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## Stirring the construction project management with co-creation and continuous improvement

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### Abstract

Gathering information that is capable to explain customers' needs is usually seen as a quite straightforward part of the traditional construction process: a customer should be able to tell all relevant needs in the first stage so that a building could be designed and built according to the gained information. But the process is lacking of service abilities if a customer wants to modify the given information due to a change in circumstances, albeit such a change is easily caused due turbulent economic situations and long spans in real-estate development projects. Hence the customer perspective regarding the construction management (CM) process should be accommodated better. In this paper, the case studies of the four premises improvement projects are reported upon, where the CM process was altered to include and apply the concepts of continuous improvement and co-creation. The process documentation covered the impacts of the case project on the usability of the premises, the indoor climate conditions (carbon dioxide and temperature) metering, the time lapse cameras and the on-line user feedback system. The documentation consists of the minutes of the meetings, the financial reporting and the time tables. Both the processes and the results of the projects are analysed. Based on the key findings, some suggestions are put forth upon how to improve the CM process to better serve customer interests and quality improvement in the future.

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### 1. Introduction

Significant potential in service innovations is considered to exist in various industries, but in many cases service innovations are understood as improvements in customer services. In practice, this may lead to situations where the

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service perspective has been adopted at the strategic level but the traditional goods perspective is still dominant at the manufacturing level (Grönroos & Helle, 2010).

In the case of University Properties of Finland (UPF) Ltd, the need of general improvement in facility management (FM) services business was recognised around 2010. For this reason, UPF launched a study concerning the implementation of evidence based design and co-creation, based on the assumption that new practices should be developed for improving all stages in construction projects – from concept development to the handover and use of premises. Moreover, a comprehensive investigation was seen essential to reveal a gap between the assumption about premises ideally serving users and the actual uses of premises. The management of UPF perceived this gap to be a bridge that needs to be built as part of a transition towards the service dominant business logic in FM services business. The need to investigate evidence based design practices was framed by studying the actual performance and outputs via the three key aspects as follows:

1. *What is the actual improvement in the utilisation of the premises when a retrofit project has been carried out?* It is quite common that retrofit projects are carried out with the determined objectives of improvement. Very rarely, the actualisation of the improvement and the real current use of the premises is being later confirmed against the target designs, such as: “Do people use the premises in the ways that the architect had imagined in the design phase?”, “Has the utilisation rate improved?” and “How has the mood of working changed?”
2. *How should new practices be implemented?* Based on the prior experience within the organization, it was assumed that every new practice causes resistance that disturbs design work, lowers down the features of new premises and slows down occupation. Co-creation practices (Prahalad & Ramaswamy, 2004) were seen as a promising way to confront these problems.
3. *What tools could be used for marketing new ideas.* The idea was to provide information about new solutions in premises from users to users. In this way, information would be in such formats that the users of premises could understand when planning their next facility upgrading projects. Supposedly, this would also ease communication between architects, a PM team and users.

Even if the idea of combining evidence based design and co-creation seemed promising, no relevant method could be identified for measuring the impacts of the adoption of these two value creating practices in actual projects. However, there was a lot of data that was gathered with many kinds of equipment for the evidence based design research. Thus, a novel method was developed to gather data that enhances understanding of the ability of users to benefit from premises.

The focus of this study is on the ability of users to benefit from premises. This was seen as a key to understand real estate development as an activity where products and services are developed, instead of a business where assets are managed. The objectives of PM processes were set to serve the usability of outcomes, i.e. impacts on users are considered before production capability, schedule and budget. The application of co-creation practices is seen as a significant way towards the realisation of this shift. As co-creation took place mainly in concept development phases, it is now assumed that also the other parts of the PM process can be improved in a radical manner.

In the same vein, the PM process was re-organized to utilise practices in continuous improvement (Deming, 1986). Tests of the re-organized process were called process demonstrations. The process demonstrations were implemented as part of four small scale retrofit projects, all constituted by UPF. Each project encompassed a specific application of improved processes ranging between a new way to explore customer needs and a completely enhanced process where the organisation as a whole was re-arranged to apply continuous improvement’s work order. The method of action research was applied.

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