

## Smart Work Centers as “creative workspaces” for remote employees

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### ABSTRACT

This paper focuses on the creative potential offered to remote workers by an innovative workplace, i.e. Smart Work Center (SWC), that acquired momentum with the diffusion of smart working, a holistic approach in managing employees' flexibility. In conceptualizing SWCs as "creative workspaces", we draw on literature on workplace creativity to identify a number of factors related to work environment influencing individual creativity. Then, in light of specific SWC's features, we developed a set of research propositions explaining how SWCs can support creativity among employees working in these spaces, both directly (through material elements) and indirectly (through culture and social relations).

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### INTRODUCTION

Creativity has assumed a crucial importance in today's society, as evidenced by the emergence of several typologies of creative workspaces. Among these, most attention was given to “co-working spaces”, where professionals and entrepreneurs' creativity is facilitated by serendipitous interactions and physical and cognitive proximity (e.g. Moriset, 2014). Similarly, researchers and practitioners looked at workspaces specifically designed for creativity and innovation goals, notably “innovation labs” and accelerators (e.g. Cohen, 2013). Both typologies, however, have been mainly considered for implications on local economy, i.e. their capability to support entrepreneurship, creativity and innovation in specific geographical areas (Fuzi et al., 2014; Fuzi, 2015).

Organizational literature provided strong evidence about the relevance of workplace creativity for companies to thrive in dynamic environments, respond to unforeseen challenges and develop new capabilities (Amabile, 1988; 1996; Shalley et al., 2004; Zhou and Hoever, 2014). In this regard, many companies are investing in designing “creative workspaces” to support individual, team and organizational creativity, foster innovation and communicate a positive image (De Paoli et al., 2017). Anyway, companies tend to confine these creative workspaces to areas designed ad hoc for creative and innovation purposes following a standardized aesthetics (e.g. Google creative lab, Design Thinking Area in Barilla). This results in little attention to

creativity emerging outside these areas during daily operations (De Paoli et al., 2017).

In the present study, we focus on the creative potential offered to employees working in the so-called Smart Work Centers (SWCs). SWC is an innovative type of office that acquired momentum with the diffusion among companies of flexible work arrangements, in particular smart working i.e. a holistic approach in managing employees' flexibility able to overcome drawbacks attributed to homeworking (Adamson et al., 2013; Clapperton and Vanhoutte, 2010; Lee et al., 2013; Hardill and Green, 2003; Micropol, 2014).

The design of workspaces within SWCs is different from traditional offices; indeed, they are organized with open spaces, areas for collaboration, concentration, communication, relaxing (Adamson et al., 2013; BNP Paribas, 2017; Myerson et al., 2010; Versteegh, 2010). A variety of potential users, including professionals, entrepreneurs, small and micro-businesses, public and private employees are allowed to access flexibly and carry out activities by taking advantage from several technological resources and services.

Despite the number of SWCs realized worldwide from private (see BNP Paribas, 2017; Cisco, 2011) and public organizations (see Eom, 2016; Micropol, 2014), we still know very little about these workspaces. Moreover, scientific and practice-oriented studies pointed at SWCs as promising solution for enhancing temporal and spatial flexibility of remote workers, while

no attention has been given to their potential to boost creativity of people working there.

In order to fill this gap, the paper aims at conceptualizing SWCs as "creative workspaces". To this end, we draw on organizational literature on workplace creativity and creative workspaces (Amabile, 1996; De Paoli et al., 2017) to identify a number of factors in work environment influencing creativity (Amabile, 1988; Shalley et al., 2004). Subsequently, taking into account SWCs' features, we develop a set of research propositions explaining how SWCs can support creativity among their users. We consider that specific space design and available technologies can directly affect smart workers' creativity, benefitting from interactions with others in physical and virtual environments. We also consider that SWCs can indirectly affect smart workers' creativity by promoting a culture of openness and a climate of collaboration, ensuring physical and cognitive proximity, enhancing workers' autonomy and informal managerial styles.

The paper is structured as follows: firstly, we provide an overview of studies on workplace creativity and examine SWCs' main features. Then, we describe the research method adopted to elaborate research propositions about the role of SWCs as creative workspace. Finally, we provide conclusions, including directions for future research.

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## THEORETICAL BACKGROUND

### Workplace creativity: a context-centered perspective

Workplace creativity is a key driver of organizational innovation, performance and long-term survival (Amabile, 1996; Shalley et al., 2004; Zhou and Shalley, 2003). Creativity is defined as production of novel, useful ideas about products, services, business models, methods and practices (Amabile, 1996; Mumford, 2003; Shalley and Zhou, 2008) and may be the outcome of individuals and teams regardless of functional area or organizational position (Zhou and Hoever, 2014).

Research mainly focused on sources of workplace creativity (Anderson et al., 2014), crucial for subsequent innovation, i.e. implementation of creative ideas (Amabile, 1996). First research was "actor-centered" and focused on individual dispositions affecting creativity (e.g. personality), whereas subsequent studies embraced a "context-centered" perspective, studying the influence of (physical and social) work environment, including workspace design and relationships with colleagues (De Paoli et al., 2017; Shalley et al., 2004).

According to the componential theory of organizational creativity and innovation (Amabile, 1988; 1996), work environment influences creativity by affecting employees' intrinsic motivation to perform an activity. In line with this theory, employee's creativity is influenced by organizational motivation to innovate,

availability of resources for task performance (e.g. technology) and managerial practices (e.g. supporting style) (Amabile, et al., 2004; Amabile and Conti, 1999).

As for workspace design, research on creativity can be categorized into two groups (De Paoli et al., 2017). Specifically: 1) studies examining how space directly affects creativity through material objects and artefacts or specific characteristics of the physical workspace (e.g. spaces diversity); 2) studies examining how space indirectly affects creativity through its influence on different variables, such as communication, social relations and organizational culture.

Notwithstanding their relevance, the analysis of how space influences workplace creativity from an organizational perspective has hitherto centred on re-designing traditional offices to make them "creative workspaces". In the next paragraph, we will introduce a new type of workplace, known as Smart Work Center, that attracted attention among organizations interested in flexible arrangements (notably smart working) (e.g. BNP Paribas, 2017; Unicredit, 2014; Veerstegh, 2010). In this regard, the focus will be on a number of features that, according to our perspective, are relevant to conceptualize SWCs as creative workspaces.

### Smart Work centers: beyond workspace flexibility

Recently, a holistic approach in managing workplace flexibility, known as Smart Working, is spreading in many organizations worldwide (e.g. BNP Paribas, 2017; Unicredit, 2014; Veerstegh, 2010). Smart working stretches the principle of remote working, i.e. working outside conventional workplace, emphasizing concepts like autonomy and empowerment and the benefits for organizations and employees (Clapperton and Vanhoutte, 2014; De Kok, 2016; Hartog et al., 2015).

Ideally, the implementation of smart working requires the integrated re-design of physical workspaces (Bricks), ICTs (Bytes), and human resource practices (Behaviors) (Clapperton and Vanhoutte, 2014; De Kok, 2016; Hartog et al., 2015). Bricks refer to a new design of office spaces so that smart workers have different typologies of working areas (e.g. open spaces, meeting rooms, concentration areas) suitable for concentration and/or interaction with colleagues (Greene and Myerson, 2011; Hartog et al., 2015). Bytes refer to the design of simple and sophisticated ICT (e.g. collaborative tools, videoconference system) to enable smart workers to perform activities whenever and wherever, thus creating a virtual work environment (Johns and Gratton, 2013). Behaviours assume the transformation of traditional work practices, based on employees' presence, that are replaced by a trust-based culture with greater employees' autonomy and empowerment (de Kok, 2016; Hartog et al., 2015).

Coherently to "Bricks" and "Bytes" levers, many organizations adopting smart working have started to re-design their offices as SWCs. These assume a re-design of physical workplaces and their endowment with

collaborative technologies. Accordingly, they are organized as shared workspaces for a variety of users, who can access flexibly and carry out activities by taking advantage from several technological resources and services (Adamson et al., 2013; Lee et al., 2013; Micropol, 2014).

Within SWCs, offices are organized as open spaces, where users can choose to work individually or in teams. Along with shared desks in open spaces, there are areas for collaboration (e.g. meeting rooms), concentration (e.g. small offices), communication (e.g. call booths), relaxing (e.g. cafeteria) (Myerson et al., 2010). In some cases, they offer complementary services, like gym and training courses (Adamson et al., 2013; BNP Paribas, 2017; Versteegh, 2010).

SWCs are equipped with several ICTs so to enable interactions and collaborations among co-located people and remote colleagues. Technological services vary from basic ones, like internet connectivity and office equipment, to advanced distance-based collaborative tools, like instant messaging and videoconferencing systems. Organizational employees can also access corporate resources through cloud computing systems and rely on social computing tools to collaborate with colleagues anywhere and anytime (Cisco, 2011).

Some described features may suggest the similarity of SWCs with other creative workspaces, mainly with co-working spaces. Anyway, it is noteworthy to evidence that, although positioned in continuity, SWCs reflect a new business model that combines and revitalizes elements that traditionally characterize these spaces. Specifically, SWCs are thought as “smart working solutions” and, according to this new approach to remote working, they are designed mainly for private and/or public employees so as to stimulate collaboration in both physical and virtual workspaces.

The scientific debate on SWCs as a new workplace is in its infancy among management scholars. In a seminal work, Eom (2016) conducted a survey among public Korean employees working in SWCs reporting several benefits, e.g. saving money, improving work-family balance. However, scientific and practice-oriented studies have hitherto emphasized SWCs as a potential solution for enhancing temporal and spatial flexibility of remote workers. No studies focused on the impact that working in SWCs can have on creativity of their users. Taking into account the key features previously described, in the next paragraph we draw on literature on workplace creativity to sound the conceptualization of SWCs as creative workspaces in a theoretically based discourse and develop a research agenda for future studies.

propositions. We draw on organizational literature on workplace creativity, more specifically on creative workspaces (Amabile, 1996; De Paoli et al., 2017) to identify a number of factors influencing individual creativity. These are related to the work environment (Amabile, 1988), specifically to: physical space (e.g. De Paoli et al., 2017; Kallio et al., 2015); technologies (e.g. Bonnardel and Zenasni, 2010; Thatcher and Brown, 2010); organizational culture and climate (Amabile, 1988; McLean, 2005); social and cognitive proximity (Boschma, 2005; Moriset, 2014), managerial practices and styles (Amabile, 1988; Amabile et al., 2004). Subsequently, drawing on (scant) scientific (e.g. Lee et al., 2013) and grey literature on SWCs (e.g. Adamson et al., 2013), we focus on those key features that are relevant for their conceptualization as “creative workspace” and the elaboration of research propositions to be investigated in future experimental research.

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## SMART WORK CENTERS AS “CREATIVE WORKSPACES”: A RESEARCH AGENDA

### The “direct” influence of SWCs on workplace creativity

Literature on workplace design underlined how the configuration of physical workspace affects the way people live the physical space and interact with others in the social space (Assenza, 2015; Bisadi et al., 2012). Specifically, location, spatial organization and architecture details (Kallio et al. 2015) but also colors, sounds, plants and flowers (Samani et al., 2014) can be leveraged to support creativity (Kallio et al., 2015). In this regard, open spaces encourage interactions, promote knowledge sharing and creative activities (Samani et al., 2014). In addition, a mix of open and private spaces, along with areas for social interactions, facilitates the performance of cognitively intense activities satisfying different preferences (Martens, 2011). Finally, the diversity of spaces enhances the sense of proximity and facilitates chance of interactions (Bisadi et al., 2012).

In this regard, as illustrated, SWCs are organized with open spaces and offer their users both concentration areas and meeting rooms to focus on individual work or collaborate with others as well as recreational areas to engage in informal interactions. This is very close to the design of workspaces in other collaborative spaces (e.g. co-working) whose positive effect on creativity has been documented in literature (e.g. Moriset, 2014). This led to the first research proposition on SWC’s physical workspace and workplace creativity to be empirically investigated through experimental research taking into account the different level of creativity of traditional employees and smart workers in SWCs.

*Proposition 1: The open nature and the availability of different spaces within SWCs positively influence smart workers’ creativity.*

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## RESEARCH METHOD

To explore the role of SWCs in fostering remote workers’ creativity we develop a set of research

Technologies are relevant to creativity processes (Amabile, 1988; 1996), to the point that they may modify the creative potential of individuals (Bonnardel and Zenasni, 2010). For example, previous research evidenced the relevance of Computer-Aided-Design (CAD) and Computer-mediated-communications (CMCs) for design activities, where creativity is imperative. Indeed, CAD supported the emergence of creative ideas, their evaluations and externalization of mental representations (Bonnardel and Zenasni, 2010). CMCs enhance creativity in design activities by favoring the sharing of ideas through synchronous (real time e.g. Skype) and asynchronous (e.g. e-mail) communications, irrespective of colleagues’ availability that foster commitment toward creativity (Chamakiotis et al., 2013). Moreover, multiple communication media provide an environment conducive for sharing new and novel ideas as the increase in the total amount of possible communication activity results in high potential for creativity (Thatcher and Brown, 2010).

SWCs are equipped with several technologies, notably communication media, that support individual and team tasks, and interactions in physical proximity and virtual workspace (Cisco, 2011). This led us to assume that technological equipment within SWCs favors greater creativity, from which the following proposition.

*Proposition 2a. The mix of communication media available within SWCs and related opportunities for synchronous and asynchronous communications, positively influence smart workers’ creativity.*

Moreover, technology-related support is crucial for remote workers (Drouin and Bourgault, 2013); specifically, the potentialities of technologies on creativity are strengthened when users may take advantage of training and/or technical support in using each technological resource (Bonnardel and Zenasni, 2010). Therefore, as these services are frequently provided to SWCs’ users (Adamson et al., 2013), we propose that these characteristics affect smart workers’ creativity.

*Proposition 2b. The relationship between technology and smart workers’ creativity will be influenced by some contextual characteristics, such as training and/or technical support available within SWCs.*

Organizations could carry on experimental research to investigate if the different variety of communication media (and related synchronous and asynchronous communications) as well as the different degree of training and/or technical support available to home-based workers and employees working in SWCs produce significant differences in terms of creative outputs.

### **The "indirect" influence of SWCs on workplace creativity**

Organizational culture (i.e. assumptions, meaning, beliefs) and organizational climate (i.e. practices and patterns of behavior rooted in these assumptions, meaning, beliefs) influence personality, motivations and behaviors and thus individual creativity (McLean, 2005). Several characteristics of organizational culture and climate are able to support creativity. These refer to the encouragement by the organizations (e.g. favoring collaboration and exchange of expertise), supervisors (e.g. clarity of team goals and work) and work group (as diversity in culture, and competences among colleagues) as well as freedom, autonomy and sufficient resources (Angle, 1989; McLean, 2005).

The adoption of SWCs by organizations fosters the emergence of a "smart" organizational culture inspired by openness, collectivity and collaboration, where enthusiasm is expressed and support is extended to explore new ideas, resulting in higher attitude to interact with others with creative purposes (Errichiello and Pianese, 2014). In this respect, SWCs share some features with co-working spaces (Deskmag, 2013; Gandini, 2015; John and Gratton, 2013; Merkel, 2015). Indeed, both workspaces attach high importance to collaboration. Co-working is based on the idea of “collaboration with other people”, enabled by geographical and cognitive proximity (Brown and Duguid, 1991). SWCs embrace the idea of “working together” but include also an “interconnected way of working” (Boorsma and Mitchell, 2011) linking physical and virtual work environments through ICTs (Errichiello and Pianese, 2014). Collaboration among smart workers is therefore not limited among people working in physical proximity (as assumed in co-working spaces) but simultaneously extends to virtual workspace where e.g. “choreographic” virtual meetings encourage free discussion and foster creativity (Malhotra et al., 2007). It follows our third proposition.

*Proposition 3. The level of smart workers’ creativity is higher in SWCs where a “smart” organizational culture and a "smart" climate are promoted, and collaboration in the physical and virtual workspace is encouraged.*

An experimental research aimed at investigating this proposition could be conducted in the context of a multinational company by comparing the creativity of three different teams involved in similar projects (e.g. a new product development) but whose members respectively work in SWCs, in pure virtual teams and traditional offices.

Regional studies emphasize advantages of proximity whose different dimensions (i.e. cognitive, organizational, social) reduce uncertainty, improve coordination, and facilitate interactive learning

(Boschma, 2005). This theory of "proximity" has been applied to creative workplaces (e.g. co-working spaces) to evidence that, although "cognitive" proximity (i.e. people share the same knowledge base) remains a prerequisite, it is important to balance diversity among users with common thread of curiosity, creativity, and passion (Moriset, 2014).

SWCs provide organizations with the opportunity to balance cognitive proximity with diversity, and prevent lock-in by ensuring openness, both essential to innovation processes. In this regard, since SWCs are thought for a variety of users, including self-employed professionals, entrepreneurs, small and micro-businesses, public and private employees (Adamsone, 2013; Micropol, 2014; Eom, 2016), creativity may benefit from combining different knowledge bases, typologies of relationships, cultures, values, local and extra-local linkages.

*Proposition 4. Within SWCs, smart workers' creativity could be favoured by cognitive proximity and diversity with other users*

This research proposition could be investigated in one or more organizations through experimental research that measures the creative output of the same group of employees working in a traditional office and, in a subsequent period, in a SWC. For example, organizations could select people working in a specific functional area (e.g. R&D) located in traditional corporate office and evaluate the performance differentials produced on their creativity when they move to SWCs.

Specific managerial skills and styles are conducive to individual creativity. In this regard, the recognition of autonomy, i.e. control over own work and freedom in deciding how to accomplish tasks, are relevant for individual creativity and organizational innovation (Amabile, 1988; Amabile et al., 2004).

Autonomy is relevant also in the context of remote working. Indeed, some authors found a positive relationship between remote working and creative tasks through enhanced job autonomy (Vega et al., 2015). Recently, Naotunna and Zhou (2018) found a positive impact of autonomy on creativity of professional remote workers due to an increased creative self-efficacy. Moreover, literature evidenced that perceived leader support, encompassing instrumental and socio-emotional support, is crucial for creativity (Amabile et al., 2004)

Autonomy may be even reinforced within SWCs, where smart workers' flexibility extends to the physical and virtual workspaces, and informal management styles, open communication flows and enthusiastic collaborations are promoted.

*Proposition 5a. The level of smart workers' creativity is higher in SWCs where employees' autonomy is encouraged and support by managers is provided.*

However, literature showed that not all remote workers were able to take advantage of flexibility. Indeed, some employees, although appreciating job autonomy, are actually unable to self-regulate towards achieving assigned goals and/or perceive themselves as not efficacy in working remotely (Lee-Kelley, 2006; Staples et al., 1999; Whittle, 2005). This led us to formulate the following proposition:

*Proposition 5b. Within SWCs, the relationship between smart workers' autonomy and creativity will be negatively influenced by their capacity to self-regulate.*

Accordingly, organizations could experiment to deepen the understanding of this proposition by providing different level of autonomy and managerial support to two separate groups. Each group would be involved in similar projects (e.g. a new promotional campaign) but working in different workplaces (i.e. traditional offices and SWCs) so as to comparing the creative outputs of each employees and groups, also taking into account their capacity to self-regulate.

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## DISCUSSION AND CONCLUSIONS

This study sheds light on a workspace, i.e. SWC, and elaborates a number of propositions related to its potential to boost smart workers' creativity. It contributes to extending knowledge on "creative workspaces" (e.g. Amabile, 1996; De Paoli et al., 2017; Gandini, 2015; Moriset, 2014) by shedding light on potentialities offered in terms of creativity by an unexplored workspace, i.e. SWC. It also provides new knowledge on workplace creativity in the context of remote working as existing studies focused on home-based teleworking and are inconclusive in their results (Allen et al., 2015; Boell et al., 2016). Indeed, some authors found a positive relationship between telework, individual creativity (Naotunna and Zhou, 2018), creative skills (Pyoria, 2011) and creative task (Vega et al., 2015). Nevertheless, others (e.g. Bailey and Kurland, 2002) emphasize that reduced work interruptions and face-to-face interactions can be detrimental to creativity and knowledge transfer, as demonstrated by Yahoo's decision to bring employees back to traditional offices (Weise and Swartz, 2013). Our paper takes into account a new context to explore the relationship between remote working and creativity and assumes that smart workers' creativity can be positively influenced when they carry on their tasks in SWCs.

Future studies should investigate the propositions about the relationships between the physical and social environment of SWCs and creativity. In these respect, quantitative studies with surveys administered to employees working in SWCs could be a viable pathway. Empirical findings may be integrated with longitudinal

case studies, exploring patterns and mechanisms underlying the emergence of creativity within SWCs.

Finally, empirical research could be based on experiments conducted in organizational environments so that companies engaged in these experiments can benefit from this knowledge (Christiansen et al., 2017). In this direction, organizations engaged in experimental research could collaborate with researchers to identify different groups of individuals, distinguished based on tasks and grouped in teams. Then, based on reliable scales, a comparison could be made between levels of individual (or team) creativity within these groups in two temporal stages. Specifically, in a first period, employees will work in traditional offices and, in a subsequent period, they will be asked to work in SWCs. In this way, it would be possible to evaluate if working remotely in SWCs positively affects workplace creativity, and to identify other factors that influence remote workers' creativity.

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## AUTHOR CONTRIBUTIONS

All authors equally contributed to conceptualizing and carrying on the present study as well as to writing the manuscript.

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