

# Open plan offices – the response to leadership challenges of virtual project work?

Open plan  
offices

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## Abstract

**Purpose** – The purpose of this paper is to explore hybrid work spaces, combining open-plan, team-based offices with virtual work and leadership, in relation to the main leadership and team challenges virtual project environments encounter.

**Design/methodology/approach** – In a review of virtual team literature, virtuality is defined and its main challenges to project leadership are identified. Based on the literature, several semi-structured interviews with project team managers within telecom and IT-consultancy were conducted. Using an exploratory approach, the authors introduce some new leadership concepts and functional benefits of open-plan offices important for virtual project environments.

**Findings** – The findings suggest that project managers encounter several new kinds of challenges while leading virtual projects. Co-location of the project team during certain stages in open-plan, team-based offices may meet some of these challenges. The authors claim that spatial arrangements and their embodied subjective experiences make an impact on the effectiveness of virtual project teams.

**Research limitations/implications** – This paper develops new conceptual thinking of how office facilities may contribute to productive virtual project teams. Further empirical studies in other settings are needed to generate generalizable findings.

**Practical implications** – The paper discusses and provides arguments for real estate and facility managers, as well as project and team leaders, for the importance of open-plan offices for virtual project teams.

**Originality/value** – The paper combines and benefits from different discussions on workspaces, virtual team and leadership. Furthermore, the paper introduces the notion of spatial leadership beyond the mainstream leader-centric approach to point out the importance of physical workspace of virtual teams and how the workspaces can perform leadership functions.

**Keywords** Open-plan offices, Office space, Spatial leadership, Virtual leadership, Virtual team work

**Paper type** Conceptual paper

## Introduction

The realisation that the office building may not continue as a stable building type for much longer, and certainly not in its present form, may be a necessary contribution to the rediscovery of “place to business” in an increasingly virtual world [...] As work spills out into the street, into homes, and into cafes, restaurants, hotel lobbies, and airport lounges, the networked office transcends individual office buildings. (Duffy, 2014, p. 130)

The quote describes the transformation offices are undergoing because of the increasingly virtual nature of knowledge-based work. In his article, Duffy questions



how this will change the regular office and how physical space will complement and enhance the self-evident benefits of virtuality. According to leading organizational scholars, the nature of work, but also the organizing and leadership of work, is changing (Avolio *et al.*, 2014; Zander *et al.*, 2012). Modern telecommunication and technology have created a new organizational reality with virtual work and virtual leadership being the rule rather than the exception, both within and across organizations and countries (DasGupta, 2011; Wakefield *et al.*, 2008; Zigurs, 2002). Virtual teams have been defined in the following way: “Virtual or distributed teams are groups of employees, typically knowledge workers with unique skills, who collaborate primarily through electronic means and are dispersed by geography and time.” (Aubert and Kelsey, 2003; Bell and Kozlowski, 2002; Kirkman *et al.*, 2004; Zigurs, 2002).

Virtual teams gather most often critical competent professionals for complex task-solving, people being organizationally and geographically dispersed. Virtual work is introducing new challenges for both collaboration and leadership, but not least for office facilities, as argued by Duffy (2014). This paper will explore what kind of demands virtual team collaboration and leadership is posing for office facilities. This may give some answers to what kind of leadership and physical office spaces are needed for virtual teams. The following open research questions will guide us to explore the theme:

RQ1. What kind of challenges does virtual team work pose to leadership?

RQ2. What kind of offices and functional aspects of offices can meet these challenges?

Several researchers within facility management have made a claim for shifting the focus from mainly space and buildings, into taking responsibility for the total provisioning of what is needed to support work (Dixon and Ross, 2011; Duffy, 2014; Hunnes Blakstad, 2015). This means that the process of defining needs and discussing different ways of working becomes more important. To understand better what virtual work and virtual leadership mean in terms of new challenges for facility managers, we will explore the subject through an extensive literature review on virtual teams and interviews with project team managers in knowledge-based organizations.

### **Literature review of “alternative officing” and virtual work**

Interestingly to note, Becker introduced early different types of “alternative” workplace solutions, with virtual offices being one of the alternatives (Becker, 1999, p. 155). Becker referred to “virtual officing” as a variety of mobile and remote work settings. With the virtual office, he meant that the workplace could happen everywhere. There is an increasing recognition that more and more teams fall into a large “hybrid category”; that is, they are no longer purely distributed or purely face-to-face, but use technology according to the needs of their task and team structure (Gurtner *et al.*, 2007). Accordingly, one may assume that virtual teams are using offices in the same way as technology, in a hybrid way, combining the needs of meeting up face-to-face with the needs of communicating and meeting up electronically, either in the office or elsewhere.

After the introduction of alternative offices, several typologies of workplace design have been developed such as different kinds of open-plan offices, team- and collaborative environments, activity-based settings and unassigned or flexible officing, among others (Becker, 1999; Becker and Sims, 2001; Duffy, 1997; Kampschroer and Heerwagen, 2005).

Several studies have been conducted on how these office solutions function in relation to communication, collaboration, flexibility, employee or user satisfaction

and productivity (Allen *et al.*, 2004; Danielsson, 2010; Kim and De Dear, 2013; Van der Voordt, 2004; Maarleveld *et al.*, 2009). Open-plan offices has been argued to introduce advantages to traditional cell offices in terms of collaboration, communication, information sharing or knowledge integration (Kampschroer and Heerwagen, 2005; van der Voordt, 2004). Moreover, there have been several reports on how organizations are increasingly investing in innovative offices and upgrading the open-plan office to support more nomadic, group-based, flexible or remote working styles (Davis *et al.*, 2011). Offices and facilities have also been seen as important drivers and shapers for business productivity and value creation (Joroff *et al.*, 2003; Kampschroer and Heerwagen, 2005; Vischer, 2006; 2007; Worthington, 2006). Recent and relevant research contributions are about the added value of corporate real estate and building design (Appel-Meulenbroek, 2013) and how workplace design shapes knowledge sharing.

Virtual offices and virtual work has been included as an important aspect of work and offices in facility management research. While some researchers have included it as one form of alternative offices and described its characteristics (Becker, 1999; Duffy, 1997), others have explored the new kind of virtual work including “Net Work” or distributed work (Harrison *et al.*, 2004), how the mobile office is characterized by diversity in spaces and locations (van Meel, 2011) and, finally, also how virtual work has consequences for offices and real estate strategy (Dixon and Ross, 2011). This paper will go deeper into the theme of virtual work by focusing at virtual leadership and its demands on offices, hitherto a less researched aspect of work space design. Interestingly, there are few studies on how leadership relates to offices and facility management, except for a recent study on how employees perceive their managers and their leadership in different office settings (Danielsson *et al.*, 2013).

### Literature review – leadership challenges and solutions in virtual teamwork

Research on virtual teamwork has long been conducted within organizational research in different fields, such as information systems management (Kayworth and Leidner, 2001; Kerber and Buono, 2004; Pauleen, 2004; Wakefield *et al.*, 2008), small groups and project management (Bell and Kozlowski, 2002; Carte *et al.*, 2006; Hertel *et al.*, 2005; Hoegl *et al.*, 2012) and leadership (Avolio *et al.*, 2014; DasGupta, 2011).

Researchers of virtual teams argue that they represent unique teamwork and leadership challenges along with cost-saving benefits (Pauleen, 2004; Zigurs, 2002; Zhang and Fjermestad, 2006; Wakefield *et al.*, 2008; Zander *et al.*, 2012). As the dispersion of team members increases, virtual teams and groups tend to experience *greater and more diverse conflict* compared to co-located teams (Wakefield *et al.*, 2008). Time differences present a constant challenge, as people work in different *time zones*. Being away from a common location and culture disrupts a team’s mutual awareness of members, which in turn inhibits shared understandings (Cramton, 2001). Team members at different sites need a *common objective and ownership to tasks and accountability*, which is more difficult to achieve in a virtual team due to fewer opportunities to physically relate and communicate. Frequent communication and relationship development appears to be even more important in virtual than in traditional teams according to Zigurs (2002), because working virtually tends to make members *focus more on the task and technology than on relations*. In fact, much of the virtual team and project literature highlights the *importance of communication and*

*trust* (Aubert and Kelsey, 2003; Hoegl *et al.*, 2012; Jarvenpaa and Leidner, 1999; Krebs *et al.*, 2006; Zigurs, 2002). Pauleen (2004) reports that leadership challenges are magnified in a virtual environment and have implications for communication, collaboration and socialization, as well as for overall team effectiveness. In a recent review, Zander *et al.* (2012) report that maintaining communication, establishing relationships and managing conflict are seen as especially critical leadership actions.

As a summary, many team and leadership challenges seem to be altered when working virtually, as the absence of face-to-face contact leads to problems in communication and relationship development, lack of trust, cultural mismatch and complex conflict handling.

A review of the literature on virtual teamwork and leadership suggests that there are *three main broad streams of solutions* for meeting the main team and leadership challenges: leadership styles and roles, communication technology and tools and face-to-face presence.

There are studies that inquire which leadership styles are best suited to virtual teams (Bell and Kozlowski, 2002; Carte *et al.*, 2006; Davis and Bryant, 2003; Hertel *et al.*, 2005; Joshi and Lazarova, 2005; Muethel and Hoegl, 2010; Wakefield *et al.*, 2008). The first approach is the traditional leader-centric approach, which focuses on the abilities of the team leader (Pauleen, 2004; Zhang and Fjermestad, 2006; Wakefield *et al.*, 2008). The second approach argues that leaders need to distribute and delegate leadership functions and responsibilities to team members (Bell and Kozlowski, 2002) by using empowering leadership (Kirkman *et al.*, 2004), self-leadership and shared leadership (Davis and Bryant, 2003; Muethel and Hoegl, 2010; Zigurs, 2002) and transformational leadership (Joshi and Lazarova, 2005; Mendenhall *et al.*, 2012). Zigurs claims that virtual teams provide a unique opportunity for redefining the concept of leadership and that self-leadership, emergent leadership, shared leadership and transformational leadership apply well to these kinds of leadership challenges. Although there are examples of highly self-organized virtual teams (Wakefield *et al.*, 2008), there are studies showing that virtual teams function better with managerial guidance (Hertel *et al.*, 2005).

There seems to be a paradox in that, while technology challenges social relationships, communication and leadership of virtual teams, the same technology is seen as a solution to many of these challenges (Zigurs, 2002; Malhotra *et al.*, 2007). Leaders co-located physically make their presence known in a variety of ways, including their physical placement at meetings, office locations, body language, voice, style of dress and so on. Many of these cues are lost in virtual environments (Zigurs, 2002). The disappearance of embodied team members is something that we challenge in a study of virtual cooperation and leadership in a global team. We argue that physicality matters in a Skype meeting, where all visuals, tones of voice and bodily gestures influence the effectiveness of the virtual meeting (De Paoli *et al.*, 2014).

Meeting face-to-face occasionally is another way to overcome the challenges of virtual work (Zigurs, 2002). Especially during team formation, research points out the importance of personal contact and socializing to build trust (Creighton and Adams, 1998; Furst *et al.*, 2004). Here, the importance of physical space is referred to indirectly, but poorly discussed in the literature. Meeting face-to-face can address many of the challenges of virtual teamwork and leadership. The lack of emphasis on physical facilities and different kinds of places to meet while working virtually is therefore striking (Table I).

*Virtual team leadership*

Challenges

- Greater and more diverse conflict
- Subgroups easily formed
- Time differences
- Lack of ownership to objective and task
- Difficulty developing trust (when not having met)
- Dysfunctional communication–distortion and misinterpretation
- Poorer communication due to lack of facial expressions, vocal inflections, verbal cues and gestures
- Traditional social mechanisms are lost or distorted
- Distinctions among members' social and expert status changed
- Difference of technological standards and quality creates communication barriers

Solutions

Leadership styles

- Finding person with right abilities
- Managers need to have more control
- Managers need to distribute and delegate
- Empowering, shared leadership

Better technology

- Face-to-face presence (physical facilities not mentioned)

**Table I.**  
Summary of  
literature review of  
virtual team  
leadership challenges  
and solutions

**Research design and data collection**

In lack of appropriate theories or earlier research combining the issues of collaboration and leadership in virtual teams with workspace design or facility management, an explorative inductive approach was used (Myers, 2013). Based on the literature review, we wanted to explore further how managers working both in virtual work spaces and open-plan offices (hybrid situation) experienced their collaboration and leadership. We wanted to understand individual managers' perceptions, motives and attitudes to their leadership in this work situation. Being oriented to individuals' subjective perceptions, qualitative research is argued as being the most appropriate approach (Myers, 2013; Denzin and Lincoln, 2005). Interviews allow us to gather rich data from managers in a distinct team leadership role.

The use and experimentation with new technology and office space is especially widespread among knowledge-based organizations with technically proficient and professionally oriented employees and managers (Becker, 1999; Duffy, 1997). We selected project managers, because they lead teams. We got access to typical knowledge-based organizations; a major international telecom company Telenor (De Paoli *et al.*, 2013) and different IT-consultancy businesses. Majority of their professionals are engineers and they work in open-plan and team-based offices. During the spring and autumn of 2012 and 2013, ten semi-structured interviews with project managers from each company were conducted. One of the major advantages of the semi-structured interview is that it gives the interviewee the opportunity to add important insights as they arise during the course of the conversation (Myers, 2013). We asked managers to use the experiences of the last project team they managed, which generally consisted of 20 to 50 people. All projects involved people in different locations and people located in open-plan offices centrally. Most of the interviews lasted for approximately 1 hour.

Interview dimensions related to work settings (virtual versus open-plan offices) were:

- time spent in the work spaces;
- perception of being a leader in these work spaces – positive experiences versus challenges (virtual versus open-plan offices);
- perception of communication and collaboration;
- perception of peak moment in the project; and
- experience with open-plan offices in relation to virtual work.

These dimensions also provided the basis for categorizing the responses of the project managers. Some quotations are provided to illustrate the dimensions.

**Empirical results**

The most striking finding is that the project managers leading virtual teams, when asked when they perceived the peak moment of the project, answered it was when they were physically co-located. Physical presence and co-location in open-plan offices were uniquely regarded positively; for the process, for being a good leader and for good results. They talked a lot about challenges leading people physically remote, at the same time praising when they all were physically present. There are strong indications in this study that open-plan offices and also team- and project spaces are particularly suitable to outbalance many of the challenges with virtual project teams. Table II gives an overview of the most important findings.

Project managers reported that the most important way to overcome virtual team leadership challenges was meeting and working face-to-face; gathering members in

**Table II.**  
Project team  
managers' experience  
of virtual work  
spaces vs open-plan  
offices (hybrid  
situation)

Interview dimensions	Virtual space (at home, on travel, public spaces)	Open-plan office (includes meeting-room)
Managers' average time spent	40-50%	30-50%
Preference related to project stage	Stage 3–Production	Stage 1–Idea and Stage 2–Planning
Positive experiences collaborating	Creates formal climate Structures task execution Good for status quo meetings Less chit-chat	Inspires trust and creativity Motivates and engages Knowledge integration Problems detected and solved Secures task overview
Challenges in leadership	Lack of informal cues Disagreements overseen Obtaining trust difficult Subgrouping according to location	Negative for concentration work Confidential meetings difficult
Conceptions of leading	Formal and detached Management oriented Challenging	Informal, involved and hands-on People- and leadership-oriented Physical space integrate and lead
Experienced peak moment of project		“When people are gathered and it is boiling” “When we create together in a location” “When physically co-located”



open-plan offices or team offices with coffee-gathering spots and whiteboard walls. This was seen as an important success criterion, as illustrated well by these quotes:

Working in the open-plan office zone is highly important. This is why we have successful projects. We obtain good integration and teamwork between the different parts of a value chain. The informal meeting and communication, when you just meet a person and a face, then you remember things to discuss. (Project manager E.S., Nov 30, 2012)

Gathering the whole project team physically, then people get going and it's a high drive, then I get a good feeling as a project manager. I did not take this seriously enough (the importance of people meeting face-to-face), but then I did not either get the kick and feeling of the peak in the project. (Project manager P.B., Nov 30, 2012).

Most project managers interviewed reported that it is vital for the virtual team to meet face-to-face at the beginning of the project and to develop a joint understanding of goals and tasks, especially when people have not previously met before and when the task is complex and demanding. They stressed the importance of physical co-location of team members during, specifically, the start-up; Stage 1 – Idea and Stage 2 – Planning. This was important for motivating people, sharing information and integrating knowledge, getting a feeling of the project and, as a leader, getting a grasp of how things are going. Most project team managers said that, specifically, these aspects were challenging to obtain in virtual meetings or in other ways virtually, although many said that virtual *status quo* meetings are often more effective for the following up work. Therefore, we have indicated that during Stage 3 – production, collaboration and leadership can well be done in virtual space.

Managers leading virtual project teams experience several challenges while leading people they do not see regularly. They reported that the leadership approach became more formal and detached. They also highlighted the importance of meeting up physically, because regardless of task, there is a need to sit together physically to discuss details and also develop the feeling of being a team. Often when people are physically remote, they may have problems doing the right priorities, which is difficult for project team managers to follow-up.

They also reported that information sharing and competence integration are vital and that open-plan team offices function much better than any other alternatives. These are demands that require openness and transparency of the physical workspace and offices in order for knowledge workers to be able to communicate and interact easily and informally.

Most team and project leaders interviewed reported that, in an open-plan office that assembles the team, the team or collaborative office (Becker, 1999) functions best when all the members of the projects are there, but it is also a preferred workspace when it is not possible for all members of the team to be present:

In the project department, we always try to get people to sit in the open-plan office space with, preferably, team members gathered physically in a designated office area; it improves communication very much, especially in virtual projects. We develop flow-charts of the most critical part of user interaction, which we put up on the walls. (Project manager H.S., Nov 30, 2012)

## Discussion of the empirical results

Already in 1999, Becker introduced “the virtual office” as an alternative office concept, but Becker’s concept did not address the ways in which virtual work influences or makes

demands on the traditional office. Several analyses of the ways in which technological drivers are shaping the office of the future have been offered (Dixon and Ross, 2011):

Rather than thinking of the office as a place primarily for solitary activity, from which one occasionally breaks out in time and space to settings intended for social activity, the office might be designed primarily as a social setting, from which one occasionally seeks out more private places for contemplation, concentration and confidentiality. (Becker, 2002, p. 147)

This quote, from a paper highlighting the benefits of open-plan and team-based officing, is more relevant than ever before. Research on virtual teamwork and leadership reveals a fascination and attraction to virtual work that seems to overlook the importance of face-to-face meeting places and physical facilities. Unlike more recent leadership literature (Hansen *et al.*, 2007; Ladkin and Taylor, 2010; Ropo and Sauer, 2008; Ropo *et al.*, 2013; Sinclair, 2005), researchers in the study of virtual teamwork and leadership seem to miss the importance of the embodied and sensuous nature of communication and leadership, especially while at the same time, miscommunication in virtual teamwork has been found to arise from the lack of informal, bodily cues and body language (Zigurs, 2002).

The issues of workspace, such as spatial distance, flexibility and proximity, are conceptually underdeveloped in virtual teamwork and leadership literature. The importance of material workspaces and the embodiment of work and leadership have been downplayed in practice and in research on virtual teams. The opportunity to work while geographically and physically dispersed has created a quasi-virtual work zone that seems to exist independently of physical workspaces and places. One may be led to think that the physical environment and meeting face-to-face are unnecessary, but also that workspaces are unimportant for virtual work. We argue here for the opposite.

The empirical findings indicate that organizations working to a large degree virtually in teams and projects should develop offices that stimulate face-to-face teamwork and communication. Open-plan and team-based office solutions seem particularly useful according to the experience of the interviewed project team managers. This confirms previous studies about collaboration and communication in open-plan offices (Allen *et al.*, 2004; Becker and Sims, 2001; Heerwagen *et al.*, 2004; Kim and De Dear, 2013; Van der Voordt, 2004; Maarleveld *et al.*, 2009) which show that these kind of office solutions are better for communication and knowledge sharing.

Socializing face-to-face in offices builds the trust that is essential for effective collaboration in virtual teams, because physical distance and collaboration virtually accentuate professional, organizational, cultural and language barriers.

In this paper, we have made the case that physical face-to-face meetings and workspaces matter for virtual team- and project work and leadership. We claim that physical spaces are vital to virtual teamwork because they emphasize the importance of the embodied nature of leadership and teamwork. Ropo *et al.* (2013) call this “spatial leadership”. Embodied, sensuous experiences of physical spaces (visual, sounds, touch, taste, smells) produce leadership perceptions attributed to virtual leadership challenges pointed out in the literature, such as trust, commitment, sense of belonging and appreciation. We argue that the embodied experiences of workspaces perform and practice leadership functions that are typically called for in virtual teams.

We conclude that leadership, in a virtual team, does not rely on a designated leader’s behavior or competencies. Instead, we suggest that leadership is constructed and maintained by the team members’ experiences of workspaces. This view also broadens



leadership from happening between humans only to include human–nonhuman encounters, such as material workspaces. This means that leadership happens “socio-materially” as people experience material places through their senses. While doing so, people attribute symbols, memories, feelings and physical qualities to the places. The embodied experiences of the material spaces shape their way of relating to people and issues and the ways in which they act on them.

### Implications for research and practice

This paper uses an interdisciplinary approach combining research about virtual team and leadership with research on facility management. Literature review indicates that the physical space perspective is missing within virtual team and leadership research, while facility management may benefit from including the leadership perspective in their future studies. We will challenge researchers within facility management to go further into the field of virtual work and leadership to develop appropriate office environments, but also to take into account newer perspectives within leadership that include the material perspective.

The findings of this exploratory study strengthen the importance of office facilities for virtual team and project environments. We claim that the material face-to-face aspect of collaboration and leadership is largely overseen in organizational and leadership practice and research. Facility and real estate management as a field need to engage more broadly in the organization and leadership debate, positioning their importance and value in an increasingly digitalized organizational reality. This would also strengthen facility and real estate managers, offering them an additional argument for the importance of office facilities. They need to be involved in the strategic development of organizations in adapting office facilities to developing technological solutions and suitable organizational designs and performance measures.

### Conclusions

Being physically present as a leader is highlighted as important by several managers, indicating that the leader does not only lead by the intellectual, rational, knowledge-based actions, which have been the prevalent way of conceiving leadership (Yukl, 2010), but also through their embodied way of being present. This suggests a new way of understanding leadership as a more personal and subjective way of relating through spatial solutions that encourage communication, collaboration and lower-power positions.

In accordance with the findings in the interviews, we suggest that *open-plan team-based offices* are particularly useful for virtual team work and leadership. They allow for “spatial leadership” and stimulate team building, commitment, information sharing, knowledge development, learning, socialization, creative thinking and problem solving, and provide a hands-on feeling of task-solving and group functioning.

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