

Costs and Benefits of Innovative Workplace Design

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Summary

Workplace innovation: backgrounds, objectives and conceptual analysis

This study explored how the objectives of workplace innovation can be operationalised in quantifiable terms. Workplace innovation is defined here as the introduction of new elements to the physical working environment or accommodation, ICT and other facilities in order to improve their harmony with new working methods. The focus is placed on flexible working in an innovative office with the joint use of activity-related workplaces. In other words: the central focus of the study is flexible working by sharing workplaces (desk-sharing) and switching workplaces regularly, depending on the task that has to be carried out at that moment ('desk-rotating').

The backgrounds and objectives of workplace innovation have been documented via a comprehensive literature study, discussions with experts, workshops, conferences and own project evaluations. The most important catalysts for workplace innovation are technological developments, such as fast, powerful and mobile ICT. These make work less dependent on place and time; the office is where you are. Economic considerations (competition, low occupancy of expensive workplaces), organisational developments (flatter, more informal network organisations, part-time work, more dynamics) and external developments (globalisation, labour market, working conditions) are also important motives for workplace innovation. The objectives focus on improving the organisation's performance and ensuring that accommodation, ICT and other facilities are used more effectively and efficiently. In addition to striving towards cost reduction and greater labour productivity, the satisfaction of employees and the recruitment and retention of scarce personnel as well as the projection of a positive image to customers are also considered by many organisations to be of paramount importance.

The concepts of costs and benefits of workplace innovation were also analysed. A distinction was made between monetary and non-monetary costs and benefits, and also between the costs and benefits for the primary process, facility costs (additional and reduced) and the effects on the operating result. Concrete indicators have been formulated for each of these categories, which give substance to the fairly abstract concepts of costs and benefits.

Costs and benefits: an exploration of the State of the Art

An important additional objective of the definition study is to identify the problem area, which is why the study also has the character of a programming study. What is currently known about the costs and benefits of workplace innovation? What knowledge is missing? To what

extent are the costs and benefits of physical intervention influenced by interactions with organisational changes and external factors? What are relevant topics for further research? Should the research subject be widened or narrowed? These complex issues require a study that is far more extensive than a brief definition study. That is why the decision was quickly taken to limit the problem area and focus the study on three main topics: employee satisfaction, labour productivity and facility costs. The research carried out on each of the topics focussed on what it entailed, which variables were relevant, how these variables are currently measured and accompanying problems. Empirical research and scientifically based views on the effect of workplace innovation were also sought for each topic. A wealth of literature was compiled, which has only partly been studied and discussed. The discussions are not exhaustive, but provide a good indication of potential links between physical interventions and satisfaction, productivity and facility costs. All in all, numerous data have been collected that will help expand and deepen existing knowledge even further.

The effects of workplace innovation

The effects of workplace innovation on *employee satisfaction* are somewhat unclear. On the one hand, many people are positive about advanced ICT, the attractive layout complete with ergonomic furniture, the greater amount of freedom to choose a workplace, and enhanced communication. On the other hand, there are numerous complaints about the lack of privacy and countless stimuli that often distract personnel and decrease concentration levels. Fewer opportunities to express one's status, identity and to personalise a workplace are also less appreciated features of flexible working. Overall, the opinion in some projects is positive, but there are those where the majority of employees would prefer to return to the old situation. Sound technology, favourable conditions for both social interaction and the opportunity to concentrate while working, and a proper ratio between the number of employees and workplaces are crucial. A careful implementation process with sufficient managerial commitment, an enthusiastic initiator, clear lines of communication and decision-making processes, and a sound balance between top-down and bottom-up appear to be just as important. In addition to the office concept, a pleasant indoor climate, personal control over the surroundings and proper support facilities are also decisive for employee satisfaction.

Not a great deal is known yet about the effects of workplace innovation on *labour productivity*, which is due in part to the difficulty of measuring it, particularly amongst knowledge workers. Positive points appear to be a more conscious approach to the working environment, improved communication between colleagues (allowing them to share knowledge amongst themselves faster and more easily), the opportunity to retire to a concentration cell or work at home, and the professional, technological infrastructure with quicker computers, Internet and Intranet and high-tech telephones. Negative points are the amount of time that is wasted by having to log on more often and search for information, loss of concentration due to distraction, continual acclimatisation and ICT-related problems, such as faltering technology, connection problems or unfamiliarity with digital filing systems. Here too, the balance in some projects is positive while in others it is negative. In most cases, the percentage of employees that think that the working environment has a positive effect on personal productivity has increased, but we have also seen that perceived labour productivity after the introduction of flexible workplaces decreases by a full point.

Flexible working appears to have a positive effect on *facility costs*. There are numerous cost-raising factors, such as a costlier implementation process due to relative unfamiliarity with workplace innovation, high investments for renovations, expensive ICT, leasing of external workplaces (home, in a hotel or satellite office) and more intensive management of jointly used workplaces. However, this is counterbalanced by major cost savings, particularly due to fewer workplaces and a smaller need for space, lower energy consumption, reduced maintenance costs and lower internal moving costs since changes in personnel are easier to deal with. Some organisations invest all or most of the savings in well-equipped, flexible workplaces. In other companies, actual lower operating costs have been realised, not per workplace or square metre (innovative workplaces are relatively expensive), but rather per employee and FTE.

Gaps in knowledge and points of interest for follow-up research

The definition and programming study has outlined the effects of workplace innovation, but many gaps in the necessary knowledge still exist. An integral framework of all costs and benefits and possible interactions and chain effects of changes in accommodation and other facilities is lacking. Many measurement problems still have to be resolved too. Furthermore, there is a huge need for standardised measurement methods in order to carry out measurements more efficiently and effectively and to compare various projects (benchmarking). Little is known about the long-term effects on the organisation's performance and the well-being of personnel. Thorough empirical research into the interactions between the physical working environment, satisfaction, motivation and productivity is limited. Research into the role of more technical aspects such as standard dimensions, building depth and installations is still not sufficiently developed. Finally, there is an urgent need for reliable indicators (the requisite number of square metres per employee and workplace, cost indicators) and calculation rules for determining the optimum ratio between the number of employees and workplaces, distinguished according to sector, job and type of workplace.

Desired results of follow-up research

This study concludes with an argument in favour of follow-up research in the form of an additional literature study, case studies across a wide spectrum, in-depth thematic sub-studies and expert meetings. Since many variables belong to the knowledge domain of various disciplines, it is advisable to set up an interdisciplinary research programme. The desired results relate particularly to:

- Further theory development, substantiated by a literature study and empirical research;
- A clear framework of possible objectives, sorted according to topic (i.e. linked to the Balanced Score Card) and relevant actors (on the basis of a stakeholders analysis);
- Standardised measurement methods for a quick scan, monitoring innovative projects and scientifically based evaluations;
- A comprehensive database, in terms of quantity and depth, of innovative projects based on a clear format. In addition to project descriptions, measurement-based analyses and evaluations must also be included in this database;
- Practical instruments (tools) for supporting complex decision-making processes.

Audience

The book on Costs and Benefits is aimed at Real Estate managers and Facility managers that are involved in discussing, preparing, implementing or management of new "flexible" non-territorial offices, i.e. offices that are based on job functions and work processes rather than individually assigned workstations. Furthermore the book may be of interest to human resource managers, researchers in the field of real estate management, facility management and environmental psychology, and teachers and academic students in this domain.

About the author

dr. Theo J.M. van der Voordt (1950), MSc, PhD, is a senior researcher and lecturer at the Department of Real Estate & Housing, Faculty of Architecture, Delft University of Technology. His is specialized in briefing and Post-Occupancy Evaluation, particularly on the interaction between user's preferences and behaviour and characteristics of the built environment. He developed design guidelines for health care centres, childcare centres, facilities for mentally retarded people, space requirements for people with physical disabilities, and combinations of housing and care for the elderly. In 1991 he published a PhD-thesis on crime prevention through environmental design, in co-operation with dr. Herman BR van Wegen. Nowadays the focus in his research is on office buildings. As such he participates in the Center for People and Buildings. For more information see <http://www.bk.tudelft.nl/users/voordt/internet> (personal website) or <http://www.re-h.nl/> (website of TU Delft, Department of Real Estate & Housing).

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