



Business Innovation Observatory



Workplace Innovation

Solutions for enhancing workplace productivity

Case study 10

The views expressed in this report, as well as the information included in it, do not necessarily reflect the opinion or position of the European Commission and in no way commit the institution.

Workplace Innovation

Solutions for enhancing workplace productivity

Business Innovation Observatory
Contract No 190/PP/ENT/CIP/12/C/N03C01

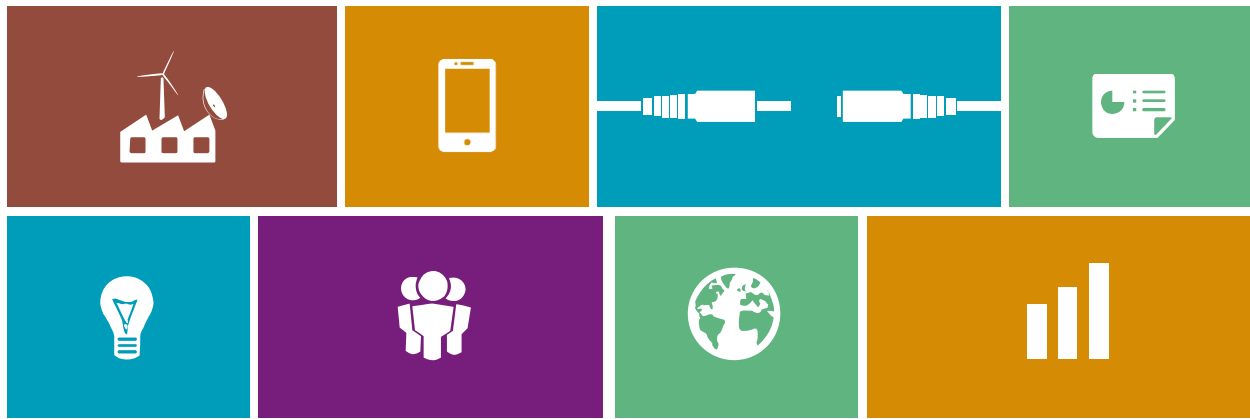
Authors: Kristina Dervojeda, Diederik Verzijl, Fabian Nagtegaal, Mark Lengton & Elco Rouwmaat, PwC Netherlands, and Erica Monfardini & Laurent Frideres, PwC Luxembourg.

Coordination: Directorate-General for Enterprise and Industry, Directorate B “Sustainable Growth and EU 2020”, Unit B3 “Innovation Policy for Growth”.

European Union, September 2013.

Table of Contents

1. Executive summary	2
2. Understanding the trend of enhancing workplace productivity	3
3. Socio-economic relevance	4
3.1. The market potential of the trend	4
3.2. The socio-economic effect of enhancing workplace productivity	5
3.3. The benefits of workplace productivity enhancements	6
4. Drivers and obstacles for solution providers	9
4.1. Access to finance is essential for scaling up	9
4.2. The importance of partners in the start-up phase	10
4.3. Building a critical mass of consumers in an early stage	10
4.4. Market focus of companies	10
5. Client perspectives and challenges related to the uptake of workplace innovation	11
5.1. Drivers for the uptake	11
5.2. Barriers to uptake	12
6. Policy recommendations for further uptake	13
7. Appendix	15
7.1. Interviews	15
7.2. Websites	15
7.3. References	15



1. Executive summary

Enhancing workplace productivity entails improvements to the efficiency of production by any organisation employing personnel. This trend study deals with organisations that develop solutions to enhance workplace productivity and flexibility through business innovation driven by technology and ICT. The case study also reflects upon the uptake and the socio-economic benefits of these solutions.

The market demand for these solutions covers all sectors of the economy and addresses every possible workplace where labour is put to use. The market boundaries for companies active in this field are set through geographical focus, size of the customer or product-market combinations. It is, however, hard to quantify the market potential for solution providers of workplace innovation. Nevertheless, the versatile applicability of this innovation type does highlight its potential to generate value in nearly all industries.

The socio-economic effect of solutions for enhancing workplace productivity is significant and is essential for future economic growth in Europe. At the level of the employee, workplace innovation solutions that result in more mobility might lead to greater flexibility and better work-life balance. However, the case of the latter is constantly under discussion amongst researchers that find mixed results, indicating that blurring boundaries between work and private life might also harm this balance. At the level of organisations, workplace innovation enhances productivity, enables organisations to recruit and retain talent better, and lowers real estate cost whilst offering possibilities to reduce the environmental footprint of these organisations. From a macro perspective the benefits of enhancing workplace productivity can be linked to sustainable economic growth at the country-level.

Europe's ability to realise the socio-economic potential of this trend is hindered by: the resistance to change by organisations considering the implementation of mobility

measures; the lack of skills of middle management to manage more flexible employees; and the (perceived) cost associated with implementing more mobility into work processes. In contrast, the drivers for the uptake of the trend are the employee's perceptions of flexibility, productivity and reduced commuting; a clear business case for organisations offering cost reductions on operational cost; environmental benefits; the availability of ICT infrastructure and broadband internet access; and the increased range in the age and skillsets of the workers.

The drivers and obstacles for business development for providing these workplace innovation solutions have been analysed on the basis of four case studies of different companies within this trend. The biggest driver highlighted by companies is the willingness to adopt workplace productivity enhancing solutions. The case studies also indicated that the companies faced typical entrepreneurial drivers and obstacles. In spite of there being few barriers to entry, businesses offering work place innovation solutions face obstacles in accessing finance in order to grow beyond the start-up phase. Moreover the cases stressed the importance of partners in this phase, building a critical mass of consumers early on, and the driving role of public support.

In order to overcome the obstacles, policy recommendations have been made in relation to adopting a long-term perspective. For instance, by launching EC and national government pilot projects, Europe could lead by example and address regulatory challenges hampering workplace innovation. Moreover, policy makers should take into account national differences in adopting the trend. Also, market actors need to be better educated on the true cost and benefits of workplace innovation. Finally, it is recommended that an analysis is to be performed on how governmental support mechanisms aimed at organisational uptake of workplace innovation may be used to stimulate the growth of firms offering workplace productivity enhancing solutions.



2. Understanding the trend of enhancing workplace productivity

Enhancing workplace productivity is paramount to surviving in today's fast-paced environments. We are constantly challenged to do more tasks in less time.

Over the past few years, organisations across the globe have changed dramatically in response to the forces of globalisation, economic uncertainty and the consumerisation of IT. These forces are fundamentally altering the way businesses are managed and operate. In this world, new ways to improve workplace productivity are no longer nice to have; they are essential for the workplace of the future.

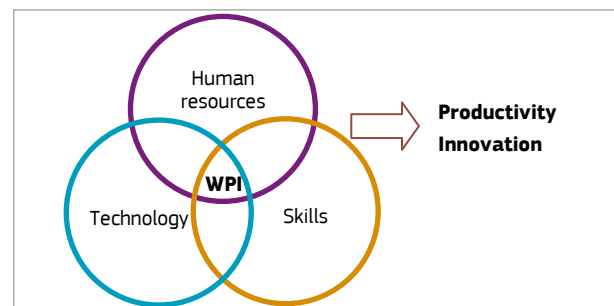
Enhancing workplace productivity through innovation comprises a business innovation trend **driven by technology and ICT**. This aspect of workplace innovation must be distinguished from enhancing workplace productivity through organisational innovation, which is the implementation of a new organisational method in the firm's business practices, workplace organisation or external relations. Innovations in organisations involve the implementation of new methods for distributing responsibilities and decision making among employees for the division of work within and between firm activities (and organisational units), as well as new concepts for the structuring of activities, such as the integration of different business activities.

Enhancing workplace productivity is paramount to surviving in today's fast-paced environments. We are constantly challenged to do more tasks in less time. This trend entails the creation of new ideas, services, products and organisations that facilitate the daily office work and increase productivity, such as coherently coordinating appointments, the reliable management of office documentation or enhancing workplace environments by moving away from common workplace conventions.

Workplace innovation is the underlying trend and is a generic term to cover – notably but not only – innovations in the way enterprises are structured, the way they manage their human resources, the way internal decision-making and innovation processes are devised, the way relationships with clients or suppliers are organised or the way the work environment and the internal support systems are designed. Workplace innovation is a reflexive process, grounded in continuing reflection, learning and improvements, and involving employees and managers at all levels.

Workplace innovation lies at the intersection of skills, technology and human resources (HR) management (Figure 1). The three elements co-exist and are interdependent; where technology adoption is driven by HR strategic policies, managers are likely to create enough momentum to change the work process and consequently to invest in training and upgrading of skills to support the innovation. Conversely, the lack of skills, coupled with a static HR management will most likely represent a barrier to technology adoption, and hence to workplace innovation. HR practices are found the most effective when they are implemented together and in concert with new capital or technological investments. Figure 1 represents the dynamic interaction between internal and external factors affecting workplace innovation.

Figure 1: Workplace innovation (WPI) as a process



Source: Beblavy et al. 2012

Workplace innovation driven by technology and ICT is accredited in academic literature for productivity growth within organisations, through work systems and human resource management practices that foster high commitment, high involvement, and high performance, and that focus on creating a positive working environment that attempts to leverage on the development and utilisation of the knowledge of employees and ability to generate valuable new insights. Such practices may include selection criteria, training curricula, mentoring programmes, incentives structures, knowledge-sharing practices, partnership-based labour-management relations, shared decision making mechanisms.

In a more dynamic and future-oriented view of this trend, Beblavy et al. (2012) distinguished three future-oriented **sub-trends** that pertain to enhancing workplace productivity through the adoption of technology¹:



- **Fragmentation and disaggregation of labour.** This can be understood in several ways: in terms of the spatial-geographical dimension it concerns those workers who no longer work just from 9 to 5. There is also a reorganisational dimension which is related to the re-distribution of these tasks to different workers/software/machines, rather than to different times of the day or locations. It is “a process whereby a certain activity is divided into several smaller pieces, which are performed at different times and/ or locations”. ICT certainly plays a strong role in this process. Nonetheless, if usage of ICT is certainly associated with fragmentation, the causal relationship is not clear and the results indicate that work, personal and home-related factors play a much stronger role.
- **Cloud labour.** This sub-trend entails paid labour that gives the possibility to assign a specific task – for example the creation of a code for a web programme, a translation or data collection – to a worker in an unspecified location. The term is first used by the US National Institute of Standards and Technology (NIST) and has five characteristics: on-demand self-service, broad access, resource pooling, rapid elasticity and measured service.
- **Virtualisation.** This sub-trend involves virtual teams, but also teleworking, co-working, and the use of social media in the workplace. Virtual teams can be defined as groups of geographically, organisationally and/or time dispersed workers brought together by information technologies to accomplish one or more organisation tasks.

3. Socio-economic relevance

3.1. The market potential of the trend

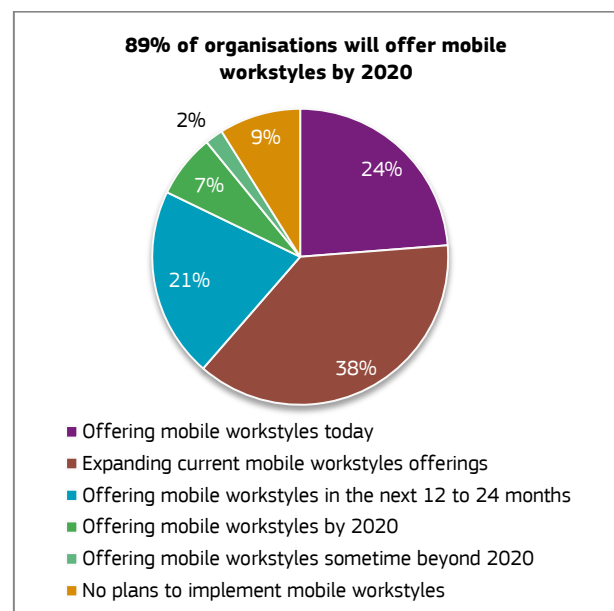
Clearly the market potential of enhancing workplace productivity by leveraging technology is large as it concerns the whole economy in all its aspects. The companies interviewed for this study, all indicated that their target market consists potentially of all corporations and other organisations active in the economy where labour is involved. The boundaries are set through geographical focus, the size of the customer and/or product-market combinations. Nonetheless, the market potential for this trend covers every organisation that employs people. It is, however, **hard to quantify the market potential of the workplace innovation.** The impact of the type of innovation described in this case study is transversal, as it is not limited to a particular industry or market. The companies that were sampled in this study do not show much overlap with regard to the markets they supply. The versatile applicability of this innovation type does, however, highlight its potential to generate value in nearly all industries.

In assessing the market potential for goods and service related to enhancing workplace productivity, a good indicator is **the adoption of workplace flexibility in different countries.** This was also confirmed in the interviews with several companies. Regions with a high adoption rate of all kinds of mobile work practices proved to have the highest market potential for the interviewed companies.

Looking closer at company level provides some interesting insights into the adoption of the main driver for workplace productivity enhancement. The demand for the technology driven workplace productivity enhancements is driven by the willingness of organisations to adopt mobile work styles.

Research by software company Citrix among 1,900 senior IT decision makers at companies around the world found that mobile work styles are already embraced by the majority and adoption continues to grow² (Figure 2).

Figure 2: The current and future adoption of mobile workstyles



Source: Citrix Workplace of the Future report 2012

A quarter (24 percent) of organisations surveyed under this research has fully introduced mobile work styles already, with a further 38 percent expanding their current deployment. An additional 21 percent plan to implement it within two years. The total number of organisations that have implemented mobile work styles will rise from 24



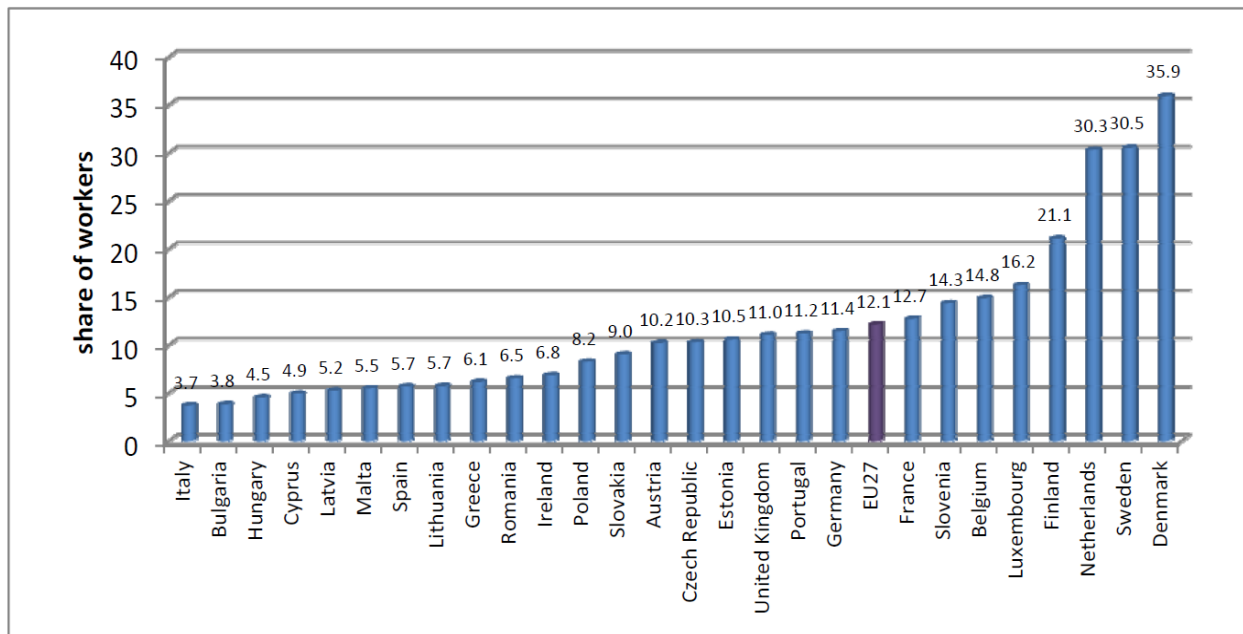
percent in 2012, to 83 percent in 2014. That is a compound annual growth rate of 86 percent. Only 9 percent of organisations do not have plans to adopt mobile work styles.

The data obtained through **the 5th European Working Conditions Survey (2010)** sheds some interesting light on the adoption of workplace flexibility. Probably the most widespread workplace innovation is the ability of workers to choose their working time, which affects, in one way or another, 40% of European workers according to this survey. The second type of workplace innovation that was examined was telework, measured as the share of workers who have

as their main place of work their employers' or own business premises and their home as a second option (Figure 3).

The European average is 12%, but there are major cross country differences. In the Netherlands, Sweden and Denmark, this share exceeds 30%, whereas employers in Italy, Bulgaria, Hungary and Cyprus provide this alternative for less than 5% of their workers. EU27 aggregate data by sector illustrates that workers who are allowed to work from home, are more numerous in four sectors: real estate, professional and scientific activities, education, and information and communications.

Figure 3: Share of office workers who also work from home (%)



Source: 5th European Working Conditions Survey (Eurofound, 2010a)

3.2. The socio-economic effect of enhancing workplace productivity

Assessing the socio economic relevance of enhancing workplace productivity can be approached from a macro and a micro, organisational perspective. At the organisational level, the literature generally provides support to the thesis that workplace innovation yields beneficial results. Large-scale survey research has demonstrated that workplace innovation is positively related to the performance of organisations³. However, organisational innovation is indispensable for productivity growth, as product and process innovation can only increase productivity (usually measured in Total Factor Productivity – TFP) when it is accompanied by organisational innovation. This holds true for all sectors, and is most noticeable in the service sector. Even the impact of ICT innovation, often used to explain differences in productivity between American and European companies, is achieved in combination with organisational innovation. As such, workplace innovation can be tied to

performance premiums of up to 30 percent for organisations investing in workplace innovation⁴.

From a macro perspective, the benefits of enhancing workplace productivity can be linked to **economic growth** at country level **while at the same time reducing the environmental footprint of society** (i.e. sustainable economic growth). Enhancing workplace productivity is directly linked to labour productivity, i.e. the value of goods and services produced in a period of time, divided by the hours of labour used to produce them. Clearly, enhancing workplace productivity through smart, innovative solutions applied at the workplace increases labour productivity. The increase of productivity is essential for future economic growth across all countries and is one of the biggest challenges of national governments these days.

To achieve (even modest) GDP increases in the coming years, OECD nations would have to generate significant productivity gains. In the 1970s in the United States, roughly 80 cents of every dollar in GDP growth was generated by a growing



labour force. For the coming decade, it is expected that labour force growth will account for less than 30 cents of every dollar added to GDP, leaving the remaining 70% to be generated through productivity gains on the work floor⁵.

The challenge is even greater in the European Union, where no growth in the workforce is expected. Here, in other words, 100 percent of GDP growth must come from productivity gains. And in Japan, the hurdle is higher still: because of a shrinking labour force, each worker will have to increase output by 160 yen to generate an additional 100 yen of growth⁶.

Therefore, **enhancing workplace productivity lies at the heart of national economies and economic policy**. It is imperative to unravel the success factors, drivers and

obstacles behind this trend. In order to better understand and assess the market and the socio economic relevance as well as the applications of workplace innovations, four SMEs were selected that have demonstrated commercial success through different activities in enhancing workplace productivity (Table 1). These firms offer a wide range of workplace innovations to their customers. By showcasing their products and services we will demonstrate how this novel business innovation can lead to successful business development and growth. The companies featured in this case study do not yet generate sky high revenues, yet they all have started out small and their number of staff has increased as their business grew. The development and application of the solutions offered by these companies is done by highly skilled professionals, most of them university graduates in business studies or ICT studies.

Table 1: Company case studies

Company	Location	Business innovation	Success signals
Novapost	France	Online services to ease and rethink HR document management (Software as a Service – SaaS)	Since 2009 growth of over 100% turnover each year and already profitable in an early stage; over 100 customers in France and manages over 300.000 employees
All-Desk	Portugal	All-Desk is a global marketplace for offering, finding, booking and administering short term meeting rooms and offices.	Finalists of the IT&Web track of the MIT Competition, securing a 100K seed investment
OfficePod	United Kingdom	Mobile workplaces	Early customers were from wide spectrum of business sectors and proved need for quality private space.
Better Workplace	Canada	On-line tools that help organisations optimize their triple bottom line performance through Intelligent Work Places and Intelligent Work-Practices (SaaS)	Large number of customers across different industries in the US and Canada

3.3. The benefits of workplace productivity enhancements

The company case studies indicated that users of their solutions see multiple benefits as a direct result of mobile work styles strategies provided for by their solutions, which is also confirmed in literature. Globally, the majority reported four possible specific advantages for employees:

- increased flexibility for employers as well as employees;
- increased personal productivity of employees;
- reduction in commuting time;
- better work/life balance for employees.

The latter possible advantage is under debate in literature since it also creates blur between private life and work. In that sense there is no conclusion on the net effect but in

some instances it might facilitate a better-work life balance. A report by KPMG (2011) based on a survey of 608 Australian employees indicated for example that fully-blended workers who have almost no dividing line between work and personal time reported that an excess of fragmentation can reduce productivity. Some of the workers indicated also that they experienced stress, blurring boundaries between work and personal lives, overtime work and difficulty in keeping track of hours worked.

More specifically, flexible workplaces enable employers to gain huge operational and strategic advantages by embracing mobile work styles to:

- Recruit and retain talent with cutting-edge policies for personal device usage and flexible work schedules;
- Offer modern, flexible, and economical workspaces that inspire people while reducing overhead and real estate costs;



- Increase personal productivity for people working anywhere by offering easy, yet secure, access to business resources.

The effects of working smarter through the solutions which enhance workplace productivity have been measured in some studies. Research by the Dutch Economic Institute for SMEs in 2008 among 650 Dutch SMEs indicated that companies with workplace development projects achieve higher productivity and financial results compared to companies that do not implement this kind of projects⁷ (see Table 2).

Table 2: Working smarter and performance

Performance criterion	SME's without working smarter	SME's with working smarter
% change in performance last 2 years		
Company results	2	18
Company turnover	7	15
Productivity	5	14
Employment	6	11

Source: Adapted from Hauw et al. 2009

The innovative solutions for working smarter of the interviewed companies address a variety of demands from customers and end users. Novapost provides software as a service (SaaS) solutions for digitalizing HR documents including the possibility to sign documents. All-desk is an enterprise that offers an online marketplace for short-term rental of office space and meeting rooms. The UK firm OfficePOD sells office and meeting pods which are highly mobile and facilitate flexible work arrangements. Better Workplace, another SaaS-company, based in North America, provides software and services that help organisations improve their performance through online workforce mobility management. Interestingly, Canada and the United States, the home markets of OfficePOD, have already implemented numerous regulations for enabling flexible work arrangements for workers and therefore this case provides a lot of insight in these markets.

Digitalization of HR documents to boost HR and employee productivity – In offices around the world the diversity and volume of documents outgoing, internal or incoming managed by HR teams is large. For example, in France, no less than 200 million payslips are published each year and are considered by HR managers as one of the most expensive documents. HR departments send out a lot of mail, from regular mailings to adhoc administrative mail such as payslips, responses to job applications and many other administrative mailings. These tasks are usually carried out within the HR office where efficient automated processes are not yet always available.

Innovative solution – Novapost provides software as a service (SaaS) that enables companies and employees to digitize their HR documents. Easy, eco-friendly and secure solutions helping businesses to switch to paperless HR administration. In 2011 the company started PeopleDoc Enterprise, the first SaaS platform enabling the digitization of all employee files. In 2012, they launched PeopleDoc Signature, a module for electronic signature dedicated to human resources

Novapost was created in 2007, with the aim of offering an alternative to classical models of document control within companies. In 2008 the company launched their first complete paperless communication service between a company and its employees. This solution was based on a simple principle: a secure personal online account for every employee and a tool enabling the company to distribute thousands of documents to its employees in just one click. Original post or parcel methods were used for employees preferring to stick to paper forms. From 2010 and onwards Novapost concentrated its activities on the HR documents market.

The document solutions offered by Novapost benefits their clients in several ways. They boost productivity, save money and set a sustainable development policy to reduce the environmental footprints of their clients. HR services also mentioned other benefits: the permanent access to archived documents, shorter delays in information exchange and improved document management.

Novapost is a French Software as a Service company, founded in 2007 and headquartered in Paris, in France.



Enhancing workplace flexibility with finding and booking meeting rooms worldwide

– The real estate industry is more and more driven by sharing economy. This phenomenon (aka the share economy, the shared economy, the mesh or the collaborative economy) refers to economic and social systems that enable shared access to goods, services, data and talent. These systems take a variety of forms but all leverage information technology to empower individuals, corporations, non-profits and government with information that enables distribution, sharing and reuse of excess capacity in goods and services. Sharing economy business models emerge from our oldest instincts as humans – cooperation, sharing, generosity, individual choice and flexibility.

Innovative solution – All-desk.com is an online marketplace for sharing and booking temporary workspaces:

- Meeting rooms
- Co-working desks



- Conference rooms
- Small offices
- Training and workshop rooms

All-Desk offers customers the benefits of booking and renting out office spaces and meeting rooms located mainly in office buildings and hotels, thereby optimizing demand and supply for flexible workplaces in a manner that was unthinkable without the internet. Currently the website offers rental options for 13,000 meeting rooms at 3,400 locations in 32 countries. The website mainly serves business travellers profiting from the flexibility offered by All-Desk.

Founded in 2011, All-Desk is located in Portugal (Lisbon) and runs a website all-desk.com. The firm is planning to expand to London, United Kingdom.

all-desk ^{beta}
ALL OVER

Changing the way people work from home and outside-office locations – Typically many organisations find themselves constantly under intense pressure to make the best possible use of their resources, including their real estate. And of course, ensuring that employees are provided with a wide range of suitable accommodations for optimizing workplace productivity is a key objective for employers. Moreover there is a trend that more and more employees work from home because it allows employees to be more flexible in balancing work and life activities. These two trends have led to the development of mobile office and meeting pods by OfficePOD.

Innovative solution – The OfficePOD service provides a flexible and efficient workspace that creates significant cost, employee, environmental and productivity benefits. The pods are highly mobile and can be installed indoors and outdoors.

OfficePOD offers mobile meeting rooms and mobile office workplaces for employees and employers. These mobile office space pods offer users several benefits. Having an OfficePOD at a home location creates the ability for users to cut down on commuting and spend more time at home, yet be more productive in their office and be safer from day-to-day distractions.

Also, as employers increasingly look to flexible working and innovative ways of finding efficiencies without sacrificing productivity, OfficePOD offers an employer a flexible workplace solution that does not risk compromising the employee's welfare and productivity. Similarly, the employee needn't risk compromising the balance of their domestic environment. Moreover, used as part of a corporate real estate strategy, the OfficePOD has the

capability of bringing about significant reductions in CO2 emissions for both the employer and employee alike.

OfficePOD's CO2 research shows a potential 63% reduction in CO2 emissions when moving to OfficePOD from a traditional office⁸. Overall the mobile office products can offer companies and entrepreneurs a business case for bringing down operational costs on office locations.

OfficePOD was established in 2009 and is located in London, United Kingdom. The company serves clients in all kinds of industries around Europe.



Increasing workplace productivity through mobility management software tools – More than 100 million employees worldwide are going through a fundamental shift in how, when and where they work. If properly managed this work shift could trigger combined savings of roughly € 800 million annually for employees, their employers, and government agencies responsible for transportation, environment, and health. It would also cut 100-300 million tons of greenhouse gas (GHG) emissions.

Innovative solution – Better Workplace provides software and services that help organisations improve their performance through workforce mobility management. Their main software as a service offering WorkFit is a quick and easy way to assess how employees are working in your organisation, and the detailed reports will help you align company resources to provide an optimal match with your employees' mobile work styles - lowering cost, improving performance, and increasing environmental efficiency.

The Intelligent Enterprise System by Better Workplace can help an organisation realise millions in operational savings, improve employee effectiveness and substantially enhance environmental efficiency - directly impacting shareholders, employees and the communities where they live and work.

Employees could save on transportation costs, commuting time and CO2 emission. Likewise, organisations would benefit from lower real estate cost and other cost savings per employee per year and a lower building footprint. Better Workplace also describes the upside of their innovative survey service software for society as a whole for the Canadian market. A more flexible workforce offers \$1,500 -



\$7,500 in positive economic impact per worker year. \$43 Billion saved at the fuel pump every year due to decreased consumption, 3000 kg CO2 per worker per year, and a 44% reduction of non-commute related business travel with increased utilisation of telecommunications and video-conferencing technology.

Founded in Canada in 2001, Better Workplace offers analytic and decision making software for optimizing

mobility of employees. Their goal is to help the world's leading companies build more mobile workplaces and help drive sustainable change, positively impacting employees, employers and the communities where they live and work.



4. Drivers and obstacles for solution providers

There are a number of drivers encouraging and obstacles hampering the business development of the companies providing solutions for enhancing workplace productivity. These drivers and obstacles impact both the companies developing innovative workplace solutions and the adoption of these solutions by users in a range of different target sectors. Further detail on such drivers, as well as obstacles, are provided in this section.

4.1. Access to finance is essential for scaling up

Access to finance is the single most important critical success factor for the past and future development plans of the firms interviewed for this case study. Seed capital through business angels and bank loans in a later development stage were the most common ways to raise funds for the companies in their start up phases.

Some of the firms benefitted from financial subsidies, grants or business competition awards (Table 3). This depended on the regions they were located in.

Table 3: Source of funding for company cases

Company	Source of funding
Novapost	Business angels, bank loan, venture capital and government loans without interest
All-desk	MIT Competition, securing a 100K seed investment; seed funding from Portuguese national bank
OfficePOD	Funding from angel investors for development of prototype; built up a network of small and some large investors to support the second stage of growth
Better Workplace	Angel investors

Novapost managed to raise € 6 million since their start-up. In the first round they raised capital through ten business angel investors. Later on they raised capital twice through venture capitalists. Also in the beginning of their existence

they profited from a government loan with preferential conditions. In their interview the founders claimed that finance conditions in France are very good during the start-up phase but become more difficult once a company wants to enter the second stage of growth. Therefore Novapost is considering moving parts of their business to the United States. Portugal-based All-desk confirmed that, in general, Anglo-Saxon countries provide more fundraising opportunities to start-ups in their second growth stage than their home country.

In accessing finance OfficePOD has a network of smaller investors and a few larger investors who are willing to provide funds for the expansion of OfficePOD. In order to scale up, OfficePOD would like to move from a centralized manufacturing model to a decentralized manufacturing model which can serve more target markets in a flexible and more efficient manner.

Better Workplace is profiting from a favourable angel investor environment since their start-up. According to the company there is a growing interest in North-America from angel investors in supporting the development of enterprise software. They are not financed through venture capital although they have tried to acquire this type of funding. According to Glenn Dirks from Better Workplace, venture capitalists are interested in either taking part in a very early stage when they can obtain a large part of the company early on, or in a later stage when a company enters a mass market stage.

All-desk obtained seed capital through a business competition organised by the MIT University in the United States. Later on they also obtained seed funding from a Portuguese national bank which had an up- and downside to it. On the upside it provided All-desk with seed capital necessary for starting-up and early growth phase. However, the largest disadvantage of the seed capital was that the bank became shareholder and this prevented All-desk from attracting funds from other countries since the bank was only allowed to support Portuguese companies without any other support from financiers from other countries. This posed a restriction on the company.



4.2. The importance of partners in the start-up phase

The presence of other companies with complementary skill sets in their industry or related industries was indicated as a primary factor for successful start-up and development of the products and services offered by the companies. Proximity to these partners is important to facilitate the development of these companies.

The founders of Novapost did not possess any software development skills. These skills were necessary to develop their business ideas into concrete software solutions. Therefore they hired developers on a flexible basis. The problem at the start-up phase was that the management of Novapost could not assess the skills of the software developers. In their view everyone was a 'star' in developing software. Over time they gained experience in assessing these skills of translating their ideas into software.

OfficePOD is connected to a regional network of suppliers. The company had the idea behind the pod, designed the pod, and now sells the pod. The rest of the supply chain is outsourced to local partners. For OfficePOD the location of the supplying partners near customers is important. Therefore their desire to sell more pods abroad is accompanied by a new manufacturing model with suppliers in target markets.

4.3. Building a critical mass of consumers in an early stage

The firms that develop solutions for enhancing workplace productivity have a tendency to rely on a regional or a national market before being able to internationalise rather rapidly (Table 4). Moreover they started to really grow after getting a large company or organisation on board. Not only because of the larger sales volumes but also because it provides start-ups with good credentials.

Table 4: Market distributions for company cases

Company	Target markets
Novapost	Began with clients in France with over 1.000 employees
All-desk	Started with the Portuguese market and is looking to expand to the United Kingdom, more specifically London
OfficePOD	First target clients are in UK market, but OfficePOD is expanding to other countries with a favourable attitude towards flex-working
Better Workplace	The company sells its software services on the American and Canadian markets, these markets are large enough for short term expansion

Building a critical mass of consumers in a consumer driven market is an important factor for the success of a start-up in this industry. The companies under study often had to invest heavily in terms of capital and time of the founders, in developing software or developing their product or service. Leveraging on this upfront investment of time and resources implies gaining market share rapidly in order to become successful.

In order to enable growth at an early stage Novapost focused on three large companies to sell their software solutions for digitization of HR documents. Critical mass in their case refers to obtaining a few big fish with big names in order to survive. The obstacle of getting large companies on board is that they expect a very professional attitude and demand higher effectiveness of the solutions offered. For a small start-up it is hard to meet these requirements with a small team. Also Novapost mentioned that although they are a SaaS-company, face-to-face contact in selling their products is very important. Novapost does not sell over the internet. The business of HR in which they operate requires trust from companies in their partner and therefore face-to-face contact is essential for creating trust.

We also found that big client names help accelerate a start-up. OfficePOD became successful after getting the BBC on board. A big name helps showcasing the product and draws the necessary attention for obtaining more customers.

4.4. Market focus of companies

The company cases indicated that a known pitfall in the start-up phase is that companies tend to have a product-market combination that is too broad for successful commercialization. The market for solutions to enhance workplace productivity requires more focus in this respect in order to succeed.

Novapost mentioned that in the first years of their existence, they focused too much on the digitization of paper processes of several departments at the same time. This led to a market approach that was much too broad for successful market entry. As a result the company did not sell a lot of services in the first 2,5 years. This experience taught the founders that workplace innovative solutions should be tailored to specific departments and functions within an organisation because every function has specific requirements towards the digitization of documents. From 2009 the company started to focus on HR documents.

The target client group consists of companies in all sectors with at least 100.000 employees. Since this crucial choice was made, the growth of the company every year exceeded 100% each year. Moreover in order to optimize the efforts of the sales force of the company, Novapost decided to focus their sales efforts on larger companies, with over 1.000 employees. In the case of smaller clients, Novapost collaborates with sales partners.



All-desk also changed market focus in the start-up phase. Their business model was based upon one time mediation for companies searching for an office space. So as soon as a client found a place, All-desk lost the client. This business model was not favourable to All-desk and therefore they changed the model and subsequently the market focus in order to guarantee more stable income streams.

Interestingly OfficePOD approached the market in an entirely different manner. It envisioned the use of their pods as flex

spaces used at home for flex-working. However, their clients also saw lots of other opportunities. After a few years of business OfficePOD began selling products for a wide variety of applications in different sectors, such as education, hospitals and media and entertainment sector. Their product-market focus was too narrow at the beginning and customers opened up to the possibilities.

5. Client perspectives and challenges related to the uptake of workplace innovation

Enhancing workplace productivity implies leveraging technological innovation and organisational innovation. From a client perspective, the solution to enhance workplace productivity often provides employers and employees with clear benefits. Nonetheless, the uptake of workplace innovations that would enhance productivity is often hampered through a variety of factors. This section will elaborate on the factors that influence the client side uptake of these innovative solutions. In doing so, a distinction must be made between the role of employers and employees. Often employers are the customers of the products and services within this trend. The end-user however will often be the employee.

5.1. Drivers for the uptake

Amongst the main drivers for the uptake of workplace innovations related to technology are **employee perceptions on flexibility, productivity and reduced commuting**. Organisations believe that workers see multiple benefits as a direct result of mobile work style strategies. Academic literature roughly distinguishes four advantages for employees: increased flexibility, increased personal productivity, reduction in commuting time and better work/life balance. According to recent research there are some profound differences in the perceived benefits for employees from country to country that can be attributed to geographical and cultural factors. Reduction of commuting time is cited as the lead employee benefit in Europe. Organisations in the Americas report increased personal productivity as the lead benefit, closely followed by employee flexibility⁹.

In some countries, governments adopt legislation recognising the employee benefits. OfficePOD indicated that there is a trend that legislations are becoming more favourable to flexible working, which is the main driver for the sales of their mobile working spaces. Legislation on for example flexible working and maternity leave helped to diffuse their

products. In the UK recently, legislation has been adopted by parliament which gives every citizen a right on flexible working. According to Better Workplace, legislation is a starting point, but real changes are driven by cultural values towards flexible work forms.

Another driver for the uptake of innovations is **a clear business case offering cost reductions of operational cost** of organisations adopting the innovation. According to OfficePOD employers need to be educated on the savings and other potential benefits they can realize through flexible working. They often provide their clients with a calculation of the amount of money that could be saved by the trade-off between real estate cost and labour, i.e. the cost savings realised by cutting down on real estate cost and having a few employees work from home. The cost saved by the company can then be put to use in hiring for example an additional worker for further expansion of the company.

The **environmental benefits** offered to clients and the positive association it brings for companies are also a client side driver for the uptake. One of the most important considerations of OfficePOD clients for purchasing is the green credentials of their products. The CEO of OfficePOD sees a trend that companies want to increase corporate responsibility under societal pressure. The green characteristics of the OfficePOD enabling working from any location, provides customers with corporate responsible behaviour.

Moreover, an important driver for client side uptake pertains to the **availability of ICT-infrastructure and equipment on the client side** and the right mind-set for using the equipment, necessary for implementing the solutions. Also the availability of high speed broad band internet is crucial for client side uptake of products and services enhancing workplace productivity. The case of the French company Novapost made clear that the main driver for uptake of digitalisation solutions for HR documents was driven by the availability of ICT within HR departments of large companies.



Both a literature review and the case studies indicate that **age and skill of the workers** involved also constitutes a driver for the uptake. It seems that the age of executives, more than the age of workers, is a catalyst for innovation and the use of ICT, according to Gagliardi (2011)¹⁰, who argues that information technologies have a higher chance of being implemented the younger the management team. Ananian & Aubert (2004)¹¹ find that the age of workers is also important: older workers are less numerous in firms that use new technologies and new forms of organisation, independently of their level of education. Novapost confirmed that some of their first customers were young software companies who sympathised with the novel ideas and management team of Novapost.

Statistics from the 5th European Working Conditions Survey do not provide a clear message on the **issue of age**¹²: older workers enjoy more autonomy and rotate tasks more often, whereas younger ones are more advantaged when it comes to flexitime. At the same time, data indicate that for most workplace innovations taken into account, there is a strong skill bias: the higher the skill level, the higher the percentage of workers reporting being involved in telework, team work and democratisation of the work environment. The strongest impact is on forms on compensation linked to performance, whereas the strong exception is flexi-time.

The skill-bias may be explained by the fact that more educated workers are better able to cope with changes in the methods of production and organisation. At the same time it is also more likely that these people are young and work in the service sector, which is more involved in re-organisation than industry to a ratio of 2 to 1.

5.2. Barriers to uptake

Although workplace innovations are becoming more and more widespread there are also several barriers to the uptake of innovations enhancing workplace productivity. One of the most important barriers relates to the **organisational resistance to change** induced by workplace innovations. When a new technology is introduced factor proportions change, responsibilities are altered and procedures change. There are threats to lines of authority, job security and responsibility. Successful implementation of a new technology into any firm requires that it will be managed, it will not happen automatically and ultimate success of the firm will be contingent on the implementation.

More specifically, the case studies made clear that resistance with middle management to adopt workplace innovation was present in a lot of organisations. In order to take a decision managers need to be aware of the benefits of workplace innovation and often they are unaware of the benefits. And even when they are aware, in some cases they are simply not interested. Among companies interviewed for

the Business Decisions Limited study (2002)¹³, 30% of the organisations across different EU countries declared being aware of new forms of work practices but were not interested for various reasons. Among those cited were: they are not necessary to meet customers' needs, they are not used by competitors and would not be supported by other managers/workers/trade unions.

The cases of OfficePOD and Better Workplace confirmed the **resistance of middle management**. In discussions with potential clients, the managers welcomed the idea of working from home. However they saw a limitation on their ability to manage workers that worked from home.

Another barrier to further uptake is **the (conception of the) cost of a transition towards a more flexible workplace**. From the company's point of view, restructuring the organisation has a cost and this cost can prove to be a disincentive to the decision to reorganise the workplace. It is the result of the sum of new furniture, new ICT equipment and related training, and consultants' fees involved in providing expertise. As such it constitutes an investment because it entails an expenditure that is expected to provide future benefits that are greater than its cost, which in this case take the form of higher productivity, better innovation capacity and lower costs. Being an investment, restructuring the company around new forms entails a risk: at the end of the process, the company may produce more or deliver on time and with fewer production errors but it could also result in a totally chaotic process and a situation that is worse than at the beginning of the process. The uncertainty of the expected payoff (higher productivity, innovation capacity and job satisfaction) leads to risk aversion.

Novapost offers their clients a clear business case for implementing their software solutions to digitize HR documents. Next to reducing paper costs, their solution enables sharing between co-workers and employers and ensures compliance with the law. All these aspects can be valued and put into a business case.

In another case, in order to convince customers of the business case the OfficePODs are offering, the company hired a consultant to calculate the savings for employers in terms of travel cost and cost associated with energy usage. The consultant developed a model for calculating these costs. This model can be used to convince customers about the potential gains of flexible working through the usage of their products.

Better Workplace suggests that governments can support mobility programmes at corporations through government grants or other kinds of support, thereby lowering the cost of implementing these programmes. These mobility programmes can significantly reduce the CO2 footprint of organisations and the grants can be contingent on the amount of reduction achieved by the programmes.



6. Policy recommendations for further uptake

On the basis of the analysis performed, policy recommendations for developing a business environment conducive to the uptake of workplace productivity enhancing innovations are presented below.

Existing research on workplace innovation clearly indicates that a **more flexible workforce is beneficial for individuals, organisations and society as a whole**. Innovations facilitating the transition to a more flexible workforce lead amongst others to increased labour productivity and more efficiency in organisations. From a societal point of view a flexible workforce also offers large advantages. The productivity increases at organisational levels might result in economic growth, at a time when growth can no longer be facilitated by population increase. Moreover a flexible workforce can lead to substantial environmental gains as work related travel patterns and the use of real estate will change and become more efficient.

Taking into account that the outcome of the trend is beneficial at multiple levels of the economy, governments should support the uptake of solutions enhancing workplace productivity where the market might fail to provide enough incentives. The benefits provided by this trend seem to be a **positive externality**. The price paid by the organisations adopting the workplace productivity enhancing practices might therefore not reflect the true value of the good or service to other stakeholders, such as employees and society as a whole. Therefore, the characteristics of this trend necessitate policy makers playing a role in stimulating the uptake and facilitating research on the conditions under which enhancing workplace productivity constitutes a positive externality of which uptake and demand is lower than desirable from a society point of view.

In general national and regional governments are recommended to adopt a **long-term perspective**, a methodical approach and support in the form of advice and guidance with launching and carrying through improvement projects, which should focus on social partners and civil society. Their role in organising training and presenting best practices must be strengthened. The European Union already has adopted some measures that can facilitate workplace innovation, particularly in terms of promoting social dialogue. Directive 2002/14/EC establishes minimum requirements for the right to information and consultation of employees. The Directive not only requires employers to provide to representatives of employees information on the recent and probable development of the undertaking's or the establishment's activities and economic situation, but also specifically information and consultation, with a view to reaching an agreement, on decisions likely to lead to

substantial changes in work organisation or in contractual relations.

In order to better understand the conditions under which workplace flexibility leads to productivity gains, national and regional policy makers should also consider launching **pilot projects** on innovative workplaces. This could include: detailed studies on the relationship between the quality of working life, innovativeness and productivity; more data collection in the field at the European level, including ad hoc surveys from Eurostat; and even, potentially, the introduction of a European index describing the quality of working life and its effects on innovativeness and productivity. These could be linked to the overall focus on social innovation that the Commission is currently pursuing.

The case studies indicated that the uptake of solutions for enhancing workplace productivity is increasing in a few countries, and some countries don't provide the culture or breeding ground for building a more flexible workplace. Therefore policy approaches to increasing the uptake should take **cultural differences and country-specific barriers** into account.

The trend on enhancing workplace productivity faces some additional **regulatory challenges** as mentioned in the previous sections. Overcoming regulatory barriers and uncertainty are essential steps in the process and they require the direct involvement of policy-makers. This is a tricky issue because it involved a complicated balancing act. On the one hand, it requires fighting for equality for all types of work in labour law and welfare systems in order to avoid marginalisation and segregation of 'atypical' work. At the same time, it also requires taking into account the very different nature of work under the conditions of workplace innovation, which might require different treatment in the very same systems – for example, more flexibility in labour law (e.g. that some things can be agreed between employers and employees) as well as taxation issues (e.g. tax implications of "bring your own device"). Moreover policy makers may take into account that labour legislation on telework and other atypical forms of labour resulting from workplace innovation are often a legal afterthought and might not suit the current status of technology, resulting in considerable regulatory uncertainty.

Another recommendation that follows from the analysis presented in this case is that the **market needs to be better educated** as to the benefits and costs from new technologies regarding workplace innovation. The case studies made clear that clients are hesitant in adopting new technologies facilitating workplace innovation, due to a variety of reasons such as risk aversion, the risk of losing



control over employees, and middle management resistance. The implementation of these technologies often changes the labour organisation of a company or organisation. First of all, it might result in a redistribution of human resources as the new process might require more, or fewer, workers. Secondly, as a result of the implementation of a new practice, there might be a change in the skills needed in the workforce. A solution to overcome the risks associated and perceived by organisations is to facilitate the presence of experts that introduce a professional approach to changes in organisation, especially for big companies.

Non-monetary aspects related to the cost of transition should also not be overlooked. These include insufficient training to overcome middle management skills gaps and to help employees to master the new general skills needed to work in the new environment (e.g. team-working skills). Another crucial element is the pay system: especially in the public sector, some organisations failed to introduce forms of reward linked to the new performance targets, thereby reducing the incentives to achieve them.

Moreover, implementation of workplace innovative practices will sometimes necessitate important investments at the client side. A company using for example a particular type of workplace will have made a sizeable investment in order to acquire it. Consequently, it will not be as flexible in streamlining the workplace according to the latest developments. In addition, large investments often result in a reduction of profits, which may lead to companies reconsidering the merits of the innovation.

On the basis of the abovementioned points, the following areas of policy should be considered to see how they could promote the uptake of productivity enhancing workplace innovations:

- A key role for the national and regional authorities is to **provide assistance in identifying barriers in legal/regulatory uncertainty** and trying to provide clear, binding answers. This concerns issues ranging from general labour legislation through health and

safety at work to data protection and fiscal/social security issues. A proactive approach by the authorities could involve appointing liaisons for workplace innovation at key regulatory agencies – labour inspectorate, social security agency and the tax administration – with a clear mandate. These officials might also consult the company on the benefits and costs associated with implementing regulation on flexible working so that organisations are better educated;

- The public sector plays an important although varying role as employer in all EU member states. Therefore one of the ways policy-makers can encourage the wider adoption of workplace innovation is for them to encourage public sector institutions to **lead by example**. Public sector institutions are generally perceived to face more difficulty in shifting to new forms of work organisations compared to private sector organisations. Therefore, successful change in such an environment can send an important message to the wider corporate world that it is possible. Moreover it may provide them with the perception to be more attractive employers compared to private sector companies;
- Typically the companies offering workplace innovations are small to medium sized. Supporting **entrepreneurship** leading to the creation of start-ups and SMEs that offer productivity enhancing workplace innovations is desirable and conducive to the business environment of this trend. This could be achieved through the promotion of grants, guarantees on bank loans, the provision of seed capital or tax-credits for organisations involved in research and development.
- Workplace innovations are based on either technology or more business-like innovations based on for example research in the social sciences. **The softer, non-technological side of these innovations** should not be overlooked by policy makers and taken into account when providing grants or other forms of government support.



7. Appendix

7.1. Interviews

Company	Name	Designation
Novapost	Jonathan Benhamou	CEO
All Desk	Pedro Santos	CEO
OfficePod	Stephen Tanner	CEO
Better Workplace	Glenn Dirks	Vice President Customer Enablement

7.2. Websites

Novapost	http://www.novapost.fr/
All Desk	http://all-desk.com
OfficePod	http://officepod.co.uk/
Better Workplace	http://www.Better Workplace.com/

7.3. References

- ¹ B. Beblavy e.a. (2012) "Workplace Innovation and Technological Change", CEPS Special Report
- ² Citrix Workplace of the Future report 2012, available at:
http://www.citrix.com/content/dam/citrix/en_us/documents/solutions/Mobile-Workstyles-Survey.pdf
- ³ P. Oeij e.a. (2012) "Workplace Innovation and its Relations with Organisational Performance and Employee Commitment", in Lifelong Learning in Europe 4/2012
- ⁴ Ibid.
- ⁵ McKinsey&Company (2010), "The productivity imperative", available at
http://www.mckinsey.com/insights/growth/the_productivity_imperative
- ⁶ Ibid.
- ⁷ Hauw, P.A., van der, Pasaribu, M.N. and Zeijden, P.T. van der (2009) "Slimmer werken: gebruik, mogelijkheden en opbrengsten in de praktijk" (Working smarter: application, opportunities and proceeds in practice). Zoetermeer: EIM
- ⁸ <http://officepod.co.uk/blog/2010/10/18/massive-63-reduction-in-co2-for-officepod-users>: This reduction is achieved when moving from 5 days in an office (with associated commute) to 3 days in an OfficePOD and 2 days travelling to the central office for meetings. In terms of the CO2 per annum created, 5.4 tonnes are created per user in a 5 day office and commute scenario compared to only 2.0 tonnes for the 3 day OfficePOD/2 day office and commute user. The greatest areas of saving are generated in relation to the reduced commuting and power required for heating, lighting and cooling
- ⁹ See reference under 1.
- ¹⁰ Gagliardi, D. (2011), "Next Generation Entrepreneur: How Web 2.0 Technologies Creep into SMEs", eChallenges e-2011 Conference Proceedings, Paul Cunningham and Miriam Cunningham (eds), IIMC International Information Management Corporation.
- ¹¹ Ananian S. and P. Aubert, (2004), "New Technologies, Workplace Organisation and the Age Structure of the Workforce: Further Evidence Using the REPONSE Survey", Documents de Travail de la DESE - Working Papers of the DESE g2004-11, Institut National de la Statistique et des Etudes Economiques, DESE, Paris.
- ¹² See reference under 1
- ¹³ Business Decisions Limited (2002), "New Forms of Work Organisation: The Obstacles to Wider Diffusion", Report for the European Commission, BDL: Brussels, October.