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# Social motivations for knowledge sharing in construction companies

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**Abstract**

In 1965 a political initiative was taken launched to solve the lack of accommodation in Sweden, and during a ten- year period about one million new homes were built- the Million Homes programme. These buildings constitute about one fourth of the entire Swedish building stock and thus have a high societal value. Today they do not always meet current building standards and many are in need of refurbishment. The Million Homes programme incorporated a large variety of technical building solutions, and knowledge about former building practices is needed if refurbishment is to be successful. Industrialised builders in Sweden have recognized the use of a platform as one means of sharing knowledge. A platform is essentially the collection of assets that are shared by a set of products. In a platform for housing refurbishment the assets have knowledge and process content (as opposed to product content) and will probably also contain many relationships. The interview study carried out as part of the research shows that the main purpose of a platform concept is to standardize components and processes. To increase the possibility that a platform concept for refurbishment of buildings will be used for knowledge sharing the focus should be on the individuals who will actually be sharing their knowledge and especially on social motivations. It is important that managers and leaders demonstrate knowledge sharing behaviors as this will lead to the establishment of a culture where knowledge sharing is the norm; in the context of this study this is especially important for the creation of an efficient platform concept for refurbishment.

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## 1. Introduction

In many of Europe´s big cities during the 1960s and 1970s, large-scale developed areas with uniform apartment blocks were built. Some forty years later, many of those buildings have deteriorated and are now of low quality (Hall & Vidén, 2005). In Sweden, a majority of the buildings built during the period belong to the Million Homes programme, and there is now a clear need to begin the refurbishment of these buildings. There are large variations in the building technology that was used in the Million Homes programme (Formas, 2012). A knowledge management system, i.e. information and communication technology (ICT), with mechanisms to reuse information and share old and new building solutions is needed. A platform concept for the refurbishment of buildings built before and during the Million Homes programme could be one method to accumulate, store and share knowledge; it could thus be regarded as a type of knowledge management system. However, the introduction of ICT does not necessarily mean that people will share knowledge more than before. The aim of this study is therefore to discuss possible ways of increasing knowledge sharing from a platform concept; we apply these ideas in the setting of building refurbishment and test if Javernick-Will´s (2012) theory of the importance of social motivations is traceable.

## 2. Research background

### 2.1. The Million Homes programme

In 1965 a political initiative began that sought to solve the lack of accommodation in Swedish cities, and during a ten- year period about one million new homes were built (Hall & Vidén, 2005). The Million Homes programme involved the construction of different types of dwellings; about equal numbers of single family homes, two-three-storey apartment buildings and high-rise buildings were built. The programme coincided with developments in building technology, which underwent rapid change in the period between 1950 and 1975 and resulted in a number of important technical advances (Formas, 2012). However, by current standards many of the Million Homes buildings are far from adequate, and there is a definite need for the refurbishment of houses built before and during the programme.

### 2.2. A platform concept

In the process of implementing industrialised house building in Sweden contractors have recognized the use of the platform concept as one method to become more efficient and reduce costs. But as argued by Jansson (2013), a fully predefined platform is hindered in the construction industry due to continuously changing demands. Methods to support the knowledge flow between projects become necessary, and the development of the platform requires a pull for experience feedback between projects. Meiling (2010) notes that knowledge is a complex matter, and also describes that in the process of continuous improvements of products, services or processes some companies in construction want to incorporate experience feedback in working routines. His interpretation is that "successful utilization of experiences is input to structured problem-solving" (p. 86), but adds that the incorporation of experience feedback commonly fails. In a platform, knowledge about processes and technical solutions is stored and circulated effectively (Robertson & Ulrich, 1998). Platforms were first developed in industries where competitiveness depends on offering several variants of a product to the potential customer segment (Meyer & Utterback ,1993). Creating new variants of a product from the very beginning is costly so companies focus on finding those parts that are common to all variants of a product. By combining the common parts with distinctive parts new variants of the product can be created at a reasonable cost. However, platforms do not only consist of common and distinctive parts; according to Robertson and Ulrich (1998) a platform is the collection of assets that are shared by a set of products.

These assets can be divided into four categories:

Components: the part designs of a product, the fixtures and tools needed to make them, the circuit designs and the programs burned into programmable chips or stored on disks.

Processes: the equipment used to make components or to assemble components into products and the design of

the associated production process and supply chain.

_Knowledge:_ design know-how, technology applications and limitations, production techniques, mathematical models and testing methods.

_People and relationships:_ teams, relationships among team members, relationships between the team and the larger organization and relations with a network of suppliers.

Platforms for the refurbishment of buildings would largely consist of processes, knowledge and relationships. For a platform to be successful, i.e. to create new variants of a product for potential customers at a reasonable cost, the interfaces between the common and distinctive parts must be optimal and managed over time (Sundgren, 1999). In a platform for house refurbishment the common parts are substituted with common processes, meaning the processes that are always present in a job. The distinctive parts are substituted with distinctive processes, meaning the processes that are needed to complete a particular job. Interfaces in a platform for refurbishing buildings would mean that appropriate knowledge, information and techniques about the job are widely shared at every step of the refurbishment process; in this way the work is completed in the optimal sequence.

## 2.3. Knowledge sharing

Knowledge is regarded as an invaluable resource for companies, a view neatly expressed by Von Krogh, Nonaka and Aben (2001) as follows: "in the light of the increasing pressure to innovate and with high employee mobility, managing the effectiveness of knowledge creation is becoming crucial for business success" (p. 435). They are supported by Johannessen, Olaisen and Olsen (2001) who argue that in the transition from an industrial society to a knowledge-based society, knowledge has become the most strategically important resource for companies. Of course knowledge takes various forms; Polanyi (1983), Nonaka and Takeuchi (1995) categorize knowledge as explicit and tacit. Nonaka and Konno (1998) argue that explicit knowledge can be expressed in words and numbers and can therefore be transmitted between individuals formally and systematically. Tacit knowledge, on the other hand, is highly personal and deeply rooted in an individual´s actions and experience as well as in the ideas, values or emotions the individual embraces; it follows that tacit knowledge is often difficult to verbalize.

In the project- based construction industry sharing knowledge can undoubtedly be a challenge. Håkansson and Ingemansson (2011, 2013) note how the construction industry places great value on short-term solutions and flexibility in dealing with the technical problems it faces, a choice that inevitably means long-term knowledge creation is lost. Lin and Lee (2012) go further, and argue that the experience and know-how to find solutions to most project-related problems lies in the minds of individual engineers and experts rather than being diffused within the corporate body. When these individuals complete projects or leave the company they often take their specialist knowledge and expertise with them leaving little of practical benefit behind; the failure to preserve and utilize such in-depth knowledge represents a major loss for construction firms.

An important prerequisite for continuous improvement in construction and the development of a platform concept is an organization´s ability to manage knowledge, especially the experience feedback it receives. This is often done by investment in ICT, yet studies suggest that ICT is mainly limited to the transfer of explicit knowledge (Al-Qdah & Salim, 2013; Johannessen et al., 2001). This is a serious shortcoming: in order to achieve sustainable competitive advantage organizations need to emphasize both the explicit _and_ tacit knowledge in their knowledge management systems.

Javernick-Will (2012) states that knowledge management scholars have mostly focused on macrolevel constructs and relationships (i.e. at the organizational level), indicating the importance of technology, communication strategies, resources and other issues for knowledge sharing. Yet according to Javernick-Will's own work it is actually on the microlevel – that of the individual employees – that the processes of locating, providing and reusing knowledge within an organization actually largely takes place. More particularly and of relevance for our work, her study focused specifically on the motivations employees had for sharing knowledge.

The coded responses in Javernick- Will´s study identified four primary categories regarding employee motivations for sharing knowledge: resources, altruistic intentions, extrinsic global incentives and social motivations. The overwhelming majority (61%) of the coded responses showed that social motivations most frequently explain the sharing of knowledge.

Javernick-Will (2012) argues that social motivations include compliance to corporate norms, feelings of

obligation to reciprocate, the desire to mimic the behaviour of leaders, peer recognition, honouring knowledge sharing commitments and high perceptions of the value of the organization´s knowledge and processes. Below is a short explanation of the social motivations as described by Javernick-Will.

Compliance to corporate norms: establishing a strong and pervasive culture where knowledge sharing is the norm is critical to sustain knowledge management initiatives within an organization. As part of this norm it is vital that organizations promote people who freely share their knowledge with others.

Reciprocity: consists of feelings of gratitude, obligation and trust in returning the favour of providing knowledge or advice on a project to people who have helped previously. Basically, people are encouraged to share their knowledge with others today, knowing that they will one day ask for a favour in return.

Mimicking the behavior of leaders: knowledge management initiatives are more likely to succeed if managers and leaders are well liked and respected by the workforce, and actually demonstrate knowledge sharing behaviours themselves.

Peer recognition: peer recognition awards and programmes that recognize employees´ contributions to the organization´s collective pool of knowledge promote knowledge sharing behaviours.

Honouring knowledge sharing commitments: people want to appear consistent in their behaviour to others. When they have clearly expressed their intentions to share their knowledge they want to live up to these commitments.

High perceptions of the value of the organization´s knowledge and processes: people value what they believe is rare, and employees are more likely to use their company´s knowledge management programmes when the knowledge of their peers is unique and cannot be found elsewhere, and/ or the company´s management system is unique and not an integral part of other organizations.

## 3. Conducted empirical research

The nature of the problem is qualitative: a knowledge management system with mechanisms to reuse information and share knowledge about both older and newer building techniques and solutions is needed; a platform for the refurbishment of buildings could be one method to generate, contain and share knowledge. To understand the knowledge sharing within organizations that use a platform, semi structured interviews with four managers from four different Swedish construction companies were carried out. Although, refurbishment is not their core business activity, we believe that their views regarding knowledge sharing can be adapted to a platform for refurbishment. The informants are referred to as A, B, C and D; they were selected because they regularly meet people in their organizations who are involved in the usage and development of a platform. The informants have worked at their respective companies for between two and nine years. The aim was to test if Javernick-Will´s (2012) theory of the importance of social motivations is traceable in a platform concept, but to do so without asking direct questions related to the theory. Therefore, the interviews were carried out according to a method described in (Halldin-Herrgård, 2003): as a help to trigger conversation on the abstract phenomenon of tacit knowledge, cards describing expressions of tacit knowledge were used in the interview situation (Haldin-Herrgård & Österåker, 2002). From the researchers` pre-understanding of a platform concept in construction, 31 expressions of tacit knowledge were chosen as a basis for the interviews. The 31 chosen expressions are displayed in Table 1.

Table 1. 31 expressions of tacit knowledge

| | | |
|---|---|---|
| ability | feeling | mental models |
| after-the-fact awareness | foreseeing | norms |
| best practice | hunch | personal competence |
| collective know-how | improvisation | routines |
| common experience | insight | rule of thumb |
| common sense | intuition | skills |
| craftsmanship | judgment | skillful |
| creativity | know-how | techniques |
| estimation | knowledge | values |
| experience | knowledge base | |
| expertise | managerial skills | |

The interview was conducted as follows:

- The informant was informed of the topic of the interview, the interview process was explained and the fact that it was being recorded made clear. They were asked to relate to the way of doing their own work.
- To begin with they were asked the question: in their opinion, what kind of information and knowledge is found in their platform?
- Then a bundle of cards, in this case 31 cards describing expressions of tacit knowledge in construction, was handed over to the informant and he/she was asked to sort out all the cards that they felt were important in a platform.
- The chosen cards then formed the basis for the rest of the interview. The informant was asked to further describe why each card was chosen.
- The interviewer posed additional questions to guarantee understanding.

All interviews were recorded and lasted between 60 and 90 minutes. The interviews were transcribed, and the transcriptions were then condensed and compared with the social motivations described by Javernick-Will (2012).

## 4. Findings

The results from the interviews show that the main purpose of a platform concept is to standardize components and processes. The reasons for standardization varied: informant A mentioned increased productivity as one reason; informant B said that a platform concept can be used as a testing tool to predict different scenarios; informant C emphasized that acting according to the rules and standards described in the platform secures the quality of the work and products that are produced; while informant D argued that a platform is a base for learning, and when using a platform the organization becomes less dependent upon individuals´ skills and craftsmanship.

Table 2 shows the condensed statements from each informant and the corresponding social motivator.

Table 2. Condensed statements and corresponding social motivator

| Social motivations | Informant A | Informant B | Informant C | Informant D |
|---|---|---|---|---|
| **Compliance to corporate norms** | our managing director talks and acts according to the company´s values all the time | we are working to visualize the company´s values | the management have articulated the company´s values which are then communicated | managerial skills to communicate values and insights that the platform is a basis for learning is crucial |
| | | | | it is important that all employees act according to the platform concept and developing the platform is a shared responsibility |
| **Reciprocity** | | in a positive atmosphere there is a dialogue about experience feedback and improvements in the daily work | to improve processes employees observe each other during an operation and agree on the best way to perform the operation | |
| **Mimicking the behaviour of leaders** | the management needs to ask for usage of the platform | the management needs to capture suggestions for improvements and discuss the importance of the platform | knowledge sharing greatly depends on the leadership; leaders must ask for new ideas or other ways to do things. | the management's ability to communicate why we are working with a platform and that together we have a responsibility to develop the platform |
| | | | when people are new on the job they observe the more experienced employees before they start to perform the work themselves, which in the beginning is done under supervision | |
| **Peer recognition** | | | to improve processes employees observe each other during an operation and agree on the best way to perform the operation | it is a key competence to make sure that improvements in the processes are transferred into the platform |

| Honouring knowledge sharing commitments | in a positive atmosphere there is a dialogue about experience feedback and improvements in the daily work | when people are new on the job they observe the more experienced employees before they start to perform the work themselves, which in the beginning is done under supervision | |
| --- | --- | --- | --- |
| High perceptions of the value of the organization´s knowledge and processes | we capture knowledge and make improvements by systematically working with experience feedback | experience feedback is extremely important; we have meetings where we focus on discussing improvements to our processes | in a platform existing knowledge is standardized and new experiences develop and improve the platform |

All four informants agreed that managerial skills and the management´s ability to communicate values in a company are crucial for the usage and development of a platform concept. The informants confirmed that they are all, in different ways, working to communicate their company´s values both internally and externally. These statements can be related to compliance to corporate norms and mimicking the behaviour of leaders.

Informants B, C and D said that using a platform concept is one way to systemize experiences and to work with improvements which might relate to high perceptions of the value of the organization´s knowledge and processes. Informant B suggested that if there is a positive atmosphere in the company a dialogue emerges about experience feedback and improvements in the daily work. This relates to both reciprocity and honouring knowledge sharing commitments. Furthermore, every other year - in an attempt to measure the company´s general atmosphere - they perform a survey with the purpose of discovering if they are in need of targeted efforts to improve job satisfaction.

Informant C described one way to improve processes: the employees observe each other during an operation, and then seek to agree on the best way to proceed - an example of both reciprocity and peer recognition.

Another example of mimicking the behaviour of leaders and honouring knowledge sharing commitments is encapsulated in a statement by informant C: when people are new on the job they are supposed to observe the more experienced employees; later, when the new employee starts to perform the work, it is done under supervision the of the more experienced employees.

Informant D argued that it is a key competence to make sure that improvements are made in the platform, a statement that relates to peer recognition.

Informant D also asserted that it is important that all employees act according to the platform concept, and added that developing the platform is a shared responsibility - another example of compliance to corporate norms.

In the interviews traces of social motivations are found; this indicates that Javernick-Will´s (2012) theory of the importance of social motivations and knowledge sharing is applicable in organisations that use a platform. Furthermore, a platform for the refurbishment of buildings is a type of knowledge management system and the researchers speculate that Javernick-Will´s theory of the importance of social motivations will be adaptable in this situation. In this study the researchers are mainly interested in addressing the importance of social motivations in knowledge sharing initiatives, and have chosen not to discuss the fact that only two statements from informant A are explainable by social motivations.

## 5. Conclusion and implications

The main purpose of a platform concept is to standardize components and processes.

The interview study allowed the informants to talk without constraints about what kind of information and knowledge that can be found in their platforms and why it is important. We believe that traces of social motivations as identified by Javernick-Will (2012) are to be found in all four interviews which we would argue demonstrate compliance to corporate norms, reciprocation, mimicking the behaviour of leaders, peer recognition, honoring knowledge sharing commitments and high perceptions of the value of the organization´s corporate knowledge and processes. In the context of refurbishing dilapidated housing stock, we believe that there is an increased possibility that a platform concept will be used for knowledge sharing by the employees if the focus is placed on the individuals who actually share their knowledge and especially on their social motivations. Compliance to corporate norms and mimicking the behaviour of leaders are mentioned at least once by all four informants we interviewed; we therefore

conclude that this indicates how crucial it is for managers and leaders to actively and visibly demonstrate knowledge sharing behaviours – if the people leading a company behave in that fashion it is our view that a culture where the norm is widespread knowledge sharing will follow.

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