

## WORKING IN THE VIRTUAL WORLD – AN APPROACH TO THE “HOME OFFICE” BUSINESS MODEL ANALYSIS

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**Abstract:** More and more employees are working outside of traditional on-site work environments in locations connected electronically to a central office. This telework or telecommuting practice has become an increasingly important employment tool, fulfilling key business needs while helping employees balance their work and personal commitments. The aim of this paper is to emphasize the importance of homeworking rather than working in the office, to identify the specific advantages and disadvantages, distinguishing between them. A total of 308 individuals from many countries worldwide took part in the online survey. The interest in working at home, how the intensity of working in a Home Office affects productivity, coping with demands, communication, work-life balance, career satisfaction were analyzed. The overall results indicate that people prefer to work at home rather than in traditional office, that a Home Office has a positive influence on the personal work experience.

**Keywords:** “Home Office” Business Model, Home Workers, Information and Communication Technologies (ICT), Teleworking, Telecommuting, Enterprise Performance, Virtual World.

### 1 Introduction

The industrial revolution brought employees from their homes to the factories. With information and communication technologies (ICT), the reverse is possible, with employees able to move back into their homes (Simitis, 1986). The flexibility for jobholders to be able to work any time at any place is technically feasible for many employees and has been for many years. In the literature there seems to be the term anywhere working subject for over forty years (Hunton and Strand, 2010; Nilles, 1975; Wilkes and Frolick, 1994).

The spread of globalization and the development of modern innovative technologies, social changes and, associated with them, the increase in collective environmental awareness, have augmented the interests in mobile and alternative forms of working in recent years (Chung, 2015; Manyika et al., 2016; UNDP, 2015). The population is exploring products and services through ICTs, e.g. desktops, laptops, tablets, smartphones and even virtual reality devices. Using these technological innovations, more and more organizations have started to redesign their approach to work. We feel strongly that central to this new approach is that the employees are asked to organize their work flexibly.

Jobs have always been one of the most defining aspects of our lives. “Telecommuting”, which originated in the 1970s as a response to the oil crisis and concerns over employees’ potential inability to travel to and from the office, involves employees completing work tasks outside of the traditional office (Böll et al., 2014; Torten et al., 2015, 2016). The term “telecommuting”, first introduced by Nilles (Nilles et al., 1974), provides a new means of interaction between employees and employers (Baltina and Vitola, 2014; Muasa, 2014; Pica, Dinu, 2016). It entails an employee working from home, and carrying out his/her working activities outside the employer’s premises. Typically, work is done at the employee’s residence, but there may be other locations as well. “Telework” is the preferred term in Europe and other countries, while in the U.S., “telecommute” is preferred (Bairnsfather and Ringelberg, 2004; Baltina, 2012; Baltina and Vitola, 2014).

The terms *home office* and *homeworking* are often associated with this type of employment. It is important to note that *home office* rather indicates a special situation when the employee occasionally works at home for some reason/s, while *homeworking* indicates work tasks performed at home as an agreed standard. *Homeworkers* is a category of employees who carry out their professional activities from their own homes (OECD, 2001). Work from home can be carried out only within

a standard contractual employment relationship between employee and employer. This means that the employer and employee have their rights and obligations set out by law. Work from home is always the subject of internal entrepreneurial agreements. Therefore, an employer cannot force an employee to work from home, and an employee cannot demand it from an employer. If an employee works from home, the total working hours are regulated by the contracted job time as in any other type of job. However, a homemaker can schedule his/her working time more at his/her own personal discretion.

Jobholder is expected to decide for it selves when he/she works (schedule flexibility), where he/she works (telecommuting), and by which communication tool/medium (smartphone, email, videoconference) he/she works (Baarne et al., 2010; Ten Brummelhuis et al., 2012). Baarne et al. (2010) implements three key characteristics of New Ways of Working. First the timing of work has become more flexible. Second, NWW offer the employee various options for the place of work, including the office, home, and during commuting time (e.g. on the train, on the bus, on the airplane). At the office, employees no longer have fixed workspaces (Kelliher and Anderson, 2008). Third, NWW are facilitated by modern media technologies such as smartphones, iPad, Skype, and videoconferencing. This concept offer workers various options for communication with co-workers, supervisors, and clients, including phone calls, email, online messaging, and (online) virtual meetings (Baarne et al., 2010).

As mentioned earlier, “telecommuting” is prevalent in the U.S. According to the National Study of the Changing Work-force, 63 % of employers allow some employees to telecommute occasionally, 33 % allow some employees to telecommute on a regular basis (Shockley, 2014).

Shockley (2014) mentions the researches in telecommuting. In fact, more than 50 peer-reviewed published studies, by means of two usual methods, focus on the organizational and/or personal outcomes of those who telecommute. The most scientifically sound method is by experiment or quasi-experiment. The second and most common type of design involves the use of surveys. Surveys include questions about an employee’s telecommuting status and the outcome variables of interest (Shockley, 2014).

This paper is organized as follows: In the following section, we briefly outline the methodology which we used for the three-step research project. The third section gives a brief overview of the concept of distance working, where we attempt to define the terms such as teleworking, telecommuting, and homeworking. The statistical information to track and measure telecommuting in selected countries is analyzed in the fourth section. In the fifth section, a case study is presented to analyze the results of the survey. Our conclusions are drawn in the final section.

### 2 Methodology

We carried out a three-step research project to study the Home Office and homeworking. The first step was a literature review on the extent and nature of homeworking worldwide. Secondly, from the accessible data, we examine a statistical overview of this form of work around the world. The final step investigates the issues, benefits and disadvantages of office workers versus homeworkers. Specifically, we explore telecommuting as it affects the employee, employer and society. Data from an online survey examine the viability of telecommuting work arrangements. The survey is an appropriate research strategy, because the purpose of the study is to describe the incidence of the phenomenon under investigation.

Electronic surveys provide the ability to conduct large-scale data collection by other than organizations at the centers of power in society (Couper, 2000). Technology provides an inexpensive

mechanism for conducting surveys online, instead of through the postal service (Sheehan and Hoy, 1999; Weible and Wallace, 1998) and one in which costs per response decrease instead of increase significantly as sample size increases (Watt, 1999). Electronic surveys are becoming increasingly common (Lazar, J and Preece, J., 1999), and research comparing electronic vs. postal surveys is starting to confirm that electronic survey content results may be no different from postal survey content results, yet provide the distinct advantages of speedy distribution and response cycles (Swoboda, et al., 1997; Yun and Trumbo, 2000).

One can divide the collection of survey data via computers into three main categories, based upon the type of technology relied upon to distribute the survey and collect data, as follows: point of contact, email-based and web-based. In this paper, we decided to use the third option. The final form of electronic survey, and the technique currently receiving the most interest of researchers (Stanton, 1998; Zhang, 2000), is the web-based survey. This is generally defined as those survey instruments that physically reside on a network server (connected to either an organization's intranet or the Internet), and that can be accessed only through a web browser (Green, 1995; Stanton, 1998).

Because a web-based survey is actually created through the use of a coding language, the potential exists for the survey to change, based upon previously answered questions (e.g. providing a different set of questions based on reported tenure in the organization). In addition, these surveys can use animation, voice, and video to enhance the user experience.

For example, one study provided a sidebar of events that occurred in the year of the respondent's self-reported birth date, to assist the respondent with recall, as well as to maintain motivation to respond to the survey (Witte, Amoroso, and Howard, 2000). Finally, web-based surveys are often connected directly to a database where all completed survey data are categorized and stored for later analysis (Schmidt, 1997; Lazar and Preece, 1999). Web-based surveys can either be sampled or self-selected. The sampled category describes respondents who were chosen using some sampling method (i.e. randomly selected from a larger population), notified of the chance to participate, and directed to the survey's website. In contrast, the self-selected category includes those respondents that happen across the survey in the course of their normal browsing (e.g. search results, web advertisement, etc.) and are not proactively solicited by the researcher.

The rapidly expanding body of literature on electronic survey techniques reflects a growing concern among researchers as to the methodological issues associated with their use (Couper, 2000; Dillman, 1978, 1991; Fink, 1995; Fowler, 1995; Krosnick, 1999).

The survey questionnaire which was activated during the entire period from 19.10 till 18.11.2016 contained several types of questions for respondents to answer. Some questions were also open-ended, which allowed respondents to submit their own answers. Other questions allowed respondents to note their answers on a different scale, with the ranges varying from negative to positive, and disagree to agree. A few of the questions required respondents to check appropriate responses. The survey was mailed out to employees in different countries using the following link <http://www.surveio.com/survey/d/K6U7B3U1J9E6L3O3H> and also through different new ICT to obtain the necessary response rate of 52.74 % (308 questionnaires were completed). The survey was coded, so that it was possible to determine employee type (management, non-management, homeworkers).

Respondents were asked to answer questions relating to working at home, with various scale answer options used related to the interrogation. The research was conducted from a normative perspective, and attempted to take into account both the viewpoints of the employees and of the employer, including their perspectives on homeworking.

### 3 Framework and genesis of distance working

In the Introduction, we presented telecommuting, teleworking and home working as the same concept. The meaning of the concept is to "work at a distance" or, in our case "to work from a home office". Among the popular terms that cover telecommuting, we understand remote work, home office work, telework, location-independent tasks and home-distributed data processing (Cross, 2017). It is difficult to distinguish between the virtual office and varieties of telecommuting, because terminology differs from study to study.

The concept seems simple, but implementation requires a slightly different perspective from both the employee and employer. Teleworking is beneficial to both, for a variety of reasons:

- For the employer, telework has been found to contribute to reduced company costs related to office space and parking, decreased turnover rates, increased productivity, and reduced absenteeism and tardiness;
- For the employee, benefits include factors such as decreased commuting time, more flexible scheduling options, and the option of providing care to dependents while working;
- In addition, teleworking has been shown to be beneficial to the environment in terms of reduced fuel emissions and reduced use of electricity. This was the expectation of the Clean Air Act, which was instituted in order to help reduce the carbon footprint of the United States (O'Sullivan and Student, 2013).

As mentioned in the Introduction, Nilles first coined the term "telecommuting" in the 1970s. The practice of telecommuting, or alternatively telework, has been heralded as the cure for a variety of organizational and social skills (Hynes, 2014; O'Sullivan and Student, 2013). It has been lauded as a strategy to assist organizations to decrease real estate costs, respond to employees' needs for a healthy work-family balance, and to aid compliance with the 1990 Americans with Disabilities Act (O'Sullivan and Student, 2013). Moreover, various studies on the effects of teleworking on quality of life have found telecommuting to constitute a popular time- and energy-saving method for employees (Azarbouyeh and Naini, 2014; Baruch, 2000).

Telecommuting is not a new concept. The term was defined as: "the partial or total substitution of telecommunications for the daily work trip" (Kim, 2015). It has been the object of many scientific articles and studies over the years. It seems less scientific studies were done in America than in Britain (Felstead & Jewson, 2000; Felstead, Jewson, Walters, & Phizacklea, 2000a, 2000b; Huws, Wermer, & Robinson 1990; Cooper, 1996; Kurland & Bailey, 1999). Telework has attracted interest in Canada (Akyeampong & Nadwodny, 2001; Duxbury, Higgins, & Neufeld, 1998; Menzies, 1997). We are of the opinion that many of these studies investigate all forms of home work simultaneously, further most of them are concentrated on one or few professional groups.

Staples survey illustrates that "managing employees who are located remotely from their manager is a key issue in telecommuting and virtual organizational structures and IT is a key enabler of remote work". This concept is also supported by Hartman et al., who state that "advancing technology has made it increasingly feasible to work from remote sites; in this context telecommuting has become one of the mechanisms management may utilize to meet pressing human resource challenges" (Davis, 2011).

There is no single widely accepted definition of what telecommuting entails, and there are difficulties in counting telecommuters because not all telecommuters do this type of work all the time. However, the core definitions of telecommuting and telework are based on the terms as defined by Dr. Jack Nilles (Davis, 2011).

Some surveys do not differentiate between people who work at home in home-based businesses and those who telecommute from their homes. Finally, the sampling methods of some surveys differ sufficiently to make comparison and averaging impossible. Given these limitations, the estimates below vary accordingly (Marcus, 1995), as shown in Table 1 from the US perspective.

Table 1. USA Survey on Telecommuting

Year and Source	Estimated values
1992 Link Resources (Telecommuting) and Mokhtarian, 1993	6.6 million telecommuters in 4.9 million households 77 % white collar 59 % conventional employees, 41% contract-based 19 % work 35 hours or more per week at home 18.3 hours at home weekly average 81 % work for businesses with fewer than 100 employees
1987 (Fathy, 1991)	200 000–250 000 telecommuters
1985 (Forbes, 1985)	100 000 telecommuters
1984 (Kelly, 1986)	4–5 million telecommuters, including part-time telecommuters

Source: author according to (Marcus, 1995)

Telework has also been promoted as a method of reducing air pollution and traffic congestion (Bailey and Kurland, 2002; Hynes, 2013). The theory of teleworking, which initially referred to working from a home office, further expanded over the years because of the availability of computer technology (ICT), which has enabled the substitution of a physical office with a remote one, including satellite centers, home-based offices, and neighborhood work centers (Hynes, 2014).

Technology has enabled us to be untethered from specific times and places of work. We now have easy access to information from any location, and at any time we need it. Companies are struggling to determine how to leverage mobility for competitive advantage (O'Neill, 2009).

Research shows that telework generally increases work performance and productivity, as well assists employees to have higher dedication and morale, and a higher energy level on the job, due to elimination of wasted time (Hill et al., 2003). However, some results show that job satisfaction does not differ between teleworkers and non-teleworkers.

The term “*flexible working*” has been used in a broad sense to cover a range of working patterns, including reduced hours, non-standard hours, various forms of remote working, and compressed working time, with the central feature being that it is the employee, not the employer, who chooses the working arrangement, known as flexibility for employees (Kelliher and Anderson, 2010). The stereotype is that mobile workers are young and female (for instance, young mothers working at home). In fact, several studies show that most mobile workers (65 %) are men and are aged over 40 years. While it has traditionally been assumed that only specialist workers (e.g. salespeople, auditors, consultants) spend significant periods away from the office, research shows that all levels of staff work outside the office, and 40 % hold leadership positions in their organizations. Policies and workspaces supporting mobility are a big draw for older workers. Most Baby Boomers, who state that they want to extend the number of years they remain in the workforce, feel that the typical, traditional workplace arrangement (e.g. inflexible work hours, dedicated workspace, commuting to one location) is out of step with the potential for time/place mobility which they actually possess. A recent study found that younger workers view mobile work as directly related to their quality of life. Thus, space and the policies that support mobility for these workers will improve their perceived quality

of life and sense of belonging to the organization (O'Neill, 2009).

In our analysis, we discovered that there are no clear, standard definitions for telecommuting, teleworking or homeworking. Indeed homework does not mean the sum of persons working at home, but on the contrary, is the sum of persons performing officially classified employment duties from a home, which can be a workplace for official work. We think that it is generally taken to involve working in a separate, central workplace, using ICTs.

Different people use the different concepts in diverse ways, linking them to a wide range of work arrangements, including mobile work, work in any location outside the usually accepted work premises of the employer, work in a shared office center or hub, and home-based work (Bradshaw and Hirose, 2016). Telecommuting has been lauded as a strategy to help organizations decrease real-estate costs, and to respond to employees' needs for a healthy work–family balance.

The number of employees working from home is increasing and has significant benefits for both parties in various types of work, such as call centers, selling home-made products, consultancy, etc. (Reshma et al., 2015).

The term “teleworking” has been approached in different ways. Several authors have attempted to characterize developments, to define it as “remote working”, “distance working” (Holti & Stern, 1986a & 1986b) or “outwork” (Probert & Wajcman, 1988). The prefix “tele-” means “distance”, therefore the term “telework” means “work at a distance”. In Europe and other countries, the term “telework” is preferred, while in the USA “telecommute” is more common (Bairnsfather & Ringelberg, 2004). Others seek to categorize the various forms of the concept, such as “home work”, “alternative officing” and “mobile working” (Gordon, 1996).

In 1990, the International Labor Organization (ILO) proposed the following definition of telework: “*A form of work in which (a) work is performed in a location remote from a central office or production facilities, thus separating the worker from personal contact with co-workers there; and (b) new technology enables this separation by facilitating communication*” (Ruiz and Walling, 2005).

In 1996, the ILO adopted Convention No. 177 on Home Work. It called on all countries of the world to develop policies to improve the conditions of their citizens who are homeworkers. This was a very important step towards getting the contribution and rights of homeworkers recognized across the world (Mehrotra and Biggeri, 2007).

A consolidated report by the European Foundation for the Improvement of Living and Working Conditions states that “*Telework is the work performed by a teleworker (employee, self-employed, homeworker etc.), mainly or for an important part, at (a) location(s) other than the traditional workplace for an employer or a client, involving the use of telecommunications*” (Ruiz and Walling, 2005).

The Department for Trade and Industry (DTI), in conjunction with the CBI, TUC and CEEP UK, has published guidance on teleworking. This states that the essential feature of teleworking is “*the use of information and communications technologies to enable remote working away from the office*” (Ruiz and Walling, 2005).

The OECD definition states that “*work at home includes those economic activities that are conducted from units or offices within the home. This category includes farmers who work and live on their farms, persons working and living at work camps, and those engaged in own- account production of goods*” (OECD, 2001).

#### 4 Prevalence of Telecommuting (Teleworking) around the world

Telecommuting known as “working from home”, or “e-commuting”, is a modern work arrangement or occupational category. However, only few countries gather statistical information to track or measure its progression. In this paper, we provide only a partial illustration of the prevalence of telecommuting. With these limited data, we are able to present a general view of the situation in this field in some of the following listed countries.

##### 4.1 Australia

Table 2 illustrates the number of Australian homeworkers from 1998 to 2002. We assume that this number of teleworkers will continue to rise. The Australian Bureau of Statistics survey which covered 3 900 households, showed that in 2006, just 6 % of the total Australian workforce was involved in telework (Shieh and Searle, 2013).

Table 2. Teleworkers

1998	1999	2000	2001	2002
293 000	378 000	438 000	545 000	480 000

Source: author according to (Byrne at al., 2005)

According to the latest figures from 2015 released by the Australian Bureau of Statistics, out of 11.6 million employees, 3.5 million are teleworkers, 2.6 million of these are employees, while the remaining 1.44 million are managers and business owners. Humphrys emphasizes that “42 % of those who regularly work from home cited catching up on work as the main reason. A further 20 % regularly worked from home because they wanted an office or did not want to pay rent or overheads” (ABS, 2016).

The percentage of employees who have been deemed eligible to telework has remained relatively stable in recent years. In both 2014 and 2015, 44 % of Federal employees were eligible to telework. Although telework eligibility rates have remained stable, telework participation has continued to increase steadily over time.

In 2013, Deloitte research into the demand for telework found that 74 % of people with career responsibilities not in the workforce would take up telework if it was available to them; 66 % of people with disabilities not in the workforce would take up telework if it was available to them; 70 % of people in rural and regional Australia not in the workforce would take up telework if it was available to them; 60 % of mature-aged workers would delay retirement by 6.6 years if they could telework. Based on these results, telework could add the equivalent of 25 000 full-time jobs, with 10 000 of these jobs in regional Australia, helping to grow annual GDP by \$3.2 billion by 2020–21 (Arts, 2015).

##### 4.2 Canada

Various Statistics Canada surveys suggest a strong growth in the number and proportion of employees doing some or all of their regularly scheduled work at home during the 1990s. The number of teleworkers rose from just a little over 600 000 (6 %) in 1990 to 1 million (9 %) in 1995, 1.4 million (10 %) in 2000 to 1.32 million (9.8 %) in 2005, with the average of 17 hours per week worked at home (Akyeampong, 2007).

The data from the General Social Survey in 2008 indicate 1.75 million employees working at home (11.2 %), 1.4 percentage more than in 2005 (Turcotte, 2010). A 2013 Study notes that half (50 %) of Gen Y (this new generation born between 1979 and 1997 who are “digital natives,” i.e. the first to grow up with technology. They have common, defining characteristics in terms of social values and expectations of the work experience (O’Neill, 2009)) full-time employed Canadians are willing to sacrifice something in order to work remotely more often, compared to 28 % of those aged 30 years and older (Cukier et al., 2013).

##### 4.3 Japan

According to a report entitled “Effort to Promote Telework in Japan” released in 2011 by the Ministry of International Affairs and Communications, in 2010 Japan was reported to have 10.9 million (16.5 %) teleworkers (proportion of teleworkers to total population of employees) compared to 2002 with 4.0 million (6.1 %). The growth is demonstrated in Table 3.

Table 3. Ratio of Teleworkers in Population (working over 8 hours per week)

2002	2005	2008	2009	2010
4.0 million	6.7 million	10.0 million	10.1 million	10.9 million
6.1 %	10.4 %	15.2 %	15.3 %	16.5 %

Source: author according to (MIC, 2011)

##### 4.4 European Union

Statistics of European teleworking in 1998 in a few countries started to measure aspects of teleworking. The estimated total number of corporate telecommuters in 15 European Union countries (including Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Ireland, Luxembourg, The Netherlands, Portugal, Spain, Sweden and UK) was 2 478 000 (Johnston et al., 1998).

National statistics on teleworking are not yet available, as definitions of the topic differ among EU countries. The most recent studies conducted were in 2005 and a publication in February 2010 (European Foundation for the Improvement of Living and Working Conditions), which covered the 27 EU Member States along with Norway. The highest incidence of telework in the EU27 and Norway in 2005 in percentage at least 25 % of the time or more and almost full-time was in the Czech Republic and the lowest one in Bulgaria, as depicted below in Table 4.

Table 4. Incidence of telework in the EU27 and Norway, 2005 (%)

	% involved in telework at least 25 % of the time or more	% involved in telework almost full-time
Czech Rep.	15.2	9.0
Denmark	14.4	2.6
Belgium	13.0	2.2
Latvia	12.2	1.8
Netherlands	12.0	1.9
Estonia	11.8	1.4
Finland	10.6	1.6
Poland	10.3	2.3
Norway	9.7	1.3
Sweden	9.4	0.4
Austria	8.6	3.2
United King.	8.1	2.5
Slovakia	7.2	3.4
Greece	7.2	1.4
Spain	6.9	1.5
Lithuania	6.8	0.7
Slovenia	6.7	1.9
Germany	6.7	1.2
France	5.7	1.6
Cyprus	5.7	0.0
Luxembourg	4.8	0.0
Ireland	4.2	0.5
Hungary	2.8	0.5
Romania	2.8	0.7
Italy	2.3	1.5
Portugal	1.8	0.7
Bulgaria	1.6	0.0
Malta	0.0	0.0
EU27	7.0	1.7

Source: author according to (Eurofound, 2010)

In 2000, the overall average proportion of employees involved in telework was approx. 5.3 % in the “older” 15 EU Member States (EU15) and 4.2 % in the then candidate countries. In 2005, the overall proportion had increased to 7 % for the entire EU27. Many of the countries with a high incidence of telework also experienced higher growth rates in the five-year period from 2000 to 2005. Among these countries, the percentage of teleworkers increased almost five-fold in the Czech Republic and more than doubled in Belgium, Denmark and Latvia. Conversely, a decreasing trend in terms of telework usage is evident in five countries – Bulgaria, Cyprus, Luxembourg, Portugal and Romania – while the figure for the UK appears to stagnate at an above-average level. Luxembourg is the only EU15 country in which, telework has decreased over the first five years of this decade. Above-average rates of telework are also found in the Scandinavian countries, Finland, Norway and Sweden (Eurofound, 2010)

#### 4.5 Switzerland

The 2001–15 survey by the Swiss Federal Statistical Office reports that, during the period under review, the number of workers doing either regular or occasional home-based telework rose almost four-fold, from 248 000 to 931 000 (BFS, 2015).

It estimates that 21 % of the active labor force was involved in home-based telework in 2015, at least occasionally. However, the number of regular teleworkers (defined as those who telework more than 50 % of the time) remained modest, despite also quadrupling from 31 000 in 2001 to 120 000 in 2015. The proportion of telework varied considerably, depending on the economic sector, with the highest prevalence found in the ICTS sector, where 51.5 % of workers had teleworked at least occasionally in 2015. The second highest prevalence was in Education (45.0 %), which was also the sector with the highest proportion of regular home-based teleworkers (7.2 % of the active workforce). The ICTS sector was followed by the Professional, Scientific and Technical sectors (34.7 %) and then by Financial Services with 24.4 %, in which approx. 25 % of employees were involved in telework, both regularly and part-time.

It is important to note that the survey covered only home-based teleworkers, whether regular or occasional. The evolution in telework is particularly striking. In 2001, telework, even on an occasional basis, accounted for less than 15 % of the workforce in all sectors; by 2015, telework rates had risen to above 15 % in over half of all sectors of activity. Closely related to the greater digitization of the economy, the ICT industry showed the highest increase in teleworkers (BFS, 2016).

#### 4.6 Latin America

Argentina, the leading country for ICTs in Latin America (third in the number of Internet users and PCs and with practically all telephone lines being digital), is experiencing a great interest in telework. The IBM company is a very good example, where out of the 1 500 employees in 2004, 700 were teleworkers, 400 being mobile workers. Attention of teleworking using ICTs has been increasing in the recent years of telework, but there are as yet no official statistics. In 2003, Carrier y Asoc. market analysts published the results of a survey on “Telecomunicaciones residenciales”. According to this survey, there are more than 320 000 homes used as electronic workplaces, i.e. 3.2 % of all homes in the country. The survey also showed that 40 % of those homes were transformed into workplaces in the last two years, while only 31.3 % have been in operation for more than five years. If this unofficial survey is confirmed, an important transformation of home into electronic workplace is currently under way in Argentina.

In 2003 in Brazil, a study of 2 000 large companies in the Sao Paulo area indicated that approximately 2 % were practicing telework. On this basis, a tentative projection of the spread of teleworking in Brazil has been attempted, with the total number of teleworkers calculated at 4–5 million, i.e. about 5 % of the

Brazilian working population. In 2003, according to Frost & Sullivan market analysts, call centers employed 500 000 agents concentrated in Sao Paulo and Rio de Janeiro, 8 % more than in 2002.

Tele-homeworking in Chile is developing, although no official statistics can be given. However, according to expert Pedro Rivadeneira, Manager of Teletrabajo tWork, approx. 300 000 Chileans are estimated to be involved in this form of work (Di Martino, 2004).

#### 4.7 USA

USA has the leading position in telecommuting, included in many surveys listed from 2000 to 2005, as shown in Table 5.

Table 5. Survey genesis in US from 2000 to 2006

Survey	Year	Millions of workers	Definition
U. S. Census	2000	4	Worked from home most of previous week, includes salaried and self-employed
Cyber Dialogue	2000	16.3	At least once/month: 7.4M full-time workers, 4.3M part-time, 4M contract
Current Population Survey	2001	3.4	Wage and salary workers, doing some paid work at home for main job
RECS (EIA2001)	2001	3.6	Households responding “YES” to “Does anyone work on your computer at home instead of traveling to their employer’s place of business?”
American Interactive Consumer Survey	2004	44.4	“Employed Americans who performed any kind of work from home, with a frequency range from as little as 1 day/year to full time”
American Community Survey	2005	4.8	Answered “Worked at home” in response to the question “How did this person usually get to work last week?”
IDC	2005	9.1	“Worked from home 3 or more days each month during regular business hours”
WorldatWork	2006	12.4	“Regular employee who works remotely at least one day per month during business hours”

		16.2	“Self-employed individual who works remotely at least one day per month normal business hours”
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Source: author according to (Mokhtarian at al. 2004; ACS, 2006; WorldatWork, 2006, GlobalworkPlaceanalytics, 2007; Hooper 2011).

The oldest published data are from 1960 to 2000 by CENSUS, as presented in Table 6 below, listing the number of homeworkers and percentage change in a 10-year period.

Table 6. USA –Total Workers and Homeworkers: 1960 to 2000

Census Year	Number of workers worked at home	% worked at home	10-year period	% change worked at home
1960	4,662,750	7.2		
1970	2,685,144	3.5	1960 to 1970	-42.4
1980	2,179,863	2.3	1970 to 1980	-18.8
1990	3,406,025	3.0	1980 to 1990	56.2
2000	4,184,223	3.3	1990 to 2000	22.8

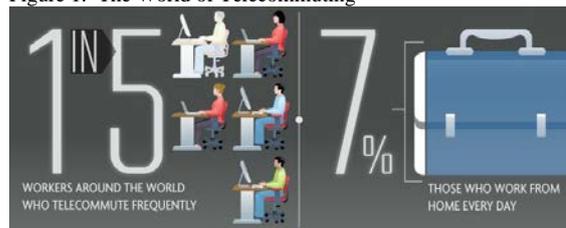
Source: author according to (Census, 2004)

The latest statistics on the work-at-home and teleworking American population are from January 2016, based on an analysis of the 2005-2015 American Community Survey (US Census Bureau) data, conducted by GlobalWorkplaceAnalytics.com. While there are no Census Bureau or government-produced data to provide additional granularity on the frequency of telework, Global Workplace Analytics' research finds that 50 % of the US workforce holds a job that is compatible with at least partial telework and approximately 20-25 % of the workforce teleworks at some frequency. 80-90 % of the US workforce state that they would like to telework at least part-time. Two to three days a week seems to be the sweet spot to allow for a balance of concentrated work (at home) and collaborative work (at the office), Fortune 1000 companies around the globe are entirely revamping their space around the fact that employees are already mobile. Studies repeatedly show that they are not at their desk 50-60 % of the time. On average, a telecommuter is college-educated, 49 years old, and earns an annual salary of \$58 000 while working for a company with more than 100 employees. 75 % of employees who work from home earn over \$65 000 per year, putting them in the upper 80th percentile of all employees, home- or office-based (Globalworkplaceanalytics, 2017).

Regular work-at-home, among the non-self-employed population, has increased by 115 % since 2005. 3.7 million employees (2.8 % of the workforce) now work from home at least 50 % of the time. The employee population as a whole increased by 1.9 % from 2013 to 2014, while the number of employees who telecommute increased by 5.6 %.

To summarize this topic, we use the results of the survey from IPSOS about the World of Telecommuting which indicates that about 20 % of employees worldwide spend at least part of their working week doing work from home. While telecommuting is relatively common, views and practices are far from standard around the globe (Davidson, 2013). 1 in 5 employees worldwide telecommutes frequently and 7 % of employees work from home every day (Figure 1).

Figure 1. The World of Telecommuting



Source: (Howdoibecomea, 2018)

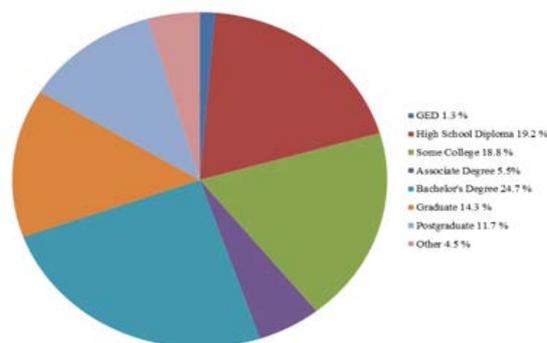
For those who do not have the opportunity to telecommute, one of the main reasons is that their employer requires them to be in their workplace e.g. in USA 38 %, Great Britain and Canada 37 %, Sweden 36 % versus Indonesia 4 %, Mexico 6 %, India 7 % and China 8 %.

While 6 out of 10 employees worldwide would be likely to telecommute full-time if their employer allowed it, opinions on the benefits of such arrangements are mixed. This type of work would help to keep 83 % more talented women in the workforce instead of leaving to raise children. 83 % of telecommuters would have less stress because of spending less time at their workplace, 78 % of them state that they would have a better work-family balance, 62 % of telecommuters state that not seeing coworkers' face-to-face would isolate those who telecommute. Working remotely makes employees less likely to be promoted and, for some, telecommuting creates conflict by lowering the boundaries between work life and family life.

## 5 Results

The data used in this study were collected from October 19 to November 18, 2016 in an Internet online survey with a probability sample of 584 workers. The participants, who were randomly chosen, had jobs that required the use of ICT to accomplish their work tasks. The response rate was 52.74 %. 308 questionnaires were completed, 52 of them (8.90 %) were incomplete. In the sample, 48.1 % respondents were male and 51.9 % female, from different countries worldwide, 65.6 % of the participants were in non-management positions, 38.0 % were high school graduates or had some college education, and 56.2 % had graduated with a Bachelor's degree or higher. More details related to education are shown in Figure 2.

Figure 2. Highest Level of Education (N=308)



Source: author's own elaboration

Most of the respondents were from USA (21.10 %), Austria (16.88 %), the United Kingdom (13.64 %), the Czech Republic (7.47 %), Slovakia (7.14 %), Italy (5.84 %), and Germany (4.22 %). More details are shown in Table 7.

Table 7. Percentage of participants by nationality (N=308)

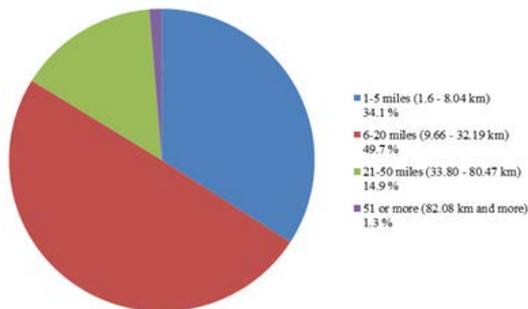
Country	%
Australia	2.27
Bosnia	0.32
Brazil	0.32
Canada	1.95

China	0.65
France	2.60
Hungary	0.65
India	0.65
Japan	2.92
Latvia	0.65
Lithuania	0.97
New Zealand	1.62
Poland	1.30
Russia	1.62
South Korea	0.32
Spain	1.30
Switzerland	2.27
The Netherlands	0.32
Turkey	0.65
Ireland	0.32

Source: author's own elaboration

In many studies, research has connected "homework" with the term "commuting to work" as an important advantage. For this reason, we also included these data in our questionnaire, where most respondents (49.7%) commute 6-20 miles to work (9.66 - 32.19 km). See Figure 3.

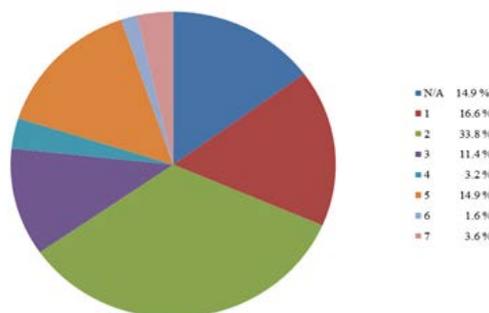
Figure 3. Commuting to work in miles (km), (N=308)



Source: author's own elaboration

Results of the survey show a clear distinction between homeworkers (32.8%) and those who do not work at home (67.2%), but we note that there is a large demand by employees to work at home (Figure 4).

Figure 4. How many days per week would you be willing to work at home? (N=308)



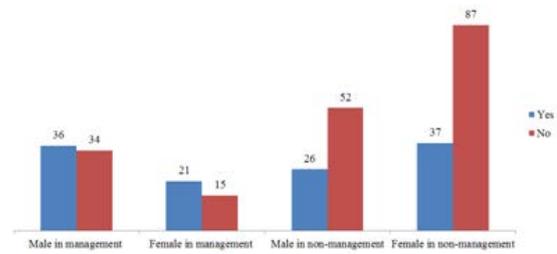
Source: author's own elaboration

Only 14.9% of respondents did not tend to choose the possibility of working at home, versus 85.1%, most of whom would prefer to work at home for 2 days per week. If we examine it from the male viewpoint, we discover that only 17.14% refuse homeworking and 82.86% tend towards it. Out of 70 respondents in management positions, most prefer to work 1 or 2 days per week at home. In non-management positions, out of 78 respondents, 14.10% reject homeworking versus 85.90% who are interested in it, preferring 1, 2 or 5 days per week. The female viewpoint is clearer, as 8.33% reject homeworking and 91.67% tend towards it. Out of 36 respondents in management positions, 1, 2 and 5 days per week are preferred. Out of 124

respondents in non-management positions, 16.13% dislike homeworking versus 83.87% who are interested in it, preferring to work mostly 1, 2, 3 and 5 days per week at home. In our opinion, the reasons that employees might have a preference for homeworking could be for a better work-life balance (e.g. time saving, flexibility, calm atmosphere), meeting family demands, not having to commute to work, financial costs, etc. However, these will be discussed in a later section.

It is evident that respondents do have a demand for remote work (under remote work, we understand work in an environment other than the employer's workplace, e.g. working from home or from another feasible environment e.g. hotel, beach, in transit, etc.). Only 39.3% of organizations offer a Home Office, versus 60.7% who do not. However, 49.7% of employees would like to have this opportunity and only 11.7% reject it. Figure 5 depicts the response by gender and between management and non-management respondents, with reference to the Home Office possibility in companies. We determine that 63.75% of females in management and non-management positions do not have the possibility of working in a Home Office, compared to 58.11% of males in management and non-management positions. As far as we are aware this result has further strengthened our confidence in missing policy of this type of work.

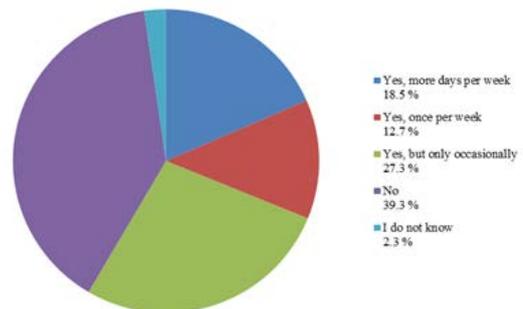
Figure 5. Home Office opportunities in organizations, number of respondents (N=308)



Source: author's own elaboration

The next topic regarding working at home provides the most remarkable result to emerge from the data is that 58.8% of the respondents practice the work whole or in part at home, where only 39.3% do not work full- or part-time at home as illustrated in Figure 6. The results indicate important evidence that in this section employees are also included who do not have a Home Office possibility. It is fundamental to note that 10.7% of the this group always take work home, 46.8% sometimes take work home, and only 17.9% never take work home. 47.7% of respondents spend 1 day per week working at home, and 28.2% spend 2 days working at home. This confirms our suggestion that the idea of working at home does not make employees feel less able to finish their work on time, as 75% of them answered this question in the negative, while only 11.4% were concerned about it. People do not want to work at home, as they have fear to not finish the work on time because of many interruptions, or depends on people's personality.

Figure 6. Do you work full- or part-time at home? (N=308)

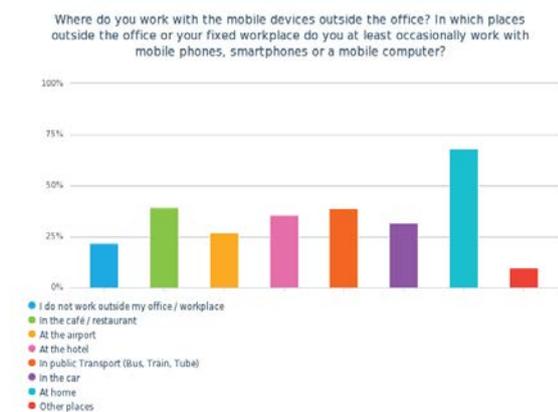


Source: author's own elaboration

Information and Communications Technologies (ICTs) are transforming not only our society and the economy, but also the way we use them in our work. These products are used by most people, ranging from mobiles, smartphones, tablets to personal computers and the World Wide Web. The more ICT is used at work, the greater flexibility and permeability will be its domain.

According to the issue of ICT utilization, we focused on the field of mobile devices outside the office, the places in which people work, which data and applications they have access to online when they are commuting to and from the office, and what professional activities they practice with electronic media on their way to work. Only 21.8% out of 308 respondents do not work outside the office and can be identified as office workers who reject any possibility of changing this situation. Out of 308 respondents, more than 68% of homeworkers use ICT devices outside the office. Further, we affirm that the utilization of ICT mostly takes place everywhere e.g. in cafés, restaurants, hotels and airports, in public transport, in cars, taxis and other venues, as shown in Figure 7. 76.6% of respondents use ICT for checking emails or Calendar, 47.4% for editing, changing or writing documents, 28.2% for using company-specific applications (programs). Most respondents use mobile devices for communication with organizations, use electronic media for phone calls, reading and writing emails. 30.2% of the total respondents use ICT for browsing the Internet, searching for contents for the company, and 24.4% for editing documents.

Figure 7. Utilization of ICT outside the office (N=308)



Source: author's own elaboration

The world's leading ICT firms (Microsoft, Apple, IBM, Oracle, Cisco) provide a unique perspective on this issue, holding tremendous promise as an enabler of social and economic progress, managing and disseminating knowledge to tap into global networks of information and services. Rapid innovations in technology are making the use of these less expensive and easier. The survey shows the unique outcome of 100% utilisation of software in our globalised world. Out of the 7 selected world-renowned software providers, most of our respondents (77.2%) use Windows OS, 62.9% are Microsoft users; 11.4% are users of Apple and 2.6% of Linux. 6.8% use other software, such as Google, ESSBASE, Online Management System, WAMAS Logistic software. This is depicted in Table 8.

Table 8. Software Utilization (N=308)

Software	Total Share in %
Windows OS	77.2
Mac OS	11.4
Linux OS	2.6
SAP	36.8
Sage	14.7
Microsoft	62.9
Social Media	14.3
Other	9.7

Source: author's own elaboration

Is working from home less problematic, more productive, or why do employees prefer to work at the office? Some people consider working from home rather problematic. One reason from our point of view could be that he/she shares their home office with pets, he/she has to take care of children while speaking to customers, which does not facilitate good communication. These were only few examples of disinterest. On the other hand, many people with young children stress that homeworking is a way of combining family and work.

Our respondents appreciate the fact that, while working at home, they are not interrupted by office gossip, noise, disliked colleagues, etc. Only a few of them miss the social interaction. Others, on the contrary, miss contact with colleagues when working from home. 239 of all respondents see the contact with colleagues as a great plus for working in the office. We think that for some people, working in the office is beneficial for the quality of work and as a counterbalance to Home Office isolation. So they prefer commuting (also part-time) to the office, so as not to miss out on the productive atmosphere and companionship of colleagues. 34.4% of respondents state that presence is very important, many things can be discussed and explained face-to-face better than at home. 131 participants prefer the separation between professional and private life.

The greatest benefits with regard to the traditional office are the skills which they can acquire in the office, e.g. behavioral and interpersonal skills (129 answers), creativity (67 answers), more experience (87 answers), and building relationships (22 answers). Respondents think that most employers reject working from home even when it is required. 15.6% of respondents think that a Home Office can lead to isolation, one works non-stop, is always on the alert (Table 9).

Table 9. Benefits of traditional office (N=308), answers

Contact with colleagues	239
Presence is important	106
Separation between professional and private life	131
Home Office leads to isolation	48
Most employers reject homeworking	48
Systematic networking	44
Time management	108
Become more experienced	87
Become creative	67
Behavioral and interpersonal skills	129
Build relationships	22
Face-to-face contact	14

Source: author's own elaboration

Our 201 respondents understand the benefit of a Home Office as being the flexibility. 100 of them think that this type of work makes work more flexible, one can focus better on work and will not be disturbed by a bustling office atmosphere (Table 10).

Table 10. Benefits of Home Office (N=308), answers

Generally better work-life balance	152
Flexibility	201
Better quality of workplace (environment, technology)	82
Home Office is the best option for not having to commute to work	99
Working from home leads to more contentment	61
Higher satisfaction with work	72
Home Office makes work more flexible	100
Home Office provides more career satisfaction	54
Time saving and time management	197
Home workers are happier and more loyal	53
Peaceful environment	25
More time for family	13

Source: author's own elaboration

The discussion about a Home Office also shows that work organization has changed during recent decades. We estimate that older people would not prefer this type of work; the idea is spreading among younger people and people of the new digital

world. The benefits of working from home are evident to homeworkers: 64.0 % think it saves time and 49.4 % that a better work-life balance can be achieved. 26.6 % mention a better quality of workplace. People working from home actually work more overtime than their colleagues who have never worked from home. The difference between work and leisure is, however, also evidently blurred for others. In their leisure time, 85 of all managerial staff deal with work calls and 70 reply to urgent emails after work. The culture of attendance that is still rooted in many companies functions in working from home. 34.4% of the participants said that attendance is important.

Work Life Balance are three words that are currently popular. In our view working from home is often celebrated as the solution to this problem. Our findings demonstrates it because 32.1 % of respondents save time on commuting, it allows a better balance between work and all other activities, as stated by 152 respondents. From our own experience of a Home Office, we are in the office a maximum of 2 days per week, when we are happy to meet other colleagues and cooperate with them. In spite of the fact that the commute is 45 minutes each way, we are no longer stressed because we do not have to do it every day. 23.4 % are more satisfied with their work, working from home makes 61 of them feel more contented and 54 of them feel more career satisfaction, 17.2 % are happier.

Working alone or from home is as expected not for everyone. Those who have to battle to meet deadlines or to avoid postponements, or who often find themselves clicking from one reference to another will not make any progress. Very likely such persons will fare much worse in a Home Office than in a real office. Self-discipline is important, with a clear determination of time constraints, as well as the care of your own biorhythm, needs and habits. Reality shows that only a few people would take working from home as a voucher for leisure and idleness. Remote working, which means being able to work from home, increases your productivity and creativity. The correct resources are essential for remote work. Email and mobile phone are alone not sufficient for homeworking.

## 6 Discussion and Conclusion

Evidently, those who have researched teleworking will be aware, there are numerous definitions of the phenomenon and variations concerning where to draw boundaries around this working practice. Telework has been seen as simply one form of flexible labour among others which could be clearly located within contemporary discussion of the need to develop firms which could adapt more easily to market changes. Meanwhile, telework should have been the subject of policy discussions which can inspire research to provide the public image of this form of working to show the main benefits such as reducing unemployment and the costs, saving the environment and other.

This paper has both emphasized how much diversity exists, and has indicated some main dimensions based on online survey. The first aspect is the attention given the dynamics of telework (benefits, Work Life Balance etc.) and second aspect is the very specific question of the experience of ICTs.

A global increase in alternative forms of work and employment is currently observed, entailing alternating working at home and in the main office. According to our results, the factors contributing to the rise in the number of staff working from home include the fact that employers are seeking to reduce office spaces, utility bills; technology makes it easier, more employees request some flexibility in workplaces and working hours; an increasing number of employees have the responsibilities of caring for a family; rising costs of commuting, government policies, employees and employers reporting the success of homeworking.

Technological developments have a crucial impact on the labor market. On one hand, more and better skilled professionals are needed and, on the other hand, new forms of time management and working arrangements are required. The latest requirements

concern a more flexible labor market, where people can work flexible and not fixed hours, such as early in the morning, in the evenings, at night, etc. and in different locations or spaces such as at home, in trains, buses, libraries, parks, etc. Modern ICT offers the opportunity of a high degree of working independence and, most probably, of the greater expansion of teleworking in the near future.

Mobility in the workplace is increasingly emerging. By 2015, the results from IDC research showed that the world's mobile working population reached 1.3 billion, i.e. 37.2 % of the total workforce, which is 300 million more compared to 2010 (The Rise of Mobility, 2017).

The aim of this paper is to emphasize the importance of homeworking rather than working in the office, to identify the specific advantages and disadvantages, distinguishing between them. A total of 308 individuals from many countries worldwide took part in the online survey. The interest in working at home, how the intensity of working in a Home Office affects productivity, coping with demands, communication, work-life balance, career satisfaction were analyzed.

The overall results indicate that people prefer to work at home, that a Home Office has a positive influence on the personal work experience. However, at the same time, a subgroup of 11.7 % reports no interest in homeworking. The following data suggest a part-time period of 2-3 days per week in the Home Office as a positive factor for the success of this new form of working. It is conceivable that individuals who are more open to new experiences will profit from working in the virtual world, experiencing a more flexible working arrangement, while expending less energy to adopt this new work design. Solitude may also play a significant role for highly self-disciplined persons, who are probably better able to work efficiently at home and to schedule their workday.

From both the survey's findings and the literature review, it can be stated that the Home Office business model can be observed as the new future challenge to employment. Global connectivity, smart machines, and modern media are just some of the drivers reshaping how we think about work, and the skills that we need to be productive contributors.

The Home Office business model can benefit the employee, the employer, and the new digital society. This study presents the data to substantiate that claim, provided the program is initiated correctly. We are confident that it will be a strong and valuable tool that management can use to attract and retain good employees. By retaining a workforce that has superior future potential, a company may gain the competitive advantage it needs to compete in the global marketplace. With increasing focus on quality family time and environmental concerns, homeworking provides employers the option of successfully dealing with these issues.

As far as we are aware, reducing commuting time and providing opportunities for employees to have a better work-life balance can increase employee well-being. A flexible workplace attracts and retains quality employees. Providing occasions for engagement of workers with the organization is a crucial element of working anywhere. It is important to note that organizations have to find an engaged workforce with the skills and capabilities of delivering exceptional customer service.

The management of all companies should seriously consider this alternative working arrangement, as it creates a strategy for success. We found that managers play an essential role in creating a successful homeworking environment. The majority of employees believe that their relationship with the company is based on mutual trust. However, managers should be aware of the benefits and limitations of this H.O. business model, to ensure that it provides workers and the organization with sustainable benefits while reducing the limitations.

Despite the benefits associated with homeworking, as detailed in this report, and the statistics indicating that homeworking as a flexible working practice is on the increase, we have to note that the adoption of certain flexible working practices can be quite tenuous. Our case study research initially comprised many organizations. This suggests that the adoption of homeworking may still be quite fragile in many organizations, even those publicly lauded for their successful implementation of flexible working practices.

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**Primary Paper Section:** A

**Secondary Paper Section:** AE, AH