer to reduce the time spent teleworking in a 'hotel, lodging facility', 'in motion (transportation facility, station)', or at a 'coffee shop, restaurant', rather than to increase time spent teleworking at those sites.

Thus, in general, more teleworkers wish to reduce the time spent teleworking away from company offices rather than increase that type of work. This tendency may derive from the fact that work away from company offices (for example, 'own home' telework) is typically unpaid for informal teleworkers, since they have not been formally ordered to telework.

Table 2.12   Opinions regarding teleworking participation

		Respondents who work in stated place	Increase	Preserve	Reduce	No opinion
Own home	Men	419	9.1%	49.9%	30.8%	10.3%
	Women	120	16.7%	38.3%	28.3%	16.7%
Own company's branch office	Men	357	6.4%	75.4%	10.6%	7.6%
	Women	88	13.6%	61.4%	10.2%	14.8%
In motion (transportation facility, station)	Men	276	3.3%	63.4%	22.5%	10.9%
	Women	50	6.0%	64.0%	18.0%	12.0%
Office or co-working space of client	Men	249	10.8%	69.1%	12.4%	7.6%
	Women	37	8.1%	54.1%	18.9%	18.9%
Hotel, lodging facility	Men	246	2.8%	66.7%	22.8%	7.7%
	Women	27	–	48.1%	25.9%	25.9%
Coffee shop, restaurant	Men	145	10.3%	61.4%	20.0%	8.3%
	Women	21	14.3%	52.4%	19.0%	14.3%
Others	Men	52	7.7%	44.2%	21.2%	26.9%
	Women	6	16.7%	33.3%	–	50.0%

Source: JILPT (2015, pp. 302–8).

4.3   Effects of Telework

As mentioned in the previous section, for Japanese teleworkers, improving business efficiency and reducing the burden of commuting are the most important advantages of teleworking (Table 2.10). In the case of mobile workers, it is quite probable that a reduction in commuting time could lengthen the amount of time available for contact with customers, which could improve their business efficiency. However, many companies have also stated that implementing telecommuting systems (instead of mobile work systems) improves teleworkers' business efficiency. How can this be accomplished?

An MHLW report introduces certain companies that have adopted telecommuting systems in order to improve business efficiency (MHLW 2014). For example, Nissan Motor Company Limited (an automobile and ship manufacturing company with 142 925 employees) has adopted a telecommuting system for all employees except those in the manufacturing departments. Their telecommuting system has 2400 registered participants. Participants are allowed a maximum of five days or 40 hours per week for

work from home, on the condition that it be requested at least one day in advance. Telecommuters must work at their own homes, and the working time of a telecommuting day must not exceed eight hours. The company claims that telecommuting contributes to enhancements in visualisation of business efficiency in those sectors that use the system well.

The NTT Data Corporation (a company involved in the planning and development of information processing systems, with 1748 employees) has also adopted a telecommuting system. All its employees, without exception, can engage in telecommuting. Telecommuters must work at their own homes, and must report to their superior when they start and finish that day's work. Overtime and late-night work are not allowed in the work from home context. The company claims that its employees tend to adhere more closely to their work plans on their telecommuting days and can finish their work easily, even in cases where workers need to devote time to childcare or nursing care responsibilities.

Several reports and documents have similarly asserted the relationship between telecommuting systems and improvements to business efficiency (MIC 2013, 2014). However, most of them merely report on impressions of an increase in employees' business efficiency; they do not present quantitative data or objective logic to explain precisely how the telecommuting system has achieved this supposed greater efficiency. For example, a report asserts that implementing a teleworking system 'inevitably' improves visualisation and the standardisation of duties (JTS 2015, p. 98). Another report finds that working in their own home makes workers 'concentrate on their duties more clearly'; yet this claim is unsupported by any objective data (MIC 2010, p. 32).

Moreover, it is difficult to find reports that provide objective data proving that the adoption of a telecommuting system actually increases business efficiency. Certainly, many telecommuters say that teleworking improves their productivity, but no actual data support these impressions. Therefore, under the existing circumstances, we can say nothing academically valid about the relationship between the effects of the telecommuting system and business efficiency. The accumulation of impartial data – which would make it possible to analyse actual phenomena, and not a mixture of sample cases – is essential to research on teleworking and business efficiency.

For employed female teleworkers, the increase in the time for housework and child care is significant (Table 2.10). A Cabinet Office report refers to some cases of companies adopting telecommuting systems as part of their effort to support female employees (Cabinet Office website), which are summarized below.

SoftBank Telecom Corporation (an information and communication service with 4273 employees) offers a telecommuting system to all

employees, which boasts a 44 per cent participation rate. Among the working mothers at SoftBank, 42 per cent engage in telecommuting. Although 43 per cent of workers engage in telecommuting for fewer than four days per month, 34 per cent telecommute for more than 15 days per month. The company allows not only working from home, but also flexible working hours. Many of the working mothers who utilise the telecommuting system frequently 'receive and send e-mails or make arrangements for the work of the day during the early morning, and then bring their children to school or nursery school' (Cabinet Office website).

Johnson & Johnson K.K. (a manufacturer and marketer of medical and health products, with 1533 employees) has adopted a telecommuting system to enhance the security of female employees, support their childcare efforts and promote work–life balance. Employees who have a child younger than elementary (primary) school age or a family member who requires nursing care higher than level 1 are allowed a maximum of 20 days of telecommuting per year. Although 90 employees are allowed to use the system, only seven or eight actually use it; on average, they work in their own home for a week to 10 days per year. Many of them utilise the company's flexi-time system together with telecommuting (website of the Cabinet Office).

These companies assert that the telecommuting system lowers their turnover rate and improves the work–life balance of female employees. The existence of female telecommuters within their workforce who have small children, or family members who require nursing care, may serve as supporting evidence of the effect of telecommuting. However, no statistical data are presented that show a lower turnover rate or improvements in work–life balance in such cases; therefore, we are not able to confirm the effect objectively.

4.4   Problems with Telework

The worst disadvantages of teleworking, according to survey respondents, are the 'ambiguity of work and time off' and 'longer work time' (Table 2.6 and 2.11). If most teleworking duties are accomplished within normal working times, workers may not experience ambiguity between work time and off time, even if these duties are executed in private spaces such as their own home. Also, since this is simply a working style, teleworking cannot on its own function to shorten or lengthen their working hours; it can only reduce commuting time in certain cases. Therefore, the issues of 'ambiguity' and 'longer work time' are probably not derived from the nature of telework itself, but rather from the peculiarities of Japanese labour systems and practices.

In the most advanced countries, 'pay based on job evaluation' (PB) systems are popular. Under these systems, wages are decided by duty, and when duties change, wages also change. The duties of workers in this system are generally determined in detail by a labour contract, and workers tend to perform these duties within the hours agreed to in their contracts.

In contrast to these conditions, most Japanese companies or organisations adopt 'wage based on job evaluation' (WB) systems. In this system, as long as employees work for the same company or organisation, their wages will not change fundamentally even if their duties change. Their wages are small when they are young and their length of continuous employment in the company is short, but that wage increases year by year. Naturally, capable employees obtain an administrative position within a shorter period than their less capable colleagues, and advance rapidly. However, companies working in this system tend to fix relatively long minimum years from starting work to allow examinations for and promotions to even the lowest administrative positions. The WB system in Japan is always accompanied by wages based on seniority.

Beyond setting wages based on seniority, the lifetime employment system is annexed to the Japanese WB system. Since employees' wages usually reach their peak among those who are 55–60 years old, most do not want to change their company except under extraordinary circumstances. The job separation rate of small enterprises in Japan, as elsewhere, is high, but the percentage of employees who keep working until retirement age is higher in those companies that are large, stable and pay good wages.

The WB system is profitable for the management side, especially as it permits the flexible use of employees. Companies frequently adopt the system to order their employees to redeploy and relocate almost unconditionally. The system has other benefits as well: during the transitional period of the Japanese industrial structure after the first oil crisis in the latter part of the 1970s, the WB system slowed or nearly halted the Japanese unemployment rate by radical labour turnover (Hamaguchi 2014, p. 55).

Under the WB system, an employee's performance is evaluated by subjective methods over a long period. According to analysis by Kumazawa, Japanese employees are evaluated by three standards: (1) degree of duty execution in a past definite period; (2) appropriateness of attitude, volition, and character as a member of the organisation; and (3) potential capability for the duty (Kumazawa 1989, pp. 43–4).

When employees belong to a department in which their duty achievement can be clearly measured numerically, such as salespeople, they are mainly evaluated by standard (1), and thus the relative importance of standards (2) and (3) is not as great. However, for employees who work

in departments that cannot measure outcomes numerically or objectively, such as clerical work, standards (2) and (3) have serious importance.

In order to acquire high evaluations on standards (2) and (3), one of the most popular employee strategies is to give a superior the impression of always being ready and willing to do whatever is needed. To make that impression, one of the most widely distributed behaviours is spontaneous overtime work. When discussing this overtime work, the key term is 'spontaneous'. Since this work is not carried by formal orders of the company, many of these hours manifest themselves as unpaid work.[13]

To measure the extent of unpaid overtime work, Japanese researchers often use two statistics regularly published by the government. One is the Rodoryoku Cyosa (Labour Force Survey) by the MIC, which tallies and collectively amalgamates individual workers' reports about their working hours. Another is the Maitsuki Kinro Tokei Cyosa (Monthly Labour Survey) by the MHLW, which totals reports from companies about how many hours their employees worked.

Table 2.13 shows the averages of weekly working hours in recent years as reported by these two surveys and the differences between them. The average reported by companies is almost six hours less per week than the average reported by employees themselves. Most of this six-hour difference can be attributed to unpaid overtime work.

As in other nations under the rule of law, it is illegal to task employees without payment in Japan. In the 2016 fiscal year, 1349 companies were exposed to 12 700 million yen of default judgments for 97 978 employees' wages for overtime work (MHLW website). In the current situation, where ordinary workers are carrying out an average of 300 hours of unpaid overtime work per year, such liabilities are only a very small proportion of the problem.[14]

Table 2.13   Weekly working hours of Japanese workers

Year	Average working hours/week		(1) – (2)/week	(1) – (2)/year
	(1) by Labour Force Survey	(2) by Monthly Labour Survey		
2012	40.1	33.6	6.5	338.9
2013	39.5	33.5	6.0	311.2
2014	39.1	33.4	5.7	296.4
2015	39.0	33.3	5.7	299.6
2016	38.8	33.0	5.8	303.5

Source: MIC's Labour Force Survey website and MHLW's Monthly Labour Survey website.

Recently, thanks to the rise of social criticism of unpaid overtime work, many companies are eager to emphasise their compliance – at least superficially. The disparity between items (1) and (2) in Table 2.13 seems to have decreased slightly over time. However, the amount of unpaid overtime wages for 2016 increased by more than 2700 million yen over the previous fiscal year.

Unfortunately, teleworking which is performed away from company offices has the effect of weakening the attention paid to overtime work. Hence, it is difficult to determine that there is no relationship for the almost simultaneous start of the superficial strengthening of regulations against unpaid overtime and the wider spread of telework systems. To analyse the relationship between working hours and teleworking it is important to recognise this background context.

However, no data currently show changes in informants' working hours before and after they started teleworking; therefore, there is no basis for determining whether or not the use of telework systems lengthens employees' work hours. From the available information, we can confirm only that 20 per cent or more of teleworkers believe that teleworking extends their working time.

Although there is no direct objective evidence that telework prolongs informants' work hours, teleworking on holidays might serve as supporting evidence for this phenomenon. As was noted previously in this chapter, the Japanese government recommends 'whole-day own-home teleworking'. Thus, the MLIT's research contains some questions related to this practice.

Table 2.14 shows the relationship between holiday teleworking and companies' approval for teleworking.

In the cases of companies which formally introduced the telework system, 18 per cent of informants report engaging in holiday teleworking, and one-third work two or more days of their holidays. Furthermore, even in cases where companies expressly forbid it, 11.6 per cent of informants report teleworking during their holidays.[15]

Table 2.15 totals the compensation received by those informants who engaged in 'whole-day own-home teleworking' during their holidays. Even in the cases of informants whose companies regularly allowed teleworking, less than one-quarter (19.4 per cent) were given substitute days off. Among informants who work at companies that do not allow teleworking, that rate is far lower (5.3 per cent). It is ironic that only in the cases of the companies which have adopted teleworking as a 'trial system' is the ratio of substitute day-off acquisition obviously higher.

As a whole, almost 90 per cent of the 'whole-day own-home teleworkers' who work during company days off or holidays are given no substitute days off. Thus, the working hours of those workers who work both

Table 2.14   Teleworking on holidays

	Not telework in holiday	1 day/week	2 days or more/week	Total
1. Regularly allowed	776	112	58	946
	(82.0%)	(11.8%)	(6.1%)	(100.0%)
2. Not regularly, but the company or superior allows	779	176	62	1017
	(76.6%)	(17.3%)	(6.1%)	(100.0%)
3. Allowed as a trial system	140	20	9	169
	(82.8%)	(11.8%)	(5.3%)	(100.0%)
4. Not applicable 1–3, but allowed	903	214	74	1191
	(75.8%)	(18.0%)	(6.2%)	(100.0%)
5. Not allowed	4626	488	119	5233
	(88.4%)	(9.3%)	(2.3%)	(100.0%)
Total	7224	1010	322	8556
	(84.4%)	(11.8%)	(3.8%)	(100.0%)

Source: Telework Population Research 2016, MLIT, recalculated.

Table 2.15   Compensation of teleworking in own home on holidays

	Given substitute day off	Given overtime allowance	Denominator
1. Regularly allowed	21	26	108
	19.4%	24.1%	100.0%
2. Not regularly, but the company or superior allows	19	20	140
	13.6%	14.3%	100.0%
3. Allowed as a trial system	6	9	22
	27.3%	40.9%	100.0%
4. Not applicable 1–3, but allowed	14	7	159
	8.8%	4.4%	100.0%
5. Not allowed	9	9	169
	5.3%	5.3%	100.0%
Total	69	71	598
	11.5%	11.9%	100.0%

Source: Telework Population Research 2016, MLIT, recalculated.

weekdays and holidays and were not given compensatory days off are inevitably extended.

Table 2.15 also shows the overtime allowance for holiday teleworking. Similar to the situation surrounding substitute days off, only 24.1 per cent of informants were given overtime allowances for holiday teleworking, even if they work in companies where telework is 'regularly allowed'. Almost 90 per cent of holiday teleworkers, therefore, are working without payment. These data provide supporting evidence for teleworking systems often being utilised as a method to make unpaid overtime work invisible.

It is generally believed that there are more mobile workers than telecommuters among Japanese teleworkers. In the cases of most Japanese companies, when mobile work schemes are adopted, the company decides which employees may shift to mobile work; the employees themselves cannot elect whether to become teleworkers or not. As a result, thousands of mobile workers are sometimes so designated on one day at large companies, regardless of employee preferences.

Most of these mobile workers have a main office to which they commute on weekdays, just like non-teleworkers. However, during the past decade, there has been an increase in the number of companies introducing office-less mobile work systems. These companies have sought to abolish or scale down their local branch offices, concurrent with the adoption of mobile work systems. In these cases, employees must hold monthly or weekly sales meetings in a rented conference room or meeting room of a hotel (Sato 2008, p. 86).

The office-less type of mobile work system offers companies two substantial advantages. The first is a reduction of office costs, including rent, fuel and lighting expenses. The second is a reduction of personnel-related expenditures for office clerks who engage mainly in sales support paperwork. When local branch offices are closed, office clerks are dismissed or transferred to other offices, and so companies succeed in reducing their personnel costs. In these cases, the paperwork that had been done by office clerks is passed on to the mobile workers themselves; thus, mobile workers may frequently engage in holiday teleworking in their own homes to deal with the additional paperwork. Under these circumstances, holiday teleworking definitely lengthens employees' total working hours. However, their additional burden is not accompanied by an increase in wages, as most are working under an 'imputed working-hour system' (Sato 2008, p. 89).[16]

The relationship between mobile work and the extension of work hours can be corroborated by the data that show sales workers more frequently chose 'longer work time' (26.7 per cent) as a disadvantage of teleworking than did people from other occupations (Table 2.16), as most mobile workers work in sales fields in Japan.

Table 2.16   Disadvantages of teleworking, by occupation

Occupation	Longer work time	Ambiguity of work and time off
Men	21.9%	39.3%
Women	18.5%	36.4%
Sales workers	26.7%	42.7%
Service workers	20.0%	32.0%
Professional and engineering workers	18.7%	43.8%
Clerical workers	18.3%	36.2%
Other workers	25.0%	28.0%
Total	20.8%	38.7%

Source: JILPT (2015, pp. 300–301), recalculated.

Another serious disadvantage of teleworking systems that can be seen from the JILPT research is 'ambiguity of work and time off'; many respondents in other research studies cite similar disadvantages. For example, in the 2014 research data of MHLW drawn from 199 employees from 30 companies, 43.5 per cent of the respondents chose 'difficulties with drawing a line between work and family life' as the most serious disadvantage of teleworking (MHLW 2014, p. 33).

Numerous studies suggest that teleworkers frequently have trouble dividing working time and family life; that is, teleworking sometimes encroaches on workers' private lives. Some companies that adopt a teleworking system formally forbid their telecommuters from working overtime or doing late-night work, since they consider improvements to employee work–life balance to be among the purposes of introducing the system (MHLW 2014, p. 8, 16). However, it should also be remembered that most Japanese teleworking is informal and often not sanctioned by company regulations.

The JILPT research also investigated the teleworking period of employed teleworkers. Survey respondents were asked to select two periods of the day during which they mainly engaged in teleworking. As shown in Table 2.17, 12.0 per cent of respondents work from 22.00 until 24.00, and 3.2 per cent from 24.00 until 03.00. There is not much difference between the genders in terms of the ratio of late-night work hours.

The research data also include the frequencies and the number of hours of late-night teleworking. The respondents who mainly engage in teleworking from 22.00 to 05.00 reported the number of days and hours during which they engaged in late-night telework within a month. On average, they engage in telework for a total of 5.0 days and 8.2 late-night hours per month (Tables 2.18 and 2.19).

Table 2.17   Time periods of teleworking (multiple answers)

	Number of respondents*	05.00– 12.00	12.00– 16.00	16.00– 20.00	20.00– 22.00	22.00– 24.00	24.00– 03.00	03.00– 05.00
Men	642	41.9%	52.5%	31.0%	21.5%	11.5%	3.7%	0.9%
Women	177	39.0%	55.4%	26.6%	19.8%	13.0%	1.7%	1.1%
Total	831	41.0%	52.9%	30.3%	21.2%	12.0%	3.2%	1.0%

Note: * Total number of respondents does not accord with sum of men and women, since some of the included respondents declined to cite their gender.

Source: JILPT (2015, p. 288).

Table 2.18   Late-night teleworking days per month

	Number of informants*	1–2 days	3–4 days	5–9 days	10–14 days	15–19 days	20+ days	Average
Men	49	38.8%	22.4%	12.2%	14.3%	8.2%	4.1%	5.6 days
Women	15	50.0%	37.5%	6.3%	6.3%	–	–	2.9 days
Total	67	41.8%	25.4%	10.4%	11.9%	7.5%	3.0%	5.0 days

Note: * Total number of informants does not accord with sum of men and women, since some of the included respondents declined to cite their gender.

Source: JILPT (2015, p. 288).

Table 2.19   Late-night teleworking hours per month

	Number of respondents*	<4 hours	4–8 hours	8–12 hours	12–16 hours	16–20 hours	20–30 hours	30–40 hours	40+ hours	Average
Men	53	52.8%	11.3%	13.2%	11.3%	–	7.5%	–	3.8%	9.3 hours
Women	15	40.0%	33.3%	20.0%	6.7%	–	–	–	–	4.8 hours
Total	70	51.4%	15.7%	14.3%	10.0%	–	5.7%	–	2.9%	8.2 hours

Note: * Total number of respondents does not accord with sum of men and women, since some of the included respondents declined to cite their gender.

Source: JILPT (2015, p. 288).

This type of late-night telework not only makes the line between work time and personal time ambiguous, but also raises complications for the work–life balance of respondents.

As noted previously, Japanese teleworkers who must frequently work during late-night hours in their own home see their wage-based work encroach upon their family or personal life. If teleworking results in late-night work within these workers' normal work schedules, then it can create ambiguous demarcations between work and family life and hence disrupt work–life balance.

The Japanese government claims that teleworking improves the work–life balance of workers. However, teleworking often results in extended work time, holiday work and late-night work. The possibility that teleworking could encroach upon work–life balance should not be neglected.

5. POLICY RESPONSES TO TELEWORKING

The Japanese government has been trying to promote teleworking systems for several decades. However, it seems that the government has put little effort into regulating telework/mobile work systems. Therefore, there are no national policies that drive enforceable laws to regulate teleworking or the use of ICTs away from the employer's premises.

In such situations, only one guideline for telecommuting, as indicated below, comprises the rules determined by the government to regulate teleworking.[17] However, it is only 'goals to strive for' among the companies that adopt telecommuting; this guideline has no legally binding power over companies.

In March 2004, the MHLW published a guideline for telecommuting: 'Joho-tsushin-kiki o Katuyo shita Zaitaku-kinmu no Tekisetsu na Donyu oyobi Jissi no tameno Gaidorain' ('Guideline for appropriate adoption and execution of telecommuting with telecommunications equipment') (MHLW 2004). It was amended in July 2008.

The government has asserted that telecommuting systems are able to contribute to higher productivity among workers, while promoting desirable work–life balance. However, telecommuters often fail to draw a line between work and family life, and currently, personnel labour management cannot address this problem appropriately. The guideline is expected to resolve this problem.

The target audience of the guideline comprises the companies or organisations that have adopted or will adopt telecommuting systems. It is expected that if many companies adhere to the guideline requirements, telecommuting systems will spread more widely.

The major requirements of the guideline are listed below:

1) Observance of the Labour Standards Law
   a. Elucidation of labour conditions of telecommuters
   b. Defrayment of overtime pay for telecommuters who work under the 'imputed working-hour system'
   c. Accurate understanding of the working hours among telecommuters
2) Observance of the Industrial Safety and Health Law
   a. Health care for telecommuters
   b. Observance of 'VDT Sagyo ni okeru Rodoese-Kanri no tameno Gaidorain' (Guideline for Labour Hygiene Administration of VDT Operation)[18]
3) Observance of the Workers' Compensation Insurance Law
4) Other precautions for appropriate adoption and execution of telecommuting
   a. Sufficient consultation about the aim of adoption, extent of work, and ways of executing telecommuting systems
   b. Documented clarification of work content and methods of execution
   c. Establishment of evaluation and wage systems for telecommuters
   d. Arrangement of expenses for communication and ICT equipment
   e. Provision of employee training for telecommuters (as a substitute for on-the-job training)
5) Autonomous execution of work (requirement for telecommuters). (MHLW website)

This guideline does not have legal force, but it is expected to influence many companies that have adopted telecommuting systems, as it is backed by the government. However, it is important to note once again that most Japanese telecommuters engage in telework informally. Therefore, it is improbable that companies that do not officially allow their employees to engage in telework will revise their regulations according to this guideline.

6. CONCLUSIONS AND RECOMMENDATIONS FOR ACTION

As mentioned repeatedly in this chapter, there is a relative dearth of research data pertaining to Japanese telework, including mobile telework. Thus, it is very difficult to make firm assertions regarding many teleworking or teleworker matters, and even more difficult to make any policy proposals. Despite this situation, it is necessary to make some recommendations.

The central ministries of the Japanese government – such as the MIC, the MHLW and the MLIT – have long undertaken various telework/mobile-work promotion policies, asserting their effectiveness in several White Papers and reports. They have argued that telework is one of the best ways to increase labour participation among the female and

older-aged workforces, and simultaneously improve the work–life balance of workers at a time when Japan's population is decreasing and its labour force shrinking.

The government's reports suggest that, currently, 14.2 per cent of workers engage in some type of teleworking – which is equivalent to 8.5 million workers. If we believe this figure, it could be said that telework has spread considerably throughout Japanese society.

One of the most important problems related to telework in Japan is the demonstrated absence of legal regulations regarding this work style. The government has been eager to promote telework, but has almost completely neglected legal regulations in this area. Since there is no law regulating teleworking with any compelling force, far too many teleworkers are working without any appropriate protections.

The prevalence of informal teleworking causes serious problems: among Japanese employed teleworkers, 17.9 per cent are not allowed to telework regularly, and another 22.3 per cent are unaware of whether their company even has rules for teleworking (Table 2.4). The companies that have not formally adopted a teleworking system cannot regulate the telework of their employees. Such unregulated, unmonitored telework situations are commonly considered to have created many problems, such as unpaid overtime and late-night and holiday work. To resolve such issues, in addition to drafting laws that regulate formal teleworking with compelling force, rules that can control informal teleworking might also prove indispensable.

NOTES

1. Since self-employed ICT workers are not viewed as teleworkers in most European and North American research studies and statistics (this type of work is typically considered to be part of the so-called 'gig economy'), the situation of self-employed teleworkers in Japan is discussed separately in the appendix to this chapter.
2. The 'whole-day own-home teleworking' is one type of telecommuting. It means the worker stays in his or her own home all day long for teleworking without commuting to an office. It is the reason for the government's recommendation of this type of teleworking to reduce the burden for commuting and to promote increasing the workforce.
3. Between 2004 and 2016, the labour force ratio of Japanese women increased from 60.2 per cent to 68.1 per cent (MIC 2017, p. 3). However, the study was unable to find data indicating the contribution of teleworking to this increase, if any.
4. In Japan, 'mobile work' is included in 'teleworking' in a broad sense. Therefore, the words telework or teleworking as used in this chapter have the same meaning as 'telework/mobile work'.
5. Overall, 98.5 per cent of Japanese business establishments have fewer than 99 employees, and 71.6 per cent of all Japanese workers work in this type of business establishment (Economic Census 2012 website). Therefore, the data captured through the

Communications Usage Trend Survey must be analysed with caution, as it covers a very small proportion of Japanese teleworkers – even after considering the fact that the telework adoption rate of small companies is typically lower than that of large companies.

6. As written in the latter part of this chapter, the large population working as informal teleworkers is related to various problems as such holiday working and unpaid overtime work.

7. The factors related to lengthy working hours among teleworkers are explained further in conjunction with the discussion on holiday working and unpaid overtime work later in this chapter.

8. The data of the Teleworker Population Research study in 2015 also supports the increase of teleworking in holiday periods. The research asks employees about teleworking during holidays. According to the data, 15.9 per cent of male employees and 14.6 per cent of females work with ICT devices during office holidays or days off.

9. In Table 2.9, 'business continuity at disaster' has a value of 18.7 per cent; it is the third most commonly cited advantage of teleworking. After the Great East Japan Earthquake of 2011, many companies and organisations attempted to introduce teleworking (particularly telecommuting) systems to establish business continuity in the event of a natural disaster (JTA 2013, p. 11). However, as shown in recent research data, the number of companies that actually established telework systems did not increase significantly after the earthquake. Recent research shows that the greatest proportion of companies that have a teleworking system do not refer in their corporate social responsibility reports to the system in relation to business continuity in the event of disaster (Torido 2014, p. 65). Therefore, it is thought that 'business continuity at disaster' is a secondary rather than primary factor among companies when introducing teleworking systems.

10. Teleworking systems that have been introduced with the aim of reducing commuting time can be found more frequently in the case of mobile work systems than the case of telecommuting.

11. The MLIT's Teleworker Population Research studies in 2015 and 2016 asked only a small subset of informants about the advantages and disadvantages of teleworking, and therefore it is necessary to cite other research data. Hence, JILPT's data in 2015 is considered the most adequate for this theme among the available data sources.

  For its research, JILPT sent out questionnaires to 10 000 companies and their 60 000 employees; they received answers from 1616 companies and 5058 employees. In all, 3.5 per cent of the respondent companies had formally adopted some kind of a teleworking system, and 13.2 per cent informally allowed their employees to telework when their superiors permitted it or when it was part of the custom of the office (JILPT 2015, p. 9). Among the 5058 employees that responded, 989 were engaged in teleworking; 762 (77.0 per cent) of them were men and 227 (23.0 per cent) were women (JILPT 2015, p. 210, recalculated).

  Among the teleworking employees in this study, 90.7 per cent were employed as full-time workers; 9.3 per cent were temporary transfers, workers from a temporary employment agency, or part-time employees.

12. We must carefully consider the correspondence between employees' opinions and their companies' policies, as the personnel divisions in most Japanese companies are very strong and workers tend to follow company policies. For example, employees can cite an 'improvement of business productivity/efficiency' without concrete evidence, as long as their company expects it, but they would never be allowed to formally assert that the teleworking system has brought a decline in productivity or efficiency. In this context, the 17.7 per cent of respondents answering 'no advantage' must be considered seriously.

13. As a matter of course, 'spontaneous' is not spontaneity by its true definition. Kumazawa instead names it 'compelled spontaneity' (Kumazawa 2007, p. 117).

14. The most important motivation for spontaneous unpaid overtime work is the desire to achieve a good wage and high status in the future, ignoring short-term losses or pains. It has a certain rational basis. However, this particular labour practice may have spread in Japan, as some researchers note, owing to the effect of a cultural background that gives

priority to group tasks over individual interests. However, no data exists to prove this supposition.

15. The fact that regularly allowed teleworkers engage in much more holiday teleworking than those who are not allowed must be interpreted carefully, as most companies or organisations that have a regular telecommuting system do not formally allow employees to work during holidays. Therefore, even among employees who work for companies that formally allow telework, there is the strong possibility that their holiday teleworking itself is informal.

16. The imputed working-hour system is a legitimate payment system for workers who frequently work away from their company office, as employers cannot accurately calculate their working hours. Under this system, the worker is considered to work for normal working hours, even if the actual number of working hours is smaller. However, if the worker must work more than the normal working time or during holidays, under this system, Japanese labour laws require the employer to pay overtime and holiday allowances. Notably, though, many companies pay only a small sum called a 'sales allowance' to their mobile workers instead of granting them overtime and holiday allowances, and force them to work longer or during holidays. This kind of system abuse is considered a disguised form of unpaid overtime work.

17. In addition to this guideline, the MIC published the 'Telework security guideline' in 2004, which has been revised three times up to and including 2018. However, this is a guideline for 'reference of the examination about information security'; it is not intended to address workers' security (MIC 2018, p. 5).

18. The 'Guideline for labour hygiene administration of VDT operation' was formulated in April 2002 by the MHLW (MHLW 2002b).

REFERENCES

Cabinet Secretariat (2013), 'Sekai Saisentan IT Kokka Sozo Sengen' ('Declaration for creation of the world leading-edge IT state'), 14 June, revd 30 June 2015 Cabinet Secretariat, Tokyo.

Gender Equality Bureau Cabinet Office (GEBCO) (2012), *Danjo Kyodo Sankaku Hakusyo Heisei 24-nenban* (*White Paper on Gender Equality 2012*), Tokyo: GEBCO.

Gender Equality Bureau Cabinet Office (GEBCO) (2016), *Danjo Kyodo Sankaku Hakusyo Heisei 29-nenban* (*White Paper on Gender Equality 2016*), Tokyo: GEBCO.

Hamaguchi, K. (2014), *Nihon no Koyo to Cyukonen* (*The Japanese Employment System and Middle-Elderly Labour*), Tokyo: Chikuma Syobo.

Japan Institute for Labour Policy and Training (JILPT) (2015), 'Joho Tsushin Kiki o Riyo shita Tayona Hatarakikata no Jittai ni kansuru Cyosa Kekka' ('A fact-finding survey report of diverse work styles involving ICT equipment'), JILPT, Tokyo.

Japan Telework Association (JTA) (2013), *Telewaku Hakusyo 2013* (*White Paper on Teleworking 2013*), Tokyo: JTA.

Japan Telework Society (JTS) (2015), *Telewaku ga Mirai o Tsukuru* (*Telework Creates the Future*), Tokyo: Impress R&D.

Japanese Institution for Labour (JIL) (1998), 'Pasokon Nettowaku ni tsudou Zaitakuwaka no Jittai to Tokusei' ('Realities and characteristics of *zaitaku* (stay-home) workers who congregate on PC networks'), JIL, Tokyo

Japanese Institution for Labour (JIL) (2002), 'Zaitakuwaku Hattyu to Zaitakuwaka

no Doko' ('A trend of *zaitaku* (stay-home) work ordering and *zaitaku* workers'), JIL, Tokyo

Kumazawa, M. (1989), *Nihonteki Keiei no Meian* (*The Lights and Darks of Japanese-Style Business Administration*), Tokyo: Chikuma Syobo.

Kumazawa, M. (2007), *Kakusa-syakai Nippon de Hataraku to iukoto* (*Labour in Japan as a Stratified Society*), Tokyo: Iwanami Syoten.

Ministry of Health, Labour, and Welfare (MHLW) (2000), 'Zaitaku-waku no Tekisei na Jissi no tameno Gaidorain' ('Guideline for appropriate execution of *zaitaku* work'), MHLW, Tokyo.

Ministry of Health, Labour, and Welfare (MHLW) (2002a), *Heisei 13-nenban Josei Rodo Hakusyo* (*White Paper on Female Labour 2001*), Tokyo: MHLW.

Ministry of Health, Labour, and Welfare (MHLW) (2002b), 'VDT Sagyo ni okeru Rodoese-Kanri no tameno Gaidorain' ('Guideline for labour hygiene administration of VDT operation'), April, MHLW, Tokyo.

Ministry of Health, Labour, and Welfare (MHLW) (2004), 'Joho-tsushin-kiki o Katuyo shita Zaitaku-kinmu no Tekisetsu na Donyu oyobi Jissi no tameno Gaidorain' ('Guideline for appropriate adoption and execution of telecommuting with telecommunications equipment'), MHLW, accessed 23 March 2019 at https://www.mhlw.go.jp/houdou/2004/03/h0305-1.html.

Ministry of Health, Labour, and Welfare (MHLW) (2014), 'Heisei 26-nendo Terewaku Moderu Jissyo-jigyo: Terewaku Katsusyo no Kojireisyu' ('Demonstrative Model Project of Teleworking 2014: example cases of success'), MHLW, Tokyo.

Ministry of Health, Labour, and Welfare (MHLW) (2015), 'Hitori-oya Kate no Zaitaku Syugyo Suishin Jigyo' ('Overview of home-based work supporting project for one-parent families'), MHLW, Tokyo.

Ministry of Internal Affairs and Communications (MIC) (2010), 'Telewaku no Doko to Sesanse ni kansuru Cyosakenkyu Hokokusyo' ('A research report on the trend and productivity of teleworking'), MIC, Tokyo.

Ministry of Internal Affairs and Communications (MIC) (2013), 'Heisei 24-nendo Terewaku Donyu Jirei' ('A collection of cases adopting teleworking systems 2012'), MIC, Tokyo.

Ministry of Internal Affairs and Communications (MIC) (2014), 'Heisei 25-nendo Terewaku Donyu Jirei' ('A collection of cases adopting teleworking systems 2013'), MIC, Tokyo.

Ministry of Internal Affairs and Communications (MIC) (2017), 'Heisei 28-nendo Rodoryoku Chyosa Nenpo 1 Kihon Syukei' ('Annual report on the Labour Force Survey 2017: vol. 1, basic statistics'), MIC, Tokyo.

Ministry of Internal Affairs and Communications (MIC) (2018), 'Terewaku Sekyuritii Gaidorain Dai 4-han' ('Telework security guideline version 4'), MIC, Tokyo.

Ministry of Land, Infrastructure, Transport and Tourism (MLIT) (2015a), 'Heisei 26-nendo Telework Jinko Jittai Chyosa Hokoku' ('Report on teleworking population research 2014'), MLIT, Tokyo.

Ministry of Land, Infrastructure, Transport and Tourism (MLIT) (2015b), 'Heisei 26-nendo Telework Jinko Jittai Chyosa: Chyousa Kekka no Gaiyo' ('Report on teleworking population research 2014: a summary'), MLIT, Tokyo.

Ministry of Land, Infrastructure, Transport and Tourism (MLIT) (2016), 'Heisei 28-nendo Telework Jinko Jittai Chyosa' ('Report on teleworking population research 2016'), MLIT, Tokyo.

Ministry of Land, Infrastructure, Transport and Tourism (MLIT) (2017), 'Heisei

28-nendo Telework Jinko Jittai Chyosa: Chyousa Kekka no Gaiyo' ('Report on teleworking population research 2016: a summary'), MLIT, Tokyo.

Sato, A. (2006), *Terewaku no Syakaigakuteki Kenkyu* (*Sociological Research on Teleworking*), Tokyo: Ocyanomizusyobo.

Sato, A. (2008), *Terewaku: 'Miraigata Rodo' no Genjitsu* (*Teleworking: Reality of the 'Labour of the Future'*), Tokyo: Iwanami Shoten.

Sato, A. (2009), 'Terewaku no Tayosei o Meguru Jisshoteki Kenkyu' ('An applied study about diversified types of teleworking'), 2005–2008 nendo Kagaku Kenkyuhi Hojokin Kiban Kenkyu (C) Kenkyu Seika Hokokusho (Report on Research Outcomes of Financial Years 2005–2008 Grants-in-Aid for Scientific Research (C)).

Sato, A. (2013), 'Teleworking and changing workplaces', *Japan Labour Review*, **10** (3), 56–69.

Takahashi, M. and Kawai, Y. (2002), 'Josei ni yoru Hi-koyogata Zaitaku-waku ni okeru Kenko-eikyo to sono Yoin ('Health effects and relevant factors in home-based work by non-employed women'), *Rodo-Kagaku* (*Journal of Science of Labour*), **78** (4), 189–202.

Takano, T. (2011), 'Heisi Fukyoki no Naisyoku-Kanairodo to Zaitaku Waku: Gurobaruka to Jyohoka no motode ('The trend of home work in the Heisei recession: the intersection of informationisation and globalisation'), *Hiroshima Kokusai Daigaku Iryofukushi-gakka Kiyo*, **7**, 1–22.

Torido, S. (2014), 'CRS Hokokusyo ni miru Kigyo ni okeru Terewaku Katsuyo Jokyo no Cyosa Kekka ni tuite' ('On the results of investigations of the telework situation in CSR reports'), *Proceedings of the Sixteenth Japan Telework Society Conference*, **16**, 63–6.

Women's Bureau of the Ministry of Labour (WBML) (1989), 'Zaitaku Syugyo Homon Cyosa Kekka Hokokusyo' ('Results of a home-visit interview survey for *zaitaku* (stay-home) workers'), WBML, Tokyo.

Women's Bureau of the Ministry of Labour (WBML) (1992), 'Johosabisusangyobunya ni okeru Zaitaku Syugyo Jittai Cyosa Kekka Hokoku' ('Results of a fact-finding survey on *zaitaku* (stay-home) work in information service industries'), WBML, Tokyo.

Websites

Cabinet Office, 'Waga Kuni no Rodoshijo ni okeru Tayosyuro ni kansuru Cyosa Hokokusyo' ('A research report on employment diversity in Japan'], accessed 23 March 2019 at http://www5.cao.go.jp/keizai1/2007/work-life/work-life.html.

Communications Usage Trend Survey 2016: Company (Heisei 28-nen Tsushin Riyo Doko Cyosa: Kigyohen), MIC, accessed 23 March 2019 at https://www.e-stat. go.jp/stat-search/files?page=1&layout=datalist&toukei=00200356&tstat=000001 102495&cycle=0&tclass1=000001102515.

Economic Census 2012: Company, (Heisei 24-nen Keizai Sensasu), MIC, accessed 23 March 2019 at https://www.e-stat.go.jp/stat-search/files?page=1&query=%E 5%B9%B3%E6%88%9024%E5%B9%B4%E7%B5%8C%E6%B8%88%E3%82% BB%E3%83%B3%E3%82%B5%E3%82%B9&layout=dataset&toukei=00200552 &tstat=000001072573.

Hitome de Wakaru Saitei Chingin (The Minimum Wage with Single Glance), accessed 23 March 2019 at https://saichin.net/.

Home Workers website, accessed 23 March 2019 at http://www.homeworkers.jp/index.html.

Labour Force Participation Rate (from OECD Statistics), accessed 23 March 2019 at http://stats.oecd.org/index.aspx?queryid=27359.

Labour Force Survey (Rodoryoku Cyosa), MIC, accessed 23 March 2019 at http://www.stat.go.jp/data/roudou/index.html.

Ministry of Health, Labour, and Welfare (MHLW), accessed 16 July 2019 at https://www.mhlw.go.jp/.

Monthly Labour Survey (Maitsuki Kinro Tokei Cyosa), MHLW, accessed 23 March 2019 at https://www.e-stat.go.jp/stat-search/files?page=1&layout=datalist&tstat=000001011791&cycle=7&year=20160&month=0&tclass1=000001015954&result_back=1&second2=1.

APPENDIX: *ZAITAKU* WORK IN JAPAN

Executive Summary

In Japan, self-employed ICT workers are seen as performing telework by both the government and researchers. There are few legal protections for these self-employed teleworkers, as most are considered contract workers to whom many labour laws, such as the minimum wage, do not apply. Therefore, many self-employed teleworkers work at wages far lower than the prevailing minimum wage and for longer hours – at times, even during the late night. This night work harms their health and personal lives.

1.   Self-Employed Telework in Japan

It is well known that self-employed workers who perform their work with ICTs are not generally viewed as teleworkers in European and North American studies (this type of work is typically considered to be part of the so-called 'gig economy'). However, home-based self-employed workers working with ICT equipment were considered to be the first 'teleworkers' in the Japanese workforce. They have since made up the majority of formal Japanese teleworkers, as most Japanese companies' labour practices and evaluation systems forbid their employees from teleworking.

Further, such home-based teleworking is associated with the most serious types of problems in Japan. Even in Western societies, the low wages and other problems related to 'crowd workers' and freelance ICT workers are becoming serious issues. However, Japanese self-employed and home-based telework started before the spread of the Internet, and its problems are particularly serious because they arise from fundamental defects in Japanese worker protection laws. Therefore, self-employed teleworkers are the subject of analysis in this appendix.

As the main text in this chapter analysing Japanese teleworking illustrated, almost 16 per cent of Japanese teleworkers are considered to be self-employed according to research by the MLIT. However, the MLIT's data do not recognise the division between two types of work. The first is freelance work, which requires work spaces different from usual workplaces involving ICT devices. This type of work is not especially different from typical freelance work, particularly from those jobs that frequently require outside work.

Another type of self-employed telework is *zaitaku* work (stay-home work). *Zaitaku* work is a very peculiar form of work. The majority of Japanese stay-home teleworkers are not employees of any company, but work in their own homes as contract-based freelancers, that is,

zaitaku-workers. Generally, *zaitaku* work is organised by specific private agencies via the Internet, and candidates who register with the agency apply for specific orders by negotiating wages, deadlines and the required skills for individual projects. Most telecommuters and mobile workers are male, but most of the *zaitaku* workers are mothers of young children.

Zaitaku work is often characterised by extremely low wages and unstable work flows. The Japanese government, which seems eager to promote the telecommuting form, tends to ignore its existence. However, in the early period of the spread of *zaitaku* work, it was regarded as a good source of home-based income.

In Japanese telework studies, *zaitaku* work has long been studied, and an abundance of research on the topic has accumulated. Since most *zaitaku* workers are mothers with young children, some of the earliest questionnaire surveys of this group were conducted by the Women's Bureau of the Ministry of Labour (WBML 1989, 1992).

One of the first studies of *zaitaku* work was conducted in 1988. It found that 97.6 per cent of 207 informants were women, and the majority were aged 30–39 years. Furthermore, 98.4 per cent of the informants were not employed, but worked under a piece rate contract. More than 90 per cent of them engaged in input jobs, such as word processing and data entry, while a smaller percentage were involved in software programming and trace drawing (WBML 1989).

These data show that most *zaitaku* work involved contract jobs performed by mothers with small children from its beginning. However, from the late 1980s and during the first half of the 1990s, their wages were on average not lower than those of non-teleworkers. A WBML study from 1991 shows the wage data for *zaitaku* workers. Among the approximately 1000 respondents, the average monthly income was 93 200 yen, with the average number of working days in a month being 16.2 days, and the working hours per day being 4.4 hours. The hourly wage was on average more than 1300 yen (WBML 1992, pp. 11–13).

Japanese minimum wage varies by prefecture, currently from 762 yen to 958 yen per hour, and it is frequently revised. In 1989, the minimum wage was 575 yen in the Tokyo area, which was the area with the highest minimum wage in Japan (website of Hitome de Wakaru Saitei Chingin). Therefore, at that time many *zaitaku* workers received more than twice the minimum wage per hour, and hence were not low wage earners.

One of the primary reasons for acquiring these higher wages was the scarcity of their ICT skills. In addition, many *zaitaku* workers obtained contracts from former employers, which probably prevented their compensation from decreasing dramatically (WBML 1989, p. 14)

However, as computer skills became more common owing to school

education and widespread adoption of technology, the scarcity value of the skill declined rapidly. By the late 1990s, most *zaitaku* workers were unable to acquire contracts from former employers, as companies chose to employ younger clerks with elementary computer skills.

To address this situation, in the mid-1990s, many *zaitaku* work agents appeared, who mediate between customers and *zaitaku* workers. Most *zaitaku* work agents have their own websites where they continually invite applicants for *zaitaku* work to register for membership.

When an agent receives a contract from a customer, certain pieces of information – such as the job details, compensation and due date – are sent to registered members by e-mail. *Zaitaku* workers who receive the e-mail, after considering their own skill levels, the proffered compensation and the due date, decide whether or not they would like to undertake the job. If they wish to accept the job, they e-mail their decision to the agent. The agent then chooses members suitable for the job from among the applicants by considering their past performance. Following the emergence of *zaitaku* work agents, the oversupply of *zaitaku* workers gradually worsened, and as a result, the fees associated with the work rapidly declined.

Furthermore, a new type of agent has recently appeared that contributes to additional reductions in the rewards for *zaitaku* work. These agents do not declare how much will be paid for the work in question; rather, payment for the *zaitaku* work is determined on the agent's website through a bidding system. In this system, customers tend to select the *zaitaku* worker who offers the lowest bid, and workers who are eager to receive the job compete with one another to reduce their own compensation in order to be selected for a particular task (Sato 2013, p. 64).

There are currently no detailed research studies on the agents that adopt this bidding system, and therefore it cannot be proven whether they cause a greater decrease in *zaitaku* workers' income. However, a review of some contracts made through one agent suggests a decline in compensation.

For example, when a bidding system was employed, the lowest pay level of a concluded contract for translation from English to Japanese was 667 yen per page, and from Japanese to English was 500 yen per page. Even the most skilled and efficient translators would not able to earn more than the 878 yen of the recent average hourly minimum wage from those projects, since these languages have quite different structures and translation requires considerable time and effort. Thus, it appears that relatively high value-added skills such as translation are now losing their higher compensation owing to the spread of these bidding systems (Sato 2013, p. 65).

2.   Problems of *Zaitaku* Work

Zaitaku workers suffer diverse problems, such as extremely low wages, long working hours and late-night work, because Japanese labour laws do not sufficiently protect contract labourers. However, after these problems became clear, it seemed that the Japanese government tended to ignore research into *zaitaku* work. Therefore, the analysis in this section must rely on older data acquired from small numbers of informants.

2.1   The problem of low wages

Figure 2A.1 makes use of research data collected from 186 *zaitaku* workers in 2002. These workers were asked about the reasons for their discontentment with teleworking. They most frequently cited 'low wage' (80.1 per cent), 'unstable quantity of work' (76.7 per cent), 'unstable income' (70.4 per cent) and 'shortage of work' (65.2 per cent) as negative factors (Sato 2006, pp. 120–1). It may be surmised that their unstable income is created by the unstable quantity of work. Furthermore, the unstable quantity of work frequently refers to an unexpected shortage of work – surplus work is almost never anticipated. That is, their unstable income is caused by a constant or unexpected shortage of work. In addition, a shortage of work accompanied by a low wage led to income shortages.

Table 2A.1 shows the rewards of *zaitaku* work. As might be expected, the rewards related to the work differ by the type of work involved. The highest paid *zaitaku* workers are those who do 'system design/analysis', who earn 5714 yen per hour, and earn an average of more than 266 000 yen per month for 46.7 hours of work.

'Data entry', which accounts for the largest proportion of *zaitaku* work, earns workers only 498 yen per hour. The second-largest group of workers comprises those who undertake 'data correction', but this generates an even lower wage: *Zaitaku* workers who do 'data correction' earn 16 600 yen through almost 70 hours of work, corresponding to just 239 yen per hour. Considering that the Japanese minimum wage is 664 yen per hour at the time of the research, these are extraordinarily low earnings.

The compensation paid to most *zaitaku* workers can be lower than the minimum wage fixed by the law for two reasons. First, the minimum wage law does not apply to *zaitaku* work. Almost all *zaitaku* workers are working in their own homes as contract labourers, and their workplace and hours are not restricted. They are not protected through the minimum wage system, because they are not employees.

However, the Home Labour Law of Japan does define the minimum labour charge for home work by contract, but the law does not regulate the minimum labour charge for all types of work at home. By determining
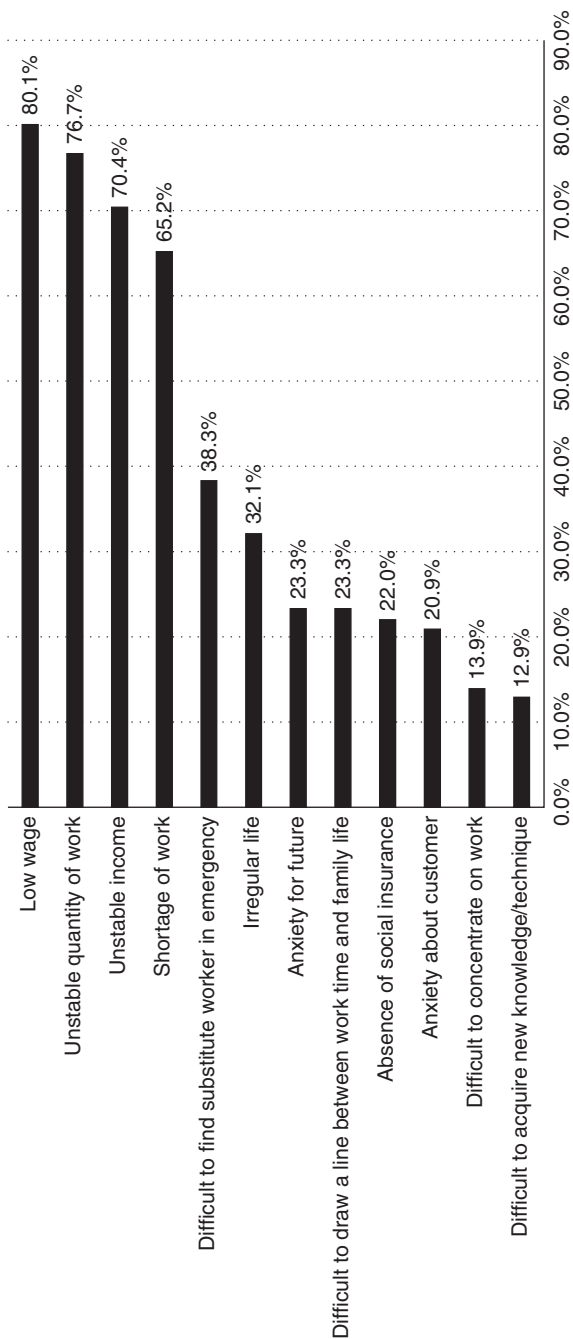
Source: Sato (2006, p. 120–21).

Figure 2A.1 Discontentment with zaitaku work (multiple answers)

Table 2A.1   *Rewards of* zaitaku *work, by occupation (multiple answers)*

	Number engaged	Rate of engagement	Average hour/ month	Average reward (Yen)	Average wage/hour (Yen)
Data correction	79	27.5%	69.5	16 600	239
Data entry	116	40.4%	49.0	24 300	498
Tape transcription	10	3.5%	54.9	34 500	629
Other work	33	11.5%	47.8	48 300	1010
CAD operation	7	2.4%	38.6	40 100	1041
Web design	13	4.5%	40.5	57 900	1432
Desktop publishing	11	3.8%	17.1	25 000	1459
Other design	1	0.3%	56.0	110 000	1964
Programming	10	3.5%	89.0	193 700	2176
Translation	1	0.3%	8.0	40 000	5000
Article writing	12	4.2%	21.3	107 100	5020
System design/analysis	3	1.0%	46.7	266 700	5714

Source: Sato (2006, p. 110).

the minimum charge for some types of typical homework, such as button-sewing and hemming, the law precludes a free-fall decline in the rewards associated with home-based work.

Nevertheless, not even this legislation protects the vast majority of *zaitaku* workers. That is because the minimum labour charge fixed by the Home Labour Law applies only to the production or processing of materials. In contrast, most *zaitaku* workers are producing or processing information, which is not included in physical materials. For this reason, the law cannot determine the minimum compensation for *zaitaku* work.

The second factor contributing to the low compensation for *zaitaku* work is the imbalance between demand and supply. Until the early 1990s, *zaitaku* workers were relatively well-compensated. However, as computer skills became more common, the scarcity of their skills rapidly declined, and their wages concurrently declined. Especially after the entrance of many *zaitaku* work agencies, huge numbers of *zaitaku* workers entered the workforce, which resulted in an oversupply of these workers.

If the *zaitaku* workers who earn less than half the minimum wage were to work away from their own homes, they would be able to earn more than the legally fixed minimum. However, as it stands, they are barely protected by extant labour laws owing to their work-from-home contract-based situations.

2.2   Health problems and night work

Health problems and night work are two serious and closely related problems for many *zaitaku* workers.

A survey report from the Japanese Institute for Labour (JIL) on 270 *zaitaku* workers found that 81.4 per cent reported eyestrain, 70.8 per cent suffer from stiff shoulders, 49.2 per cent from lower-back pain and 16.1 per cent from stomach ache (JIL 1998, p. 152). A later JIL report announced that among 92 *zaitaku* workers, 48.9 per cent have complained about eyestrain, lower-back pain or stiff shoulders (JIL 2002, p. 57). These data confirm the seriousness of the health problems related to these work systems.

The JIL reports do not clarify the relationships between the teleworkers' physical problems and their working conditions; indeed, it seems that almost no research has been conducted on this relationship in Japan.

Only one study has analysed the relationship between the physical and mental fatigue of *zaitaku* workers and their working conditions (Takahashi and Kawai 2002, pp. 191–6). That study – which collected responses from 95 female *zaitaku* workers – shows that with respect to physical fatigue, 11.6 per cent 'always feel fatigue', while 13.7 per cent felt that 'fatigue remains even in the morning'. Furthermore, 9.5 per cent of the respondents felt that 'fatigue remains at bedtime', and 40.0 per cent complained about the 'fatigue remaining after work'. Regarding their mental condition, 10.5 per cent of respondents were suffering from 'strong fatigue', and 28.4 per cent felt 'somewhat tired'.

In total, 44.6 per cent of the respondents were affected by mental fatigue, 25.3 per cent were suffering from some degree of physical fatigue and 17.9 per cent had both physical and mental ailments.

The research data indicate relationships between physical/mental fatigue and long work times or late-night work. Regarding long work times, 34.4 per cent of the respondents who felt an 'accumulation' of 'physical fatigue' had worked more than 50 hours per week, whereas only 16.9 per cent of the 'no accumulation' group had worked more than 50 hours. Furthermore, 30.6 per cent of the respondents who felt an 'accumulation' of 'mental fatigue' had worked more than 50 hours, whereas just 17.4 per cent of the 'no accumulation' group had worked more than 50 hours (Table 2A.2).

Many *zaitaku* workers not only work long hours but also work late into the night because they often need to balance childcare or elder care with wage work. This night work harms worker health, and further promotes difficulties in distinguishing between working time and free time.

Research data from 186 *zaitaku* workers shows that 68.9 per cent usually work in their own home from 21:00 to 24:00, and 39.3 per cent work from

Table 2A.2   Fatigue accumulation and working hours per week

Teleworking hours/week	Physical fatigue		Mental fatigue	
	No accumulation	Accumulation	No accumulation	Accumulation
Fewer than 9 hours	16.9%	21.7%	17.4%	22.2%
10-19 hours	8.5%	8.7%	6.5%	13.9%
20-34 hours	39.0%	17.4%	39.1%	25.0%
35-49 hours	18.3%	17.4%	19.6%	8.3%
More than 50 hours	16.9%	34.8%	17.4%	30.6%

Source: Takahashi and Kawai (2002, p. 192).

Table 2A.3   Night telework of zaitaku *workers*

	18.00–21.00	21.00–24.00	24.00–4.00
Usually work at (multiple answer)	30.6%	68.9%	39.3%
Mainly work at (single answer)	6.1%	24.5%	11.2%

Source: Sato (2009), recalculated.

24:00 to 4:00. In addition, for 24.5 per cent of *zaitaku* workers, 21:00 to 24:00 is the main teleworking time period (Table 2A.3). Mothers of small children comprise a major proportion of *zaitaku* workers, and they choose to engage in teleworking to 'combine childcare and wage work'. They more frequently work during late-night time periods because they wish to work after their children have gone to bed.

The relationship between late-night work and physical fatigue is easily identifiable: in the research of Takahashi and Kawai (2002), 79.2 per cent of the respondents who had accumulated 'physical fatigue' had worked until late at night, but the proportion of 'no accumulation' respondents who had worked during that time period was almost 20 percentage points lower (Table 2A.4).

These data are collected from the answers of a limited number of respondents, and so they cannot represent the overall picture of night teleworking. However, it is clear that night teleworking often leads to serious health problems.

Table 2A.4   Fatigue accumulation and working time period (multiple answers)

Time period of teleworking	Physical fatigue		Mental fatigue	
	No accumulation	Accumulation	No accumulation	Accumulation
Early morning	18.3%	25.0%	23.9%	21.6%
Late morning	53.5%	45.8%	47.8%	56.8%
Afternoon	77.5%	75.0%	73.9%	78.4%
Evening	36.6%	33.3%	32.6%	32.4%
Midnight	60.6%	79.2%	65.2%	62.6%

Source: Takahashi and Kawai (2002, p. 192).

3.   Policy Responses to *Zaitaku* Work

As has been noted, there is no law protecting home-based ICT contract workers in Japan. Only the following guideline made by the MHLW has proposed some rules for private companies and other organisations who make contracts with *zaitaku* workers. However, this guideline contains only recommended goals and has no legally binding power.

The MHLW decided in June 2000 on a guideline dealing with *zaitaku* work and amended it in March 2010; the guideline is titled 'Zaitaku-waku no Tekisei na Jissi no tameno Gaidorain' (Guideline for Appropriate Execution of *zaitaku* work). According to the MHLW, the purpose of this guideline is to prevent conflicts that relate to contract-based *zaitaku* work in order to make it a satisfactory type of working arrangement. To protect workers, the guideline sets concrete requirements with which employers of *zaitaku* workers should comply.

The major requirements of the guideline are:

1) Elucidation and preservation of contract terms, in document form, including: contents of ordered work, amount/date/means of payment, treatment of necessary expenses, deadline/place/means of delivery, treatment on the occasion of changes in contract conditions, treatment of imperfect products/missed deadlines, treatment of intellectual property rights of product, and treatment of personal data.
2) Fairness of contract terms: fairness of payment day, compensation, and deadline of delivery. (MHLW 2000, pp. 9–11)

One of the most important problems relating to this guideline is the ambiguity of the word 'fairness'. The minimum wage and labour charge

regulations do not apply to *zaitaku* work, and therefore, there is no impartial standard for the compensation offered for such work.

After the announcement of the guideline, the MHLW established some policies to support *zaitaku* workers. For example, as a part of the MHLW's 'Zaitaku Syugyosya Sogo Shien Jigyo' ('General support project for home-based workers'), the Home Workers website was established, which recommends *zaitaku* work. Further, as a project of 'Hitori-oya Kate Sogo Shien Jigyo' ('General Support program for mother–child families'), the MHLW executes 'Hitori-oya Kate no Zaitaku Syugyo Suishin Jigyo' ('Home-based work supporting project for one-parent families') (MHLW 2015). This project primarily targets single mothers who have small children, aiming to support them by enabling them to engage in *zaitaku* work.

However, these support programmes for *zaitaku* work have been severely criticised. The rewards of *zaitaku* work are generally very low and highly unstable. If many mother–child dyad families were to rely exclusively on this type of work, it is very likely that they would become members of the working poor (Takano 2011, p. 19).

4. Conclusion

In the case of *zaitaku* workers, extremely low compensation, health troubles and late-night work are typical problems. *Zaitaku* workers are not protected even by the legal minimum wage and industrial safety and health laws. Instead, it seems that *zaitaku* work has come to be used as a method of evading laws that would protect non-teleworking home workers or information workers who work in a standard office employment environment. In this context, developing legal frameworks that protect home workers who engage in producing or processing information – and not just materials – is an urgent issue.

1. Telework and its effects in Europe

Lutz Gschwind and Oscar Vargas

EXECUTIVE SUMMARY

Europe combines several unique features in regard to the development, incidence and effects of telework. Many countries on the continent have seen large-scale economic shifts over the past five decades, away from employment in manufacturing and towards information and telecommunication-enabled service and knowledge-based jobs. This development coincided with an increasing demand for flexible workplace and working time policies at the national, sectoral and company levels, fuelled by a steady rise in dual-earner households owing to increasing female labour market participation. Europe is also unique in the sense that policy-making and social dialogue regarding telework are embedded into a 2002 framework agreement for telework on the supranational level, the European Union. This agreement among the European Union level social partners has changed the nature of dialogue and policy-making in relation to telework in a way that cannot be found outside this region. A comparison of European countries also unveils how telework can, against the backdrop of these common characteristics, develop differently depending on the social and economic setting. All of these particularities are discussed in detail in this chapter with help of 2015 data from the European Working Conditions Survey and detailed national reports compiled by experts from ten countries on the continent.

1. INTRODUCTION

Europe can be considered an ideal breeding ground for the rise of telework. National economies across the continent have been following a similar trajectory over the past five decades, away from employment in manufacturing and towards service jobs and high-skill tasks (Gallouj et al. 2015; Wölfl 2005). Mobile information and communication technologies (ICTs) play a crucial role in this development. Automation and

digitalisation are drastically reducing the necessity of human labour in the stationary production of goods as well as, to an increasing extent, in services such as transportation, sales and accounting (Autor 2015; Brynjolfsson and McAfee 2014). A growing number of tasks in Europe's new, knowledge-based economy are enabled by Internet connections and can be performed anywhere at any time with the help of mobile ICTs. Increasingly fewer jobs remain entirely dependent on a single location (Gallouj et al. 2015; Holtgrewe 2014; Popma 2013). This rise in mobility and use of ICTs for work is coupled with an increasing demand for flexible working time and workplace arrangements. In addition, rapid increases in female labour-market participation have increased the number of dual-earner households. This transformation has created an increasing demand for the ability to arrange paid work and private life flexibly for all working household members across space and time (Annesley 2007).

All these conditions speak in favour of a large-scale expansion of telework across the European continent. Nevertheless, progress has been slow. Estimates by Eurofound for the early years of the 21st century show that the share of home-based telework had increased from 5 per cent to 7 per cent between 2000 and 2005 (Welz and Wolf 2010). These increases appear rather modest. However, they do not give the full picture. Reported estimates exclude mobile and occasional telework. The work pattern has experienced an expansion owing to the technological developments of the last 15 years. Moreover, they do not reflect to what extent and how work with mobile ICTs developed differently across countries. This chapter complements such earlier findings with help of two new sources of information: (1) an expert survey that was conducted in ten European countries in order to gather statistics, policy reports and study results on the national level, and (2) the sixth wave of the European Working Conditions Survey (EWCS). Data for both sources were gathered in 2015. Detailed findings of this analysis were discussed in the joint European Foundation for Improvement of Living and Working Conditions (Eurofound) and International Labour Organization (ILO) report (Messenger 2017). This chapter presents a summarised version together with updated results of the study.

2. MAIN DATA SOURCES AND OPERATIONALISATION OF TELEWORK

Reported figures and examples for the incidences and effects of telework in Europe are derived from a combination of data sources. The primary source is an expert survey that was designed and distributed for a joint

project of Eurofound and the ILO in 2015. It captures the use of telework across ten European countries: Belgium, Finland, France, Germany, Hungary, Italy, the Netherlands, Spain, Sweden and the UK. Each of the national experts was given a guideline for the collection of research reports, policy evaluations and company examples for the study of telework in their respective countries. The predominant sources of information for the incidence and intensity of telework were large-n surveys. Telework is of growing interest for public authorities and policy-makers across all country cases. Standardised questions for this topic are therefore included in some national labour force or working conditions surveys. However, they are rarely the main focus, which means that telework tends to be addressed by only one or two items. Statistics on the incidence of telework thus vary greatly in relation to the organisation of work (home-based or mobile), the intensity of telework (once a week or once a month) and the reference population of the survey (employees or all workers). Results of the national reports were therefore complemented with data from the sixth wave of the EWCS.

Data for the EWCS is generated with the help of face-to-face surveys and standardised questionnaires. The sixth wave was conducted in 2015 with about 44 000 workers in 35 European countries. Telework is not directly addressed in the survey. However, respondents were asked about both their work location and the use of ICTs for work. This information was combined to identify four types of workers: (1) regular home-based teleworkers who use ICTs at least several times a month to work from home, (2) regular mobile teleworkers who work with help of ICTs several times a week or more at locations other than their home or employer's premises, (3) occasional teleworkers who work primarily at their employer's premises but occasionally (less than several times a month) work from home or at other locations, and (4) non-teleworkers who remain at their employers premises at all time. This categorisation is unique in the context of this volume, as it allows for great detail and an operationalisation of telework that is more in tune with the latest developments of ICT-enabled work (see the Introductory chapter of this volume; see also Messenger and Gschwind 2016). It is used as a framework both for the discussion of national reports and for the presentation of data from the EWCS.

3.   DRIVERS OF AND BARRIERS TO TELEWORK

The parallel trends of workplace digitalisation and increased demand for work–life balance can be considered common drivers of telework across the European continent. However, their forces do not unfold evenly over

all countries and sectors. Comparative studies on regulatory barriers to working time and workplace flexibility highlight a strong split across Europe. The Nordic countries, Sweden and Denmark in particular, are found to combine generous social security for parents and the elderly with a regulatory framework and working culture that allows for flexible coordination between paid work and private life. Southern and Eastern European countries, such as Greece, Italy, Portugal, Spain and the Czech Republic, Hungary, Poland and Slovakia are characterised by a lower level of formal flexibility and an emphasis on presenteeism. Central European countries, most prominently Germany, fall in between those two poles (Chung et al. 2007; Goudswaard et al. 2013; Muffels and Luijkx 2008; Wilthagen and Tros 2004). The development of telework is intertwined with these contextual factors. Work away from the employer's premises is facilitated in a regulatory framework and working culture that enables both working time and workplace flexibility (Bailey and Kurland 2002; Baruch 2000; Taskin and Edwards 2007). Time-related and cross-country variation in the contextual determinants of telework are discussed below in light of these considerations.

The trend towards an increasing demand for work–life balance policies is clearly reflected in results of a survey among 1556 German companies for the year 2012. About 81 per cent of employers consider family friendliness to be 'important' or 'quite important' for their company. Only 47 per cent responded this way when the same study was first conducted in 2003. Information and communication technology-enabled mobile and home-based work is identified as an adequate response to this trend by both employers and employees. The share of companies with policies for home-based telework increased from 8 per cent in 2003 to 21 per cent in 2012 (BMFSFJ 2013). Results of a survey among German workers in 2012 show that home-based telework is undertaken by 62 per cent of respondents in order to balance paid work and private life. In comparison, only 27 per cent state that they choose to work at home because it improves their job satisfaction (Pfisterer et al. 2013).

A comparison with other national reports shows that the trend towards telework adoption has unfolded unevenly across the European continent. Evidence from a company survey in Sweden indicates an even larger increase than in Germany. The share of companies with employees who work away from the employer's premises for at least half a day per week increased from 36 per cent in 2003 to 51 per cent in 2014 (Statistics Sweden 2014a). Results of a study among 300 companies in Spain, in contrast, indicate a much slower rise of telework. About 7 per cent of surveyed companies reported in 2003 that they adopted formal policies to enable work away from the employer's premises. Ten years later the share had only

increased to 13 per cent (IDC 2013). The authors of the national report for Spain explain the modest adoption of telework with a relatively strong emphasis on presenteeism in the Spanish working culture, a slow development of the required ICT infrastructure and a general lack of public policies for working time and workplace flexibility. These explanations are in line with comparative research on social security and workplace flexibility in Europe (Chung et al. 2007; Goudswaard et al. 2013; Muffels and Luijkx 2008; Wilthagen and Tros 2004).

The comparison across countries lends support to the hypothesis that the driving forces of telework are bound to contextual factors such as employment regulation, working culture and ICT infrastructure. This dependence is also emphasised by cross-sectoral comparisons within the country cases. Results from a study of equality plans and collective agreements in 56 large Spanish companies shows that it is more difficult to introduce telework as a mode of work in direct manufacturing processes (for example, for workers in a workshop or production line). Typical office jobs such as accounting and management can be adapted more easily to working time flexibility and telework programmes (Otaegi 2015). Similar cross-sectoral variations are also reported for the case of France. Telework is found to be particularly prevalent in technology-intensive and in Anglo-Saxon multinational companies (MNCs). However, there is a high degree of heterogeneity among these companies as well (Greenworking 2012). This variation suggests that barriers to telework can also be found on the individual and company levels.

Technical problems and reluctance among managers are reported as the main individual- or company-level barriers for telework. A 2015 survey among 1027 teleworkers in Sweden asked respondents if they encountered any obstacles when working away from the office. The results showed that 63 per cent encounter difficulties to access the company's information technology (IT) system and 56 per cent stated that they find it problematic to participate in meetings with the help of ICTs. Word of such technical and organisational problems can make employers reluctant to adopt of telework in their own companies. A study among employers in Flanders, Belgium, shows that a majority of employers fears high costs for ICT infrastructure and loss of managerial control owing to the adoption of flexible working time and workplace arrangements. These fears are particularly pronounced in small and medium-sized companies and among managers who themselves have not had any experience with telework (Walrave and De Bie 2005).

4.   THE INCIDENCE OF TELEWORK

The review of drivers of and barriers to working time and workplace flexibility in Europe indicates a considerable cross-country variation in relation to the current incidence and intensity of telework. At first glance, a comparison of reported figures in the national reports seems to lend support to this expectation. Table 1.1 shows that shares of teleworkers are particularly high in the Nordic countries. Every third employee in Finland and Sweden is working at least occasionally away from the employer's premises with the help of ICTs. Moderate levels of telework can be found in Central Europe. Workers in Southern and Eastern Europe work almost exclusively at their employer's premises. These figures seem to indicate a rough North/South and East/West divide in the incidence of telework. However, it is highly problematic to draw general conclusions from the summary of these individual national reports alone. The number of countries per region varies greatly, together with the data sources, reference populations and operational definitions of telework. It is therefore important to complement these reported figures with additional data from EWCS.

Results of analyses with 2015 data of the EWCS are summarised in Figure 1.1. They indicate a similar general North/South and East/West divide as in the national reports. Shares of teleworkers are much higher in Denmark (37 per cent), Finland (24 per cent) and Sweden (33 per cent) than in Greece (9 per cent), Italy (7 per cent), Portugal (11 per cent) and Spain (13 per cent). Central and West European countries fall in between, ranging from 30 per cent in the Netherlands to 12 per cent in Germany. The same can be said for Eastern European countries. Shares of teleworkers vary between 24 per cent in Estonia and 10 per cent in the Czech Republic. Differences between the country reports, on the one hand, and estimates on the basis of the EWCS, on the other, can be explained with variations in the form and timing of the data collection processes as well as the different definitions of telework. This is particularly visible in relation to occasional telework. National labour force and working conditions surveys rarely include questions about work in between a worker's home and the employer's premises. Estimates for the incidence of telework in the national reports are therefore conservative and fall on average below those of the EWCS.

The national data collected from the ten EU member states also enables us to draw some conclusions about the characteristics of teleworkers. The breakdown by occupations shows that not all types of work can be performed away from the employer's premises and not all jobs are dependent on ICTs. Some occupations (for example, shop assistants or manufacturing) require the employee to work at a fixed workplace in

Table 1.1   *Incidence of telework on basis of national reports for ten*
              European countries

Country	Percentage share	Operational definition	Intensity	Reference population	Year of data collection
Sweden	32	Home-based	A few hours per week or more	Employees	2013
Finland	28	Home-based + mobile	At least occasionally	Employees	2013
Belgium	20	Home-based	At least sometimes	All workers	2011
Netherlands	15	Home-based + mobile	At least half a day per week	Employees	2014
UK	14	Home-based + mobile	Main job	All workers	2014
France	12	Home-based + mobile	At least rarely	All workers	2003
Germany	12	Home-based	At least sometimes	All workers	2011
Spain	11	Home-based + mobile	Regular place of work	All workers (who work with computers)	2011
Italy	5	Home-based + mobile	Regular place of work	All workers	2013
Hungary	1	Home-based	Regularly	All workers	2014

Sources: Sweden (Statistics Sweden 2014b), Finland (Lyly-Yrjänäinen 2015), Belgium
(Eurostat 2015), Netherlands (Hooftman et al. 2015), UK (ONS 2015), France (DARES
2004), Germany (Brenke 2014), Spain (OECT 2015), Italy (Chiaro et al. 2015), Hungary
(KSH 2015).

order to perform work-related tasks. Other occupations (such as bus
drivers) constantly work away from the employer's premises, but do not
use ICTs during work. Consequently, Brenke (2014) reports a low share
of telework in Germany among shop assistants and in manufacturing
occupations, as well as for construction workers. Similarly in Hungary and
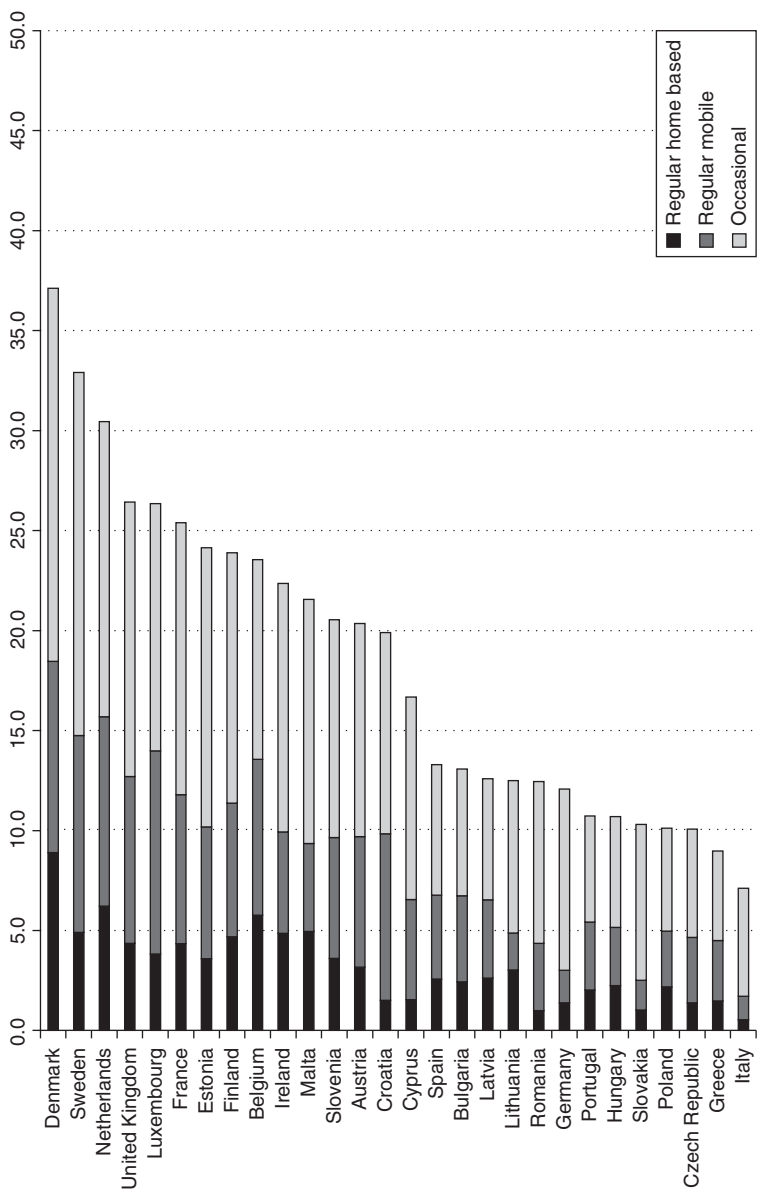
Source: Eurofound (2015).

Figure 1.1 Share of workers by type of telework and country (percentage)

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the Netherlands, the lowest share of telework is to be found among plant and machine operators, as well as elementary occupations and craft and related trades' workers (Hooftman et al. 2015; KSH 2015).

By contrast, the highest share of teleworkers is normally among knowledge workers, that is, highly qualified employees, often in managerial posts (see Hungary, KSH 2015; Netherlands, Hooftman et al. 2015; Spain, INSHT 2011). In the UK, for example, those employees who mainly work from home and who depend on the use of ICTs are overrepresented in the more professional occupations: 43 per cent of them are managers or professionals (compared with 29 per cent among all employees). This suggests that availability of teleworking may be partly related to seniority (Ruiz and Walling 2005). The same tendency is also reflected in the data from the Netherlands: 41 per cent of managers and 24 per cent of professionals use ICTs for work away from their employer's premises, while only 15 per cent do so in the population as a whole. Similarly in Finland, several studies show that telework is more common among employees with higher occupational status (Lyly-Yrjänäinen 2015; Perkiö-Mäkelä and Hirvonen 2013; Sutela and Lehto 2014).

This pattern of telework or mobile telework distribution is also recognisable across economic sectors: telework is relatively scarce in sectors which require the employee to work at a fixed workplace in order to perform work-related tasks (for example, manufacturing), while sectors with high ICT dependence and more flexibility for working location show a larger incidence. Data for the Netherlands, for instance, shows that telework is most prevalent in information and communication (42 per cent), financial and insurance activities (36 per cent) as well as professional, scientific and technical activities (28 per cent) (Hooftman et al. 2015).[1] In Hungary, the proportion of teleworkers is higher in services, among non-profit and non-governmental organisations, but below the average in the public sector (KSH 2015). In Spain, mobile telework seems to be more prevalent in the service sector than in agriculture, construction or industry (INSHT 2011). In Sweden, it has been found that telework is strongly associated with high-status occupations in the advanced service sector (Vilhelmson and Thulin 2016).

Available results based on national data vary substantially across countries in relation to demographic characteristics. The distribution of teleworkers between men and women, for example, is almost equal in Germany (Pfisterer et al. 2013) and Hungary (KSH 2015). By contrast, men are more likely to be teleworkers in Finland (Perkiö-Mäkelä and Hirvonen 2013), the UK (Ruiz and Walling 2005), France (Greenworking 2012), Sweden (Statistics Sweden 2014b) and the Netherlands (Hooftman et al. 2015). The difference ranges from slight – four percentage points in

Finland and six percentage points in the Netherlands – to considerable – in France, 63 per cent of employees working away from the employer's premises and using ICTs are men, while in the UK, the male–female breakdown of teleworkers is 70 per cent–30 per cent. The results of these national sources also differ in relation to the frequency of telework usage between men and women.

Results from the EWCS (Eurofound 2015) are presented in Figures 1.2 and 1.3. They lend support to the hypothesis that teleworkers are mainly found in higher-level professions (managers, professionals and technicians). However, this type of work is not exclusively reserved for one group of occupations. Clerical support workers regularly use ICTs for work away from the employer's premises as well. The EWCS also shows more consistent cross-country results across sectors: telework is more prominent in the services sector, especially in finance and other services, followed by public administration and defence and education. In relation to the type of telework arrangement, regular home-based telework is typical of higher-level professions, and especially in the education sector is related to teachers working from home.

Results for the distribution across demographic characteristics help explain some of the conflicting results of the national reports. The percentage of women is higher in home-based telework (57 per cent) than in mobile telework (34 per cent), while men are overrepresented in the latter. These results are consistent with the national reports when a distinction of these typologies is available in labour force and working conditions surveys. Therefore, it can be concluded that in Europe, in general, women tend to perform slightly more home-based telework than men, whereas men tend to carry out much more mobile telework work than women.

5.   THE EFFECTS OF TELEWORK

The national studies point to a wide, but uneven, spread of telework across the European continent. This should be taken into account when studying the effects of using mobile ICTs for work away from the employer's premises. New technologies such as tablets and mobile phones have the potential to fundamentally alter the way work is undertaken in the 21st century. However, these effects unfold only slowly in some countries and sectors, while they have more profound impacts in others. This section offers a detailed comparative analysis of these effects and their variations for the European case in relation to the following dimensions: working time, work–life balance, occupational health and well-being, and individual and organisational performance. It should be noted early on that the
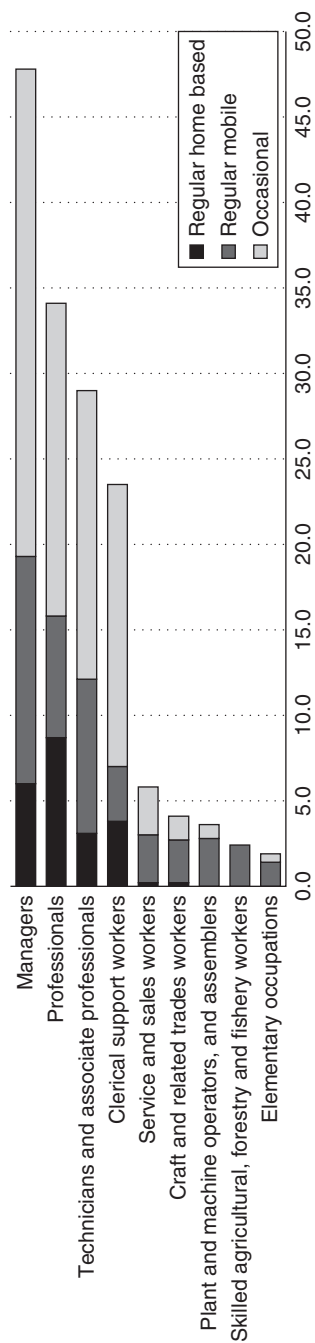
Source: Eurofound (2015).

Figure 1.2 Share of workers by type of telework and occupation (percentage)
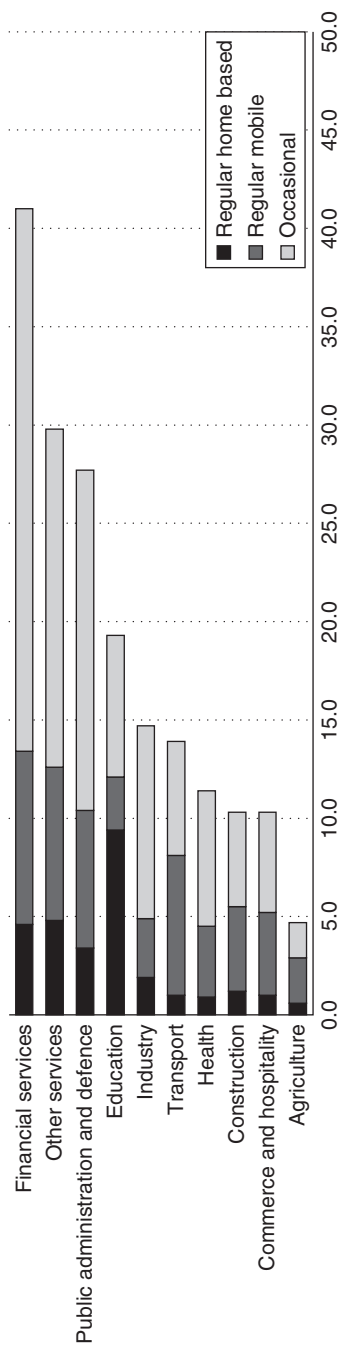
Source: Eurofound (2015).

Figure 1.3   Share of workers by type of telework and economic sector (percentage)

results presented are not interpreted in terms of causality. Results are rarely disaggregated by sector or occupation, which means that the effects are often simply a characteristic of the work itself rather than its location and organisation. A similar problem occurs with the interpretation of effect direction. New policies relating to work–life balance or a strategic reorganisation of work schedules, for example, can make room for the use of ICTs rather than the other way around. Moreover, it is difficult to reach definitive conclusions on the effects of mobile ICTs on the world of work based on the current state of research on this topic. This is either because studies are not on a scale that could provide a sufficient basis for general, nationwide conclusions, or because operational definitions vary across countries or from those used in this chapter. Nevertheless, with the contribution of the EWCS 2015 analysis, in the context of the almost complete absence of comparative research on this topic, the results presented in this chapter can provide some comparative evidence of the effects of telework.

5.1   Working Time and Work Organisation

Almost all surveyed national expert reports show that teleworkers tend to work longer than the average employee in their respective countries. For example, in Belgium, employees report 39 contractual working hours a week; yet their actual working hours vary and are different for teleworkers and other employees. Those employees who always work at their employers premises work 42.6 hours per week on average; teleworkers, however, work an average of 44.5 hours per week (Walrave and De Bie 2005). Similar results are given for Finland (Ojala 2011), the Netherlands (Hooftman et al. 2015), Spain (INSHT 2011), Sweden (Trygg 2014) and the UK (Tipping et al. 2012). Results of the Spanish National Working Conditions Survey show that 19 per cent of workers who remain at the employer's premises work more than 40 hours a week, compared with 24 per cent of those working at home and 33 per cent working at another location.

   The only study whose findings differ from the above is that by Wheatley (2012) for the UK. Findings on basis of the British Household Panel (ONS 2015) suggest that home-based teleworkers have a lower number of working hours than those employees who always work at the employer's premises. Additional variations show up when the results are disaggregated by work location and gender. Mobile teleworkers have around the same working hours as regular employees for both men and women. Home-based teleworkers, in contrast, have a shorter working week on average: 2.6 hours less among men and 7.4 hours less among women. The figures for female employees are substantially lower for all work locations, reflecting their higher propensity to work part-time. These gender differences

are also found in a Finnish study, which shows that 19 per cent of male teleworkers work more than 41 hours, compared with 6 per cent of female teleworkers (Ojala 2011).

Data from the British Labour Force Survey (ONS 2015) includes information about the remuneration of telework. About 80 per cent of overtime worked by teleworkers remains unpaid, compared with 60 per cent of overtime worked by regular employees. One reason for this difference is the blurring of boundaries between formally contracted and informally supplemented working hours. In Finland, 65 per cent of respondents reported that they had been contacted about work-related matters outside normal working hours in 2013, mostly via e-mail. One third of respondents reported that these contacts had been made several times during the reference period (Sutela and Lehto 2014). Similarly, in Spain 68 per cent of workers confirm that they receive e-mails or telephone calls outside normal working hours (Randstad 2012). In Sweden, more than half of the respondents of a survey (53 per cent) were available after normal working hours even on a daily basis (Unionen 2013). One-third of the respondents agree completely or to a certain degree that they often check work e-mails after normal working hours. Stated reasons for this occasional telework vary substantially between mobile and non-mobile workers. About half of all workers who stay at the employer's premises report that they answer e-mails and telephone calls primarily in order to stay reachable for their colleagues. About one-third reports that they do so in order to help customers and clients. In comparison, 74 per cent of mobile workers stay connected in order to be reachable for colleagues and 61 per cent do so in order to connect with clients and customers (Unionen 2013).

The relatively long workweeks of teleworkers and their informal supplemental working hours contribute substantially to an alteration of traditional work schedules. Walrave and De Bie (2005) show for Flemish teleworkers that the planning of a workday looks very different in comparison with a regular eight-hour office day. Almost half the teleworkers (45 per cent) run little errands in between work periods, gear their working hours to family needs or do odd jobs or domestic chores when having a break. Just a minority of the home-based teleworkers (9 per cent) keep to the timetable of the office, whereas others start working earlier or later or quit working earlier or later (36 per cent). Thus, while the working day of teleworkers is typically longer than those of office workers, it is also more 'porous' (see Genin 2016).

Evenings and weekends seem to be particularly prevalent for supplemental working hours with ICTs. Hooftman et al. (2015) report that 70 per cent of Dutch teleworkers frequently or sometimes carry out their work in the evening, and about half of them (50 per cent) do so on Sundays.

In comparison, only 52 per cent of non-teleworkers report to work frequently or sometimes during evenings and 38 per cent do so on Sundays. Interestingly, this working time pattern by teleworkers occurs more frequently on an occasional basis than on a regular basis. Similar results are reported for Belgium (Glorieux and Minnen 2008), Spain (INSHT 2011) and Finland (Anttila et al. 2009). However, working at night (defined as midnight to 6 am) is as unusual among teleworkers as it is among regular employees. Hooftman et al. (2015) report that working regularly at night is even less prevalent among home-based teleworkers (3 per cent) than among other employees (8 per cent) in the Netherlands.

Employers' attitudes towards such atypical work schedules are mixed. According to Pfisterer et al (2013), 29 per cent of the surveyed employers in Germany did not expect employees to be available for work outside normal working hours. Another 28 per cent stated that they expected availability, but only in exceptional cases. Of the surveyed companies, 19 per cent expected employees to be available on weekday evenings and 17 per cent expected them to also be available at weekends. Only 4 per cent expected employees to be available during holidays or at night. In contrast, in France, according to the OBERGO survey, respondents reported that the reason for their longer and more intensive working time and more atypical work schedules while teleworking is the perceived pressure to justify their activity while being absent from the office (Lasfargue and Fauconnier 2015).

In Europe, the EWCS data show that the share of employees working long hours – defined as 48 hours or more per week – is higher among workers doing telework than among other employees, including regular home-based teleworkers and especially among mobile teleworkers (see Figure 1.4). This is the case for both men and women, although men are more likely to work such long hours both in the office (or industrial plant) and in each category of telework, especially mobile telework. These results appear to support the findings from the national studies that teleworkers are more likely to work long hours than their office-based counterparts.

5.2   Work–Life Balance

Studies on the effects of telework on work–life balance typically generate mixed results. Information and communication technologies can be used as tools to better integrate paid work and private life. However, this practice is also prone to blur the boundaries between the two. Harris (2003) argues that this lack of clear boundaries can help to explain why teleworkers tend to have a longer workweek. Paid work is simply spreading further into the time reserved for family and private life. Such ambivalent
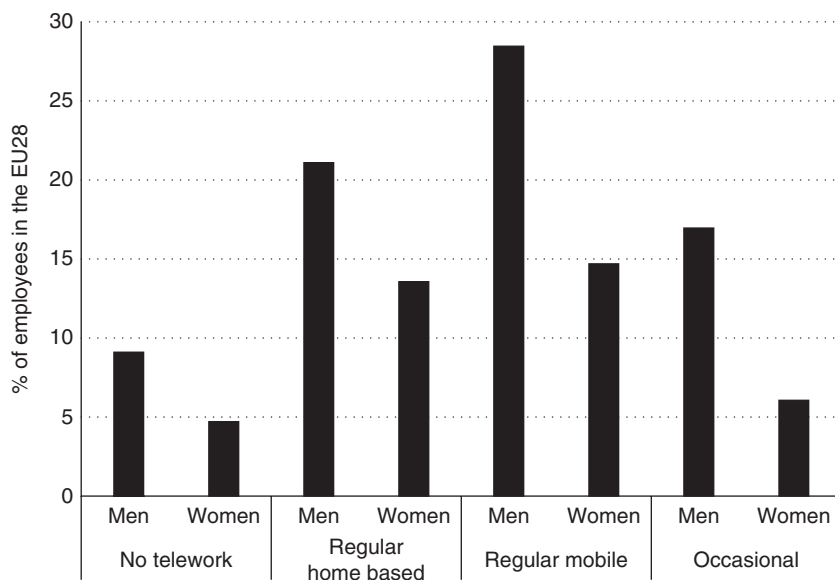
Source: Eurofound (2015).

Figure 1.4 Percentage share of employees working 48 hours or more per week, by type of telework and gender, EU28

outcomes are reported in some of the national reports. Using data from the Finnish Quality of Work Life Surveys 2003 and 2008, Ojala et al. (2014) studied the effects of both telework and informal overtime work at home on the work–family interface. The findings suggest that flexible working schedules enable employees to integrate paid work and private life, but also that family life is being infringed upon. According to this study, home-based telework is not only positive for the work–family interface. In particular, working unpaid overtime at home – that is, supplemental telework– increases feelings of guilt about neglecting home issues, and employees working informal overtime at home are more likely to report that work disrupts family life (Ojala and Pyöriä 2013). Such ambiguities are also reflected in a study of teleworkers in Germany. While 79 per cent of 505 employees surveyed stated that working from home helped them to reconcile work and family life, 55 per cent stated that it caused private and working life to overlap too much (Pfisterer et al. 2013).

The studies from Finland and Germany suggest that positive and negative effects on work–life balance are essentially cancelling each other out. However, it should be noted that many workers prefer to integrate their

work and personal lives at the expense of blurring boundaries and longer workweeks. A study on telework in France suggests that this form of work contributes to longer working hours, but also to an enhanced perception of work–life balance (Lasfargue and Fauconnier 2015). Respondents stated that longer working hours are balanced by time saved through, for example, shorter commuting hours. Consequently, 95 per cent of the respondents stated that telework has had a positive impact on their quality life both at work and away from it; 89 per cent reported a higher quality of family life, and 88 per cent perceived a better work–life balance. Results from the Belgian national study also show a tendency towards a positive attitude among teleworkers. Walrave and De Bie (2005) report that telework has a positive impact on work–life balance for 56 per cent of teleworkers, no impact for 34 per cent and a decrease for 11 per cent. Positive net effects on work–life balance are also reported for the Netherlands (Peters et al. 2009), Italy (Boni and Vultaggio 2013) and Hungary (Magyar Távmunka Szövetség 2016).

Positive aggregated net effects in the described studies can give the impression that telework generally has more positive than negative effects for workers. However, readers of these studies should take into account that the effects follow a gender imbalance. Wheatley (2012) found that female home-based teleworkers perform extensive housework and are more likely to work shorter hours in their paid work. Male teleworkers, by contrast, tend to have a work pattern that is more akin to full-time hours and contribute little by way of housework. An interesting report from Spain, however, shows how ICTs can help to break down gendered working patterns. In-depth studies with male home-based teleworkers show that they become adapted to their new work pattern once they start to take over more care responsibilities. They value their newfound flexibility and do not want to go back to rigid work schedules. However, the report also concludes that it is not possible to establish a clear cause-and-effect relationship between a flexible work environment (with or without ICTs) and greater parental involvement in childcare. That is, it is not clear if the option of flexible work arrangements is a cause, or a consequence, of parents' involvement with their children and their interest in work–life balance (Miyar Cruz and Rimbau Gilabert 2012).

Results of the EWCS 2015 reflect the described ambiguities in relation to the effects of telework on work–life balance. Home-based teleworkers are particularly prone to work in their free time in order to meet work demands. About 60 per cent of both men and women do so either on a daily basis or several times per week. In comparison only 10 per cent of those who always stay at their employer's premises report the same blurring of boundaries. The shares of mobile teleworkers fall in between those two
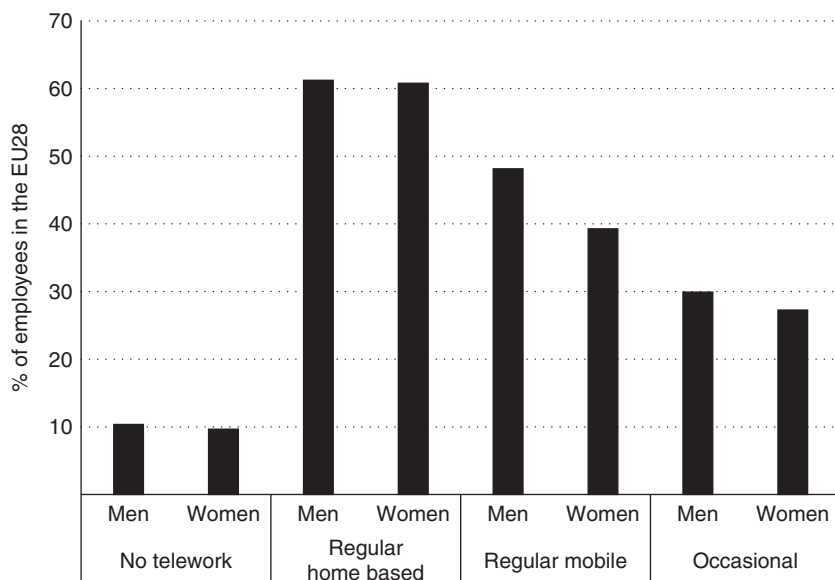
Figure 1.5   *Percentage share of workers who report working in their free time to meet work demands daily or several times a week by type of telework and gender, EU28*

extremes (Figure 1.5). Yet, this blurring of boundaries does not seem to translate into strong negative effects for home-based teleworkers. They report that their working hours do not fit well with their personal life at a slightly lower rate than those employees who always work at the employer's premises. The share for mobile telework, in contrast, is two times higher than that for home-based telework. Blurred boundaries seem to be more problematic for this group. This is particularly the case for male teleworkers (Figure 1.6). They report negative effects of blurred boundaries at a slightly higher rate in relation to both mobile telework (29 per cent for men and 25 per cent for women) and occasional telework (17 per cent for men and 14 per cent for women).

5.3   Occupational Health and Well-Being

Maintaining standards for occupational health and well-being in the transition from stationary to mobile work is challenging both for employers and employees. Workers are by definition on the move and could be
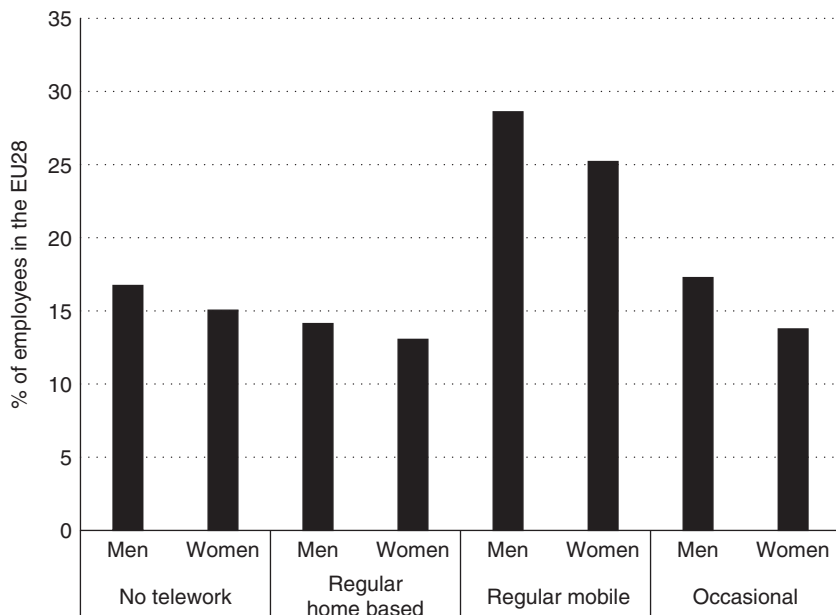
*Figure 1.6   Percentage share of employees who report that their working
                hours do not fit with family or social commitments, by type of
                telework and gender, EU28*

subject to health risks that do not exist to the same extent at the employer's
premises. However, questions of health and well-being also move beyond a
critical discussion of ergonomics at work. A look into the national reports
reveals a growing interest in other detrimental aspects of telework, such as
stress and isolation, but also positive effects, such as reduced commuting
time and increased autonomy. Such diverging interests reflect the strong
relationship between work–life balance, on the one hand, and health and
well-being, on the other. Excitement and concern about the impact of ICTs
are directed to these dimensions of work jointly. Corresponding results
from the expert survey are reviewed in this section and are compared to
analyses with data on health and well-being in the EWCS 2015.

   Some studies in the national reports emphasise that the growing work-
related use of mobile ICTs can have detrimental effects on occupational
health. Hooftman et al. (2015) report for the Netherlands that teleworkers
use visual displays for a longer time per day (5.8 hours) than other workers
(3.5 hours). These results are consistent across sectors. These workers are

exposed to a higher risk of typical health issues among display users, such as eyestrain, headaches or muscular pain. These results were underlined by a conference in the Madrid region (organised by Unión Interprofesional de la Comunidad de Madrid, UICM) which took place in April 2014. The results showed that the main health concerns arising from the use of mobile technologies are neck pain and tendon pain in the wrists and fingers. Ophthalmic problems and sleeping disorders may also occur (Unión Interprofesional 2015).

More ambiguous results are found regarding the relationship between telework and stress. In the UK, Kelliher and Anderson (2010) note the apparent paradox between the high satisfaction among flexible workers (teleworkers) and work intensification. They argue that part of the reason why there is greater work intensification for teleworkers is because of the social exchange between employers and employees: in return for the ability to work flexibly, workers may respond with more effort (often called 'reciprocity'). However, this seems to be just one element of the equation. A report from Grant et al. (2013) confirms that there are risk factors associated with ICT use, resulting from intensification and lack of time to recuperate, which could go beyond the simple social exchange between the employer and the employee. The trend for teleworkers to work longer can, at least partly, explain Grant's finding.

Studies from Finland and Germany reflect the ambiguity of telework in relation to stress as well. Kandolin and Tuomivaara (2012) analysed data from the Finnish Work and Health Survey 2009 and found that flexibility regarding the time and place of work correlates positively with employee overall well-being. However, the Finnish national study also highlights the increased risk of stress when engaged in telework, due to less time for recovery (Ojala and Pyöriä 2013; Vesala and Tuomivaara 2015). In similar vein, the study of Hammermann and Stettes among digitally networked employees in Germany shows that they are largely satisfied with their level of work intensity, but only if they are also given a sufficient autonomy to set their own work schedules (Hammermann and Stettes 2015). Research by Walrave and De Bie (2005) for the case of Belgium shows that stress levels decreased for 43 per cent of employees through the shift from regular office work to telework. However, 46 per cent of them saw no significant change and 11 per cent reported an increase. Hence, the majority of teleworkers did not experience any change in work pressure at all.

Studies on the working time management of teleworkers indicate a trade-off between autonomy and isolation. In the UK, Beauregard's study of Advisory, Conciliation and Arbitration Service (Acas) employees (Beauregard et al. 2013) found that teleworkers enjoy more freedom when it comes to setting their own schedules. However, they also feel more

isolated and miss day-to-day interactions with co-workers. Similar findings are reported from Italy. According to Manager Italia (2011), based on a survey of managers of companies in the services sector, a serious threat to workers' well-being arises from the lack of social interaction and loneliness (42 per cent), as well as the lack of help from colleagues when working (30 per cent). In Hungary, a web-based survey among teleworkers shows that they report a weakening of social ties and support, as well as diminished company loyalty and motivation. Findings from Finland suggests that such isolation can be linked to higher burnout levels among teleworkers (Ojala and Pyöriä 2013; Vesala and Tuomivaara 2015).

Findings based on the EWCS suggest that employees themselves feel that telework takes a toll on their health and well-being. Negative effects are reported more frequently by employees who are performing mobile telework (32 per cent) or home-based telework (27 per cent) than by office-based employees (23 per cent) and those who only occasionally work with ICTs away from the employer's premises (20 per cent) (Figure 1.7). Moreover, working with ICTs away from the employer's premises seems to be related to slightly higher stress levels. Those who do mobile telework report at a higher rate (40 per cent) that they feel work-related stress 'always' or 'most of the time' when compared with those who work exclusively at their employer's premises (25 per cent). Shares for home-based (31 per cent) and occasional teleworkers (33 per cent) are also higher, but not to the same extent (Figure 1.8). These differences reflect the results of the
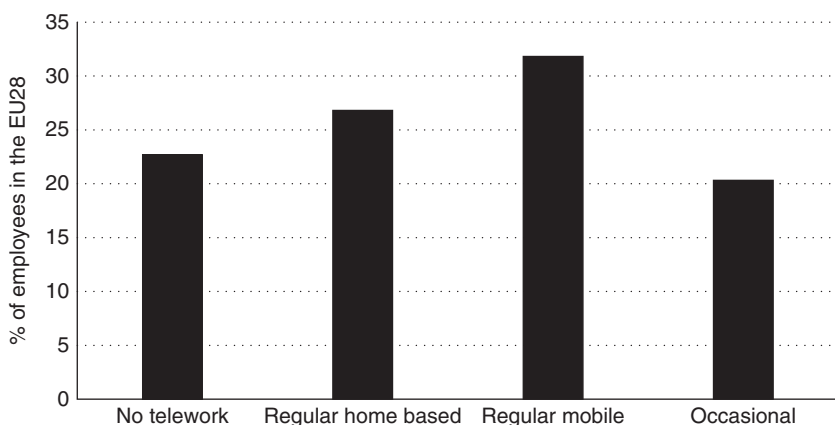
Source: Eurofound (2015).

Figure 1.7   Percentage of employees who report that work affects their health negatively by type of telework, EU28
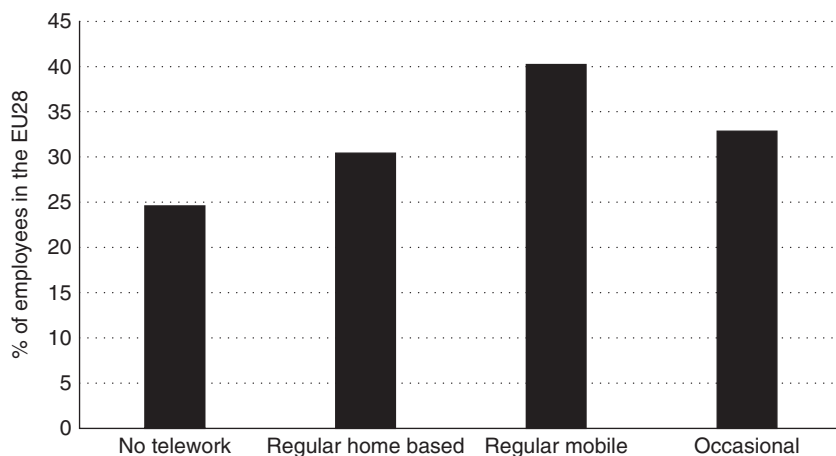
Figure 1.8   Percentage of employees reporting they feel stress at work 'always' or 'most of the time' by type of telework, EU28

studies reviewed above in respect of both the ambiguity and the net effects of telework on occupational health and well-being. Working with mobile ICTs away from the employer's premises does take its toll on workers in terms of stress and blurring boundaries between paid work and private life. However, this form of work entails positive elements as well. Workers are more autonomous and can reduce their commuting hours with the help of new technologies. This inner ambiguity can help to explain why net effects of telework on health and well-being are only felt to be modestly negative by some workers in the national studies described above.

5.4   Individual and Organisational Performance

Telework is not only attractive to employers because it allows them to offer enhanced autonomy and work–life balance to employees. Information and communication technologies also enable a reduction in office space and a closer connection with clients and customers. These innovations are promising as regards productivity and a company's overall performance. Yet, such effects cannot be treated as a given. The causal link between telework and job performance is not as clear as is often presumed, but depends to a large extent on the balance between communication and location that is inherent to all forms of telework. Moreover, reviews of studies in earlier sections highlight that telework can have negative or, at best, ambiguous

effects on the health and well-being of employees. It is therefore important to critically discuss whether and to what degree such ambiguities translate into improved performance on both the individual and the organisational levels.

Results for the Swedish case suggest that telework is largely welcomed by employers. Almost 80 per cent of them state that allowing employees to sometimes work away from the employer's premises generally leads to higher productivity (André 2013). A UK study similarly suggests that flexibility and autonomy have a role in improving performance, but with some nuances (Beauregard et al. 2013). According to the study, productivity is higher among home-based teleworkers, and two main reasons are put forward for this. First, home-based teleworkers tend to work more unpaid hours than their office-based counterparts, so an increase in productivity is partly due to an increase in actual working time. The second explanation is that home-based teleworkers are more productive because they experience fewer interruptions than office-based workers.

Similar results were found in France: according to a study by the research institute OBERGO, 84 per cent of teleworkers stated that their productivity increased owing to telework, and 81 per cent said that their telework is of higher quality than their office work (Lasfargue and Fauconnier 2015). The reasons given in the French report also relate to the individual, micro-level organisation of work aspects, such as: teleworkers being less frequently interrupted by colleagues or their superiors; spending less time answering telephone calls or communicating via e-mail; and having more time to perform work as that they do not have to travel to and from the office. Both the French and UK contributions suggest that partial telework seems to have a higher impact on performance/productivity than the more extreme cases of no or high levels of telework.

For companies, telework is found to be a way of improving staff retention. Telework (especially regular home-based telework) is becoming an increasingly important strategy among workers struggling to combine the daily use of time for various purposes at different locations, as investigated by, for example, Wheatley (2012) for the case of the UK. Therefore, telework can be a way to attract those workers. Kelly et al. (2008) found for the same case that organisations use telework as a recruitment tool to attract high-skilled professionals, the main group of workers demanding flexible work schedules.

One of the barriers to using telework for improving performance is the complexity and skills needed to use ICTs effectively, especially for some groups of workers. According to the Spanish contribution, 26 per cent of small and medium-sized enterprises (SMEs) report such problems. In the UK, arguments about flexible working have suggested that without

some sort of company policy in place, there will be ICT skills gaps that employers will struggle to fill. In Sweden, a survey focused on individual performance was conducted by TNS Sifo on behalf of TDC, a company that provides IT solutions to corporations and organisations (TDC 2015). The 1027 participants were asked if they encountered any obstacles when working away from the office. The results show that many employees had experienced technical difficulties that hindered their work.

In Belgium, Walrave and De Bie (2005) showed that teleworking is not feasible for certain jobs (27 per cent of respondents). They identified concerns regarding the lack of supervision of employees (17 per cent) as another barrier for implementing telework to obtain performance advantages. According to the Swedish national study, managers found coordinating telework costly, the required programmes difficult and, in particular, controlling remote workers problematic. Issues of trust, control and power were regarded as the main obstacles constraining the implementation of teleworking programmes and favouring professionals rather than clerical workers.

In conclusion, telework seems to generally enhance performance, owing to a more efficient use of the working time and space, longer working hours and higher levels of motivation related to work autonomy. These experiences are taking place at the same time that there are still issues related to trust and control reported by managers and employers.

6.   POLICY RESPONSES TO TELEWORK

In recent years, policies have been formulated in relation to the promotion and organisation of both home-based and mobile telework aimed at fostering the positive effects of telework and at reducing its negative effects. These policy responses come from various actors and at various levels: national governments, national and sectoral social dialogue, and at company or workplace level. The particularity for all policy responses in the case of Europe is the supranational structure under which coordination and legislation for telework operates. Some legislation and social dialogue are embedded into directives or agreements reached on the level of the European Union (EU). The discussion of policy responses thus deviates from the other sections in this chapter. A first subsection will sketch the development of supranational policy-making in relation to telework on the EU level. National-, sectoral- and company-level responses are then discussed in reference to this overarching structure.

6.1   Supranational Level

Although there are no EU directives specifically focused on telework, several have particular relevance for workers subject to these types of work arrangements. For example, the EU Working Time Directive specifies a number of provisions designed to protect the health and safety of workers across the EU, including those performing telework. These provisions set up a legal framework determining a maximum of 48 working hours per week, including overtime. The reference period should not exceed four months, but may be extended up to six months. Under certain conditions (for example, in the case of a collective agreement), it may be extended up to a maximum of one year. The Working Time Directive also provides for minimum periods of consecutive hours of daily rest (11 hours) and weekly rest (35 hours); the latter can be averaged over a two-week period. Other relevant EU directives in the field of occupational health and safety are related to the use of ICT to work away from the employer's premises. Directive 89/391 – the OSH 'Framework Directive' – does not differentiate between different work locations, but the European Framework Agreement[2] on Telework (2002) specifies that: 'The employer is responsible for the protection of the occupational health and safety of the teleworker in accordance with Directive 89/391 and relevant daughter directives, national legislation and collective agreements.'

In terms of specific arrangements related to telework at European level, the European Framework Agreement on Telework is of paramount importance. It was concluded between the social partners (European Trade Union Confederation, ETUC; Business Europe; the European Centre of Employers and Enterprises, CEEP; and the European Association of Craft, Small and Medium-Sized Enterprises, UEAPME) in July 2002. This framework agreement was ground-breaking because it was the first time an agreement, which had to be implemented directly within member states' different industrial relations systems, was concluded in an autonomous social partnership. The agreement provides a general European framework for people doing telework, which is to be implemented in accordance with national procedures and practices.

In this agreement, telework is defined as follows: 'Telework is a form of organising and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employer's premises, is carried out away from those premises on a regular basis' (European Framework Agreement on Telework, Article 2). This definition is intentionally broad in order to cover both mobile and home-based telework. This means that it can be adapted flexibly to technological advancements and new forms of work. It also

implies that the definition relates to many of the studies mentioned in this chapter. Central elements of the agreement are the voluntary character of telework, equal treatment between teleworkers and regular employees, the provision of a safe and secure workspace despite the difference in location, and respect of the employees' collective rights. Most of the EU member states have translated the European Framework Agreement on Telework into national-level social partner agreements. Ireland and the UK, which do not have a national system of collective bargaining, have introduced guides and codes of good practice. Other countries have transposed the agreement into their national labour laws.

6.2 National- and Sectoral-Level Policies

In Finland, teleworking has been on the national agenda and in several government programmes. In 2006, the Finnish government made the decision to promote teleworking, based on tripartite preparatory work. The main objectives were to improve the quality of working life, increase productivity and promote ecological and sustainable ways of working. In 2007, an employer guide for teleworking was published by the Finnish Ministry of Employment, financed by the European Social Fund, to support the development of management and working arrangements towards better productivity and quality of work (Pekkola and Uskelin 2007). In 2009, the Finnish Ministry of Employment and the Economy published a report on teleworking, providing practical recommendations and measures to facilitate the introduction of teleworking in companies and organisations. While in Finland teleworking has generally been considered to be a win–win arrangement if properly organised, white-collar unions have recently started to focus on the issues of work–life balance and health and well-being for those workers who use ICT away from the employer's premises on a regular basis, particularly the issue of unpaid overtime, as illustrated by a campaign of the Federation of Professional and Managerial Staff, YTN (see website at 8tuntia.fi, accessed 4 January 2019).

Hungary was the first country to incorporate the European social partner agreement on telework into the national regulatory framework, in consultation with and involving social partners. The legal recognition at national level was officialised through a law (Act XXVIII of 2004 concerning the modification of certain employment related acts) whose provisions on telework were later incorporated into the labour code (Act XXII of 1992) as a separate chapter. In 2003, the Hungarian government developed a comprehensive mid-term strategy on the Hungarian information society (*Magyar Informacios Tarsdalom Strategia*). In the same year, the Minister of Labour entrusted the newly established Telework Board to develop a

roadmap for the introduction of telework in Hungary. While a number of institutions were subsequently created, such as a telework centre in the Budapest Labour Market Intervention Centre (dealing with the training of potential teleworkers), it lost its emphasis on telework in 2011 when it was renamed the Turr Istvan Training and Research Centre.

Although telework is not very popular in Italy, a draft law on agile work (*lavoro agile*) was nevertheless drawn up, in January 2016, aimed at increasing productivity and facilitating work–life balance. Specifically, the draft law defines agile work as a type of employment contract with the following characteristics: it is possible to fulfil some work duties away from the employer's premises within the working time limits set in legislation and collective agreements; it is possible to use technological tools in order to carry out the work; and there is no fixed work station during those times when work is being done away from the employer's premises. Furthermore, the draft law establishes employer responsibility for employee safety and health as well as for the correct functioning of the technological tools provided to accomplish work tasks away from the employer's premises. Every enterprise must sign an ad hoc agreement for the introduction of agile work: these agreements regulate the ways through which the employer exercises its managerial power as well as establishing rest days and the guarantee of the right to disconnect. The draft also notes the principle of equality of treatment (economic and legislative) between the agile worker and an employee working at the employer's premises in the same company.

In Spain, the only national-level legislation related to telework is included in the Law 3/2012 regarding urgent measures for the reform of the labour market (*Ley 3/2012 de 6 de Julio, de medidas urgentes para la reforma del Mercado laboral en Espana*) regulates some aspects of distance work (telework). Telework agreements need to be formulated in writing, and the teleworker has the same rights as the other workers concerning health and safety, wages, training and representation. This provision was included because of the introduction of new forms of employment relationships based on the use of ICT. The objective is to promote innovations in work organisation, improve work–life balance and increase employment opportunities. It is only a preliminary and approximate legal framework, with many aspects to be further regulated later. However, at the local level there are some interesting examples, such as the community of Madrid, which created an intermediation service for psychosocial risks (*servicio de intermediacion en riesgos psychosociales*). This service deals with, for instance, mental health issues, such as increasing stress due to higher uncertainty or lack of boundaries between work and private life. Telework is more actively addressed in social dialogue in Spain. The Second

Agreement for Employment and Social Dialogue 2012–2014 (*II Acuerdo para el Empleo y la Negociacion Collectiva 2012–2014*) acknowledges that telework is an innovative work organisation form. It also states that telework should be voluntary and reversible, and should involve the same rights as those for workers who do not work away from the employer's premises. The agreement notes the need to further regulate aspects such as privacy, confidentiality, training and health and safety. Furthermore, in Spain a number of collective agreements refer to these aspects, particularly in relation to health and safety. An example is the sectoral collective agreement for the chemical industry (*convenio colectivo general de la industria quimica*) setting out the conditions for telework in that sector.

In Sweden, while rules and regulations related to the labour market are almost exclusively decided by the social partners (who do not consider telework to be a particularly important issue for negotiation or regulation), the Swedish Work Environment Agency deals with issues related to work environment and workers' rights. In relation to teleworking, the authority has highlighted the issue on its website by publishing articles related to computer work in the home and IT stress; for example, the overwhelming amount of information available and the feeling that someone should be constantly available to respond to work demands via mobile phone or e-mail. The main message of this agency is that telework is a joint responsibility and that the employer is partly responsible, whether there is a written agreement for telework or not.

In the UK, the government has drafted a guide for teleworking in the wake of the European Agreement on Telework. More broadly, in the UK all employees have (since 2014) the right to request flexible work (including working from home), subject to a qualification period of two years. Previously, this right to request was only available to carers, including the parents of young children. However, the employer is not obliged to accept the employee's demand for flexible working, and are only required to give due consideration to requests for flexible work made by their employees. Many larger companies in the country had similar procedures, including extension to all employees, even before the new legislation came into force. An example of social dialogue on telework in the UK is the negotiating guide for teleworking in local administration by the trade union UNISON (UNISON 2014). It was generated in reference to a number of agreements already in place. The guide summarises a number of issues such as the regular review of home-based telework policies, the types of work eligible for home-based telework and the procedures to terminate the agreement. The guide also states that one of the key elements to examine, in order to determine whether the type of work is suitable for telework or not, is whether clear objectives can be established for it.

In the Netherlands, the Working Conditions Act was revised on 1 July 2012 to broaden the definition of telework and working from home to locally independent work. Performing paid work in the living quarters or another place chosen by the employee away from the employer's premises falls under the Working Conditions Decree (*Arbowet*), including all health and well-being legislation. According to this decree, the employer has a duty of care, which includes when an employee works from home or elsewhere, away from the employer's premises, and they should check whether the employee is working according to the Working Conditions Act. The nature of this check is not specified, but it may include the provision of information, registering working hours, and having discussions about performance and appraisal interviews for the employee. Ultimately, the employer is liable. If an employee refuses to follow an instruction of the employer, then the employer may refuse them the option to telework. Examples of sectoral-level collective agreements include the sectoral agreement for childcare in children's centres and childminding (*AAV CAO 2013 kinderopvang voor kindercentra en gastouderschap*), which establishes an allowance for teleworking, both for teleworking and also for the use of space or a room at home, in cases where the worker works more than 70 per cent from home, and the employer has to provide them with a computer, modem and software. The sectoral social agreement in welfare and social services (*AVV 2015/16 welzijn en maatschappelijke dienstverlening*) is a specific collective agreement that includes an allowance for teleworking.

In Italy, the inter-confederal agreement of June 2004 implemented the European Framework Agreement on Telework in the private sector. In addition to the general principles already mentioned (such as the voluntary nature of telework and its reversibility), it refers to the right of workers to get appropriate training in the necessary ICT equipment, in relation to the characteristics of this type of work arrangement. It also establishes that costs of communication, purchase and maintenance of ICT devices are the responsibility of the employer, who is also responsible for the health and safety of the workers. At national level, the 2011 agreement on work–life balance policies explicitly mentions teleworking as a family-friendly measure that could be considered by companies in terms of promoting flexibility. Moreover, several social partner agreements established at industry level in Italy contain clauses governing telework, such as telecommunications, chemistry, commerce, electricity, services and distribution, bread-making and food processing for SMEs, ceramics, insurance, social and third sector companies, and the textile and clothing industry. The rationale behind these industry agreements is primarily to promote work–life balance.

The 'right to be disconnected' and related policies

A new policy approach, known as the 'right to be disconnected', attempts to limit the negative effects of telework by protecting employees' non-working time to ensure adequate rest periods and to address work–life conflict and well-being issues.

The policy issue of constant availability for work due to the constant connectivity enabled by ICTs is still emerging, for which only a few initiatives at national or sectoral level, in a handful of countries, have been undertaken thus far. The majority of these policy responses have taken place at company or workplace level, most prominently in France and Germany. In the majority of cases, different agreements – both at sectoral or company level – have tried to grant a type of 'right to be disconnected' by limiting the functioning of e-mail servers after normal working hours, as well as during those periods that should be considered rest times for workers (such as weekends and holiday periods).

As regards company-level agreements related to the right to be disconnected, some examples from major automobile companies in Europe have been developed and implemented in recent years; in France by Renault and in Germany by BMW and Daimler. Also, several sectoral-level agreements related to the right to disconnection (*droit à la déconnexion*) have been signed in France. For example, the telework collective agreement in the French telecommunications sector (*Accord relatif au télétravail dans la branche des telecommunications*) of 6 October 2006 specifies that the employment contract must include a provision specifying the time periods during which the teleworker can be contacted. The right to switch off has also been introduced in the oil sector agreement, in which the minimum of 11 hours of daily rest between working days are protected.

However, the most important initiative regarding the right to disconnect has been addressed by a legislative initiative. France introduced a specific article on the right to be disconnected (*le droit à la déconnexion*) in the most recent revision of the French labour code, in 2016.[3] The new legislation in France, to implemented from 2017, includes an obligation for employers and employees in every company with 50 employees or more to negotiate 'the use of ICTs', with a view to ensuring respect for the rest and holiday periods of workers and their personal and family lives. If no agreement is concluded, then the employer needs to adopt a charter after consultation with worker representatives. It is up to the employer to define the modalities to be developed to guarantee the right to be disconnected. Some possible means of ensuring that such time periods are respected include blocking e-mail access during those times and mutual agreements between employees and their superiors regarding respecting such time periods.

6.3   Company-Level Policies

In addition to recent examples of company initiatives related to the right to disconnect, national studies also include other company policies and practices, most of which relate to home-based telework rather than to other telework arrangements. Depending on the country, these are based on social partner agreements or are unilateral company practices. In the examples that follow, selected from the national studies, it is clear that companies often decide to introduce telework in order to address employee needs for work–life balance, including regarding the location of work and their family responsibilities.

In DRV Braunschweig Hannover, a statutory retirement insurance company in Germany employing 2000 employees (65 per cent women), an establishment-level social partner agreement on work–family reconciliation policies has been in place since the 1990s. In this company, employees have the right to work from home if they have care responsibilities for children (under 18 years) or other family members. The company provides the hardware and software needed for working from home. Rules were introduced to establish when teleworkers needed to be available for working from home, with a view to facilitating cooperation between office-based workers and teleworkers. Working hours are fixed between the employee and their direct superior (between 0600 and 2000), and once a month the teleworker and their supervisor meet to discuss working time and other issues. In addition, employees can participate in stress or time management seminars. This practice has been introduced together with other working-time arrangements that could better enhance the reconciliation of work and private life, such as flexible part-time work, job sharing, sabbaticals and a parent–child room. Around 135 employees participate in the teleworking options, the majority of whom choose designated times for working in the office (to ensure good coordination with colleagues and management) and for working from home. As a result of this initiative, absenteeism was reduced by 20 per cent, and the average number of months spent on parental leave fell from 19 months to 14 months. Staff surveys show that employees appreciate the freedom to adapt their working hours to their private needs, as well as the reduction in commuting time.

In Belgium, KBC Bank provides another example of how telework company practices can have a positive impact on work–life balance. The company introduced a new work organisation plan in 2010, in which three possibilities were offered: working in a more decentralised manner by creating satellite offices in administrative buildings of the bank closer to employees' homes; facilitating telework by providing laptops and mobile phones; and introducing flex desks. The number of home-based

teleworkers in the bank is increasing year by year. One of the conditions, however, is to be at the employer's premises for at least three days a week. Telework is not possible for those who work less than 70 per cent of a full-time job. The results of an employee satisfaction survey show work–life balance has increased for 87 per cent of teleworkers there. In addition, 83 per cent said that they can work with greater concentration, 72 per cent feel less stress at work, 68 per cent are more motivated and 62 per cent can better organise their work.

In France, the same aim of achieving a better work–life balance for workers was behind the choice of the Thales Group, where a group-level agreement on telework was concluded on 26 April 2013 for a two-year trial period. This is detailed in a company-level agreement of 24 April 2015, which provides practical guidelines to help social partners introduce and manage telework at local level. This agreement initially provided for telework one day a week, which was later extended to two days a week. Eligible employees have been in their position for six months and in the group for one year. They must work either full-time or a minimum of 80 per cent full-time hours. In each Thales company, 8 per cent of the workforce telework for two days a week and 10 per cent telework for one day a week. The agreement also contains a provision regarding the right to disconnect outside normal company opening hours or at least during the minimum rest period between two consecutive working days (11 hours), in accordance with minimum legislative standards (see section 6.1 on the Working Time Directive). Similarly, PSA Peugeot Citroën introduced home-based telework in 2011 for a trial period after consultation with the social partners. It was introduced and evaluated as a 'new social contract', whereby employees and employers evaluated it positively as leading to a reduction in stress related to commuting, better work–life balance, a gain in efficiency for employees, and higher motivation and efficiency for employers. Telework is possible for all employees who have been in the company with a permanent contract or have at least one year of seniority in the group. Six criteria need to be fulfilled: sufficient autonomy, mastery of skills, mutual trust, compatible work organisation, a telework-compatible position and a properly equipped work space. Telework is voluntary both for employees and their supervisors. This case reflects that in some companies the right to telework is limited to certain workers according to criteria such as employment status.

In Italy, company examples can be found across a range of different sectors, each with its own motivation and modalities. Most have involved consultation with social partners or have been included in a collective agreement. The University of Palermo introduced the possibility of teleworking for three days a week maximum to increase workers' well-being

and motivation, improve their work–life balance and to adapt to a different work culture (with a focus on goals for workers, rather than physical presence at the company). A company-level collective agreement was concluded in Telecom Italy, whereby workers can work up to a maximum of four days a week from home. Another driver there was improving the company's capacity to cope with difficult economic situations and reducing absenteeism rates and labour costs.

Along similar lines, Indra, a multinational Spanish consulting and technology company, introduced telework in 2002 (first via a pilot) to improve workers' motivation and satisfaction, and to increase performance. It has a dual objective: to facilitate work–life balance and working time flexibility; and to increase competitiveness, while reducing absenteeism and turnover. Telework is voluntary, but needs to be approved by the employee's supervisor. One of the requirements is that the tasks need to be 'teleworkable'; the telework period can be between 25 per cent and 80 per cent of the total working time. The same employment conditions are maintained, and the employer pays for any necessary investments in ICT infrastructure.

More innovative approaches have been developed in Finland and the Netherlands with apparent positive consequences for companies and employees. The Finnish Transport Agency conducted a one-year experiment with telework. They wanted to find out if work efficiency could be improved by giving employees more freedom as to the time and location of their work. Positive consequences included: improved work–life balance for workers, reduced commuting time for workers, greater efficiency regarding work tasks that require a high degree of concentration, and a change in organisational culture, whereby trust and responsibility have become central.

KPN, a telephone company in the Netherlands, has implemented what they call 'a new way of working' or 'a new world of work' (*het nieuwe werken*). This refers to work that is independent of time and place and is largely based on the use of ICTs. The works council in the company was involved throughout the process. The aim is to share with employees the benefits derived from this way of working. It involves greater time and space flexibility for work, more efficient use of resources, and productivity optimisation by stimulating communication and collaboration. This process started with a pilot in 2009 and was later extended, through a series of implementation stages. A corporate programme manager was employed to coordinate the introduction of this new way of working, and guidance was provided by an external consultant, for all employees seeking to reach an optimal way of working and collaborating. All employees received equipment needed to work from home and there was a reduction in office

space, which has been reorganised into four types: open work spaces; closed work spaces (for work requiring concentration); open work and meeting spaces; and closed meeting spaces. Quantitative and qualitative tests that were carried out before and after the pilot process indicated that the initiative resulted in lower rates of sickness absenteeism, better work satisfaction, reduced commuting times and an increase in working from home. Some unexpected issues arose. For example, the workplace became quite untidy, probably because each individual felt less responsible for keeping the shared spaces clean. Also, employees who did not start work early in the morning could find themselves without a workstation when they arrived at the office.

In Sweden, at the computer giant Hewlett Packard, the senior safety representative, together with the Human Resources (HR) department, put a teleworking policy in place. This policy prescribes that telework should take place for a maximum of three days a week; on the remaining days, employees must work at one of the company's premises. The rationale behind this relates to the social aspect of work and the importance of colleagues seeing each other, not only for improved efficiency but also for employee well-being. It is interesting that this type of partial-teleworking policy seems to be common in many different organisations, both public and private, in a wide range of countries.

The increase in telework across countries analysed in this report, and awareness of the positive and negative effects for both workers and employers, are encouraging policy-makers to include provisions in national laws related to this work arrangement. This process was fostered in the EU by the Framework Agreement on Telework (2002), and it is still evolving in some countries to incorporate new potential benefits and rights, as well as to protect workers from potential negative side effects. Such developments are mainly related to the improvement of work–life balance and, to a lesser extent, occupational health and well-being (for example, mental well-being). Initiatives are being considered and/or developed to monitor the amount of time a worker is available for work and is actually working, with a view to safeguarding their rest periods. In this regard, Finland's sustainable work and well-being approach is interesting. In most countries, legislation tries to ensure equal rights in relation to working and employment conditions between teleworkers and workers at the employer's premises. Issues such as labour market participation, business continuity and organisational performance seem to be more relevant outside Europe, for example in Japan and the US (Eurofound and ILO 2017).

7. CONCLUSIONS AND OUTLOOK FOR THE FUTURE

The review of studies on the driving forces, incidence, effects and policy responses in relation to telework indicates that mobile ICTs have had, and will continue to have, a profound impact on work in Europe. Virtually all countries on the continent have experienced a transition both from manufacturing to service jobs and from single-earner to dual-earner households in some form. These developments are fuelled by technological advancements and, not least, the possibility of working away from the employer's premises with help of mobile ICTs. Several particularities in relation to this development could be uncovered for the case of Europe. Comparative analyses show that telework is spreading with varying speeds across countries, sectors and occupations. These variations are primarily connected to the pace of technological development, but also to each country's specific economic structure, working culture, and the nexus between workplace flexibility and social security. Owing to a lack of systematic comparative research on the topic, it is difficult to estimate whether and to what degree these conditions act as catalysts for the effects of telework. However, the results of the reviewed studies indicate that they are likely to do so in an ambiguous way, including both advantages and drawbacks in relation to working time, work–life balance, well-being, health and performance.

  Another unique feature of the European case is the multi-level structure of telework governance. The 2002 Framework Agreement on Telework by the Social Partners of the European Union preceded policy-making and social dialogue about telework in many European countries. It is ambitious in its demands for standards on occupational health, safety, working hours and equal treatment of home-based and mobile employees. Its definition is also broad enough to incorporate many of the telework arrangements currently used in the world of work in Europe, and it has fuelled a considerable amount of social dialogue on this subject. However, following the literal wording of the agreement omits some teleworkers (for example, only regular telework is included in the agreement). Moreover, since the agreement covers only employees and some workers do telework in their free time (sometimes such work is not paid, and therefore this work would not formally qualify as telework as defined in the framework agreement), this might pose some new challenges for the implementation of the agreement. This is rather important for the emerging debate about the so-called 'right to disconnect' (and the actual effects of such regulations on working time have yet to be determined). National reports for France and Germany indicate early developments in relation to collective

agreements and legislation that aim to protect employees from continuous reachability via mobile ICTs and its implication for individual health and privacy. These developments may give precedent to a new interpretation of the Framework Agreement on Telework that covers work anywhere at any time in a more holistic sense. In relation to these aspects, Europe has the potential to take a pioneering role in the ongoing debate about telework.

NOTES

1. Electricity, gas, steam and air-conditioning supply also shows a high share of employees using ICTs at least half a day away from the employer's premise (42 per cent) – which however might not be classified as mobile teleworkers per se – the workplace of employees in this sector is mostly at the clients' premises. The work performed away from employer's premises is thus contingent on the industry itself and may not necessarily be a work arrangement enabled by the use of ICTs.
2. Framework agreements signed by EU-level social partners have to be implemented by their affiliates at national level. Therefore, the obligation for their implementation is on the social partners and not on the national governments. A different aspect is that the provisions of the agreement have been included in the national legislation in some European countries.
3. Article L2242-8, modified by Law no. 2016-1088 of 8 August 2016, article 55 (V).

REFERENCES

André, M. (2013), 'Svenska chefer gillar distansarbete' ('Swedish bosses like working from a distance'), accessed 21 December 2018 at www.chef.se.

Annesley, C. (2007), 'Lisbon and social Europe: towards a European "adult worker model" welfare system', *Journal of European Social Policy*, **17** (3), 195–205.

Anttila, T., Nätti, J., Ojala, S. and Tammelin, M. (2009), *Ansiotyö kotona: Yleisyys, minaispiirteet, seuraukset ja hallinta palkansaajilla* (*Gainful Employment at Home: Prevalence, Characteristics, Consequences and Management of Wage and Salary Earners*), Tampere: Finnish Work Environment Fund.

Autor, D.H. (2015), 'Why are there still so many jobs? The history and future of workplace automation', *Journal of Economic Perspectives*, **29** (3), 3–30, doi:10.1257/jep.29.3.3.

Bailey, D.E. and Kurland, N.B. (2002), 'A review of telework research: findings, new directions, and lessons for the study of modern work', *Journal of Organizational Behavior*, **23** (4), 383–400, doi:10.1002/job.144.

Baruch, Y. (2000), 'Teleworking: benefits and pitfalls as perceived by professionals and managers', *New Technology, Work and Employment*, **15** (1), 34–49.

Beauregard, A., Basile, K. and Canonico, E. (2013), *Home Is Where Work Is: A New Study of Homeworking in Acas – and Beyond*, London: ACAS.

Boni, M. and Vultaggio, A. (2013), 'La via italiana al welfare aziendale: scenari attuali e prospettive future', *Sociologia e Politiche Sociali*, (2), 1591–2027.

Brenke, K. (2014), 'Heimarbiet: Immer weniger Menschen in Deutschlang gehen ihrem Beruf von zu Hause aus nach' ('Homeworking: fewer and fewer people in

Germany are following their profession from home'), DIW Weekly Report No. 8/2014, Deutsches Institut für Wirtschaftsforschung, Berlin.

Brynjolfsson, E. and McAfee, A. (2014), *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, New York: W.W. Norton.

Bundesministeriums für Familie, Senioren, Frauen und Jugend (BMFSFJ) (2013), *Unternehmensmonitor Familienfreundlichkeit 2013* (*Company Monitor Family-Friendly Policies 2013*), Berlin: Ministry of Family Affairs, Senior Citizens, Women and Youth.

Chiaro, G., Prati, G. and Zocca, M. (2015), 'Smart working: dal lavoro flessibile al lavoro agile', *Sociologia Del Lavoro*, (138), 69–87.

Chung, H., Kerkhofs, M., Ester, P. and Chung, H. (2007), *Working Time Flexibility in European Companies*, Luxembourg: Office for Official Publications of the European Union.

Direction de l'Animation de la recherche, des Études et des Statistiques (DARES) (2004), 'Le télétravail en France' ('Telework in France'), research report no. 51.3, accessed 4 January 2019 at https://travail-emploi.gouv.fr/IMG/pdf/publication_pips_200412_n-51-3_teletravail-en-france.pdf.

Eurofound and the International Labour Organization (ILO) (2017), *Working Anytime, Anywhere: The Effects on the World of Work*, Luxembourg: Publications Office of the European Union and Geneva: ILO.

European Foundation for Improvement of Living and Working Conditions (Eurofound) (2015), *Sixth European Working Conditions Survey*, Luxembourg: Publications Office of the European Union.

European Framework Agreement on Telework (2002), European Trade Union Confederation, Union of Industrial and Employers' Confederations of Europe, European Association of Craft, Small and Medium-Sized Enterprises, and European Centre of Employers and Enterprises (ETUC-UNICE-UEAPME-CEEP), 16 July.

Eurostat (2015), *Labour Force Survey, ad-hoc module 2011*, accessed 21 December 2018 at https://ec.europa.eu/eurostat.

Gallouj, F., Weber, K.M., Stare, M. and Rubalcaba, L. (2015), 'The futures of the service economy in Europe: a foresight analysis', *Technological Forecasting and Social Change*, **94** (May), 80–96.

Genin, É. (2016), 'Proposal for a theoretical framework for the analysis of time porosity', *International Journal of Comparative Labour Law and Industrial Relations*, **32** (3), 280–300.

Glorieux, I. and Minnen, J. (2008), 'Thuiswerk in Vlaanderen' ('Homework in Flanders'), in E. Martinez, E. Krzeslo and J. De Shampheleire (eds), *Telewerk: Inzet, regels en praktijk* (*Telecommuting: Commitment, Rules and Practice*), Brussels: FOD WASO.

Goudswaard, A., Dhondt, S., Vergeer, R. and Oeij, P. (2013), *Organisation of Working Time: Implications for Productivity and Working Conditions*, Dublin: European Foundation for the Improvement of Living and Working Conditions.

Grant, C.A., Wallace, L.M. and Spurgeon, P.C. (2013), 'An exploration of the psychological factors affecting remote e-worker's job effectiveness, well-being and work–life balance', *Employee Relations*, **35** (5), 527–46, doi:10.1108/ER-08-2012-0059.

Greenworking (2012), 'Le télétravail dans les grandes entreprises françaises – Comment la distance transforme nos modes de travail' ('Telework in major companies in France – how distance is transforming our ways of work'), synthesis

for the Minister for Industry, Energy and the Digital Economy, Greenworking SAS, Paris.

Hammermann, A. and Stettes, O. (2015), *Bewältigung von Stress in einer vernetzten Arbeitswelt – Befunde aus der BIBB/BAuA-Erwerbstätigenbefragung* (*Coping with Stress in a Networked Work Environment – Findings from the BIBB/BAuA Employment Survey*), IW-Trends No. 2/2015, Cologne: Institut der deutschen Wirtschaft, pp. 113–35.

Harris, L. (2003), 'Home-based teleworking and the employment relationship: managerial challenges and dilemmas', *Personnel Review*, **32** (4), 422–37.

Holtgrewe, U. (2014), 'New new technologies: the future and the present of work in information and communication technology', *New Technology, Work and Employment*, **29** (1), 9–24.

Hooftman, W., Mars, G.M.J., Janssen, B., de Vroome, E.M.M. and van den Bossche, S. (2015), *Nationale Enquête Arbeidsomstandigheden 2014 – Methodologie en globale resultaten* (*National Working Conditions Survey – Methodology and Results*), Leiden: TNO.

Instituto Nacional de Salud e Higiene en el Trabajo (INSHT) (2011), *Encuesta Nacional de Condiciones de Trabajo 2011* (*National Working Conditions Survey*), Madrid: Instituto Nacional de Salud e Higiene en el Trabajo.

International Data Corporation (IDC) (2013), *El trabajo Flexible en España ¿Es España realmente Flexible?* (*Flexible Work in Spain: Is Spain Really Flexible?*), Madrid: IDC.

Kandolin, I. and Tuomivaara, S. (2012), 'Työ, terveys ja työssä jatkamisajatukset' ('Work, creating flexibility at work'), in M. Perkiö-Mäkelä and T.M. Kauppinen (eds), *Työ, terveys ja työssä jatkamisajatukset*, vol. 41, Helsinki: Institute of Occupational Health, Work and Human Research, pp. 27–41.

Kelliher, C. and Anderson, D. (2010), 'Doing more with less? Flexible working practices and the intensification of work', *Human Relations*, **63** (1), 83–106.

Kelly, E.L., Kossek, E.E., Hammer, L B., Durham, M., Bray, J., Chermack, K., et al. (2008), 'Getting there from here: research on the effects of work–family initiatives on work–family conflict and business outcomes', *Academy of Management Annals*, **2** (August), 305–49.

Központi Statisztikai Hivatal (KSH) (2015), Tájékoztatási adatbázis (Information database), accessed 19 December 2018 at http://statinfo.ksh.hu/Statinfo.

Lasfargue, Y. and Fauconnier, S. (2015), *Enquête 2015 sur les impacts du télétravail* (*2015 Survey on the Impacts of Telework*), Paris: OBERGO.

Lyly-Yrjänäinen, M. (2015), *Työolobarometri: Syksy 2014 Ennakkotietoja* (*Työolobarometri: Autumn 2014 Preliminary Information*). Helsinki: Ministry of Employment and the Economy.

Magyar Távmunka Szövetség (2016), 'Távmunka: itt a családbarát és hatékony munkavégzés ideje!' ('Teleworking: it's time for family-friendly and efficient work!'), study report, Budapest, accessed 19 December 2018 at http://tavmunka.org.

Manager Italia (2011), Italia e lavoro, così non va! Ultimi in Europa per occupazione e telavoro (Italy and work, that's not the way! Last in Europe for employment and telework), study report, Milan, accessed 19 December 2018 at www.psicopolis.com.

Messenger, J.C. and Gschwind, L. (2016), 'Three generations of telework: new ICTs and the (r)evolution from home office to virtual office', *New Technology, Work and Employment*, **31** (3), 195–208.

Miyar Cruz, D. and Rimbau Gilabert, E. (2012), 'Nuevas tecnologías, trabajo y aternidad: Las nuevas formas de flexibilidad laboral y sus efectos sobre la implicación de los hombres en el cuidado de los hijos' ('New technologies, work and paternity: new forms of labour flexibility and their effects on the involvement of men in childcare', IN3 Working Paper No. DWP12-001, Universitat Oberta de Catalunya, Barcelona.

Muffels, R. and Luijkx, R. (2008), 'Labour market mobility and employment security of male employees in Europe: "trade-off" or "flexicurity"?', *Work, Employment and Society*, **22** (2), 221–42.

Observatorio Estatal de Condiciones de Trabajo (OECT) (2015), 'Encuesta Nacional de Condiciones de Trabajo 2011' ('National Working Conditions Survey 2011'), accessed 6 June 2019 at www.insst.es.

Office for National Statistics (ONS) (2015), *Labour Force Survey 2014*, Office for National Statistics, Newport, accessed 4 January 2019 at https://www.ons.gov.uk/.

Ojala, S. (2011), 'Supplemental work at home among Finnish wage earners: involuntary overtime or taking the advantage of flexibility?', *Nordic Journal of Working Life Studies*, **1** (2), 77–97.

Ojala, S. and Pyöriä, P. (2013), 'Kotona työskentelyn yleisyys ja seuraukset: Suomi eurooppalaisessa vertailussa' ('Working at home, the prevalence and consequences: a European comparison Finland'), *Työpoliittinen Aikakauskirja*, **56** (1), 52–64.

Ojala, S., Nätti, J. and Anttila, T. (2014), 'Informal overtime at home instead of telework: increase in negative work–family interface', *International Journal of Sociology and Social Policy*, **34** (1–2), 69–87.

Otaegi, A. (2015), 'Análisis de los planes de igualdad de empresas del sector industrial' ('Analysis of equality plans in enterprises of the industrial sector'), Newsletter No. 113, 1st of May Foundation, Madrid.

Pekkola, J. and Uskelin, L. (2007), *Etätyöopas työnantajille* (*Telecommuting Guide for Employers*), Helsinki: Ministry of Labo.

Perkiö-Mäkelä, M. and Hirvonen, M. (2013), *Työ ja terveys – haastattelututkimus 2012 Taulukkoraportti* (*The National Finnish Work and Health Survey 2012*), Helsinki: Finnish Institute of Occupational Health.

Peters, P., den Dulk, L. and van der Lippe, T. (2009), 'The effects of time-spatial flexibility and new working conditions on employees' work–life balance: the Dutch case', *Community, Work & Family*, **12** (3), 279–97.

Pfisterer, S., Streim, A. and Hampe, K. (2013), *Arbeiten 3.0 – Arbeiten in der digitalen Welt (Work 3.0 – Work in the Digital World)*, Berlin: Bundesverband Informationswirtschaft, Telekommunikation und neue Medien e.V. (BITKOM).

Popma, J. (2013), 'The Janus face of the "new ways of work": rise, risks and regulation of nomadic work', working paper, European Trade Union Institute, Brussels.

Randstad (2012), 'Las tecnologías destruyen las fronteras entre vida privada y laboral' ('Technologies destroy the boundaries between private and work life'), press release, accessed at www.randstad.es.

Ruiz, Y. and Walling, A. (2005), 'Home-based working using communication technologies', *Labour Market Trends*, **113** (10), 417–26.

Statistics Sweden (2014a), *ICT Usage in Enterprises 2014*: Stockholm: Statistics Sweden.

Statistics Sweden (2014b), *The Work Environment Survey*, Stockholm: Statistics Sweden, accessed 21 December 2018 at https://www.scb.se/en/.

Sutela, H. and Lehto, A.-M. (2014), *Työolojen muutokset 1977−2013* (*Changes in Working Conditions 1977–2013*), Helsinki: Statistics Finland.

Taskin, L. and Edwards, P. (2007), 'The possibilities and limits of telework in a bureaucratic environment: lessons from the public sector', *New Technology, Work and Employment*, **22** (3), 195–207.

TDC (2015), 'IT förhindrar distansjobb' ('IT impedes distance working'), report, Stockholm, accessed 4 January 2019 at www.mynewsdesk.com.

Tipping, S., Chanfreau, J., Perry, J. and Tait, C. (2012), *The Fourth Work–Life Balance Employee Survey*, London: Department for Business Innovation and Skills.

Trygg, K. (2014), *Arbetets geografi – Kunskapsarbetets organisation och utförande i tidrummet* (*Geography of Work – the Organisation of Knowledge-Intensive Work and Its Application in Time and Space*), Stockholm: Department of Human Geography, Stockholm University.

Unión Interprofesional (2015), 'Jornada divulgativa sobre la prevención de patologías asociadas a las tics' ('Informative day on the prevention of pathologies associated with ICTs'), Madrid, accessed 4 January 2019 at www.uicm.org

Unionen (2013), 'Jobbet alltid närvarande – en studie om tjänstemännens gränslösa arbetsliv' ('Work is always present – a study on the boundaryless working life of white-collar workers'), Unionen, Malmö.

UNISON (2014), 'Homeworking and teleworking – a negotiators guide', accessed 4 January 2019 at www.unison.org.uk.

Vesala, H. and Tuomivaara, S. (2015), 'Slowing work down by teleworking periodically in rural settings?', *Personnel Review*, **44** (4), 511–28.

Vilhelmson, B. and Thulin, E. (2016), 'Who and where are the flexible workers? Exploring the current diffusion of telework in Sweden', *New Technology, Work & Employment*, **31** (1), 77–96, doi:10.1111/ntwe.12060.

Walrave, M. and De Bie, M. (2005), 'Teleworking @ home or close to home – attitudes towards and experiences with homeworking, mobile working, working in satellite offices and telecentres', report, University of Antwerp.

Welz, C. and Wolf, F. (2010), *Telework in the European Union*, Dublin: European Foundation for the Improvement of Living and Working Conditions (Eurofound).

Wheatley, D. (2012), 'Good to be home? Time-use and satisfaction levels among home-based teleworkers', *New Technology, Work and Employment*, **27** (3), 224–41.

Wilthagen, T. and Tros, F. (2004), 'The concept of "flexicurity": a new approach to regulating employment and labour markets', *Transfer: European Review of Labour and Research*, **10** (2), 166–86.

Wölfl, A. (2005), 'The service economy in OECD countries', in Organisation for Economic Co-operation and Development, *Enhancing the Performance of the Services Sector*, Paris: OECD, pp. 27–62.

3. Telework and its effects in the United States

Kate Lister and Tom Harnish

EXECUTIVE SUMMARY

Desks in the United States of America (US) are empty an average of 40–50 percent of normal working hours. When employees are not in their office, they are working in conference rooms, in clients' offices, at coffee shops, at home, in their cars, at airports and just about anywhere there is an Internet connection. They are working in those places at all times of the day – during normal working hours, at nights and on weekends.

While only 19.7 percent of the US workforce teleworks on a regular basis (at least once a week), many other US workers telework from remote locations with information and communications technologies (ICTs) or telecommute (defined as avoiding commuter travel through the use of technology) less regularly. While details about where, when and how often employees do so are largely unavailable, estimates suggest that approximately 40 percent telework at least occasionally.[1] When they do, they use a wide variety of ICTs, including, for example, the Internet, smartphones, home computers, laptops, tablet computers, teleconferencing and videoconferencing.

While many acknowledge there are negative aspects to telework/ telecommuting, in particular the tendency to work longer hours, the large majority of US employees (79–87 percent, depending on the sector) say they would like to work remotely at least some of the time. A number of studies also show that more than a third of them would give up some pay for the opportunity to telework.

Based on an extensive examination of academic and other research, this chapter concludes that the majority of US workers feel that the benefits of technology – and its impact on how, when and where they can work – outweigh the frustration that sometimes accompanies its use. For example, over three-quarters of US employees say that their ability to use technology outside of normal working hours is a positive development. Although the feeling of being 'always on' is frequently cited as a negative,

it is mitigated by the benefits, such as reduced work–life conflict, increased autonomy, feeling trusted and empowered, and avoiding commuter travel.

While working in an office still represents the norm, telework is now common across age groups, gender, occupation, education levels and income levels. The trend is growing, as evidenced by dramatically reduced office occupancy and a more than 100 percent increase in regular telework (at least one day per week) since 2005.

Assessing the impact of technology on workers is difficult for a variety of reasons. First, there is no national or even regional source of data on where and when US employees work. Some employers track it to the limited extent that they can, but such company data is rarely shared. Second, the trend toward workplace flexibility – allowing employees to work where and when they like, for example – further muddies the concept of the traditional workday. Is an employee who answers an email at 9 p.m. working overtime or just blending work and non-work outside of normal hours? Third, the use of technology is ubiquitous; over 90 percent of US employees are Internet users. There is therefore no way of comparing ICT users with those who do not use such technology.

Technology has clearly changed the nature of both work and workers, for good and for bad. This genie is probably not going back into the bottle. What we need now is a better understanding of how telework impacts people and organizations, so that we can develop work practices, policies and governance that maximize its benefits and minimize its potential for negative impacts. The research shows that with appropriate policies, practices, training and cultural integration, organizations can maximize the employer, employee and environmental benefits of telework.

INTRODUCTION

Seventy-nine percent of US private sector employees and 87 percent of federal workers say they would like to telework/telecommute at least some of the time.[2] Over half of US workers have jobs that are compatible with telework, but it is still generally considered to be a privilege reserved for older, more tenured employees rather than a mainstream trend.[3] While 38 percent of US employers allow some employees to telecommute on a regular basis, only 8 percent offer this option to all employees (see Figure 3.1).[4] Nonetheless, the trend is growing.

Approximately 3.7 million US employees telecommute half-time or more (2.5 percent of the employee workforce). That number grew by 103 percent between 2005 and 2014.[5] The percentage of employers that allowed

Figure 3.1   US employers who allow telecommuting

regular telecommuting for some or all employees has also been growing (see Figure 3.1).

While saving money, primarily through real-estate cost reductions, became the primary driver for increased telework during the 2007–09 recession, it is increasingly being used as part of a holistic strategy aimed at:

- enhancing employee attraction and retention;
- reducing work–life conflict;
- increasing productivity;
- improving sustainability/ensuring continuity of operations;
- reducing traffic congestion;
- reducing pollution;
- accommodating the disabled; and
- slowing the outbound migration of talent.

Nevertheless, in spite of the known benefits for people, planet and profit, resistance from senior leaders and middle managers continues. Mistrust, the attitude that if left untethered, employees will not work as hard, is common. Research shows that teleworkers often work harder than their office-bound cohorts, primarily because they give back some of the time they would have otherwise spent commuting, and because they enjoy the privilege of working remotely and do not want to lose it.

The impact of the conflicting effects of telework/telecommuting is the primary focus of the analysis in this chapter.

METHODOLOGY AND MAIN DATA SOURCES

A wide range of research sources are cited in this chapter, but the majority of the data used to assess the effects of telework/mobile work on working time, work–life balance, performance, and health and well-being came from:

- the American Community Survey (ACS);
- the US General Social Survey (GSS);
- the Ipsos Global Telecommuting Survey (Ipsos);
- the Federal Employee Viewpoint Survey (FEVS); and
- the American Time Use Survey.

Important details and caveats about each data source are provided below.

American Community Survey

The most robust data on telework in the US is gathered annually from the ACS,[6] a product of the US Census Bureau. Unfortunately, the ACS tracks the incidence of telework based on a single question: 'What was your primary means of transportation to work during the survey week?' One of the answers is 'worked at home'. Thus, the only thing we know about these respondents is that they worked at home at least half the time. We cannot ascertain from this source the number of employees who work away from the office, but not at home. There is no longitudinal data collected by the US Census Bureau or any other organization regarding employees who work in third places, such as a customer's office, on the road, in coffee shops or at co-working spaces.

Self-employed workers (whether incorporated or unincorporated) were excluded from the ACS data used in this report, although they are often included in the telework numbers reported by US government agencies and the media.

General Social Survey[7]

The GSS[8] is a biannual, nationally representative survey and personal interview of US households conducted by the National Opinion Research Center (NORC), federally funded by the US National Science Foundation. The survey includes a Quality of Worklife (QWL) module that comprises 76 questions developed by a group headed by the US National Institute of Occupational Safety and Health (NIOSH). Data from these surveys represents all employed people, including the self-employed, contractors and temporary workers.

Ipsos

Ipsos is one of the world's leading market research firms. They conduct a monthly omnibus survey in 24 countries. In 2011, an Ipsos survey included questions about telecommuting. The resulting report, 'Telecommuting: citizens in 24 countries assess working remotely for a total global perspective',[9] drew on an employee population from a screened sub-group of an international sample of 18 682 adults aged 18–64 years in the US and Canada (and aged 16–64 years in all other countries as well). Weighting was applied to ensure a representative sample with a margin of error of plus or minus 3.1 percentage points. There has been no update to the 2011 report.

Gallup, Inc.

Gallup, Inc., purports to own the largest database in the world on management. Their Gallup Panel, Gallup Daily tracking, and Gallup's employee engagement database collectively represent the study of nearly 200 000 global employees. Much of the data regarding worker hours, the frequency of telecommuting and worker attitudes was derived from their reports. Some of their survey questions are parsed to exclude the self-employed, but not all. It is therefore important to read the notes associated with each mention of the data derived from this source.

Federal Employee Viewpoint Survey

The FEVS[10] is a survey conducted annually by the US Office of Personnel Management. It includes all full-time and part-time permanent non-seasonal US federal employees including federal teleworkers. It is used as a tool for gauging employee attitudes. Over 90 percent of federal employees (nearly 400 000 individuals) completed the survey in 2013 (which was reported in 2014).

American Time Use Survey

The US Bureau of Labor Statistics conducts the annual ATUS.[11] It measures the amount of time people spend doing various activities, such as paid work, commuting, childcare, volunteering and socializing.

The ATUS offers measures of telework that are derived from data recorded in the diary section of the ATUS by respondents. In their diary, individuals report what they were doing over a 24-hour period and where they were for most activities.

The ATUS does not include any specific questions about work schedules or formal arrangements to work from home, so it is impossible to know whether a survey respondent who reported working from home was doing so on a scheduled office day, was working in addition to usual work hours, or whether the respondent regularly or usually worked from home.

American Time Use Survey data includes people who are employed, unemployed or non-employed; full-time and part-time workers, including independent contractors and freelancers; and unincorporated and incorporated small business employees/owners.

WORKPLACE FLEXIBILITY IN THE UNITED STATES

Workplace flexibility has very negative connotations in many parts of the world, especially Europe where it means that employers circumvent working-time laws and regulations to force workers to work whenever employers want them to do so. In the US, however, flexibility means giving workers options regarding where, when and how they work, and this type of worker-orientated flexibility is one of the most sought after benefits among US workers.

Worker-orientated workplace flexibility in the US is offered in a variety of forms including telework – which is defined in this volume as using ICTs to perform work from outside the employer's premises, but also other forms such as flexible hours (that is, formal and informal flexi-time arrangements), flexible days, and so on. It should be noted that telecommuting is a subset of telework that involves the substitution of ICTs for commuting.[12]

The Desire for Workplace Flexibility

A 2015 study by Ernst & Young revealed that, after competitive pay and benefits, the top factors employees say are very important in a potential job are 'being able to work flexibly and still be on track for promotion' which was tied at 74 percent with 'working with colleagues, including my boss, who support my efforts to work flexibly'.[13]

WorldatWork finds flexible scheduling the second most commonly utilized employee health and well-being benefit (after physical health risk assessments).[14] Their research shows having access to workplace flexibility, regardless of whether employees use it, has a positive impact on job satisfaction.

Accenture's 2013 research indicated 80 percent of respondents agreed that having flexibility in their work schedule was extremely or very

important to work–life balance, yet 70 percent said technology brings work into their personal lives.[15]

Worker-orientated workplace flexibility is ranked at the top or near the top of the list of most important factors in a job. Millennials in particular find it highly attractive.[16]

Finally, peer-reviewed research by economist Lonnie Golden of Penn State University suggests the extent to which work–life conflict occurs is dependent on not just the number of hours an employee works, but whether or not they feel they have discretion over the timing of their working hours and schedules.[17]

TELEWORK IN THE US

Research by Pew Research Center indicates that 94 percent of employed Americans are Internet users.[18] There is no US source of information on the use of ICTs among the work-at-home population. We assumed for this chapter that all work at home involves the use of ICTs, and we assumed that telework/mobile work may not, strictly speaking, be work from home but could also potentially be in third spaces such as coffee shops, libraries, in airports, on aircraft or at co-working facilities. Unless noted otherwise, those assumptions apply throughout this chapter.

A distinction between telework – the substitution of technology for travel – and telecommuting – the substitution of technology for commuter travel – is made throughout this chapter. However, in general, there is no official count of all teleworkers; therefore, most of the data in this report relates to telecommuters.

The large majority of US employees say they would like to telework at least part of the time:

- 78 percent of US workers and 87 percent of federal workers say they would like to telework all or some of the time.[19, 20]
- 70 percent of parents and 59 percent of non-parents say lack of workplace flexibility, including no option to telecommute, would cause them to seriously consider leaving a job.[21]

Overall Incidence and Place(s) of Work

Numbers on the overall incidence and place of work differ by source (details below). Taken together, the research suggests the range of telecommute participation levels indicated in Table 3.1.

Based on a special analysis and tabulation of 2014 ACS data conducted

Table 3.1   *Frequency of telecommuting*

Frequency	Participation (% of US employees)
2.5 to 5 days a week	2.5–4.0
1 to 2.5 days a week	6.0–10.0
Occasional monthly	4.0–5.0
Infrequently	6.0–11.0
Never	60.0–71.0

Source: Based on American Community Survey 2014 data which is based on analysis of American Community Survey 2015 data by Global Workplace Analytics.

by the authors of this study, 2.5 percent of the US full-time civilian work-force (not including the self-employed) worked away from their employer's workplace half the time or more (3.7 million employees).

United States General Social Survey 2014 data (which includes the self-employed) indicates that 40 percent of the workforce works from home at least some of the time: 15 percent do so once a month or less, 19 percent do so once a week or less and 6 percent do so full-time.[22] There is little difference in the frequency of work from home by gender, according to the GSS.

According to the FEVS,[23] 29 percent of all federal employees telecommute. Nearly half of federal telecommuters do so one day a week or more. There is a linear relationship between agency tenure and telework; those with the longer tenure represent the largest group of telecommuters.[24]

The frequency of telework is also increasing. Gallup's most recent survey shows a full 31 percent of employees spend at least some of their time working in a different location than their co-workers, an increase of seven percentage points since 2013. During the same period, the percentage who worked remotely one day a week or less fell nine percentage points (see Figure 3.2), presumably because many have become more frequent teleworkers. While the teleworkers included in Gallup's numbers are not all telecommuters (because they may not be working remotely for a full day), nevertheless they are dealing with many of the same issues.

Incidence by Demographics

Sex

Fifty-two percent of employees who work from home half the time or more are women (compared with 47 percent of the total workforce). The ratio of male/female participation has changed little over the past decade.[25]

Figure 3.2　Time employees spend working remotely

Age

Half of telecommuters are aged 45 years or over, compared with 41 percent of the overall workforce (see Figure 3.3). The greatest disproportional participation in telecommuting is among those aged 65 years and older.[26]

Industry

The professional services industry accounts for the largest share of telecommuters (17 percent of total) followed by the healthcare and finance industries, which account for 12 percent and 10 percent respectively (see Figure 3.4).[27]

　　Relative to the total workforce, telecommuting is disproportionately more prevalent in the industries in Table 3.2.[28]

Occupation

Telecommuting is most common among managers, salespeople and administrative workers; see Table 3.3.[29]

Education

Telecommuters are, on average, more highly educated than other employees. Approximately 53 percent have at least a bachelor's degree, compared with 37 percent of non-telecommuters.[30]

Figure 3.3 Telecommuter vs. non-telecommuter by age

Figure 3.4 Telecommuters versus non-telecommuters by industry

However, not all work-from-home jobs require a college degree. Twenty percent of teleworkers have a high school diploma (or less), and 27 percent have an associate's degree.

Income

Telecommuters earn, on average, more than non-telecommuters. Among those who earn $100 000 a year or less (79 percent of telecommuters compared with 67 percent of non-telecommuters), the average telecommuter

Table 3.2   Disproportionate prevalence of telecommuting by industry

Industry	Relative prevalence
Professional services	2.8x
Information	2.2x
Finance	2.0x
Real estate and leasing	1.9x

Source: Based on American Community Survey 2015 data by Global Workplace Analytics.

Table 3.3   Percentage of telecommuting and non-telecommuting by industry

Occupation	% of telecommuters	% of workforce
Management	18	10
Sales and related	13	11
Office and administrative support	10	13
Business and financial	9	5
Personal care and service	8	4

Source: Based on American Community Survey 2015 data by Global Workplace Analytics.

Table 3.4   Cities with the highest and lowest percentage of telecommuters

City/state	% employees who telework half time or more
Boulder, CO	8.5
Lafayette, LA	1.0

Source: Based on American Community Survey 2015 data by Global Workplace Analytics.

makes approximately $4000 a year more than non-telecommuters ($41 705 compared with $37 657, respectively).[31]

Location
The percentage of telecommuters varies widely by location.[32] The highest and lowest percentage are shown in Table 3.4.

See Table 3.5 for the cities with the largest growth in the trend among workers.

The differences are probably related to the composition of jobs in particular areas and, to a lesser extent, a region's telework advocacy.

Table 3.5   Cities with the largest growth in the percentage of telecommuters

City/state	% increase 2005 to 2015
Chattanooga, TN	325
Bremerton, WA	273
Youngstown, OH	246

Source: Based on American Community Survey 2015 data by Global Workplace Analytics.

Formal versus Informal Telework Policies among US Employers

Approximately 29 percent of employers had a formal telework policy in place as of 2013, a decline from 35 percent in 2009.[33] This decline is probably the result of the following:

- Employers not wanting to publicize their program for fear everyone would want to telework; most, for example, do not include telework availability in recruitment materials.
- Ambiguity over taxation, labor law and other regulations that apply to where and when people work. For example: (1) state and regional employee and employer taxes may be triggered when individuals work outside their own region for even a brief period; (2) additional employer licensing and registration may be required by some locales; and (3) different overtime, safety, and other labor laws may apply when an employee is working in a different region. All of this represents an administrative burden as well as potential penalties for non-compliance.
- Wanting to allow sub-groups the freedom and flexibility to craft their own policies. For example, about 15 percent of employers either have or plan to formalize telework policies at the sub-group level, although this practice has declined since 2011 when it accounted for about 27 percent of employers.

EFFECTS OF TELEWORK/MOBILE WORK

Effects on Working Time

While the data about working time in the US varies by source, there appears to be a consensus that:[34]

- US workers worked longer hours in 2014 than in 2007, but fewer than in 2002;
- men work longer hours than women, and the number of hours they work has grown faster than for women;
- men are working a majority of their extra hours at home while women are largely substituting office hours with from home work hours;
- the majority of those who work in excess of both 50 and 60 hours a week never work from home;
- the primary reason for working from home is to catch up on work; and
- among those who work from home some or all of the time, those who do so one to four days a week work the longest hours.

The details behind these findings are given next.

The most robust data on working hours in the US is generated annually by the ATUS,[35] a product of the US Bureau of Labor Statistics. As noted earlier, the ATUS does not make a distinction between people who work from home to catch up on work (that is, overtime work) or those who work at home as a substitution for commuter travel. The ATUS also does not distinguish between people who work in the evenings and on weekends as part of their normal schedule and those who do so in addition to their normal workweek.

In spite of those limitations, ATUS data can be useful in understanding working hours for the purpose of this report. According to ATUS data:

- Employees work, on average, between 37 hours (service industry workers) and 49 hours (farming, fishing and forestry workers) per week.
- Men work an average of 44.25 hours a week, women 40.95 hours a week.
- Between 2007 and 2014, this number increased by one hour a week for men and six minutes a week for women.
- The largest increases occurred among those with college degrees (but not advanced degrees), the middle two income classes, and transportation and production workers.

The 2014 ATUS data indicates that among those who worked from home on an average day:

- Men did so an average of 3.5 hours per day and women did so an average of 3.04 hours per day. This represents an increase of 37 minutes a day for men and five minutes a day for women from 2007.

- In terms of work at their workplace, men who worked at their workplace typically worked an average of 8.52 hours a day while women worked an average of 7.96 hours per day. Those numbers represent an increase of ten minutes a day for men, and a decrease of 7 minutes a day for women when compared to the 2007 numbers.
- On the whole, therefore, 78 percent of the increase in working hours from 2007 to 2014 for men is time working from home rather than in the office. Women, however, seem to be substituting time at work with time working from home.

Since ATUS numbers do not distinguish between single jobholders, multiple jobholders or the self-employed, it is not known whether the increase in work represents a trend or is a reflection of extra work taken on during the recession.

The 2014 GSS Survey (which includes the self-employed) indicates the primary reason cited for working from home (by 41 percent) was 'to catch up on work'. This figure grew eight percentage points between 2002 and 2006, but negligibly between 2010 and 2014. Other reasons for working from home included: 'part of primary job' (29 percent in 2014), 'operating a home-based business' (17 percent in 2014) and 'other combinations and other reasons' (14 percent in 2014).

Among GSS respondents who reported working between 50 and 59 hours during the survey week, 53 percent never worked from home, 17 percent worked from home once a month or less, 30 percent did so one to four days a week, and 6 percent mainly worked at home. A similar distribution was seen among those who reported working more than 60 hours a week; those who never worked at home accounted for the largest portion (44 percent), and those who worked at home one to four days a week accounted for the second largest portion (34 percent).

The number of days per month respondents reported working extra hours (over 40 hours a week) ranged from a low of 4.4 days a month for those who never worked from home, to nine days a month for those who worked at home one to four days a week.

Use of ICTs for after-hours working (supplemental telework)
Thirty-six percent of US employees, including both telecommuters and office-based workers, say they frequently check their email outside of normal business hours (see Figure 3.5).[36]

More than half of the employees surveyed (52 percent) say they feel that checking email outside of normal working hours is at least somewhat necessary to get ahead in the organization (see Figure 3.6).

Figure 3.5 *How often do you check your email outside of working hours?*

Figure 3.6 *How important do you feel checking email outside of regular hours is to your career?*

Nine out of ten say they feel the number of emails they respond to outside of normal hours is reasonable (see Figure 3.7).

While Gallup has not asked the same question about after-hours computer use since 2014, at least at the time the sentiment was similar

Note: Asked of people who said they use email at work.

Source: Gallup, Inc. (March 2017).

Figure 3.7 *Is the amount of emails you have to check after business hours reasonable?*

Source: Work and Workplace, Gallup, Inc., 2014.

Figure 3.8 *Attitudes toward after-hours ICT use*

with more than two-thirds of respondents saying that being able to work remotely outside of normal business hours was generally positive (see Figure 3.8).[37]

However, six in ten employees say they would favor a law to limit email and other digital communication after normal business hours (see Figure 3.9). Perhaps the seeming dichotomy could be explained by the removal of guilt if working after hours was shunned by society and because, presumably, their colleagues would similarly not be working after hours.

Gallup also cautions employers to avoid acting prematurely on policies

Figure 3.9   Would you favor or oppose a labor law that gave employees the 'right to disconnect'?

regarding the use of technology outside of normal working hours.[38] Their research also finds the more engaged employees are, the less likely they are to experience stress regardless of whether or not they are expected to check email after hours.[39]

- Thirty-four percent of engaged employees whose employer expected them to check after-hours emails and 30 percent of those whose employers did not expect them to do so reported stress the previous day.
- By contrast, 54 percent of employees who were not engaged and 56 percent of those disengaged whose employers expected them to check emails after hours reported stress.

Among those whose employer did not expect their employees to check emails after hours, 39 percent of those not engaged and 53 percent of those disengaged reported stress the prior day.

According to Gallup, younger employees tend to approach work and life as more of a blend than separate parts of their lives. Table 3.6 shows just how interspersed life is for this group.

Effects of Telework on Individuals

Table 3.7 summarizes the most common effects of telework on individual or job performance in the US, and the extent to which their effects on

Table 3.6   Percentage of younger employees who do the following activities

At work	At home
60% check or send personal emails	51% check or send work emails
57% send personal text messages	43% send work related texts
53% make personal phone calls	46% make work-related phone calls
50% check or use social media	34% conduct work-related research

performance are typically positive, neutral, and/or negative. The effects presented in this section have been derived from a wide range of studies that have been catalogued by the authors of this report and from the authors' own client work.[40] Subgroup data is not available. Please refer to the notes following Table 3.7 for additional details.

Effects of Telework on Organizational Outcomes

A wide range of research indicates that when employees are given control over where, when and how they work, the majority of them are happier, healthier, experience less work–life conflict and stress, and report greater well-being.[41, 42, 43, 44, 45]

As the studies cited in the above paragraph demonstrate, when telework is properly implemented, it translates into the following organizational benefits:[46]

- reduced sickness, primarily owing to less exposure to sick co-workers, greater autonomy, reduced stress, access to healthier food, reduced commuting, better sleep, being able to recuperate from injury or illness in the comfort of home and having more time for exercise;
- reduced stress, primarily owing to greater autonomy, reduced work–life/life–work conflict, reduced exposure to office politics, having clear goals and being measured by results;
- reduced work–life/life–work conflict and burnout, primarily owing to having control over their hours and place of work, being able to better integrate personal and work responsibilities, and being able to spend more time near loved ones;
- reduced presenteeism,[47] primarily owing to: better health, greater sense of control, higher job satisfaction and greater engagement;
- improved sleep, primarily owing to reduced stress and more time owing to lack of commute;
- increased job satisfaction, engagement and sense of achievement, primarily owing to: greater autonomy, feeling trusted, greater control

Table 3.7   *Selected effects of telework on individual job performance-related factors*

Effect	Positive	Neutral	Negative	Notes
Autonomy	x			
Belongingness		x	x	1
Work–life/life–work conflict	x	x	x	2
Productivity	x			
Concentration	x			
Collaboration	x		x	3
Communication	x		x	3
Trust	x		x	4
Job satisfaction	x			
Engagement	x			
Happiness	x			
Health	x		x	5
Goal clarity	x			
Role clarity	x		x	6
Advancement		x	x	
Cultural attachment		x	x	7
Stress	x		x	8
Commute stress	x			
Time	x	x		
Money	x			
Family	x	x	x	9
Childcare	x		x	10
Eldercare	x			

Notes:
1. Unless efforts are made to ensure that teleworkers are treated the same as non-teleworkers, the former may begin to feel disenfranchised. Examples of how to avoid this include: (1) mixing their time between office and remote work; (2) using technology such as an Intranet or video-conferencing to reinforce bonds with colleagues and help them feel virtually there; (3) having places for them to work when they do come to the office; (4) holding virtual events that everyone participates in; (5) using inclusive etiquette when virtual participants are present; and (6) having supportive co-workers, managers and senior leaders.
2. While the majority of research shows that telework reduces work–life and life–work conflict, it should be noted that at least one study suggests that role ambiguity can increase conflict. The study indicates that while autonomy can mitigate this conflict, it is largely the result of isolation and information undersupply.[48]
3. Some teleworkers feel that they communicate and collaborate better when they work remotely. Specifically, they find they are better able to include distant team members in their work. Success factors include having and knowing how to use collaboration tools, training for both on-site and off-site workers, and choosing the right people to telework. Absent these factors, collaboration can suffer.
4. Managers are often mistrustful of teleworkers. Out of sight, they assume teleworkers are slacking off. Successful managers learn to manage their people based on what people do, not where, when, and how they do it. Telework does not work unless there is trust between not just managers and employees, but also among co-workers.

Table 3.7   (continued)

5. Many teleworkers report getting more sleep and having more time for exercise (owing to the reduction in commuting time), access to healthier food, and reduced stress. These and other factors can lead to better health. However, when problems that arise from telework are left unchecked, it can lead to greater stress and poorer health. In addition, it is critical that ergonomic and safety issues at the remote location be addressed to reduce the chance of injury.
6. While goal clarity typically improves through telework, role clarity can sometimes suffer owing to having fewer borders between work and home life. This can be avoided with training for both on-site and off-site workers; setting clear expectations around working hours and availability; and creating artificial borders to signify the end of the workday.
7. The organization's virtual presence must exude and reinforce its culture if remote employees are to feel that they are a part of it.
8. The majority of remote employees report lower stress, however, some experience stress due to isolation and lack of communications. Autonomy is an important factor in mitigating this stress. This is covered in more depth later in this chapter.
9. Most remote employees report family stress is reduced with telework, but boundaries must be established both within the family, among friends, and between the employee and the organization.
10. In general, telework is not an adequate substitute for childcare for US employees with young children.

over time, better understanding of and connection to organizational goals, and being able to work in the comfort of one's home;

● increased exercise primarily due to: reduced work–life/life–work conflict, and reduced commuting; and

● greater resilience primarily owing to increased flexibility, reduced stress, choice over environment, feeling empowered and better sleep.

Federal telework: a case study on organizational outcomes

The US Federal Government represents a large and well-studied population of teleworkers. The most recent survey results from this population were made available in 2014.[49] According to that survey, approximately 31 percent of federal workers teleworked at least part of the time and only 13 percent chose not to telework at all.

Surveys by the US Federal Government of federal employee views (FEVS) indicate the employee engagement among their teleworkers has been seven to eight percentage points higher than non-teleworkers in all years since 2011.[50]

In addition, the 2013 US Federal Government employee telework survey showed that, compared to those federal government employees who were not allowed to telework, federal teleworkers were:[51]

● 12 percentage points more likely to feel their supervisor supports their need to balance work and life issues (85 percent versus 73 percent) and half as likely to report their supervisor did not;

- 11 percentage points more likely to say they trust and have confidence in their supervisor (73 percent versus 62 percent);
- three percentage points more likely to say they know what is expected of them in their job (81 percent versus 79 percent);
- nine percentage points more likely to say that they feel a sense of personal empowerment in their job (50 percent versus 41 percent);
- nine percentage points more likely to recommend their organization as a 'good place to work' than those not allowed to telework (72 percent versus 63 percent);
- eight percentage points more likely to report satisfaction with their jobs (73 percent versus 65 percent);
- five percentage points less likely to report job dissatisfaction (12 percent versus 17 percent);
- eight percentage points less likely to report they intended to leave their organization (26 percent versus 34 percent);
- six percentage points more likely to report they were held accountable for achieving results (87 percent versus 81 percent);
- 13 percentage points more likely to say they have a real opportunity to improve their skills in their organization (71 percent versus 58 percent);
- seven percentage points more likely to say their co-workers share knowledge (77 percent versus 70 percent); and
- eight percentage points more likely to say their talents are used well in the workplace (64 percent versus 56 percent).

There was no difference between those allowed and those not allowed to telework for those saying that their workload is unreasonable (25 percent in both cases).

Summary of organizational outcomes

Table 3.8 summarizes the most common positive, neutral and/or negative effects of telework on organizational performance. As in the previous section, much depends on how it is executed. These effects have been derived from a wide range of studies that have been catalogued by the researchers and from the researchers' own client work.[52] The major factors that influence outcomes are reviewed later in this chapter. Subgroup data is not available. Please refer to the notes following Table 3.8 for further details.

Effects of Telework on Worker Well-Being and Work–Life Fit or Balance

The majority of research suggests that while some teleworkers in the US report stress from the feeling of being constantly 'on' and/or not being able to turn work off at the end of the day,[53] the impact on 'work–life fit' – a

Table 3.8   Selected effects of telework on organizational performance

Effect	Positive	Neutral	Negative	Notes
Productivity	x	x		1
Performance	x	x		1
Absenteeism	x			
Attraction	x			
Retention	x			
Real estate costs	x	x		
Technology costs	x	x		2
Other costs	x			
Customer service	x			
Continuity of operations	x			
Environmental sustainability	x			
Organizational sustainability	x			
Shareholder value	x	x		
Citizenship	x		x	3
Team dynamics	x	x	x	4
Creativity	x	x	x	5
Innovation	x	x	x	5
Communications	x	x	x	5
Meeting fatigue	x			
Agility/resilience	x			
Employee well-being	x			
Efficiency	x			
Talent pool	x			
Globalization	x			
Need for overstaffing	x			
Mentoring		x	x	6
On-boarding/new employee indoctrination			x	7
Diversity	x			
Cultural integration		x	x	7
Trust	x			
Disability accommodation	x			
Labor pool burnout	x			
Corporate travel	x			
Employee engagement	x			
Paper usage	x			

Notes:
1. A large majority of employers report employee productivity and performance improves with telework. Several studies indicate that this improvement is largely attributable to: working some or all of the time they would have spent commuting, feeling trusted and empowered, having fewer interruptions, being able to work when they are most productive, being able to work on days they might have otherwise called in sick and being able to use their own (often superior) technology.

Table 3.8   (continued)

2. Research suggests that the majority of employers do not pay for all of an employee's technology. Many employees, in fact, prefer to use their own devices. Both of these factors can reduce the employer's cost of technology. Alternatively, for those organizations that are reliant on desktop versus laptop computers, that have not moved their files to the cloud, and in general have not kept pace with technology, upgrades will be essential to success. It should be noted that such upgrades should likely be made regardless of telework if the firm is to remain competitive. Some employers make the transition from desktop to laptop as part of their regular technology refresh cycle.
3. Organizations are increasing judged – by investors, potential hires and the media – by how they treat their people. Providing flexibility in where and when people work is viewed as good governance. Some US employers – particularly those in the public sector or those that are known for having poor customer service – have experienced a backlash from the public owing to the perception that if someone is, say, mowing their lawn in the afternoon, they must be slacking. Employers in these categories need to communicate the benefits of their policies to the public to fend off criticism.
4. While numerous US organizations successfully operate in an all-virtual model, with no one working in the same location, some contend that team dynamics suffer when people do not see each other physically. In general, a mix of face-to-face and virtual time works best. Proper training and technology provisioning (that is, smartphones, teleconferencing/videoconferencing and collaboration tools) are essential for maintaining team dynamics when people telework. Best-in-class employers work hard at finding new ways for virtual and on-site employees to connect.
5. The research is inconclusive on whether co-location is necessary for creativity, innovation and communications. Prior team dynamics, the type of job, whether training is provided, individual personalities, technology, levels of trust and more influence the processes.
6. Some organizations and their employees find that being in physically separate places reduces the subtle mentoring that takes place between senior and junior colleagues. This is perhaps one reason telework is more prevalent among more senior people.
7. Many organizations do not allow telework options for new employees, as it is felt on-site time is necessary for making connections, building trust and gaining a sense of the organizational culture. Those that do allow it for new employees have developed virtual strategies to accomplish the same thing. They also ensure that virtual and onsite employees are treated equally and are measured by results rather than presence.

phrase that is generally preferred in the US over 'work–life balance' – is largely seen as positive.[54, 55]

In addition, some research suggests that telework is most beneficial when employees have some discretion over their work schedule as well as their place of work.[56] Demographics, employee engagement levels, and how telework is implemented, practiced and culturally integrated also play a role in whether perceptions and outcomes regarding telework are positive or negative.

Effects on Employee Health and Well-Being

Available research indicates that telework/mobile work can reduce absenteeism, stress, presenteeism, accidents, and both short- and long-term disability.

- The company Best Buy found that workers participating in their flexible work initiative, which includes telework, got 52 minutes more sleep each night, were more likely to go to the doctor when sick, slept better owing to reduced work–life conflict, were less stressed and reported better overall health.[57]
- Sixty-eight percent of human resource professionals felt that flexible work arrangements improved employee quality of life and 25 percent said it had a somewhat positive impact.[58]
- Human resource professionals felt that flexible work arrangements have a somewhat positive or positive impact on absenteeism (70 percent) and employee health and wellness (58 percent).[59]
- Thirty-two percent of human resource professionals report decreased absenteeism among teleworkers. Only 5 percent said it increased absenteeism.[60]

A synthesis of hundreds of studies by the authors, as well as the authors' own client work, suggests that telework can also have a positive impact on employee health and well-being because of:[61]

- the ability to return to work more quickly after medical events (by working from home);
- less worry about loved ones at home (in particular those with elder-care responsibilities);
- more time for family, fitness, friends and self;
- reduced stress from not commuting;
- greater empowerment due to feeling trusted and having control over one's time;
- reduced work–life conflict;
- reduced exposure to sick co-workers;
- less stress from office distractions;
- reduced risk of traffic accidents;
- reduced exposure to occupational hazards and environmental toxins;
- increased satisfaction owing to greater productivity;
- comfort in one's own surroundings (plants, pictures and pets);
- increased sleep;
- ability to work when they are most effective (when time flexibility is allowed); and
- escape from office politics.

However, telework is not without potential negative health and wellness outcomes. In particular, research shows that some employees:[62]

- suffer stress and burnout from the feeling they are expected to be available outside of regular hours, regardless of whether they are actually working;
- feel frustration over unclear boundaries between work and life;
- feel isolated and disconnected from their colleagues (primarily among those who telework all the time);
- feel they are left out of the loop in important communications;
- have difficulty turning work off at the end of the day;
- absent the social cues from co-workers, find they are less likely to take breaks or lunches;
- fear being passed over for projects or having reduced opportunity for advancement;
- feel frustrated when family and friends expect them to accomplish more home-related work (that is, laundry, preparing dinner, running errands, and so on) because 'they are not *really* working';
- sit for long periods without moving;
- have a greater temptation to overeat, oversleep, or overwork, particularly those with '-holic' tendencies to begin with;
- feel frustrated that they do not have the self-discipline to stay productive;
- tend to work while sick; and
- suffer repetitive stress injuries due to poor ergonomics.

Effects on work–life conflict and stress

Researchers from Brigham Young University analyzed data from 24 436 IBM employees in 75 countries (including the US) to identify the point at which a quarter of them reported that work interfered with personal and family life.[63]

- For office workers on a regular schedule working at the employer's premises, the breaking point was 38 hours per week. Given a flexible schedule based on their individual needs and the option to telecommute, employees were able to work 57 hours per week before experiencing such work–life conflict.
- The author of that report stressed that it is the combination of telecommuting and a flexible schedule that reduces work–life conflict; that is, the teleworker needs to have the ability to set their own work schedule (that is, working time autonomy), rather than being required to work a normal office schedule.

Accenture's global research of 4100 US business executives found that technology plays a role in achieving work–life balance, but at the same

time, survey respondents expressed mixed feelings about its impact on their personal lives.[64]

- More than three-quarters (77 percent) agreed that technology enabled them to be more flexible with their schedules, and 80 percent reported that having flexibility in their work schedule was extremely or very important to their work–life balance. Yet 70 percent also said that technology brings work into their personal lives by blurring the boundaries between work and personal life.
- Three-quarters (75 percent) of respondents reported they work frequently or occasionally during paid time off, generally checking email, catching up on work, working with no distractions and participating in conference calls (cited by 71 percent, 44 percent, 35 percent and 30 percent, respectively). At the same time, 40 percent consider themselves workaholics.
- More than half (52 percent) said they have turned down a job owing to concerns about its impact on work–life balance. Work–life balance topped respondents' definitions of career success, ahead of money, recognition and autonomy (cited by 56 percent, 46 percent, 42 percent and 42 percent, respectively).

A 2011 Ipsos special report on telecommuting showed that 78 percent of US Federal Government employees agreed (49 percent) or strongly agreed (29 percent) that employees who telecommute are better able to achieve balance between work and family. Forty-eight percent of respondents said telework actually creates more work–family conflict because it reduces the boundaries between work and family life.[65] While these findings are seemingly contradictory, because of the benefits of telework a teleworker may feel better able to balance work and family even in the face of increased conflict.

Research by PGi in 2015 found 65 percent of US workers would like to work remotely. A frequency of one day a week was favored by 50 percent of respondents, and two to three days a week was cited by 46 percent of respondents. The top motives were reducing the commute and improving work–life balance.[66]

Research by Pew showed that 51 percent of office workers and 19 percent of non-office workers say digital tools allow them more flexibility in the hours they work. Also, 76 percent of Americans view the Internet as a good thing, 15 percent view it as a bad thing and 8 percent say it is some of both.[67] These numbers vary by as much as 8 percentage points across demographics.

In addition, research by Gallup shows that 42 percent of US employees

rated working remotely after business hours as 'strongly positive', 37 percent rate it as 'positive' and only 8 percent see it as negative.[68]

One peer-reviewed study by respected telework researchers suggests that, 'the positive effect of telework revolves around reduced work pressure and role conflict and increased autonomy'.[69] Reduced time pressure because of less time spent commuting, for example; improved job clarity and better-defined communication channels (the need for which increases with telework); and greater autonomy in work-related activities were found to be the source of the positive effects.[70]

Ernst & Young's 2015 Global Generations report asked millennials, Generation X and boomers to rate the following attributes in terms of their importance to what they seek in their job to help them better manage work and family responsibilities:[71]

- 45 percent, 44 percent and 33 percent, respectively, said telework three to five days a week;
- 50 percent, 48 percent and 38 percent, respectively, said they would like to telework one to two days a week;
- 71 percent, 73 percent and 69 percent, respectively, said the ability to work flexibly informally as needed; and
- 74 percent, 76 percent and 71 percent, respectively, said working with colleagues and supervisors who supported their efforts to work flexibly and meet both my personal and professional goals.

A US Federal Government study found 87 percent of routine government teleworkers felt telework had a positive impact on their ability to balance their work and non-work lives. Only 1 percent said it had a negative impact.[72]

Research by Gallup shows a positive correlation occurs between the frequency of distance work and current and future life satisfaction (which Gallup names 'thriving'). Sixty-three percent of those who work remotely seven or more hours a week say that they are thriving, compared with just 52 percent of those who never work remotely.[73]

Surprisingly, Gallup research even shows a positive correlation between frequently checking email outside of work and how employees rate their life satisfaction. Sixty-three percent of those who check email outside of working hours with the greatest frequency report 'thriving' compared to 54 percent of those who never do so.[74]

Nonetheless, in spite of these positive correlations, Gallup research also shows that both distance work and frequently checking email outside work increase employee stress. Forty-eight percent of those who frequently checked email outside of normal hours and 47 percent of those who worked remotely seven or more hours a week reported experiencing a lot

of stress compared to 36 percent of those who never did so (36 percent and 37 percent, respectively).[75]

A 2012 peer-reviewed study found that the primary negative effects of telework are role ambiguity and reduced support and feedback. The report suggests these effects likely result from reduced communications, the absence of facial and other body cues during conversation, and poor communication generally.[76]

In a 2014 article published in the *Harvard Business Review* online blog, Gallup cautions employers to avoid 'jumping the gun' about polices regarding use of technology outside of normal working hours. Instead, they recommend developing workplace programs and practices aimed at increasing employee engagement with the organization[77] Thirty-four percent of engaged employees whose employer expected them to check after-hours emails and 30 percent of those whose employers did not expect them to do so reported stress the previous day. By contrast, 54 percent of employees who were not engaged and 56 percent of those disengaged whose employers expected them to check emails after hours reported stress. Among those employees whose employer did not expect their employees to check emails after hours, 39 percent of those who were not engaged and 53 percent of those who were disengaged reported stress the prior day.

Gallup's work is not intended to suggest that employees not take vacations or be allowed to work long hours. The need for downtime is well documented. Gallup is merely reporting what the research shows regarding the link between engagement and employee attitudes towards mobile technology and vacation usage (among others).

Best Practices for Successful Outcomes from Telework

How telework programs are implemented and managed can have a big impact on individual and organizational success. Essential best practices include:

- unwavering commitment from senior leaders;
- change management to precede the initiative;
- a commitment to training;
- a culture of trust; and
- management by results, not presence.

Beyond those 'must haves', teleworkers are most successful when:[78]

- employees choose to work remotely, rather than it being a requirement;
- employees have the tools and technology they need to be productive;

- employees receive training in technology use;
- employees receive training in remote work;
- employees are measured on results;
- employees are able to shift their working hours around personal needs;
- employees work a mix of on-site and off-site time;
- employees have access to technical support;
- remote employees are provided on-site space as needed;
- solutions are put in place to ensure that teleworkers and non-teleworkers are treated equally;
- teleworkers and non-teleworkers receive training to ensure that communication and collaboration does not suffer;
- co-workers are supportive;
- the manager is in favor of remote work;
- the manager supports work–life fit;
- the manager has worked or does work remotely;
- the manager has received training in managing remote employees;
- managers and employees have a clear understanding of expectations;
- managers and co-workers set and respect employee downtime;
- the organization determines who can and cannot work remotely in a transparent, fair and consistent way;
- the organization's leaders support remote work;
- the organization has a culture of workplace flexibility;
- the organization has a culture of trust;
- the organization provides opportunities for remote workers to engage, face to face, with co-workers on an occasional basis; and
- the organization provisions teleworkers and non-teleworkers with communications and collaboration tools and training to enable seamless interaction and access.

In addition, strategies that have been shown to help teleworkers manage work–life boundaries include:[79]

- having a separate office that they can leave at the end of the day;
- occasionally working from a third place;
- setting alarms or using apps to remind them when to quit; and
- establishing routines around start times, end times and break times.

The organizational impacts of telework are most positive when:[80]

- cross-functional teams are involved in establishing a telework program – as a minimum that should include representatives from

human resources, real estate, information technology, risk management, sustainability and communications;
- managers, teleworkers and non-teleworker receive appropriate training;
- change management programs accompany the introduction of telework programs;
- employees are provisioned with appropriate technology and adequately trained in its use;
- home office ergonomics and safety are addressed;
- there is a clear understanding of working hours/days, availability, and performance measurement;
- managers and co-workers are supportive of telework;
- senior management clearly supports telework;
- effective virtual communications technology is made available;
- checks are put in place to ensure that the treatment of teleworkers is consistent with that of non-teleworkers when it comes to promotions, provisioning and work assignments;
- policies and practices are established and applied consistently; and
- teleworkers are selected appropriately.

POLICY RESPONSES TO TELEWORK

A variety of federal, state and sectoral policies have impacted or are soon likely to impact the incidence and nature of telework in the US.

US Federal Government Law Regarding Telework among Federal Employees

Since 2000, US Federal law has required that every US government employee work from home to the maximum extent possible.[81] The original impetus was fear of a government shutdown owing to the avian flu pandemic.

Since that time, acts of terrorism, extreme weather events and other pandemic threats have repeatedly reminded government leaders of the need for telework as a cornerstone in its continuity of operations strategy (for example, during crisis periods such as the avian flu pandemic). While numerous congressional bills aimed at expanding and enforcing the 2000 mandate have been proposed, little progress was being made toward federal telework adoption.

In 2010 then-President Obama, referring to himself as the 'Teleworker in Chief' (because he worked at his home, the White House), lobbied hard

for more telework for federal government employees. He also moved the conversation about telework beyond its previous focus on continuity of operations and framed it as a strategy for reducing work–life conflict, attracting and retaining talent, and measuring people by results rather than presence.

In December of 2010, the Telework Enhancement Act (TEA) passed both houses of Congress with bipartisan support and was signed into law by the President. While most of the enforcement aspects of the Act, as well as specific funding for Federal Government agency implementation, were lost during Congressional debates, the law requires US Federal Government agencies to:[82]

- establish a policy under which eligible employees would be allowed to telework;
- designate a Telework Managing Officer;
- determine eligibility of employees and notify them of their eligibility status;
- designate a senior manager to coordinate each agency's telework program;
- require a written agreement between an agency manager and each of his or her employees authorized to telework;
- develop and implement telework training programs for managers and employees;
- ensure that interactive training be provided to eligible employees and their managers and that the training be successfully completed prior to entering into a telework agreement; and
- adopt telework as a part of the agency's Continuity of Operations Plan.

The US Office of Personnel Management's (OPM's) Director could not have been clearer about his and the Obama administration's support for telework in the agency's annual report on the status of telework to Congress:[83]

> I believe telework must be implemented with a focus on accountability. As the President said at his White House Forum on Workplace Flexibility last March, 'It's about attracting and retaining top talent in the federal workforce and empowering them to do their jobs, and judging their success by the results that they get – not by how many meetings they attend, or how much face-time they log . . .'. Presenteeism, the practice of sitting at one's desk without working, can be just as problematic as absenteeism. I am an adamant supporter of telework because workers in an effective telework program can only be judged by their results. Those who can't perform and can't improve can't hide behind their

desks. It is up to management to give our employees clear direction and support, and then trust them to deliver.

While the TEA and OPM offered agencies guidance for the development of their telework programs, each is left to develop its own policies, training, and procedures.

Approximately 36 percent of federal employees are members of a labor union,[84] and agencies were similarly left on their own to negotiate telework issues with their labor unions. Union receptivity has been mixed. The issues have centered on:

- the physical burden of carrying a laptop;
- the issue of lost paid time off during unexpected office shutdowns (such as snow days and floods);
- ambiguity over who can and who cannot telework;
- ensuring privacy;
- the expectation of always being available;
- issues related to overtime and travel pay; and
- employees being expected to use/maintain their own technology.

The most recent annual report to Congress (2013 reporting on 2012 results) showed the following rate of agency compliance toward the mandates set by the TEA (see above).[85]

- Establish a policy: 76 percent of agencies.
- Designate a Telework Managing Officer: 98 percent of agencies.
- Determine eligibility of employees: 47 percent eligible; notify them of their eligibility status: 88 percent.
- Designate a senior manager to coordinate the agency's telework program: 97 percent.
- Establish a written agreement between an agency manager and each of his or her employees authorized to telework: of the 91 percent of agencies that maintained such records reported 267 227 signed agreements in place (21 percent of eligible employees).
- Ensure that an interactive training program is completed by potential teleworkers: compliance not discernable from available reports.
- Adopt telework as a part of the agency's Continuity of Operations Plan: 46 percent.

Since the signing of the TEA, telework participation of one day a week or more has grown from 4 percent of federal employees in 2011 to 14 percent in 2014.[86]

An in-depth analysis of the obstacles faced by US Federal Government agencies in furthering telework is available in a White Paper produced by the authors of this report. It is entitled *Federal Telework: Obstacles and Opportunities* and is based on surveys and interviews of federal leaders in 2013. The primary obstacles centered on issues of accountability, culture, training and technology provisioning.[87]

State and Local Initiatives Regarding Telework

State and local telework initiatives have been largely focused on the reduction of commuter travel in areas with heavy traffic congestion. A few have been aimed at creating employment in areas where industry shifts have caused high levels of unemployment (for example, coal towns and steel towns). In cities with the heaviest pollution, employers can avoid substantial financial penalties by reducing employee commuter travel.

States including Virginia, Georgia, Washington, Minnesota, Texas, California, Connecticut and a handful others have, at some time, implemented advocacy, training and, even, grant programs aimed at encouraging private and public sector adoption of telework. Most of the funding for those initiatives has come from US Department of Transportation state allocations. Reductions in federal, and thus state, funding have forced the closure of many of these programs in recent years.

Other Federal and State Existing and Pending Laws that May Impact Telework

Both US Federal Government and state governments in the US set regulations designed to protect employees' well-being. Some are considering new laws and regulations that may directly or indirectly impact organizations that offer telework.

US Federal Government and state government rules concerning overtime pay

While neither Federal nor various US state governments currently have specific regulations regarding use of ICTs away from the employer's premises or beyond normal working hours, some governments have shown, or are beginning to show, some interest in the topic, primarily as it relates to overtime payments for supplemental telework (that is, telework that increases working hours beyond the legal limits).

Currently, US federal law requires that most non-exempt employees be paid overtime rates for work conducted in excess of 40 hours a week. Some states, such as California, have extended this right to include many

exempt employees.[88] Under federal law, any work performed beyond the established weekly legal limit is compensable for non-exempt employees, generally at a rate that is a 50 percent increase over an employee's base rate of pay. In practice, however, someone who occasionally answers emails after hours rarely reports that time as part of their working hours, but not everyone is satisfied with this situation.

- In 2009, several sales personnel at T-Mobile USA filed suit against their employer for allegedly requiring them to provide a mobile number on their business cards so customers could reach them at all times. The company settled out of court for an undisclosed sum.[89]
- In an individual law suit brought in 2015, the US Court of Appeals ruled that, provided the employer makes timesheets or the equivalent available to the employee, the burden of tracking workers' working time for work performed remotely is the responsibility of the employee.[90]

Aside from the T-Mobile company case, most of the legal actions to date have been treated as individual cases rather than class action suits. 'As a result,' says the author of a 2015 *Wall Street Journal* article, 'they haven't proceeded as precedent-setting actions involving a large group of workers'.[91]

Occupational health and safety policies related to telework
Employees who work remotely are subject to the same occupational health and safety standards as any employee. Employers ensure compliance with a variety of methods including home audits, self-certification, photo audits and/or formal telework policies.

Some employers are building wellness/well-being into their corporate strategies. Their primary drivers include: being an employer of choice, reducing healthcare costs, reducing absenteeism/presenteeism, increasing engagement, reducing work–life conflict and improving employee well-being.

The most common wellness programs involve incentivizing employees to utilize full vacation time, developing workplaces and work practices that focus on employee well-being, seeking an evidence-based office environment standard that optimizes the health and well-being of its employees (WELL™ certification)[92] for their buildings, providing areas where employees can rest and recover, offering stress-management training, offering wellness programs, providing eldercare assistance, offering workplace flexibility training for managers to recognize signs of burnout, and so on.

Tax and labor law implications of telework

State employment laws and even some local employment laws (such as those that relate to overtime, working hours, employee safety, employee benefits, travel reimbursement and employee classification) as well as employment taxes often differ from federal laws. A number of states and local governments are aggressively pursuing what they see as potentially lost tax revenues owing to remote work.

Since ensuring compliance is extremely difficult for employers who may not even know where their people are working, some have resorted to closing down email servers outside of regular business hours. The California Chamber of Commerce's Employment Law blog, for example, suggests that employers implement policies and practices such as: prohibiting after-hours work among non-exempt employees without prior approval; not issuing smartphones or other portable electronic devices to non-exempt employees; and blocking their after-hours access to company servers.[93] The results of these actions may potentially reduce flexibility for employees to work where and when they choose.

Private Sector Initiatives Regarding Telework

According to the Society for Human Resource Management (SHRM), approximately one-fifth of organizations (21 percent) have a formal policy that regulates wireless communication device use outside of normal working hours, while roughly one-quarter of organizations (26 percent) have an informal policy.[94]

Of those organizations that have informal wireless communication device usage policies in place, approximately four out of five (81 percent) express their limitations of wireless communication device use to employees directly through supervisors or managers. Of the organizations that do not have a formal or informal policy on wireless communications device usage, the large majority (87 percent) allows their employees to set their own limits on the use of wireless communication devices for work purposes outside of normal working hours.

There are some interesting examples of organizational policies as regards telework.

- Pomona College in California instructed employees that they were not to use email after business hours. This was in response to a State of California law making all employees eligible for overtime pay.[95]
- Motivated by improving employee work–life balance, Vynamic, a small Pennsylvania-based healthcare industry consultancy, started shutting down access to email on weekends and from 10 p.m. to

6 a.m. on weekdays. The company says the move has increased productivity and employee happiness because employees are better rested.[96]

- Van Meter, an electronic parts distributor in Iowa, put a stop to non-essential work-related emails after 5 p.m. and before 7 a.m. on weekdays and altogether during employee vacations. The purpose of the move was to improve work–life balance.[97]
- In an effort to reduce employee stress, Edelman, a Canadian-based public relations firm, strongly discourages emails from 7 p.m. to 7 a.m.[98]
- When a team of consultants at Boston Consulting Group began organizing 'predictable time off' and a 'no messaging zone' during their off-time, their total hours dropped by 11 percent without any diminishment in work output. Seventy-two percent of employees participating in the program said they were satisfied with their job compared with only 49 percent of those not participating; 54 percent said they were satisfied with their work–life balance (compared with 38 percent); and 51 percent said they were excited to go to work the next morning (compared with 27 percent).[99]

Finally, it should be noted that legal pressure from employees and employee groups regarding after-hours work is increasing, as discussed in previous sections.

CONCLUSIONS AND RECOMMENDATIONS FOR ACTION

The US is behind many European Union countries in establishing and enforcing laws that pertain to employee well-being. It was not until 1971 that the Occupational Safety and Health Administration (OSHA) under the US Department of Labor (DOL) was established to ensure safe and healthful working conditions by setting and enforcing safety standards. United States federal, state and local government actions taken to date have primarily focused on the extent to which telework use violates tax and labor laws.

Public and private sector employer actions have been largely focused on:

- avoiding fines and legal action brought by labor unions and/or workers;
- attracting and retaining talent/organizational sustainability;
- creating a public perception of good citizenship;

● ensuring that workers have an adequate amount of time off because they understand the benefits of downtime for health, productivity, employee engagement, and so on; and
● expressing a genuine concern for their workforce.

While employees are working differently than they did a decade ago, the numbers suggest that they are not necessarily working substantially more hours. There will always be workaholics, that is, individuals who for a variety of reasons choose to work long hours, and long hours are also part of some companies' business models (for example, major law firms). Some employees work long hours because of work overload, but others are happy to do so because they are truly engaged in what they do.

On balance, teleworkers in the US report that being able to work when and where they want reduces work–life conflict, improves their overall work–life balance and offers a variety of other benefits. While some regular teleworkers work longer hours than their counterparts who always work in the office, their leisure time is nearly the same thanks to reduced commuting time – with the added benefit of a reduction of commuting-related stress.

Despite some drawbacks, a substantial majority (79 percent) of American employees (aged 35–54 years) want to telework,[100] and the overall benefits of telework to both employers and employees have been documented in this chapter. The key to making telework sustainable for both lies in how it is implemented. In particular, manager and employee training for telework are crucial. With a mutual understanding of expectations, good practices, communications protocols and the tools required to get the job done, telework can offer a triple win for people, planet and profit.

NOTES

1. These figures are the authors' own calculations. The authors are Kate Lister and Tom Harnish of Global Workplace Analytics. The figures are based on data from the following data sources: the US Census Bureau, the General Social Survey, the Bureau of Labor Statistics and Ipsos.
2. The Dieringer Research Group (2009), 'Telework trendlines 2009', report, WorldatWork, Scottsdale, AZ; US Office of Personnel Management (2013), '2013 status of telework in federal government', US Office of Personnel Management, Washington, DC.
3. Lister, K. and Harnish, T. (2011), 'State of telework in the United States: how individuals, business and government benefit', Telework Research Network, Global Workplace Analytics, Carlsbad, CA.
4. Matos, K., Galinsky, E. and Bond, J.T. (2014), '2014 National Study of Employers', Families and Work Institute and the Society for Human Resource Management, Washington, DC.

5. These figures are the authors' own calculations based on data from the American Community Survey, 2014, US Census Bureau, Suitland, MD, accessed 25 June 2019 at https://www.census.gov/programs-surveys/acs/data.html.

6. These figures are the authors' own calculations based on data from the American Community Survey, 2013, US Census Bureau, Suitland, MD, accessed 25 June 2019 at https://www.census.gov/programs-surveys/acs/data.html.

7. Lonnie Golden, Professor of Economics and Labor-Employment Relations at Penn State University, Abington College, extracted data from the GSS for this chapter. His analysis showed no significant differences among the various populations regarding the data included in this chapter.

8. US General Social Survey, NORC at the University of Chicago, 2014, accessed 25 June 2019 at https://gss.norc.org/Get-The-Data.

9. Ipsos Global @dvisor (2011), 'Telecommuting: citizens in 24 countries assess working remotely for a total global perspective', Ipsos, accessed 14 August 2016 at https://www.ipsos.com/sites/default/ files/news_and_polls/2012-01/5486-ppt.pdf.

10. Federal Employee Viewpoint Survey 2014, US Office of Personnel Management, Washington, DC.

11. These figures are the authors' own calculations based on data from the American Time Use Survey 2014, in the American Community Survey 2014, US Census Bureau, Suitland, MD, accessed 25 June 2019 at https://www.census.gov/programs-surveys/acs/data.html.

12. Jack Nilles coined the terms telework and telecommuting in the mid-1970s to better represent what he originally called the 'Telecommunications-Transportation Tradeoff'. (J.M. Nilles, 1976, *Telecommunications-Transportation Tradeoff: Options for Tomorrow*, New York: John Wiley & Sons.) While the two terms are often used interchangeably, 'telecommuting' is actually a subset of telework. Nilles defines 'telework' as any form of substitution of information technologies (such as telecommunications and/or computers) for normal work-related travel; moving the work to the workers instead of moving the workers to the work. He defines 'telecommuting' as the portion of telework that applies to the daily commute to and from work; a primary source of traffic congestion, air pollution, and lost productivity (http://jala.com/history.php, accessed 25 June 2019).

13. Ernst & Young (2015), 'Global generations: a global study on work–life challenges across generations', EYG no. KK1088, Ernest and Young Global Management (EYGM).

14. WorldatWork (2015), 'Total rewards and employee well-being practices: a report by WorldatWork underwritten by HealthMine', WorldatWork, Scottsdale, AZ. WorldatWork is a nonprofit professional association engaged in the cultivation of successful compensation and total rewards strategies.

15. Accenture (2013), 'Defining success: 2013 global research results', accessed 26 July 2017 at www.accenture.com/IWD.

16. Ernst & Young (2015), 'Global generations: a global study on work–life challenges across generations', EYG no. KK1088, Ernest and Young Global Management (EYGM) Limited.

17. Golden, L., Lambert, S., Henly, J. and Wiens-Tuers, B. (2011), 'Working time in the employment relationship: perceived control and work–life balance', in K. Townsend and A. Wilkinson (eds), *The Edward Elgar Research Handbook on Work and Employment Relations*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar, pp. 188–211.

18. Purcell, K. and Rainie, L. (2014), 'Email and the Internet are the dominant technological tools in American workplaces', Pew Research Center, accessed 20 June 2017 at https://www.pewinternet.org/2014/12/30/email-and-the-internet-are-the-dominant-technological-tools-in-american-workplaces/.

19. The Dieringer Research Group (2009), 'Telework trendlines 2009', report, WorldatWork, Scottsdale, AZ.

20. These figures are the authors' own calculations based on data from the Federal

Employee Viewpoint Survey, 2014, US Office of Personnel Management, Washington, DC.

21. Ernst & Young (2015), 'Global generations: a global study on work–life challenges across generations', EYG no. KK1088, Ernest and Young Global Management (EYGM) Limited.

22. These figures are the authors' own calculations based on data from the US General Social Survey, 2014, NORC at the University of Chicago.

23. These figures are the authors' own calculations based on data from the Federal Employee Viewpoint Survey, 2014, US Office of Personnel Management, Washington, DC.

24. These figures are the authors' own calculations based on data from the Federal Employee Viewpoint Survey, 2014, US Office of Personnel Management, Washington, DC.

25. Lister, K. and Harnish, T. (2017), '2017 State of telecommuting in the US employee workforce, Global Workplace Analytics and FlexJobs, accessed 22 June 2017 at http://globalworkplaceanalytics.com/whitepapers.

26. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

27. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

28. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

29. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

30. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

31. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

32. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

33. Ahmade, R., Brand, J., Creighton, J., Dirks, G., Hood, C., Nagy, G., et al. (2013), 'New WOW alternative workplace strategies benchmarking study', 1 November, New Ways of Working, unpublished report.

34. These figures are the authors' own calculations based on data from the US Census Bureau, the General Social Survey, the Bureau of Labor Statistics and Ipsos.

35. Based on data from the American Community Survey, 2013, US Census Bureau, Suitland, MD, accessed 25 June 2019 at https://www.census.gov/programs-surveys/acs/data.html.

36. 2017 was the first year that this question was asked.

37. Gallup, Inc. (2017), 'Work and workplace', March, accessed 6 February 2018 at http://news.gallup.com/poll/1720/work-work-place.aspx.

38. Gallup, Inc. (2014), 'Should employers ban email after work hours?', September, accessed 6 January 2017 at https://www.gallup.com/workplace/236519/employers-ban-email-work-hours.aspx.

39. Ibid.

40. The following papers are available at http://globalworkplaceanalytics.com/whitepapers: Lister, K. and Harnish, T. (2011), 'State of telework in the US', Global Workplace Analytics, Carlsbad, CA, online 8 November 2011; Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad,

CA, online 10 August 2010; Lister, K. and Harnish, T. (2011), 'The bottom line on telework: California government workforce', Global Workplace Analytics, Carlsbad, CA, online 8 March 2012; Lister, K. and Harnish, T. (2012), 'Federal telework obstacles and opportunities', Global Workplace Analytics, Carlsbad, CA, online 10 December 2013; Lister, K. and Harnish, T. (2011), 'The bottom line on telework for the Thurston Region state and local government', Global Workplace Analytics, Carlsbad, CA, online 14 August 2014; Lister, K. and Harnish, T. (2013), 'Federal telework return on taxpayer investment', Global Workplace Analytics, Carlsbad, CA, online 30 May 2015; Lister, K. and Harnish, T. (2011), 'The shifting nature of work in the UK', Global Workplace Analytics, Carlsbad, CA, online 9 June 2015; Lister, K. and Harnish, T. (2010), 'Results based management: the key to unlocking talent and increasing productivity', Global Workplace Analytics, Carlsbad, CA, online 30 May 2015; Lister, K. and Harnish, T. (2010), 'Workshift Canada: the bottom line on telework', Global Workplace Analytics, Carlsbad, CA, online 1 August 2012.

41. Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad, CA, online 10 August 2010, accessed 25 June 2019 at http://globalworkplaceanalytics.com/whitepapers.

42. Matos, K. and Galinsky, E. (2012), '2012 national study of employers', Families and Work Institute and Society for Human Resource Management, Washington, DC.

43. Golden, L., Lambert, S. and Henly, J. (2013), 'Work schedule flexibility: a contributor to employee happiness?', *Journal of Social Research and Policy*, **4** (2), 107–35.

44. WorldatWork (2013), 'Survey on workplace flexibility 2013', WorldatWork, Scottsdale, AZ.

45. Ipsos Global @dvisor (2011), 'Telecommuting: citizens in 24 countries assess working remotely for a total global perspective', Ipsos, accessed 14 August 2016 at https://www.ipsos.com/sites/default/ files/news_and_polls/2012-01/5486-ppt.pdf.

46. Lister, K. and Harnish, T. (2011), 'The bottom line on telework for the Thurston Region state and local government', Global Workplace Analytics, Carlsbad, CA, online 14 August 2014, accessed 25 June 2019 at http://globalworkplaceanalytics.com/whitepapers.

47. Presenteeism is defined in the US as meaning present at work but not performing one's best, not simply being physically present in the office.

48. Weinert, C., Maier, C. and Laumer, S. (2015), 'Why are teleworkers stressed? An empirical analysis of the causes of telework-enabled stress', in O. Thomas and F. Teuteberg (eds), *Proceedings of the 12th International Conference on Wirtschaftsinformatik*, Osnabrück, pp. 1407–21.

49. US Office of Personnel Management (2014), Federal Employee Viewpoint Survey Results, accessed 18 January 2017 at https://www.opm.gov/policy-data-oversight/data -analysis-documentation/employee-surveys/results/2014-employee-survey-results/.

50. Ibid.

51. US Office of Personnel Management (2013), '2013 Status of telework in government – report to Congress', US Office of Personnel Management, Washington, DC.

52. Lister, K. and Harnish, T. (2011), 'State of telework in the US', Global Workplace Analytics, Carlsbad, CA, online 8 November 2011; Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad, CA, online 10 August 2010; Lister, K. and Harnish, T. (2011), 'The bottom line on telework: California government workforce', Global Workplace Analytics, Carlsbad, CA, online 8 March 2012; Lister, K. and Harnish, T. (2012), 'Federal telework obstacles and opportunities', Global Workplace Analytics, Carlsbad, CA, online 10 December 2013; Lister, K. and Harnish, T. (2011), 'The bottom line on telework for the Thurston Region state and local government', Global Workplace Analytics, Carlsbad, CA, online 14 August 2014; Lister, K. and Harnish, T. (2013), 'Federal telework return on taxpayer investment', Global Workplace Analytics, Carlsbad, CA, online 30 May 2015; Lister, K. and Harnish, T. (2011), 'The shifting nature of work in the UK', Global Workplace Analytics, Carlsbad, CA, online 9 June 2015; Lister, K. and Harnish,

T. (2010), 'Results based management: the key to unlocking talent and increasing productivity', Global Workplace Analytics, Carlsbad, CA, online 30 May 2015; Lister, K. and Harnish, T. (2010), 'Workshift Canada: the bottom line on telework', Global Workplace Analytics, Carlsbad, CA, online 1 August 2012. These papers accessed 25 June 2019 at http://globalworkplaceanalytics.com/whitepapers.

53. Sodexo (2014), '2014 workplace trends report', accessed 15 February 2015 at http://sodexousa.com/usen/media/press-releases/2014/news-2014-workplace-trends.aspx.
54. Society for Human Resource Management (2014), '2014 workplace flexibility survey: overview of flexible work arrangements', Society for Human Resource Management, accessed 4 June 2017 at https://www.shrm.org/trends-and-forecasting/research-and-surveys/pages/2014-workplace-flexibility-survey.aspx.
55. Golden, L., J.R. Henly and S. Lambert (2013), 'Work schedule flexibility: a contributor to happiness?', *Journal of Social Research & Policy*, **4** (2), 107–35.
56. Golden, L., Lambert, S., Henly, J. and Wiens-Tuers, B. (2011), 'Working time in the employment relationship: perceived control and work–life balance', in K. Townsend and A. Wilkinson (eds), *The Edward Elgar Research Handbook on Work and Employee Relations*, Cheltenham, UK and Northampton, MA, USA, pp. 188–211.
57. Moen, P., Kelly, E.L., Tranby, E. and Huang, Q. (2011), 'Changing work, changing health: can real work-time flexibility promote health behaviors and well-being', *Journal of Health and Social Behavior*, **54** (4), 404–29.
58. Society for Human Resource Management (2009), 'Workplace flexibility in the 21st century: meeting the needs of the changing workforce', Society for Human Resource Management, accessed 4 June 2017 at https://blog.shrm.org/sites/default/files/reports/09-0464_Workplace_Flexibility_Survey_ Report_inside_FINALonline.pdf.
59. Ibid.
60. Society for Human Resource Management (2014), '2014 workplace flexibility survey: overview of flexible work arrangements', Society for Human Resource Management, accessed 4 June 2017 at https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/pages/2014-workplace-flexibility-survey.aspx.
61. Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad, CA, accessed 10 August 2010 at http://globalworkplaceanalytics.com/whitepapers; Lister, K., and Harnish, T. (2013), 'Federal telework return on taxpayer investment, federal telework return on taxpayer investment', Global Workplace Analytics, Carlsbad, CA, accessed 30 May 2015 at http://globalworkplaceanalytics.com/whitepapers; Nilles, J.M. (1998), *Managing Telework: Strategies for Managing the Virtual Workforce*, Hoboken, NJ: John Wiley & Sons; Lake, A. (2013), *Smart Flexibility: Moving Smart and Flexible Working from Theory to Practice*, Aldershot: Gower; Clapperton, G. and P. Vanhoutte (2014), *The Smarter Working Manifesto*, Oxford: Sunmakers.
62. Ibid. (all).
63. Hill, E.J.; Erickson, J.J., Holmes, E.K. and Ferris, M. (2010), 'workplace flexibility, work hours, and work–life conflict: finding an extra day or two', *Journal of Family Psychology*, **24** (3), 349–58.
64. Accenture (2013), 'Defining success: 2013 global research results', Accenture, 1 March, accessed 14 April 2015 at www.accenture.com/IWD.
65. Ipsos Global @dvisor (2011), 'Telecommuting: citizens in 24 countries assess working remotely for a total global perspective', Ipsos, accessed 12 July 2016 at https://www.ipsos.com/sites/default/ files/news_and_polls/2012-01/5486-ppt.pdf.
66. PGi (2015), 'PGi global telework survey report', PGi, accessed 12 July 2016 at https://www.pgi.com/resources/white-papers/2015-pgi-global-telework-survey/.
67. Fox, S. and Rainie, L. (2014), 'Part 1: how the Internet has woven itself into American life', Pew Research Center Internet and American Life Survey (Omnibus survey), Pew Research Center, accessed 3 September 2016 at https://www.pewinternet.org/2014/02/27/part-1-how-the-internet-has-woven-itself-into-american-life/.
68. Harter, J. and Agrawal, S. (2014), 'Most U.S. workers see upside to staying connected

at work', Gallup, accessed 3 September 2016 at https://news.gallup.com/poll/168794/workers-upside-staying-connected-work.aspx.

69. In abstract of Sardeshmukh, S.R., Sharma, D. and Golden, T.D. (2012), 'Impact of telework on exhaustion and job engagement: a job demands and job resources model', *New Technology Work and Employment*, **27** (3), 193–207.

70. Sardeshmukh, S.R., Sharma, D. and Golden, T.D. (2012), 'Impact of telework on exhaustion and job engagement: a job demands and job resources model', *New Technology Work and Employment*, **27** (3), 193–207.

71. Ernst & Young (2015), 'Global generations: a global study on work–life challenges across generations', EYG no. KK1088, Ernest and Young Global Management (EYGM) – based on the question: 'Please rate the following factors that would cause you to seriously consider leaving a job based on how important they are to you'.

72. US Merit Systems Protection Board (2011), 'Telework: weighing the information, determining an appropriate approach', a report to the President and the Congress of the United States by the US Merit Systems Protection Board, Washington, DC.

73. Witters, D. and Liu, D. (2014), 'Using mobile technology for work linked to higher stress', Gallup, May, accessed 6 November 2016 at https://news.gallup.com/poll/168815/using-mobile-technology-work-linked-higher-stress.aspx.

74. Ibid.

75. Ibid.

76. Sardeshmukh, S.R., Sharma, D. and Golden, T.D. (2012), 'Impact of telework on exhaustion and job engagement: a job demands and job resources model', *New Technology Work and Employment*, **27** (3), 193–207.

77. Harter, J. (2014), 'Should employers ban email after work hours?', *Harvard Business Review* blog, August, accessed 17 December 2016 at https://hbr.org/2014/08/should-employers-ban-email-after-work-hours.

78. Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad, CA, accessed 10 August 2010 at http://globalworkplaceanalytics.com/whitepapers; Lister, K., and Harnish, T. (2013), 'Federal telework return on taxpayer investment, federal telework return on taxpayer investment', Global Workplace Analytics, Carlsbad, CA, accessed 30 May 2015 at http://globalworkplaceanalytics.com/whitepapers; Nilles, J.M. (1998), *Managing Telework: Strategies for Managing the Virtual Workforce*, Hoboken, NJ: John Wiley & Sons; Lake, A. (2013), *Smart Flexibility: Moving Smart and Flexible Working from Theory to Practice*, Aldershot: Gower; Clapperton, G. and P. Vanhoutte (2014), *The Smarter Working Manifesto*, Oxford: Sunmakers.

79. Ibid. (all).

80. Ibid. (all).

81. US Office of Personnel Management (2011), 'Guide to telework in the Federal Government', US Office of Personnel Management, Washington, DC, s. 359 of Public Law 106-346.

82. US Office of Personnel Management (2011), 'Guide to telework in the Federal Government', US Office of Personnel Management, Washington, DC, s. 359 of Public Law 106-346.

83. US Office of Personnel Management (2012), '2013 Status of telework in federal government, report to the Congress', US Office of Personnel Management, Washington, DC, p. 36.

84. US Bureau of Labor Statistics (2014), 'Union membership for annual 2013', Economic News Release, January, US Bureau of Labor Statistics, Washington, DC.

85. US Office of personnel management (2013), '2013 status of telework in federal government, report to the Congress', US Office of Personnel Management, Washington, DC.

86. US Office of Personnel Management (2014), 'Federal employee viewpoint survey results', accessed 12 July 2016 at https://www.opm.gov/policy-data-oversight/data-analysis-documentation/employee-surveys/results/2014-employee-survey-results/.

87. Lister, K. and Harnish, T. (2012), 'Federal telework obstacles and opportunities',

November, Global Workplace Analytics, Carlsbad, CA, online 30 May 2015, http://globalworkplaceanalytics.com/whitepapers.

88. The terms 'non-exempt' and 'exempt' derive from the Fair Labor Standards Act of 1938. They refer to those employees who either are eligible or are not eligible for overtime payments under the Act, respectively. The US Department of Labor establishes regulations that determine which employees are considered to be eligible for such payments, which change from time to time.

89. Weber, L. (2015), 'Can you sue the boss for making you answer late-night email?', *Wall Street Journal*, 20 May, accessed 1 May 2017 at https://www.wsj.com/articles/can-you-sue-the-boss-for-making-you-answer-late-night-email-1432144188.

90. Polishuk, A. (2015), 'Timekeeping for telecommuters under the FLSA' (U.S. Fair Labor Standards Act), California Public Agency Labor and Employment blog, 26 May 2015, accessed 26 May 2015 at https://www.calpublicagencylaboremploymentblog.com/wage-and-hour-2/timekeeping-for-telecommuters-under-the-flsa/.

91. Weber, L. (2015), 'Can you sue the boss for making you answer late-night email?', *Wall Street Journal*, 20 May, accessed 1 May 2017 at https://www.wsj.com/articles/can-you-sue-the-boss-for-making-you-answer-late-night-email-1432144188.

92. WELL Certification is a trademarked name owned by Delos Living, New York.

93. California Chamber of Commerce (CalChamber) (2015), 'DOL taking interest in smartphones and off-the-clock work', CalChamber HRWatchdog, 28 May, accessed 28 May 2015 at https://hrwatchdog.calchamber.com/2015/05/dol-taking-interest-in-smartphones-and-off-the-clock-work/.

94. Society for Human Resource Management (SHRM) Staff (2012), 'Technology and its impact on employees during non-working hours', SHRM blog, 1 August, accessed 7 August 2015 at https://blog.shrm.org/workplace/technology-and-its-impact-on-employees-during-nonworking-hours.

95. Noguchi, Y. (2015), 'Amid new overtime rules, more employers might set email curfew', National Public Radio, 8 July, accessed 8 July 2015 at https://www.npr.org/sections/alltechconsidered/ 2015/07/08/416515537/amid-new-overtime-rules-more-employers-might-set-email-curfew.

96. Ibid.

97. Rayasam, R. (2015), 'The end of the inbox: companies that banned email', BBC, 25 March, accessed 25 March 2015 at http://www.bbc.com/capital/story/20150324-the-companies-that-banned-email.

98. Thompson, C. (2015), 'End the tyranny of 24/7 email', *New York Times*, 28 August, Opinion pages, accessed 28 August 2015 at https://www.nytimes.com/2014/08/29/opinion/end-the-tyranny-of-24-7-email.html.

99. Perlow, L. (2012), 'Predictable time off: the team solution to overcoming constant work connection', FastCompany blog, 21 May, accessed 7 July 2016 at https://www.fastcompany.com/1837867/ predictable-time-team-solution-overcoming-constant-work-connection.

100. Burnett, J. (2018), 'Survey: workers in these cities like the option to telecommute the most', *The Ladders*, 13 June, accessed 14 June 2018 at https://www.theladders.com/career-advice/survey-workers-in-these-cities-like-the-option-to-telecommute-the-most.

3. Telework and its effects in the United States

Kate Lister and Tom Harnish

EXECUTIVE SUMMARY

Desks in the United States of America (US) are empty an average of 40–50 percent of normal working hours. When employees are not in their office, they are working in conference rooms, in clients' offices, at coffee shops, at home, in their cars, at airports and just about anywhere there is an Internet connection. They are working in those places at all times of the day – during normal working hours, at nights and on weekends.

While only 19.7 percent of the US workforce teleworks on a regular basis (at least once a week), many other US workers telework from remote locations with information and communications technologies (ICTs) or telecommute (defined as avoiding commuter travel through the use of technology) less regularly. While details about where, when and how often employees do so are largely unavailable, estimates suggest that approximately 40 percent telework at least occasionally.[1] When they do, they use a wide variety of ICTs, including, for example, the Internet, smartphones, home computers, laptops, tablet computers, teleconferencing and videoconferencing.

While many acknowledge there are negative aspects to telework/ telecommuting, in particular the tendency to work longer hours, the large majority of US employees (79–87 percent, depending on the sector) say they would like to work remotely at least some of the time. A number of studies also show that more than a third of them would give up some pay for the opportunity to telework.

Based on an extensive examination of academic and other research, this chapter concludes that the majority of US workers feel that the benefits of technology – and its impact on how, when and where they can work – outweigh the frustration that sometimes accompanies its use. For example, over three-quarters of US employees say that their ability to use technology outside of normal working hours is a positive development. Although the feeling of being 'always on' is frequently cited as a negative,

it is mitigated by the benefits, such as reduced work–life conflict, increased autonomy, feeling trusted and empowered, and avoiding commuter travel.

While working in an office still represents the norm, telework is now common across age groups, gender, occupation, education levels and income levels. The trend is growing, as evidenced by dramatically reduced office occupancy and a more than 100 percent increase in regular telework (at least one day per week) since 2005.

Assessing the impact of technology on workers is difficult for a variety of reasons. First, there is no national or even regional source of data on where and when US employees work. Some employers track it to the limited extent that they can, but such company data is rarely shared. Second, the trend toward workplace flexibility – allowing employees to work where and when they like, for example – further muddies the concept of the traditional workday. Is an employee who answers an email at 9 p.m. working overtime or just blending work and non-work outside of normal hours? Third, the use of technology is ubiquitous; over 90 percent of US employees are Internet users. There is therefore no way of comparing ICT users with those who do not use such technology.

Technology has clearly changed the nature of both work and workers, for good and for bad. This genie is probably not going back into the bottle. What we need now is a better understanding of how telework impacts people and organizations, so that we can develop work practices, policies and governance that maximize its benefits and minimize its potential for negative impacts. The research shows that with appropriate policies, practices, training and cultural integration, organizations can maximize the employer, employee and environmental benefits of telework.

INTRODUCTION

Seventy-nine percent of US private sector employees and 87 percent of federal workers say they would like to telework/telecommute at least some of the time.[2] Over half of US workers have jobs that are compatible with telework, but it is still generally considered to be a privilege reserved for older, more tenured employees rather than a mainstream trend.[3] While 38 percent of US employers allow some employees to telecommute on a regular basis, only 8 percent offer this option to all employees (see Figure 3.1).[4] Nonetheless, the trend is growing.

Approximately 3.7 million US employees telecommute half-time or more (2.5 percent of the employee workforce). That number grew by 103 percent between 2005 and 2014.[5] The percentage of employers that allowed

Figure 3.1   US employers who allow telecommuting

regular telecommuting for some or all employees has also been growing (see Figure 3.1).

While saving money, primarily through real-estate cost reductions, became the primary driver for increased telework during the 2007–09 recession, it is increasingly being used as part of a holistic strategy aimed at:

● enhancing employee attraction and retention;
● reducing work–life conflict;
● increasing productivity;
● improving sustainability/ensuring continuity of operations;
● reducing traffic congestion;
● reducing pollution;
● accommodating the disabled; and
● slowing the outbound migration of talent.

Nevertheless, in spite of the known benefits for people, planet and profit, resistance from senior leaders and middle managers continues. Mistrust, the attitude that if left untethered, employees will not work as hard, is common. Research shows that teleworkers often work harder than their office-bound cohorts, primarily because they give back some of the time they would have otherwise spent commuting, and because they enjoy the privilege of working remotely and do not want to lose it.

The impact of the conflicting effects of telework/telecommuting is the primary focus of the analysis in this chapter.

METHODOLOGY AND MAIN DATA SOURCES

A wide range of research sources are cited in this chapter, but the majority of the data used to assess the effects of telework/mobile work on working time, work–life balance, performance, and health and well-being came from:

- the American Community Survey (ACS);
- the US General Social Survey (GSS);
- the Ipsos Global Telecommuting Survey (Ipsos);
- the Federal Employee Viewpoint Survey (FEVS); and
- the American Time Use Survey.

Important details and caveats about each data source are provided below.

American Community Survey

The most robust data on telework in the US is gathered annually from the ACS,[6] a product of the US Census Bureau. Unfortunately, the ACS tracks the incidence of telework based on a single question: 'What was your primary means of transportation to work during the survey week?' One of the answers is 'worked at home'. Thus, the only thing we know about these respondents is that they worked at home at least half the time. We cannot ascertain from this source the number of employees who work away from the office, but not at home. There is no longitudinal data collected by the US Census Bureau or any other organization regarding employees who work in third places, such as a customer's office, on the road, in coffee shops or at co-working spaces.

Self-employed workers (whether incorporated or unincorporated) were excluded from the ACS data used in this report, although they are often included in the telework numbers reported by US government agencies and the media.

General Social Survey[7]

The GSS[8] is a biannual, nationally representative survey and personal interview of US households conducted by the National Opinion Research Center (NORC), federally funded by the US National Science Foundation. The survey includes a Quality of Worklife (QWL) module that comprises 76 questions developed by a group headed by the US National Institute of Occupational Safety and Health (NIOSH). Data from these surveys represents all employed people, including the self-employed, contractors and temporary workers.

Ipsos

Ipsos is one of the world's leading market research firms. They conduct a monthly omnibus survey in 24 countries. In 2011, an Ipsos survey included questions about telecommuting. The resulting report, 'Telecommuting: citizens in 24 countries assess working remotely for a total global perspective',[9] drew on an employee population from a screened sub-group of an international sample of 18 682 adults aged 18–64 years in the US and Canada (and aged 16–64 years in all other countries as well). Weighting was applied to ensure a representative sample with a margin of error of plus or minus 3.1 percentage points. There has been no update to the 2011 report.

Gallup, Inc.

Gallup, Inc., purports to own the largest database in the world on management. Their Gallup Panel, Gallup Daily tracking, and Gallup's employee engagement database collectively represent the study of nearly 200 000 global employees. Much of the data regarding worker hours, the frequency of telecommuting and worker attitudes was derived from their reports. Some of their survey questions are parsed to exclude the self-employed, but not all. It is therefore important to read the notes associated with each mention of the data derived from this source.

Federal Employee Viewpoint Survey

The FEVS[10] is a survey conducted annually by the US Office of Personnel Management. It includes all full-time and part-time permanent non-seasonal US federal employees including federal teleworkers. It is used as a tool for gauging employee attitudes. Over 90 percent of federal employees (nearly 400 000 individuals) completed the survey in 2013 (which was reported in 2014).

American Time Use Survey

The US Bureau of Labor Statistics conducts the annual ATUS.[11] It measures the amount of time people spend doing various activities, such as paid work, commuting, childcare, volunteering and socializing.

The ATUS offers measures of telework that are derived from data recorded in the diary section of the ATUS by respondents. In their diary, individuals report what they were doing over a 24-hour period and where they were for most activities.

The ATUS does not include any specific questions about work schedules or formal arrangements to work from home, so it is impossible to know whether a survey respondent who reported working from home was doing so on a scheduled office day, was working in addition to usual work hours, or whether the respondent regularly or usually worked from home.

American Time Use Survey data includes people who are employed, unemployed or non-employed; full-time and part-time workers, including independent contractors and freelancers; and unincorporated and incorporated small business employees/owners.

WORKPLACE FLEXIBILITY IN THE UNITED STATES

Workplace flexibility has very negative connotations in many parts of the world, especially Europe where it means that employers circumvent working-time laws and regulations to force workers to work whenever employers want them to do so. In the US, however, flexibility means giving workers options regarding where, when and how they work, and this type of worker-orientated flexibility is one of the most sought after benefits among US workers.

Worker-orientated workplace flexibility in the US is offered in a variety of forms including telework – which is defined in this volume as using ICTs to perform work from outside the employer's premises, but also other forms such as flexible hours (that is, formal and informal flexi-time arrangements), flexible days, and so on. It should be noted that telecommuting is a subset of telework that involves the substitution of ICTs for commuting.[12]

The Desire for Workplace Flexibility

A 2015 study by Ernst & Young revealed that, after competitive pay and benefits, the top factors employees say are very important in a potential job are 'being able to work flexibly and still be on track for promotion' which was tied at 74 percent with 'working with colleagues, including my boss, who support my efforts to work flexibly'.[13]

WorldatWork finds flexible scheduling the second most commonly utilized employee health and well-being benefit (after physical health risk assessments).[14] Their research shows having access to workplace flexibility, regardless of whether employees use it, has a positive impact on job satisfaction.

Accenture's 2013 research indicated 80 percent of respondents agreed that having flexibility in their work schedule was extremely or very

important to work–life balance, yet 70 percent said technology brings work into their personal lives.[15]

Worker-orientated workplace flexibility is ranked at the top or near the top of the list of most important factors in a job. Millennials in particular find it highly attractive.[16]

Finally, peer-reviewed research by economist Lonnie Golden of Penn State University suggests the extent to which work–life conflict occurs is dependent on not just the number of hours an employee works, but whether or not they feel they have discretion over the timing of their working hours and schedules.[17]

TELEWORK IN THE US

Research by Pew Research Center indicates that 94 percent of employed Americans are Internet users.[18] There is no US source of information on the use of ICTs among the work-at-home population. We assumed for this chapter that all work at home involves the use of ICTs, and we assumed that telework/mobile work may not, strictly speaking, be work from home but could also potentially be in third spaces such as coffee shops, libraries, in airports, on aircraft or at co-working facilities. Unless noted otherwise, those assumptions apply throughout this chapter.

A distinction between telework – the substitution of technology for travel – and telecommuting – the substitution of technology for commuter travel – is made throughout this chapter. However, in general, there is no official count of all teleworkers; therefore, most of the data in this report relates to telecommuters.

The large majority of US employees say they would like to telework at least part of the time:

- 78 percent of US workers and 87 percent of federal workers say they would like to telework all or some of the time.[19, 20]
- 70 percent of parents and 59 percent of non-parents say lack of workplace flexibility, including no option to telecommute, would cause them to seriously consider leaving a job.[21]

Overall Incidence and Place(s) of Work

Numbers on the overall incidence and place of work differ by source (details below). Taken together, the research suggests the range of telecommute participation levels indicated in Table 3.1.

Based on a special analysis and tabulation of 2014 ACS data conducted

Table 3.1   Frequency of telecommuting

Frequency	Participation (% of US employees)
2.5 to 5 days a week	2.5–4.0
1 to 2.5 days a week	6.0–10.0
Occasional monthly	4.0–5.0
Infrequently	6.0–11.0
Never	60.0–71.0

Source: Based on American Community Survey 2014 data which is based on analysis of American Community Survey 2015 data by Global Workplace Analytics.

by the authors of this study, 2.5 percent of the US full-time civilian work-force (not including the self-employed) worked away from their employer's workplace half the time or more (3.7 million employees).

United States General Social Survey 2014 data (which includes the self-employed) indicates that 40 percent of the workforce works from home at least some of the time: 15 percent do so once a month or less, 19 percent do so once a week or less and 6 percent do so full-time.[22] There is little differ-ence in the frequency of work from home by gender, according to the GSS.

According to the FEVS,[23] 29 percent of all federal employees telecom-mute. Nearly half of federal telecommuters do so one day a week or more. There is a linear relationship between agency tenure and telework; those with the longer tenure represent the largest group of telecommuters.[24]

The frequency of telework is also increasing. Gallup's most recent survey shows a full 31 percent of employees spend at least some of their time working in a different location than their co-workers, an increase of seven percentage points since 2013. During the same period, the percent-age who worked remotely one day a week or less fell nine percentage points (see Figure 3.2), presumably because many have become more frequent teleworkers. While the teleworkers included in Gallup's numbers are not all telecommuters (because they may not be working remotely for a full day), nevertheless they are dealing with many of the same issues.

Incidence by Demographics

Sex
Fifty-two percent of employees who work from home half the time or more are women (compared with 47 percent of the total workforce). The ratio of male/female participation has changed little over the past decade.[25]

Figure 3.2   Time employees spend working remotely

Age

Half of telecommuters are aged 45 years or over, compared with 41 percent of the overall workforce (see Figure 3.3). The greatest disproportional participation in telecommuting is among those aged 65 years and older.[26]

Industry

The professional services industry accounts for the largest share of telecommuters (17 percent of total) followed by the healthcare and finance industries, which account for 12 percent and 10 percent respectively (see Figure 3.4).[27]

Relative to the total workforce, telecommuting is disproportionately more prevalent in the industries in Table 3.2.[28]

Occupation

Telecommuting is most common among managers, salespeople and administrative workers; see Table 3.3.[29]

Education

Telecommuters are, on average, more highly educated than other employees. Approximately 53 percent have at least a bachelor's degree, compared with 37 percent of non-telecommuters.[30]

Figure 3.3   Telecommuter vs. non-telecommuter by age

Figure 3.4   Telecommuters versus non-telecommuters by industry

However, not all work-from-home jobs require a college degree. Twenty percent of teleworkers have a high school diploma (or less), and 27 percent have an associate's degree.

Income

Telecommuters earn, on average, more than non-telecommuters. Among those who earn $100 000 a year or less (79 percent of telecommuters compared with 67 percent of non-telecommuters), the average telecommuter

Table 3.2   Disproportionate prevalence of telecommuting by industry

Industry	Relative prevalence
Professional services	2.8x
Information	2.2x
Finance	2.0x
Real estate and leasing	1.9x

Source: Based on American Community Survey 2015 data by Global Workplace Analytics.

Table 3.3   Percentage of telecommuting and non-telecommuting by industry

Occupation	% of telecommuters	% of workforce
Management	18	10
Sales and related	13	11
Office and administrative support	10	13
Business and financial	9	5
Personal care and service	8	4

Source: Based on American Community Survey 2015 data by Global Workplace Analytics.

Table 3.4   Cities with the highest and lowest percentage of telecommuters

City/state	% employees who telework half time or more
Boulder, CO	8.5
Lafayette, LA	1.0

Source: Based on American Community Survey 2015 data by Global Workplace Analytics.

makes approximately $4000 a year more than non-telecommuters ($41 705 compared with $37 657, respectively).[31]

Location
The percentage of telecommuters varies widely by location.[32] The highest and lowest percentage are shown in Table 3.4.

See Table 3.5 for the cities with the largest growth in the trend among workers.

The differences are probably related to the composition of jobs in particular areas and, to a lesser extent, a region's telework advocacy.

Table 3.5 Cities with the largest growth in the percentage of telecommuters

City/state	% increase 2005 to 2015
Chattanooga, TN	325
Bremerton, WA	273
Youngstown, OH	246

Source: Based on American Community Survey 2015 data by Global Workplace Analytics.

Formal versus Informal Telework Policies among US Employers

Approximately 29 percent of employers had a formal telework policy in place as of 2013, a decline from 35 percent in 2009.[33] This decline is probably the result of the following:

- Employers not wanting to publicize their program for fear everyone would want to telework; most, for example, do not include telework availability in recruitment materials.
- Ambiguity over taxation, labor law and other regulations that apply to where and when people work. For example: (1) state and regional employee and employer taxes may be triggered when individuals work outside their own region for even a brief period; (2) additional employer licensing and registration may be required by some locales; and (3) different overtime, safety, and other labor laws may apply when an employee is working in a different region. All of this represents an administrative burden as well as potential penalties for non-compliance.
- Wanting to allow sub-groups the freedom and flexibility to craft their own policies. For example, about 15 percent of employers either have or plan to formalize telework policies at the sub-group level, although this practice has declined since 2011 when it accounted for about 27 percent of employers.

EFFECTS OF TELEWORK/MOBILE WORK

Effects on Working Time

While the data about working time in the US varies by source, there appears to be a consensus that:[34]

- US workers worked longer hours in 2014 than in 2007, but fewer than in 2002;
- men work longer hours than women, and the number of hours they work has grown faster than for women;
- men are working a majority of their extra hours at home while women are largely substituting office hours with from home work hours;
- the majority of those who work in excess of both 50 and 60 hours a week never work from home;
- the primary reason for working from home is to catch up on work; and
- among those who work from home some or all of the time, those who do so one to four days a week work the longest hours.

The details behind these findings are given next.

The most robust data on working hours in the US is generated annually by the ATUS,[35] a product of the US Bureau of Labor Statistics. As noted earlier, the ATUS does not make a distinction between people who work from home to catch up on work (that is, overtime work) or those who work at home as a substitution for commuter travel. The ATUS also does not distinguish between people who work in the evenings and on weekends as part of their normal schedule and those who do so in addition to their normal workweek.

In spite of those limitations, ATUS data can be useful in understanding working hours for the purpose of this report. According to ATUS data:

- Employees work, on average, between 37 hours (service industry workers) and 49 hours (farming, fishing and forestry workers) per week.
- Men work an average of 44.25 hours a week, women 40.95 hours a week.
- Between 2007 and 2014, this number increased by one hour a week for men and six minutes a week for women.
- The largest increases occurred among those with college degrees (but not advanced degrees), the middle two income classes, and transportation and production workers.

The 2014 ATUS data indicates that among those who worked from home on an average day:

- Men did so an average of 3.5 hours per day and women did so an average of 3.04 hours per day. This represents an increase of 37 minutes a day for men and five minutes a day for women from 2007.

● In terms of work at their workplace, men who worked at their workplace typically worked an average of 8.52 hours a day while women worked an average of 7.96 hours per day. Those numbers represent an increase of ten minutes a day for men, and a decrease of 7 minutes a day for women when compared to the 2007 numbers.

● On the whole, therefore, 78 percent of the increase in working hours from 2007 to 2014 for men is time working from home rather than in the office. Women, however, seem to be substituting time at work with time working from home.

Since ATUS numbers do not distinguish between single jobholders, multiple jobholders or the self-employed, it is not known whether the increase in work represents a trend or is a reflection of extra work taken on during the recession.

The 2014 GSS Survey (which includes the self-employed) indicates the primary reason cited for working from home (by 41 percent) was 'to catch up on work'. This figure grew eight percentage points between 2002 and 2006, but negligibly between 2010 and 2014. Other reasons for working from home included: 'part of primary job' (29 percent in 2014), 'operating a home-based business' (17 percent in 2014) and 'other combinations and other reasons' (14 percent in 2014).

Among GSS respondents who reported working between 50 and 59 hours during the survey week, 53 percent never worked from home, 17 percent worked from home once a month or less, 30 percent did so one to four days a week, and 6 percent mainly worked at home. A similar distribution was seen among those who reported working more than 60 hours a week; those who never worked at home accounted for the largest portion (44 percent), and those who worked at home one to four days a week accounted for the second largest portion (34 percent).

The number of days per month respondents reported working extra hours (over 40 hours a week) ranged from a low of 4.4 days a month for those who never worked from home, to nine days a month for those who worked at home one to four days a week.

Use of ICTs for after-hours working (supplemental telework)
Thirty-six percent of US employees, including both telecommuters and office-based workers, say they frequently check their email outside of normal business hours (see Figure 3.5).[36]

More than half of the employees surveyed (52 percent) say they feel that checking email outside of normal working hours is at least somewhat necessary to get ahead in the organization (see Figure 3.6).

Figure 3.5　*How often do you check your email outside of working hours?*

Figure 3.6　*How important do you feel checking email outside of regular hours is to your career?*

Nine out of ten say they feel the number of emails they respond to outside of normal hours is reasonable (see Figure 3.7).

While Gallup has not asked the same question about after-hours computer use since 2014, at least at the time the sentiment was similar

Note: Asked of people who said they use email at work.

Source: Gallup, Inc. (March 2017).

Figure 3.7   Is the amount of emails you have to check after business hours reasonable?

Source: Work and Workplace, Gallup, Inc., 2014.

Figure 3.8   Attitudes toward after-hours ICT use

with more than two-thirds of respondents saying that being able to work remotely outside of normal business hours was generally positive (see Figure 3.8).[37]

However, six in ten employees say they would favor a law to limit email and other digital communication after normal business hours (see Figure 3.9). Perhaps the seeming dichotomy could be explained by the removal of guilt if working after hours was shunned by society and because, presumably, their colleagues would similarly not be working after hours.

Gallup also cautions employers to avoid acting prematurely on policies

Note: Asked of employed adults.

Source: Gallup, Inc. (March 2017).

Figure 3.9   Would you favor or oppose a labor law that gave employees the 'right to disconnect'?

regarding the use of technology outside of normal working hours.[38] Their research also finds the more engaged employees are, the less likely they are to experience stress regardless of whether or not they are expected to check email after hours.[39]

● Thirty-four percent of engaged employees whose employer expected them to check after-hours emails and 30 percent of those whose employers did not expect them to do so reported stress the previous day.
● By contrast, 54 percent of employees who were not engaged and 56 percent of those disengaged whose employers expected them to check emails after hours reported stress.

Among those whose employer did not expect their employees to check emails after hours, 39 percent of those not engaged and 53 percent of those disengaged reported stress the prior day.

According to Gallup, younger employees tend to approach work and life as more of a blend than separate parts of their lives. Table 3.6 shows just how interspersed life is for this group.

Effects of Telework on Individuals

Table 3.7 summarizes the most common effects of telework on individual or job performance in the US, and the extent to which their effects on

Table 3.6   Percentage of younger employees who do the following activities

At work	At home
60% check or send personal emails	51% check or send work emails
57% send personal text messages	43% send work related texts
53% make personal phone calls	46% make work-related phone calls
50% check or use social media	34% conduct work-related research

performance are typically positive, neutral, and/or negative. The effects presented in this section have been derived from a wide range of studies that have been catalogued by the authors of this report and from the authors' own client work.[40] Subgroup data is not available. Please refer to the notes following Table 3.7 for additional details.

Effects of Telework on Organizational Outcomes

A wide range of research indicates that when employees are given control over where, when and how they work, the majority of them are happier, healthier, experience less work–life conflict and stress, and report greater well-being.[41, 42, 43, 44, 45]

As the studies cited in the above paragraph demonstrate, when telework is properly implemented, it translates into the following organizational benefits:[46]

- reduced sickness, primarily owing to less exposure to sick co-workers, greater autonomy, reduced stress, access to healthier food, reduced commuting, better sleep, being able to recuperate from injury or illness in the comfort of home and having more time for exercise;
- reduced stress, primarily owing to greater autonomy, reduced work–life/life–work conflict, reduced exposure to office politics, having clear goals and being measured by results;
- reduced work–life/life–work conflict and burnout, primarily owing to having control over their hours and place of work, being able to better integrate personal and work responsibilities, and being able to spend more time near loved ones;
- reduced presenteeism,[47] primarily owing to: better health, greater sense of control, higher job satisfaction and greater engagement;
- improved sleep, primarily owing to reduced stress and more time owing to lack of commute;
- increased job satisfaction, engagement and sense of achievement, primarily owing to: greater autonomy, feeling trusted, greater control

Table 3.7   Selected effects of telework on individual job performance-related factors

Effect	Positive	Neutral	Negative	Notes
Autonomy	x			
Belongingness		x	x	1
Work–life/life–work conflict	x	x	x	2
Productivity	x			
Concentration	x			
Collaboration	x		x	3
Communication	x		x	3
Trust	x		x	4
Job satisfaction	x			
Engagement	x			
Happiness	x			
Health	x		x	5
Goal clarity	x			
Role clarity	x		x	6
Advancement		x	x	
Cultural attachment		x	x	7
Stress	x		x	8
Commute stress	x			
Time	x	x		
Money	x			
Family	x	x	x	9
Childcare	x		x	10
Eldercare	x			

Notes:
1. Unless efforts are made to ensure that teleworkers are treated the same as non-teleworkers, the former may begin to feel disenfranchised. Examples of how to avoid this include: (1) mixing their time between office and remote work; (2) using technology such as an Intranet or video-conferencing to reinforce bonds with colleagues and help them feel virtually there; (3) having places for them to work when they do come to the office; (4) holding virtual events that everyone participates in; (5) using inclusive etiquette when virtual participants are present; and (6) having supportive co-workers, managers and senior leaders.
2. While the majority of research shows that telework reduces work–life and life–work conflict, it should be noted that at least one study suggests that role ambiguity can increase conflict. The study indicates that while autonomy can mitigate this conflict, it is largely the result of isolation and information undersupply.[48]
3. Some teleworkers feel that they communicate and collaborate better when they work remotely. Specifically, they find they are better able to include distant team members in their work. Success factors include having and knowing how to use collaboration tools, training for both on-site and off-site workers, and choosing the right people to telework. Absent these factors, collaboration can suffer.
4. Managers are often mistrustful of teleworkers. Out of sight, they assume teleworkers are slacking off. Successful managers learn to manage their people based on what people do, not where, when, and how they do it. Telework does not work unless there is trust between not just managers and employees, but also among co-workers.

Table 3.7 (continued)

5. Many teleworkers report getting more sleep and having more time for exercise (owing to the reduction in commuting time), access to healthier food, and reduced stress. These and other factors can lead to better health. However, when problems that arise from telework are left unchecked, it can lead to greater stress and poorer health. In addition, it is critical that ergonomic and safety issues at the remote location be addressed to reduce the chance of injury.

6. While goal clarity typically improves through telework, role clarity can sometimes suffer owing to having fewer borders between work and home life. This can be avoided with training for both on-site and off-site workers; setting clear expectations around working hours and availability; and creating artificial borders to signify the end of the workday.

7. The organization's virtual presence must exude and reinforce its culture if remote employees are to feel that they are a part of it.

8. The majority of remote employees report lower stress, however, some experience stress due to isolation and lack of communications. Autonomy is an important factor in mitigating this stress. This is covered in more depth later in this chapter.

9. Most remote employees report family stress is reduced with telework, but boundaries must be established both within the family, among friends, and between the employee and the organization.

10. In general, telework is not an adequate substitute for childcare for US employees with young children.

over time, better understanding of and connection to organizational goals, and being able to work in the comfort of one's home;

● increased exercise primarily due to: reduced work–life/life–work conflict, and reduced commuting; and

● greater resilience primarily owing to increased flexibility, reduced stress, choice over environment, feeling empowered and better sleep.

Federal telework: a case study on organizational outcomes

The US Federal Government represents a large and well-studied population of teleworkers. The most recent survey results from this population were made available in 2014.[49] According to that survey, approximately 31 percent of federal workers teleworked at least part of the time and only 13 percent chose not to telework at all.

Surveys by the US Federal Government of federal employee views (FEVS) indicate the employee engagement among their teleworkers has been seven to eight percentage points higher than non-teleworkers in all years since 2011.[50]

In addition, the 2013 US Federal Government employee telework survey showed that, compared to those federal government employees who were not allowed to telework, federal teleworkers were:[51]

● 12 percentage points more likely to feel their supervisor supports their need to balance work and life issues (85 percent versus 73 percent) and half as likely to report their supervisor did not;

- 11 percentage points more likely to say they trust and have confidence in their supervisor (73 percent versus 62 percent);
- three percentage points more likely to say they know what is expected of them in their job (81 percent versus 79 percent);
- nine percentage points more likely to say that they feel a sense of personal empowerment in their job (50 percent versus 41 percent);
- nine percentage points more likely to recommend their organization as a 'good place to work' than those not allowed to telework (72 percent versus 63 percent);
- eight percentage points more likely to report satisfaction with their jobs (73 percent versus 65 percent);
- five percentage points less likely to report job dissatisfaction (12 percent versus 17 percent);
- eight percentage points less likely to report they intended to leave their organization (26 percent versus 34 percent);
- six percentage points more likely to report they were held accountable for achieving results (87 percent versus 81 percent);
- 13 percentage points more likely to say they have a real opportunity to improve their skills in their organization (71 percent versus 58 percent);
- seven percentage points more likely to say their co-workers share knowledge (77 percent versus 70 percent); and
- eight percentage points more likely to say their talents are used well in the workplace (64 percent versus 56 percent).

There was no difference between those allowed and those not allowed to telework for those saying that their workload is unreasonable (25 percent in both cases).

Summary of organizational outcomes

Table 3.8 summarizes the most common positive, neutral and/or negative effects of telework on organizational performance. As in the previous section, much depends on how it is executed. These effects have been derived from a wide range of studies that have been catalogued by the researchers and from the researchers' own client work.[52] The major factors that influence outcomes are reviewed later in this chapter. Subgroup data is not available. Please refer to the notes following Table 3.8 for further details.

Effects of Telework on Worker Well-Being and Work–Life Fit or Balance

The majority of research suggests that while some teleworkers in the US report stress from the feeling of being constantly 'on' and/or not being able to turn work off at the end of the day,[53] the impact on 'work–life fit' – a

Table 3.8   Selected effects of telework on organizational performance

Effect	Positive	Neutral	Negative	Notes
Productivity	x	x		1
Performance	x	x		1
Absenteeism	x			
Attraction	x			
Retention	x			
Real estate costs	x	x		
Technology costs	x	x		2
Other costs	x			
Customer service	x			
Continuity of operations	x			
Environmental sustainability	x			
Organizational sustainability	x			
Shareholder value	x	x		
Citizenship	x		x	3
Team dynamics	x	x	x	4
Creativity	x	x	x	5
Innovation	x	x	x	5
Communications	x	x	x	5
Meeting fatigue	x			
Agility/resilience	x			
Employee well-being	x			
Efficiency	x			
Talent pool	x			
Globalization	x			
Need for overstaffing	x			
Mentoring		x	x	6
On-boarding/new employee indoctrination			x	7
Diversity	x			
Cultural integration		x	x	7
Trust	x			
Disability accommodation	x			
Labor pool burnout	x			
Corporate travel	x			
Employee engagement	x			
Paper usage	x			

Notes:
1. A large majority of employers report employee productivity and performance improves with telework. Several studies indicate that this improvement is largely attributable to: working some or all of the time they would have spent commuting, feeling trusted and empowered, having fewer interruptions, being able to work when they are most productive, being able to work on days they might have otherwise called in sick and being able to use their own (often superior) technology.

Table 3.8   (continued)

2. Research suggests that the majority of employers do not pay for all of an employee's technology. Many employees, in fact, prefer to use their own devices. Both of these factors can reduce the employer's cost of technology. Alternatively, for those organizations that are reliant on desktop versus laptop computers, that have not moved their files to the cloud, and in general have not kept pace with technology, upgrades will be essential to success. It should be noted that such upgrades should likely be made regardless of telework if the firm is to remain competitive. Some employers make the transition from desktop to laptop as part of their regular technology refresh cycle.
3. Organizations are increasing judged – by investors, potential hires and the media – by how they treat their people. Providing flexibility in where and when people work is viewed as good governance. Some US employers – particularly those in the public sector or those that are known for having poor customer service – have experienced a backlash from the public owing to the perception that if someone is, say, mowing their lawn in the afternoon, they must be slacking. Employers in these categories need to communicate the benefits of their policies to the public to fend off criticism.
4. While numerous US organizations successfully operate in an all-virtual model, with no one working in the same location, some contend that team dynamics suffer when people do not see each other physically. In general, a mix of face-to-face and virtual time works best. Proper training and technology provisioning (that is, smartphones, teleconferencing/videoconferencing and collaboration tools) are essential for maintaining team dynamics when people telework. Best-in-class employers work hard at finding new ways for virtual and on-site employees to connect.
5. The research is inconclusive on whether co-location is necessary for creativity, innovation and communications. Prior team dynamics, the type of job, whether training is provided, individual personalities, technology, levels of trust and more influence the processes.
6. Some organizations and their employees find that being in physically separate places reduces the subtle mentoring that takes place between senior and junior colleagues. This is perhaps one reason telework is more prevalent among more senior people.
7. Many organizations do not allow telework options for new employees, as it is felt on-site time is necessary for making connections, building trust and gaining a sense of the organizational culture. Those that do allow it for new employees have developed virtual strategies to accomplish the same thing. They also ensure that virtual and onsite employees are treated equally and are measured by results rather than presence.

phrase that is generally preferred in the US over 'work–life balance' – is largely seen as positive.[54, 55]

In addition, some research suggests that telework is most beneficial when employees have some discretion over their work schedule as well as their place of work.[56] Demographics, employee engagement levels, and how telework is implemented, practiced and culturally integrated also play a role in whether perceptions and outcomes regarding telework are positive or negative.

Effects on Employee Health and Well-Being

Available research indicates that telework/mobile work can reduce absentee-ism, stress, presenteeism, accidents, and both short- and long-term disability.

- The company Best Buy found that workers participating in their flexible work initiative, which includes telework, got 52 minutes more sleep each night, were more likely to go to the doctor when sick, slept better owing to reduced work–life conflict, were less stressed and reported better overall health.[57]
- Sixty-eight percent of human resource professionals felt that flexible work arrangements improved employee quality of life and 25 percent said it had a somewhat positive impact.[58]
- Human resource professionals felt that flexible work arrangements have a somewhat positive or positive impact on absenteeism (70 percent) and employee health and wellness (58 percent).[59]
- Thirty-two percent of human resource professionals report decreased absenteeism among teleworkers. Only 5 percent said it increased absenteeism.[60]

A synthesis of hundreds of studies by the authors, as well as the authors' own client work, suggests that telework can also have a positive impact on employee health and well-being because of:[61]

- the ability to return to work more quickly after medical events (by working from home);
- less worry about loved ones at home (in particular those with elder-care responsibilities);
- more time for family, fitness, friends and self;
- reduced stress from not commuting;
- greater empowerment due to feeling trusted and having control over one's time;
- reduced work–life conflict;
- reduced exposure to sick co-workers;
- less stress from office distractions;
- reduced risk of traffic accidents;
- reduced exposure to occupational hazards and environmental toxins;
- increased satisfaction owing to greater productivity;
- comfort in one's own surroundings (plants, pictures and pets);
- increased sleep;
- ability to work when they are most effective (when time flexibility is allowed); and
- escape from office politics.

However, telework is not without potential negative health and wellness outcomes. In particular, research shows that some employees:[62]

- suffer stress and burnout from the feeling they are expected to be available outside of regular hours, regardless of whether they are actually working;
- feel frustration over unclear boundaries between work and life;
- feel isolated and disconnected from their colleagues (primarily among those who telework all the time);
- feel they are left out of the loop in important communications;
- have difficulty turning work off at the end of the day;
- absent the social cues from co-workers, find they are less likely to take breaks or lunches;
- fear being passed over for projects or having reduced opportunity for advancement;
- feel frustrated when family and friends expect them to accomplish more home-related work (that is, laundry, preparing dinner, running errands, and so on) because 'they are not *really* working';
- sit for long periods without moving;
- have a greater temptation to overeat, oversleep, or overwork, particularly those with '-holic' tendencies to begin with;
- feel frustrated that they do not have the self-discipline to stay productive;
- tend to work while sick; and
- suffer repetitive stress injuries due to poor ergonomics.

Effects on work–life conflict and stress
Researchers from Brigham Young University analyzed data from 24 436 IBM employees in 75 countries (including the US) to identify the point at which a quarter of them reported that work interfered with personal and family life.[63]

- For office workers on a regular schedule working at the employer's premises, the breaking point was 38 hours per week. Given a flexible schedule based on their individual needs and the option to telecommute, employees were able to work 57 hours per week before experiencing such work–life conflict.
- The author of that report stressed that it is the combination of telecommuting and a flexible schedule that reduces work–life conflict; that is, the teleworker needs to have the ability to set their own work schedule (that is, working time autonomy), rather than being required to work a normal office schedule.

Accenture's global research of 4100 US business executives found that technology plays a role in achieving work–life balance, but at the same

time, survey respondents expressed mixed feelings about its impact on their personal lives.[64]

- More than three-quarters (77 percent) agreed that technology enabled them to be more flexible with their schedules, and 80 percent reported that having flexibility in their work schedule was extremely or very important to their work–life balance. Yet 70 percent also said that technology brings work into their personal lives by blurring the boundaries between work and personal life.
- Three-quarters (75 percent) of respondents reported they work frequently or occasionally during paid time off, generally checking email, catching up on work, working with no distractions and participating in conference calls (cited by 71 percent, 44 percent, 35 percent and 30 percent, respectively). At the same time, 40 percent consider themselves workaholics.
- More than half (52 percent) said they have turned down a job owing to concerns about its impact on work–life balance. Work–life balance topped respondents' definitions of career success, ahead of money, recognition and autonomy (cited by 56 percent, 46 percent, 42 percent and 42 percent, respectively).

A 2011 Ipsos special report on telecommuting showed that 78 percent of US Federal Government employees agreed (49 percent) or strongly agreed (29 percent) that employees who telecommute are better able to achieve balance between work and family. Forty-eight percent of respondents said telework actually creates more work–family conflict because it reduces the boundaries between work and family life.[65] While these findings are seemingly contradictory, because of the benefits of telework a teleworker may feel better able to balance work and family even in the face of increased conflict.

Research by PGi in 2015 found 65 percent of US workers would like to work remotely. A frequency of one day a week was favored by 50 percent of respondents, and two to three days a week was cited by 46 percent of respondents. The top motives were reducing the commute and improving work–life balance.[66]

Research by Pew showed that 51 percent of office workers and 19 percent of non-office workers say digital tools allow them more flexibility in the hours they work. Also, 76 percent of Americans view the Internet as a good thing, 15 percent view it as a bad thing and 8 percent say it is some of both.[67] These numbers vary by as much as 8 percentage points across demographics.

In addition, research by Gallup shows that 42 percent of US employees

rated working remotely after business hours as 'strongly positive', 37 percent rate it as 'positive' and only 8 percent see it as negative.[68]

One peer-reviewed study by respected telework researchers suggests that, 'the positive effect of telework revolves around reduced work pressure and role conflict and increased autonomy'.[69] Reduced time pressure because of less time spent commuting, for example; improved job clarity and better-defined communication channels (the need for which increases with telework); and greater autonomy in work-related activities were found to be the source of the positive effects.[70]

Ernst & Young's 2015 Global Generations report asked millennials, Generation X and boomers to rate the following attributes in terms of their importance to what they seek in their job to help them better manage work and family responsibilities:[71]

- 45 percent, 44 percent and 33 percent, respectively, said telework three to five days a week;
- 50 percent, 48 percent and 38 percent, respectively, said they would like to telework one to two days a week;
- 71 percent, 73 percent and 69 percent, respectively, said the ability to work flexibly informally as needed; and
- 74 percent, 76 percent and 71 percent, respectively, said working with colleagues and supervisors who supported their efforts to work flexibly and meet both my personal and professional goals.

A US Federal Government study found 87 percent of routine government teleworkers felt telework had a positive impact on their ability to balance their work and non-work lives. Only 1 percent said it had a negative impact.[72]

Research by Gallup shows a positive correlation occurs between the frequency of distance work and current and future life satisfaction (which Gallup names 'thriving'). Sixty-three percent of those who work remotely seven or more hours a week say that they are thriving, compared with just 52 percent of those who never work remotely.[73]

Surprisingly, Gallup research even shows a positive correlation between frequently checking email outside of work and how employees rate their life satisfaction. Sixty-three percent of those who check email outside of working hours with the greatest frequency report 'thriving' compared to 54 percent of those who never do so.[74]

Nonetheless, in spite of these positive correlations, Gallup research also shows that both distance work and frequently checking email outside work increase employee stress. Forty-eight percent of those who frequently checked email outside of normal hours and 47 percent of those who worked remotely seven or more hours a week reported experiencing a lot

of stress compared to 36 percent of those who never did so (36 percent and 37 percent, respectively).[75]

A 2012 peer-reviewed study found that the primary negative effects of telework are role ambiguity and reduced support and feedback. The report suggests these effects likely result from reduced communications, the absence of facial and other body cues during conversation, and poor communication generally.[76]

In a 2014 article published in the *Harvard Business Review* online blog, Gallup cautions employers to avoid 'jumping the gun' about polices regarding use of technology outside of normal working hours. Instead, they recommend developing workplace programs and practices aimed at increasing employee engagement with the organization[77] Thirty-four percent of engaged employees whose employer expected them to check after-hours emails and 30 percent of those whose employers did not expect them to do so reported stress the previous day. By contrast, 54 percent of employees who were not engaged and 56 percent of those disengaged whose employers expected them to check emails after hours reported stress. Among those employees whose employer did not expect their employees to check emails after hours, 39 percent of those who were not engaged and 53 percent of those who were disengaged reported stress the prior day.

Gallup's work is not intended to suggest that employees not take vacations or be allowed to work long hours. The need for downtime is well documented. Gallup is merely reporting what the research shows regarding the link between engagement and employee attitudes towards mobile technology and vacation usage (among others).

Best Practices for Successful Outcomes from Telework

How telework programs are implemented and managed can have a big impact on individual and organizational success. Essential best practices include:

- unwavering commitment from senior leaders;
- change management to precede the initiative;
- a commitment to training;
- a culture of trust; and
- management by results, not presence.

Beyond those 'must haves', teleworkers are most successful when:[78]

- employees choose to work remotely, rather than it being a requirement;
- employees have the tools and technology they need to be productive;

- employees receive training in technology use;
- employees receive training in remote work;
- employees are measured on results;
- employees are able to shift their working hours around personal needs;
- employees work a mix of on-site and off-site time;
- employees have access to technical support;
- remote employees are provided on-site space as needed;
- solutions are put in place to ensure that teleworkers and non-teleworkers are treated equally;
- teleworkers and non-teleworkers receive training to ensure that communication and collaboration does not suffer;
- co-workers are supportive;
- the manager is in favor of remote work;
- the manager supports work–life fit;
- the manager has worked or does work remotely;
- the manager has received training in managing remote employees;
- managers and employees have a clear understanding of expectations;
- managers and co-workers set and respect employee downtime;
- the organization determines who can and cannot work remotely in a transparent, fair and consistent way;
- the organization's leaders support remote work;
- the organization has a culture of workplace flexibility;
- the organization has a culture of trust;
- the organization provides opportunities for remote workers to engage, face to face, with co-workers on an occasional basis; and
- the organization provisions teleworkers and non-teleworkers with communications and collaboration tools and training to enable seamless interaction and access.

In addition, strategies that have been shown to help teleworkers manage work–life boundaries include:[79]

- having a separate office that they can leave at the end of the day;
- occasionally working from a third place;
- setting alarms or using apps to remind them when to quit; and
- establishing routines around start times, end times and break times.

The organizational impacts of telework are most positive when:[80]

- cross-functional teams are involved in establishing a telework program – as a minimum that should include representatives from

human resources, real estate, information technology, risk management, sustainability and communications;
- managers, teleworkers and non-teleworker receive appropriate training;
- change management programs accompany the introduction of telework programs;
- employees are provisioned with appropriate technology and adequately trained in its use;
- home office ergonomics and safety are addressed;
- there is a clear understanding of working hours/days, availability, and performance measurement;
- managers and co-workers are supportive of telework;
- senior management clearly supports telework;
- effective virtual communications technology is made available;
- checks are put in place to ensure that the treatment of teleworkers is consistent with that of non-teleworkers when it comes to promotions, provisioning and work assignments;
- policies and practices are established and applied consistently; and
- teleworkers are selected appropriately.

POLICY RESPONSES TO TELEWORK

A variety of federal, state and sectoral policies have impacted or are soon likely to impact the incidence and nature of telework in the US.

US Federal Government Law Regarding Telework among Federal Employees

Since 2000, US Federal law has required that every US government employee work from home to the maximum extent possible.[81] The original impetus was fear of a government shutdown owing to the avian flu pandemic.

Since that time, acts of terrorism, extreme weather events and other pandemic threats have repeatedly reminded government leaders of the need for telework as a cornerstone in its continuity of operations strategy (for example, during crisis periods such as the avian flu pandemic). While numerous congressional bills aimed at expanding and enforcing the 2000 mandate have been proposed, little progress was being made toward federal telework adoption.

In 2010 then-President Obama, referring to himself as the 'Teleworker in Chief' (because he worked at his home, the White House), lobbied hard

for more telework for federal government employees. He also moved the conversation about telework beyond its previous focus on continuity of operations and framed it as a strategy for reducing work–life conflict, attracting and retaining talent, and measuring people by results rather than presence.

In December of 2010, the Telework Enhancement Act (TEA) passed both houses of Congress with bipartisan support and was signed into law by the President. While most of the enforcement aspects of the Act, as well as specific funding for Federal Government agency implementation, were lost during Congressional debates, the law requires US Federal Government agencies to:[82]

- establish a policy under which eligible employees would be allowed to telework;
- designate a Telework Managing Officer;
- determine eligibility of employees and notify them of their eligibility status;
- designate a senior manager to coordinate each agency's telework program;
- require a written agreement between an agency manager and each of his or her employees authorized to telework;
- develop and implement telework training programs for managers and employees;
- ensure that interactive training be provided to eligible employees and their managers and that the training be successfully completed prior to entering into a telework agreement; and
- adopt telework as a part of the agency's Continuity of Operations Plan.

The US Office of Personnel Management's (OPM's) Director could not have been clearer about his and the Obama administration's support for telework in the agency's annual report on the status of telework to Congress:[83]

I believe telework must be implemented with a focus on accountability. As the President said at his White House Forum on Workplace Flexibility last March, 'It's about attracting and retaining top talent in the federal workforce and empowering them to do their jobs, and judging their success by the results that they get – not by how many meetings they attend, or how much face-time they log . . .'. Presenteeism, the practice of sitting at one's desk without working, can be just as problematic as absenteeism. I am an adamant supporter of telework because workers in an effective telework program can only be judged by their results. Those who can't perform and can't improve can't hide behind their

desks. It is up to management to give our employees clear direction and support, and then trust them to deliver.

While the TEA and OPM offered agencies guidance for the development of their telework programs, each is left to develop its own policies, training, and procedures.

Approximately 36 percent of federal employees are members of a labor union,[84] and agencies were similarly left on their own to negotiate telework issues with their labor unions. Union receptivity has been mixed. The issues have centered on:

- the physical burden of carrying a laptop;
- the issue of lost paid time off during unexpected office shutdowns (such as snow days and floods);
- ambiguity over who can and who cannot telework;
- ensuring privacy;
- the expectation of always being available;
- issues related to overtime and travel pay; and
- employees being expected to use/maintain their own technology.

The most recent annual report to Congress (2013 reporting on 2012 results) showed the following rate of agency compliance toward the mandates set by the TEA (see above).[85]

- Establish a policy: 76 percent of agencies.
- Designate a Telework Managing Officer: 98 percent of agencies.
- Determine eligibility of employees: 47 percent eligible; notify them of their eligibility status: 88 percent.
- Designate a senior manager to coordinate the agency's telework program: 97 percent.
- Establish a written agreement between an agency manager and each of his or her employees authorized to telework: of the 91 percent of agencies that maintained such records reported 267 227 signed agreements in place (21 percent of eligible employees).
- Ensure that an interactive training program is completed by potential teleworkers: compliance not discernable from available reports.
- Adopt telework as a part of the agency's Continuity of Operations Plan: 46 percent.

Since the signing of the TEA, telework participation of one day a week or more has grown from 4 percent of federal employees in 2011 to 14 percent in 2014.[86]

An in-depth analysis of the obstacles faced by US Federal Government agencies in furthering telework is available in a White Paper produced by the authors of this report. It is entitled *Federal Telework: Obstacles and Opportunities* and is based on surveys and interviews of federal leaders in 2013. The primary obstacles centered on issues of accountability, culture, training and technology provisioning.[87]

State and Local Initiatives Regarding Telework

State and local telework initiatives have been largely focused on the reduction of commuter travel in areas with heavy traffic congestion. A few have been aimed at creating employment in areas where industry shifts have caused high levels of unemployment (for example, coal towns and steel towns). In cities with the heaviest pollution, employers can avoid substantial financial penalties by reducing employee commuter travel.

States including Virginia, Georgia, Washington, Minnesota, Texas, California, Connecticut and a handful others have, at some time, implemented advocacy, training and, even, grant programs aimed at encouraging private and public sector adoption of telework. Most of the funding for those initiatives has come from US Department of Transportation state allocations. Reductions in federal, and thus state, funding have forced the closure of many of these programs in recent years.

Other Federal and State Existing and Pending Laws that May Impact Telework

Both US Federal Government and state governments in the US set regulations designed to protect employees' well-being. Some are considering new laws and regulations that may directly or indirectly impact organizations that offer telework.

US Federal Government and state government rules concerning overtime pay
While neither Federal nor various US state governments currently have specific regulations regarding use of ICTs away from the employer's premises or beyond normal working hours, some governments have shown, or are beginning to show, some interest in the topic, primarily as it relates to overtime payments for supplemental telework (that is, telework that increases working hours beyond the legal limits).

Currently, US federal law requires that most non-exempt employees be paid overtime rates for work conducted in excess of 40 hours a week. Some states, such as California, have extended this right to include many

exempt employees.[88] Under federal law, any work performed beyond the established weekly legal limit is compensable for non-exempt employees, generally at a rate that is a 50 percent increase over an employee's base rate of pay. In practice, however, someone who occasionally answers emails after hours rarely reports that time as part of their working hours, but not everyone is satisfied with this situation.

- In 2009, several sales personnel at T-Mobile USA filed suit against their employer for allegedly requiring them to provide a mobile number on their business cards so customers could reach them at all times. The company settled out of court for an undisclosed sum.[89]
- In an individual law suit brought in 2015, the US Court of Appeals ruled that, provided the employer makes timesheets or the equivalent available to the employee, the burden of tracking workers' working time for work performed remotely is the responsibility of the employee.[90]

Aside from the T-Mobile company case, most of the legal actions to date have been treated as individual cases rather than class action suits. 'As a result,' says the author of a 2015 *Wall Street Journal* article, 'they haven't proceeded as precedent-setting actions involving a large group of workers'.[91]

Occupational health and safety policies related to telework

Employees who work remotely are subject to the same occupational health and safety standards as any employee. Employers ensure compliance with a variety of methods including home audits, self-certification, photo audits and/or formal telework policies.

Some employers are building wellness/well-being into their corporate strategies. Their primary drivers include: being an employer of choice, reducing healthcare costs, reducing absenteeism/presenteeism, increasing engagement, reducing work–life conflict and improving employee well-being.

The most common wellness programs involve incentivizing employees to utilize full vacation time, developing workplaces and work practices that focus on employee well-being, seeking an evidence-based office environment standard that optimizes the health and well-being of its employees (WELL™ certification)[92] for their buildings, providing areas where employees can rest and recover, offering stress-management training, offering wellness programs, providing eldercare assistance, offering workplace flexibility training for managers to recognize signs of burnout, and so on.

Tax and labor law implications of telework

State employment laws and even some local employment laws (such as those that relate to overtime, working hours, employee safety, employee benefits, travel reimbursement and employee classification) as well as employment taxes often differ from federal laws. A number of states and local governments are aggressively pursuing what they see as potentially lost tax revenues owing to remote work.

Since ensuring compliance is extremely difficult for employers who may not even know where their people are working, some have resorted to closing down email servers outside of regular business hours. The California Chamber of Commerce's Employment Law blog, for example, suggests that employers implement policies and practices such as: prohibiting after-hours work among non-exempt employees without prior approval; not issuing smartphones or other portable electronic devices to non-exempt employees; and blocking their after-hours access to company servers.[93] The results of these actions may potentially reduce flexibility for employees to work where and when they choose.

Private Sector Initiatives Regarding Telework

According to the Society for Human Resource Management (SHRM), approximately one-fifth of organizations (21 percent) have a formal policy that regulates wireless communication device use outside of normal working hours, while roughly one-quarter of organizations (26 percent) have an informal policy.[94]

Of those organizations that have informal wireless communication device usage policies in place, approximately four out of five (81 percent) express their limitations of wireless communication device use to employees directly through supervisors or managers. Of the organizations that do not have a formal or informal policy on wireless communications device usage, the large majority (87 percent) allows their employees to set their own limits on the use of wireless communication devices for work purposes outside of normal working hours.

There are some interesting examples of organizational policies as regards telework.

- Pomona College in California instructed employees that they were not to use email after business hours. This was in response to a State of California law making all employees eligible for overtime pay.[95]
- Motivated by improving employee work–life balance, Vynamic, a small Pennsylvania-based healthcare industry consultancy, started shutting down access to email on weekends and from 10 p.m. to

6 a.m. on weekdays. The company says the move has increased productivity and employee happiness because employees are better rested.[96]

- Van Meter, an electronic parts distributor in Iowa, put a stop to non-essential work-related emails after 5 p.m. and before 7 a.m. on weekdays and altogether during employee vacations. The purpose of the move was to improve work–life balance.[97]
- In an effort to reduce employee stress, Edelman, a Canadian-based public relations firm, strongly discourages emails from 7 p.m. to 7 a.m.[98]
- When a team of consultants at Boston Consulting Group began organizing 'predictable time off' and a 'no messaging zone' during their off-time, their total hours dropped by 11 percent without any diminishment in work output. Seventy-two percent of employees participating in the program said they were satisfied with their job compared with only 49 percent of those not participating; 54 percent said they were satisfied with their work–life balance (compared with 38 percent); and 51 percent said they were excited to go to work the next morning (compared with 27 percent).[99]

Finally, it should be noted that legal pressure from employees and employee groups regarding after-hours work is increasing, as discussed in previous sections.

CONCLUSIONS AND RECOMMENDATIONS FOR ACTION

The US is behind many European Union countries in establishing and enforcing laws that pertain to employee well-being. It was not until 1971 that the Occupational Safety and Health Administration (OSHA) under the US Department of Labor (DOL) was established to ensure safe and healthful working conditions by setting and enforcing safety standards. United States federal, state and local government actions taken to date have primarily focused on the extent to which telework use violates tax and labor laws.

Public and private sector employer actions have been largely focused on:

- avoiding fines and legal action brought by labor unions and/or workers;
- attracting and retaining talent/organizational sustainability;
- creating a public perception of good citizenship;

● ensuring that workers have an adequate amount of time off because they understand the benefits of downtime for health, productivity, employee engagement, and so on; and
● expressing a genuine concern for their workforce.

While employees are working differently than they did a decade ago, the numbers suggest that they are not necessarily working substantially more hours. There will always be workaholics, that is, individuals who for a variety of reasons choose to work long hours, and long hours are also part of some companies' business models (for example, major law firms). Some employees work long hours because of work overload, but others are happy to do so because they are truly engaged in what they do.

On balance, teleworkers in the US report that being able to work when and where they want reduces work–life conflict, improves their overall work–life balance and offers a variety of other benefits. While some regular teleworkers work longer hours than their counterparts who always work in the office, their leisure time is nearly the same thanks to reduced commuting time – with the added benefit of a reduction of commuting-related stress.

Despite some drawbacks, a substantial majority (79 percent) of American employees (aged 35–54 years) want to telework,[100] and the overall benefits of telework to both employers and employees have been documented in this chapter. The key to making telework sustainable for both lies in how it is implemented. In particular, manager and employee training for telework are crucial. With a mutual understanding of expectations, good practices, communications protocols and the tools required to get the job done, telework can offer a triple win for people, planet and profit.

NOTES

1. These figures are the authors' own calculations. The authors are Kate Lister and Tom Harnish of Global Workplace Analytics. The figures are based on data from the following data sources: the US Census Bureau, the General Social Survey, the Bureau of Labor Statistics and Ipsos.
2. The Dieringer Research Group (2009), 'Telework trendlines 2009', report, WorldatWork, Scottsdale, AZ; US Office of Personnel Management (2013), '2013 status of telework in federal government', US Office of Personnel Management, Washington, DC.
3. Lister, K. and Harnish, T. (2011), 'State of telework in the United States: how individuals, business and government benefit', Telework Research Network, Global Workplace Analytics, Carlsbad, CA.
4. Matos, K., Galinsky, E. and Bond, J.T. (2014), '2014 National Study of Employers', Families and Work Institute and the Society for Human Resource Management, Washington, DC.

5. These figures are the authors' own calculations based on data from the American Community Survey, 2014, US Census Bureau, Suitland, MD, accessed 25 June 2019 at https://www.census.gov/programs-surveys/acs/data.html.

6. These figures are the authors' own calculations based on data from the American Community Survey, 2013, US Census Bureau, Suitland, MD, accessed 25 June 2019 at https://www.census.gov/programs-surveys/acs/data.html.

7. Lonnie Golden, Professor of Economics and Labor-Employment Relations at Penn State University, Abington College, extracted data from the GSS for this chapter. His analysis showed no significant differences among the various populations regarding the data included in this chapter.

8. US General Social Survey, NORC at the University of Chicago, 2014, accessed 25 June 2019 at https://gss.norc.org/Get-The-Data.

9. Ipsos Global @dvisor (2011), 'Telecommuting: citizens in 24 countries assess working remotely for a total global perspective', Ipsos, accessed 14 August 2016 at https://www.ipsos.com/sites/default/ files/news_and_polls/2012-01/5486-ppt.pdf.

10. Federal Employee Viewpoint Survey 2014, US Office of Personnel Management, Washington, DC.

11. These figures are the authors' own calculations based on data from the American Time Use Survey 2014, in the American Community Survey 2014, US Census Bureau, Suitland, MD, accessed 25 June 2019 at https://www.census.gov/programs-surveys/acs/data.html.

12. Jack Nilles coined the terms telework and telecommuting in the mid-1970s to better represent what he originally called the 'Telecommunications-Transportation Tradeoff'. (J.M. Nilles, 1976, *Telecommunications-Transportation Tradeoff: Options for Tomorrow*, New York: John Wiley & Sons.) While the two terms are often used interchangeably, 'telecommuting' is actually a subset of telework. Nilles defines 'telework' as any form of substitution of information technologies (such as telecommunications and/or computers) for normal work-related travel; moving the work to the workers instead of moving the workers to the work. He defines 'telecommuting' as the portion of telework that applies to the daily commute to and from work; a primary source of traffic congestion, air pollution, and lost productivity (http://jala.com/history.php, accessed 25 June 2019).

13. Ernst & Young (2015), 'Global generations: a global study on work–life challenges across generations', EYG no. KK1088, Ernest and Young Global Management (EYGM).

14. WorldatWork (2015), 'Total rewards and employee well-being practices: a report by WorldatWork underwritten by HealthMine', WorldatWork, Scottsdale, AZ. WorldatWork is a nonprofit professional association engaged in the cultivation of successful compensation and total rewards strategies.

15. Accenture (2013), 'Defining success: 2013 global research results', accessed 26 July 2017 at www.accenture.com/IWD.

16. Ernst & Young (2015), 'Global generations: a global study on work–life challenges across generations', EYG no. KK1088, Ernest and Young Global Management (EYGM) Limited.

17. Golden, L., Lambert, S., Henly, J. and Wiens-Tuers, B. (2011), 'Working time in the employment relationship: perceived control and work–life balance', in K. Townsend and A. Wilkinson (eds), *The Edward Elgar Research Handbook on Work and Employment Relations*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar, pp. 188–211.

18. Purcell, K. and Rainie, L. (2014), 'Email and the Internet are the dominant technological tools in American workplaces', Pew Research Center, accessed 20 June 2017 at https://www.pewinternet.org/2014/12/30/email-and-the-internet-are-the-dominant-technological-tools-in-american-workplaces/.

19. The Dieringer Research Group (2009), 'Telework trendlines 2009', report, WorldatWork, Scottsdale, AZ.

20. These figures are the authors' own calculations based on data from the Federal

Employee Viewpoint Survey, 2014, US Office of Personnel Management, Washington, DC.

21. Ernst & Young (2015), 'Global generations: a global study on work–life challenges across generations', EYG no. KK1088, Ernest and Young Global Management (EYGM) Limited.

22. These figures are the authors' own calculations based on data from the US General Social Survey, 2014, NORC at the University of Chicago.

23. These figures are the authors' own calculations based on data from the Federal Employee Viewpoint Survey, 2014, US Office of Personnel Management, Washington, DC.

24. These figures are the authors' own calculations based on data from the Federal Employee Viewpoint Survey, 2014, US Office of Personnel Management, Washington, DC.

25. Lister, K. and Harnish, T. (2017), '2017 State of telecommuting in the US employee workforce, Global Workplace Analytics and FlexJobs, accessed 22 June 2017 at http://globalworkplaceanalytics.com/whitepapers.

26. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

27. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

28. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

29. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

30. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

31. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

32. These figures are the authors' own calculations based on data from Global Workplace Analytics analysis of the US American Community Survey, 2015 (US Census Bureau, Washington, DC).

33. Ahmade, R., Brand, J., Creighton, J., Dirks, G., Hood, C., Nagy, G., et al. (2013), 'New WOW alternative workplace strategies benchmarking study', 1 November, New Ways of Working, unpublished report.

34. These figures are the authors' own calculations based on data from the US Census Bureau, the General Social Survey, the Bureau of Labor Statistics and Ipsos.

35. Based on data from the American Community Survey, 2013, US Census Bureau, Suitland, MD, accessed 25 June 2019 at https://www.census.gov/programs-surveys/acs/data.html.

36. 2017 was the first year that this question was asked.

37. Gallup, Inc. (2017), 'Work and workplace', March, accessed 6 February 2018 at http://news.gallup.com/poll/1720/work-work-place.aspx.

38. Gallup, Inc. (2014), 'Should employers ban email after work hours?', September, accessed 6 January 2017 at https://www.gallup.com/workplace/236519/employers-ban-email-work-hours.aspx.

39. Ibid.

40. The following papers are available at http://globalworkplaceanalytics.com/whitepapers: Lister, K. and Harnish, T. (2011), 'State of telework in the US', Global Workplace Analytics, Carlsbad, CA, online 8 November 2011; Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad,

CA, online 10 August 2010; Lister, K. and Harnish, T. (2011), 'The bottom line on telework: California government workforce', Global Workplace Analytics, Carlsbad, CA, online 8 March 2012; Lister, K. and Harnish, T. (2012), 'Federal telework obstacles and opportunities', Global Workplace Analytics, Carlsbad, CA, online 10 December 2013; Lister, K. and Harnish, T. (2011), 'The bottom line on telework for the Thurston Region state and local government', Global Workplace Analytics, Carlsbad, CA, online 14 August 2014; Lister, K. and Harnish, T. (2013), 'Federal telework return on taxpayer investment', Global Workplace Analytics, Carlsbad, CA, online 30 May 2015; Lister, K. and Harnish, T. (2011), 'The shifting nature of work in the UK', Global Workplace Analytics, Carlsbad, CA, online 9 June 2015; Lister, K. and Harnish, T. (2010), 'Results based management: the key to unlocking talent and increasing productivity', Global Workplace Analytics, Carlsbad, CA, online 30 May 2015; Lister, K. and Harnish, T. (2010), 'Workshift Canada: the bottom line on telework', Global Workplace Analytics, Carlsbad, CA, online 1 August 2012.

41. Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad, CA, online 10 August 2010, accessed 25 June 2019 at http://globalworkplaceanalytics.com/whitepapers.

42. Matos, K. and Galinsky, E. (2012), '2012 national study of employers', Families and Work Institute and Society for Human Resource Management, Washington, DC.

43. Golden, L., Lambert, S. and Henly, J. (2013), 'Work schedule flexibility: a contributor to employee happiness?', *Journal of Social Research and Policy*, **4** (2), 107–35.

44. WorldatWork (2013), 'Survey on workplace flexibility 2013', WorldatWork, Scottsdale, AZ.

45. Ipsos Global @dvisor (2011), 'Telecommuting: citizens in 24 countries assess working remotely for a total global perspective', Ipsos, accessed 14 August 2016 at https://www.ipsos.com/sites/default/ files/news_and_polls/2012-01/5486-ppt.pdf.

46. Lister, K. and Harnish, T. (2011), 'The bottom line on telework for the Thurston Region state and local government', Global Workplace Analytics, Carlsbad, CA, online 14 August 2014, accessed 25 June 2019 at http://globalworkplaceanalytics.com/whitepapers.

47. Presenteeism is defined in the US as meaning present at work but not performing one's best, not simply being physically present in the office.

48. Weinert, C., Maier, C. and Laumer, S. (2015), 'Why are teleworkers stressed? An empirical analysis of the causes of telework-enabled stress', in O. Thomas and F. Teuteberg (eds), *Proceedings of the 12th International Conference on Wirtschaftsinformatik*, Osnabrück, pp. 1407–21.

49. US Office of Personnel Management (2014), Federal Employee Viewpoint Survey Results, accessed 18 January 2017 at https://www.opm.gov/policy-data-oversight/data -analysis-documentation/employee-surveys/results/2014-employee-survey-results/.

50. Ibid.

51. US Office of Personnel Management (2013), '2013 Status of telework in government – report to Congress', US Office of Personnel Management, Washington, DC.

52. Lister, K. and Harnish, T. (2011), 'State of telework in the US', Global Workplace Analytics, Carlsbad, CA, online 8 November 2011; Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad, CA, online 10 August 2010; Lister, K. and Harnish, T. (2011), 'The bottom line on telework: California government workforce', Global Workplace Analytics, Carlsbad, CA, online 8 March 2012; Lister, K. and Harnish, T. (2012), 'Federal telework obstacles and opportunities', Global Workplace Analytics, Carlsbad, CA, online 10 December 2013; Lister, K. and Harnish, T. (2011), 'The bottom line on telework for the Thurston Region state and local government', Global Workplace Analytics, Carlsbad, CA, online 14 August 2014; Lister, K. and Harnish, T. (2013), 'Federal telework return on taxpayer investment', Global Workplace Analytics, Carlsbad, CA, online 30 May 2015; Lister, K. and Harnish, T. (2011), 'The shifting nature of work in the UK', Global Workplace Analytics, Carlsbad, CA, online 9 June 2015; Lister, K. and Harnish,

T. (2010), 'Results based management: the key to unlocking talent and increasing productivity', Global Workplace Analytics, Carlsbad, CA, online 30 May 2015; Lister, K. and Harnish, T. (2010), 'Workshift Canada: the bottom line on telework', Global Workplace Analytics, Carlsbad, CA, online 1 August 2012. These papers accessed 25 June 2019 at http://globalworkplaceanalytics.com/whitepapers.

53.   Sodexo (2014), '2014 workplace trends report', accessed 15 February 2015 at http://sodexousa.com/usen/media/press-releases/2014/news-2014-workplace-trends.aspx.

54.   Society for Human Resource Management (2014), '2014 workplace flexibility survey: overview of flexible work arrangements', Society for Human Resource Management, accessed 4 June 2017 at https://www.shrm.org/trends-and-forecasting/research-and-surveys/pages/2014-workplace-flexibility-survey.aspx.

55.   Golden, L., J.R. Henly and S. Lambert (2013), 'Work schedule flexibility: a contributor to happiness?', *Journal of Social Research & Policy*, **4** (2), 107–35.

56.   Golden, L., Lambert, S., Henly, J. and Wiens-Tuers, B. (2011), 'Working time in the employment relationship: perceived control and work–life balance', in K. Townsend and A. Wilkinson (eds), *The Edward Elgar Research Handbook on Work and Employee Relations*, Cheltenham, UK and Northampton, MA, USA, pp. 188–211.

57.   Moen, P., Kelly, E.L., Tranby, E. and Huang, Q. (2011), 'Changing work, changing health: can real work-time flexibility promote health behaviors and well-being', *Journal of Health and Social Behavior*, **54** (4), 404–29.

58.   Society for Human Resource Management (2009), 'Workplace flexibility in the 21st century: meeting the needs of the changing workforce', Society for Human Resource Management, accessed 4 June 2017 at https://blog.shrm.org/sites/default/files/reports/09-0464_Workplace_Flexibility_Survey_ Report_inside_FINALonline.pdf.

59.   Ibid.

60.   Society for Human Resource Management (2014), '2014 workplace flexibility survey: overview of flexible work arrangements', Society for Human Resource Management, accessed 4 June 2017 at https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/pages/2014-workplace-flexibility-survey.aspx.

61.   Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad, CA, accessed 10 August 2010 at http://globalworkplaceanalytics.com/whitepapers; Lister, K., and Harnish, T. (2013), 'Federal telework return on taxpayer investment, federal telework return on taxpayer investment', Global Workplace Analytics, Carlsbad, CA, accessed 30 May 2015 at http://globalworkplaceanalytics.com/whitepapers; Nilles, J.M. (1998), *Managing Telework: Strategies for Managing the Virtual Workforce*, Hoboken, NJ: John Wiley & Sons; Lake, A. (2013), *Smart Flexibility: Moving Smart and Flexible Working from Theory to Practice*, Aldershot: Gower; Clapperton, G. and P. Vanhoutte (2014), *The Smarter Working Manifesto*, Oxford: Sunmakers.

62.   Ibid. (all).

63.   Hill, E.J.; Erickson, J.J., Holmes, E.K. and Ferris, M. (2010), 'workplace flexibility, work hours, and work–life conflict: finding an extra day or two', *Journal of Family Psychology*, **24** (3), 349–58.

64.   Accenture (2013), 'Defining success: 2013 global research results', Accenture, 1 March, accessed 14 April 2015 at www.accenture.com/IWD.

65.   Ipsos Global @dvisor (2011), 'Telecommuting: citizens in 24 countries assess working remotely for a total global perspective', Ipsos, accessed 12 July 2016 at https://www.ipsos.com/sites/default/ files/news_and_polls/2012-01/5486-ppt.pdf.

66.   PGi (2015), 'PGi global telework survey report', PGi, accessed 12 July 2016 at https://www.pgi.com/resources/white-papers/2015-pgi-global-telework-survey/.

67.   Fox, S. and Rainie, L. (2014), 'Part 1: how the Internet has woven itself into American life', Pew Research Center Internet and American Life Survey (Omnibus survey), Pew Research Center, accessed 3 September 2016 at https://www.pewinternet.org/2014/02/27/part-1-how-the-internet-has-woven-itself-into-american-life/.

68.   Harter, J. and Agrawal, S. (2014), 'Most U.S. workers see upside to staying connected

at work', Gallup, accessed 3 September 2016 at https://news.gallup.com/poll/168794/workers-upside-staying-connected-work.aspx.

69. In abstract of Sardeshmukh, S.R., Sharma, D. and Golden, T.D. (2012), 'Impact of telework on exhaustion and job engagement: a job demands and job resources model', *New Technology Work and Employment*, **27** (3), 193–207.

70. Sardeshmukh, S.R., Sharma, D. and Golden, T.D. (2012), 'Impact of telework on exhaustion and job engagement: a job demands and job resources model', *New Technology Work and Employment*, **27** (3), 193–207.

71. Ernst & Young (2015), 'Global generations: a global study on work–life challenges across generations', EYG no. KK1088, Ernest and Young Global Management (EYGM) – based on the question: 'Please rate the following factors that would cause you to seriously consider leaving a job based on how important they are to you'.

72. US Merit Systems Protection Board (2011), 'Telework: weighing the information, determining an appropriate approach', a report to the President and the Congress of the United States by the US Merit Systems Protection Board, Washington, DC.

73. Witters, D. and Liu, D. (2014), 'Using mobile technology for work linked to higher stress', Gallup, May, accessed 6 November 2016 at https://news.gallup.com/poll/168815/using-mobile-technology-work-linked-higher-stress.aspx.

74. Ibid.

75. Ibid.

76. Sardeshmukh, S.R., Sharma, D. and Golden, T.D. (2012), 'Impact of telework on exhaustion and job engagement: a job demands and job resources model', *New Technology Work and Employment*, **27** (3), 193–207.

77. Harter, J. (2014), 'Should employers ban email after work hours?', *Harvard Business Review* blog, August, accessed 17 December 2016 at https://hbr.org/2014/08/should-employers-ban-email-after-work-hours.

78. Lister, K. and Harnish, T. (2010), 'Telecommuting benefits: the bottom line', Global Workplace Analytics, Carlsbad, CA, accessed 10 August 2010 at http://globalworkplaceanalytics.com/whitepapers; Lister, K., and Harnish, T. (2013), 'Federal telework return on taxpayer investment, federal telework return on taxpayer investment', Global Workplace Analytics, Carlsbad, CA, accessed 30 May 2015 at http://globalworkplaceanalytics.com/whitepapers; Nilles, J.M. (1998), *Managing Telework: Strategies for Managing the Virtual Workforce*, Hoboken, NJ: John Wiley & Sons; Lake, A. (2013), *Smart Flexibility: Moving Smart and Flexible Working from Theory to Practice*, Aldershot: Gower; Clapperton, G. and P. Vanhoutte (2014), *The Smarter Working Manifesto*, Oxford: Sunmakers.

79. Ibid. (all).

80. Ibid. (all).

81. US Office of Personnel Management (2011), 'Guide to telework in the Federal Government', US Office of Personnel Management, Washington, DC, s. 359 of Public Law 106-346.

82. US Office of Personnel Management (2011), 'Guide to telework in the Federal Government', US Office of Personnel Management, Washington, DC, s. 359 of Public Law 106-346.

83. US Office of Personnel Management (2012), '2013 Status of telework in federal government, report to the Congress', US Office of Personnel Management, Washington, DC, p. 36.

84. US Bureau of Labor Statistics (2014), 'Union membership for annual 2013', Economic News Release, January, US Bureau of Labor Statistics, Washington, DC.

85. US Office of personnel management (2013), '2013 status of telework in federal government, report to the Congress', US Office of Personnel Management, Washington, DC.

86. US Office of Personnel Management (2014), 'Federal employee viewpoint survey results', accessed 12 July 2016 at https://www.opm.gov/policy-data-oversight/data-analysis-documentation/employee-surveys/results/2014-employee-survey-results/.

87. Lister, K. and Harnish, T. (2012), 'Federal telework obstacles and opportunities',

November, Global Workplace Analytics, Carlsbad, CA, online 30 May 2015, http://globalworkplaceanalytics.com/whitepapers.

88. The terms 'non-exempt' and 'exempt' derive from the Fair Labor Standards Act of 1938. They refer to those employees who either are eligible or are not eligible for overtime payments under the Act, respectively. The US Department of Labor establishes regulations that determine which employees are considered to be eligible for such payments, which change from time to time.

89. Weber, L. (2015), 'Can you sue the boss for making you answer late-night email?', *Wall Street Journal*, 20 May, accessed 1 May 2017 at https://www.wsj.com/articles/can-you-sue-the-boss-for-making-you-answer-late-night-email-1432144188.

90. Polishuk, A. (2015), 'Timekeeping for telecommuters under the FLSA' (U.S. Fair Labor Standards Act), California Public Agency Labor and Employment blog, 26 May 2015, accessed 26 May 2015 at https://www.calpublicagencylaboremploymentblog.com/wage-and-hour-2/timekeeping-for-telecommuters-under-the-flsa/.

91. Weber, L. (2015), 'Can you sue the boss for making you answer late-night email?', *Wall Street Journal*, 20 May, accessed 1 May 2017 at https://www.wsj.com/articles/can-you-sue-the-boss-for-making-you-answer-late-night-email-1432144188.

92. WELL Certification is a trademarked name owned by Delos Living, New York.

93. California Chamber of Commerce (CalChamber) (2015), 'DOL taking interest in smartphones and off-the-clock work', CalChamber HRWatchdog, 28 May, accessed 28 May 2015 at https://hrwatchdog.calchamber.com/2015/05/dol-taking-interest-in-smartphones-and-off-the-clock-work/.

94. Society for Human Resource Management (SHRM) Staff (2012), 'Technology and its impact on employees during non-working hours', SHRM blog, 1 August, accessed 7 August 2015 at https://blog.shrm.org/workplace/technology-and-its-impact-on-employees-during-nonworking-hours.

95. Noguchi, Y. (2015), 'Amid new overtime rules, more employers might set email curfew', National Public Radio, 8 July, accessed 8 July 2015 at https://www.npr.org/sections/alltechconsidered/ 2015/07/08/416515537/amid-new-overtime-rules-more-employers-might-set-email-curfew.

96. Ibid.

97. Rayasam, R. (2015), 'The end of the inbox: companies that banned email', BBC, 25 March, accessed 25 March 2015 at http://www.bbc.com/capital/story/20150324-the-companies-that-banned-email.

98. Thompson, C. (2015), 'End the tyranny of 24/7 email', *New York Times*, 28 August, Opinion pages, accessed 28 August 2015 at https://www.nytimes.com/2014/08/29/opinion/end-the-tyranny-of-24-7-email.html.

99. Perlow, L. (2012), 'Predictable time off: the team solution to overcoming constant work connection', FastCompany blog, 21 May, accessed 7 July 2016 at https://www.fastcompany.com/1837867/ predictable-time-team-solution-overcoming-constant-work-connection.

100. Burnett, J. (2018), 'Survey: workers in these cities like the option to telecommute the most', *The Ladders*, 13 June, accessed 14 June 2018 at https://www.theladders.com/career-advice/survey-workers-in-these-cities-like-the-option-to-telecommute-the-most.

4. Telework and its effects in Argentina

Sonia Boiarov

EXECUTIVE SUMMARY

This chapter is a compilation of information on the current incidence of teleworking in Argentina, especially that related to this form of work organization, and the work–life balance of teleworkers. To that end, we have adopted a working definition of what we mean by teleworking, especially for dependent relationships: 'Teleworking is work done by workers using information and communication technologies (ICTs) away from the employer's premises'.

To achieve the objectives, official statistical information was obtained from the National Institute of Statistics and Censuses (INDEC); companies were interviewed; and articles in newspapers and journals, studies, academic theses and surveys were analysed.

No specific studies were found on the incidence of telework, so it was necessary to make use of secondary data from the National Survey on Access and Usage of Information and Communication Technologies (INTEC) for 2011[1] and the Annual Urban Household Survey (EAHU). Both surveys are conducted in Argentina by INDEC. Wherever possible, a distinction was made between teleworkers in dependent employment and those who work as freelancers or are self-employed.

According to the results of this analysis, only 2.7 per cent of all workers in Argentina are teleworkers. Of these, 1.6 per cent or 186 687 people are teleworkers in a dependent employment relationship and 226 439 are independent, making a total of 413 126, of which 56 per cent are men. This percentage of teleworkers appears to be very low if we consider that other surveys conducted in the private domain have estimated the total number of teleworkers at 2 million, without distinguishing their type of employment.

Several studies concur that the number of hours of telework exceeds the number of hours of work on site in a traditional office. The intensity or extent of telework, both in frequency and the pattern of working time, affects workers' health and well-being, which sometimes spills over into

their personal lives and invades the family domain, giving rise to various psychosocial risks which need special attention.

With respect to the organization of the work, a study (CENIT Foundation 2011) of 106 teleworkers conducted in Buenos Aires City showed that 61 per cent of teleworkers said that they had increased their income, 53 per cent said that they concentrated better on their work and 35 per cent said that it was easier to do their job when they worked from home. However, working to targets changes working hours, meaning that they work more hours or more atypical hours. In addition, the skills required for teleworking make greater demands on teleworkers in terms of aptitudes such as self-discipline in managing working time, self-reliance and organizing their work and personal responsibilities to facilitate work–life balance.

The burden of such additional responsibilities for teleworkers appears to be greater than women are willing to assume in some cases, and this situation has given rise to a number of academic theses and studies. One of these, conducted in the Province of Buenos Aires, records that the main obstacles for women teleworkers were isolation and balancing family, work and leisure (Aguirre et al. 2015). In addition, the atypical or unsocial hours affect family life, and this impairs health after the age of 40 (Neffa 2015, p. 133), especially among women for whom alterations in their circadian rhythms are associated with stress, depression and anxiety. The most common manifestations of this deterioration are chronic fatigue and sleep disturbance, loss of concentration, musculoskeletal disorders, increased digestive and cardiovascular problems, and psychosocial disorders.

In general terms, the psychosocial risk factors in teleworking (Rubbini 2012), according to the specialist literature, are the same as what for many individuals could also be considered as advantages:

- control and independence in work;
- social relations;
- flexibility;
- work–life balance;
- use of information and communication technologies;
- skills/requirements;
- professional development; and
- legal and institutional regulation.

Also, the distance that separates people from their work group has consequences for the workers' interpersonal relations and affects the organizations to which they belong, given that their distribution and motivation are the same.

Finally, the chapter sets out some telework policies applied in companies and at the governmental level.

Interviews were also conducted by the author in three heterogeneous organizations, which allowed an insight into the policies, objectives, degree of formality, consequences and benefits resulting from the implementation of their telework programmes.

In the governmental sphere, the precursor was the request to the Ministry of Labour, Employment and Social Security (MTESS)[2] from the Centre for Telework and Distance Learning of the Faculty of Social Sciences of the University of Buenos Aires (CTT – now the Fundación Caminando Utopías[3]) which, in 2001, requested the formation of a Commission on Telework (Boiarov 2007, p. 25) with the objective of studying whether there was a need for legislation to regulate teleworkers in a dependent employment relationship. The Commission was created in 2003 and presented its first draft of the Teleworking Act in 2007 (Senate of the Argentine Nation 2007).

In 2005, the CTT supported the creation of the Telework Group in the Economic Commission for Latin America and the Caribbean (ECLAC), chaired by Argentina and, thanks to a grant from the United Nations and the International Telecommunication Union, participated in the World Summit on the Information Society (WSIS).

The requested Commission on Telework comprised representatives of labour relations of various organizations. It later became the Telework Coordinator and had a space on the Ministry of Labour's website[4] with access to various government programmes regarding telework, such as skills certification, the Programme of Monitoring and Promotion of Telework in Private Enterprises (PROPET), the Programme of Implementation of Telework in the Public Sector, Telework for Persons with Disabilities, Youth and ICTs, and Telework after 45 Years, a New Challenge.[5]

Although Argentina does not have a specific domestic law on telework, seven draft laws were presented between 2007 and 2014. At provincial level, on 3 July 2013, Act 2861 on Promotion and Dissemination of Telework was passed in the Province of Neuquén.[6] Draft laws were also recorded in the provinces of Buenos Aires,[7] Rio Negro,[8] Chaco[9] and La Pampa (Pregno 2013). In addition, various resolutions on telework have been issued, the *Manual of Good Practices in Telecommuting* (MoLESS 2011) was produced, and several collective agreements were concluded.[10]

Comments in the final section of the chapter invite further consideration as to whether current labour legislation might be a constraint on developing telework to its full potential, recognizing that the lack of information is a real difficulty in this area and showing the importance of monitoring the full duration of telework programmes to prevent the

risks inherent in this way of working and to capitalize on its benefits to the maximum.

INTRODUCTION/BACKGROUND

In line with the interest of the International Labour Organization (ILO) regarding telework, this chapter investigates the way in which teleworkers and companies are organized in the new paradigm created by the introduction of New ICTs in the world of work.

A number of questions arise, such as: how many teleworkers are there currently in Argentina? Do teleworkers work longer hours than those in an office? How do they balance personal and working life? What policies do companies adopt? Does the legislation support this way of working?

METHODOLOGY AND MAIN DATA SOURCES

Methodology for Estimating the World of Teleworkers

In the absence of specific statistical data on telework in Argentina, we resorted to the following data source: public microdata of the National Institute of Statistics and Censuses (INDEC),[11] which is available on its website.[12]

We used the Annual Survey of Urban Households (EAHU), the main purpose of which is to collect information on the labour market, which is an extension of the continuous 'Permanent Household Survey – 31 Urban Agglomerations', through incorporation in the sample of private homes in localities with 2000 or more inhabitants, not covered by the Permanent Household Survey, for all the provinces except Tierra del Fuego, Antartica and the South Atlantic Islands, and the Autonomous City of Buenos Aires. The EAHU is carried out every third quarter, and it covers the following:

- the total national urban population resident in private homes; and
- the total provincial urban population resident in private homes.

It is based on a random, stratified and multistage sample, obtained by the Department of Statistical Methodology of INDEC from the Framework of the National Housing Sampling Survey (MMNV), which includes homes selected for the Permanent Housing Survey (EPH) – 31 Urban Agglomerations. The sample size is approximately 46 000 homes.

We also analysed the design and structure of the INDEC ICT database for 2011 (INDEC 2011).

Using the combination of both of these databases, the following activities were carried out:

- the construction of a working definition of teleworker along the lines of the ILO's definition and the variables available in the selected database;
- the preparation of a plan of tables along the lines of the 'Standard Expert Questionnaire on Telework (including Mobile Telework) and Its Effects' and the variables available in the selected database;
- fine-tuning the selected database by linking databases; the construction of variables envisaged in the schedule; and the reconstruction and labelling of the categories of occupational variables of interest.
- processing the data with SPSS software; preparing the design of the tables in Excel with their respective titles, notes, source and formats in general; and the presentation of the tables in a Word file for direct incorporation into the study.

We consider that this work is as precise as it can be, given that it has been constructed from secondary data, always with the caveat that we are referring to existing information that has been collected for another purpose.

Definition of Telework Used in this Chapter

Telework is work performed by workers using ICTs away from the employer's premises.

Source of Data

The source of data used was the EAHU and the National Survey of Information and Communication Technologies (ENTIC).

The ENTIC was conducted for the first time in Argentina in 2011, as a module of the EAHU during the third quarter of that year. The ENTIC collected information on access to radios, televisions, telephony, computers and the Internet in households, as well as the use of mobile phones, the Internet and computers. This latter data is essential in identifying teleworkers and was a crucial factor in the selection of the data source.

We also interviewed three organizations that have telework programmes and used reports of official bodies such as the Ministry of Labour, the Economic Commission for Latin America and the Caribbean (ECLAC), universities, approved theses and current articles on the subject.

INCIDENCE OF TELEWORK

Overall Incidence

The INDEC ICT was used to construct general tables covering 15 306 596 prime age workers, excluding employers, unpaid workers and those not specified (Tables 4.1 and 4.2).

Of all self-employed workers, 7.8 per cent were teleworking, while among workers in an employment relationship, only 1.6 per cent were teleworking.

It appears that of the 100 per cent of prime age workers, only 2.7 per cent of the economically active population are teleworkers.

Table 4.1   Occupation by status of teleworker by occupational category: Argentina, third quarter 2011 (percentage)

Occupational category	Teleworker		Total
	No	Yes	
Employer	100.0	0.0	100.0
Self-employed	92.2	7.8	100.0
Blue- or white-collar worker	98.4	1.6	100.0
Unpaid family worker	100.0	0.0	100.0
No information	100.0	0.0	100.0
Total	97.3	2.7	100.0

Source: Own preparation based on EAHU-ENTIC, third quarter 2011.

Table 4.2   Occupation by status of teleworker by occupational category: Argentina, third quarter 2011 (number of workers)

Occupational category	Teleworker		Total
	No	Yes	
Employer	709 109	0	709 109
Self-employed	2 664 924	226 439	2 891 363
Blue- or white-collar worker	11 396 186	186 687	11 582 873
Unpaid family worker	121 597	0	121 597
No information	1654	0	1654
Total	14 893 470	413 126	15 306 596

Source: Own preparation based on EAHU-ENTIC, third quarter 2011.

Incidence of Telework Disaggregated by Gender, Occupation and Sector

If we compare the data from Tables 4.1 and 4.2 with a study by ECLAC in conjunction with the Argentine Ministry of Labour (Novick and Rotondo 2013), we find that telework is not well developed in this country: only 4 per cent of companies operate some form of telework. This figure is just one percentage point higher than the one that we obtained in our analysis of the INDEC secondary data. However, the rate of application of telework rises to some 12 per cent in large companies and 21 per cent in the multinational companies segment.

For the extent of telework adoption by sector and size of enterprise, see Figure 4.1 from the ECLAC study (Novick and Rotondo 2013 p. 171).

The same study analyses employers' perceptions, 18 per cent of whom considered that the incorporation of ICTs can allow growing numbers of workers to work from home. The difference between this potential (18 per cent) and the current reality, which is only 4.8 per cent, led the researchers to conclude that greater use could be made of telework in the future, as a substantial portion of employers were already well informed about it.
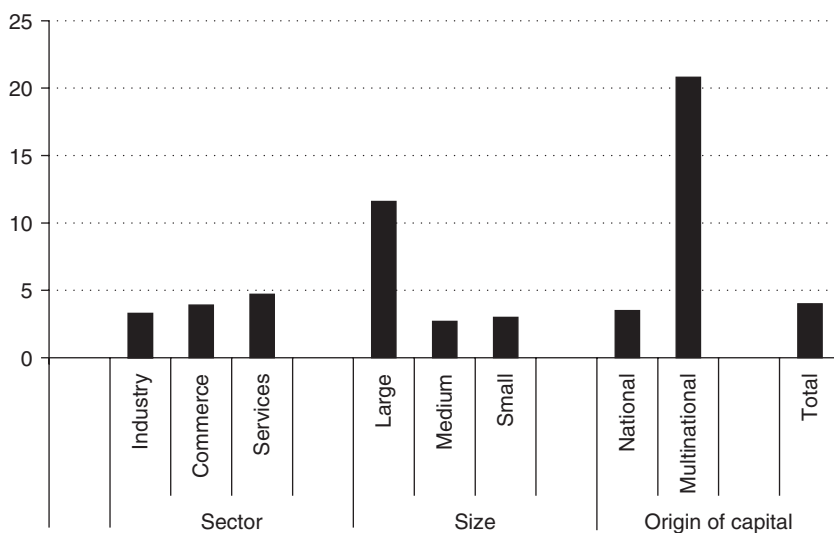
Source: Employment and Business Dynamics Observatory, General Directorate of Statistics and Labor Studies, Ministry of Labor Employment and Social Security, based on ICT Labour Statistics Indicators.

Figure 4.1   Rate of application of telework in companies, by sector, size and source of capital, firms with over ten employees, 2010 (percentage)

   With regard to the profiles of workers who have access to telework, it was found that in 66 per cent of firms, this possibility is offered to those in general management functions, in 46 per cent it is offered to supervisors and chiefs and in 54 per cent to other workers. The occupational areas in companies where telework is commonly used are, in order of importance: 28 per cent in administration, 26 per cent in systems, 24 per cent in sales and marketing, 12 per cent in production and 14 per cent in other areas. It was also observed that 74 per cent of the companies used this form of working in more than one area of the organization, while 26 per cent only use it in a specific area.

   If we take the private estimates of the numbers of teleworkers who have offices at home, the number is much higher, estimated to be as high as 2 million persons.[13]

Gender

Tables 4.3 and 4.4 show that the majority of teleworkers are men; their share of teleworkers is 12 percentage points higher than women teleworkers

Table 4.3   Occupation by sex by status of teleworker, Argentina, third quarter 2011 (percentage)

Sex	Teleworker		Total
	No	Yes	
Male	60.1	56.0	60.0
Female	39.9	44.0	40.0
Total	100.0	100.0	100.0

Source: Own preparation based on EAHU-ENTIC, third quarter 2011.

Table 4.4   Occupation by sex by status of teleworker, Argentina, third quarter 2011

Sex	Teleworker		Total
	No	Yes	
Male	8 946 339	231 548	9 177 887
Female	5 947 131	181 578	6 128 709
Total	14 893 470	413 126	15 306 596

Source: Own preparation based on EAHU-ENTIC, third quarter 2011.

in an employment relationship. This male majority was already observed in Argentina in the first studies carried out in 2007 (Boiarov et al. 2007) for the International Development Research Centre (IDRC) (Boiarov et al. 2007, p. 68).

INTENSITY (FOR EXAMPLE, FREQUENCY, DURATION, SHARE OF TOTAL WORKING TIME) AND EFFECTS OF TELEWORK

The effects of telework on working time has been the subject of various descriptive analyses,[14] but very few field studies in Argentina. One specific book on psychosocial work relationships makes explicit mention of telework as follows:

> Resort to flexible working time has spread in the light of the needs of the company or organization and workers have to adapt. In some cases, as the work cannot be finished during the working day, the task is continued at home, even on rest days. These are overtime hours which are not recognized or paid as such. Telework frequently leads to such situations. (Neffa 2015, p. 136)

Neffa (2015) then goes on to show how the duration and configuration of working time influence the worker's health and well-being, which can be analysed either by the number of hours and days worked or, in the case of night work, shift work and atypical hours which disrupt family life, as having to be available to work outside normal working hours when the company or organization so requires. This extension of working time cannot always be balanced with what a worker needs to do, or wants to do outside the workplace to fulfil family and social responsibilities.

Middle and senior management are less affected by this phenomenon because they have greater opportunities to adapt their work timetables, even though this potential freedom needs to be studied in relation to the context of pressure at different times of the year or during times of crisis.

On other occasions, telework helps to reduce the impact of unjustified absences and tardiness, but at the same time, the use of ICTs often leads to an increase in demands on working time. The loss of the distinction between zones or areas of work and non-work thus becomes frequent.

Very often the amount of teleworkers' working time exceeds the prescribed number of hours laid down by law and collective agreements or professional charters. An EPH study (Revista de trabajo 2012) covers hours worked during 2010 and 2011. If we consider that working hours are regulated by law in Argentina at eight hours per day and 48 hours per
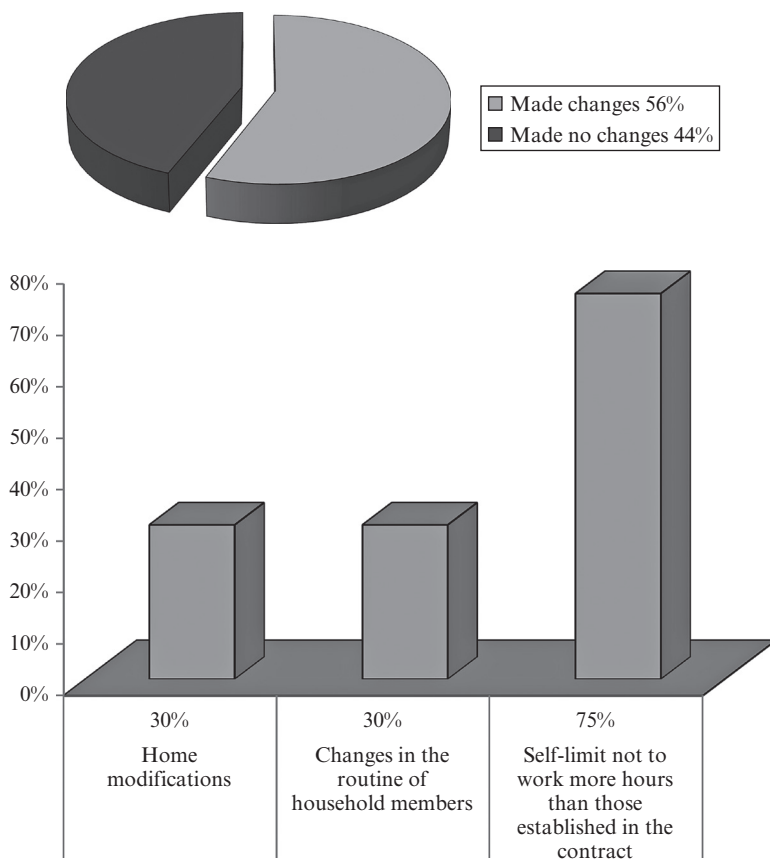
Note: The question supports multiple answers.

Figure 4.2   Changes to allow teleworking from home (in percentages)

week, in the fourth quarter of 2011 the number of people working between 46 and 60 hours per week represented 25 per cent of the urban population, and those working more than 60 hours per week accounted for 7.6 per cent.

Figure 4.2 shows that the self-limitation of working time is considered one of the changes necessary to be able to telework successfully.

Effects on Individual Job Performance and Organizational Performance

Telework shows changes in organizational and individual performance, as explained in a study of four companies by San Andrés University (Cabrera and Steizel 2012). It found that three of those companies were working on the basis of objectives. Telework days were handled differently in all of them. For example, in CISCO, telework days were agreed with the chief. In Siemens, two options were offered, choosing between three or four days of telework per week.

CISCO uses GPS Chat to to know the location of a permanent teleworker. TELECOM is organized on the basis of skills, where one of the principles is a results-based management approach. Accenture has seven flexible forms of working, with telework being one. Another major change when adopting telework concerns the management of teleworkers, which must be based on trust.

Figure 4.3 is taken from a study of 106 teleworkers in Buenos Aires City (CENIT Foundation 2011) and shows that 61 per cent say that they increased their income; 53 per cent said that their concentration on the job had improved; and 35 per cent found it easier to do their work when they were teleworking.

The same study in Buenos Aires found that:

● with regard to the motivation for teleworking, employees' responses focused on three areas: the flexibility of working hours (64 per cent),
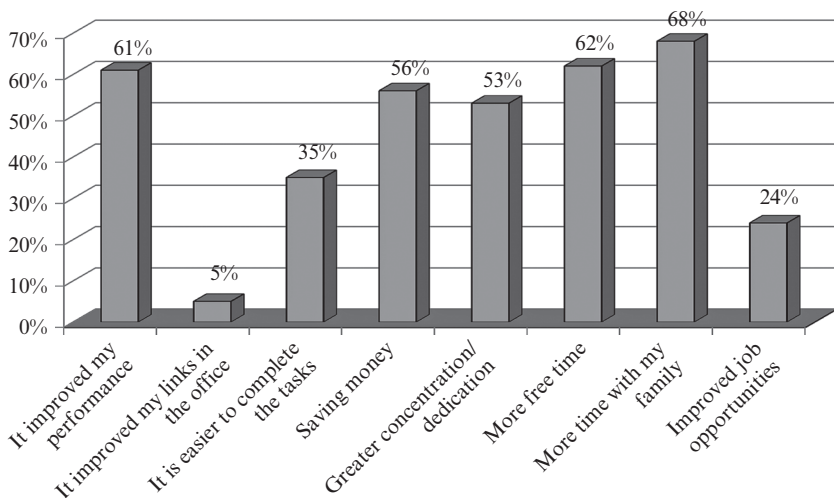
Figure 4.3   Advantages of telework (percentages)

avoiding commuting to work (62 per cent) and balancing family, personal and working life (61 per cent); and

● among the most important advantages of telework were those related to quality of life, that is, more time to spend with the family (68 per cent) and to deal with personal affairs (62 per cent). In addition, another significant aspect, mainly from the firm's point of view, is that the vast majority of teleworkers also mention the benefit of improved productivity.

A paper for the Tenth National Labour Studies Congress (Rubbini and Suarez Maestre 2011) suggests that the main factors that affect the individual performance of teleworkers are:

● analytical tasks are better done at home;
● improved concentration;
● working to objectives, increased working hours, or working outside normal office hours; and
● working to objectives means that the employee must have certain qualities and aptitudes, such as self-management of working time, independence, and the ability to balance personal and working life.

In addition, the collective performance of employees is affected by the de-linking of teleworkers from the work group owing to the worker's geographical segregation.

Enterprise performance is affected by:

● improved productivity.
● cost savings due to a reduction of office space.

Table 4.5 shows some of the characteristics of the telework programmes that are operated in four organizations in Argentina.

Effects on Work–Life Balance, Including Work–Family Reconciliation/ Conflict

A study by the IAE in 2010 (Family and Business Conciliation Centre 2010) covered 118 companies established in Argentina, two of them multinationals. This study found that an increasing number of companies say that they are concerned with helping their employees to reconcile work and family life.

Figure 4.4 shows companies and their work–life reconciliation policies.

There is a strong belief in many organizations in Argentina that a

Table 4.5   Characteristics of the telework programmes operated in four organizations in Argentina

Company	CISCO Systems	Telecom	Siemens	Accenture
Start of programme	Since 2005, but formalized on 2009 with the incorporation of PROPET	November 2008 with PROPET. Pilot lasted 6 months with 50 people. Now there are 600 teleworkers	2011	Negative results year after year with respect to work–life balance, so, in 2009–10, decided to launch a flexible work programme
Preconditions		Different age ranges and different areas. Reversibility and voluntary nature are the principles applied	Change in organizational culture, change in ways of working.	Need to have Internet connection, internal phone either home phone or mobile, and company notebook. If going out for any reason, must inform supervisor
Those who telework	100% exception positions that do not allow it	54% women, 10% fathers. The post is assessed to see if it is suited to telework, then the person is considered and the chief's opinion of him or her	Can telework if the location does not affect output. There is informal telework agreed with chief, but does not have the benefits of the formal programme	Flexible work applies to the team. Once decided, all workers in the area may apply the chosen method provided that they meet certain requirements. These include: one year's service, a high level of commitment to the company and identification with the Accenture culture, working full time and having consistently shown a high degree of responsibility and self-management in their post

Number of days and hours of telework	Mutual agreement between the management	100% telework or every day. Must be available during normal office hours. If the person leaves home, must inform for safety reasons	Two types of telework chosen by the teleworker: 1 – Three days at home and two in the office. 2 – Four days at home and one in the office	
ICT return		Telework does not change the way people do their jobs. In the pilot scheme, the results were highly satisfactory		
Modality	Objectives based		Objectives based	The incorporation of flexible working methods made traditional control difficult, so objectives-based working had to be introduced
Elements of organization of employers' work: worker's independence, participation, commitment, management style	Teleworkers must self-manage. They participate in telepresence through virtual meetings. They use GPS chat, so know where the person is at any time	Skills; results-based approach, ability to resolve urgent problems, must be technologically advanced, little dependent on social aspects, independent, responsible, self-disciplined, ability to plan, well prepared for the job. Finally, they select people who want to participate	The manager does it. Teleworkers need certain aptitudes and skills to be independent, organized, master the task, a degree of commitment, etc. Then, they see if the teleworker wants to telework	They have seven different forms of flexible working. The most used of these is telework

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Table 4.5 (continued)

Company	CISCO Systems	Telecom	Siemens	Accenture
Disadvantages	Teleworkers work more		They are required to work certain hours of Telework when you do not have the physical space, because other household members do not understand teleworking, because they are with their friends or when they need support. Any of the parties can ask to give up the programme	
Leadership	Based on trust and professionalism of employees	Many teleworkers who were promoted to higher posts decided to give up telework to perform better as managers		Participation in the programme is a result of the trust that the employee has earned through her/his loyalty and commitment
Number of teleworkers	140 (35% women)	600		
Evaluation	Positive with respect to balance. Teleworkers are satisfied	96% of teleworkers said that their quality of life had improved. 76% said they were very satisfied and the rest satisfied.	Positive for teleworkers. In the energy sector, women returning from maternity leave prefer to go on teleworking.	The programme is a 100% success. The majority of Accenture staff use it and, when new people join, they ask for it. The programme

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		improved people's satisfaction and helped to reduce costs. Being able to work at home makes a difference. The labour climate survey had a more positive work–life balance outcome than before. It also reduced the cost of turnover, especially women. The areas where positive results were not achieved were those with the longest working hours, such as consulting, as the greater flexibility does not solve the problem of long working hours
	Fewer dismissals for illness or absenteeism. They say that without travel, they avoid illness. Turnover fell by an estimated 50%. In the network unit, which had a high turnover because of problems with work–life balance, retention improved when the programme was merged and the turnover fell sharply	In other sectors, 50% continue and 50% not. More acceptance after the company moved to Munro. Some managers resist because they find it harder to manage teleworkers.
Benefit for teleworkers	The company issues a laptop computer, a chair, a desk, a first aid kit and a fire extinguisher	They are given a kit with a notebook plus amount for expenses (light, gas, etc.)

Source: Cabrera and Steizel (2012).

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Pollutants	Enriching

	D	**A**	
Systematic	No policies		
	No facilitators		
	No culture 0%	FR culture 5%	

	C	**B**	
Discretionary	Some FR policies	Enough political and	
	and practices	FR practices	
	Ambivalent culture 17%	Incipient culture 78%	
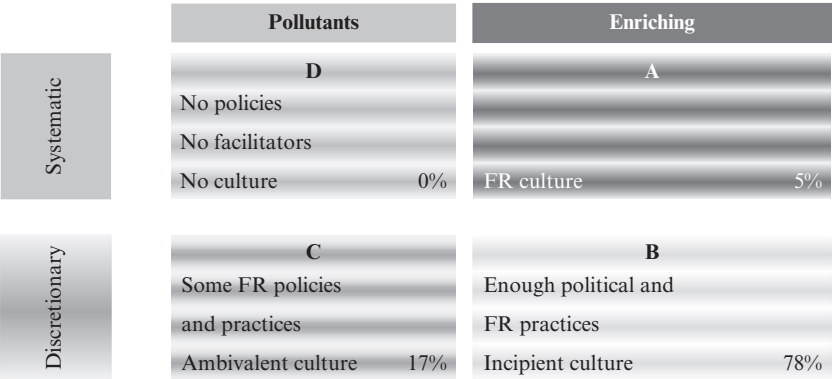
D. Sceptical or indifferent company: lacks FR policies

C. Committed company: it already has some policies, but little applies

B. Proactive company: it has policies and there are FR practices

A. Rich company: its culture is already FR

Note: * Family-responsible companies.

Figure 4.4   Positioning of companies in the family-responsible businesses (EFR) model

healthy balance of work, family and personal life will result in more job satisfaction and greater productivity.

Figure 4.5 reveals the principal concerns of companies that conspire to frustrate their intention to promote the reconciliation of work and family life, most importantly the difficulty of recruiting key employees. They also mention the lack of initiatives by employers themselves, and the inherent difficulty of balancing family and working life.

However, other studies, such as that by Neffa (2015, p. 146) (mentioned elsewhere in this chapter), assert that:

> this new productive paradigm which is being progressively embedded in this country's companies and organizations, albeit in disparate ways, is seeking to make the former separation between time spent at work and time devoted to the family more porous and flexible; working time is often subtly extended and work tasks are performed outside the workplace, spilling over into family life. Moreover, companies make use of new technologies (mobile phones, tablets, laptops) with which they maintain constant and close contact with their employees, assigning them additional tasks and evaluating the work done, or programming tasks to be carried out during their free time. This situation of lack of harmonization of the two schedules intensifies work and can generate personal tensions and conflicts within the family environment.
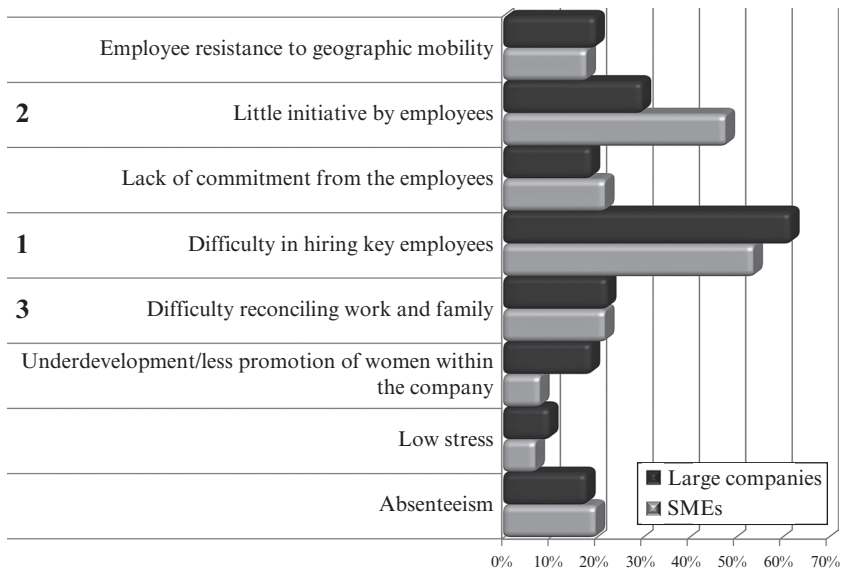
Figure 4.5   Principal concerns of companies

The possibility of reconciling family life with those activities to be performed outside the workplace and outside working hours are of paramount importance, since the company's or organization's demands and requirements are frequently rigid and restrictive, since they are dependent on their production schedules, and thus impact on what happens outside the workplace and working hours. This raises the question of balancing family life and relationships with partners and children, and hinders or limits the worker's participation in sports, cultural, social, religious and political activities.

The status of citizen-worker can be a source of constant tension when work-related stress deprives people of space to think and participate in political, union and social life.

Of the companies studied, 36 per cent are in the initial phase of telework, 17 per cent rarely use it and 25 per cent do not even have it on their agenda. However, 22 per cent of these companies are working intensively on the issue.

Another study by the University of San Andrés says that a survey shows that women in Argentina occupy only 17 per cent of management posts in companies. This is due, in part, to prejudice concerning women's capacities and the lack of human resources policies that allow them to balance family life and work, as many of them give up paid work as soon as they become

mothers. Thus, many women abandon their career development in an organization to look after their children. In such cases, telework could be an opportunity to avoid losing their connection to the labour force while caring for the family. This burden of greater responsibilities that women are prepared to assume has given rise to various theses and studies, one of which, conducted in the Province of Buenos Aires, found that the principal obstacles for women teleworkers were isolation and reconciling family, work and leisure (Aguirre et al. 2015).

Another study (Lenguita et al. 2005), conducted by CONICET researchers, shows that the most recurrent problem, perhaps the most pernicious for teleworkers, is setting limits on working time. In all the cases analysed, extended working days were observed (an average of 12 hours of work per day), and, in most cases, there was no distinction between weekdays and weekends. The main problem lies in not marking an end to the working day and making even the most fundamental physiological demands subject to the pressure of work, as illustrated by the following quotations from some of those interviewed: 'Lunch depends on whether I have time to eat. If I have to hand something in at two in the afternoon and I am in a rush until two, I am going to eat at three, if at all' (Lenguita et al. 2005, p. 15), and 'I do not use a diary, and this means I keep everything in my head, and I cannot sleep if I have something hanging over me' (Lenguita et al. 2005, p. 16).

The solution to these problems in managing working time that they are trying to find is associated with the concept of constant availability to the employer, whether conditioned by rigid forms of organization or otherwise. 'Efficient use of time depends on everything being as predictable as possible' (Lenguita et al. 2005, p. 16).

By not having to follow a pre-established timetable, teleworkers would be more available to their employers because they are at home and because of the flexibility of their time: 'You work at home, but they call you at eleven in the evening, on Saturdays, Sundays, because it is your workplace and you work until who knows what time'(Lenguita et al. 2005, p. 16).

A similar study that was carried out by the CENIT Foundation in the Autonomous City of Buenos Aires (CENIT Foundation 2011) shows that, among the disadvantages of telework, 30 per cent of those surveyed said that they worked longer hours as teleworkers. Figure 4.6 portrays the main disadvantages encountered in this form of work.

The same study shows the changes that 56 per cent of teleworkers needed to make to be able to telework effectively; 75 per cent of them mentioned the time limits that they had to impose on themselves in order not to work more hours than stipulated in their contract.

For some, the expression 'available for telework' means that teleworkers
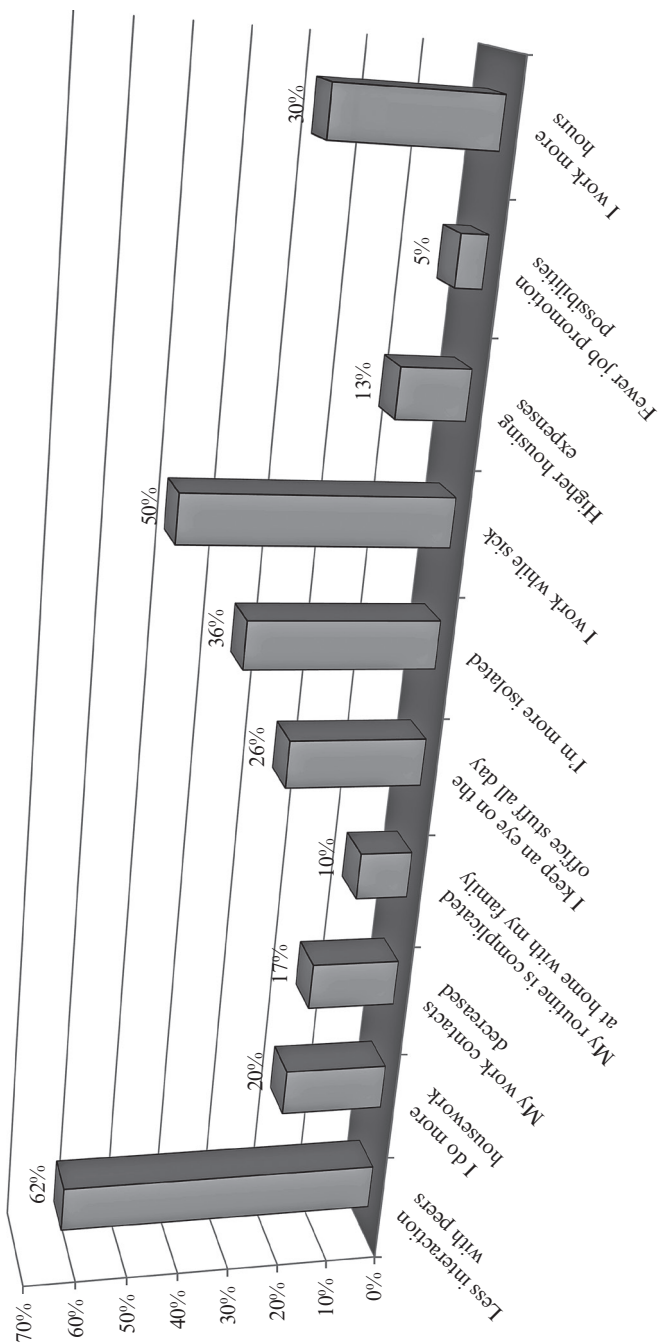
Figure 4.6   Disadvantages of telework (percentages)

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must be available to the employer; however, the limitations of this concept are vague. It does not draw a distinction between working time and rest periods, and the two aspects could even overlap.

Effects on Occupational Health and Well-Being

Argentina is one of those countries in the world where people work a lot; according to the Union of Swiss Banks (La Nación 2011)), Argentine workers work an average of 2053 hours annually. This situation arises owing to a large demand for labour, a reduction in the number of employees in relation to business activities, and the need to deal with unforeseen incidents in the production process or the circumstances of customers' and users' requirements. However, in all of these cases, the result is greater worker fatigue, which is not always matched by monetary returns or days off to rest and recover from work. Moreover, the 'atypical' or 'antisocial' hours affect family life and aggravate poor health, particularly from the age of 40 onwards (Neffa 2015, p. 133); this is especially the case among women, because changes in the circadian rhythm are associated with stress, depressive disorders and anxiety. The most common manifestations of this deterioration are chronic fatigue and sleep disorders, loss of concentration, musculoskeletal disorders, increased digestive and cardiovascular problems, and psychosocial disorders. The resulting mood swings, stress, anxiety, depression and so on lead to consultations with psychologists or psychiatrists and increase the consumption of psychotropic medicines (Belkic et al. 2004; Bonde 2008; Elovainio et al. 2006).

Other work-related demands, and the time needed to perform them, come from taking on new responsibilities as a result of technological and organizational changes, often without being forewarned and without having time to train properly to handle them.

Psychosocial risk factors associated with telework, according to the specialized literature (Rubbini 2012), are often the same as those factors which for many individuals could also be considered to be advantages:

- control and independence at work;
- social relations;
- flexibility;
- work–life balance;
- the use of information and communication technologies;
- skills/requirements;
- professional development; and
- legal and institutional regulation.

Finally, the distance that separates teleworkers from their work group has consequences for workers' interpersonal relations and affects the organizations to which they belong.

It is interesting that the Argentine Ministry of Labour's *Manual of Good Practices in Telecommuting* (MLESS 2011) and the Asociart *Manual of Good Health and Safety at Work for Telework* (Asociart n.d.) include explanations of how to prevent occupational accidents in the home.

A study conducted in Villa María (Yennerich 2014) involving a census of companies finds that the benefits of working at home can become detrimental when work and family activities interfere with each other, increasing the worker's anxiety and burden (owing to role conflict). Availability for telework presents a dilemma, as the flexibility of working time means that the worker does not have much free time. This complaint is found among teleworkers in Villa María (for example, teleworker A. Lechnik in 2013), and must be taken into account as a factor which wears the worker down through anxiety and stress.

We also found another article (El País 2015) in the same vein, which shows that, while technologies have simplified and saved working time, they have also accustomed organizations to demand a response 24 hours a day and seven days a week, potentially almost enslaving employees carrying on with tasks such as answering emails outside of normal working hours, receiving work-related messages via social networks or making a presentation remotely during a day off.

POLICY RESPONSES TO TELEWORK

Responses at National and/or Sectoral Level

In 2001, the Centre for Teleworking and Distance Learning of the Faculty of Social Sciences of the University of Buenos Aires (CTT – now the Fundación Caminando Utopías[15]) requested the MTESS to set up a Commission on Telework (Boiarov 2007, p. 25) with the objective of studying where there was a need for legislation to regulate teleworkers in a dependent employment relationship. The Commission was created in 2003 and presented its first draft Teleworking Act in 2007 (Senate of the Argentine Nation 2007).

In 2005, the CTT supported the creation of the Telework Group chaired by Argentina in ECLAC, and, thanks to a grant from the United Nations and the International Telecommunications Union (ITU), participated in the WSIS.

The requested Commission on Telework comprised labour relations

representatives from various organizations. It later became the Telework Coordination Centre, it had a space on the website of the Ministry of Labour,[16] with access to the following government programmes regarding telework (reproduced here verbatim):[17]

1. Certification of telework skills: in collaboration with the Secretariat of Employment, actions are being implemented for certification of telework skills. This certification allows:
   a. Teleworkers
      i. – to expand their opportunities for decent work through ICTs.
      ii. – to formalize the knowledge and experience acquired.
      iii. – to guarantee the labour quality by allowing continuing training.
   b. Companies
      i. – to validate human resources management.
      ii. – to focus investment in training.
      iii. – to improve productivity.
2. Programme of Monitoring and Promotion of Telework in Private Enterprises (PROPET)
   The objective is to promote telework in the private sector, through the coordination that supports companies participating in PROPET in the development of telework practices, providing tools, knowledge and experience. The Ministry of Labour, Employment and Social Security Resolution No. 595/2013,[18] which created the PROPET, has the objective of promoting, facilitating and monitoring the application of telework in companies in the private sector, through tools which provide a legal framework for employers and teleworkers.
3. Programme of Implementation of Telework in the Public Sector
   This allows improving quality of life and optimizing the employment of those who engage in telework within the public administration.
4. Telework for persons with disabilities
   This programme consists of training persons with disabilities through special courses so that, once they have acquired ICT knowledge and skills, they have the chance of entering the world of work via the medium of telework.
5. Youth and ICTs
   The objective is to generate opportunities for social and work inclusion for young people aged between 18 and 24 years who have not completed primary and/or secondary education and who are unemployed. The proposal is to provide training to acquire skills in the use of ICTs and telework, allowing their entry into work through corporate social responsibility actions to prevent social exclusion.
6. Telework from 45 years of age, a new challenge
   This programme seeks the re-entry into work of men and women aged over 45 years, providing an immediate response to those who have expertise and maturity in self-managing their time and work.

The creation of a telework network[19] was also announced, plus a *Manual of Good Practices in Telecommuting* (MoLESS 2011) and a tripartite telework observatory.[20]

Although Argentina does not have a specific national law on telework,

seven draft laws were presented between 2007 and 2014 – as can be seen on the website of the Congress of the Nation of Argentina, https://www.senado.gov.ar/parlamentario/parlamentaria/avanzada?cantRegistros=25 (accessed 18 July 2019):

1. Draft law 159/07 presented by the Committee on Telework in the Ministry of Labour, Employment and Social Security: 'Legal Regime for Telework in Relation to Dependency', submitted by the Executive Branch.
2. Draft law 2337/07 on Telework submitted by Senator Bar.
3. Draft law 3498/10 of Senators Rodríguez Saá and Negre de Alonso (March 2012, 0590-S-/12), 'Legal Regime for Telework in Relation to Dependency'.
4. Draft law 3499/10 signed by the same senators above 'Promotion and Dissemination of Telework'. Internet. Ibidem.
5. Draft law 590/12 re-submitting 3498/07.
6. Draft law 595/12 re-submitting 3499/10.
7. Draft law 4109/14 on Promotion and Regulation of Telework submitted by Senator Leguizamón.

None of the proposals listed in Table 4.6 have been enacted into law. In Argentina, draft laws lose parliamentary status between two legislative periods, so at the time of preparing this chapter, there are no current proposals to regulate telework that could be enacted into law.

Provinces

On 3 July 2013, Act 2861 on Promotion and Dissemination of Teleworking was enacted in the Province of Neuquén.[21] Draft laws were also recorded in the provinces of Rio Negro (Vargas 2014), Buenos Aires, Chaco and La Pampa. A number of collective agreements have also been concluded.

Responses at Company/Enterprise Level

National Commission for Communications (CNC): interview on 3 July

The CNC is a public body formerly under the Secretariat of Communications. It was placed under a new body, the Federal Information and Communication Technologies Authority (AFTIC), by Decree 1117 of 2015.[22] This telework programme in a state enterprise was a pioneer in the country. The pilot began in January 2009, and it was definitively established in 2014. It now has 48 teleworkers, and it is hoped that it will expand as technology changes; it is envisaged to buy more notebooks and improve Internet connectivity. Currently, all the teleworkers have a desktop

Table 4.6 Proposals for legislation to regulate telework in Argentina

Doc.	Type	Originator	Extract
4109/14	Draft law	National Senate	Leguizamón: Draft Law on Promotion and Regulation of Telework
595/12	Draft law	National Senate	Rodríguez Saá and Negre De Alonso: Draft Law on Promotion and Dissemination of Telework
590/12	Draft law	National Senate	Rodríguez Saá And Negre De Alonso: Draft Law on the Legal Regime for Telework in Relation to Dependency
3499/10	Draft law	National Senate	Rodríguez Saá and Negre De Alonso: Draft Law on Promotion and Dissemination of Telework
3498/10	Draft law	National Senate	Rodríguez Saá and Negre De Alonso: Draft Law on the Legal Regime for Telework in Relation to Dependency
3437/10	Draft declaration	National Senate	Colazo: Draft Declaration Welcoming the Implementation of the Telework Programmes Promoted by the Ministry of Labour, Employment and Social Security
2465/10	Draft declaration	National Senate	Rodríguez Saá: Draft Declaration Declaring of Interest The 15th International Telework Conference – Ita 2010, Under the Banner 'Telework for Sustainable Development', to be Held from 25 to 27 August in Buenos Aires City
4147/08	Draft declaration	National Senate	Colazo: Draft Declaration Declaring of Cultural Interest The 'Telework I Forum' Held in the Ministry of Labour, Employment And Social Security
2337/07	Draft law	National Senate	Bar: Draft Law on Telework
159/07	Draft law	Executive Branch	Message No.829/07 and Draft Law on the Legal Regime for Telework in Relation to Dependency

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personal computer (PC) and a notebook. They hope to improve the programme so that it can be developed with a single device through a virtual private network (VPN) direct to the server. Only two people have dropped out of the programme since it began (one because of foreign travel, and the other owing to a promotion, as the new position required more regular attendance in the office).

Primary motivation   Quality of life of teleworkers. Quality here encompasses two main variables:

- minimization of travel to the office; and
- optimization of personal time.

To date, the need for space has not been a problem but, since the creation of the AFTIC, several offices moved to the building where the CNC currently operates, and they will have to be relocated to a smaller space.

Current consequences of the policy   Teleworkers view the possibility to telework as a form of recognition. The managers think that some teleworkers would be willing to work harder to stay in the programme.

The teleworking days and work schedules allocated by the managers are chosen from three options: 8 a.m. to 4 p.m., 9 a.m. to 5 p.m. or 10 a.m. to 6 p.m. Once chosen, they cannot be changed. That is, the place is flexible, but the flexibility of working hours is subject to these options only.

The CNC is currently preparing a survey to be sent to all teleworkers but, unfortunately, it was not available at the time of this study.

Social dialogue   The CNC plays an active part in two important unions in the Government, the State Workers' Association (ATE) and the National Civil Service Union (UPCN). To date, they have supported the programme. There are even delegates who are teleworkers and no complaints about this practice have been received so far.

In 2014, an agreement was concluded with the Ministry of Labour. Together they participate in events and hope to have an audit of the ministry which consists of collecting information specifically on teleworkers. This agreement has allowed them to share experiences with the ministry, formalize the situation of teleworkers, keep more up to date on the subject and apply the *Manual of Good Practices in Telecommuting* issued by that ministry (MoLESS 2011).

In conclusion, the CNC wants to develop the practice of telework to improve the quality of life of teleworkers because they consider something that improves working conditions to be good practice. They were

specifically asked about participation in strikes or whether they asked for the location or the forms of communication with teleworkers, but nothing like this has happened yet. If it did occur, there would be no problem in providing information about these experiences.

Bruno Matarazzo: interview on 22 July
Bruno Matarazzo is a family business with 20 employees dedicated to outplacement, leadership development, crisis settlement and skills assessment. They started a pilot telework programme with five teleworkers (25 per cent of the payroll), which lasted for approximately eight months during 2013 and 2014.

To design the pilot programme, they contracted the Red Experta consultancy who guided them in implementing a tailor-made programme. The programme was developed, but then it was interrupted owing to an internal crisis in the company which required the owner, Bruno Matarazzo, to call everyone into the office until the team had been consolidated and the problem resolved.

Telework has remained in practice for specific situations. For example, the change and refurbishment of the offices delayed the move of the workers in the sales area. They were teleworking until their workstations were ready for use.

The people who received training in telework and practised it are now willing to telework when the company needs it, even when it is not continuous or permanent. They even decided to include an additional person in the telework programme in the marketing sector.

The primary motivation for the policy   The move from Microcentro – Paraguay 577, to Núñez, Avenida Del Libertador 8630 (near the boundary with Buenos Aires Province).

The main objective of the policy   To work together to improve the work environment and thereby increase productivity.

The content of the policy or enterprise-level agreement   The main points of the agreement:

1. It is voluntary in character.
2. It maintains existing rights and obligations between the parties.
3. The telework agreement lasts three months.
4. Tasks are personal and cannot be delegated.
5. Working hours are from 9 a.m. to 3 p.m.; overtime is prohibited.
6. Telework days may be changed by the company.

7. Work tools are provided, and there is reimbursement of additional expenses.
8. Teleworkers undertake to maintain their workplace with proper lighting and a safe work environment.
9. There is a reversibility clause (teleworkers can choose to go back to working in the office).

The expected or actual consequences of the policy (on working time, work organization, performance, work–life balance, health and job satisfaction, and so on) Everyone who took part in the experiment during those eight months teleworked between two and three days per week and belonged to the sales area. All of them said they were satisfied and wanted to continue teleworking.

Working time during the eight-month period was controlled by daily reports and monitoring of objectives. Indicators were specially designed for the number of calls and their effectiveness in securing interviews. Any overtime work was not paid.

The organization of tasks was affected by the technology, as it was difficult to meet the requirements of teleworkers to access the system (for example, creating a company login).

Another obstacle was the generational difference of the managers in relation to the employees. It was not easy for employees to convince the managers that they could perform their tasks without being present in the office. There were also people who signed up for telework by phoning in to say that on that same day they were working from home, even though they were not previously authorized to do so. The company had to clarify the situation with those employees, explaining the selection criteria and who could participate in the telework programme.

In light of the technological obstacles to teleworking in the company, a policy of flexible working time was introduced for people who lived further away from the site.

The final result of the work climate survey and performance evaluation that they carried out was that they achieved better commitment, improved the work climate, and telework functioned well at the worst moments of the crisis in the company. The main complaints concerned the technologies, and situations when, for example, they were not given ergonomic chairs. They are sure that they will continue telework in the future, initially on a temporary basis and then more permanently.

Social dialogue As it is a small company, it does not have active trade unions, nor has it joined the Ministry of Labour's PROPET programme, and there is also no other significant institutional participation.

Ernst & Young[23] **(Pistrelli, Henry Martin y Asociados S.R.L.)**
Ernst & Young is a multinational corporation whose business is accountancy and tax advice. Its Argentine branch is located in the Autonomous City of Buenos Aires.

The company has had an official and stable telework programme since 2011, which covers all the staff who fulfil the established requirements for the programme. There are currently 320 teleworkers out of a total of 2000 employees in Argentina. The company hopes to be able to increase the number of teleworkers in the future.

Normal office hours are 9 a.m. to 6 p.m., Monday to Friday, with a 40-hour workweek.

The primary motivation for the policy   The company's telework policy is designed to attract and retain young people in particular.

The main objective of the policy   To achieve the objectives of the company/business, while also achieving personal objectives.

The content of the policy or enterprise-level agreement   The policy includes different modalities: that is, home office and flexible working hours. The policy primarily explains what is meant by flexible working, highlighting the responsibility of each person to achieve the expected results.

The home office extends to all the tasks carried out in the company or at clients' premises, but in a virtual form, from the employee's private home connecting to the office IT systems. Flexible working hours (flexi-time), in contrast, allow arrival and departure times for work in the office other than the established times of 9 a.m. to 6 p.m., while maintaining 40 hours per week with one hour for lunch.

The expected or actual consequences of the policy (on working time, work organization, performance, work–life balance, health and job satisfaction, and so on)   Telework operates normally in the company, and the company's objectives are achieved. The employees prefer it and can achieve the work–life balance they want. They say that they could not do it any other way. The reality is that they do not work many extra hours when they work from home. If necessary, overtime would be paid up to the senior grade, in the same way as for people working in the office. Teleworkers must remain connected at home or at the client's premises during normal working hours. The days teleworked vary and give rise to many different combinations among all the teleworkers in the company. The main obstacle that they had to face in implementing the telework programme is related to the change in

the work culture for older generations. The principal achievement was the retention of talent, but they do not have any performance indicators for that outcome or any calculations of cost savings.

Social dialogue   The company's employees do not belong to any trade union, and the company has not joined PROPET given that it is not compulsory to do so.

Table 4.7 compares the three companies interviewed.

CONCLUSIONS AND RECOMMENDATIONS FOR ACTION

We found that there is very little empirical information related to telework in Argentina. The theoretical information that is available is not always consistent with the findings of interviews with those involved or other official sources, as we were able to ascertain from the number of teleworkers when we analysed the EPH. For that purpose, it was necessary to resort to interpretation of secondary data and select documents based on studies instead of opinions.

Argentina may have been the first country in the region with a specific regulatory regime for telework, since in 2003 it created the Commission on Telework requested by the Centre for Teleworking and Distance Learning of the University of Buenos Aires.[24] In 2005, this Commission submitted to the Minister of Labour, Dr Carlos Tomada, the draft law to regulate telework in a dependent employment relationship. Submitted to Congress in 2007, it lost its parliamentary status between two legislative periods. Laws governing telework in some other countries in South America were subsequently enacted in 2008. For several years, the previous government[25] had the majorities needed to pass a law on telework, which was announced on various occasions through the media,[26] but nothing happened with these proposals. There were also other unofficial draft laws, which also were not approved and lost their parliamentary status. Currently, we have provincial laws, collective agreements and resolutions on telework in Argentina, but there is still no national law on the subject.

The most recent legislative proposal to regulate telework in the country may even be a constraint on the development of telework to its full potential. One particular constraint relates to the occupational risks insurers (ART). For example, the Asociart[27] *Manual of Good Practices in Health and Safety at Work for Teleworkers* reads:

Table 4.7 Comparison of telework programmes in three companies in Argentina

	CNC – National Commission for Communications	Bruno Matarazzo	Ernst & Young
Type of company	Public	Family	Private
Number of workers	1400	20	2000
Number of teleworkers	48	5	320
% of total workers	3.43%	25%	16%
The primary motivation for the policy	1. Quality of life of teleworkers. 2. Need for space.	Move and reduction of space.	To attract and retain young people in particular.
Form: HR policy, company-level social partners' agreement, etc.	Sign a written agreement with the teleworkers		
The main objective of the policy	Coincides with the primary motivation	Better work environment	Fulfil company/business objectives and achieve personal objectives
The content of the policy or enterprise-level agreement	The agreement is within the PROPET framework. It establishes validity. Voluntary character. Equality with work when present and conditions of work. Health cover and occupational accident insurance. Tasks assigned by the functional	Voluntary character. Maintains existing rights and obligations between the parties. Telework agreement lasts 3 months. Tasks are personal and cannot be delegated. Working hours 9 a.m. to 3 p.m., overtime is prohibited. Telework days may be changed by the company. Work tools are provided and	The flexibility policy comprises: home office and flexible working hours. Informs those who are eligible, requirements and those who will take the decision.

The expected or actual consequences of the policy (on working time, work organization, performance, work–life balance, health and job satisfaction, etc.)	unit to which they belong. The employer owns the moveable assets allocated. The teleworker is responsible for the proper use of the equipment. A confidentiality agreement is concluded. Reversibility clause	reimbursement of additional expenses. Teleworkers undertake to maintain the workplace well-lit and safe. Reversibility clause	Developed guidelines and home office guide
	For teleworkers, it is a recognition. The place is flexible, but not working hours	The teleworkers are satisfied and want to continue. Working hours are controlled by journals and objectives. Overtime is not paid. The organization was affected by difficulties in accessing the system (login). Another obstacle was the generational difference between the managers. Some people wanted to join telework, even without authorization. The climate survey showed greater commitment, improved work environment, and telework gave good results even during the company crisis. The main complaints were technologies and lack of an ergonomic chair. They will continue in the future, first temporarily, until more permanently	In the climate survey in 2014, 68% expressed satisfaction with the flexibility policy

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ACTION 2. The teleworker must authorize the employer's occupational health and safety service and/or its occupational risks insurer (ART) to *evaluate the premises where the home telework is performed* and adopt appropriate preventive measures.

The occupational health and safety service and/or its occupational risks insurer (ART) must evaluate the teleworker's workstation and propose preventive measures to be adopted.

In the evaluation visit, the occupational health and safety service or the prevention officer of the occupational risks insurer (ART), supplementing the compulsory initial training course as appropriate, will discuss the following matters with the teleworker:

1. The risks inherent in the use of data display screens
2. The risks inherent in the work environment and the use of work equipment, and also inform the teleworker about the preventive measures necessary to eliminate or neutralize such risks.

The officer will also provide information/training regarding the following aspects:

1. Act on Occupational Risks: Rights and obligations of the parties.
2. Conduct in the event of an occupational accident.

It is important to emphasize that the purpose of this action is to ensure and check proper compliance by the teleworker with the applicable legislation on occupational safety and health. To that end, the worker must allow the occupational health and safety service and the occupational risks insurer (ART) access *to the place* where he/she chooses to perform his/her work, provided that the visit is agreed in advance with the worker, *within his/her working hours*. (Asociart n.d., pp. 21–2, emphases added)

From this extract it is clear that the timing of telework would be limited by the ART, and only one place would be possible for telework; thus the potential for this form of work, as regards both aspects, place and time – which are the key changes introduced by telework – would be limited.

However, the work-related limitations are understandable given that the number of accidents during work-related travel continues to rise in Argentina. The 2012 report of the Occupational Risks Supervisory Authority (SRT) states:

An initial classification of the total (occupational accidents) mentioned shows that 70.5 per cent are occupational accidents during work, 20.1 per cent are accidents during travel for work, while the rest are shared between occupational diseases (3.4 per cent) and aggravation of a previous injury (6.0 per cent) . . . A reduction of some 5.3 per cent can be seen in accidents during work. In the case of accidents during travel for work, there was a rise of 8.8 per cent over the same period. At the same time, occupational diseases rose by 3.1 per cent. Lastly, there was an increase in [the cases of] aggravation of a previous injury in 2012 of 21.7 per cent compared with the previous year. (SRT 2012, p. 4)

We also found that the place of telework is only more flexible to a limited extent, as in the majority of cases it is confined to establishing a

Table 4.8 *Notified cases of accidents and occupational diseases, by type of incident and month of occurrence, 2012*

Month	Type of event				Total
	Accident at work	Accident during travel	Occupational disease	Aggravation previous injury	
January	37211	9019	953	2667	49850
February	34931	9552	1303	2413	48199
March	43458	12209	1852	3182	60701
April	35975	10515	1755	2755	51000
May	41150	12163	2184	3584	59081
June	38607	11527	2058	3322	55514
July	37299	10963	1647	3406	53315
August	39955	11831	2252	3835	57873
September	37946	10949	2838	3435	55168
October	42424	12159	2410	4010	61003
November	42695	11678	1973	3872	60218
December	34983	10081	1436	3009	49509
Total	466634	132646	22661	39490	661431

home office, and it is more difficult to telework at times other than during normal working hours. Thus, flexibility of working time is more difficult to achieve than flexibility of the location where work is performed.

In October 2015, new data was published comparing ENTIC 2011 and ENTIC 2012. Although the databases of the latter are not yet available, we took the graph in Figure 4.7 from the press release which shows an increase in computer ownership and Internet use, making the outlook for the development of telework more attractive in the future.

This initiative will contribute to constructing and including indicators which show the complexity of this form of working. However, for every positive attitude, we found another negative attitude on the same subject. This situation highlights the need for more field studies, rather than theoretical analyses or compilations, which are the most abundant.

What is clear is that telework does not lend itself to improvisation. It requires careful design at each stage of implementation, so that each detail is taken into account. The selected teleworkers, and the tasks, working hours, timing and type of communication, method of supervision and leadership, elements and place of work can all help to determine whether or not a telework programme is successful.
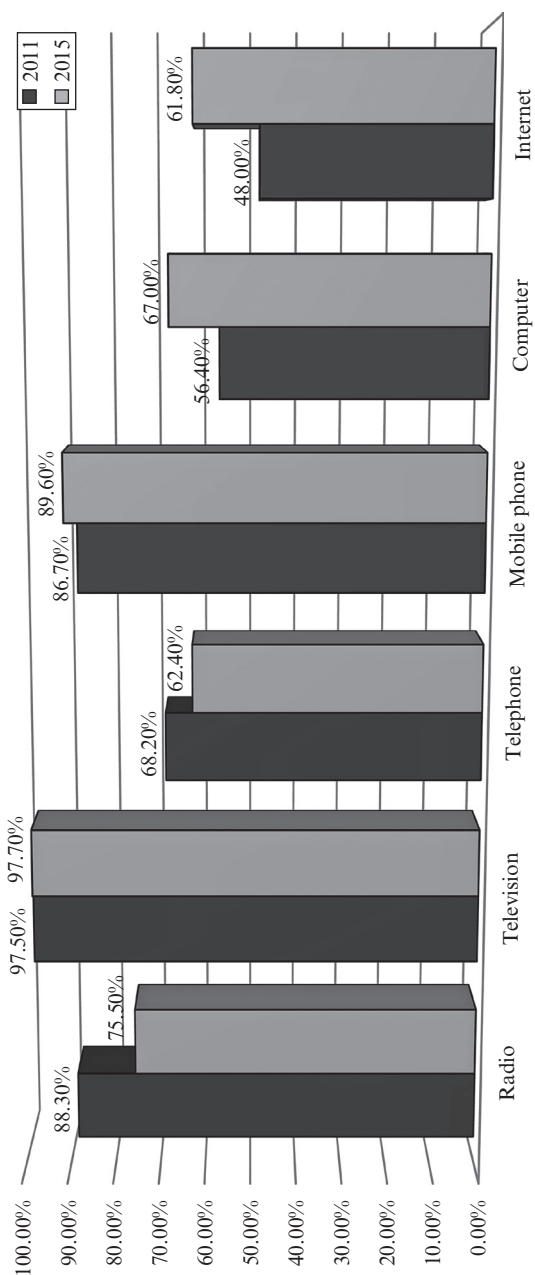
Figure 4.7 Households by availability of ICT assets (in percentages): total 31 agglomerations per Permanent Household Survey (EPH), 2011 and 2015

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NOTES

1. Accessed 12 June 2019 at http://www.indec.gov.ar/bases-de-datos.asp. At the time of completion of this work, ENTIC 2015 had been carried out, but the database was not available.
2. The MTESS has recently been abolished, and its functions incorporated into a new Ministry of Production and Labour.
3. Website: http://www.caminandoutopias.org.ar/ (accessed 12 June 2019).
4. Website of the Ministry of Labour of the Nation, on technological change and employment, teleworking: http://www.trabajo.gob.ar/teletrabajo/ (accessed 12 June 2019).
5. Since this chapter was completed, the Ministry of Labour, Employment and Social Security (MoLESS) was abolished and its functions were transferred to other ministries.
6. Law 2861, Promotion and Dissemination of Teleworking, (2013), Province of Neuquén, accessed 12 June 2019 at http://200.70.33.130/images2/Biblioteca/2861PromocionDifusi onTeletrabajo.pdf.
7. Law 120 of the Legislature of the City of Buenos Aires, appointment to telework in Article 2 (1998), accessed 18 July 2019 at http://legisrn.gov.ar/lrn2016/sin-categoria/ auspician-la-modalidad-del-teletrabajador-estatal/.
8. Project 876/2014 of Telework Law, Promotes and disseminates the teleworking modality as a genuine instrument for the reorganization of employment within the provincial public administration, through the use of information and communication technologies (2014), Legislature of the Province of Río Negro, Viedma, accessed 18 July 2019 at http://www.legislaturachaco.gov.ar/sitio/noticia.php?not_id=4818#.XS46aetKiUk.
9. Law 2617 (2017), accessed 12 June 2019 at http://www.legislaturachaco.gov.ar/sitio/noti cia.php?not_id=4818.
10. Items accessed 12 June 2019 at http://www.trabajo.gov.ar/downloads/actTeletrabajo/08042 7_teletrabajo-ypf.pdf, http://www.upjet.org.ar/archivos_noticias/674-2.pdf and http://tele trabajolegal.tic.org.ar/index.php?option=com_weblinks&view=category&id=20%3Aacu erdos&Itemid=27.
11. National Institute of Statistics and Censuses (INDEC), database, microdata, accessed 12 June 2019 at http://www.indec.gov.ar/bases-de-datos.asp.
12. National Institute of Statistics and Censuses (INDEC), accessed 12 June 2019 at http:// www.indec.gov.ar.
13. Articles where they reference the number of 2 million teleworkers in Argentina: https://www. riesgolab.com/index.php/institucional/prensa/item/881-en-argentina-mas-de-dos-millon es-de-personas-teletrabajan and http://www.iprofesional.com/notas/174637-Teletrab ajo-dos-millones-de-argentinos-trabajan-desde-sus-hogares-el-125-de-la-fuerza-laboral (accessed 12 June 2019).
14. https://www.facebook.com/notes/erreius/doctrina-destacada-de-la-semana-la-jornada-la boral-en-el-teletrabajo-por-mar%C3%ADa-e/284918941527252 (accessed 13 June 2019).
15. CTT website: http://www.caminandoutopias.org.ar/ (accessed 14 June 2019).
16. New website since 2016: https://www.argentina.gob.ar/trabajo/virtual (accessed 14 June 2019).
17. Since this chapter was completed, the Ministry of Labour, Employment and Social Security (MoLESS) was abolished and its functions were transferred to other ministries.
18. Resolution 595/2013, Ministry of Labour, Employment and Social Security, *Official Gazette*, Bs. As., 07/05/2013, accessed 14 June 2019 at http://www.trabajo.gob.ar/down loads/teletrabajo/res_595-2013_PROPET.pdf.
19. Ministry of Labour, Employment and Social Security, First Telework Colloquium, launch Teleworking Network, accessed 14 June 2019 at http://www.trabajo.gob.ar/downloads/ teletrabajo/100922_redteletrabajo.pdf.
20. Website of the Ministry of Labour, Employment and Social Security where the Tripartite Telework Observatory is published: http://www.trabajo.gov.ar/ott/?id_seccion=502.
21. Law 2861, Promotion and Dissemination of Teleworking, (2013), Province of Neuquén,

accessed 12 June 2019 at http://200.70.33.130/images2/Biblioteca/2861PromocionDifusi onTeletrabajo.pdf.
22. Created in 2014 by Act 27078: Argentina Digital.
23. Ernst & Young company website: http://www.ey.com (accessed 14 June 2014).
24. Antecedents of the Telecommuting Commission from 2003 to 2005, http://www.cami nandoutopias.org.ar/ministerio/indice.php and http://www.informe-teletrabajo.com.ar/ PDF/regimen.pdf (accessed 14 June 2019).
25. Refers to the Governments since 2003 of Néstor and Cristina Kirchner up to the date of this report.
26. See articles accessed at http://www.cronista.com/negocios/Buscan-regular-por-ley-el-tele trabajo-una-modalidad-cada-vez-con-mas-adeptos-20150406-0004.html, and http://www .lanacion.com.ar/1746358-viviana-diaz-la-ley-de-teletrabajo-se-discutira-este-ano-en-el- congreso**.**
27. Asociart is the name of a company that has the objective of insuring occupational risks: https://www.asociart.com.ar/centro-de-capacitacion/biblioteca-de-recursos/ (accessed 17 July 2019).

REFERENCES

Aguirre, A., Moretti, M. and Boiarov, S.A. (2015), 'Women who telecommute in the home in the province of Buenos Aires, a new family problem or an employment solution?', accessed 12 June 2019 at http://es.slideshare.net/concursobialetmasse/ mujeres-que-teletrabajan-en-la-provincia-de-buenos-aires-un-nuevo-problema- familiar-o-una-solucin-laboral.

Asociart (n.d.), *Manual of Good Practices in Health and Safety at Work for Teleworkers*, Buenos Aires: Asociart, accessed 13 June 2019 at https://www.yumpu. com/es/document/view/14400651/manual-para-teletrabajadores-asociart-art.

Belkic, K.L., Lansbergis, P., Schnall, P. and Baker, D. (2004), 'Is job strain a major source of cardiovascular disease risk?', *Scandinavian Journal of Work Environment and Health*, 30 (2), 85–128.

Boiarov, S. (2007), 'Goal 5 of ECLAC 2007: report on legislation and regulation relating to telework in Latin America and the Caribbean', accessed 12 June 219 at http://www.cepal.org/socinfo/noticias/noticias/2/32222/gdt_elac_meta_5.pdf.

Boiarov, S., Rozo, C. and Poliszuk, N. (2007), *Exporters of Internet Services, United States and Argentina*, E-Book Corporation/El Cid Editor, accessed 12 June 2019 at http://etis-lac.tic.org.ar/libro_etis-lac.pdf.

Bonde, J.P. (2008), 'Psychosocial factors at work and risk of depression: a system- atic review of the epidemiological evidence', *Occupational and Environmental Medicine*, **65** (7), 438–45.

Cabrera, M.C. and Steizel, S. (2012), 'Telework: its contribution in retaining and developing women in companies in Argentina', working paper, May, University of San Andrés, Buenos Aires, accessed 18 July 2019 at http://repositorio. udesa.edu.ar/jspui/bitstream/10908/896/1/%5BP%5D%5BW%5D%20T.L.%20A dm.%20Mar%C3%ADa%20Carolina%20Cabrera.pdf.

CENIT Foundation (2011), 'Telework, climate change and public policies, survey of teleworkers of companies in the Autonomous City of Buenos Aires: results report of field work results', April, prepared from research conducted by the CENIT Foundation in the framework of the project 'Teleworking, Climate Change and Public Policies', IDRC Subsidy No. 105235-001, accessed 12 June

2019 at http://www.trabajo.gob.ar/downloads/teletrabajo/encuesta_a_teletraba jadores_caba.pdf.

El País (2015), 'Can you work less and spend more time with the family?', *El País*, 21 January, accessed 13 June 2019 at http://internacional.elpais.com/internac ional/2015/01/21/actualidad/1421802992_270266.html.

Elovainio, M., Leino-Arjas, P., Vahtera, J. and Kivimäki, M. (2006), 'Justice at work and cardiovascular mortality: a prospective cohort study', *Journal of Psychosomatic Research*, **61** (2), 271–4.

Family and Business Conciliation Centre (2010), 'Work–family balance', special management report, IAE Business School, University of Austral, Buenos Aires.

La Nación (2011), 'The future of work: how much time is left for the 8-hour day?', *La Nación*, 5 August, accessed 13 June 2019 at http://www.conexionbrando. com/1395276.

Lenguita, P., Duhalde, S. and Villanueva, M.M. (2005), 'The forms of labor control in times of tele-availability. Analysis on the organization of telework at home in Argentina', University of Buenos Aires, accessed 13 June 2019 at www.aset.org. ar/congresos/7/12016.pdf.

Ministry of Labour, Employment and Social Security (MLESS) (2011), *Manual of Good Practices in Teleworking*, Buenos Aires: Organización Internacional del Trabajo (International Labour Organization), accessed 13 June 2019 at hhttp:// www.trabajo.gob.ar/downloads/teletrabajo/manual_buenas_practicas_2011.pdf.

National Institute of Statistics and Censuses (INDEC) (2011), 'National survey of information and communication technologies design of registration and struc- ture for individual and household microdata bases', accessed 12 June 2019 at http://www.indec.gov.ar/ftp/cuadros/menusuperior/entic/entic_dis_registro.pdf.

Neffa, J.C. (2015), *Psychosocial Risks at Work: Contribution to the Study*, Buenos Aires: CEIL-CONICET.

Novick, M. and Rotondo, S. (2013), '"The challenge of ICTs in Argentina. Creating capacity for the generation of employment" in the framework of the project "Inclusive political dialogue and sharing of experience", in the programme Alliance for the Information Society 2-(@LIS2)', Economic Commission for Latin America and the Caribbean (ECLAC), March.

Occupational Risks Supervisory Authority (SRT) (2012), 'Informe anual de acci- dentabilidad laboral 2012' ('Annual report of labor accidents 2012'), accessed 18 July 2019 at https://www.srt.gob.ar/estadisticas/anuario/Informe%20Anual%20 de%20Accidentabilidad%20Laboral%20-%20A%C3%B1o%202012.pdf.

Pregno, S. (2013), 'Bill to create an area or telework coordination', September, accessed 12 June 2019 at http://dipfrepam.blogspot.com.ar/2013/09/pregno-propone-crear- el-area-o.html and at http://caminandoutopias.org.ar/accesible/?id=noticias& n=621.

Revista de trabajo (2012), *Bulletin of Labor Statistics (BEL)*, **8** (10), Ministry of Labour, Employment and Social Security, Buenos Aires, accessed 18 July 2019 at http://trabajo.gob.ar/estadisticas/revista/.

Rubbini, N.I. (2012), 'Psychosocial risks in telework', paper presented at the Seventh Conference of Sociology of the National University of La Plata (UNLP), accessed 13 June 2019 at http://jornadassociologia.fahce.unlp.edu.ar/vii-jornadas-2012/ actas/Rubbini.pdf/view.

Rubbini, N.I. and Suarez Maestre, A. (2011), 'Group 8: Productive decentralization and outsourcing: their effects on labour processes and relations, bases for an inte- gral description of telework', paper presented at the Tenth National Labour Studies

Congress, Buenos Aires, accessed 13 June 2019 at http://www.trabajo.gba.gov.ar/informacion/Publicaciones%20P%C3%A1gina/Aproximaci%C3%B3n%20al%20concepto%20de%20teletrabajo.Rubbinni-Suarez%20Mestre.pdf.

Senate of the Argentine Nation (2007), 'Draft law on the legal regime of teleworking in dependency relationship', accessed 12 June 2019 at http://www.caminandoutopias.org.ar/ministerio/Proy_teletrabajo_PEN-PE159-07.pdf.

Vargas, R. (2014), 'Promoting a favourable environment for the state worker', Rio Negro Legislature, accessed 14 June at http://legisrn.gov.ar/lrn2016/sin-categoria/auspician-la-modalidad-del-teletrabajador-estatal/.

Yennerich, G. (2014), 'Effects of the new information technologies (tics), on the employment situation of the companies in the town of María and the area of influence', paper presented at the Third Congress of Administration of the Center of the Republic, Western Regional Meeting Center of Adena.

5. Telework and its effects in Brazil

Alvaro Mello and Armando Dal Colletto

INTRODUCTION AND BACKGROUND

The knowledge about the diffusion, performance and potential of telework in Brazil has been inadequate for years. The employment policymakers have based their decisions on stakeholders' demands with very little support of analyzed research data. Better data is needed to feed policy-making, for research, and for the development and deployment of initiatives. In particular, there is a need in Brazil for reliable information about trends – the nature, direction and pace at which people take up telework. This objective could be achieved through studies that take a consistent approach to collecting comparable data, such as the current study carried out by the International Labour Organization (ILO).

While the Brazilian literature about telework contains many positive personal opinions and success stories of specific teleworking programs, the evidence of benefits and problems is relatively superficial, mostly associated with individual company cases and personal opinions of consultants and vendors. In particular, the factors that decisively influence the development of telework are still not sufficiently understood.

There is a need for a more systematic and rigorous approach to test the impact of teleworking programs, and to develop a more general perspective on actual benefits, problems and success factors important to increase the benefits and reduce the problems. The new working environments and work processes are not bearing fruit in many application areas and the key ideas from the research in this field are not being taken up. However, the overall understanding of new work paradigms for the economy and socially sustainable growth is increasing rapidly.

The topic of telework demonstrates the importance of studies regarding how to integrate the most modern technology into organizational behavior. There is still a major shift to be made. Information and communication technologies (ICTs) are maturing, and there is a convergence of devices and tools in the Brazilian environment. However, there is also a lack of

data on the incidence of telework, as well as studies of its effects on workers, businesses and the country's economy.

The Brazilian culture is one of the world's most varied and diverse, owing to it being a melting pot of nationalities – the result of centuries of European domination as well as the practice of slavery. The latter brought large numbers of African migrants across Brazil's borders to live in and influence the local cultures with their customs and ideas. The European settlers also brought their ideas, belief systems and innovations with them, shaping society significantly. All of these different influences have meant that the modern-day Brazilian culture is unique, diverse and very complex. Brazilians, as a nation, place a great deal of importance on the family structure and the values that are entrenched within that institution. Families are usually large, and even extended family members are close to one another, providing much needed help and support to each other whenever and however necessary.

Owing to this diverse heritage, when working in Brazil, cross-cultural management is essential and needs to realize the importance of each person's distinct role within the organization. Many people believe that their supervisors have been chosen because they have more experience than those they manage, and it is, therefore, typically viewed as being unnecessary, and even inappropriate, for them to consult with lower-ranking individuals when making decisions. In many smaller companies, the management style is paternalistic, with the employer taking on a parental role: their objective is to guide employees to help them achieve the company's goals. Nonetheless, when they are empowered and encouraged to do so, Brazilians can be extremely creative and work well in teams.

Brazil's cross-cultural tolerance and readiness for change is apparent, but Brazil remains a country that is cautious in its business dealings. Changes are made, albeit slowly, and require a considerable amount of thought, planning and evaluation. It is important for innovations to have a track record or history demonstrating their benefits if they are to be accepted and implemented.

The fear of exposure and the potential for embarrassment that may accompany failure mean that cross-cultural sensitivity is necessary. While in risk-tolerant environments failure is typically perceived as a learning process that encourages confidence in future ventures, in Brazil failure causes a long-term loss of confidence by the individual as well as by others.

This chapter, sponsored by ILO, is the first of its kind in the country, and is orientated to integrate, refine and validate the existing knowledge in the country regarding telework, and also identify key research needs and the feasibility of expanding the implementation of telework in Brazil.

METHODOLOGY AND MAIN DATA SOURCES

To achieve the objectives of this chapter, the approach defined by the ILO was to explore existing surveys, case studies, articles, monographs and other reports already available in the country. No primary sources of data on telework were available in Brazil; thus, it was necessary to base the analysis and conclusions of this chapter exclusively on available secondary data. The work plan for this study was divided into two groups of activities:

- Information sources definition and questionnaire preparation, which was designed to:
  - ensure a common understanding of concepts across the project and its requirements;
  - enable detailed analysis and synthesis of the questionnaire;
  - include meetings with the community of teleworkers, practitioners and researchers such us the members of Sobratt[1] and GETST[2] at the Regional Administration Council in the state of São Paulo;
  - include interviews with professionals from important Brazilian companies that have already implemented telework (best practices);
  - select available information sources; and
  - prepare the answers to the expert questionnaire.
- Report preparation, which was designed to:
  - analyze the questionnaire feedback from ILO;
  - review the sources and include updated or additional data;
  - write the draft report and submit to members of Sobratt for their review to obtain final insights;
  - define opportunities for new local studies and researches in the field; and
  - report delivery to ILO for their review.

The main sources for the country-level quantitative data came from the IBGE,[3] the Brazilian Institute for Geography and Statistics. Several articles, theses, reports, surveys and segment analyses also comprised the secondary data, totaling more than 40 documents. They are included in the bibliography at the end of the chapter.

INCIDENCE OF TELEWORK

Brazil has no official data regarding the incidence of telework supplied by the Ministry of Labor or another statistical institution. The IBGE demographic census identifies the number of workers that perform their activity at home, but these numbers could not be utilized for the purpose of this chapter since they consider all types of activities performed at home without any drill down that could show data on what we consider telework for the purposes of this study – that is, using ICTs to perform work away from the employer's premises. Some journalists have made this mistake and published estimates of the incidence of telework in Brazil that do not have a scientific or even a logical basis. We reanalyzed the available, very limited, data and chose an alternative methodology for roughly estimating the incidence of telework in the country based on two key assumptions: that teleworkers are employed by organizations, and that they typically perform professional activities in a certain domain of work.

Our calculation strategy is based on the PNAD[4] (IBGE 2012a) occupied persons census in several occupational activities, such as managers, professionals, intellectuals, technicians and clerks, linked to the IBGE's Country Companies File – CEMPRE[5] (IBGE 2012b), including employees from public administration, private companies and not for profit organizations in 2012. We adjusted these numbers using the percentage of companies that declare adopting the practice of telework, which we extracted from the SAP[6] countrywide home office survey among 200 national and multinational companies in 2014.

The calculation method starts with the total number of companies and employees from the CEMPRE report, multiplied by the percentage of companies that adopted home office practices from the SAP survey (36 percent), obtaining the number of potential teleworkers. Also, as we learned from the SAP survey (SAP Consultores Associados 2014) that the companies just offer this possibility to 45 percent of all their employees, a second multiplication by this factor (by 45 percent) is necessary. The formula that we used was as follows: the Total number of employees × 0.36 × 0.45. Dividing the result by the total number of employees declared by the companies (46 242 713), the percentage of teleworkers officially and legally working in Brazil is estimated to be approximately 16 percent of all employees (this is the percentage of employees who ever telework). We emphasize that this figure is valid only for people who have a formal work contract with a public or private institution. The results of our calculations are shown in Table 5.1.

An additional source of data regarding the incidence of telework is GPTW,[7] an annual survey in Brazil. It includes a question about the

Table 5.1   Incidence of telework based on PNAD and CEMPRE

Number of occupied people	95 292 086	PNAD 2012 from IBGE
Number of companies	5 195 250	CNEP 2012 from IBGE
Number of employees declared by the companies	46 242 742	CNEP 2012 from IBGE
Number of employees potentially teleworking	16 647 377	36% of total employees based on SAP survey
Number of employees practicing telework	7 491 320	45% of the potential employees based on SAP survey
Estimated telework incidence	16.2%	

Table 5.2   Incidence of telework based on GPTW (in %)

% of employees authorized to practice home office – 20% of time	% of companies in the list
Above 75	9
Between 51 and 75	2
Between 26 and 60	6
Between 11 and 25	14
Between 6 and 10	14
Between 0.1 and 5	21
None	30
Non-respondents	4

practice of telework. Table 5.2 shows the percentage of listed companies' employees that work at least 20 percent of their time as teleworkers. A total of 135 companies are listed in Brazil.

Another survey, conducted by a human resource (HR) consulting company (Ladeia 2013) in 2013 and including 415 companies of different size in the state of São Paulo studied how the home office is practiced. They conclude that:

● the telework adoption rate among companies in the sample is 35 per cent, which is very close to the 36 per cent found by SAP one year later;
● these companies have had a telework option in place for five years or more;
● 50 per cent of the employees consider the practice very motivating;

- the majority of the companies offer telework, up to a limit of 30 per cent of the workweek; and
- the sales, marketing, information technology (IT) and HR departments are the main adopters of telework, mainly in the services industry (70 per cent).

CATHO,[8] a large Internet-based recruiting company in Brazil, published a survey taken among 26 000 candidates for employment, about home office practice, in which 37 percent declared they teleworked and 23 percent did so once or twice a week. Segmenting the sample by company size, they found greater telework adoption among companies with more than 500 employees (40 percent) and less among smaller companies (34 percent) (Ferreira 2015). Other projections indicate that in Brazil, by 2020, companies will only supply six seats in their premises for every ten employees.

The incidence of telework in Brazil is closely related to the growth in the number of people connected to Internet. According to IBOPE,[9] 50 percent of the Brazilian population has access to the Internet and this is growing 10 percent annually. IBOPE also estimates that one-third of the workers are already performing their activities away from traditional offices (IBOPE – NIELSEN 2015). According to the Citrix 'Workplace of the Future' report (Citrix 2012), organizations will have almost a fifth fewer workspaces by the end of 2020, provide just two-thirds of a desk for each office employee, and completely redesign their workplaces.

DRIVERS OF TELEWORK

A correlation appears to exist between the type of jobs, the organization of work and the intensity of telework. We may consider these aspects as drivers for the adoption of telework. Typically, successful cases of telework adoption are predominantly present in specific areas such as:

- call centers, equipped with robust systems that track in details the agent activity, access remotely corporate information and update databases. Big companies, such as Gol Airlines,[10] Porto Seguro[11] and others, report that they have practiced home office with a large portion of their customer service agents for many years;
- creative and design tasks typically measured by the outcomes achieved by journalists, graphic designers, writers, architects and other intellectual-based jobs also appear very often as good examples of telework;

- technical activities such as computer programming also measured by outcomes (lines of code or function points) appeared in our case research;
- mandatory hiring quotas of people with disabilities. In Brazil, the legislation requires that companies with more than 100 employees fulfil a quota of 2–5 percent employees with disabilities (named PCD). A home office policy facilitates the achievement of these quotas, transforming it into a driver;
- workspace limitations at the company premises;
- nonstop services and processes that must be reliable anywhere at any time with the participation of specialized and skilled people;
- field services in utility companies requiring mobile teams to perform maintenance and supervising tasks;
- virtual organizations or those with a small amount of physical space. These companies frequently do not have an office but maintain a significant business; and
- activities accomplished in the field such as product promotions, sales, market research and others that require outside tasks and face-to-face contact with clients and the marketplace. The employees, instead of going back to the office, remotely interact with the company information system, prepare data updates, and report their results.

Additional findings appeared in several research studies that suggest additional drivers of telework:

- According to BSP[12] Telework Study Center (CETEL) research: 94 percent of teleworkers have a formal evaluation focused on outcomes compared with 63 percent of all employees. This suggests that having a results-based evaluation and control process is a driver for adopting telework.
- In the SAP-Consulting study, the research detected that many companies see the home office as a benefit to the employee, instead of valuing the cost reduction and productivity gain. In this case increasing employee benefits is the driver.

Organizational culture has a key role in telework decisions. To increase the probability of success, workers need to spontaneously adopt telework; the home environment has to be compliant; the worker's lifestyle has to be understood; social activities need to be created; training programs and innovation initiatives need to be stimulated; and a systematic implementation must be adopted.

It is also important to remember that the number of startups is growing faster at this time of the country's economic crises. According to Fernando Paiva and Henrique Medeiros (2015; Medeiros 2015), startups are adopting telework in their value chains, thereby increasing their competitive strengths. No official data is available, but some associations that represent these startups are increasing the number of members at rates of 40 percent yearly. The program Startup Rio, maintained by Rio de Janeiro's state government, doubled the number of projects from 2014 to 2015. The WOW[13] accelerator brings similar growth. Crowdfunding also demonstrates the trend. This ecosystem is becoming mature and is totally related to the number of Internet users. Teleworkers will directly benefit from that development.

EFFECTS OF TELEWORK

Looking to the worldwide scenario, we learn that telework is shaped by several factors and trends that simultaneously limit and leverage its possibilities. These factors, together with telecommunications and IT, are related to the nature of work, the workers, the workplace, the urban mobility and environmental regulation.

The nature of work migrated from agricultural to industrial and, more recently, to services. Currently, the great majority of the workforce could be identified as information workers, transitioning to the status ofdigital information workers as their functions are performed entirely based on computers that are geographically dispersed in a decentralized and connected structure.

Relocation because of a job offer is not mandatory anymore; time for the family and leisure can substitute for commuting time; and retaining employees is now based on having attractive working conditions such as time and location flexibility, empowerment, less job stress and better company values. In big urban conglomerates, environmental problems force authorities to improve air quality by, for example, limiting transport resources, thereby reducing people's mobility. In summary, many of the jobs now being performed, could, with little or no restructuring, be performed at home at least one or two days a week. Employees are ready for, and even demanding, more responsibility for themselves and more flexibility in their lives.

Working Time (Hours of Work and Work Schedules)

Work performed away from the company's premises started to be regulated by the Brazilian labor law in 1943 because of the workers that used

to perform their activities at home before any ICT resource was used. According to the Brazilian constitution, workers have a normal limit of 44 hours of work per week. Shorter workweeks are possible in the case of a special agreement between companies and trade unions. The maximum workday, including overtime, is ten hours a day with a few specific exceptions. There is no distinction owing to the work site, and the employee has to follow the company's rules regarding the work schedule and punctuality.

With ICT advancements and the adoption of telework practices, a new law (Federal Law no. 12.551/2011) included a paragraph in the previous labor law Article 6 (CLT 2011): the ICT instruments to manage and control work are equivalent to the personal and direct methods of managing and controlling people's work. This paragraph recognizes that employees doing their tasks using ICTs away from the company's premises have exactly the same status, including the possibility of receiving overtime payment. Based on that, we may conclude that no matter whether at the company's premises or any other location such as their own home, the policies and rules are the same. All the start/finish time controls used in their premises could be used or replicated outside those premises using ICTs with the same legal value (Pereira 2015). The advantages and disadvantages of telework would therefore be located in other variables such as mobility, workplace convenience, the work schedule, the work environment and others.

Specific answers to the above questions are still difficult to determine, owing to the complete lack of official statistics or even established best practices in those enterprises that already have formally implemented telework with the ICT support. However, important facts and comments will provide a general picture of the current situation in Brazil regarding telework.

Economic globalization and technological development have led many professionals to remain connected to work at all times, whether in the office or elsewhere. Consequently, working hours for those workers who are not restricted to the workplace can exceed ten hours daily. Even though there is no specific research on this issue, observations made in the labor market, especially in the past 15 years, when new technologies (for example, smartphones, tablets and social networks) appeared, show the stretch of working hours. They allow work in atypical conditions that did not exist before. This trend in which working from home, in hotels, in co-working and in the subway, becomes a working habit is increasingly common, particularly for professionals at technical levels (medium and higher) and in management positions, owing to the globalized world and the use of mobile devices and apps (A Epoca da Dedicação Total ao Trabalho 2011).

Excesses of working time are permitted by unlimited connectivity and should be part of the concerns of business leaders. It is recommended to

observe what happens with subordinates, because of the risks of employees extending their workday beyond normal working hours. The possibility of overtime claims is real, even for companies that do not formally use telework. It is well known that employees may spend the whole day at the office, and when they get home they will check their notebook computer or smartphone. In addition, there are companies that do not permit work away from the office, but do not give sufficient time to employees to, for example, respond to all their emails, and consequently they will need to work additional hours at home. A possible strategy to avoid this situation is to block access to the corporate IT network at certain times, as does the SERPRO (Federal Data Processing Service), which blocks access to their network after 9.00 p.m. (Fora dol Expediente 2013).

Owing to the usage of ICTs, many new aspects appeared in the relationship between employees and employers. For example, giving a company smartphone to employees to perform work tasks away from the office could be interpreted as assigning them extra tasks subject to overtime rules, if these devices are used after the normal working hours. In 2012, the TST (High Court of Labor) updated the 'Sumula 428' (TST 2012), which is a rule regarding workers at home in standby mode:

> If the worker is being controlled by the employer using ICT devices in order to be called during his resting time, the company has to pay an extra time corresponding to 1/3 of the normal wage per hour. In addition, if the worker stays in touch with his/her boss through ICT devices after hours, they should be compensated with extra time. (Authors' translation into English)

This matter does not have a general interpretation and changes depending on each case. These issues are new in the country and will continue to be discussed before reaching appropriate and detailed regulation. Common practices demonstrate that employees not subjected to rigid worktime controls normally access their emails or do job tasks away from company premises without receiving any extra payment for that work. However, those workers who have rigid work time control and work extra time at the company's premises do receive overtime payments.

According to Sobratt studies and analysis on this issue, the following considerations are important:

- Workers hired under the Brazilian CLT,[14] self-employed workers and professionals practice telework. Teleworkers are subject to the same rules regarding work, occupational health and well-being (Decision 3214/78; Ministry of Labor and Employment 1978a).
- Telework is not outsourcing. Telework is a work format and outsourcing is a business model.

- Each company should establish policies concerning telework and working time, ICT equipment, controls, costs, training, legal compliance and change management.
- Each company should establish a specific regulation for teleworking employees, such as working time, interruptions, delays and presence controls, transport and food vouchers, and other policies that could avoid labor complaints owing to misinterpretations of labor rights as applied to this new work model.
- Several court decisions and collective agreements show some important issues that create jurisprudence and could become a general rule or best practice in the future, such as the one described below signed by the Data Processing Workers Union and data processing enterprises:
  - No overtime, standby hours or additional night fees should be paid to teleworkers for those teleworkers that do not follow an established time and shift schedule to work outside the company premises.
  - No reimbursement should be made regarding communication or equipment expenses.
  - Transportation expenses paid to regular workers should not be extended to teleworkers.
  - Overtime should be paid to teleworkers when the enterprise controls the working hours, defines the shift or work schedule, and it is previously authorized.

According to Home Agent[15] research among their agents, working at home, and not commuting to the company, gave most of the employees four hours of extra time every day. Among the positive consequences of that situation is less absenteeism, more punctuality and better health.

A research study by PwC[16] and FGV[17] ('O futuro do trabalho: Impactos e desafios para as organizações no Brasil'; PwC and FGV 2014) of 113 companies employing 1.6 million people shows that among the employee aspirations are alternative work models, promotions based on merit, and better compensation, all of them having the same weight. These employees are in their thirties and forties and have small children. There is no doubt that their choice is to work away from the company premises if allowed. In the same research, 69 percent of the companies wish to adopt flexible time and the home office, but are afraid of legal problems. They are afraid of the consequences on overtime owing to the process of accountability regarding the use of smartphones and emails outside their company premises. Other consequences are redesigning completely the office space to take account of the new situation. Co-working spaces instead of being

assigned individual desks and other architectural changes may push the companies to some serious expenses. Philips in Brazil will invest about US$27 million in the coming years to implement technology for teleworking. Their employees worldwide have to follow a uniform policy of working from home once a week, no matter the position, including the president (Gasparini 2015; Luders 2015; Pati 2014).

Effects on Individual Job Performance and Organizational Performance

According to the President of the ABRH (the Brazilian Association for Human Resources), Luzia Fröhlich, several companies in the Brazilian state of Santa Catarina started to bet on the home office as a powerful tool to increase performance. The Justice Tribunal of the state started a pilot project similar to the Federal Capital Tribunal's successful experience, achieving a productivity increase. According to Xedes Ribeiro Freitas, a tribunal analyst, from August to December 2014 the pilot participants increased productivity more than expected. A preliminary condition to work from home was to achieve 20 percent higher productivity than on tribunal premises.

Similarly, according to SAP Consulting Research, owing to mobile work, 27 percent of participants reported a better synchronization among company locations and an improvement on internal projects. As 42 percent reported a productivity increase, it is possible to expect that the practice introduced time flexibility to employees without negatively influencing the quality and punctuality of the results. Banco do Brasil[18] studies show similar results, with employees practicing home office increasing their productivity by 15–17 percent.

A company specializing in accounts receivable, Service Cobranças Curitiba (Mello 2011), conducted a study among its teleworkers in 2010. Respondents reported on the influence of telework practice and its main consequences on job and organizational performance. 92 percent of the respondents reported that they were satisfied. Only 8 percent said that they were unhappy with telework.

See Table 5.3 for the impacts reported on organizational performance indicators such as productivity, turnover, response time, negotiation effectiveness and teleworker satisfaction, when compared with regular workers inside the company. There are no doubts about the economic benefits for the company of these positive results.

An organization called AVAPE[19] focuses on people with special needs as teleworkers. These candidates, owing to their difficulties in commuting between home and office, frequently could not compete in the labor market. Offering them the opportunity to work from home, after effective

Table 5.3 *Effect of telework on job performance in Service Cobranças Curitiba*

	Home office/regular
Productivity (number of cases closed)	+18%
Turnover	−58%
Lack of promptness	−50%
Effectiveness of negotiations	+15%
Quality of life	+10%

training, increased their self-esteem, showing them that they are able to perform as well as their colleagues without any physical limitations. Now they have teleworkers with special needs that have acquired the self-confidence to try a better job in other companies. They are convinced about the personal productivity improvement these employees experienced after the telework opportunity.

Algar,[20] a large call center company, declared that their teleworker agents improved their productivity because they had better concentration when working from home. They also gained significant knowledge about team management and control. Security issues in respect of information disclosure, which had been raised by their customers, were also improved. Call center employees working from home brought organizational benefits, such as:

- learning how to establish processes to manage home-office teams; creating a new practice that could be extended to other functions; and creating a companywide culture;
- reducing clients' (companies') resistance due to the security of their confidential data and impact on business continuity;
- reducing costs and absenteeism, with higher productivity;
- converting the internal experience regarding telework practices into a new service to be marketed in the future;
- achieving clear gains for the teleworkers, such as ownership of a home computer, cost reductions on clothing, self-development and a better quality of life;
- bringing advantages on the social and environmental side as well, such as new jobs, less commuting thereby reducing pollution, and opportunities for older people or those with special needs.

Home Agents, a company founded in 2011, is a contact center outsourcer that operates 100 percent with telework. Their home-based model

allows workers to be closer to their families and away from the hectic public transportation and the lack of safety in Brazil. The agents strongly embrace and value this opportunity, which is evident from the absenteeism, turnover and quality-related key performance indicators (KPIs), which are significantly better than the industry standard.

Among the company's strengths are strategic technological partners with high reliability, a consolidated management model and the pioneering experience in the provision of call center services in the Brazilian market.

The employees receive constant training focused on adaptability to the model, customer service quality, and results. There is also constant monitoring of operations and effective integration of the remote agents with business management.

Employees access the company IT system through the Internet, and all of the data is stored in the company's server. Through a structure based on a cloud model and a VPN[21] (Venezia n.d.) access system, the company avoids the risk of fraudulent customer data capture. This is also achieved through intense training focused on data security.

Through a quality rating system, Home Agent grades its employees on the quality of the service provided according to their readiness, proper use of the operating script, argument, intonation, verbalization and language, attention to information, warmth, responsiveness and empathy, personalization of customer care, product knowledge, transmission of accurate and complete information, system records, and closing script. Through employee ratings, processes are changed and training demands arise. A research study among their agents made in 2014 showed that 98 percent of them said that their quality of life improved, with less stress due to mobility, with less illnesses and a feeling of being closer to the family. They also report up to four hours a day saved on commuting, and a significant percentage went back to school.

Owing to a change in legislation, Seguradora Lider,[22] the insurance company responsible for the DPVAT[23] consortium, was forced to offer its customers a 24 hours a day, seven days a week (24/7) customer service. However, the company decided against opening the call center overnight given how expensive an operation it would become owing to the cost of maintaining the entire building – incurring infrastructure, safety, and maintenance costs – for 24 hours a day. Therefore, the company searched for an outsourcer to handle the night shift operation for them.

In order to comply with both the law and Seguradora Lider DPVAT's expectations, Home Agent proposed a night shift operation using their home-based model, which would benefit not only the customer but also the agents involved in the night operations. With that, Seguradora Lider DPVAT was able to comply with the law, and through the home-based

model, Home Agent was able to achieve better KPIs (2.16 percent average absenteeism, 0.76 percent average turnover and 92 percent average quality grades) against the market standard on its night shift operation dedicated to Seguradora Lider DPVAT.

Home Agent generated a positive social impact particularly because the WAHA,[24] an important part of their stakeholders (who were relating to their customers, even though they were outsourcers), gained a better quality of life by saving commuting time, avoiding unsafe situations at night, and remaining closer to their families

Tetra, a pilot project developed at the Brazilian Federal Data Processing Company, SERPRO,[25] aimed to improve the quality of life of the employees and their productivity, and to reduce company costs. During six months, the project evaluated employees' productivity and the logistics expenses after one year of home office practices. Indicators were collected four times: once before starting (the baseline) and three times after implementation. The following indicators were measured:

- productivity indicator, measured based on target achievement (function points for example);
- logistic resources saving indicator (employees at home or in satellite locations);
- a specific quality of life indicator;
- a professional compliance indicator (team relationship in the new practice).

The positive results of the project were valued at US\$101 165 and the costs were US\$39 500, meaning that the net benefits generated were around US\$60 000.

The examples show a heavy incidence of call and contact centers in the processes of telemarketing, customer loyalty and credit negotiations, among others. The main reason is top management's strategy to search for new work alternatives of a more flexible work environment with a win-win result for the employees and the companies, without any prejudice to the customer.

Research conducted by Dom Cabral Foundation[26] (Logistica Supply Chain e Infraestrutura 2014) estimated at US\$7 billion the losses due to mobility problems in the city of São Paulo, which affects companies' productivity.

Ticket,[27] a company in São Paulo, substituted 24 offices in Brazil and saved US\$972 223 million in rentals and maintenance costs each year (Bazolli 2015) by adopting telework. According to the managers in the company (Mello 2011), the main motivations to adopt teleworking were:

- institutional policies to include special needs people and follow sustainability and corporate social responsibility (CSR) practices. The result is compliance with the regulations (quotas), thus avoiding penalties. This could be interpreted as a cost reduction and a good image enabler among customers and in the community and society;
- financial needs and aiming to avoid operational costs related to absenteeism, turnover and office space requirements. Home office adopters declared that telework avoids office space expansion and sometimes even reduced it after implementation. Happy employees do not quit so easily and working at home lowers absenteeism, both bringing cost reductions (Home Agent research);
- technology advancement and availability permitted them to support call and contact centers' complex systems remotely (Algar and Home Agent); and
- social and economic drivers, searching for more productivity, less carbon emissions and a better quality of life for the employees.

According to the workers (Mello 2011), their main motivations are:

- the financial advantages owing to reduced expenditures on clothing, accessories and commuting to work at the companies' premises;
- the reduced risks of acquiring diseases and suffering accidents. (Home Agent research detected employee and family health improvement);
- the working time and site flexibility; and
- a better overall quality of life (saving four hours a day by not having to commute).

Regus, a global office rental company, sponsored a survey in partnership with MindMetre Research about professionals' commuting expenditures worldwide. Brazil, South Africa, France, India and Mexico are the most expensive countries in a list of more than 100 countries. For example, Brazilian executives spend 6 per cent of their annual income on transportation between their homes and offices. The global average is 5 per cent, almost twice the percentage five years ago. Japan has the lowest percentage. They surveyed 44 000 executives globally, who reported their expenses on public transport, car maintenance, fuel, parking and time lost due to commuting. The company's general manager comments about the importance of companies offering more flexibility to workers, increasing their motivation, company attraction and, eventually, reducing costs (Arcoverde 2015). More than 60 percent of the managers in

Brazil, in five cities, reported that they are already managing teleworkers, and 75 percent of them believe that this work model is more productive (Cavalcanti 2015).

Effects on 'Work–Life Balance', Including Work–Family Reconciliation/Conflict

Employee flexibility as regards their work schedules is still very limited in medium- and low-level functions in Brazil. The majority of them have to follow a fixed time schedule, mainly those that work in public and customer services, or follow normal office hours. Brazilian labor legislation is very rigid regarding work and rest hours, allowing little flexibility for negotiations between companies and workers. However, when employees work based on objectives or projects, this type of work schedule flexibility is common. The standard is a negotiation between the employee and the manager before taking time off during the workday. Companies need to be careful of the legal consequences of these acts. For example, accidents that occurred during these hours could be considered as occupational and companies could be liable for them.

> The labor relationship's transformation, a consequence of a global competitive economy and the information technology advancement, created the time and space flexibility and new methods of work. Telework is the clearest evidence of the labor relationship changes, signaling a new relationship between human beings regarding work and organizations. The expectations of productivity gains, cost reduction, better processes and improved life quality together can behave as pillars for true competitive advantage. If on one hand, the research shows that companies get many benefits for their margins, on the other hand employees got better life quality, time flexibility, eliminating commuting time and mainly increased their satisfaction. (Perez 2010)

> Work and Home are still considered culturally different arenas, each of them carrying its own values and practices. If on one hand, home is organized in a very subjective manner incorporating love and affectivity principles, work on the other is rationally organized according to instrumental procedures where efficiency and effectiveness are the final objectives. Merging both scenarios into a single environment means renegotiating social relationships and the time and space shared among them. This means not invading work space with life activities and vice versa not invading life space with work activities, as mentioned by one of the teleworkers interviewed. (Silva et al. n.d., p. 13)

The teleworker manages the technological resources in order to help him or her organize their professional and home activities. This includes a review of the domestic space and family relationships (Hamilton n.d.). The majority of them have a specific space in the house where they practice

home office, and they keep the family out of that space during 'office hours'. A few teleworkers mix the spaces and times.

From a socio-psychological perspective, it seems that social relationships suffer because of the reduced social contact of teleworkers with their colleagues and supervisors (Daantje Derks 2010). Not seeing the manager, or not being seen by the manager and other top executives, worries the employee for the reason that, if nobody sees you, then you will not be remembered. It seems that the traditional work conception is prevalent when control comes together with recognition. Telework could be transformed into a change agent by simultaneously promoting the corresponding changes in the social and cultural fields. If not, it will be limited to a simple site transfer, including the family in this process without its agreement.

Sometimes employees do not use their company mobile devices during rest time or access their work mailbox only during office hours. Some do not publish their private phone numbers or private emails. Also, some do not interrupt their work to help with routine home problems, and even create private spaces with closed doors or complete isolation from the family or neighbors (Marchetti 2015).

Whether the overall consequences of telework for work–life balance are positive or negative depends upon the worker, what type of telework is involved, the location and under what type of contract it is performed. Autonomous professionals have their autonomy reinforced by working from home, while clerical employees regulated by control measures can find their autonomy reduced still further compared with full-time permanent employees. (US Department of Transportation 1992)

Triad PS of São Paulo, a research company, undertook a survey of 4100 professionals, which showed that 62 percent of them admit postponing work activities to surf the Internet. The study found that 25 percent of respondents spend up to an hour at work dealing with personal matters on the Web. It is understood that these people will have to accomplish their tasks; however, the problem is that they are also sacrificing moments of physical activity, reading and taking care of their health (Viramos Escravos da Tecnologia 2013).

In the Justice Tribunal of the state of Santa Catarina, during the teleworking pilot project implementation, lawyer Marcello Müller Teive, age 36, volunteered to participate because of his supervisor's arguments that he would be able to spend more time with his young daughter. The lawyer reported he is happier working at home, has more time flexibility to tend to family needs, and at the same time is more productive without any additional effort.

To Tatiana da Silva Pioner, age 37, also a project participant, many

advantages occurred for her, especially no more heavy commuting traffic. She used to spend at least two hours a day in traffic jams. She commented that anxiety and depression had been affecting her, but now with telework her health is much better.

Evidence for increased or decreased job satisfaction, quality of life, promotion potential and supervisory support for teleworkers is ambiguous, and studies of work from home and family relationships have found that these linkages are important but not easy to analyze, and are in need of further study. The international literature suggests that teleworkers from government agencies generally report greater satisfaction and productivity gains than those of private employers. No significant correlation has been found between gender, age or educational level and telecommuting satisfaction or productivity, and their studies showed that the evaluation system and level of supervisory support (emotional and technical, including equipment, software, and so on) were also important to satisfaction (US Department of Transportation 1992).

Effects on Occupational Health and Well-Being

Telework may improve the overall health of the worker and result in reduced medical costs. Studies of automobile drivers in the US have shown significant relationships between exposure to traffic congestion and a variety of adverse physiological reactions (US Department of Transportation 1992). These early findings are also relevant for metropolitan areas outside the United States, such as São Paulo in Brazil. It is one of the most populous urban concentrations in the world, surpassing 20 million inhabitants. The motor vehicles fleets – which include advanced aged and a large portion of illegal vehicles (without an annual license) – exceed 5 million units, bringing disastrous consequences for urban mobility and the environment. The sprawl of the city, the historically disproportionate investment in individual transport due to the motor vehicle culture, and easier financing for the poorer classes to acquire the family car, have resulted in massive traffic jams in recent decades. With the drastic reduction in the average speed and flow of traffic during weekdays, the consumption of fuel increased, contributing to global climate change and increased atmospheric contamination, aggravated by local weather and geographical conditions that do not favor the dilution of pollutants.

In addition to the cardio-respiratory problems associated with atmospheric pollution, the average travel time from home to work in São Paulo is currently over 100 minutes (1 hour and 40 minutes) (Green and Sanchez 2013). However, this time may be significantly longer in a portion of the trips because of frequent roadworks, rain and traffic accidents. Sedentary

lifestyle, exacerbated stress and sleep disorders are some examples of the possible consequences of this state of affairs.

The information published by the agencies responsible for the management of air quality in São Paulo and the Clean Air Institute reporting on air quality in Latin America (Green and Sanchez 2013) indicate routine violations of air quality standards and annual average concentrations of pollutants that exceed, by far, the standards recommended by the World Health Organization (WHO). Fine particulate matter (PM2.5) and ozone (O_3) are the two main pollutants of concern to environmental and public health authorities, each in their own way.

Toxicological studies of recognized scientific value attribute the occurrence of thousands of annual premature deaths to high concentrations of PM2.5 (Watts 2015). In the Metropolitan Area of São Paulo 7000 people die each year from cardio-respiratory problems caused by atmospheric pollution (Sobratt 2013). This higher incidence of respiratory diseases, which are reflected in higher social costs, could be reduced by the implementation of comprehensive sustainable transport and mobility policies, many of them already under development in São Paulo, while others still await a better understanding from society and decision makers for their timely and necessary development (Green and Sanchez 2013).

The cost of traffic jams, estimated by Professor Andre Franco Montoro Filho from Fundação Getulio Vargas (Montoro 2013), is R$62.5 billion per year. The productive time lost in the Greater São Paulo Area is two hours a day or 12.5 percent of the total workday. Each worker pays an invisible toll of R$20 per day no matter if driving a private car alone or using public transportation. This scenario is even worse when we remember that private cars, taxis and almost 15 000 buses are blocked throughout the city at any time of the day. The low speed exponentially increases the pollutant emissions and CO_2 per kilometer, obliging the population to breathe in the pollutants for several hours.

Telework and remote activities will facilitate solutions if this work model is expanded throughout the country, as is already happening in more advanced cities in the developed countries. Thirty years ago, typing machines and table calculators were still in the offices; 20 years ago we started using emails and ten years ago no online videos or social networks existed; and all these functionalities are now in smartphones and have been for the past five years. The new wave of commercially available, simple to operate tools makes possible agile personal and professional interactions, expenditure reductions and low environmental impacts, when compared with face-to-face activities that require dedicated space, operational infrastructure and long-distance commuting.

Eventually, telework's benefits could expand far beyond company

frontiers. In Greater São Paulo, there are 7 million jobs, which can be translated into 14 million people commuting every day. Thirty percent of these workers drive cars, which means 4.2 million drivers commuting per day. Adopting the standards from foreign experiences such as in the US state of North Carolina, where the target is a 20 percent reduction of vehicles with alternative transportation, the reduction in São Paulo should be close to 840 000 commuters per day. Considering that telework could contribute 50 percent of this reduction, we have 420 000 fewer private cars per day, which on average would save 3.36 million kilometers or 336 000 liters of fuel per workday. In one year, this amounts to 84 million liters and 168 000 tons of CO_2, 42 tons of NO_x and 67 tons of hydrocarbons (HCs).

Even those less sensitive to environmental issues would adopt telework for reasons related to time spent in traffic jams. Cities such as São Paulo and Rio de Janeiro consume, on average, two hours of the employees' day for commuting activities. This is a loss of revenue to the workers owing to reduced mobility. As economic growth increases, more cars go onto the streets and it takes more time to commute. This is what the study carried out by Carlos Frickman Young and Elisa Possas shows us, which they estimate at between 1.9 percent and 3.8 percent of the Rio de Janeiro state GDP (Frickman Young et al. 2013).

Teleworkers in Brazil are covered by the same Work Safety and Health regulations as their colleagues at the companies' premises. Factors such as physical space and mental health examinations and follow-ups should be followed exactly to the same standards for both work models. However, companies should also look to prevention measures and working conditions regarding the functions (seated jobs, call center agents and drivers, for example) and the supplied equipment, such as tables, headsets, protection garments and accessories. Their use and effectiveness are the companies' responsibility. Medical inspections and technical evaluations from the Health and Safety area are mandatory when adopting home office (Mello 2011), and need to follow the regulation Portaria MTE – Decision 3214/78 (Ministry of Labor and Employment 1978b) that protect the workers' physical conditions.

To trigger legal and HR actions, employees must immediately report incidents, such as sickness or accidents. When working from home, sometimes the employee could be asked to continue working, which is completely inappropriate and should be prohibited. Access to company systems in this case should be blocked to mitigate company risk and demonstrate that worker's health comes first. The fact that an employee is working from home does not allow the company to assume that a minor illness or malaise is not a reason to stop working. The company should even block the employee's access to the ICT system to save the employee's

health and also not take the risk of a legal punishment (Wolnei Tadeu Pereira 2015).

In a study with development agents, in a bank in the northeast of Brazil, the social and psychological impacts of telework were analyzed (Mello 2011). The objectives were to identify factors that could influence the life of teleworkers positively or negatively. The agents, who, because of their job profile, work far from their families, feel well integrated with their work colleagues but also feel isolated from their families, bringing negative consequences to the relationships with their spouses and children. This emotional condition decreased their job performance.

A case reported by a sales manager working for three years for a big cosmetics company reveals that to avoid health problems, the professional must respect work schedules, interruptions and lunch times. The person was incapable of disconnecting from work, and continued working for many hours without eating meals because preparing them would use up productive time. She also missed family events and asked her daughter to help her. The work was the management of sales in two cities, Jaraguá and Taipas in the state of São Paulo. At home, she prepared the sales campaigns and sales reports, performed back-office tasks and fulfilled orders for delivery to the sales people. She handled around 40 boxes with 20 kilograms of materials each month. This work would take 16 hours of non-stop typing. She developed a hernia disease in the back, leading to surgery. After nine months on sick leave, she came back to work with many restrictions due to her illness. The orders data entry department then recommended a transfer to another job. After 15 days in the new job, she was fired, and the case is currently being litigated (Consumidor Moderno 2015).

According to Home Agent, an innovative call center company, their agents reported significant improvements based on surveys among them (Boucinhas 2015). Several inquiries show a consistent demonstration of better satisfaction, in which 98 percent of the agents report a better quality of life through working at home, including the family's quality of life. The free time they gained working from home was used for themselves and their families. Going deeper into the reasons, 93 percent of them declared the time saved on commuting as an advantage; 91 percent declared more time for the family as an advantage; 77 percent declared that working when having minor illnesses is also an advantage; 50 percent declared having more time to study an advantage; and, finally, 48 percent declared an improvement in caring for their health.

Regarding the disadvantages of working from home, 63 percent miss their colleagues and have the feeling of being alone due to the distance; 50 percent complain of interference around their homes; and 29 percent

miss the need to dress up to go to work. Respondents clearly state the ambiguity of telework in the interviews. As one interviewee explained: 'in my opinion, among the positive facts is the avoidance of daily crowded commuting, staying hours in unconformable transport, followed by a long walk, permits more time with my family and more time available for rest time'. Another interviewee reported: 'when working at home, we need to be careful to maintain our external contacts and constantly be aware of the external world'.

An additional point to be raised concerns work-related accidents in the home. When a teleworker performs his or her activities at home, some new situations could occur. For example, if a person working in a home office has an accident using the stove could it be considered a work accident? The answer depends on the job. If the person is a chef, then yes. If the person is a clerk and is using the stove to prepare his or her lunch, then it is not. This and other domestic problems are still being studied and organized to better prepare companies and teleworkers for this new reality.

POLICY RESPONSES REGARDING TELEWORK

Telework can lead to a reduction in the number of commuting vehicles and thus contribute to the attainment of cleaner air and congestion mitigation. Therefore, many communities view it as a transportation demand management measure and a more sustainable work system. In some countries, federal or local governments provide assistance for establishing a telework strategy and its implementation. At the Brazilian federal government level, many departments already practice telework, thereby creating a flexible work model benefiting both employees and productivity.

Responses at National and Sectorial Level

The Commission of Participative Legislation (CLP), held on 7 August 2013, was a seminar to discuss telework in Brazil, sponsored by the Federal Chamber of Deputies. The issue in question was from the suggestion No. 74, 2013, authored by the Union of Public Servants of the Federal Legislature and the Court of Audit (Sindilegis). Authorities and theme scholars attended the event and contributed to the debates. Some data show a reduction in the number of Federal Audit Court of Brazil (TCU) processes with the use of teleworking. The seminar also was attended by the Director General of the Chamber of Deputies who was open to considering the implementation of teleworking in that body. The speakers explained the benefits to the environment and urban mobility that can

arise from the use of telework, in addition to enumerating a number of countries already using it successfully. The seminar was an opportunity to show to Brazilian society and the Brazilian Congress the benefits of telework, as well as technological advances that allow the use of this new working method, which is already used by public authorities and by private companies. These advantages of telework will inspire all those who seek ways to optimize the working conditions of civil servants and other workers in Brazil.

The municipality of Fortaleza in the state of Ceará in 2000 created a program to stimulate and support working from home (Programa de Prática Profissional em Informática e do PINC – Programa de Incentivo aos Negócios – PROINFOR). Its purpose was the creation of telework sites in regions to be developed, with facilities to teach IT, devices to be shared among users, and telecommunications resources.

Several law projects have already been approved or are still under discussion in the Brazilian Congress:

- Federal Law no. 12.551/2011 – approved. This law is an update to the main Brazilian labor law, the Consolidation of Labor Laws (in Portuguese, the Consolidação das Leis do Trabalho, CLT), which governs labor relations in Brazil. This law establishes the following rule: 'There are no differences among work performed in the company premises, at home or at distance, since an employment relationship exists'. 'The ICT means for command, control and supervision are comparable, in legal terms, to the face-to-face means of command, control and supervision of others' work.'
- Law Project 4.793/2012 – approved – amendment to the Labor Law, adding to article 457-B: 'The teleworker's compensation rules will be agreed in employment contracts, conventions or collective employment agreements'. The stated reasons for this law project are that:
  – telework has grown exponentially in recent decades;
  – many of these workers are self-employed, which is regulated by its own legislation; however, many others perform telework under regular (CLT) contracts; also, there is a regular practice of working from home using ICT mobile technology that goes beyond normal working hours;
  – although Federal Law no. 12.551/2011 updated CLT article 6 comparing teleworkers to regular workers, this has increased the number of cases in the justice system negotiating overtime payments and other issues. The lack of these details in the existing law needs to be remedied with additional regulations.

● Law Project 274/2013 – proposed amendment to the Labor Law. For similar reasons to the above, this project also intends to update the Labor Law focusing on telework, with some detailed regulations, to reduce the amount of litigation and conflicts in the jurisprudence. The project suggests new articles to bring a better balance between employees' and employers' rights. It aims to propose a regulation for a special work model owing to the differences that distinguish telework from regular work at employers' premises, while keeping all other dispositions that are common to both models. Telework should not be used to avoid compliance with workers' rights. Employers' controls also need to be more regulated to avoid problems of interpretation whereby a simple email could be considered as a proof of overtime work. The teleworking environment is in constant mutation, and Brazil needs to be prepared for that development to avoid obsolescence. In addition, the role of unions and workers' organizations is not clearly established.

● Resolution SMA (Environment Secretary of the State of São Paulo) No. 24, April 2013. This resolution provides for the creation of a working group to study mobility management strategies by means of telework and tele activities in São Paulo. The reasons behind this resolution include being compliant with other guidelines and resolutions already approved, such as:

  – Guidelines of the State Policy on Climate Change, SPCC (State Law No. 13 798 of 9 November 2009, and Decree No. 55 947 of 24 June 2010), in particular the provisions on sustainable transport;

  – Vehicle Pollution Control Plan, PCPV – CONAMA (National Council of Environment) Resolutions 418/2009 and 426/2010 CONAMA (National Council for the Environment);

  – Federal Law No. 12.551, of 15 December 2011 (see discussion at the beginning of this list).

These are proposals for a strategy to encourage telecommuting in Sao Paulo State, drawn up by Sobratt (2013):[28]

  – publication of a consolidated version of the Report of the Telecommuting and Teleactivities (White Paper on telecommuting) after submission for public consultation;

  – the formal position by SMA in favor of telework and the first steps towards a promotional program of best practices;

  – the development and implementation of a roadmap for telework and teleactivities in companies and the monitoring of emissions and consumption to be avoided; and

  – the establishment of criteria to certify carbon credits as a result

of consistent telecommuting programs in business, in accordance with state laws for air quality.
- Law Project 326/2013 – proposed amendment to the Labor Law. This law project defines and establishes rules for telework. It focuses on the differences between third-party work and contracted workers. It prohibits contracting with foreign employees without previous authorization from the Labor Ministry. It establishes that the teleworker is responsible for the risks at the home workplace and exempts the employer from the responsibility for life and accident insurance for such workplaces. It also requires employers to make inspection visits to the home workplace of teleworkers.

Telework in the tribunals

Several tribunals across the country have authorized their public servants to work outside their premises. The selected examples that pioneered this practice had a strong influence on the establishment of public policies and legislation on the matter.

According to the magazine *Revista Direito e Liberdade* (Realidade do Teletrabalho no Brasil e nos Tribunais Brasileiros 2010) the instruction 11/2003 initiated this work model in the Accounts Tribunal for the State of Rio Grande do Sul. Among the reasons for it are to increase productivity and reduce energy consumption and the use of available equipment. The Federal Accounts Tribunal in 2009 defined internal rules for telework, leaving to management the decision on the categories of jobs allowed to telework. It should prioritize the convenience for the department and not be understood as an employee right. Functions with less interaction among people and greater individual effort were the top candidates for telework.

The Regional Work Tribunal for the state of Minas Gerais (Estrada 2010) was the first in the country to create jurisprudence about telework in 2009. Their decision recognizes work performed at home as being equal to the same work performed on the organization's premises, and subject to the same labor legislation when supported by telecommunication and information technology, no matter the distance from the office.

- Public Hearing for the Law Project 2723/2015 on 6 October 2015, author: Dep. Daniel Vilela – PMDB/GO. This amends section 3 of article 19 of Law No. 8.112, which regulates the practice of the 'home office' in all federal departments, foundations, and so on regarding the public servants' practices of telework. Several departments including public universities and Sobratt participated in this Public Service Labor Commission at the Chamber of Deputies. The purpose of the law project and the hearing, according to the author,

is the redesign of traditional work models, maintaining at a distance the same interaction among employer and employees based on usage of IT tools. The deputy also states that one of the advantages is the workers' comfort working from home, in many cases reducing interference, increasing concentration, saving time, and reducing stress caused by congested urban transit.

After the law project's approval, many departments that already practice telework, often not using this terminology, will follow the same rules and universalize the practice. Sobratt knows of excellent examples of telework adoption in this area such as:

– BNB, Northeast Bank of Brazil;
– METRO, São Paulo Metro Company;
– CONAB, National Food Supply Company;
– ANVISA, Sanitary Agency Internal Revenue System;
– EMBRAPA, Brazilian Agriculture Research Company Banco do Brasil;
– SERPRO, Federal Data Processing Company; and
– Justice Tribunals in São Paulo and Rio de Janeiro.

● The important new law 13.467, dated 13 July 2017, in force since 13 November 2017, brought the Labor Reform, which substantially altered labor relations in Brazil. It incorporates all the previous amendments and new law projects regarding telework. In this way, teleworking in Law 13.467 was considered in Articles 75-A, 75-B, 75-C, 75-D and 75-E of the CLT,[29] with changes in the existing articles and the inclusion of new items as additions to the original text. In summary, Law 13.467 makes the following changes to the existing Brazilian labour law:

– Revised article 4 of the CLT on working time, creating new concepts. In summary, article 4 of the CLT specified that the time in which the employee is at the company's headquarters, but carrying out particular activities such as study, leisure, rest, social relations and religious practices, or when changing uniforms (when there is no obligation for employees to do so in the company), cannot be considered to be working time. Previously, there was disagreement and understanding that these periods could be counted as working time.

– Eliminated control of the daily work schedule for those employees who are active in teleworking; specifically, it introduced an exemption to control of the daily work schedule for teleworkers. However, there is a disagreement in the doctrine on the matter, since the ICT means allow control of the work schedule in various ways, and in some activities, for example, call centers, there

are provisions in regulatory norms on time limits and breaks that must be observed.

– Established the requirement that there be an individual employment contract or contractual addendum stating in writing the exercise of telecommuting, according to article 75-C from the CLT. This legal determination is important because, as a rule, the employment contract does not need to be written.

– Defined the specific costs that should be included in the employment contract. Contracts may be established, under a legal determination for the acquisition, maintenance or supply of technological equipment and the infrastructure necessary for the provision of remote services, as well as the reimbursement of expenses incurred by the employee, such as use of the Internet and electricity.

– Regulated the conditions regarding the reversibility of telework. According to article 75-C, section 2 of the CLT, the employer can unilaterally determine a change from the teleworking scheme to face-to-face (work in the office), with a transition period of 15 days, requiring a contractual amendment to be made regarding the change. There may also be a change from the face-to-face (work in the office) regime to teleworking through an agreement between the parties and registration in a contractual addendum.

– Established an obligation to provide the teleworker with explicit and overt guidance regarding health and safety standards. However, as the CLT stipulates as a general rule that it is an obligation of the employer to comply with and enforce general standards of health and safety at work, it is recommended that employers require that employees comply with these standards. There is a discussion about the difficulties in relation to this obligation of the employer when teleworking, since it could not have access to the residence of the worker, without express authorization, to prove that they are following these rules.

– States that telework can be negotiated collectively, including internal regulation, telecommuting conditions, control of the working day, monitoring, standby time, and so on. As a rule, the work schedule can be established in collective bargaining, since Article 611-A, item VIII of the CLT establishes that collective bargaining prevails over the law in the matter of telework.

The legal security provided by the new law will give impetus to telework adoption and the promotion of collective bargaining will

help its practice, according to its possibility and necessity in each
sector or area of implementation.

● Establishes a bill to create, in the city of São Paulo, the Municipal
Telework Incentive Policy, authored by the councilman Police Neto
(PSD), November 2018. The proposal provides for tax incentives
for companies that adopt distance working arrangements, whether
at home (office) or in shared spaces (co-working). The objective of
this municipal policy is to stimulate teleworking in public and private
organizations, contributing to a reduction in commuting, thus reduc-
ing traffic congestion and also reducing the emission of pollutants.
Citizens would gain in quality of life: greater flexibility to organize
their own schedules and increase productivity, and eliminating the
time spent in traffic congestion. The program also favors setting
up companies outside the expanded city center, and this incentive
should create more employment opportunities for individuals with
disabilities and reduced mobility. The expansion of telecommuting
favors the city as a whole. If fewer people have to move, in addition to
the environmental gain, the city can also save money on bus trips, as
the value of such tickets totals over R$3 billion in subsidies per year.

Responses at Company/Enterprise Level

Several companies were early adopters of telework, based on their pilot
experiences and the advice of experts. They established internal policies
that help them to have a common background and procedures inside their
companies; these enterprise-level policies are presented in this section.
Some analysis and conclusions from these experiences are also reported
when available. It is important to keep in mind that the company examples
reviewed in this section should not be interpreted as a typical examples or
as best practices.

Compuware[30]

Compuware is a global software company, now named Dynatrace, a
supplier of computer applications monitoring products to corporations
worldwide. This company has approximately 5700 customers worldwide,
from small startups to the largest enterprises. More than 800 experts in the
company work worldwide as developers and field engineers. This policy
was established for the Brazilian branch. Interviewing the company presi-
dent, he made it clear that, being a global digital transformation company,
the main goals of the project were increased productivity and a better
quality of life for employees. Cost reduction was an additional benefit, but
not the main objective.[31]

Overall objective of the policy   The objective is to provide guidelines for managers and employees about the conditions and requirements for the practice of telework in the company.

Telework objectives

- Improve employees' productivity.
- Improve employees' quality of life and create opportunities to reduce expenses associated with their commuting to workplace activity.
- Reduce expenses on transportation, food and materials.
- Improve retention of current employees.
- Reduce office space.
- Contribute to urban mobility and the environment.

Telework assumptions

- Telework implementation is a pilot project to be used as a learning tool to expand this practice, which is being continuously evaluated and reviewed.
- Functions eligible for teleworking are defined by the company, based on HR and management recommendation after top management approval.
- The option to adopt telework is made by each employee with the formal approval of the respective managers.
- The space where the activity takes place is subject to compliance with standards, especially work safety and health requirements.
- The time schedule and the length of the workday will remain the same. Due to remote activities, employees have time flexibility regarding beginning and ending work, their lunch break and rest intervals at their convenience. Those employees assigned to customers must follow the customers' schedule.
- Telework can be practiced once a week or more, based on the nature of their function, either at home or at any alternative office.
- To preserve integration and connections among employees, all collaborators must work at their offices at least once a week.
- Activities subject to telework will be controlled regarding outcomes, time schedule and indicators negotiated between workers and management and monitored by the managers.
- Telework activities will be continuously monitored and may require employees' presence in face-to-face or virtual meetings in a location assigned by Compuware.
- An addendum to the labor agreement will be developed for the func-

tions subject to the practice, containing these and other conditions eventually required.

- Special procedures and norms will define the technology used, information security and other aspects related to IT.
- All of the costs related to devices and communications to support telework will be the responsibility of Compuware, which will establish employees' limitations for their use.

Results

- For the company
  – Savings on office floor space, considering rental, taxes and maintenance of US$147 222 annually.
  – Employees' reallocation to a smaller space, eliminating 'idle' space, improved the company's internal climate.
  – Employees' perception is that their productivity improved.
- For the employees
  – An important commuting time reduction of two hours a day on average, adding up to 180 hours per year, which can be translated into one month of working time.
  – This time saved was expended as follows: 32 percent with family, 29 percent exercising, 20 percent on leisure, 17 percent studying and 3 percent on domestic tasks.
  – This reduction also eliminated the consequent stress of commuting to work and improved the quality of life for 80 percent of the employees.
  – A reduction in private vehicle costs for the large majority of participants, by a total of US$625 yearly on average.
- For the environment
  – The community had a reduction of 4800 kilograms of CO_2 in the atmosphere owing to elimination of 5000 commuting trips, saving 60 000 liters of fuel.
- Final recommendations
  – An expansion of the telework program in terms of the number of days, functions and participants.
  – Areas not included in the telework pilot project, such as finance, were required to start immediately to improve the bad internal climate due to the feelings of exclusion of these employees.

Some companies have developed agreements with labor unions and professional associations to govern telework and have a clear relationship with their employees. In 2013 Compuware provided a good example by

collaborating with SINPD,[32] a union that represents IT workers in the state of São Paulo, signing the first Brazilian Collective Agreement for the period of 2013–14.

Fibria[33]
A Brazilian company with a strong presence in the global forest products market, Fibria is the largest global producer of eucalyptus pulp. The company has an annual production capacity of 5.3 million tons, with mills located in Três Lagoas (Mato Grosso do Sul), Aracruz (Espírito Santo), Jacareí (São Paulo), besides Veracel, a mill in Eunápolis (Bahia), in joint venture with Stora Enso. In partnership with Cenibra, it operates Portocel, in Aracruz, the only Brazilian port specializing in pulp shipments.

With its operations based entirely on renewable forest plantations, in the states of São Paulo, Minas Gerais, Rio de Janeiro, Espírito Santo, Mato Grosso do Sul and Bahia, Fibria has a total forest base covering 969 000 hectares, of which 343 000 hectares are native forests that have been set aside for environmental conservation.

In October 2012, the company entered into a strategic alliance with the Canadian company Ensyn Technologies to invest in renewable fuels derived from wood and biomass.

Objectives of telework

● Contribute to the cultural change intended to boost the integration and synergy across the entire company.
● Improve quality of life and generate opportunities to reduce employees' expenses related to commuting to work.
● Improve employee recruitment and retention.
● Promote better productivity.
● Redesign the organization of office space, aiming at a reduction of floor space.
● Contribute to urban mobility conditions and environmental improvement.

Guidelines

● The functions eligible to telework are a company decision based on HR and management recommendation, approved by top management and following feasibility criteria for telework functions.
● Opting to work away from the company premises is a voluntary employee decision approved by the direct manager.
● Telework will be practiced in two ways:

- – home office, working from home five days a week, visiting the office on scheduled days in accordance with management.
  - – flexible work, working from home twice a week and three days in the company's central office.
- All the current employee benefits, such as transportation tickets and food, will be kept exactly as offered in the face-to-face model.
- The employees' performance evaluation must follow the same procedures as the current system, just being adapted to the particular case of the home office or flexible work.
- Target and time schedules and result indicators previously agreed among leadership according to the company practice will support activities subject to telework.
- The communication between leaders and team members will follow the same face-to-face practices, considering the specificities of each function, including instant messaging and video. An additional tool will be developed to map employees' location, ensuring that the communication process reaches employees in the company premises when teleworking.
- Office space distribution will be assigned:
  - – according to the needs of flexible work teams, without fixed places;
  - – to permit, infrequently, the presence of home office adopters in the central office; and
  - – according to the needs of common spaces for meetings and relaxation.
- The condition of the worksite where the home office or the flexible work will be performed will be audited and people will be trained on ergonomics, safety and occupational health rules.
- The same workday duration will be kept in accordance with national legislation.
- The control of working hours will be kept the same as in the current policy.
- The site for flexible work is agreed between the employee and management.
- To preserve the integration and the links among the team, all the teleworkers will work in the company's central office once a week on the same day.
- Telework activities will be continuously monitored and employees could be asked to participate in face-to-face meetings in a location defined by the company.
- A contract amendment will be developed for the functions eligible

for telework, containing these and other conditions required for the participants of this work model.

- All the IT tools for work needs – notebook computers, smartphones, headsets and so on – will be supplied by Fibria. The company will reimburse the communication costs.

Cisco

The Cisco telework program has evolved over the years from a convergence of top-down company practices with bottom-up changes in employee expectations. The company operates in 97 countries and they have a double role, both as telework adopters and as suppliers of tools for teleworking.

Cisco Systems began a formalized teleworking program for managers and employees in 1993, becoming one of the first companies in Silicon Valley to do so.

Objectives of the program

- Allow workers greater flexibility in the scheduling of their work hours by, in many cases, eliminating the need for a daily commute.
- Empowers employees to work full speed at a reduced time and cost to both the employee and the company.
- Promotes general improvement in the quality of life for its workers.
- Save space, save the environment, save money and improve head-count productivity.
- Establishes a workplace as business partner and decision-making facilitator for the entire organization.

Guidelines

- A single group will lead policies and support business decisions, including policies regarding the office environment. Exceptions turn into the rule very easily. Cisco ensures that no project is approved outside Cisco corporate policies and that the chairman, chief finance officer and chief information officer support this work environment and strategy.
- A flexible policy that enables many employees to telework, based on their job requirements and their manager's approval. Where necessary, this policy is customized to reflect country-specific laws and employee entitlements.
- Creating a company culture of trusting employees to work responsibly, strong performance management practices and finding the right balance of autonomous and collaborative action.

- A 'pay-for-performance' compensation philosophy and strong performance management systems are used to evaluate employees and determine their compensation. This model helps employees and managers identify specific goals and job expectations, but gives the employees significant flexibility over when, where and how to meet them.
- Offer training and coaching to managers for setting expectations, communicating effectively and giving useful feedback on the job performance of remote employees.
- Regularly sponsor events in local Cisco offices that bring together nearby employees, even if they do not work in the same team or department. These events give employees social and networking opportunities, and help to sustain their feelings of connectedness to the company.

CONCLUSIONS AND RECOMMENDATIONS FOR ACTION

The subject of telework appears to be of great importance to the social and economic development of an emerging country such as Brazil. The global competitive environment, influenced by strong issues in the changing political, economic, social and climate, requires new solutions for both old and new problems. Technology is an important weapon in this sustainability war, which needs to be appropriately applied for increasing the population's wealth. In a democracy, regulation and negotiation facilitate a smooth transition in society.

The incredible increase in Internet users in the country, around 20 percent in the most recent year, reached almost 50 percent of the entire population – in 2017, 57.8 percent of the country's households (Santos Capinheiro 2018) were connected to the Internet, which means an even bigger percentage when focusing on just the active working population. Based on IBOPE – NIELSEN projections of 10 percent annual Internet growth in Brazil (IBOPE – NIELSEN 2015), it is reasonable to predict that teleworkers will jump from nearly 7.5 million currently to 15 million by 2020. The congestion and air quality improvements potentially attainable through telecommuting could be substantially increased by proper education and incentives. The direct energy, air quality, safety and time benefits of telecommuting will be increased as the degree of congestion is reduced. However, telecommuting could also potentially stimulate urban sprawl and have other impacts on land use and public transportation. Factors that will affect the rate of growth of telecommuting include the uncertainty of benefits for employers and the considerable time and effort inherently

required in bringing about major changes in work styles and ways of doing business. Telecommunication services and equipment are adequate for most current telecommuting, but high-bandwidth capabilities will be needed in the future and would be beneficial now. Government agencies can play a significant role in facilitating and encouraging telecommuting. Telework can also be an effective tool for travel demand management.

The analyses for this chapter show that telework is not suitable for every job, person or situation. Whether an individual telecommutes, how often and when, are decisions of the employer and the employee, made under the constraints of the existing physical and institutional environment. Conditions that must be met before a person can become an active home-based teleworker include the following:

- The job must be suited, at least in part, to performance at a remote location.
- The capabilities and personal characteristics of the employee must be appropriate for working with little or no direct supervision.
- The employing firm must accept telecommuting as a legitimate and desirable activity, provide necessary support and have appropriate IT infrastructure in place.
- The supervisor or manager of the employee must accept the concept and practice of telecommuting.
- The employee must feel comfortable with telecommuting in terms of its suitability for his or her personal work habits and style, its effect on social interactions and on their advancement and career.
- The employee must have a suitable workplace and working time free of distractions (such as childcare responsibilities).
- Available technology, particularly telecommunications services, must be adequate and cost-effective for the work to be performed at home.

While all of these conditions can be met in many cases, each will filter out a portion of the potential telecommuting population. Some of these elements are eliminated or modified in the case of satellite telework centers, but implementation of such centers is more complicated, costs could be higher and, depending on specific circumstances, vehicle miles and emission reductions could be zero or even negative.

Continuing research is needed to fully understand telecommuting costs, benefits and future impacts. We suggest that future studies should focus on:

- the economic feasibility of a new work model based on telework;
- the effect of social isolation as a new job insulation, limiting the professional development of teleworkers;

- the differences in the impact of telework among the hierarchical levels (C level, managers, supervisors, and leaders);
- the use of telework as part of contingency plans in emergency situations;
- the use of telework as a best practice to improve work and personal life balance;
- the use of telework as a social inclusion tool for minorities and special needs people;
- telework and productivity gains, cost reduction and improved outcomes;
- new impacts as a consequence of new technological developments, such as broadband, social networks, collaborative and related tools that establish new paradigms such as telepresence and automatic continuous translating;
- the impacts of new generations of 'digital natives' with new habits, cultures, and abilities; and
- telework as a change management and an entrepreneurship enabler.

Telework has grown remarkably in Brazil. The increasing rates of adherence are mainly due to some known factors, such as the popularization of IT and pressures for reduction of costs and increased productivity in companies. The global people mobility crisis and atmospheric contamination in urban centers also have contributed to the decisions of governments and companies to adhere to remote working. However, there is still resistance that contributes to reduce the growth in the adherence of companies to telework; this resistance is caused by several factors, such as conservative managers, administrative risk aversion, lack of new parameters for tasks and productivity, limited knowledge of new IT and telecommunications resources, and many others. The myth of 'staying at home to work', related to the cultural tradition that work is outside the home or sharing professional, domestic and family tasks, are additional barriers to telework adoption. These various types of resistance are now being overcome by reality.

Stationary working spaces are expensive, distant and often inflexible. Competitiveness decreases when compared with competitors who practice remote activities. Workers lose their jobs to lighter and faster companies that practice telework. Environmental limits imposed by pollution and global warming are being incorporated into international agreements and local legislation. Governments are strongly charged to provide quality services without increasing costs. Congested traffic and queues for public transport catalyze the population to protest against the mobility crisis. The argument that teleworking and all types of remote activities offer a quick, effective and inexpensive fix to respond, at least in part, to these challenges

is true. The first steps are computer equipment purchased at retail stores, a clever identification of first adopters, and an effort to change culture. Telework is one of the solutions for the mobility crisis we face, and helps to reduce environmental degradation, improve public health, reduce exclusion and mitigate other damage to the family and social structures.

NOTES

1. Sobratt – Sociedade Brasileira de Teletrabalho e Teleatividades (Brazilian Association for Telework).
2. GETST – Working Excellence Group Work in a Transforming Society.
3. IBGE – Instituto Brasileiro de Geografia e Estatística (Brazilian Institute for Geography and Statistics).
4. PNAD – Pesquisa Nacional por Amostra de domicílios (National Households Random Research).
5. CEMPRE – Cadastro Central de Empresas (National Companies File).
6. SAP – HR consulting company, www.sapconsultoria.com.br/quem-somos/?lang=en – 2014 Annual Research on Home Office (accessed 27 June 2019).
7. GPTW – Great Places to Work, www.greatplacetowork.com.br (accessed 27 June 2019).
8. CATHO – Internet-based consulting company, www.catho.com.br (accessed 27 June 2019).
9. IBOPE – Instituto Brasileiro de Opinião e Estatistica (Brazilian Institute of Opinion and Statistics), www.ibope.com.br/pt-br/Paginas/home.aspx (accessed 27 June 2019).
10. Gol Airlines – low-cost model Brazilian airline, http://www.voegol.com.br/en-us/Paginas/Default.aspx (accessed 27 June 2019).
11. Porto Seguro – leading and innovative Brazilian insurance company, http://www.portoseguro.com.br/en (accessed 27 June 2019).
12. BSP – Business School São Paulo, Laureate Universities, CETEL is the Telework Study Center, http://bsp.edu.br/pesquisas-e-publicacoes/ (accessed 27 June 2019).
13. WOW – Brazilian start up accelerator.
14. CLT – Consolidação das Leis do Trabalho (Consolidation of Labour Laws).
15. Home Agent – full home office call center company, www.homeagent.com.br (accessed 27 June 2019).
16. PwC – PricewaterhouseCoopers.
17. FGV – Fundação Getulio Vargas (Getúlio Vargas Foundation).
18. Banco do Brasil – largest Brazilian bank.
19. AVAPE – Associação para Valorização de Pessoas com Deficiência (Association for Valuing Persons with Disabilities), http://www.avape.org.br/portal/en/avape.html (accessed 27 June 2019).
20. Algar – leading Brazilian technology company, http://www.algartech.com/en (accessed 27 June 2019).
21. VPN – virtual private network.
22. Seguradora líder, http://www.seguradoralider.com.br (accessed 27 June 2019).
23. DPVAT – Seguro Obrigatório de Danos Pessoais Causados por Veículos Automotores de Vias Terrestres (mandatory insurance personal injury caused by motor vehicle land routes).
24. WAHA – Work at Home Agent model, http://viasourceos.com/how-the-work-at-home-agent-waha-model-benefits-mothers (accessed 27 June 2019).
25. SERPRO – Serviço Federal de Processamento de Dados.
26. FDC – Fundação Dom Cabra, http://www.fdc.org.br/en/Paginas/default.aspx (accessed 27 June 2019).

27. Ticket – http://www.ticket.com.br/portal/ – Accor Group.
28. SMA – Secretaria do Meio ambiente do Estado de São Paulo (Environment Secretary for the State of São Paulo).
29. CLT – Consolidação das Leis do Trabalho (Master Law in Brazil about Labor Relations).
30. Compuware – a software company acquired by Dynatrace.
31. This is a testimonial of the president of Dynatrace to the consultants of GCONT Group of Consultancy on Telework in 2015, in a project in São Paulo supported by the World Bank, on 15 July 2013.
32. SINPD – Sindicato Nacional de Profissionais de Processamento de Dados (National Union of Data Processing Professionals).
33. Fibria – http://www.fibria.com.br/ (accessed 27 June 2019).

BIBLIOGRAPHY

A Epoca da Dedicação Total ao Trabalho (2011), 'A Epoca da Dedicação Total ao Trabalho' ('The era of full time dedication to the work'), *O Estado de São Paulo*, accessed 20 June 2017 at https://economia.estadao.com.br/noticias/sua-carreira,a-epoca-da-dedicacao-total-ao-trabalho,90628e.

Arcoverde, L. (2015), *Valor Economico*, 24 April, accessed 20 August 2017 at http://www.valor.com.br/carreira/4019900/brasileiro-tem-maior-gasto-com-deslocamento-entre-casa-etrabalho?utm_source=newsletter_tarde&utm_medium=24042015&utm_term=brasileiro+tem+maior+gasto+com+deslocamento+entre+casa+e+trabalho&utm_campaign=informativo.

Bazolli, A. (2015), 'Home office cresce no Brasil, mas ainda enfrenta obstaculos' ('Home office grows in Brazil but still faces obstacles'), accessed 21 June 2019 at https://exame.abril.com.br/carreira/pegando-no-batente-sem-sair-de-casa.

Berbert, L. (2015), 'Brasil sobe 12 posições no ranking de conexão da UIT' ('Brazil goes up 12 positions in the ITU ranking'), *Teletime*, 30 November, accessed 21 June 2019 at https://teletime.com.br/30/11/2015/brasil-sobe-12-posicoes-no-ranking-de-conexao-da-uit/.

Bernardino, A.F., Roglio, K.D. and Corso, J.M. (2012), 'Telecommuting and HRM: a case study of an information technology service provider', *JISTEM – Journal of Information Systems and Technology Management*, **9**(2), accessed 27 June 2019 at http://www.scielo.br/scielo.php?pid=S1807-17752012000200006&script=sci_arttext.

Boucinhas, F. (2015), blog, 24 April, accessed 14 August 2017 at http://boucinhas.hs-sites.com/blog-homeagent/pesquisa-revela-vantagens-de-trabalhar-em-casa.

Cavalcanti, O. (2015), 'Trabalho remoto: 79% das empresas no Brasil não exigem presença física dos colaboradores no escritório' ('Telewotk: 79% of Brazilian companies do not require for physical presence in their premises'), 9 September, accessed 21 June 2019 at https://tiinside.com.br/tiinside/webinside/09/12/2015/trabalho-remoto-79-das-empresas-no-brasil-nao-exigem-presenca-fisica-dos-colaboradores-no-escritorio/?noticiario=TI.

Citrix (2012), 'The workplace of the future', Citrix blog, 2 October, accessed 12 September 2016 at https://www.citrix.com/blogs2012/09/26/the-workplace-of-the-future/.

Companhia Estadual de Telefones da Guanabara (CETEL) (n.d.), 'CETEL', accessed 20 June 2019 at www.bsp.edu.br and http://bsp.edu.br/pesquisas-e-publicacoes/.

Consolidação das Leis do Trabalho (CLT) (2011), Brazilian Labour Law

Article 6 old and new revision, accessed 21 June 2019 at https://jus.com.br/artigos/20844/a-lei-n-12-551-2011-e-a-nova-redacao-do-artigo-6-da-clt.

Consumidor Moderno (2015), 'Os direitos do trabalhador em regime home office' ('Home office workers' rights'), 17 July, accessed 25 August 2017 at www.uol.com.br and http://consumidormoderno.uol.com.br/index.php/defesa-do-consumidor/item/30037-os-direitos-do-trabalhador-em-regime-home-office.

Cruz, R. (2015), 'Retrocesso Digital' ('Digital backspace'), O Estado de São Paulo, accessed 20 August 2017 at https://economia.estadao.com.br/noticias/geral,retrocesso-digital,1810722.

Daantje Derks, A.B. (2010), 'The impact of e-mail communication on organizational life', *Journal of Psychosocial Research on Cyberspace*, **4** (1), art. 4, accessed 25 June 2016 at http://www.cyberpsychology.eu/view.php?cisloclanku=2010052401.

Editorial (2015), 'Geração Startup' ('Start up generation'), *Exame Magazine*, (1102), 31 October, accessed 20 July 2017 at https://exame.abril.com.br/edicoes/1102/.

Estado de São Paulo (2015), 'Navegar é Preciso' ('Sailing is necessary'), *Suplemento Brasil Conectado*.

Estrada, M.M. (2010, 'Realidade do Teletrabalho no Brasil e nos Tribunais Brasileiros' ('Telework reality in the Brazilian tribunals'), *Revista Direito e Liberdade*, **12** (1), 103–16.

Federal Law no. 12.551/2011 – approved, accessed 28 June 2019 at http://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2011/Lei/L12551.htm.

Ferreira, R. (2015), '37.2% dos Brasileiros ja fazem home office, diz pesquisa da Catho' ('37.2% of Brazilians already do home office, says research from Catho'), *Diario do Comercio, Industria e Serviços* (*Journal of Commerce, Industry and Services*), August, accessed 21 June 2019 at https://www.dci.com.br/2.254/37-2-dos-brasileiros-ja-fazem-home-office-diz-pesquisa-da-catho-1.583908.

Folha de São Paulo (2015), 'Especial Carreira Executiva' ('Special, Executive Career'), 15 November, accessed 15 June 2016 at http://acervo.folha.uol.com.br/fsp/2015/11/15/475.

Fora dol Expediente (2013), 'Fora dol Expediente' ('Off the record'), *Valor Economico*, 18 April, accessed 26 June 2019 at https://www.revistadigital.com.br/2013/04/fora-do-expediente/.

Frey, C.B. and Osborne, M.A. (2013), 'The future of employment: how susceptible are jobs ro computerization', working paper, 17 September, Oxford Martin Programme on Technology and Employment, University of Oxford, accessed 28 June 2019 at https://www.oxfordmartin.ox.ac.uk/downloads/academic/future-of-employment.pdf.

Frickmann Young, C.E., Aguiar, C. and Possas, E. (2013), 'Sinal fechado: custo econômico do tempo de deslocamento para o trabalho na Região Metropolitana do Rio de Janeiro' ('Red light: commuting time economic cost in the Metropolitan Region of Rio de Janeiro'), *Revista Economica*, **15** (2), accessed 21 June 2019 at http://www.revistaeconomica.uff.br/index.php/revistaeconomica/article/view/70.

Gasparini, C. (2015), 'O home office é mesmo o vilão da produtividade?' ('Is the home office really the villain of productivity?'), *Exame*, 20 February, accessed 21 June 2019 at https://exame.abril.com.br/carreira/o-home-office-e-mesmo-o-vilao-da-produtividade/.

Green, J. and Sanchez, S. (2013), 'Air quality in Latin America: an overview', Clean Air Institute, Washington, DC, accessed 28 June 2019 at http://wedocs.unep.org/bitstream/handle/20.500.11822/19502/Air_Quality_in_Latin_America_An_

Overview.pdf?sequence=1&isAllowed=y; full report originally available at http://
www.cleanairinstitute.org/calidaddelaireamericalatina/.

Hamilton, E. (n.d.), 'Bringing work home: advantages *and* challenges *of* telecom-
muting', The Center of Work & Family, Boston College: accessed 19 August
2017 at https://www.bc.edu/content/dam/files/centers/cwf/research/publications/
pdf/BCCWF_Telecommuting_Paper.pdf.

Instituo Brasileiro de Geografia e Estatística (IBGE) (2012a), 'Pesquisa Nacional
por Amostras de Domicilios 2012', ('National survey by households sample
2012'), accessed 15 September 2016 at http://biblioteca.ibge.gov.br/visualizacao/
livros/liv65857.pdf.

Instituo Brasileiro de Geografia e Estatística (IBGE) (2012b), 'Estatisticas do
Cadastro Central de Empresas' ('Master enterprises file'), accessed 15 September
2016 at http://biblioteca.ibge.gov.br/visualizacao/livros/liv86882.pdf.

IBOPE – NIELSEN (2015), 'Brasileiros com Internet no smartphone já são mais
de 70 milhões' ('Brazilians with Internet on smartphone surpass 70 million'), 14
September, accessed 28 June 2019 at http://www.nielsen.com/br/pt/press-room
/2015/Brasileiros-com-internet-no-smartphone-ja-sao-mais-de-70-milhoes.html.

Kedouk, M. (2015), 'Os benefícios do home office para as empresas' ('Home office
benefits for companies'), *Voce RH*, November, accessed 30 August 2017 at
http://vocerh.uol.com.br/noticias/acervo/os-beneficios-do-home-office-para-as-
empresas.phtml#.VmN2zDZdHIU.

Kelly, M.D. (2011), 'Developing real skills for virtual teams', Kenan Flager Business
School, University of North Carolina, Chapel Hill, NC, accessed 15 July 2015
at http://www.kenan-flagler.unc.edu/executive-development/custom-programs/~/
media/Files/documents/executive-development/developing-real-skills.ashx.

Ladeia, B. (2013), 'A pratica de Home Office ainda é tabu nas empresas brasileiras'
('Home Office adoption is still a taboo in Brazilian companies'), accessed 21
June 2019 at https://exame.abril.com.br/negocios/pratica-de-home-office-ainda
-tabu-nas-empresas-brasileiras/.

Law Project 4.793/2012 – approved – amendment to the Labor Law, adding to
Article 457-B, accessed 21 June 2019 at http://www.revolucaobrasileira.com.br/
PMDB/Carlos_Bezerra/Projetosdelei/PL-4793/2012.

Law Project 274/2013 – proposed amendment to the Labor Law, accessed 21 June
2019 at https://www25.senado.leg.br/web/atividade/materias/-/materia/113558.

Law Project 326/2013 – proposed amendment to the Labor Law, accessed 21 June
2019 at https://www25.senado.leg.br/web/atividade/materias/-/materia/113905.

Lemos, A. (2006), 'O que é cidade digital?' ('What is digital city?'), *Guia das cidades
digitais*, accessed 15 August 2015 at http://www.guiadascidadesdigitais.com.br/
site/pagina/o-que-cidade-digital.

Logistica Supply Chain e Infraestrutura (2014), 'Núcleo de Logistica Supply Chain
e Infraestrutura' ('Nucleus of Logistics, Supply Chain and Infrastructure'), 14
May, FDC, accessed 28 June 2019 at https://nucleos.fdc.org.br/logistica/.

Luders, G. (2015), 'Por que cada vez mais empresas adotam o home office', ('Why
more companies each time adopt home office?'), accessed 15 August 2015 at
https://exame.abril.com.br/revista-exame/mais-trabalho-de-casa/.

Marchetti, A.N. (2015), 'Notas Técnicas sobre Teletrabalho e a Qualidade de Vida
no Trabalho' ('Technical notes about telework and life quality at work'), Sobratt,
accessed 15 August 2015 at http://www.sobratt.org.br/index.php/15082015-
notas-tecnicas-sobre-teletrabalho-e-a-qualidade-de-vida-no-trabalho/.

Marino C., Neves N. and Rossi L. (2013), 'Viramos Escravos da Tecnologia ou não?'

('Have we became slaves of technology or not?'), *Exame*, 19 April, accessed 16 July 2019 at https://exame.abril.com.br/carreira/viramos-escravos-da-tecnologia/.

Masi, D.D. (2000), *Ocio Criativo* (*Creative Leisure*), São Paulo: Editora Sextante.

Masi, D.D. (2015), 'Bancos podem liderar teletrabalho' ('Banks may lead telework'), interviewer A. Mompean, October.

Medeiros, F.P. (2015), Interviews, *Mobile Time*, 11 November, accessed 11 July 2019 at www.convergecom.com.

Mello, A. (2011), 'The use of telework in call center and multi client contact centers operating in Brazil: study to identify the driving forces, restrictive and recognized contributions', doctoral dissertation, University of São Paulo.

Ministry of Labor and Employment (1978a), Decision 3214/78, accessed 21 June 2019 at http://www.trtsp.jus.br/geral/tribunal2/ORGAOS/MTE/Portaria/P3214_78.html.

Ministry of Labor and Employment (1978b), Portaria MTE – 3214/78, accessed 27 June 2019 at http://sislex.previdencia.gov.br/paginas/63/MTE/1978/3214.htm.

Montoro, A.F. (2013), 'O custo da falta de mobilidade-urbana' ('The cost of lack of urban mobility'), *Folha de São Paulo*, 4 August, accessed 15 September 2015 at http://www1.folha.uol.com.br/opiniao/2013/08/1321280-andre-franco-montoro-filho-o-custo-da-falta-de-mobilidade-urbana.shtml.

Organization, W.H. (2014), 'Ambient (outdoor) air quality and health', fact sheet, Media Centre, World Health Organization, Washington, DC, accessed 15 January 2016 at http://www.who.int/mediacentre/factsheets/fs313/en/.

Paiva, F. (2015), '63% do tempo on-line do brasileiro é gasto em dispositivos móveis' ('63% of Brazilian online time spent on mobile devices'), *Mobile Time*, 17 November, accessed 28 June 2019 at http://www.mobiletime.com.br/17/11/2015/63-do-tempo-on-line-do-brasileiro-e-gasto-em-dispositivos-moveis/423263/news.aspx.

Paiva, F. and Medeiros, H. (2015), 'Fundos de investimento mantêm planos para o Brasil' ('Investment funds keep plans for Brazil'), *Mobile Time*, 11 November, accessed 28 June 2019 at https://www.mobiletime.com.br/noticias/11/11/2015/fundos-de-investimento-mantem-planos-para-o-brasil/.

Passo a Passo para a Construção de um Plano de Mobilidade Urbana (2014), 'Passo a Passo para a Construção de um Plano de Mobilidade Urbana' ('Guide for construction of an urban mobility plan)', WRI Brasil, 2 December, accessed 20 August 2017 at http://d.pr/f/1eLcr.

Pastore, J. (2014), 'Editorial', *O Estado de São Paulo*, 11 March.

Pati, C. (2014), '5 hábitos das equipes (muito) produtivas no trabalho remoto' ('5 habits of (very) productive teams in remote work'), *Exame*, 14 April, accessed 26 June 2019 at https://exame.abril.com.br/carreira/5-habitos-das-equipes-muito-produtivas-no-trabalho-remoto/

Pellares, A. (2015), *Tecnologia e Gestão de Pessoas* (*Technology and People Management*), São Paulo: Revista T&D Inteligencia.

Pereira, W.T. (2015), 'Questões legais a respeito do Teletrabalho' ('Legal issues regarding teleworking'), *Revista Profissional e Negocios*, **200** (June), accessed at http://www.profissionalenegocios.com.br/versao-online/edicao200/index.html.

Perez, G. (2010), 'Teletrabalho e Tecnologia da Informação: Uma Analise Exploratoria', ('Telework and information technology: an exploratory analysis'), item 13, University of São Paulo, accessed 21 June 2019 at https://docplayer.com.br/19109662-Teletrabalho-e-tecnologia-da-informacao-uma-analise exploratoria.html.

Pesquisa Nacional por Amostra de Domicilios (PNAD) (2008), 'Pesquisa Nacional por Amostra de Domicilios' ('National survey by households sample'), accessed 25 July 2016 at https://ww2.ibge.gov.br/home/estatistica/populacao/trabalhoer endimento/pnad2008/default.shtm.

PricewaterhouseCoopers and Fundação Getulio Vargas (PwC and FGV) (2014), 'O futuro do trabalho: Impactos e desafios para as organizações no Brasil' ('The future of work: impacts and challenges for organizations in Brasil'), accessed 20 September 2015 at http://www.pwc.com.br/pt/publicacoes/servicos/consultoria-negocios/futuro-trabalho-impactos-desafios-organizacoes-brasil.html.

Realidade do Teletrabalho no Brasil e nos Tribunais Brasileiros (Telework Reality in the Brazilian Tribunals) (2010), *Revista Direito e Liberdade*, 103–16.

Resolution SMA (Environment Secretary of the State of São Paulo) No. 24, April 2013, accessed 21 June 2019 at arquivos.ambiente.sp.gov.br/legislacao/2013/04/Resolução-SMA-024-2013-Processo-2846-2013-GT-para-estudar-estratégias-de-cunho-ambiental-para-difusão-do-teletrabalho.pdf.

Samor, G. (2015), 'Um modelo de negócios inovador num setor cada vez mais dificil' ('A innovative business model in a complex industry'), 12 September, accessed 15 December 2015 at http://veja.abril.com.br/blog/mercados/startups/na-home-agent-um-call-center-sem-uma-laje-nas-costas/.

Santos Capinheiro, R. (2018), 'Pequenos provedores são os heróis da conectividade' ('Small providers are the connectivity heroes'), accessed 27 June 2019 at http://www.telesintese.com.br/pequenos-provedores-sao-os-herois-da-conectividade/.

SAP Consultores Associados. (2014), 'Pesquisa Home Office Brasil' ('Survey Home Office Brasil') accessed 15 December 2015 at http://sapconsultoria.com.br/homeoffice/resultados-2014/.

Schumpeter, J.A. (1975), *Capitalism, Socialism and Democracy*, New York: Harper.

Silva Tose, M., Siqueira, E.S., Binotto, E., Simioni, F.J. and Filardi, F. (n.d.), 'Reorganização da Dimensão Subjetiva dos Trabalhadores no Espaço Produtivo' ('Reorganizing the workers' subjective dimension in the productive space'), accessed 16 February 2016 at https://www.academia.edu/2630394/Teletrabalho_Reorganização_da_Dimensão_Subjetiva_dos_Trabalhadores_no_Espaço_Produtivo.

Sociedade Brasileira de Teletrabalho e Teleatividades (Sobratt) (2013), 'Estudo de Estratégias de Gestão de Mobilidade via Teletrabalho e Teleatividades no Estado de São Paulo' ('Study of mobility management strategies through telework and tele-activities in the State of São Paulo'), Secretaria do Meio Ambiente do Estado de São Paulo, São Paulo, accessed 15 November 2015 at http://www.sobratt.org.br/index.php/10082013-estudo-de-estrategias-de-gestao-de-mobilidade-via-tele trabalho-e-teleatividades-no-estado-de-sao-paulo-resolucao-sma-n-24-de-10-de-abril-de-2013.

TI Inside (2015), 'Facebook atinge marca de 99 milhoes de pessoas conectadas no Brasil' ('Facebook reaches the mark of 99 million people connected in Brazil'), 9 December, accessed 15 December 2015 at http://convergecom.com.br/tiinside/webinside/09/12/2015/facebook-atinge-marca-de-99-milhoes-de-pessoas-conec tadas-no-brasil/?noticiario=WI.

Tribunal Superior do Trabalho (TST) (2012), 'Sumula 428', accessed 21 June 2019 at https://jus.com.br/artigos/22874/o-que-o-tribunal-superior-do-trabalho-pretende-sinalizar-com-a-nova-redacao-da-sumula-428.

US Department of Transportation (1992), 'Transportation implications of

telecommuting', accessed 20 July 2016 at http://www.telelavoro.rassegna.it/fad/telelav/trasporti.htm.

Vasconcelos, P. (2015), 'Desperdício de tempo no trânsito custa 4,4% do PIB' ('Waste of time in traffic costs 4.4% of the GNP'), *Valor Economico*, 16 September.

Venezia, P. (n.d.), 'Small business VPN primer: set up your office network for telecommuting', PCWorld, accessed 20 December 2015 at http://www.pcworld.com/article/240762/small_business_vpn_primer_set_up_your_office_network_for_telecommuting.html.

Volk, S. (2015), 'Teletrabalho: reduza custos e aumente a produtividade' ('Telework: reduces cost and increases productivity'), 23 April, IBEF, accessed 20 December 2015 at http://www.ibefsp.com.br/content-hub/teletrabalho-opcao-para-reduzir-custos-e-aumentar-produtividade/.

Watts, N. (2015), 'Technical briefing of World Health Organization Conference on Health and Climate', World Health Organization, Geneva.

Wolnei Tadeu Pereira, A.M. (2015), 'Fundamentos do Trabalho Legal – Parte 2' ('Legal work foundations – part 2'), Profissionais e Negocios, accessed 30 January 2016 at http://www.profissionalenegocios.com.br/versaoonline/edicao201/index.html.

WRI Brasil (2012), 'Gestão de Demanda de Viagens' ('Trips demand management'), accessed 25 March 2016 at www.embarqbrasil.org: http://embarqbrasil.org/nosso-trabalho/projeto-cidade/gest%C3%A3o-da-demanda-de-viagens.

WRI Brasil (2015), 'Passo a Passo para construir um Plano de Mobilidade Corporativa' ('Step by step to build a corporate mobility plan'), accessed 25 March 2016 at http://d.pr/f/1ioEz.

6. Organization advantage: Experience of telework in India

Ernesto Noronha and Premilla D'Cruz

EXECUTIVE SUMMARY

Early work on teleworking in India focused on its feasibility in terms of the availability of telecommunications infrastructure. Power failures and fluctuations meant that installation of generators was required to ensure a steady flow of electricity and connectivity. Furthermore, it was necessary to ensure that computers and telephone connections were affordable for teleworking to succeed (Aundhkar et al. 2000; Irani et al. 2000). Since then broadband penetration has increased many times over, with mobile phone connections becoming common, which increases the feasibility of implementing a telework programme. More recently, the Digital India programme launched by the Government of India (GOI) to provide high-speed Internet connectivity across the length and breadth of the country (GOI 2015) should provide a boost to telework.

Since the literature on telework in India is limited, we undertook a fresh survey of 1047 employees working across several business sectors from around the country. Of those working as teleworkers, the largest share came from information technology and information technology enabled services (IT/ITES) (12 per cent), followed by hospitality (11 per cent), telecommunications (9 per cent), manufacturing (8 per cent) and financial services (7 per cent). This means that in comparison to earlier studies which found teleworking to be restricted to IT, finance and media, our study finds that it has spread to other sectors as well.

Another interesting finding is that it is often argued that teleworking is most suitable for women, particularly in the Indian context. Women find it difficult to pursue their careers, especially when their children are young. Those who do so have to manage many demands of family life plus the stress of their careers, which is often detrimental to their health. Telework is seen as a way out of the situation, which allows them to be connected to their careers from their homes and also organize their time better

(Aundhkar et al. 2000; Gothoskar, 2000; Irani et al. 2000**)**. Thus, telework in India is assumed to be a gendered phenomenon. However, when disaggregating for gender our findings show that more women worked from the office (82 per cent) than teleworked (19 per cent), which was similar for men. Thus, contrary to the existing belief, women do not always prefer to telework, while men could also be interested in teleworking. This may also be related to the policy of organizations that do not distinguish between men and women when deciding who teleworks; the definition of telework, which means any place away from the office rather than solely home-based work; and the nature of the workplace, which in the case of men means third spaces. Nonetheless, it is significant to note that, in general, women also prefer working in the office.

Across the entire sample, most of the respondents worked in jobs which had regular timings (98.5 per cent). Eighty-four per cent of all those working from the office worked for nine hours or less. This dropped to 81 per cent for those teleworking. However, those working beyond 6.00 p.m. from the office were 54 per cent, while the proportion was higher (66 per cent) for those teleworking. A further disaggregation of teleworkers reveals that this figure was 75 per cent for those working from a combination of spaces – that is, the office and any place other than the office. This means that, although those working from the office also worked long hours, the numbers increased for those working from places besides the office. While 84 per cent of those working in the office stated that they did not receive overtime payments for work beyond nine hours, this was 89 per cent in the case of teleworkers. This means that payment of overtime rates ceased to exist in general, but those working from the office still stood a chance of getting payments – a chance which was almost non-existent for those working from beyond the office.

Although it was obvious that those working from other places would take breaks, as that defined the flexibility that telework offered, we found that even those working in the office (45 per cent) took more than the stipulated breaks, often resulting in stretched hours of work. This may partially account for them working more than nine hours, beyond 6.00 pm or on weekends, reflecting the Indian work ethic (see D'Cruz and Noronha 2012). A substantial number of teleworking employees (51 per cent) reported that they worked all the time.

With regard to getting time off to take care of personal matters, teleworking employees seemed divided, with 50 per cent stating that they quite often or mostly got time off, while the other half stated that this was possible only occasionally, never or rarely. Therefore, most of those teleworking maintained strict working hours (53 per cent) and separate work spaces to enable them to work effectively. With regard to the former,

it called for being self-accountable, self-motivated, self-governed and self-managed, with a high sense of moral and professional integrity (Rajan 2000), giving the impression of a more empowering work relationship (Gothoskar 2000).

Despite this, managers called teleworkers frequently to check on them and pressurize them to come to the office more regularly (Raghuram 2014). Not surprisingly, a substantial number (46 per cent) stated that they were on work-related calls quite often or most of the time with 27 per cent being on calls occasionally. This mindset probably gets reflected in organizational polices that require teleworkers to be available at any hour, log on for a given number of hours, complete a given amount of work every day, contact the office at given intervals (Rajan 2000) and have regular email communications, which are followed up by weekly meetings (Aundhkar et al. 2000). Moreover, normative control is also invoked to ensure the creation and maintenance of a strong organizational culture that increases employees' commitment to organizational values and their identification with the organization (Noronha and D'Cruz 2008b). Regarding careers, the response is mixed, with some arguing that teleworking did not hamper career prospects, while others argued that out of sight was out of mind and also that the productivity of teleworkers declines over a period of time (Chowdary and Jayakumar 2009).

Another issue pertains to infrastructure. Teleworkers were expected to install an inverter in their houses to manage power failures and utilize their own equipment, although software and a fixed amount of telephone costs are paid by the organization (Noronha and D'Cruz 2008b). In our sample, to enable employees to work from home, employers mainly provided laptops (58 per cent) and desktop computers (31 per cent). The other types of devices provided were telephones, that is, land lines, mobile phones and smartphones. It seems that employers benefited from teleworking. About 80 per cent of the respondents resoundingly agreed that employers gained from teleworking in terms of productivity and efficiency, while 76 per cent stated that employers gained from better quality work. The other parameters on which more than half of the respondents agreed or strongly agreed are cost savings (53.4 per cent), flexibility (58.3 per cent), customer satisfaction (60.8 per cent) and virtual teamwork (53.9 per cent). Despite these benefits accruing to employers, teleworking cannot be a universal policy covering all jobs and industries. In those jobs and industries that require the physical presence of employees or where issues related to privacy, control and data security are critical, teleworking cannot be introduced (Chowdary and Jayakumar 2009; Mitter 2000; Rajan, 2000). Further, in order to ensure that teleworking works well, organizations should have a good management by objectives programme,

which ensures that deliverables are achieved and goals are met (Chowdary and Jayakumar 2009). Moreover, organizations have allowed only those who had worked as full-time office employees and had achieved a certain level of proficiency in their jobs to opt for telework (Noronha and D'Cruz 2008b). Finally, although the decision to telework was motivated primarily by domestic or family concerns, teleworking was construed as an opportunity to continue in the realm of paid employment while simultaneously fulfilling home-related responsibilities (Noronha and D'Cruz 2008b). However, the perception is that teleworking is not recommended as a substitute for childcare, and some organizations even specify that the location of the teleworking should be free of distractions for a major part of the day.

INTRODUCTION

Telecommuting as a formal practice has its origins in the USA (Raghuram 2014; see also the Introduction in this volume) and is often used interchangeably with the term teleworking (Mitter 2000). In India, the concept of telework is more commonly understood in the context of internationally outsourced work in software services or remote data processing (Mitter 2000), which Mitter and Sen (2000) define as teletrade. While some argue that telework as a concept and as a practice is still in the process of evolving in India (Chowdary and Jayakumar 2009; Gothoskar 2000) and is not as yet as widespread (Mitter 2000), Lila and Anjaneyulu (2013) assert that all modes of telework, such as working from home, mobile teleworking, teleconferencing, offshore teleworking, self-employed teleworking and teleworking centres (on a minuscule level), exist in India. Nonetheless, offshore outsourcing in the service industry seemed to provide the immediate inducement for teleworking in India (Aundhkar et al. 2000), since Indian employees had to work at atypical hours to cater to clients in different time zones, thereby relieving them of the need to be present in office at these unusual times (Raghuram 2014).

TELEWORKING IN INDIA – PAST RESEARCH

Given this development, it was quite natural for employees from the IT/ITES sector to be more likely to be able to telework than those from other sectors, which required physical presence and interactions with their colleagues and the public (Lila and Anjaneyulu 2013). However, although the IT/ITES industry took the lead in facilitating telework, the finance

and media sectors were not far behind (Aundhkar et al. 2000; Gothoskar 2000). In the finance sector, the emphasis was not so much on connecting distant employees to the core office, but rather on tele-networking (Mitter 2000). Nonetheless, where required, field-based employees reported their activities to personnel in the branch office, who then fed the information into the computer or the service centre (Aundhkar et al. 2000), while media employees and freelancers frequently used cybercafés, telecentres, tele-cottages or computer centres to submit news reports and to coordinate television programmes (Mitter 2000). Accordingly, the employees most susceptible to telework were journalists, researchers, accountants, publishers, software developers and back-office personnel. Over the years, others type of activities, such as data conversion, data processing, medical transcription, content development, deposition summaries, insurance-claim processing, marketing, communications, customer support service, sales transactions banking, secretarial work and geographical information systems, were also seen as being compatible with teleworking (Gothoskar 2000; Irani et al. 2000).

Several benefits have been highlighted for adopting teleworking in countries such as India. These benefits include the ability of teleworkers to work more hours than their office-bound colleagues by saving time on commuting and long lunch breaks (Chowdary and Jayakumar 2009; Noronha and D'Cruz 2008b). Further, according to employers, teleworking allows more flexibility, makes it easier to meet deadlines and cuts down production time (Aundhkar et al. 2000) by using employees effectively, profitably and reducing costs (Irani et al. 2000; Mitter 2000; Rajan 2000). From the employees' perspective, teleworking improves their quality of life by facilitating work–life balance, especially for women with small children and disabled employees who would normally have to give up their careers (Aundhkar et al. 2000; Lila and Anjaneyulu 2013; Rajan 2000). In addition to teleworking offering employees the opportunity to combine family with career (Mitter 2000; Noronha and D'Cruz 2008b), it also helps them economically and provides them, especially women, with a sense of purpose (Noronha and D'Cruz 2008a).

Teleworking is seen as a way out of the situation for women because it allows them to be connected to their careers and to organize their time better (Aundhkar et al. 2000; Gothoskar 2000; Irani et al. 2000). Yet it is difficult to ensure that women can progress to higher value-added jobs. However, women do not always prefer to be home-based workers, and this is true not only of young middle-class women, but also of mothers with young children who often express their need to go out to work in order to avoid loneliness and alienation (Mitter 2000). Thus, women's approach to telework is more complex than that of men. The social pressures of having

to balance the demands of family and career force them to telework, which in the process may potentially also change their employment status from that of full-time employee to freelance consultant (if the company for whom they work does not permit their employees to telework), while simultaneously excluding them from organizational benefits and privileges (Mitter 2000).

However, there is a resistance to the externalization of work from the office, both from employers and from employees. From the employers' perspective, teleworking is still viewed with circumspection, as it erodes the advantages of face-to-face interaction which are presumed to generate competence and company loyalty, impacting on the quality of services and delivery time. It also makes the task of evaluating employees' performance more difficult within the prevalent management traditions, which still place importance on personal interaction, direct supervision and strict monitoring. Managers are concerned about the inefficiencies arising out of the lack of supervision and personal contact, and as well as maintaining the confidentiality of sensitive information (Irani et al. 2000; Mitter 2000). These apprehensions could be reasons why the tasks performed by Indian teleworkers are often less complex and need comparatively little monitoring (Mitter 2000). However, some predict that telework is likely to expand to cover highly skilled jobs, as well as jobs with no prospect of career progression in the future (Gothoskar 2000).

Employees felt that teleworking is good for the company, but bad for the individual in the long run, as it could lead to isolation and alienation (Aundhkar et al. 2000). From the employees' point of view, the notion of working from home is not without worries (Mitter 2000). In general, teleworkers were likely to feel more insecure, lose their bargaining power, be deprived of workplace culture, camaraderie and security, be more susceptible to non-payment by clients or employers, be more likely to lack a labour organization to deal with issues of pay, health and safety, have less access to training, advancement and benefits, and feel increased stress on the job; in particular, women were likely to face the reinforcement of their roles in the home, denial of legitimate access to public and social spaces, and reinforcement of women's basic vulnerability as women and as workers (Gothoskar 2000). While work constituted a critical component of the identity of female teleworkers, they continued to view their domestic roles, and especially their maternal role, as central, and they constructed telework as a flexible strategy providing an opportunity to combine this role with paid work. Thus, engagement with telework often operated to confirm women's traditional gender identity, perpetuating the gendered division of domestic responsibilities and gendered ideologies within the household. Yet, being able to manage so many activities was not easy, given

the organization's expectations regarding the quality and quantity of work. Being able to cope was contingent on their specific family situation, the availability and nature of support, and their structuring and/or extending the workday. Teleworking, while providing a solution to a set of dilemmas, presents challenges of its own (Noronha and D'Cruz 2008b).

METHODOLOGY

According to the guidelines provided by the International Labour Organization (ILO), information for this study was to be obtained from surveys, datasets, studies, articles and other sources of information already available in the country; no new data collection was required. Available information – both quantitative and qualitative – was to be compiled using a standard expert questionnaire developed by Eurofound and the ILO. In the first stage of the study, all the required information in the standard questionnaire was to be completed, and the second stage involved preparing a report that synthesized information for possible publication. Telework was defined as using ICTs, such as smartphones, tablets, laptops or desktop computers, for work away from the employer's premises. However, since there is little or no information relating to teleworking in India (Jones 2005) and the data required for the study could not be accessed from the existing literature, the researchers decided to undertake a fresh survey. Using a database from a recruiting firm, emails were sent out to more than 25 000 people. In addition, emails were also sent out to employees who we had contacted earlier for our various studies on the IT/ITES sector. Nonetheless, our final sample was 1047, after dropping about 50 participants whose data was not complete or who were not working currently in India (but were looking for the jobs in India). This was a 4 per cent response rate with a tilt towards the IT sector. The results of about 1047 respondents were analysed for this report; these include both those who telework (19.5 per cent) and those who do not telework (80.5 per cent). For the purpose of this analysis, the teleworkers were categorized into those working only from home, those working any other place besides the home, and those working from a combination of places. The survey was conducted by research staff telephonically at a time that was convenient for the respondents, after the participants had agreed to participate and sent back their telephone numbers. Efforts were also made to check the authenticity of the data collected by randomly telephoning participants who took part in the survey.

Since the purpose was to get adequate representation of teleworkers across economic sectors, there was no particular effort made to achieve a regional representation. Nevertheless the sample seemed to be spread

out quite evenly, with 33 per cent of the respondents coming from West India (which includes Mumbai, Pune and Ahmedabad), 28 per cent from North India (mainly Delhi and the National Capital Region), 25 per cent from South India (mainly Chennai, Bangalore and Hyderabad), and the rest from East and Central India (mainly Kolkata). Nonetheless, some effort was made to get an even industrial representation by sending out emails to equal numbers of participants from all the sectors; however, this was largely unsuccessful, as we did not get equal numbers of return responses. Regarding industry, although theoretically we wanted an equal representation from each industry, it was not possible and was dependent on those who agreed to take the survey. Although there was no deliberate attempt to bias the sample towards the IT/ITES sector, our research in the field for several years and their adeptness with technology tilted the sample towards this sector. However, studies researching teleworking in India have long focused on this sector, as there was an assumption that this sector would be most susceptible to technology. For instance Mitter (2000) states that her sample was deliberately biased towards big establishments, and towards emerging sectors, such as software, that are likely to adopt teleworking. Later, Noronha and D'Cruz (2008a, 2008b) focused their study on medical transcriptionists who we have included in the IT/ITES sector. More recently Lila and Anjaneyulu (2013), in addition to focusing on areas of finance, sales, human resources and marketing, also considered the job profiles of those working in the IT/ITES sector. Finally, the basis of Raghuram's (2014) work is the experience of teleworking in the IT sector, whose characteristics support the use of teleworking programmes. Thus, the bias towards the IT/ITES sector is not by design, but has been accidently relevant. However, what may be relevant to IT could also be applicable to other organizations, such as consulting, as they confront similar problems and benefits (Raghuram 2014). The other sectors also often explored are media and finance (Mitter 2000). Our survey once again reveals that the sample was primarily tilted towards IT/ITES (12 per cent) and hospitality (11 per cent), followed by telecommunications (9 per cent), manufacturing (8 per cent) and financial services (7 per cent).

Simultaneously, all the existing studies on teleworking in the Indian context were reviewed and all newspaper articles scanned for information. Since the survey did not pick up information on the organizational polices, as most teleworking was an informal arrangement between supervisors and employees, organizations who had formal policies were contacted and their human resource (HR) managers interviewed. Finally, five case studies of organizations were constructed, representing IT, finance, manufacturing, publishing and consulting sectors, in order to understand their organizational practices.

INCIDENCE OF TELEWORK

Of those interviewed 80.5 per cent worked from the office and only 19.5 per cent teleworked. Of those teleworking, employees using a combination of different spaces were the highest, at 65.7 per cent; 27.5 per cent worked from a place other than home or the office; and just 6.9 worked only from home (Table 6.1).

The sample consisted of 79 per cent males and 21 per cent females. The low representation of women in the sample could be related to India's rate of female participation in the labour force being the lowest among the BRIC (Brazil, Russia, India and China) countries (Lila and Anjaneyulu 2013). When disaggregating for gender we find that more women worked from the office (82 per cent) than teleworked (19 per cent), while the males working from the office were 80 per cent, with male teleworkers being 20 per cent (Table 6.2). Thus, contrary to belief, women do not always prefer to telework and males could also be interested in teleworking. This may be related to the policy of some organizations, which does not distinguish between men and women when deciding who teleworks; the definition of telework, which means any place other than the office rather than only home-based work; and the nature of the workplace, which for men means

Table 6.1   Place of teleworking

Place of work	Frequency	Percentage
Only home	14	6.9
Any place other than home or office	56	27.5
Combination of spaces – office and home and any place other than home/office	134	65.7
Total	204	100.0

Table 6.2   Place of work by gender

Gender	Where do you work from		Total
	Office	Telework	
Male	667	164	831
	(80.3%)	(19.7%)	(100.0%)
Female	176	40	216
	(81.5%)	(18.5%)	(100.0%)
Total	843	204	1047
	(100.0%)	(100.0%)	(100.0%)

Table 6.3   Gender and teleworking (percentage)

Gender	Never	Not on a daily basis	Once every day	Several times a day	Always
Male	76.3	0.2	1.2	14.6	7.8
Female	78.7	0.0	0.0	10.1	11.2

third spaces. Nonetheless, it is significant to note that even women typically prefer coming to the office.

Similarly, there was no major difference in the way men and women experienced teleworking. Seventy-six per cent of the men never worked from home, while this was 79 per cent for women (Table 6.3). Similarly, 11 per cent of the women always teleworked, and this was about 8 per cent for men. Thus, although there were more women working from the office, this tendency did not get reversed for those who were teleworking.

Given that Lila and Anjaneyulu (2013) argue that the responsibility towards the family, including the setting up of a house, providing education to children and doing other household tasks peaks at 30–40 years, it is not surprising that this was the preferred age group for telework. The average age of those teleworking in our sample was 31 years, with those in the teleworking group not only being between 30 and 40 years (38 per cent), but also a substantial number in the 20–30 years bracket (49 per cent); see Table 6.4.

Thus, there were those who were less than 30 years old who also teleworked, and it was not only those who were unmarried and had no household responsibilities who teleworked. Further, with most married persons in India falling in the age category of 30–40 years, Lila and Anjaneyulu (2013) argue that the marital status of employees influenced the choice of telework, with married people teleworking more frequently compared with unmarried people. Accordingly, those who teleworked and were married were the largest group (53 per cent of respondents), but there was also a substantial number (43 per cent) who were not married and still teleworked – breaking the myth that it was mostly those who were married who took to telework (Table 6.5).

Those who teleworked were better educated. Just over 50 per cent of those teleworking were postgraduates, while almost 36 per cent of teleworkers were graduates (Table 6.6). Thus, it was clear that the education level of teleworkers was high, and a larger portion of the sample would have used technology in their everyday life.

Eighty-eight per cent of teleworkers worked for private organizations, while only 8 per cent worked for public sector organizations. There were

Table 6.4   Age and place of work

Age	Place of work		Total
	Office	Telework	
Less than 20	1	0	1
	(0.1%)	(0%)	(0.1%)
20–30	486	98	584
	(58.1%)	(48.5%)	(56.2%)
30–40	281	76	357
	(33.6%)	(37.6%)	(34.4%)
40–50	55	19	74
	(6.6%)	(9.4%)	(7.1%)
50 and over	14	9	23
	(1.7%)	(4.5%)	(2.2%)
Total	837	202	1039
	(100%)	(100%)	(100%)

Table 6.5   Marital status and place of work

Marital status	Place of work		Total
	Office	Telework	
Married	381	108	489
	(45.2%)	(52.9%)	(46.7%)
Unmarried	442	88	530
	(52.4%)	(43.1%)	(50.6%)
Others	3	1	4
	(0.3%)	(0.5%)	(0.4%)
Not available	17	7	24
	(2.0%)	(3.4%)	(2.3%)
Total	843	204	1047
	(100.0%)	(100.0%)	(100.0%)

more managerial employees (75 per cent) who were teleworking than non-managerial employees (25 per cent). However, the sample was also proportionately distributed, with managerial employees making up 74 per cent of the sample, and non-managerial employees only 26 per cent (Table 6.7), making it difficult for us to say with certainty that it is more common to find managers teleworking than non-managers.

Ninety-nine per cent of employees interviewed were full-time employees, so most of the employees who were teleworking (98 per cent) were also full-

Table 6.6   Educational level (highest qualification) and place of work

Educational level (highest qualification)	Place of work		Total
	Office	Telework	
Up to Tenth Standard	6 (0.7%)	0 (0.0%)	6 (0.6%)
Up to Twelfth Standard	13 (1.5%)	3 (1.5%)	16 (1.5%)
Undergraduate	9 (1.1%)	1 (0.5%)	10 (1.0%)
Diploma holder	61 (7.2%)	16 (7.9%)	77 (7.4%)
Graduate	388 (46.1%)	72 (35.5%)	460 (44.0%
Postgraduate diploma holder	29 (3.4%)	9 (4.4%)	38 (3.6%)
Postgraduate	335 (39.8%)	102 (50.3%)	437 (41.8 %)
Not available	1 (0.1%)	0 (0.0%)	1 (0.1%)
Total	842 (100%)	203 (100%)	1045 (100%)

Table 6.7   Position in the organization and place of work

Position in the organization	Place of work		Total
	Office	Telework	
Non managerial	221 (26.2%)	51 (25.0%)	272 (26.0%)
Managerial	621 (73.8%)	153 (75.0%)	774 (74.0%)
Total	842 (100%)	204 (100%)	1046 (100%)

time employees (Table 6.8). Regarding the days of work and employment, we find that days of work were more intense for full-time teleworkers rather than for part-time teleworkers. While there were 11 per cent of full-timers working every day, none of the part-timers worked every day. However, caution is required here because only four part-timers were included in the sample, compared with 200 full-timers (Table 6.9). However, we also found

Table 6.8   Type of employment and place of work

Type of employment	Place of work		Total
	Office	Telework	
Full-time	835	200	1035
	(99.1%)	(98.0%)	(98.9%)
Part-time	8	4	12
	(0.9%)	(2.0%)	(1.1%)
Total	843	204	1047
	(100%)	(100%)	(100%)

Table 6.9   Employment status and days of work

Employment status	None	1–2 days per week	3–6 days per week	Every day	Total
Full-time	3	1	175	22	N = 200
	1.5%	0.5%	87.0%	11%	
Part-time	0	0	4	0	N = 4
	0.0%	0.0%	100.0%	0.0%	

freelancers, mainly those from the IT industry, who were teleworking but were not included in the sample.

EFFECTS OF TELEWORK

Hours of Work

Most of the respondents worked in jobs which had regular schedules (98.5 per cent). Eighty-four per cent of all those working from the office worked for nine hours a day or less. This dropped to 81 per cent for those teleworking (Table 6.10). This means that, although some of those working from the office worked long hours, the numbers increased slightly for those working from places other than the office. Sixty-one per cent of the respondents stated that they worked overtime. This figure was 63 per cent for those working from office and 70 per cent for teleworkers (Table 6.11). Thus, there were more teleworkers who worked overtime on a daily basis. Likewise, 54 per cent of the respondents who worked in the office reported that they worked beyond 6.00 p.m., but this figure was higher (66 per cent)

Table 6.10   Official hours of work and place of work

Official hours of work	Place of work		Total
	Office	Telework	
Less than 9 hours	707	161	868
	(84.1%)	(80.9%)	(83.5%)
More than 9 hours	134	38	172
	(15.9%)	(19.1%)	(16.5%)
Total	841	199	1040
	(100.0%)	(100.0%)	(100.0%)

Table 6.11   Overtime work and place of work

Overtime work	Place of work		Total
	Office	Telework	
Yes	530	143	673
	(62.9%)	(70.1%)	(61.3%)
No	313	61	374
	(37.1%)	(29.9%)	(35.7%)
Total	843	204	1047
	(100.0%)	(100.0%)	(100.0%)

for those who were teleworking (Table 6.12). A further disaggregation of teleworkers reveals that the figure was even higher (75 per cent) for those who were working from a combination of spaces, that is the office and any other place besides the office. Similarly, 71 per cent of the sample worked on weekends (Saturday or Sunday, or both). This figure was higher for teleworkers (79 per cent), as compared with office-based employees (69 per cent). See Table 6.13. Sixty per cent of those interviewed stated that they worked for six days or more in a week that included Sundays (Table 6.14). Those working from the office (58 per cent) were better off compared with teleworkers (67 per cent). Thus, there was an overall intensification of work, which was greater for teleworkers. This situation has to be seen in light of the new government initiative, 'Make in India', which probably will further intensify work.

Only about 32 per cent of respondents never worked for more than 48 hours a week (Table 6.15). While 46 per cent of respondents working from an office always worked for more than 48 hours a week, 48 per cent of those teleworking also did so. Thus, the percentage of teleworkers (66 per

Table 6.12   Working after 6 p.m. and place of work

Work after 6 p.m.	Place of work		Total
	Office	Telework	
Yes	456	135	591
	(54.2%)	(66.2%)	(56.5%)
No	382	69	451
	(45.4%)	(33.8%)	(43.1%)
No fixed time	4	0	4
	(0.5%)	(0.0%)	(0.4%)
Total	842	204	1046
	(100.0%)	(100.0%)	(100.0%)

Table 6.13   Work on weekends and place of work

	Where do you work from?		Total
	Office	Telework	
Never	263	42	305
	(31.2%)	(20.6%)	(29.1%)
Saturday or	580	162	742
Sunday, or both	(68.8%)	(79.4%)	(70.9%)
Total	843	204	1047
	(100.0%)	(100.0%)	(100.0%)

Table 6.14   Number of days of the week worked and place of work

Number of days of the week worked	Place of work		Total
	Office	Telework	
Less than 5	4	0	4
	(0.5%)	(0.0%)	(0.4%)
5	331	61	392
	(39.3%)	(29.9%)	(37.4%)
5.5	20	6	26
	(2.4%)	(2.9%)	(2.5%)
6 or more	488	137	625
	(57.9%)	(67.2%)	(59.7%)
Total	843	204	1047
	(100.0%)	(100.0%)	(100.0%)

Table 6.15   Work for more than 48 hours a week and place of work

Work for more than 48 hours a week	Place of work		Total
	Office	Telework	
Never	281	56	337
	(33.3%)	(27.5%)	(32.2%)
Rarely (once)	45	6	51
	(5.3%)	(2.9%)	(4.9%)
Sometimes (once or twice; twice)	64	19	83
	(7.6%)	(9.3%)	(7.9%)
Often (Three times)	47	18	65
	(5.6%)	(8.8%)	(6.2%)
Always (four or five times)	386	97	483
	(45.8%)	(47.5%)	(46.1%)
Others (specify)	20	8	28
	(2.4%)	(3.9%)	(2.7%)
Total	843	204	1047
	(100.0%)	(100.0%)	(100.0%)

cent) who worked for more than 48 hours a week from sometimes to always was slightly higher than the figure for office-based workers (59 per cent).

Although it was obvious that those working beyond the office would take more frequent breaks, as that defined the flexibility that telework offered, we found that even those working in the office (45 per cent) took more than the stipulated breaks (Table 6.16), often resulting in stretched hours of work. This situation may partially account for them working more than nine hours, beyond 6.00 p.m. or on weekends, reflecting the Indian work ethic (see D'Cruz and Noronha 2012).

While 84 per cent of those working in the office stated that they did not received overtime payments for work beyond nine hours per day, this figure was 89 per cent in the case of teleworkers (Table 6.17). Only about 10 per cent of the entire sample received overtime payments for work beyond official working hours, of which 10 per cent were those working in the office and about 8 per cent were teleworkers (Table 6.18). Overall, only 3.2 per cent of employees received overtime payments that were twice their normal wages, as specified by law. This situation means that payment of overtime rates generally ceased to exist, but those working in the office still had a slightly better chance of getting such payments, which was almost non-existent for those working from places away from the office.

Table 6.16   More than stipulated breaks and place of work

Breaks other than those stipulated	Place of work		Total
	Office	Telework	
Yes	380	135	515
	(45.1%)	(66.2%)	(49.2%)
No	455	67	522
	(54.0%)	(32.8%)	(49.9%)
Not applicable	6	2	8
	(0.7%)	(1.0%)	(0.8%)
Depends on workload	2	0	2
	(0.2%)	(0.0%)	(0.2%)
Total	843	204	1047
	(100.0%)	(100.0%)	(100.0%)

Table 6.17   Overtime payment and place of work

Overtime payment	Place of work		Total
	Office	Telework	
Yes	86	16	102
	(16.2%)	(11.2%)	(15.2%)
No	444	127	573
	(83.8%)	(88.8%)	(84.8%)
Total	530	204	1047
	(100.0%)	(100.0%)	(100.0%)

Organizational and Individual Performance

While employees' self-rating of employers' gains from the productivity of teleworking could be biased, about 80 per cent of the respondents resoundingly agreed that employers gained from teleworking in terms of increased productivity and efficiency, while 76 per cent stated that employers gained in terms of better quality of work (Table 6.19). The other parameters on which more than half of the respondents agreed or strongly agreed were cost savings (53.4 per cent), flexibility (58.3 per cent), customer satisfaction (60.8 per cent) and virtual teamwork (53.9 per cent). Thus, overall it seems that employers benefitted from teleworking. At the individual level, too, respondents teleworked because they believed they could achieve higher output (68 per cent) and better quality (68 per cent), but this percentage was not as overwhelming as in the case of employers'

Table 6.18   Overtime rate and place of work

Overtime rate	Place of work		Total
	Office	Telework	
Less than normal rate	17	1	18
	(2.0%)	(0.5%)	(1.7%)
Normal rate	36	5	41
	(4.3%)	(2.5%)	(3.9%)
Twice normal rate	26	7	33
	(3.1%)	(3.4%)	(3.2%)
Yes but amount not known	7	3	10
	(0.8%)	(1.5%)	(1.0%)
None	757	188	945
	(89.8%)	(92.2%)	(90.3%)
Total	843	204	1047
	(100.0%)	(100.0%)	(100.0%)

gain (Table 6.20). The other important factors where more than half the respondents agreed or strongly agreed were saving on travel time (52.5 per cent), higher autonomy (55.9 per cent), flexibility (60.3 per cent), and control over their work schedule (50.5 per cent). Thus, the respondents stated that it was in the interest of the employer and also in their own interest that they teleworked, as they were able to achieve higher output with better quality.

More than half of those who were teleworking stated that they did not face any disturbances (55 per cent), lack of concentration (62 per cent), extra hours of work (53 per cent), higher performance indices (57 per cent) or work–life balance issues (55 per cent). At the same time, we cannot ignore that at least 20 per cent of teleworkers faced one of the difficulties listed in Table 6.21, with a total of about 32 per cent facing disturbances while working at a place away from the office.

Work–Life Balance

A substantial number of teleworking employees (51 per cent) reported that they worked all the time (Table 6.22). A substantial number (46 per cent) of them stated that they were on work-related calls quite often or most of the time, with 27 per cent on calls occasionally. Regarding getting time off to take care of personal matters, teleworking employees seemed divided: 50 per cent stated that they quite often or mostly got time off to deal with such matters, while the other half stated it was only occasionally, rarely, or

Table 6.19   Employers gain from teleworking

Employer Gain \ Response	Employer's gain					
	Strongly disagree	Disagree	Can't say	Agree	Strongly agree	Not available
Productivity and efficiency	0 (0.0%)	6 (2.9%)	29 (14.2%)	141 (69.1%)	22 (10.8%)	6 (2.9%)
Quality is better	0 (0.0%)	7 (3.4%)	34 (16.7%)	134 (65.7%)	21 (10.3%)	8 (3.9%)
Cost savings	0 (0.0%)	13 (6.4%)	63 (30.9%)	100 (49.0%)	9 (4.4%)	18 (8.8%)
High flexibility	0 (0.0%)	12 (5.9%)	57 (27.9%)	110 (53.9%)	9 (4.4%)	6 (7.8%)
Customer satisfaction	0 (0.0%)	9 (4.4%)	51 (25.0%)	110 (53.9%)	14 (6.9%)	20 (9.8%)
Staffing	0 (0.0%)	12 (5.9%)	78 (38.2%)	85 (41.7%)	5 (2.5%)	24 (11.8%)
Retention	0 (0.0%)	10 (4.9%)	77 (37.7%)	86 (42.2%)	7 (3.4%)	23 (11.3%)
Virtual teamwork	0 (0.0%)	10 (4.9%)	61 (29.9%)	99 (48.5%)	11 (5.4%)	23 (11.3%)

273

Table 6.20 Reasons for teleworking

Reasons for teleworking	Responses					
	Strongly disagree (1)	Disagree (2)	Can't say (3)	Agree (4)	Strongly agree (5)	Not available (6)
Your output is higher	0 (0.0%)	9 (4.4%)	27 (13.2%)	128 (62.7%)	10 (4.9%)	30 (14.7%)
Your quality is better (e.g., more accurate, less errors)	0 (0.0%)	6 (2.9%)	29 (14.2%)	126 (61.8%)	13 (6.4%)	30 (14.7%)
You save on travel time	4 (2.0%)	28 (13.7%)	31 (15.2%)	102 (50.0%)	5 (2.5%)	34 (16.7%)
You have higher autonomy	1 (0.5%)	20 (9.8%)	30 (14.7%)	107 (52.5%)	7 (3.4%)	39 (19.1%)
You can manage work–life balance	3 (1.5%)	21 (10.3%)	28 (13.7%)	104 (51.0%)	10 (4.9%)	38 (18.6%)
You can keep away from politics	3 (1.5%)	48 (23.5%)	46 (22.5%)	63 (30.9%)	0 (0.0%)	44 (21.6%)
There is opportunity to pursue other things	2 (1.0%)	51 (25.0%)	32 (15.7%)	75 (36.8%)	2 (1.0%)	42 (20.6%)
Your family is not supportive	24 (11.8%)	88 (43.1%)	30 (14.7%)	18 (8.8%)	1 (0.5%)	43 (21.1%)
Flexibility	3 (1.5%)	20 (9.8%)	27 (13.2%)	115 (56.4%)	8 (3.9%)	31 (15.2%)
Fewer interruptions	5 (2.5%)	28 (13.7%)	33 (16.2%)	92 (45.0%)	2 (1.0%)	44 (21.6%)
More control over the work schedule	2 (1.0%)	21 (10.3%)	36 (17.6%)	94 (46.1%)	9 (4.4%)	42 (20.6%)

Table 6.21   Problems of teleworking

Problems of teleworking	Responses					
	Strongly disagree (1)	Disagree (2)	Can't say (3)	Agree (4)	Strongly agree (5)	Not available (6)
Disturbance	6 (2.9%)	107 (52.5%)	20 (9.8%)	59 (28.9%)	6 (2.9%)	6 (2.9%)
Lack of concentration	5 (2.5%)	121 (59.3%)	20 (9.8%)	50 (24.5%)	3 (1.5%)	5 (2.5%)
Extra hours of work	3 (1.5%)	105 (51.5%)	21 (10.3%)	48 (23.5%)	14 (6.9%)	13 (6.4%)
Higher performance indices (output, quality, etc.)	4 (2.0%)	113 (55.4%)	30 (14.7%)	33 (16.2%)	8 (3.9%)	16 (7.8%)
Higher controls	3 (1.5%)	106 (52.0%)	29 (14.2%)	43 (21.1%)	6 (2.9%)	17 (8.3%)
Work–life balance	4 (2.0%)	109 (53.4%)	31 (15.2%)	42 (20.6%)	7 (3.4%)	11 (5.4%)

never. Nonetheless, 61 per cent argued that ICT devices helped in controlling work schedules most of the time or quite often, enabling about 35 per cent of those answering the question to take holidays quite often or most of the time. However, 47 per cent occasionally, rarely or never felt that ICT devices allowed them to take holidays when they wanted to do so. When it came to sleep, 67 per cent felt that it was not disrupted, with only 21 per cent stating it did get disrupted. Devices disrupted spending time with friends in 75 per cent of the cases occasionally, rarely or never. Finally, 60 per cent of the teleworkers were never, rarely or occasionally expected to work on holidays.

Most of those teleworking maintained strict working hours (53 per cent) and separate work spaces to enable them to work effectively (Table 6.23). The former called for self-responsibility and control.

We now turn to the broad policies that the five organizations that we studied formulated regarding telework.

Table 6.22 Impact of use of device on work–life balance

Response Work–life balance	Never	Rarely	Occasionally	Quite often	Most of the time	NA	Total
Work all the time	23 (11.3%)	18 (8.8%)	53 (26.0%)	65 (31.9%)	40 (19.6%)	5 (2.5%)	204 (100.0%)
Prevent from spending time with family/partner	47 (23.0%)	53 (26.0%)	47 (23.0%)	38 (18.6%)	13 (6.4%)	6 (2.9%)	204 (100.0%)
Always on work-related calls	19 (9.3%)	30 (14.7%)	55 (27.0%)	64 (31.4%)	30 (14.7%)	6 (2.9%)	204 (100.0%)
Get time off to take care of family/personal matters	16 (7.8%)	23 (11.3%)	55 (27.0%)	61 (29.9%)	41 (20.1%)	8 (3.9%)	204 (100.0%)
Help control your work schedule	15 (7.4%)	21 (10.3%)	25 (12.3%)	30 (14.7%)	95 (46.6%)	18 (8.8%)	204 (100.0%)
Allows you to take holidays when you want to	42 (20.6%)	19 (9.3%)	37 (18.1%)	59 (28.9%)	16 (7.8%)	31 (15.2%)	204 (100.0%)
Devices disrupt your sleep	83 (40.7%)	57 (27.9%)	19 (9.3%)	15 (7.4%)	9 (4.4%)	21 (10.3%)	204 (100.0%)
Keeps you from spending enough time with your friends	51 (25.0%)	56 (27.6%)	45 (22.1%)	32 (15.7%)	9 (4.4%)	11 (5.4%)	204 (100.0%)
Work on holiday and weekends	33 (16.2%)	45 (22.1%)	45 (22.1%)	36 (17.6%)	14 (6.9%)	31 (15.2%)	204 (100.0%)

Table 6.23   Strategies for reconciling issues of work–life balance

Strict working hours	109
	(53.4 %)
Separate space for work	99
	(48.5 %)
Family member and friend are told not to disturb	19
	(19 %)
Family members and friends visit only by prior opportunity	48
	(24 %)
Visitors and attended by family members	71
	(35 %)

POLICY RESPONSES TO TELEWORK

The first organizations to introduce teleworking to India were multinationals such as IBM and American Express, which were soon followed by Indian organizations, particularly in the IT sector (Raghuram 2014). Raghuram (2014) argues that the lead taken by the IT sector was because of its characteristics, such as geographically distributed customers and team members. This implies that teleworking cannot be a universal policy covering all jobs and industries. In those jobs and industries that require the physical presence of employees and where issues related to privacy, control and data security are critical, teleworking cannot be introduced. In addition, although organizations involved in telework ensure a relatively more empowering work relationship (Gothoskar 2000), managers may resist teleworking – especially in high power distance countries such as India – because of their inability to control or monitor physically dispersed subordinates, who by teleworking also reduce their dependence on the organizations. To reclaim their power, the supervisors may increase direction and work control procedures, or even increase the surveillance of subordinates electronically. Consequently, managers called teleworkers frequently to check on them and pressurize them to come to the office more frequently.

The above mindset probably is reflected in organizational polices that require teleworkers to be available at any hour, log on for a given number of hours, complete a given amount of work every day, contact the office at given intervals and have regular email communications that are followed up by weekly meetings. Further, in order to ensure that teleworking works well, organizations should have a good management by objectives programme and a precise job description which ensures that deliverables are

achieved and goals are met. Moreover, teleworking is not an entitlement, and requires prior management approval which is based on a review of the eligibility criteria and the objective of balancing employee and business needs. Organizations typically allowed only those who had worked as full-time office employees, had achieved a certain level of proficiency and had familiarized themselves with the firm's polices and the manager concerned to opt for telework.

In summary, the major concern of organizations implementing telework in India is control (Mitter 2000). For instance, in some cases organizations took care of issues of connectivity; however, issues such as power failures, or telephone or computer breakdowns were not entertained, since the organization had no way of verifying them. On these types of occasions, teleworkers were either expected to apply for leave or work in the office. Nonetheless, teleworking was problematic for conventional strategies of managerial control, which emphasize the visibility and presence of workers. A range of mechanisms, such as surveillance devices, target setting and home visits, are devised by managers to compensate for the loss of visibility and presence of home-located employees. Thus, organizations intensify bureaucratic controls in order to compensate for the perceived reduction of direct supervision of teleworkers (Noronha and D'Cruz 2008a). Not surprisingly, teleworkers felt that office-goers could get away with underperforming. Most of the office employees did much less work and had many distractions, such as food breaks, game breaks or just whiling away their time (Noronha and D'Cruz 2008b). This situation is likely to make teleworkers cautious and overly concerned about their evaluations and visibility, with some in the long run giving up teleworking if the supervisor's control is counterproductive (Raghuram 2014).

Normative control is also invoked to ensure the creation and maintenance of a strong culture that increases employees' commitment to organizational values and their identification with the organization (Noronha and D'Cruz 2008b). Teleworkers were expected to also be self-accountable, have a high sense of moral and professional integrity, and be self-motivated, self-governed and self-managed (Rajan 2000). Continued socialization of employees was achieved through the occasional gathering of teleworkers in the office to allow them to participate in the necessary rituals. The office intranet and email system were instrumental in maintaining teleworkers' connectedness with their employing organization. Through these media, employees were kept abreast of issues related to work, leisure, administration and policies, among others, and were invited to participate in various activities (Noronha and D'Cruz 2008b).

Another issue pertains to infrastructure. Teleworkers are expected to install an inverter in their houses to manage power failures and utilize their

Table 6.24   Preferred place of work as a teleworker

Preferred place of work	Frequency (%) (n = 204)
Home	97
	(47.6%)
Short working space	21
	(10.3%)
Internet café	21
	(10.3%)
Public space	20
	(9.8%)
Travel	49
	(24%)

own equipment, although software and a fixed amount of telephone costs are provided by the organization. The anticipated benefits forced teleworkers to make investments in work space, electricity, computer hardware, Internet connectivity and unlimited power supply (UPS) in their homes. This amount increased if employer organizations wanted the employees to purchase branded computers instead of cheaper assembled ones. A few teleworkers converted their one-room house into a virtual office, while others were planning to buy a two-bedroom apartment so that teleworking would become more comfortable (Noronha and D'Cruz 2008b). Forty-eight per cent of those teleworking in our survey worked from home (Table 6.24).

To enable employees to work from home, employers mainly provided laptops (58 per cent) and desktop computers (31 per cent). The other types of devices provided were telephones, that is, land lines and mobile phones and smartphones. See Table 6.25. Besides providing computing facilities and telephones, 56 per cent of employees stated that employers paid for the maintenance of laptops and another 54 per cent stated that employers paid for the maintenance of smartphones (Table 6.26).

Regarding careers, the response is mixed, with some arguing that telework did not hamper career prospects, while others argue that out of sight was out of mind and that the productivity of teleworkers declines over a period of time (Chowdary and Jayakumar 2009). Teleworkers stated that if they wanted to move up the organizational hierarchy, they had to return to office-based work (Noronha and D'Cruz 2008b). Thus, those who are teleworking are advised to over-communicate by writing articles in company newsletters and other forums, so that they can compensate for their lack of physical presence and become more visible to the organization (Chowdary and Jayakumar 2009).

The decision to telework was motivated primarily by domestic or

Table 6.25   Does your employer provide devices?

Devices	Frequency (%) n = 204
Smartphones	50 (24.5%)
Tablets	20 (9.8%)
Laptops	118 (57.8%)
Desktops	64 (31.4%)
Landline telephones	56 (27.5%)
Mobile phone	36 (22.8%)
Video-audio tools (webcams, video cameras, etc.)	23 (11.3%)

Table 6.26   Employer pays for maintenance cost of devices

Devices	Frequency (%) (n = 204)
Smartphones	109 (53.5%)
Tablets	24 (11.7%)
Laptop	115 (56.4%)
Desktop	57 (28%)
Landline telephones	50 (24.5%)
Mobile phones	72 (35.3 %)
Video-audio tools	31 (15.2%)

family concerns, and teleworking was construed as an opportunity to continue in the realm of paid employment, while simultaneously fulfilling home-related responsibilities (Noronha and D'Cruz 2008b). However, teleworking was not recommended as a substitute for childcare, and some organizations even specify that the location of the teleworking should be

free of distractions for a major part of the day. Most of the successful teleworking programmes require that no child under 5 years of age is living at home (Raghuram 2014).

Nonetheless, for teleworkers to get their voice heard, traditional trade unionism may be inadequate to demand the rights of dispersed teleworkers, but teleworkers do require the support of collective and cooperative actions. For instance, women who opt for teleworking in the absence of adequate childcare provisions may require such assistance (Mitter 2000). Further, Noronha and D'Cruz (2008b) note that some teleworkers formed an exclusive e-group through which they maintained contact with each other and shared their concerns. They met management as a group once every three months at the office. The e-group and group meetings helped the teleworkers to collectively redress their problems related to connectivity, holiday compensation, attendance and other inequities between them and office-based workers.

CONCLUSION

Early work on teleworking in India often focused on its feasibility in terms of availability of telecommunications infrastructure. Power failures and fluctuations meant installation of generators to ensure a steady flow of electricity and thus connectivity (Noronha and D'Cruz 2008b). Since then, broadband penetration has increased many times over, with mobile phone connections becoming common, thus increasing the feasibility of a telework programme. More recently, the Digital India programme launched by the Government of India to provide high-speed Internet connectivity across the length and breadth of the country (GOI 2015) will boost the possibilities of telework. Evidence in support of this comes from our survey, where we find that, in comparison to earlier studies, which circumscribed telework to IT, finance and media, the phenomenon of telework has spread to other sectors as well, such as hospitality, telecommunications and manufacturing.

We begin with some misconceptions related to telework in India. It is often contended that those who are teleworking are married. For instance, Lila and Anjaneyulu (2013) argue that the marital status of employees influenced the choice of telework, with married people teleworking more frequently compared with unmarried people. In our sample, too, 53 per cent of those teleworking were married, but at the same time 47 per cent were unmarried. Thus, those availing themselves of the facility to telework need not be married. Another interesting finding of the study is that it is often stated that telework in India is a gendered phenomenon, that is, the

decision to telework is perceived as being motivated primarily by domestic/family concerns and is construed as an opportunity for women to continue in the realm of paid employment, while simultaneously fulfilling home-related responsibilities (Aundhkar et al. 2000; Gothoskar 2000; Irani et al. 2000; Noronha and D'Cruz 2008b). However, when disaggregating by gender, we found that more women worked in the office (82 per cent) than teleworked (18 percent), while the ratio for men was similar, that is, 80 per cent working from the office and 20 per cent teleworking. Thus, contrary to the prevailing belief, women do not always prefer to telework and men are also interested in teleworking. This may be related to the policy of organizations, which does not distinguish between men and women when deciding who teleworks.

Teleworking was not a universal policy covering all jobs and industries. In those jobs and industries that require the physical presence of employees and where issues related to privacy, control and data security are critical, teleworking cannot be introduced (Chowdary and Jayakumar 2009; Mitter, 2000; Rajan 2000). Therefore, in most cases the final decision lies with the manager. In addition, the major concern of organizations implementing telework is control, which emphasizes the visibility and presence of workers. Organizations only allow those who had worked as full-time office employees and had achieved a certain level of proficiency to opt for telework. Telework was not recommended as a substitute for childcare, and some organizations even specify that the location of the teleworking should be free of distractions for a major part of the day. Further, issues such as power failure or telephone or computer breakdown were not entertained, since the organization had no way of verifying them. On these occasions, teleworkers were either expected to apply for leave or work in the office (Noronha and D'Cruz 2008b). Also, although organizations involved in telework ensure a relatively more empowering work relationship (Gothoskar 2000), managers called teleworkers frequently to check on them and pressurize them to come to the office more frequently (Raghuram 2014). This mindset probably is reflected in organization polices that require teleworkers to be available at any hour, log on for a given number of hours, complete a given amount of work every day, touch base with the office at given intervals (Rajan 2000), and have regular email communications which are followed up by weekly meetings (Aundhkar et al. 2000). In addition, normative control is also invoked to ensure the creation and maintenance of a strong culture that increases employees' commitment to organizational values and their identification with the organization (Noronha and D'Cruz 2008b). Teleworkers are expected to be self-accountable, have a high sense of moral and professional

integrity, and be self-motivated, self-governed and self-managed (D'Cruz and Noronha 2006; Rajan 2000).

Consequently, more teleworkers worked long hours and at weekends, including Sundays, compared with those working from office, reflecting the Indian work ethic (see D'Cruz and Noronha 2012; Noronha et al. 2018). Thus, although there was an overall intensification of work, it was higher for teleworkers. Similarly, it was also clear that working in the office did make a difference for performance appraisals, promotions, privileges, leave and holidays, and overtime payments. Not surprisingly, teleworkers felt that office-goers could get away with underperformance. Therefore, those teleworking are advised to over-communicate by writing articles in company newsletters and other forums, so that they could compensate for their lack of physical presence and become more visible to the organization (Chowdary and Jayakumar 2009). Moreover, traditional trade unions are inadequate to address these issues, but teleworkers do resort to collective and cooperative actions. For instance, teleworkers formed an exclusive e-group through which they maintained contact with each other and shared their concerns with management (Noronha and D'Cruz, 2008b). Further, individually most of those teleworking maintained strict working hours (53%) and separate work spaces to deal with issues of work–life balance.

Finally, we recommend the following for organizations wanting to introduce teleworking arrangements:

1. Organizations should create a culture that is supportive of teleworking. This means that teleworkers should be given the assurance that they will not be discriminated against, especially in terms of pay, benefits and privileges, training, deliverables and career progression.
2. Organizations should take responsibility for communicating and holding regular meetings with employees instead of than putting the burden of this on employees.
3. Technical support should be provided to teleworking employees in case of computer breakdown or non-performing software applications.
4. Proper forums such as e-groups and WhatsApp groups should be created for teleworkers to share their concerns between themselves and the management.
5. Supervisors should clearly instruct subordinates about their roles and responsibilities when allowing or opting to telework, so as to avoid possible misunderstandings and allow the organization to reap the benefits of telework.
6. Get-togethers should be organized for the teleworkers and their office-based colleagues, so that they get to know each other and operations can take place seamlessly.

7. There should be an effort to build trust between supervisors and sub-ordinates because this is a core requirement for effective teleworking. This would reduce supervisors' need to micro-manage teleworkers.
8. Supervisors' concerns should be restricted to getting the job done at the required time.
9. It is impractical to restrict teleworking only to jobs whose deliverables can be well defined; instead, even jobs that lend themselves to being performed autonomously beyond the office should be offered for teleworking.
10. Of course, clarity and agreement on deliverables can help to foster effective telework arrangements.
11. The option of working in the office should be available to those teleworking, so that productivity can be enhanced and issues of isolation while teleworking can be handled effectively. To enable this, the organization should provide the required infrastructure.
12. Organizations should provide the necessary equipment for working away from the office and reimburse employees for any related expenses involved in teleworking.
13. The legal framework and grievance-handling procedures available to office workers should also be made available to teleworkers.
14. Organizations should share their best practices with each other, so that the benefits of teleworking can be reaped by everyone.

REFERENCES

Aundhkar, A., Vaz, N., Pillai, G.A., Murthy, D.L.N., Thakar, S.S. and Gothoskar, S. (2000), 'Nature of teleworking in key sectors: case studies of financial, media and software sectors in Mumbai', *Economic and Political Weekly*, **35** (26), 2277–92.
Chowdary, N. and Jayakumar, V. (2009), 'Telecommuting: a perk or prerequisite?', Structured Assignment Ref. No. 410-012-4, IBS Case Development Centre, Hyderabad.
D'Cruz, P. and Noronha, E. (2006), 'Being professional: organizational control in Indian call centers', *Social Science Computer Review*, **24** (3), 342–61.
D'Cruz, P. and Noronha, E. (2012), 'High commitment management practices re-examined: the case of Indian call centres', *Economic and Industrial Democracy*, **33** (2), 185–205.
Gothoskar, S. (2000), 'Teleworking and gender', *Economic and Political Weekly*, **35** (26), 2293–8.
Government of India (GOI) (2015), *Digital India*, New Delhi: Department of Electronics & Information Technology (DeitY) Ministry of Communications and Information Technology.
Irani, A., Gothoskar, S. and Sharma, J.C. (2000), 'Potential and prevalence of teleworking in Mumbai', *Economic and Political Weekly*, **35** (26), 2269–76.

Jones, C. (2005), 'Teleworking: the quiet revolution, 2005 update', 14 September, ID No. G00122284, Gartner Research, Stamford, CT.

Lila, P. and Anjaneyulu, M. (2013), 'Modeling the choice of tele-work and its effects on travel behaviour in Indian context', *Procedia – Social and Behavioral Sciences*, **104** (2 December), 553–62.

Mitter, S. (2000), 'Teleworking and teletrade in India: combining diverse perspectives and visions', *Economic and Political Weekly*, **35** (26), 2241–52.

Mitter, S. and Sen, A. (2000), 'Can Calcutta become another Bangalore? Looking for windows of opportunity in international telework', *Economic and Political Weekly*, **35** (26), 2263–8.

Noronha, E. and D'Cruz, P. (2008a), 'Seeking the future: after-hours telecommuters in India's medical transcription industry', *Labour and Management in Development*, **8** (1), 15–26.

Noronha, E. and D'Cruz, P. (2008b), 'The dynamics of teleworking case studies of women medical transcriptionists from Bangalore, India', *Gender, Technology and Development*, **12** (2), 157–83.

Noronha, E., D'Cruz, P. and Banday, M.U.L. (2018), 'Navigating embeddedness: experiences of Indian IT suppliers and employees in the Netherlands', *Journal of Business Ethics*, 21 November, doi.org/10.1007/s10551-018-4071-3.

Raghuram, S. (2014), 'Telecommuting in India: pitfalls and possibilities', *South Asian Journal of Human Resources Management*, **1** (2), 207–20.

Rajan, P. (2000), 'Teleworking: training and educational needs', *Economic and Political Weekly*, **35** (26), 2299–304.

7. Conclusions and recommendations for policy and practice

Jon C. Messenger

1. INTRODUCTION

New information and communications technologies (ICTs) such as smart-phones and tablet computers have revolutionized everyday work and life in the 21st century. On the one hand, they enable us to constantly connect with friends and family as well as with work colleagues and supervisors; on the other hand, paid work becomes increasingly intrusive into the time and space normally reserved for personal life. Crucial to this development is the detachment of paid work from traditional office spaces. Office work and, more broadly, knowledge work is now largely supported by Internet connections, and can thus be carried out almost anywhere and at any time. This new spatial independence dramatically changes the role of technology in the work environment, offering both new opportunities and new challenges. Scholars are increasingly concerned with the advantages and drawbacks of new ICTs for aspects such as working time, work–life balance, occupational safety and health and individual and organizational performance. Policymakers and those involved in industrial relations have started to become aware of the implications of the anytime, anywhere nature of work with new ICTs, and while a few initiatives have been established at national level in some countries, most policies and programs are at the organizational level.

2. DRIVERS FOR, AND BARRIERS TO, THE EXPANSION OF TELEWORK

There are a variety of drivers promoting the expansion of telework around the world. For example, digitalization of the workplace and increasing demands for work–life balance are common drivers of telework across the European Union (EU) member states. However, the impact of these factors varies substantially from one country to another: they are much stronger

in Northern European/Nordic countries, such as Denmark, Finland and Sweden, as well as the Netherlands, than in Southern European countries such as Greece, Italy, Portugal and Spain.

In Japan, particular attention is paid to telework by the public authorities, who promote it as a tool to combat the erosion in the size of the labor force. Declining birthrates paired with an aging population and low employment rates among women have led to a decline in labor force participation since the beginning of the 21st century. In response, public agencies such as the Ministry of Internal Affairs and Communications (MIC), the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the Ministry of Health, Labor and Welfare (MHLW) strongly promote telework in order to encourage increased labor force participation, particularly among women with young children.

Telework/telecommuting originated in the United States in the 1970s and 1980s, beginning in the information industry in California, and has gradually expanded over the decades. The Telework Enhancement Act (TEA) of 2010 even charges that United States Federal Government agencies enable telework for all federal government employees. Unlike in Japan, however, in the United States this work arrangement is not seen as a means to handle the effects of demographic change. Instead, interest in telework grew out of the fear of a government shutdown owing to the avian flu pandemic in 2000, when employees of United States Federal Government agencies were encouraged to avoid public spaces and crowded offices by working from home. Currently this work arrangement is increasingly promoted in the United States as a business model that attracts top talent and reduces both the time spent commuting and the cost of office space.

Attention to telework in Argentina has been channeled by a range of efforts to create policies and public institutions for this work arrangement on a national level. A Commission on Telework initiated by the Ministry of Work, Employment and National Security (MWEN) presented a legislative project in 2007 which aimed at regulating the standards for occupational health and safety for teleworkers. Experts on the commission came from the Center for Telework and Teleinformation (CTT) at the University of Buenos Aires, which was created in 2000 as a response to the severe economic crises that struck Argentina in the 1990s. Scholars of the CTT evaluate the capacity of job creation through telework in the information age and work closely with public agencies, labor unions and employers' organizations.

Public interest in telework in Brazil and India is growing more slowly than in the countries discussed thus far. National debates about the merits and limitations of the work arrangement have been encouraged only

recently through, for example, a seminar on the topic in Brazil held by the Commission on Participative Legislation (CLP) in June 2013 and a new law regarding telework enacted in 2017 (for details, see Chapter 5 in this volume). A central driver for this debate has been the growing concern about air pollution and traffic congestion in major urban areas such as São Paulo – where, according to the Brazil study, annual average concentrations of pollutants (for example, fine particulate matter and ozone) are very high and average commuting time is very long (an average commuting time of 1 hour and 40 minutes between home and the workplace). Telework is, thus, as in the other cases, seen as a form of work that matches the public interest, but attention to this topic began to grow only in the past decade. Similarly in India, even though severe traffic congestion and the resulting pollution is also a very important issue, public debate about telework does not take place on a large scale and no official data sources on telework could be found.

Country-specific drivers of telework foster the promotion of this work arrangement to varying degrees and in various forms. Support for ICT-enabled work from outside the employer's premises is formed around the effects of demographic change, work–life balance, air pollution, traffic congestion and/or economic growth. Nonetheless, according to all of the country chapters in this volume, there appears to be a considerable degree of management resistance to permitting telework in many organizations – including those that already have teleworking/telecommuting polices in place. All the studies also agree that this resistance is due mainly to the fact that the traditional 'command and control' style of management is not possible with telework, and many managers fear this loss of control. For example, Chapter 3 (on the United States) in this volume notes that: 'Managers are often mistrustful of teleworkers. Out of sight, they assume teleworkers are slacking off' (p. 146, n. 4). Among the countries studied for this report, management resistance to telework is perhaps the strongest in India, as indicated by the following statement from Chapter 6 in this volume:

> Managers may resist teleworking – especially in high power distance countries such as India – because of their inability to control or monitor physically dispersed subordinates, who by telecommuting also reduce their dependence on the organizations. To reclaim their power, the supervisors may increase direction and control of work procedures or even increase the surveillance of subordinates. (p. 277)

3. INCIDENCE AND INTENSITY OF TELEWORK IN DIFFERENT COUNTRIES

Any effort to grasp and compare the incidence and intensity of telework across countries needs to address some important conceptual challenges, as well as substantial limitations in the available data. A translation of the English term telework into the country's first official language is the most commonly used term to express the phenomenon that is the focus of this volume, including all three generations of telework described in the Introduction. The term telecommuting is also used in the United States, as well as India and Japan, to refer to work which substitutes for commuter travel. Operational definitions for data collection fall into either of two overlapping categories: work performed with ICTs from outside the employer's premises, that is, telework (A), and work performed from home (AB). Figure 7.1 illustrates the relationship between the two.

As was discussed in the Introduction, this volume provides for a very broad definition of telework, which is as follows: work performed with ICTs from outside the employer's premises. This broad definition covers all forms of telework, including its traditional form (work from home), but *excludes work at home that is performed without ICTs*. It includes telework that supplements, as well as substitute*s* for, work in the office (purely substitutional telework is telecommuting, as discussed above). This definition also includes mobile forms of telework, which involve working from various alternative locations outside of the employer's central office (see also, Eurofound and ILO 2017). However, this definition, in line with most of the telework literature, excludes self-employed home-based workers – the notable exception being Japan where they are included (for details, see Chapter 2 in this volume).

While this same definition was used by all of the country experts participating in this study, the available data varies substantially across countries.
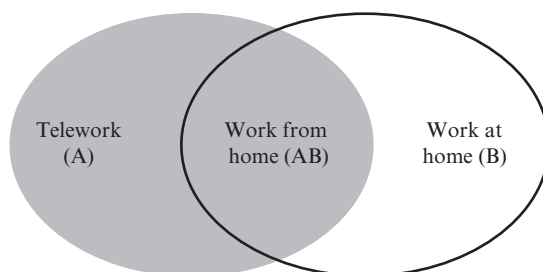
Figure 7.1   *Work arrangements covered in the country reports upon which the chapters in this volume are based*

This means that the conceptual framework presented in the Introduction cannot be fully realized in most of the countries analyzed in our volume. Perhaps the most comprehensive data on all the forms of telework in our model is Japan. Data sources for the report from Japan cover A and AB separately, hence both telework in a general sense and its intersection with B, work at home. The Sixth European Working Conditions Survey (EWCS), in 2015, provides comparable figures for A across the EU-28; for this reason, this chapter presents the EWCS estimates rather than estimates from the European national studies synthesized in the EU chapter in this volume (Chapter 1). The surveys referred to in the report from the United States cover either telework (A) or work from home using ICTs (AB) depending on the specific survey. The very limited data available from Brazil covers only work *at* home (B), and therefore it may include work performed in the home without the use of ICTs (that is, traditional homework), which is problematic for the purposes of this study. The data for India originates from a new employee survey conducted for this study that applies the definition of telework as shown in category A. The operational definition used in the Argentina study (Chapter 4 in this volume) covers only those teleworkers who work from home (AB). An overview of the variation in the operational definitions and data sources by country is shown in Table 7.1.

At first glance, the overview of scholarly terms and the operational definitions for country-level data collection regarding telework appears to reveal a mismatch among the country studies included in this volume. Nonetheless, what needs to be emphasized in this context is that the categories A and B in Table 7.1 overlap to a large extent in the real world of work. All studies differentiate between what could be called work carried out 'from home' and work carried out 'at home', with the possible exception of the estimates derived for Brazil. While the first indicates that a worker remains in contact with colleagues at the employer's premises, the latter may also include work carried out at home for an employer without using ICTs or self-employment. Work *from* home is, by its conditions, enabled by ICTs, which means that areas A and B in Figure 7.1 overlap to a large extent – even if the use of ICTs is not specifically covered by a particular survey item. Therefore, the incidence and intensity or extent of telework (that is, the number of days or hours of telework performed in a particular period) will be compared across countries based on the assumption that the concept of telework is basically comparable across data sources. Nevertheless, it is essential to keep in mind that the figures presented in this chapter are only very roughly comparable. Indeed, foreshadowing a recommendation presented later in this chapter, the process of putting together this study has made it very clear that internationally

Table 7.1   Operationalization and data sources for research on telework

Country	Term used by scholars	Operational definition	Data source	Year
Japan	Telework	Telework + work from home	Teleworking Population Research (TPR)	2014
European Union (EU-28)	Telework and ICT mobile work (mobile telework)	Use of ICTs to work from outside the employer's premises from any location including home	European Working Conditions Survey (EWCS)	2015
United States	Telecommuting/ telework	Work from home	American Community Survey (ACS)	2014
		Work from home	General Social Survey (GSS)	2012
		Telework	Federal Employee Viewpoint Survey (FEVS)	2014
		Work from home	American Time Use Survey (ATUS)	2014
		Telework	IPSOS Global Telecommuting Survey (GTS)	2011
Argentina	Telework	Work from home	Encuesta Nacional de Tecnologías de la Información y la Communication (ENTIC)	2011
Brazil	Telework	Work at home	Estimated based on percentages from SAP Annual Research on Home Office	2012
India	Telecommuting	Telework	Own survey conducted (Own)	2015

comparable data on telework is non-existent outside the EU, and that there is a real need for such data.

Two benchmarks are set in order to compare estimations for the incidence of telework across countries. First, survey results are compared for the population of all employees in the national workforce (with some caveats, see below). Telework among self-employed workers is not covered in all of the surveys. Moreover, self-employment (that is, own-account work) can be considered conceptually challenging in the context of telework owing to overlapping boundaries between 'work from home' and 'work at home'. Secondly, telework is compared for a similar level of intensity. Employees are considered teleworkers for the analysis presented below if they do work from outside the employer's premises with help of ICTs for at least one day per week or the approximate equivalent (that is, eight hours per week or several times per month). An overview of the match between these slightly different benchmarks and the various surveys used to provide the data is presented in Table 7.2.

Estimates for the incidence of telework in the observed population can be realized using the TPR in Japan, the EWCS for the EU-28, the Encuesta Nacional de Tecnologías de la Información y la Communication (ENTIC; English translation – National Survey of Information and Communication Technologies, NSICT) in Argentina, either the ACS or the GSS in the United States, the SAP survey in Brazil and the own survey conducted by the national experts in India. All other surveys in the United States refer to a different population and are therefore disregarded. The TPR in Japan includes only employees in a full-time job, and the benchmark intensity of at least eight hours per week refers to 'teleworker in a narrow sense' in Chapter 2 in this volume. The survey conducted by the experts from India roughly matches this benchmark with an estimation of telework for at least one day per week, as does the EWCS benchmark for regular home-based telework of several times per month.[1] The ACS only allows for an estimation of telework with a much higher benchmark level of intensity, 2.5 or more days per week; however, the benchmark used in the GSS is one day per week, which is more comparable with the other countries analyzed in this volume. The incidence of telework in Brazil can be roughly estimated for the share of employees who are offered the option to work at least once per week from or at home (see Chapter 5 in this volume); however, given that this estimate likely includes work performed at home without the use of ICTs, these estimates are not presented here. Finally, it should be noted that the estimations for telework in Argentina are not provided by level of intensity. All of these limitations need to be kept in mind for interpreting the comparisons in this section. Table 7.3 summarizes the incidence of regular telework in the different countries based on the benchmarks discussed above.

Table 7.2   Benchmarks for telework intensity and observed populations

Country	Population	Intensity of ICT/mobile work	Survey
Japan	All employees in the workforce with a full-time job	At least eight hours/week	TPR
European Union (EU-28)	Regular home-based telework	At least several times a month (regular home-based telework)	EWCS
	Regular mobile telework	or	
		At least several times per week in two other locations (regular mobile telework)	
United States	All employees in the workforce	At least 2.5 days/week	ACS
	All employees and own-account workers in the workforce	At least once/week	GSS
	All employees in federal agencies	At least one day/week	FEVS
	All individuals in working age (18–64 years)	At least once/week	GTS
Argentina	All employees in the workforce	Not available	ENTIC
Brazil	All employees in the workforce	At least once/week	SAP
India	All employees in the 'organized sector' (formal economy)*	At least 1 day/week	Own survey

Note: * The non-agricultural 'organized sector' in India is estimated to represent between 14 and 16 percent of the total Indian economy (Institute of Applied Manpower Research, Planning Commission and Government of India 2012).

Table 7.3   Incidence of regular telework among all employees in the workforce

	Japan	EU-28	US	Argentina	India
Data source	TPR	EWCS	GSS	ENTIC	Own
Intensity of telework	≥8 hours/ week	At least several times per month	≥1 day/ week	N/A	≥1 day/ week
Population in the national workforce	Employees	Employees	Employees	All workers	Employees
Estimated % share of regular teleworkers (including mobile workers)	16*	8	20	2	19**

Notes:
N/A = not available.
 *   The figure for Japan is for employees only. It differs from the overall figure presented in the chapter on Japan (14.2 percent), which is for all workers including the self-employed.
**   The figure for India is taken from the employee survey conducted by the India country experts, and this figure is for employees in the non-agricultural 'organized sector' (formal economy) only.

The incidence of regular telework given the above requirements varies substantially across countries – from 20 percent in the United States and 16 percent in Japan, down to only 2 percent in Argentina. Recognizing that 'organized sector' (formal economy) employment in India represents a relatively small portion (14–16 percent) of total employment in the country,[2] the incidence of regular telework is really only substantial in the EU-28 (albeit with a wide variation across countries, ranging from 18 percent in Denmark to 2 percent in Italy; for details, see Chapter 1 in this volume), Japan and the United States. The main reason for this relatively low incidence is that the benchmark for telework intensity needs to be set relatively high (one day per week or the approximate equivalent, that is, eight hours per week or several times per month) in order to allow for a reasonable comparison across countries.

Survey items for occasional telework with lower intensity are still very rare in research on the topic. Japan is a notable exception, most likely owing to the extensive efforts of the Japanese Government to promote telework.

The TPR survey in Japan includes items for 'teleworker in a wide sense', defined as telework of less than eight hours per week and as little as only one minute per week. Telework of such a low intensity could include a single telephone call or responding to an email from home or from places other than the office or home (for example, cafés and trains). The share of teleworkers among all employees under this low level of intensity is estimated to be high: approximately 32 percent of all employees in Japan. As of 2015, similar data for 'occasional telework' of lesser frequency was also available for the EU-28, based on the EWCS. The results showed high figures (more than 30 percent) for the Nordic countries and the Netherlands, and relatively low figures (less than 10 percent) in a number of Southern and Eastern European countries (for example, the Czech Republic, Greece, Italy and Poland).

Figures similar to those for telework in Japan can be identified for the United States if the benchmark level of telework intensity is reduced. For example, results of the FEVS indicate that telework is undertaken by 29 percent of all federal government employees when including the categories 'very infrequently' and 'one or two days a month'. A comparable share of employees who occasionally do telework can be identified for the total United States workforce (40 percent) using GSS data and for all respondents of working age in the IPSOS data (32 percent).

Table 7.4 provides an overview of the findings regarding the incidence of telework by gender, for all employees in the workforce (or in the case of

Table 7.4   Incidence of regular telework by gender

	Japan	EU	US	Argentina	India
Data source	TPR	EWCS	GSS	ENTIC	Own
Intensity of telework	≥8 hours/ week	At least several times per month	≥1 day/ week	–	1 day/week
Population in the national workforce	Employees	Employees	Employees	All workers	Employees
Gender:					
Women	14%	7%	18%	2%	18%
Men	21%	9%	22%	2%	19%

Notes: The gender breakdown of telework in Argentina is only available for all workers, including the self-employed; this contrasts with the figures in Table 7.3, which are for employees only. The figures for India are taken from the employee survey conducted by the India country experts, which covered employees in the non-agricultural 'organized sector' (formal economy) only.

India, those employees in the 'organized sector'). No data is available for Brazil.

Looking at the results by gender in Table 7.4, the incidence of regular telework is similar among women and men in Argentina, India and the United States. Based on EWCS data, the situation in the EU-28 is similar, except that women are more likely than men to work from home (57 versus 43 percent), while men are much more likely to perform regular mobile telework than women (67 versus 33 percent). Hence, telework can neither be called a typically female nor a typically male work arrangement in these countries.

In contrast, only 14 percent of female employees in Japan are teleworkers, compared with 21 percent among all male employees; most of the latter are mobile teleworkers (for details, see Chapter 2 in this volume). This substantial gender difference in telework in Japan appears to contradict the proclaimed purpose of telework as a means of enhancing female labor force participation in that country. This suggests that country-specific gender roles and models of work and family life are probably shaping the incidence of telework.

From an occupational perspective, the highest shares of teleworkers by occupation can be found for clerical support workers in Japan, India and the United States, among science and engineering workers in Japan and India, and among highly qualified knowledge workers, such as managers and professionals, and sales workers in all of the countries reviewed in this volume. Each of these occupations offers unique conditions for telework. The tasks of clerical support workers are commonly enabled by ICTs, and therefore can be carried out remotely for some share of the workweek; the proportion of such workers who are regularly performing telework appears to be particularly high in Japan. Sales workers are frequently at their clients' premises while using ICTs to maintain contact with their colleagues remotely, and thus they are more likely to be mobile teleworkers. The work of managers and many professionals allows for a relatively high degree of autonomy, which enables work outside of direct supervision at the employer's premises. By contrast, low shares of teleworkers can be found in those occupations that are characterized by the need for physical presence at the employer's premises, low ICT use and/or low autonomy. These conditions are typically found, for example, among shop assistants and in the elementary occupations, where the shares of teleworkers appear to be low in all of these countries.

Cross-country patterns comparable to those across occupations, discussed previously, are less common when breaking down the incidence of telework by economic sector across these same countries. The highest shares of teleworkers in Japan can be found in the manufacturing sector

(for example, management and support services within the sector) and in the other service activities sector. In the EU, the service sector is dominant, particularly information and communication, finance and insurance, professional, scientific and technical (PST) activities, and public administration. The main telework sectors in the United States are human health and social work activities and PST activities; the latter sector also has the highest incidence of teleworkers in Argentina and a relatively high level in India. However, the highest shares of telework in India are in the public administration and defense sector and the electricity, gas, steam and air conditioning supply sector, while this work form is also prominent in the public administration and defense sector in Argentina.

Large variations in the incidence and intensity of telework across economic sectors could have different causes. One reason may be the differences in business structures or managerial models across countries. The variation could, however, also simply be produced by a mismatch in the categorization of economic sectors or by the variation in the operational definitions of telework across countries. It is not possible to disentangle the causes based on the information available from the country reports upon which the chapters in this volume are based.

Findings from the comparative analysis regarding the incidence of telework across the countries analyzed in this volume indicate that regular ICT-enabled work from outside of the employer's premises is most common among those employees whose jobs are enabled by ICTs in the first place, such as science and engineering workers and clerical support workers; those who work with ICTs at their clients' premises, particularly sales workers; and those who are granted a degree of autonomy in their work, such as managers and highly qualified professionals. The breakdown by gender reveals country-specific variations which can be traced back to the prevailing gender roles and models of work and family life, such as in Japan. Moreover, occupation appears (at least on the surface) to matter more than economic sector in terms of the incidence of regular telework. Regular telework is still relatively rare in the countries analyzed in this volume, with the notable exceptions of some EU countries (for example, Nordic countries and the Netherlands), Japan and the United States, even among those occupations that are most prone to telework. The findings regarding telework at lower intensity, in contrast, indicate that occasional telework may be on the rise: an estimated share of 30 to 40 percent of employees in these same EU countries, Japan and the United States uses ICTs at least occasionally and/or for short periods of time, in order to perform work away from their employer's premises. Comparable data for this form of occasional telework is not yet available in the other countries reviewed in this volume.

4. EFFECTS OF TELEWORK

As reported by the national experts, it is difficult to reach definitive conclusions regarding the effects of telework on the world of work based on the current state of research on this topic. This is the case either because studies have not been undertaken on a scale that could provide a sufficient basis for general, nationwide conclusions, or because the operational definitions for data collection do not match those used for this chapter. Substantial results are, in consequence, not available for all countries, and country-specific variations regarding the effects of telework are particularly difficult to detect. Nonetheless, the results drawn from the country studies and summarized in this section can provide some initial comparative evidence on the effects of telework and pave the way for more in-depth comparative research in the future. Key findings regarding the effects of telework are synthesized from the country studies and presented in this section for the following dimensions of the world of work: working time, work–life balance, occupational health and well-being, and individual and organizational performance.

4.1 Effects on Working Time: Working Hours and the Organization of Working Time (Work Schedules)

The effects of telework on working time are the only effects that appear to be unambiguous, according to the results from the country studies. All of the country chapters report the same basic pattern: longer hours of work combined with much greater discretion for workers regarding the organization of their working time, often referred to as time sovereignty. The latter is perhaps the most sought-after benefit of telework, together with the ability to avoid commuting to work. This is because telework allows workers to structure their working days in accordance with their individual needs. For example, they can take their children to school and pick them up after school, run errands and take care of other personal business (for example, medical appointments) during the normal working day when offices and stores are typically open, and then work at other times. As we see in this section, all of these factors dramatically change the nature of working time.

 First, all the country studies included in this volume report that telework tends to lengthen hours of work. For example, the MLIT survey referred to in Chapter 2 (on Japan) in this volume indicates that employed teleworkers spend on average 46.2 hours per week on paid work. This figure compares to an average of only 39.3 hours of work per week for Japanese employees as a whole. Results for those who do telework with lower intensity provide

further clarification regarding these figures. Employees who state that they use ICTs for paid work between one minute and eight hours per week report an even lower average of 37.6 hours of work. That is, the higher the intensity of telework, the more time is spent on paid work per week. Unsurprisingly, 63 percent of teleworkers in wage and salary employment in the Japan Institute for Labor Policy and Training (JILPT) study referred to in Chapter 2 in this volume state that the lengthening of working time is the largest disadvantage of this form of work.

Results comparable to those for Japan are also reported for Argentina, the EU, India and the United States. For example, findings from the United States country study (Chapter 3 in this volume) based on American Time Use Survey (ATUS) data indicate that 78 percent of the increase in working hours from 2007 to 2014 among male workers is time spent working from home rather than in the office. Telework as a supplement to, rather than as a substitute for, work at the employer's premises is also reported in the GSS. Forty-one percent of the respondents in the 2014 survey reported that they work from home to catch up on work. Slightly more teleworkers are also found among those who work more than 60 hours a week (34 percent) than among those working between 50 and 59 hours a week (30 percent). For the EU-28, the incidence of employees working long hours (defined as more than 48 hours per week) is higher for all teleworker groups than for those employees who always work at their employer's premises, especially the regular mobile teleworkers (see Figure 1.4 in Chapter 1 in this volume). Similarly, a study by the Centro de Estudios para la Transformación (CENIT) Foundation in Buenos Aires found that 30 percent of respondents to their survey reported that they work longer hours when they telework. In India, the survey results indicate that a higher proportion of teleworkers worked long hours (again defined as more than 48 hours per week) than office-based workers (66 versus 59 percent).

As these results suggest, it appears that telework often leads to an extension of working hours. What makes this extension of working hours particularly difficult to estimate is that much of the telework seems to be spent beyond regular working hours and also outside formal arrangements – which means that it may supplement rather than substitute for working hours spent at the employer's premises. For example, only 10 percent of the respondents to the survey conducted for the India country study (Chapter 6 in this volume) reported that they were paid for work beyond regular office hours, and the share among teleworkers is even lower (4 percent), even though they work more overtime. The use of ICTs for work during breaks was reported by 57 percent of those who always work at their employer's premises, compared with 83 percent among teleworkers. A share of 65

percent of the respondents to the Indian survey stated that work-related mobile devices made them work beyond normal business hours. Similarly, a study among teleworkers in Buenos Aires cited in Chapter 4 in this volume showed that 56 percent of the respondents experienced a change in their work routines through the introduction of telework, and 75 percent of this subgroup stated that they had to learn how to restrain themselves from working beyond their contractual working hours.

It is interesting that telework outside formal agreements is reported by a majority of the respondents in the MLIT study from Japan. Indeed, 68 percent of these teleworkers stated that they are explicitly not allowed to work away from their employer's premises. Unfortunately, no quantitative data on such informal unauthorized telework is available for the other countries analyzed in this volume. Hence, it is not possible to say whether this large share of informal unauthorized telework is unique to the Japanese workforce or not.

In addition to its effect on the length or volume of working hours, telework also impacts on the organization or arrangement of working time, mainly because of the employee-orientated working time flexibility or time sovereignty that is inherent in most teleworking arrangements. Chapter 1 in this volume provides a vivid illustration of this phenomenon, noting that:

> [T]he planning of a workday looks quite different in comparison to a regular eight-hour office day. Almost half of the teleworkers (45 percent) run little errands in between, gear the working hours to family needs or do odd jobs or domestic chores when having a break. Just a minority of the home-based teleworkers (9 percent) keep to the timetable of the office, whereas others start working earlier or later or quit working earlier or later (36 percent). Thus, while the working day of teleworkers is typically longer than those of office workers, it is also has more 'porosity' (see Genin 2016). (p. 49)

As a result of the porosity of a typical teleworking day, teleworkers are more likely than their office-based colleagues to work during the evenings and sometimes on the weekends as well. For example, Chapter 1 in this volume reports that teleworkers in several countries, such as Belgium, Finland, Spain and the Netherlands, are more likely to work during the evenings and on Sundays than their colleagues who always work at the employer's premises. Similarly, according to Chapters 2 and 6 in this volume, teleworkers in Japan and India, respectively, are also more likely to work evenings and weekends than are their office-based counterparts. Thus, it appears that, while telework allows individuals to better organize their working days in line with their personal needs, it also results in them performing more paid work during time periods that are normally reserved

for personal life. The result is that the boundary between paid work and personal life has the potential to become very blurred – a topic discussed at length in the next section, which focuses on work–life balance.

4.2 Effects on Work–Life Balance

One of the driving forces behind the expansion of telework is workers' belief – as revealed in all of the country chapters – that it can help them to achieve a better work–life balance, as well as employers' realization that helping workers to do so can provide business benefits such as higher productivity, greater loyalty to the organization and reduced staff turnover. While there is a great deal of potential for such win-win reciprocity, the reality is often more complex – and much more ambiguous.

Indeed both positive and negative effects of telework on work–life balance are reported by all of the country studies, sometimes even by the same individuals. First, as highlighted in all the country chapters, teleworking (at least home-based teleworking, that is, telecommuting) is likely to reduce commuting time. It is not by chance that telework/telecommuting originated in Southern California, as traffic congestion in that region was already a serious problem by the mid-1970s (Nilles 1975, 1988). The health benefits of avoiding a long and stressful commute between home and the office, and back again, emerge as a key advantage of telework in all the country chapters, particularly Brazil and the United States, probably because the authors of these chapters live in São Paulo and Southern California, respectively, where two-hour one-way commutes are not uncommon.

This does not necessarily mean that telework will reduce working hours; the net effect on a worker's disposable time depends on a variety of factors, and the lengthening of working time is reported to be one of the largest disadvantages of this work arrangement. Second, while telework can improve work–life balance in general, it can also lead to a blurring of the boundaries between the typically separate domains of paid work and personal life. A survey of teleworkers in Japan by the JILPT, referenced in Chapter 2 in this volume, shows that the issue of the ambiguity of work and time off was the highest ranked disadvantage of telework among both women (36.4 percent) and men (39.3 percent). Similarly, research by the MHLW covering employees in 30 Japanese firms finds that 43.5 percent of respondents find it difficult to draw a line between work and family life. Such mixed results are also reported for EU countries in Chapter 1 of this volume: better overall work–life balance, but also a blurring of work–life boundaries and a higher risk of work–life conflict, particularly for regular mobile workers.

The work–life balance results in several of the country studies in this volume also vary by gender. For example, Chapter 1 in this volume reports that women in the EU who telework typically report more positive work–life balance results than men, and this result appears to be because they work fewer hours than male teleworkers. Likewise, a survey among teleworkers by the JILPT cited in Chapter 2 in this volume shows that 42 percent of female respondents, but only 16.5 percent of male respondents, selected family-related issues[3] as being an advantage of telework. In contrast, the most widely cited advantage of telework among male respondents (58 percent) was improvement of business productivity/efficiency, although this factor was also cited by 48.4 percent of female respondents.

Results regarding work–life balance similar to those in the EU and Japan can also be identified for the United States, Argentina, Brazil and India. For example, a study by Accenture global research of 4100 United States business executives (cited in Chapter 3 in this volume) found that more than three-quarters of them (77 percent) said that technology enabled them to be more flexible with their schedules, and around 80 percent of the respondents named flexibility in their schedules as being extremely or very important for balancing work and personal life. In similar vein, 77 percent of respondents in a 2011 IPSOS special report on telecommuting among United States employees agreed or strongly agreed that employees who telecommute are better able to achieve balance between work and family. Yet 70 percent of the respondents in the IPSOS study reported that technology led to a blurring of boundaries because it brings work into their personal lives, and 48 percent of them also reported that telecommuting creates more work–family conflicts.

Results from a study in Buenos Aires conducted by CENIT and presented in Chapter 4 of this volume indicated that 68 percent of the respondents selected more time to spend with the family as an advantage of this work form, while only 10 percent of teleworkers stated that telework complicated routines with the family at home. In Brazil, a survey of call center agents who work from home indicated that 98 percent of them reported a better quality of life, including the family's life quality, primarily because of saving time on commuting (93 percent of respondents) and having more time for their families (91 percent of respondents). However, one-half (50 percent) of the Brazilian respondents also reported disadvantages from interference around their homes. In India, most of the survey respondents engaging in telework reported that with the help of ICTs they could at least occasionally take time off for family matters (79.3 percent); moreover, 67 percent of these respondents reported no impact or only an occasional impact on personal life from using ICTs for work away from the employer's premises. However, about half (51 percent) of the respondents

to the Indian survey who telework reported that they worked all the time; 46 percent stated that they were on work-related calls quite often or most of the time; and 81 percent said that they are occasionally in 'stand-by mode' when they are at home, meaning that they could be called by their employer with a work-related demand at any time on their mobile device.

All of these findings suggest that the effects of telework on work–life balance are highly ambiguous and perhaps even contradictory. On the one hand, teleworkers report reduced commuting time, more time for their families and a better overall balance between work and personal life; on the other, they report an increase in working hours, a blurring of the boundaries between paid work and personal life, and more work–life conflicts. How can these seemingly contradictory results be reconciled? An important clue has to do with the nature of the telework that they perform. Specifically, it appears that whether telework substitutes for work in the office (for example, telecommuting), or instead supplements that work, has an important impact on whether teleworkers report that their work–life balance is positive or negative (see also Eurofound and ILO 2017).

4.3 Effects on Occupational Health and Well-Being

Some seemingly contradictory effects of telework on occupational health and well-being can be also identified across the countries reviewed in this volume. Owing to the nature of work with ICTs, ergonomic issues (for example, eyestrain, neck pain, and tendon pain in the wrists and fingers) are important, but there are other concerns as well. For example, the three highest ranking disadvantages of telework in the CENIT study of teleworkers in Buenos Aires cited in Chapter 4 in this volume are less interaction with friends (62 percent), working while being sick (50 percent) and being more isolated (36 percent). Similar results were found in a study by the company Home Agent cited in Chapter 5 of this volume, the Brazil study. In a survey a majority of the workers in this company state that being isolated from their colleagues is the key disadvantage of telework (63 percent); half of them also say that they are distracted owing to interference with their personal life. In contrast, the JILPT data presented in Chapter 2 of this volume indicates that in Japan, in comparison to other disadvantages, a feeling of isolation/alienation was selected by only 5.4 percent of respondents; increased problems with health was selected by only 5.3 percent; and disruption by noise was reported to be a disadvantage for only 5.7 percent. In addition, the JILPT results indicate that 4.2 percent of teleworkers perform night work (between midnight and 5 a.m.), and night work of any kind is likely to increase workers' physical fatigue and potentially lead to sleeping disorders. Moreover, as discussed

in Chapter 1 of this volume, in the EU telework in general and particularly regular mobile telework from multiple locations appears to lead to work intensification, which can result in an increased level of reported stress (see also Eurofound and ILO 2017).

Commuting between home and the workplace can be very stressful because of traffic congestion and expose workers to a range of health and safety hazards, which can be minimized or completely avoided via telework, at least in its telecommuting form. As is described in Chapter 5 of this volume, in the São Paulo metropolitan area the average one-way commuting time between home and work is approximately 1 hour and 40 minutes, with massive traffic congestion. In addition, commuters in São Paulo are exposed to concentrations of pollutants (for example, fine particulate matter and ozone) that far exceed World Health Organization (WHO) standards. In this case, an expansion of telework/telecommuting would not only provide health benefits to those individuals who telecommute, but would also have a broader positive impact on traffic congestion, greenhouse gas emissions and the healthiness of the environment more broadly. In Chapter 3 in this volume, the United States study comes to a similar conclusion, arguing that the 'greenest' commute is no commute at all; indeed, it is difficult to argue with that logic given the serious threat posed by global climate change.

Research findings regarding the effects of informal supplemental telework (for example, checking e-mails outside of normal business hours) are, once again, scarce. An example of its effects can be given with a policy introduced by the Boston Consulting Group, as cited in Chapter 3 of this volume. This company advised its employees not to send any messages during their time off. Employees following this advice reported higher job satisfaction (72 percent compared with 49 percent among those who did not participate), greater satisfaction with work–life balance (54 percent versus 38 percent) and increased motivation (51 percent versus 27 percent) in an evaluation following the implementation of the policy.

The advantages and disadvantages of telework for occupational health and well-being are found to be roughly in balance in the studies reviewed by the country chapters. It is difficult to determine whether the variations among these results occur owing to ambiguities in the effects of telework, differences in work culture in the different countries or because of different populations observed using data collection items that do not match with sufficient accuracy. However, one possible clue for interpreting these differences is provided in Chapter 3 of this volume, which suggests that in the Unites States the key ingredient for strengthening the positive effects and reducing the negative effects of telework on occupational health and well-being appears to be autonomy. According to a range of research studies

and company cases reviewed in the country chapters, those employees who are engaged in telework are happier, healthier and experience less stress if they are given a substantial degree of autonomy regarding where, when and how they work.

4.4 Effects on Individual and Organizational Performance

The various studies referred to by the country chapters all indicate generally positive effects of telework on individual performance; that is, teleworkers typically perform better than their counterparts working only in the office. While many of the studies and articles in the various chapters in this volume are based on self-reported performance, and thus subject to bias, there are also many studies and articles in the chapters based on more objective measures, such as supervisor-rated performance.

Chapter 3 in the volume, on the United States, provides a particularly comprehensive review of the effects of telework on organizational outcomes. Based on their own client work and a meta-analysis of American and Canadian studies, they conclude that telework generally has positive effects on the productivity of individual employees. They credit this increased productivity to a number of factors, including working for part of the time that they would have spent commuting, fewer interruptions, being able to work when they are most productive, and even being able to work on days when they would have had to call in sick. The same chapter also finds that telework provides a number of other benefits to organizations, including increased employee engagement, reduced absenteeism and improved employee recruitment and retention, thanks to the appeal of remote working and flexible schedules based on individual needs. These findings are also confirmed by the seminal meta-analysis by Allen et al. (2015, p. 49), which asserts that, 'meta-analytical research . . . has suggested that telecommuting is positively associated with supervisor-rated or objectively measured performance'.

The United States finding is backed by results from the Indian employee survey, which found that 96 percent of the respondents stated that telework enhances their productivity. Similarly, a study of teleworkers in Buenos Aires found that 61 percent of the 106 teleworkers interviewed reported that they improved their performance and 53 percent said that they improved their concentration and dedication to work. In Japan, employees cited the improvement of business productivity/efficiency and the improvement of customer service as the top two advantages of telework. The number three advantage of telework is the reduction of the physical/mental burden of commuting; this also benefits organizations because, as all the country chapters agree, teleworkers typically use part of the commuting

time saved to extend their working hours (see also the results of the French and UK studies in Chapter 1 in this volume).

However, the effects of informal, supplemental telework, such as responding to telephone calls and e-mails on mobile devices, on individual performance appear to be neutral to negative when considering the company cases presented in Chapter 3 of this volume, on the United States. For example, a study conducted by the Boston Consulting Group indicates that total hours of work in the company were reduced by 11 percent after advising employees not to send messages during their time off. Effects of any kind on the performance of employees following this advice could not be identified. In a similar vein, the company Vynamic reported an increase in productivity after shutting down access to its company network servers on weekends and from 10 p.m. to 6 a.m. on weekdays. This positive result was linked with better rest and increased employee well-being.

Several company case examples discussed in Chapter 5 in this volume also show how, in Brazil, improved individual performance through regular telework can result in enhanced organizational performance as well. The company Service Cobranças Curitiba found that staff turnover and tardiness (arriving late for work) could be reduced by more than 50 percent with the help of telework arrangements. The productivity, effectiveness and life quality of their employees each improved by more than 10 percentage points. The company Algar reported to the Brazilian experts that both employees and employers benefit from the reduction of commuting time and costs and from the improved concentration of employees when working from home. Evaluations of a telework pilot project for the Brazilian Federal Data Processing Company, SERPRO, showed that introducing work from home policies resulted in net benefits of US$60 000 for the company, owing to a combination of improved productivity, reduced costs and improved quality of life for employees.

Results of the Communications Usage Trend Survey (2016) presented for Japan in Chapter 2 of this volume indicate that medium-sized enterprises (1000 to 2000 employees) and large companies (more than 5000 employees) improved their organizational performance through telework policies. Benefits for organizations are reported in the company survey of the MIC referred to in Chapter 2 of this volume. Improvement of efficiency is the highest ranking response among the 11 answer categories for the advantages of telework listed in the survey (51.3 percent), closely followed by the reduction of commuting time for employees (45 percent). However, it is important to note that not only the improvement of efficiency, but also the reduction of employees' commuting time, can result in improved organizational performance. This is because the majority of teleworkers in Japan (66.8 percent) are mobile teleworkers, and mobile telework allows

companies to increase the customer-serving time of these workers, many of whom are sales persons, and to reduce office space costs.

Another organizational advantage of telework is that of business continuity in times of natural disasters. For, example, business continuity ranks third (23.5 percent) in the Japanese survey. Results for the latter are interpreted in Chapter 2 of this volume as a reaction to the Great East Japanese Earthquake of 2011. Parallels in the United States can be seen with the introduction of the Telework Enhancement Act, which was originally proposed in response to the avian flu pandemic in 2000. In contrast, the primary reasons for public authorities such as the Japanese MIC to promote telework are not given priority by enterprises. Only 10.7 percent of companies surveyed named promoting the work–life balance of their employees as an advantage of telework, and only 8.7 percent named the employment of commuting-disadvantaged persons, such as senior citizens or individuals with disabilities, as an advantage. In contrast, in both Argentina and Brazil, companies specifically use telework as a vehicle to provide employment opportunities for individuals with mobility issues. In Brazil there is even a specific legal requirement that companies with more than 100 employees must meet a hiring quota for individuals with disabilities of 2–5 percent of their workforce, and telework helps companies to be able to meet this hiring quota.

5.   POLICY RESPONSES TO TELEWORK AT NATIONAL, SECTORAL, AND COMPANY LEVELS

Policy responses to telework at the national, sectoral and company levels include various conditions and goals across organizations and countries. A rough separation can be made in this context between work from home policies and the occasional use of ICTs for work away from the employer's premises. Companies improved their organizational performance most through telework policies of the former kind. These findings match with the examples provided by the national experts across the countries studied for this volume, and all of the companies with formal telework policies appear to fall into one of these two categories, stretching across a variety of sectors and business models.

Several commonalities among the examples of policy responses to regular telework (which as we have seen, is often, although not always, work from home) can be identified across the countries reviewed in this volume. First, many policies aim at promoting rather than regulating telework because it is seen as a mode of work that improves the work–life

balance of employees and reduces commuting costs while simultaneously improving productivity and reducing office space costs. Examples include the Telework Enhancement Act in the United States and the guidelines for the implementation of telework in the Brazilian branch of the firm, Compuware. The second set of goals that appears to be common across countries is that of eligibility, formalization and direct communication between employees and their supervisors. Specifically, the intensity (or extent of) telework is often limited by requiring a minimum number of days at the employer's premises each week. Most employees, except for those in manufacturing operations and assembly-line jobs, are potentially eligible to work from home for at least some of their working time. Specific conditions for regular telework are then set in direct agreements between employees and their supervisors. Telework promotion and regulation of this type appears to be very common among companies specialized in the use of ICTs as part of their business models. Those mentioned in the country chapters are Compuware and Cisco in Brazil, the branches of IBM, The RainMaker Group and American Express in India and NTT Data Corporation in Japan. Additional examples can be found in manufacturing, business consulting and public administration.

The most comprehensive framework for policies and practices is the European Framework Agreement on Telework (ETUC-UNICE-UEAPME-CEEP 2002) – which is of paramount importance in EU member states. Chapter 1 in this volume provides a more detailed description of this framework agreement; nonetheless, it is essential to summarize that information here because this agreement is the most comprehensive regulation on telework that exists, and it can potentially serve as a model that can be adapted to other countries as well. This agreement was concluded among the European social partners (that is, the European Trade Union Confederation, Business Europe, the European Centre of Employers and Enterprises providing Public Services and the European Association of Craft, Small and Medium-Sized Enterprises) in 2002. It was ground-breaking because this was the first time that an agreement which needed to be implemented in all EU member states was concluded in an autonomous social partnership between workers' and employers' representatives. This agreement provides for a general EU-wide framework covering those employees who telework that is designed to be implemented in accordance with national procedures and practices in different countries. That is, it is a type of best practice: a flexible, customized regulation designed to balance the needs of workers and employers.

In this agreement, telework is defined as follows: 'Telework is a form of organizing and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could

also be performed at the employer's premises, is carried out away from those premises on a regular basis' (ETUC-UNICE-UEAPME-CEEP 2002, art. 2). This definition was kept intentionally broad, in order to cover both home-based and mobile telework. This means that it can potentially also be adapted to new technological developments and new forms of telework. Core elements of the framework agreement are the voluntary character of telework, equal treatment between teleworkers and regular employees, the provision of a safe and secure workspace despite the difference in location, and respect of the employee's collective rights. Most of the EU member states have translated the European Framework Agreement on Telework into national-level social partner agreements. Some EU countries have even transposed the agreement into their national labor laws (for example, Hungary). In addition, Ireland and the UK, which do not have national systems of collective bargaining, have introduced national guides and codes of good practice.

Policy responses to occasional, informal telework are generally much more restrictive than those for regular telework. This situation probably arises because much of this work appears to supplement rather than substitute for work in the office – effectively leading to unpaid overtime work, as with the informal, unauthorized telework reported in Japan, in Chapter 2 of this volume. Again, Europe is a pioneer in terms of policy responses: most prominently, a right to disconnect from work was enacted into French law at the national level and a number of German companies, led by the automotive industry, have established an effective right to disconnect in company practice by shutting down company e-mail servers at night and on weekends (see Chapter 1 in this volume for additional information).

Similarly, in the United States an employee who occasionally answers e-mails outside normal business hours rarely reports that time in their working hours; however, as ICT use away from the workplace has expanded, the question of overtime pay for telework outside of normal business hours is becoming an issue, and several cases have already resulted in litigation. A number of American firms have established company polices banning work-related messages outside of regular business hours, either by simple advice or by shutting down their servers on weekends and during evenings and nights – a type of company policy which originated in Germany. The examples of the Boston Consulting Group and Vynamic have been mentioned previously in this chapter, and other companies in the United States with similar policies are also mentioned in Chapter 3 in this volume. Moreover, according to Chapter 5 in this volume, the Labor High Tribunal in Brazil has put nationwide regulations of this kind in place, which specify that employees have the right to be paid one-third of their

regular hourly wage during those times when they are required by their companies to be available to take calls outside of normal business hours (termed 'stand-by mode').

These examples of policy responses across countries indicate that the balance between the promotion and restriction of telework varies depending on the specific form of telework. Regular telework from outside the employer's premises, such as work from home or another location such as a client's premises for several hours or days per week, is often enhanced and formalized through agreements which set the conditions for this form of work, as well as its balance with traditional work at the employer's premises. In contrast, policy responses to informal, supplemental telework typically aim at restricting the use of mobile devices for work outside of regular business hours. Formal agreements for this latter form of telework are rare. This contrast reflects the different effects of these two forms of telework on working time, work–life balance, occupational health and well-being, and individual and organizational performance.

6.   RECOMMENDATIONS FOR POLICY AND PRACTICE

The country experiences reviewed and analyzed in this volume indicate national policies and company or organizational practices that can both promote the spread of telework and help to ensure that it is implemented in a manner that maximizes its advantages and limits its potential downsides. This section attempts to synthesize the key recommendations from the country chapters in this volume for both a national policy on telework and company or organizational and individual practices.

First, adequate data is a necessary component of any national strategy designed to promote telework and ensure its quality. The difficulties of assembling this volume were compounded enormously by the fact that available country data was inadequate to fully implement our common definition and conceptual framework of telework in the 21st century (see the Introduction for a detailed discussion of this framework). Despite the use of different terms in different countries, we applied a common, broad definition of telework across all of them (see the Introduction in this volume for details); however, the available data in most countries was limited to the most traditional form of telework, work from home, that is, the home office. In most cases, data on mobile telework is not available, much less data on occasional forms of telework that are common in today's digitally connected world, such as checking e-mails outside of normal business hours.

Second, an adequate national framework is important for both

expanding the availability of telework and also ensuring its quality. This framework has to be both well-structured and flexible at the same time. It has to be structured enough that it clearly specifies the 'rules of the game' for those companies/organizations interested in adopting telework. However, it also has to be flexible enough that it can be adapted to a variety of different circumstances in different companies/organizations. The European Framework Agreement on Telework (ETUC-UNICE-UEAPME-CEEP 2002) provides a good example of such a flexible framework. Its key elements include:

- the voluntary character of telework for both the worker and the employer concerned;
- a guarantee that teleworkers benefit from the same rights regarding employment conditions as comparable workers working at the employer's premises;
- measures to be taken by the employer to ensure that data used and processed by the teleworker are subject to appropriate data protection standards and that the teleworker's privacy is respected (the teleworker must comply with these rules);
- provision for the installation and maintenance of equipment for telework, which is the employers' responsibility unless the teleworker chooses to use his or her own equipment;
- protection of the teleworker's occupational health and safety, for which the employer is responsible in accordance with applicable legislation at EU and national levels, and with collective agreements;
- an understanding that the organization of work, and particularly the organization of working time, is managed by the teleworker within applicable legislation, collective agreements and company rules, based on an equivalent workload and performance standards applicable to comparable workers at the employer's premises;
- measures to prevent the teleworker from being isolated from the rest of the working community of the company or organization;
- access to training and career development opportunities, which must be the same as those for comparable workers at the employer's premises;
- teleworkers' collective rights, which must be the same as those of employees who are working at the employer's premises (in particular, there should not be any obstacles to communicating with workers' representatives) and;
- implementation and follow-up.

Third, at the company or organizational level, the support of top management is essential for a properly functioning telework program or

option. Similarly, a results-based management (RBM) or management by objectives (MBO) or similar program is also necessary: it is not possible to effectively manage teleworkers using traditional management approaches, and managers – especially frontline (first level) supervisors – will need to manage teleworkers based solely on the results they produce, rather than (partly) based on their presence in the office at specified times.

This leads us to our fourth recommendation, which is that a special effort is crucial for overcoming resistance to telework by frontline supervisors. They fear the loss of direct control over their subordinates, and with good reason as they are the ones who are ultimately accountable for the results produced by the unit under their supervision. Allaying these fears requires the establishment of some type of RBM, MBO or similar program in the company or organization, so that managers – especially frontline supervisors – can feel comfortable that teleworkers are being held accountable for achieving concrete, measurable results. Specific training for frontline supervisors regarding how to manage teleworkers by results is also strongly advisable.

Finally, teleworkers themselves need to learn how to practice telework effectively. First and foremost, they need an effective individual strategy for managing the boundary between paid work and personal life, otherwise the blurring of the work–life boundary may lead to serious problems and conflicts. In addition, specific training regarding how to telework effectively (something which seems very basic, but is not provided in many companies and organizations) can help teleworkers to maximize the benefits of teleworking, while avoiding many of its common pitfalls (for example, poor ergonomic design of workstations in home offices).

7. OUTLOOK FOR THE FUTURE

The country experiences reviewed in this volume suggest that the use of ICTs for work away from the employer's premises is on the rise around the world. Particular advantages of telework, such as reduced commuting time and office space costs, less traffic congestion and pollution, better individual and organizational performance, business continuity in times of natural disasters, as well as perceptions of improved work–life balance for workers, have led employers, politicians and public authorities to promote and facilitate this form of work to a large extent. However, telework has neither grown rapidly where it was specifically promoted, nor can such a development be expected to unfold in the near future. One reason for this is that telework requires particular standards of ICT infrastructure, data security, confidentiality and workplace mobility. Moreover, and probably

even more importantly, it can only be introduced successfully where workers are given a substantial degree of autonomy in their work. Therefore, telework will probably not grow across all occupations and in all sectors. More likely, it will become an established form of work for those workers whose tasks are already ICT-enabled, as well as for certain positions and models of management that allow a substantial degree of work autonomy.

Different forms of telework can be expected to further develop along different paths. Working regularly with ICTs away from the employer's premises is still comparatively rare, with the notable exceptions of some EU countries (for example, the Nordic countries and the Netherlands), Japan and the United States. The incidence of regular telework varies widely, between 2 percent and 20 percent depending on the country, occupation and sector. In contrast, there is occasional, often informal telework, such as telephone calls or e-mails, which is performed by an estimated share of between 30 and 40 percent of employees in Japan and the United States. Far less research has been undertaken so far on this form of telework, but the findings of the country chapters indicate that it will probably continue to grow much faster than regular telework at a higher level of intensity, and its effects are far more likely to be problematic because it is more likely to supplement, rather than substitute for, work in the office. The rise of restrictive policy responses to this form of telework, including the right to disconnect, company policies regarding 'off hours' calls and e-mails among some companies in Germany and a few in the United States, and the requirement that employees be compensated for occasional standby work in Brazil, further indicate that the growth of this form of telework may be more controversial than the rise of other forms of telework.

8.   CONCLUSION

The country experiences reviewed in this volume are largely in line with the current state of international research on ICT-enabled work away from the employer's premises (for a review of this literature, see Messenger and Gschwind 2015). Specifically, it appears that telework is neither purely advantageous compared with traditional office work at the employer's premises, nor does it seem to produce mainly negative effects. The disadvantages of telework with which workers seem to struggle most are its tendency to lengthen working hours and to create interference between paid work and personal life. On the positive side, workers report a reduction of commuting time, higher productivity, and more time spent with family and friends. Hence, the findings on the effects of telework indicate a profound inner ambiguity. The advantages of less time spent commuting, more time

spent with family and friends, and higher productivity are interlocked in a trade-off with longer hours of work and a blurring of the boundary between paid work and personal life.

The negative effects of telework could be cushioned effectively with more appropriate managerial guidance, stricter separation between workplaces and the home, and clear working time regulations regarding work performed with ICTs away from the employer's premises. Such policy responses, however, should only provide a broad framework because detailed regulations, at least to some degree, run counter to the autonomy needed to enable telework in the first place. Telework in a form that can improve work–life balance and enhance individual performance generally requires a significant degree of autonomy. Organizations and managers will need to grant employees such autonomy, so that workers themselves can orchestrate telework and regular office work without unduly blurring the boundaries between paid work and personal life. Policies at the national, sectoral and organizational levels need to be adapted dynamically to technological advancements, companies' business requirements and workers' needs and preferences. These recommendations imply that workers, employers and public authorities must be well informed about the advantages and disadvantages of different forms of telework, in order to enable them to design appropriate policies to accentuate its positive effects and reduce the negative effects. Better data on telework, additional research, and a closer cooperation between policymakers, employers, employees and scholars is needed to pave the way for a continuing evolution of telework in the rapidly changing world of work in the 21st century.

NOTES

1. The 2015 EWCS also provides an alternative, higher benchmark of intensity (that is, the extent of telework) for regular mobile teleworkers of at least several times per week in two locations other than the employer's premises. An employee can qualify as a regular teleworker under either the lower, regular home-based teleworker benchmark or the higher regular mobile teleworker benchmark (for further information, see Chapter 1 in this volume).
2. It is important to keep in mind that the organized sector (formal economy) in India represents only a small portion of the total economy. Assuming that telework is rare in the unorganized sector (informal economy), the percentage of teleworkers in the total Indian economy is quite small.
3. Specifically, they selected the following responses: increase of time for communication with family, increase of time for housework and increase of time for childcare/nursing care.

REFERENCES

Allen, T.D., Golden, T.D. and Shockley, K.M. (2015), 'How effective is telecommuting? Assessing the status of our scientific findings', *Psychological Science in the Public Interest*, **16**(2), 40–68.

Communications Usage Trend Survey (2016), 'Communications Usage Trend Survey 2016: Company' ('Heisei 28-nen Tsushin Riyo Doko Cyosa: Kigyohen'), MIC, accessed 23 March 2019 at https://www.e-stat.go.jp/stat-search/files?page=1&layout=datalist&toukei=00200356&tstat=000001102495&cycle=0&tclass1=000001102515.

Eurofound and the International Labour Organization (ILO) (2017), *Working Anytime, Anywhere: The Effects on the World of Work*, Luxembourg and Geneva: Publications Office of the European Union and ILO.

European Trade Union Confederation, Union of Industrial and Employers' Confederations of Europe, European Association of Craft, Small and Medium-Sized Enterprises and European Centre of Employers and Enterprises providing Public Services (ETUC-UNICE-UEAPME-CEEP) (2002), 'European Framework Agreement on Telework', Brussels, 16 July.

Genin, E. (2016), 'Proposal for a theoretical framework for the analysis of time porosity', *International Journal of Comparative Labour Law and Industrial Relations*, **32** (3), 280–300.

Institute of Applied Manpower Research, Planning Commission and Government of India (2012), *Organized and Unorganized Employment in the Non-Agricultural Sectors in the 2000s*, New Delhi: Government of India.

Messenger, J. and Gschwind, L. (2015), 'Telework, new ICTs and their effects on working time and work–life balance: review of the literature', unpublished ILO working paper, ILO, Geneva.

Nilles, J.M. (1975), 'Telecommunications and organizational decentralization', *IEEE Transactions on Communications*, **23** (10), 1142–7.

Nilles, J.M. (1988), 'Traffic reduction by telecommuting: a status review and selected bibliography', *Transportation Research Part A: General*, **22** (4), 301–17.

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