

Slipping and sliding: Implementation of new working methods through piloting in building projects

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Abstract

The implementation of new working methods refers to social innovations that are “social processes through which new ideas, objects and practices are created, and developed in organizations” (Slappendal 1996, pp. 107-108). Implementation of innovations is often considered a linear process during which inventions are re-defined, re-structured, clarified and routinized (Rogers 2003). However, innovations can also be understood as sources of transformative change that takes place as a process of “translation” (Czarniawska & Sevon 1996). It can also mean their “re-contextualization” when they are modified by adopters to fit their local circumstances (Garud, Tuertscher & van der Ven 2013). Besides being a technological invention, an innovation can also be an idea, practice, or a material artifact (Rogers and Shoemaker 1971). The non-linear process of the innovation implementation can be a result of the interaction between the environment of the firm and the diffusion process, the capabilities of the firm and the processes employed to build it over time (Manley 2008).

Many studies of implementation examine the adoption of technological innovations in construction industry. Due to inter-organizational character of the industry the process of implementation can be considered an iterative process with various feedback loops (Shibeika & Harty 2016, Emmitt 2001). Slaughter has defined six cyclical stages evident in the implementation of innovations in construction industry. They are comprised by the identification of potential alternatives and their evaluation to project objectives, a firm’s commitment to the selected innovation, the detailed preparation of the innovation and the actual use as well as the post-use evaluation of the innovation (Slaughter 2000).

The implementation of new ideas and methods is not a simple diffusion process within firms, multi-party networks and communities. Among other things employees easily stick to their old, routine practices (Whyte & Lobo, 2010). The hierarchical model of organizing work based on the traditional command and

control type of management creates also a challenging environment to the implementation of new ideas in the industry (Chioccio, Forgues, Paradis & Iordanova, 2011). The adoption of new ideas takes often place in a top-down manner, although a bottom-up approaches to their adoption would be more beneficial on various levels of a building process (Arayici et al. 2011).

The implementation, diffusion and stabilization of new working methods is examined in Finnish construction industry. The research and development project is funded by the Finnish Work Environment fund for 2016-2018. The theoretical approach of the study draws on the cultural-historical activity theory (CHAT) and the theory of expansive learning (Engeström & Sannino 2010, Engeström 1987). CHAT is not a specific theory to study innovation but a general paradigm to study human activity. The key concepts of CHAT that are relevant here are the mediated and object-oriented activity, activity conceptualized as an activity system and the process of expansive learning triggered by contradictions. The theory of expansive learning (Engeström 1987) focuses on qualitative transformations in the process of innovation and opens up a perspective on the process of innovation from idea generation to implementation and diffusion of an innovation. In expansive learning, the learners construct a new object and concept for their collective activity, and implement this new object and concept in practice. The activity-theoretically oriented ethnography was applied as a method of the study. It involved following the implementation of new working methods in-site and gathering authentic data about the implementation process.

Five different organizations selected a new method of working that they wanted to implement in their organization. A company representative was nominated to promote the implementation of the selected method and to participate the directory group meetings in each organization. The directory group constituted a temporary organization between the managerial level responsible for the decision-making and the level of practice in which the new methods were experimented and diffused. New ideas were also shared and discussed among participating organizations in the directory group meetings. The research group was responsible for organizing the meetings. They provided also ethnographic research results from the on-going pilots to be discussed in the meetings. In our presentation, preliminary findings of the study are provided. All five cases will be analyzed and compared. The features and complications of the implementation will be described.

Summary of the cases

Case 1 is a small consulting company offering BIM and visualization services to the construction industry. The managing director and the visualizing expert are the main actors in the case. Their goal is to develop and implement a new service product called the “receipt working” (Lassila 2016) in the industry. The concept of receipt working has been their object of development for several years. Its main components include means for better coordination of building activity. They address three levels of implementation in their pilot project. The negotiations and organizing the pilot project in their client company creates the

first level of implementation. Second, the main events of implementation are carried out in the receipt workshop in which a schedule of a building project is negotiated. Third, the stabilization and diffusion of the receipt working takes place in the company. The story of Case 1 does not involve any remarkable complications of actions. In the autumn 2017, they delivered a leaflet about the new service to their partnering organizations.

Case 2 represents a fairly large public building agency responsible for the planning, construction and operation of buildings in Finland. The main actor is an experienced company representative. The organization wants to implement the Last Planner system to their building projects (Ballard 2000, Koskela 2000). The researchers qualified in the training of the Last Planner System provided a staff training day in the company. Case 2 involves two levels of implementation. The use of the Last Planner system creates the first level of implementation in a building project. The second level of the use involves the diffusion of the Last Planner System to other building projects. The third level of implementation is carried out in the agency. An interesting expansion emerged instead of complications of action in Case 2. The main contractor of the building project decided to implement the Last Planner system to another building project. Currently, the diffusion of Last Planner system to other building projects is in the agenda of the organization of Case 2.

Case 3 is one of the largest Finnish construction companies. The main actor responsible for the organization of the implementation has varied during the research and development project. The company decided to implement the Last Planner System (Ballard 2000, Koskela 2000). The researchers organized several staff training days focusing on the Last Planner System in the company. Since then the Last Planner system has been applied in various building projects. The change of the leading person seems to have complicated the implementation but the implementation of the selected method has proceeded successfully on the level of practices.

Case 4 represents a large public property owner in Finland. The main actors of the organization are two BIM advisors. The aim of the organization is to implement the method of knotworking, which is a method for intensive collaboration between various players in the construction industry (Kerosuo, Mäki & Korpela 2015). The implementation was complicated by not being able to find a pilot project for the experimentation of knotworking until spring 2017. The two advisors reported about the in the directory meetings. The organization has decided to create general directions of knotworking to their Intranet on order to diffuse the method of knotworking in the organization.

Case 5 is fairly large architecture and engineering office. The main actor responsible for the organization of the implementation has varied during the project as in Case 3. Furthermore, the decision about the method they want to implement has also varied during the project. The story of Case 5 is constituted of several beginnings that have come to an end due to many reasons and the final outcome is currently open.

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