

# SMART WORKING: RETHINKING WORK PRACTICES TO LEVERAGE EMPLOYEES' INNOVATION POTENTIAL

Luca Gastaldi<sup>a\*</sup>, Mariano Corso<sup>a</sup>, Elisabetta Raguseo<sup>b</sup>  
Paolo Neirotti<sup>c</sup>, Emilio Paolucci<sup>c</sup>, Antonella Martini<sup>d</sup>

<sup>a</sup> Politecnico di Milano, Italy

<sup>b</sup> Grenoble Ecole de Management, France

<sup>c</sup> Politecnico di Torino, Italy

<sup>d</sup> University of Pisa

\* Corresponding author: [luca.gastaldi@polimi.it](mailto:luca.gastaldi@polimi.it)

## ABSTRACT

*We investigate Smart Working (SW), a set of modern and not-conventional organisational models that are characterised by high flexibility in the choice of the working spaces, time and tools, and that provides all employees of a organisation with the best working conditions to accomplish their tasks. Specifically, the paper aims to: (i) identify whether firms adopt different SW models: (ii) explore complementarities between the elements that can lead to choose a SW model, and (iii) figure out whether contingent variables matters in the implementation of a particular SW model. In order to achieve these goals, we have delivered a survey to 100 HR directors of medium and large Italian organisations and accomplished multiple, embedded case studies. Empirical evidence suggest that the managers who aim to fully benefit of SW practices should not only invest in the enabling digital technologies, but also make the complementary transformations in organisational policies and workspace settings, according the contingent conditions under which they operate.*

*Keywords: Smart Working, ICT, Physical Workplace, Work behaviour, Performance.*

## 1. INTRODUCTION

The methods and the tools through which work practices are accomplished have changed dramatically in the last decade (Hamel, 2012). Successful organisations are increasingly characterized by the ability to abandon now inappropriate working configurations (Birkinshaw et al., 2008) to support new organisational principles, such as emerging collaboration (Vlaar et al., 2008), autonomy in the choices of work settings (Leonardi and Balley, 2008), talent enhancement, responsibility and widespread innovation (Hamel, 2007).

According to Birkinshaw (2010), if, on the one hand, organisations tend to manifest inertial behaviours in dealing with this paradigm shift, on the other hand, they are consistently looking for elements to balance new business targets with the evolving needs of their employees (Leonardi, 2011). In fact, the generation of value within the business do-main is no longer linked only to insightful business models (Gunther McGrath, 2013), but also to how employees actually create, perceive, realize, defend and evolve these business models in day-by-day activities especially in highly turbulent competitive environments (Brown and Eisenhardt, 1998).

Actually, most of the innovation potential of employees remain unexpressed due to inappropriate organisational models (Oksanen and Stähle, 2013), and an increasing number of firms are rethinking these organisational models, referring to the emerging ones with the term ‘Smart Working’ (SW) (Plantronics, 2014). Specifically, a SW corresponds to non-conventional organisational models that are characterized by higher flexibility and autonomy in the choice of working spaces, time and tools, and that provides all employees of an organisation with the best working conditions to accomplish their tasks.

Thanks to the development and diffusion of digital technologies, along with the increasingly pervasive dissemination of powerful and easy-to-use mobile devices, firms can be supported in the progressive implementation of a SW model (Ahuja et al., 2007). However, digital levers could be necessary but not sufficient in realising the innovation potential associated to SW. Based on these considerations, this paper aims to look inside the black box of SW, by unpacking the elements that can generate complementarities between the adoption of digital tools and innovations of organisational models. Specifically, the purpose of this paper is threefold: (i) identifying the different SW configurations adopted by firms; (ii) exploring complementarities between the elements affecting these configurations; (iii) figuring out whether contingent variables matters in the implementation of a SW model.

The paper is structured as follow. In paragraph 2, we discuss the theoretical background. In paragraph 3, we show the research methodology and the data measures used to collect and analyse empirical facts on SW phenomenon. In paragraph 4 we discuss the key findings of the quantitative and qualitative analyses. Finally, we conclude the paper with empirical and theoretical implications of the findings and directions for future research.

## 2. THEORETICAL BACKGROUND

The development and diffusion of digital technologies (especially those supporting communication, collaboration and social networking), along with the pervasive dissemination of powerful and easy-to-use mobile devices, can support organisations in developing a SW system (Ahuja et al., 2007). While recent literature has analysed how ICT has made work more portable and ubiquitous (Yoo et al., 2010), there is not yet a comprehensive understanding and empirical evidence of the existence, if any, of complementarities between elements on which firms should focus in case they want to adopt a SW organisational model.

According to a preliminary analysis (Mann, 2012), the three elements that can constitute a SW model are: (i) the usage of ICT-based solutions (*ICT element*); (ii) the innovations in the HR practices and in the organisational model (*HR element*); (iii) the reconfiguration of the workplace and of the office layout (*layout element*). These three elements can allow firms to adopt a SW model for different reasons. First, IT solutions, especially the collaborative ones, allow groups to share more easily files, information and ideas (Chudoba et al., 2005). In such a way, all employees can interact in real time in a flexible and effective way by contributing to a SW environment. Second, changes in the HR practices can be introduced when a new organisational model is chosen, as SW is. Specifically, change management actions for managing the organisational models chosen can be applied by the organisations (Cameron and Green, 2012), such as training programmes for the middle and top management, training for the end users, new communication plans, new management by objectives processes systems, projects of cultural change, or processes’ reorganisation. Third, recent works emphasize the importance of promotion strategies in spatial reconfiguration of the office layout (e.g. Smith et al., 2013). In this way, employees can increase their productivity and can manage better their work-life balance. Therefore, particular office reconfigurations may lead to innovative ways of collaborating with others and thus simplifying the development of a SW model.

### 3. METHODS

This study is based on a continuative research initiative promoted since 2012 by the School of Management of Politecnico di Milano, i.e. the Smart Working Observatory, which is focused not only on analysing the SW phenomenon as well as its impacts on organisations' performance, but also on supporting organisations in the progressive implementation of SW models. Refer to Gastaldi and Corso (2014) for an overall description of the Observatory, its results and how it accomplishes its activities.

In order to achieve the goals of this paper, we have triangulated quantitative and qualitative analyses (Jick, 1979). The former is based on a survey run among Italian companies and AIDA Bureau van Dijk database, which contains financial data of Italian firms. The latter has been developed through multiple, embedded case studies oriented in better explaining the findings achieved in the quantitative analysis. In the following paragraph we will describe the methodological choices that have shaped the research process

#### 3.1 QUANTITATIVE ANALYSIS

The quantitative analysis occurred in two steps. First, descriptive statistics and a cluster analysis were computed to examine the diffusion patterns of the three elements taken into exam, and to delineate the main configurations used by firms in terms of SW. In the second step, ANOVA analysis and Kruskal-Wallis non-parametric tests were used to understand the contingent conditions under which SW configurations are chosen by firms.

The survey has been delivered through an electronic platform to a convenient sample of 100 HR directors of medium and large Italian firms. On data gathered, a cluster analysis was conducted in order to investigate the complementarities between the three elements that can characterize a SW strategy. We complemented the data gathered through the questionnaires with financial data contained in the AIDA Bureau van Dijk database, for evaluating through ANOVA analyses the contingent conditions and the organisational performance that characterize firms that choose a particular SW practice. Table 1 provides the definition, variable construction, and sources for all of the three elements used in this research. All measures have been in the table have operationalized using the survey responses.

Element	Variable construction/definition	Measure	Reference
Layout	Adoption of initiatives of redesigning of the physical workspace for creating environments more flexible and oriented to collaboration	From 0 (none initiatives) to 2 (multiple initiatives)	Elsbach and Pratt (2007)
	Extent to which employees telework	From 0 (none employee) to 2 (all employees)	Martínez-Sánchez et al. (2007)
	Extent to which employees use ICT personal devices (PC, tablet, etc.)	From 0 (none employee) to 2 (all employees)	Martínez-Sánchez et al. (2007)
ICT	Extent to which employees use external ICT services (e.g. skype, twitter) at anytime from anyplace	From 0 (none employee) to 2 (all employees)	Martínez-Sánchez et al. (2007)
HR	Extent to which employees can manage in a flexible way their working hours	From 0 (none employee) to 2 (all employees)	Coenen and Kok (2014)
	Percentage of employees for which the company uses a MBO system and KPI	From 0 (none employee) to 6 (all employees)	Coenen and Kok (2014)
	Change management actions implemented in the organisation*	From 0 (no actions) to 6 (all actions)	Coenen and Kok (2014)

\* We have considered 6 actions 1) Training for the middle and top management; 2) Training for the end users; 3) Communication plans; 4) New MBO systems; 5) Projects of cultural change; 6) Processes' reorganisation

**Table 1. Measures of the three elements**

We assisted the data collection effort with the AIDA Bureau van Dijk database. We use this database in order to figure out contingent variables that may influence the decision of adopting a particular SW model. Their operationalization is shown in Table 2.

### 3.2 QUALITATIVE ANALYSIS

We performed four case studies on the Italian branches of International organisation, which were similar in terms of C-level's willingness to invest in SW, but adopted different implementation strategies.

As suggested by Eisenhardt (1989), we have relied on several data sources: face-to-face interviews, phone conversations, follow-up emails, and archival data such as internal documents, press releases, websites, and news articles. In order to maximise the benefits from these sources of evidence, and better deal with reliability issues, two of the three principles suggested by Yin (2003) have been followed: the triangulation of data sources, and their organisation in an electronic and navigable case study database.

The primary data source was 49 semi-structured interviews conducted over seven months (from April 2013 to October 2013) with the HR director of the firms, at least one of the C-levels, and—through a snowball technique (Patton, 2002)—other informants involved in SW implementation process. Within each firm, authors continued recruiting informants until additional interviews failed to dispute existing, or reveal new, categories or relationships that is, until theoretical saturation (Strauss and Corbin, 1990) was achieved. Table 3 proposes the organisations involved in the case studies as well as the interviews accomplished.

Potential informant bias has been addressed in several ways. First, the interviews collected both real-time and retrospective longitudinal data in several waves over seven months. According to Ozcan and Eisenhardt (2009) these kinds of data collection are ideal because retrospective data enable efficient collection of more observations (thus enabling better grounding), while real-time data mitigate retrospective bias (Leonard-Barton, 1990). Second, anonymity has been promised to companies and informants. According to Eisenhardt (1989) this decision encourages candour. Third, the interviews have been complemented with wide-ranging archival and observational data, as suggested by Bingham and Eisenhardt (2011). Fourth, open-ended questioning has been used to give the informants wide scope to relate the concept as they chose. According to Koriat et al. (2000), this helps in addressing potential informant bias. Fifth, informants not only from multiple levels of hierarchy, but also with different perspectives have been considered during the interviews (Ozcan and Eisenhardt, 2009). Finally, interview techniques like courtroom questioning, event tracking, and nondirective questioning (Martin and Eisenhardt, 2010) have been used to yield accurate information (Huber and Power, 1985).

Variable	Operationalisation
Industry types	Firms are classified into public administration, retail industry, bank sector, engineering industry, food industry, ICT sector, other industries*
Size	Number of employees
Capital intensity	Ratio between the property plants and equipment and the number of employees
Human capital	Ratio between the total labour cost and the number of employees
Year of foundation	Year of foundation
VA/employees	Ratio between the value added and the number of employees
EBITDA/employees	Ratio between EBITDA and number of employees

\* This variable has been collected through the survey; all others have been extracted from the AIDA Bureau van Dijk DB

**Table 2. Variables operationalisation**

Org <sup>*</sup>	Industry	Employees	Interviews <sup>**</sup>			Total
			HR manager	C-levels	Others	
A	Public administration	3,407	2	2	5	9
B	Food and beverage	3,764	5	8	2	15
C	Brewing	961	4	2	6	12
D	Food packaging and processing	824	6	2	5	13

\* Pseudonyms are used to protect the anonymity of the organisational and their members

\*\* Each interview lasted approximately 1.5 hours

**Table 3. Organisations involved in the qualitative analysis**

Following recommendations regarding multiple cases theory-building (Eisenhardt and Graebner, 2007), within and cross-case analyses have been performed with no a priori hypotheses. The authors cycled among the emergent theory, case data, and literature to further refine abstraction levels, construct measures, and theoretical relationships (Eisenhardt, 1989). To converge on a parsimonious set of constructs, authors focused (and will present) only on the most robust findings (Andriopoulos and Lewis, 2009).

## 4. FINDINGS

### 4.1 CONFIGURATIONS OF SW PRACTICES: THE CLUSTER ANALYSIS

Descriptive statistics (Table 4) highlighted that firms invest more in ICT solutions (59% of companies surveyed) regard to the reconfiguration of the workplace and of the office layout (39% of companies). However, the majority of the organisations surveyed (the 67%) make innovations in the human resource practices and in the organisational model followed.

Variable		Mean	Median	Dev. std.	Minimum	Maximum
Element	Layout	0.39	0	0.49	0	1
	ICT	0.59	1	0.49	0	1
	HR	0.67	1	0.47	0	1
Industry	PA	0.14	0	0.35	0	1
	Bank	0.13	0	0.34	0	1
	Engineering	0.08	0	0.27	0	1
	Food	0.06	0	0.24	0	1
	Retail	0.06	0	0.24	0	1
	ICT	0.06	0	0.24	0	1
	Other	0.47	0	0.50	0	1
Contingent var.	Human capital (k€)	54.76	57.00	16.84	10.00	88.00
	Capital intensity (k€)	762	128	2,980	1.00	21,319
	Employees	4,197	566	18,387	57	140,435
	Year of foundation	1984	1996	29	1865	2010
	VA/employees (k€)	80.15	77.00	34.28	15.00	165.00
	EBITDA/employees (k€)	25.60	20.50	26.94	-62.00	104.00

**Table 4. Descriptive statistics**

Smart Worker		1. Inconsistent	2. Analogical	3. Digital	4. Complete	Total
Element	Layout*	Low	High	Low	High	39%
	ICT*	Low	Low	High	High	59%
	HR*	Low	High	High	High	67%
Industry	PA	21.4%	15.4%	12.1%	7.7%	14%
	Bank	3.6%	38.5%	15.1%	7.7%	13%
	Engineering	7.1%	0%	12.1%	7.7%	8%
	Food	3.6%	7.9%	9.1%	3.8%	6%
	Retail	10.7%	7.7%	3.0%	3.8%	6%
	ICT	0%	7.7%	0%	19.2%	6%
Contingent var.	Human capital (k€)	44.76	55.83	57.80	60.16	54.76
	Capital intensity (k€)	2.079	192	443	166	762
	Employees	566	1,579	274	606	566
	Year of foundation	1978	1974	1993	1981	1984
	VA/employees (k€)	66.76	70.80	89.40	85.11	80.15
	EBITDA/employees (k€)	22.00	17.20	31.60	24.67	25.60
Percentage of firms		28%	13%	33%	26%	100%

\*“Low” means that the value of the element is under the mean of the sample, “High” otherwise

**Table 5. ANOVA results**

The three binary variables<sup>1</sup> operationalizing the three elements that may determine a company to adopt SW practices were subject to a Hierarchical Cluster Analysis using Ward’s method (Forst and Vogel, 1977), which produced a dendrogram. The dendrogram showed that within the sample there were four distinct approaches to SW, which are shown in Table 5. The existence of distinct approaches provided empirical evidence on the existence of complementarities between the elements investigated.

A first approach (*cluster 1*) consists of 28% of companies surveyed. We called these firms “inconsistent smart workers” as they do not invest significantly in any of the three elements investigated. This cluster is composed mainly by organisations that operate in the public administration and in the retail industry. These organisations have not high-level human capital and are capital intensive. Furthermore, the majority of them are older than the others are, and are characterized by low levels of productivity.

The second group (*cluster 2*) in terms of frequency in the sample consists of 13% of surveyed companies whose features are based on attributing importance to investments in innovations in the human resource practices and in the organisational model followed, and in the reconfiguration of the workplace and of the office layout. Since ICT element is not significantly used by this cluster, we labelled it as “analogical smart workers”. This cluster is mainly composed by organisations operating in banking and with medium qualified employees. These organisations are older than others, have more employees, are labour intensive, and have relatively low productivity levels.

The biggest group (*cluster 3*) consists of 33% of organisations whose distinguishing trait is the limited importance for the reconfiguration of the workplace and of the office layout. For this reason, we labelled this group as “digital smart workers”. This cluster is composed mainly by organisations of the engineering and in the food industry. These organisations have medium-qualified human capital and are labour intensive. The majority of them is younger than others firms, have a medium size and high levels of productivity.

<sup>1</sup> Values in the scale higher to the median value were converted into a 1 and the others to 0.

Finally, a fourth approach to SW (*cluster 4*) consists of 26% of organisations that have invested in all the three elements investigated. Given the typology of investments made by these organisations, we labelled this group as “complete smart workers”. This cluster is composed mainly by organisations of the ICT industry that have hired qualified employees (high human capital levels). These companies are labour intensive, are characterized by medium dimensions, and have medium productivity levels.

## 4.2 RESULTS OF QUALITATIVE ANALYSIS

We have structured the results of the case studies according to the main reasons that led the different organisations to invest in SW and the specific configurations of the three elements characterising each SW model (Table 6). The rest of the paragraph will briefly describe the cases deepening the statements reported into the tables.

### 4.2.1 ORGANISATION A: INCONSISTENT SMART WORKERS

Organisation A is a public administration managing an Italian Region. With 3,407 employees and different facilities spread throughout a large geographical territory, the C-levels of organisation A started thinking to SW principles with the main aims of reducing the commuting costs of their employees while increasing their functional integration and, thus, their effectiveness in answering citizen requests. The underlying objectives were not only to switch from silos-based to cohesive service delivery, but also to progressively empower all employees toward the usage of ICT as a lever through which disrupting the service processes.

Organisation		A Inconsistent SW	B Analogical SW	C Digital SW	D Complete SW
Reasons for investing in SW	Organisational efficiency*	<u>Cost reduction</u>	<u>Rationalisation</u>	<u>Productivity</u>	Flexibility
	Organisational effectiveness*	Response rate	Quality improvement	<u>Collaboration</u>	Innovation
	Employees engagement*	Empowerment	<u>Creativity</u>	Sense of community	<u>Work-life balance</u>
Configurations of the three elements characterising the SW models	Layout	<ul style="list-style-type: none"> <li>No significant intervention made</li> <li>Building constraints to be faced (old facilities not easily reconfigurable)</li> </ul>	<ul style="list-style-type: none"> <li>Development of a new building focused on fully exploiting SW</li> <li>Concentration, collaboration and relax rooms</li> </ul>	<ul style="list-style-type: none"> <li>No significant intervention made</li> <li>Necessity of changing the building in order to fully benefit from SW models)</li> </ul>	<ul style="list-style-type: none"> <li>Intelligent, modular building, which adapt to organis. needs</li> <li>Building automation</li> <li>Acoustic isolation</li> </ul>
	ICT	<ul style="list-style-type: none"> <li>No significant intervention made</li> <li>UCC as enabling investment</li> </ul>	<ul style="list-style-type: none"> <li>No significant intervention made</li> <li>UCC as enabling investment</li> </ul>	<ul style="list-style-type: none"> <li>Mobile workspace for all employees</li> <li>UCC</li> <li>Cloud solutions</li> <li>Social network within the firm</li> </ul>	<ul style="list-style-type: none"> <li>Full digitalization of archives/docs</li> <li>UCC</li> <li>Mobile workspace and app for employees</li> </ul>
	HR	<ul style="list-style-type: none"> <li>No significant intervention made</li> <li>Assessment of the effectiveness of current model in balancing employees' needs with firms goals</li> </ul>	<ul style="list-style-type: none"> <li>Extension to all senior managers</li> <li>Training</li> <li>SW leadership program</li> <li>Clear definition of the SW priorities on which focusing</li> </ul>	<ul style="list-style-type: none"> <li>Preliminary pilots in ICT &amp; marketing divisions</li> <li>Quantification of the SW benefits</li> <li>Extension to all other employees</li> <li>Training</li> </ul>	<ul style="list-style-type: none"> <li>Extension to all employees</li> <li>Full autonomy in choosing working times, places and tools</li> <li>Self-certification of working hours</li> </ul>

\* For each organisation we have underlined the main reasons explaining the investments in SW

**Table 6. Main reasons for investing in SW and configurations of the three SW building blocks**

Organisation A started to invest in a Unified Communication and Collaboration (UCC) suite (instant messaging, presence and collaboration) as an enabling ICT-based investment to achieve these potential benefits. However, the lack of a solid budget associated to strong financial constraints not only forced to focus on a (suboptimal) general-purpose suite, but also to ignore other complementary SW elements. In particular, the lack of training programmes explaining how to take advantage of the digital solution limited its extension from the convenient pilot units in which it has been tested to the whole organisation. Recognising this initial mistake, organisation A is now focused on assessing the effectiveness that the current organisational model has in balancing employees' needs with firms performance goals, and compare it to models used in other public administrations and firms. The results of this exercise will be used to define the next priorities to move organisation A along the continuum toward SW models.

#### **4.2.2 ORGANISATION B: ANALOGICAL SMART WORKER**

Organisation B is the Italian branch of a multinational food and beverage company that, in the last months of 2013, moved all its employees into a new building structured into functional areas (concentration rooms, collaboration rooms, relax rooms, etc.). This change provided an opportunity to rethink the whole working model, with the aims of rationalising the cost of facilities (as well as their management), improving the quality of the internal decision-making processes and stimulate creativity in individuals.

During the construction of the new building, the organisation has extensively invested in training all senior managers regarding the levers and benefits related to SW. Once a clear idea of SW levers and benefits was disseminated, organisation B developed a leadership program to engage senior managers in the development of SW model and mature the capabilities necessary to efficiently and effectively accomplishing this task. A clear definition of specific SW priorities completed the programme of HR development, and allowed to fully exploit the new building once ready. One of the results of the prioritization of all SW efforts has been the choice of not making particular interventions in ICT domain. Two are the main reasons explaining this choice: (i) the organisation already had a supportive and mature digital infrastructure; (ii) managing also this element could compromise the effectiveness of the whole process of SW development (too many variables to be taken into account). Only unified collaboration and communication solutions has been considered an indispensable and enabling investment that cannot be neglected.

#### **4.2.3 ORGANISATION C: DIGITAL SMART WORKER**

Organisation C is the Italian branch of a multinational brewing company that in July 2013 started developing a SW model with the objectives of increasing the productivity and the level of collaboration of its employees instilling a sense of community in them. Starting from the consideration that it was impossible to work on layout element, since current building structure impedes the rearrange of office layout allowing to fully benefit from SW principles, the C-levels of organisation C decided to start a SW initiative involving its HR and the ICT divisions. This initiative has been structured according to three phases: (i) evaluation of current organisational and individual needs; (ii) piloting of a SW model into controlled, supportive settings; (iii) quantification of SW benefits and extension of SW model to the whole organisation through a set of training sessions.

During this process, organisation C invested in the development of a digital environment complementing the HR strategy of letting people work whenever and wherever they wanted. Thus, in addition to some investments in unified communication and collaboration tools, a mobile workspace (constituted by a laptop, a smartphone and an in-

ternet connection) has been made available to all employees. Moreover, a set of cloud-based solutions has been developed to improve the performance, the reliability and the scalability of the applications used in day-by-day tasks. Finally, a corporate social network significantly increased the inter-organisational knowledge exchange.

The combination of HR and ICT elements allowed achieving significant results in compressed timeframes. For instance, organisation C registered a productivity growth from 20% to 30% regarding its marketing unit in just 3 months of experimentation. With these numbers, the promoters of SW initiative convinced the C-levels of organisation C to significantly invest into the development of a SW model.

#### **4.2.4 ORGANISATION D: COMPLETE SMART WORKER**

Organisation D is the Italian branch of a multinational food packaging and processing company. Organisation D started thinking to SW in 2006 in order to increase the innovativeness of its employees and the flexibility in managing them. Underlying these objectives there was the necessity of retaining key HRs in a geographical territory full of other strong employer brands. Within these settings, and recognising the centrality of HRs in producing the competitive advantage of the firm, organisation D focused on increasing work-life balance.

One peculiarity of organisation D is that its HR director is also the ICT leader as well as the facility manager of the firm. This choice ensured high levels of interrelations and complementarities among the three SW elements. An intelligent and modular building has been developed to adapt to organisational need. Thus, if employees necessitate of a big conference room, open spaces are autonomously created by moving transparent walls and dynamically rearranging office layout. Light and temperature within the building are centrally controlled to provide employees with the most conformable conditions to accomplish their tasks.

All archives and documents have been digitalised or moved to a separated warehouse. An internal logistic service brings the documents that employees need where and when they need it. In this way the working place is highly simplified, and human resource can focus on one task at a time and boost both their efficiency and effectiveness. The organisation has developed a set of apps allowing to book a meeting room on the run, release it, check the queue at the canteen, etc. More generally, organisation D has created a mobile workspace allowing employees to work whenever and wherever they want.

These and many other benefits (corporate kindergarten, wellness areas, centralised commuting services, etc.) have been made to all employees - blue collars included. These last ones have not only a full autonomy in choosing their working times, places and devices, but also self-certificate their working hours and spontaneously coordinate in the different R&D projects within the firm. The end result is a reduction of the HR, IT and layout yearly costs by an order of 10%, and a significant increase in the innovativeness of the organisation who recently won the best-place-to-work award.

## **5. CONCLUSIONS**

This study highlights some considerations regarding the objectives and the elements characterising a SW models. The main reasons for which an organisation invests in SW tend to shape and being shaped by the investments accomplished in SW elements. Inconsistent smart workers tend to see SW only as a way to reduce costs. Analogical smart workers tend to combine resources rationalisation with employees creativity. Digital smart workers focus on establishing collaboration and a sense of community among its employees. Complete smart workers tend to focus on work-life balance, and see the innovativeness and the flexibility of its assets as a by-product of a satisfied employee to be retained as a key resource.

Overall we demonstrate that there are complementarities between the elements that can characterize a SW model. At least two elements are developed in each SW configuration found. Quantitative and qualitative analyses show the centrality of HR element in the development of SW models. In particular, the cross-analysis of the four different implementation strategies of SW suggests that the development of pilots in controlled organisational niches, the quantification of the benefits associated to SW, the engagement of senior managers and employees trainings are central in the development of SW. Indeed, SW requires the concurrent presence of at least two elements, where HR element is always developed.

Regarding the layout element, it is important to note that most of current organisational facilities have different constraints that impedes to fully benefit from the potential of SW. Recognising that the organisational layout tend to shape working practices in a significant way, many organisations are deciding to start from green field, and exploit the development of new facilities as an opportunity to rethink organisational models in order to combine efficiency (e.g. less space used due to the usage of shared desks) with effectiveness (e.g. usage of room favouring collaboration among employees). In the quantitative analysis we found that younger firms do not make any particular investments in the layout element. This maybe is due to the fact that such companies adopt already flexible solutions that allow them to be “smart” and do not need do reconfigure their organizational facilities.

With a reference to ICT, the cases suggest that the UCC solutions seem to be a necessary but insufficient investment to develop SW. In order to concretise the SW potential, most advanced cases complements these investments with (at least) the development of a mobile workplace allowing: (i) employees to work also outside firm facilities, and (i) firms to progressively develop flexible models of ICT governance opening up further SW opportunities. What is clear is that there are different stages of ICT maturity towards a SW model, and practitioners ask for models to help them prioritise their investments coherently to other SW elements. Further, looking survey results, they suggest that banks invest to a lower extent in ICT solutions probably given security problems that can arise in an extensive usage of them.

In conclusion, the proposed study contributes to classify that there is not a unique path for developing a SW, but a set of potential paths that have to be designed taking into account the characteristics of the firm investing in SW. In this study we show that there is a risk of not being able to implement SW if firms focus on all elements on all three domains. It is better to focus on a specific area and/or proceed through a gradual developmental process. While there is certainly more research on this topic, we believe that this study provides an important approach to how we conceptualize and operationalize SW concept. Future research needs to further investigate the development dynamics of SW configurations in order to understand the adoption timing of the three elements. Moreover, future studies should focus on studying SW adoption at a functional level in order to measure the relative performance

## REFERENCES

- Ahuja M.K., Chudoba K.M., Kacmar C.J., McKnight D.H., George J.F. (2007) IT Road Warriors: Balancing Work-family Conflict, Job Autonomy, and Work Overload to Mitigate Turnover Intentions, *MIS Quarterly*, Vol. 31, No. 1, pp. 1–17.
- Andriopoulos C., Lewis M.W. (2009) Exploitation-Exploration Tensions and Organisational Ambidexterity: Managing Paradoxes of Innovation, *Organisation Science*, Vol. 20, No. 4, pp. 696–717.
- Bingham C.B., Eisenhardt K.M. (2011) Rational Heuristics: the “Simple Rules” That Strategists Learn From Process Experience, *Strategic Management Journal*, Vol. 32, No. 13, pp. 1437–1464.
- Birkinshaw J. (2010) *Reinventing Management*, Jossey-Bass, San Francisco.
- Birkinshaw J., Hamel G., Mol M. (2008) Management Innovation, *Academy of Management Review*, Vol. 33, No. 4, pp. 825–845.
- Brown S.L., Eisenhardt K.M. (1998) *Competing on the Edge*, Harvard Business School Press, Boston.

- Cameron E., Green M. (2012) *Making Sense of Change Management: A Complete Guide to the Models Tools and Techniques of Organisational Change*, Kogan Page Publishers.
- Chudoba K.M., Wynn E., Lu M., Watson-Manheim M.B. (2005) How Virtual Are We? Measuring Virtuality and Understanding Its Impact on a Global Organisation, *Information Systems Journal*, Vol. 15, pp. 279–306.
- Coenen M., Kok R.A.W. (2014) Workplace Flexibility and New Product Development Performance, *European Management Journal*, Vol. 32, No. 4, pp. 564–576.
- Eisenhardt K.M. (1989) Building Theory from Case Study Research, *Academy of Management Review*, Vol. 14, No. 4, pp. 532–549.
- Eisenhardt K.M., Graebner M. (2007) Theory Building from Cases: Opportunities and Challenges, *Academy of Management Journal*, Vol. 50, No. 1, pp. 25–32.
- Elsbach K.D., Pratt. M.G. (2007) The Physical Environment in Organizations, *Academy of Management Annals*, Vol. 1, No. 1, pp. 181–224.
- Forst H.T., Vogel F. (1977) *Hierarchisch-Agglomerative Klassifikation von Merkmalsträgern bzw. Merkmalen*. Kiel: Institut für Betriebswirtschaft.
- Gastaldi, L. and Corso, M. (2014) Academics as Orchestrators of Smart Working Initiatives, in: Lee, J. (Ed.) *The Changing Nature of Work*, Seoul (South Korea), Springer, pp. 1–15.
- Gunther McGrath R. (2013) *The End of Competitive Advantage: How to Keep Your Strategy Moving as Fast as Your Business*, Harvard Business Review Press, Cambridge
- Hamel G. (2007) *The Future of Management*, Harvard Business School Press, Cambridge.
- Hamel G. (2012) *What Matters Now: How to Win in a World of Relentless Change, Ferocious Competition, and Unstoppable Innovation*, Jossey-Bass, San Francisco.
- Hitt M.A., Bierman L, Shimizu K., Kochhar R. (2001) Direct and Moderating Effects of Human Capital on Strategy and Performance in Professional Service Firms: A Resource-based Perspective, *Academy of Management Journal*, Vol. 44, No. 1, pp. 13–28.
- Huber G.P., Power D.J. (1985) Retrospective Reports of Strategic-level Managers: Guidelines for Increasing their Accuracy, *Strategic Management Journal*, Vol. 6, No. 2, pp. 171–180.
- Jick T. (1979) Mixing Qualitative and Quantitative Methods: Triangulation in Action, *Administrative Science Quarterly*, Vol. 24, No. 4, pp. 602–611.
- Koriat A., Goldsmith M., Pansky A. (2000) Toward a Psychology of Memory Accuracy, *Annual Review of Psychology*, Vol. 51, No. 2, pp. 481–537.
- Leonard-Barton D. (1990) A Dual Methodology for Case Studies: Synergistic Use of a Longitudinal Single Site with Replicated Multiple Sites, *Organisation Science*, Vol. 1, No. 3, pp. 248–266.
- Leonardi P.M. (2011) When Flexible Routines Meet Flexible Technologies: Affordance, Constraint, and the Imbrication of Human and Material Agencies, *MIS Quarterly*, Vol. 35, No. 1, pp. 147–167.
- Leonardi P.M., Balley D.E. (2008) Transformational Technologies and the Creation of New Work Practices, *MIS Quarterly*, Vol. 32, No. 2, pp. 411–436.
- Martin J.A., Eisenhardt K.M. (2010) Rewiring: Cross-business-unit Collaborations in Multi-business Organisations, *Academy of Management Journal*, Vol. 53, No. 2, pp. 255–301.
- Martínez-Sánchez A., Pérez-Pérez M., De Luis Carnicer P., Vela Jiménez M.J. (2007) Telework, Human Resource Flexibility and Firm Performance, *New Technology, Work and Employment*, Vol. 22, No. 3, pp. 208–223.
- Oksanen K., Stähle P. (2013) Physical Environment as a Source for Innovation: Investigating the Attributes of Innovative Space, *Journal of Knowledge Management*, Vol. 17, No. 6, pp. 815–827.
- Ozcan P., Eisenhardt K.M. (2009) Origin of Alliance Portfolios: Entrepreneurs, Network Strategies, and Firm Performance, *Academy of Management Journal*, Vol. 52, No. 2, pp. 246–279.
- Patton M. (2002) *Qualitative Research and Evaluation Methods (3<sup>rd</sup> ed.)*, Thousand Oaks, SAGE.
- Plantronics (2014) *Smarter Working*, available at [www.plantronics.com/us/solutions/smarter-working](http://www.plantronics.com/us/solutions/smarter-working).
- Smith L., Ucci M., Marmot A., Spinney R., Laskowski M., Sawyer A., Fisher A. (2013) Active Buildings: Modelling Physical Activity and Movement in Office Buildings: An Observational Study Protocol, *BMJ open*, Vol. 3, No. 11., pp. 1–15.
- Strauss A.L., Corbin J. (1990) *Basic of Qualitative Research*, Newbury Park, SAGE.
- Vlaar P.W.L., van Fenema P.C., Tiwari V. (2008) Cocreating Understanding and Value in Distributed Work: How Members of Onsite and Offshore Vendor Teams Give, Make, Demand, and Break Sense, *MIS Quarterly*, Vol. 32, No. 2, pp. 227–255.
- Yin R. K. (2003) *Case study research: Design and methods (3<sup>rd</sup> Ed.)*, Thousand Oaks, SAGE.
- Yoo, Y., Henfridsson O., Lyytinen K. (2010) Research Commentary—The New Organizing Logic of Digital Innovation: An Agenda for Information Systems Research, *Information Systems Research*, Vol. 21, No. 4, pp. 724–735.