



Challenges for Action Research on HWID in Activity Based Workplaces

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Abstract. In this paper we discuss challenges when conducting action research and formulating research projects in a fairly volatile organisational setting. This is done against a background of Human Work Interaction Design (HWID) research in new office environments and Activity Based Workplaces (ABW). While the concept of ABW is not new, presently there is a growing trend towards reconstruction of office work-places where the concept, in one form or the other, is having an impact on office design—and the design and use of ICT in the workplace. This paper will present experiences from the planning phase of a project in the area of HWID and ABW, and discuss the different roles and situations that needed to be handled as an action researcher.

1 Introduction

In this paper we present experiences from the planning phase of an action research project in the area of Human Work Interaction Design (HWID) and new ways of working (NWoW), or more specifically activity based work (ABW). Studying how ICT and especially interaction design can support employees in ABW is an emerging field. While ICT and office design have a long history as there have been numerous pioneering efforts in establishing NWoW, recent developments in ICT, prominently regarding mobility and ubiquitous computing, alongside high profile new offices such as Googleplex, contribute to a global trend in restructuring office design and office work (Bodin, 2010).

An opportunity to study the phenomena of NWoW and HWID presented itself to the research group as a large Swedish government organisation (GovOrg), that the group had worked with earlier, suggested that a new office building white collar workers was to be based on the concept of ABW. An action research project was initiated, for which the planning phase received funding as a separate planning project. Although the field is highly relevant and the initial idea in many ways still stand firm, it quickly became apparent during the planning phase that the high stakes involved in the change as well

as the internal dynamics within the organisation presented serious challenges for the continuation of the project.

In this paper we will reflect upon the challenges presented to the initial project idea and to discuss possible strategies for continuing the research, as we believe this to be a relevant field for HWID research.

2 Background and Theory

2.1 Activity Based Workplaces

The physical work environment in all its variety is a factor influencing office workers (Bodin, 2010). Recently, flexible offices and more specifically management philosophies such as the idea of activity based working (ABW) has attracted the interest of organisations – notably in Australia, the Netherlands and Sweden – as well as researchers. The concept of ABW is rather complex and ambiguous, one description states that employees “whilst in the office, can choose an activity-based workstation that best suits the activity at hand from a functional perspective and also matches with the employees’ preferences.” (Appel-Meulenbroek et al., 2011, p. 123). One important consequence of this is that it makes possible a significant reduction of traditional workstations and also office space. Space is here seen as a mediating factor between people and ICT. Indeed, the strategic use of corporate space is seen as the necessary, though not sufficient, factor in empowering the workforce and ameliorating many of the downsides of computer-supported work (van Kotsveld & Kamperman, 2011). A part of the concept is the increased use of ICT in support of both employee mobility and facility monitoring (Ianeva et al., 2015). Not surprisingly, the ICT industry itself is one of the major proponents of this new way of working (Gates, 2005). Yet, while ABW is proposed as a solution to the problems associated with open plan offices, e.g. high cognitive stress, research on ABW and cognitive stress is inconclusive (Too & Harvey, 2012, De Been & Beijer, 2014). In a seminal paper, Humphry (2014) traces the origins of this seemingly new “anywhere, anyplace” work rhetoric and expose some of its inherent paradoxes, notably e.g. how these images of newness contribute to the conservation of old work patterns.

As ICT in the workplace thus become more and more embedded and pervasive the scope for HCI and HWID broadens. The pioneering works of Alexander (2006) have argued for the application of usability concepts in the field of facility management, however the field seems to have attracted limited attention so far (Rasila et al. 2010). Instead, the most common tool seems to

be variations on the model developed by Laing et al. (1998), where the amount of face-to-face interaction is contrasted with the amount of job autonomy (resulting in a matrix of four basic office types: the hive, the cell, the den and the club). While this broad categorisation of work can aid planning, other techniques, such as personas, could provide a deeper understanding on how to improve the quality of work and the work environment.

2.2 Action Research

Action research has been our research approach for many years at the HCI group at Uppsala University. In action research projects, the role of the researchers is twofold: they are studying a particular phenomenon in practical settings (the research part) and they are actively improving the situation together with the participants (the action part) (McKay and Marshall, 2001). In many of our studies, we have focused on work environment and how ICT can support white collar workers in their daily activities (e.g. Sandblad et al, 2003; Janols et al, 2014, Cajander et al, 2014). Action research is a suitable research methodology for organisational change such as the introduction of new work patterns and research as it has the dual aim of solving research questions at the same time as solving problems in practice (McKay & Marshall, 2001) and to make a change (Oates, 2006). The idea is that the researchers, together with the practitioners, combine their different experiences and knowledge in order to solve a particular problem, as well as developing theory around this problem. Rapoport (1970) defines action research as an approach that “aims to contribute both to the practical concerns of people in an immediate problematic situation and the goals of social science by joint collaboration within a mutually acceptable ethical framework”. A prominent feature of action research is an active and deliberate involvement of the researcher in the context of the investigation. This is unlike many methodologies where the researcher is seen as a spectator who observes different phenomena without intervening.

2.3 Drivers, Inertia and Change

A driver behind large scale changes in organisation can be to keep up with the latest management ideas. This behaviour can be interpreted, according to the new institutional theory (Mayer & Rowan, 1977; DiMaggio & Powell 1983; Czarniawska & Joerges, 1996; Czarniawska & Savón, 2005), as a need to identify and to legitimize an organisation within the organizational field to which they belong (Czarniawska & Joerges, 1996; Erlingsdottir & Lindberg, 2005). Choices of management methods or processes are hence not necessarily

based on the actual needs of the organization, nor the situation, but are rather a conformity to what the other organizations do and which management methods or processes are in vogue.

Studies of the diffusion of innovations have shown that these diffusion processes can be described by a characteristic “S-curve” (Rogers, 2003). Diffusion is slow in the beginning as only those categorised as “innovators” and “early adopters” are interested in the innovation. But, as the use and knowledge of the innovation spreads, the rate of diffusion increases (fueled also by factors such as maturity of the innovation, lowered cost of providing the innovation, etc.) because the interest of the majority of potential users is won. As the diffusion process approaches saturation, the rate of diffusion decreases, with the group categorised as “laggards” being the only one group (out of those who will eventually adopt the innovation) that has still not adopted the innovation but proceeds to do that at a slow pace. (Rogers, 2003) This theory describes the voluntary adoption of innovation over an extended period of time, and as such is not applicable to the introduction of innovations in a workplace where they subsequently become mandatory to use. However, the fact, that adoption of mandatory innovations is commonly concentrated to a very short interval of time (or even intended to be near instantaneous) makes it interesting to discuss what happens when everyone is thus effectively forced to be an early adopter.

Due to the variation in time and effort required for different organisations to technically and organisationally prepare for adopting an innovation, it is not surprising that the rate of diffusion on a societal level is normally distributed. However, the social factors affecting an individual’s voluntary adoption of an innovation usually result in a normal distribution as well, while efforts toward facilitating user adoption strive to shift the weight of the distribution towards more innovators and early adopters while simultaneously maximizing market share (Cain & Mittman, 2002). In sociotechnical systems, the possible rate of change is determined by social, technical, and organisational inertia (Lind, 2014). If these sources of inertia are not taken into consideration during organisational change efforts, the adoption of the innovation is likely to be negatively affected due to the interrelated nature of the organisation of work, the technology supporting that work, and the workers.

3 The Case and the Project

A large Swedish government agency GovOrg is in the process of relocating 600 employees to a new office building that will be ready in 2017. Plans for a new building have been long in the making, but recently management

suggested that in addition to relocating the work force to these new facilities, there should also be a major transformation of work practices and ICT support through the introduction of ABW.

This presented an interesting opportunity for the research group. The research group had previously identified the need for organisational support regarding usability issues within GovOrg (Cajander et. al. 2014). One recommendation was to form a competency centre to promote best practices in the field of HCI and the development and introduction of new competencies and processes for the deployment of IT systems. The research group suggested to the GovOrg board that this concept might be even more relevant to the wider HWID issues related to ABW, e.g. by aiding in identifying how the suggested change could positively affect the employees and how ICT could support the employees in the new work environment. The Swedish Governmental Agency for Innovation Systems (Vinnova) had just started a program for innovation in public organisations and a joint application was made for a planning project. In the end Vinnova granted a planning project entitled Tactics for Activity Based Usability (TABU). The short term goal of the project was to prepare a large proposal for Vinnovas next application cycle in the fall of 2015, with the long term goal of establishing a governance model for sustainable usability in a complex and activity based working environment – to be used in GovOrg but also to be made available to other organisations. It should be noted that the express objective of Vinnova is to support innovation rather than research, though we here use the terms research project/innovation project interchangeably.

The TABU project was composed of separate work packages. The first included business environment analysis and situation analysis and the researchers participated at industry conferences and seminars and also established contact with Swedish researchers in the field as well as with other actors in the area. An important outcome of the activities in this work package is that we have been able to confirm that the project questions are relevant also outside of GovOrg. The group also had access to internal information gathering within GovOrg, such as surveys and meetings. The final work packages concerned the planning of and application writing for the actual innovation project. As there is a gap in time between the end of the planning project and the next grant application cycle, we are using the time to adjust the initial ideas so as to better align with the dynamics of GovOrg.

4 Analysis and Discussion

Results show that the fashionable management approach presented by industry clashed with the vision of many employees in the organisation. There was a considerable gap between the vision for ABW as it was presented by industry and its acceptance by employees at GovOrg. The employees were not swayed, and instead significant social inertia was generated towards the ABW concept and the whole relocation project, which became difficult to handle in the action research project. The pioneers of ABW described it like *the silver bullet*, while many employees were strongly opposed to the idea, in many cases on very rational grounds. This social inertia could be related to the employees experience of GovOrg's technical and organisational inertia (Lind, 2014), and their doubts about the feasibility of such significant organisational changes within such a narrow timeframe as warranted for the introduction of ABW and necessary ICT solutions. Between these two positions, actors on management level were sometimes found to be trying to strike a balance and sometimes to be promoting one side or the other. This setting made the role of the researchers very precarious. As the internal dynamics of the organisation became more sensitive, supporting the TABU project was not a priority on the management agenda and consequently the research group had to accept less insight into the process. In the following we discuss some early and inconclusive observations that we think need to be taken into account when developing the project plan and the project's goal. Using the categorization presented earlier on diffusion of innovations (Rogers, 2003), the industry representatives can be seen as the innovators, the management as the early adopters and the employees take the role of laggards. This is an oversimplification, however, as there are people in the different groups that adhere to other categories.

4.1 The Innovators from Industry

One of the driving forces behind ABW is the available technology, and the large ICT companies are trying to create a new market for communication technology and mobile work technology in this area. When we visited a large ICT company, for example, they first presented their ABW and then they had a presentation of the technology supporting ABW. Conferences on ABW also incorporate presentations of technologies such as Internet of Things, monitoring through sensors and GPS technology for office space. It seems, that ABW is used as a unique selling point for some companies, and to differentiate companies exactly as innovators.

The Early Adopters: Management. Reorganising according to ABW has become a way of legitimizing and branding the organisation. As presented, ABW is as a cool new way of working where everyone is responsible for ensuring that they choose the work place that suit them best given the task at hand. The concept has become a fashion statement, and some of those who were in favour of the concept at the attended industry conferences did indeed present it using the latest marketing strategies. It seems the choice of ABW was based on many things other than the organisation's actual needs, and that at some places visited by the researchers it had the consequence of there simply not being enough room for everyone to attend when they called to large meetings in the organisation.

The Employees as the Laggards: While it should be noted that quite a few employees were positive to the idea of ABW, many of them were very worried and thought that the proposed change was a bad idea. Some argued that it was an idea solely based on economic calculations, as one of the major costs in an organisation is office space. An internal survey the researchers took part of revealed that the majority were indeed very negative to the concept. Many of the employees worried about their work procedures, and how they would be affected when ABW would be introduced, as then their classifiers with papers and all their paper based documentation should be gone.

5 Conclusions

During the planning project it became obvious for the researchers that ABW is an elusive concept. For some people it incorporates management ideas about responsibility and motivation. For others it was connected to the use of technology and for example the ability to monitor whether dustbins are empty in an office. Some seemed to rationalise ABW as a synonym for open office spaces. This confusion regarding the meaning of the concept lead to communication problems during discussions, as people could have so different interpretations.

The challenges presented above lead to dilemmas when managing different roles as a researcher. It might sound easy to work with collaborative action research, and to be a change agent in organisations at the same time as you do research on the change. However, this role is all but simple and requires much experience and skill, as illustrated for example by Westlander (2006).

One of the biggest dilemmas for the research project was that the various positions became entrenched very quickly. In an ideal case the research group might have contributed to finding a common ground between the proponents and opponents of ABW, but in this case there was an obvious risk of the

researchers being perceived as supporting one position or the other. The strong emotions connected to ABW thus caused ethical dilemmas for the research group: How should the research group participate in the discussion without being perceived as taking sides? How normative can we be as researchers when asked about things that are very complex such as ABW? These strong emotions also connected to another dilemma in the project: How much time are we spending trying to understand ABW and its dynamics (ie. reading papers on workplaces, participating in conferences and understanding the concept) in relation to the participation in the planning of the future office building incorporating ABW and handling the internal conflicts in the organisation?

While it would perhaps be easier to change our research focus, we believe that many important design decisions are being made under less than ideal circumstances, such as the ones described above, and that studying them is worthwhile. Still, minor changes to the project idea might make it more feasible. Such changes might relate to the goal as well as the process. Of course, different sources of funding might open new doors (and close others) in terms of alternate directions for the project.

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