Knowledge Management In Projects-Based Organisations: Part 2 – Exploiting knowledge capital

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This is the second part of a two-part series of articles on knowledge management in a projects-based organisation. These articles are based on a recently completed master's degree in engineering. The two parts are as follows:

- Part 1 – Building and transferring knowledge; and
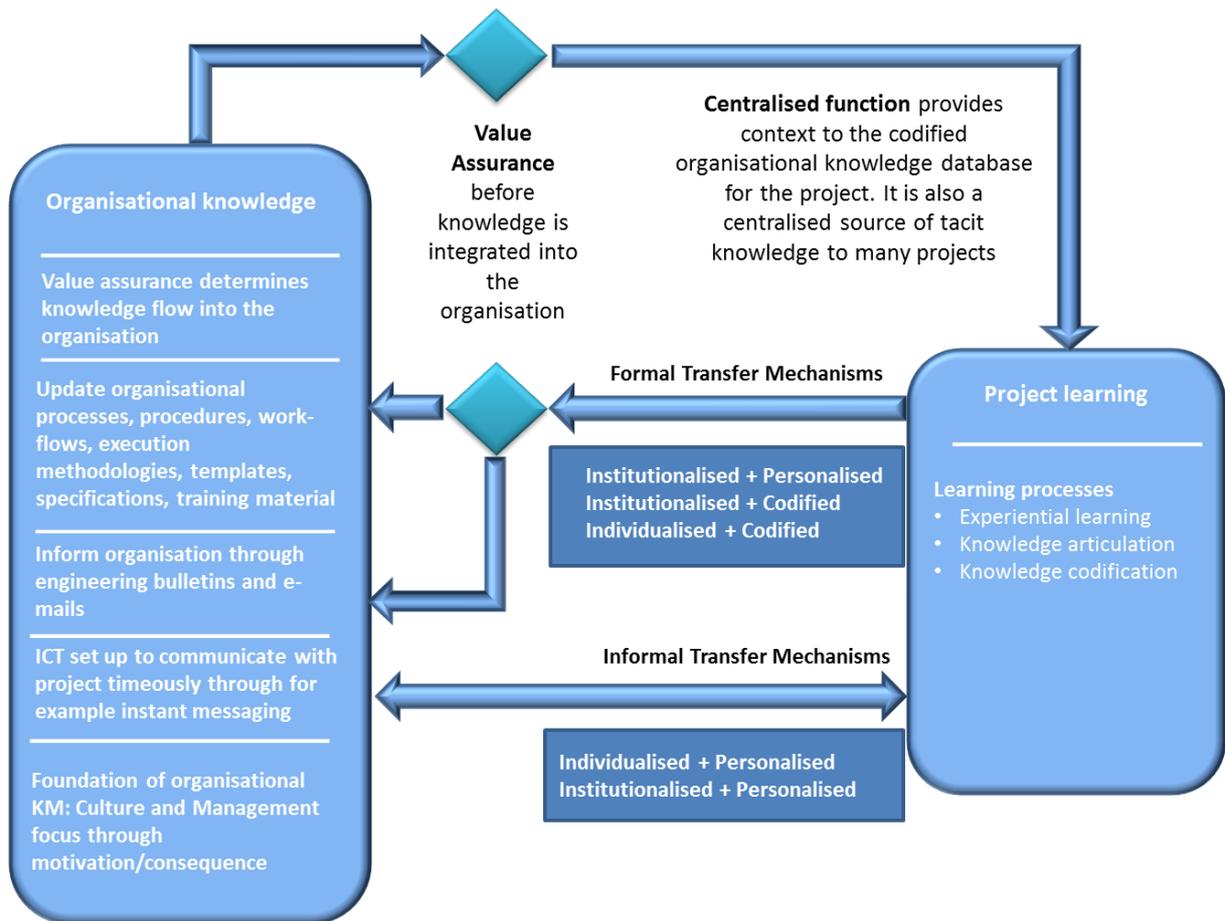- Part 2 – Exploiting knowledge capital.

This article considers the pitfalls of knowledge management within the projects-based organisation and looks at what is required for an organisation to fully utilise KM as a lever to exploit its knowledge capital and sustain the competitiveness of the organisation.

Introduction

In the first article in the series, I presented the knowledge-pull framework and focused on the learning processes used to build knowledge, as well as types of knowledge. I discussed specific knowledge transfer mechanisms, looking at what mechanisms will improve knowledge transfer from the project to the organisation.

This second article considers the pitfalls of knowledge management (KM) within the projects-based organisation (PBO) and looks at what is required for an organisation to fully utilise KM as a lever to exploit its knowledge capital and sustain the competitiveness of the organisation. I focus on the organisational knowledge, the dissemination thereof, and how the organisation can improve the use of its innate knowledge capital.

I will once again use the knowledge-pull framework as a basis for the discussion and it is duplicated here as Figure 1 for ease of reference. Readers are encouraged to refer to the first article for a better understanding of the knowledge-pull framework.

Value Assurance before knowledge is integrated into the organisation

Centralised function provides context to the codified organisational knowledge database for the project. It is also a centralised source of tacit knowledge to many projects

Organisational knowledge

Value assurance determines knowledge flow into the organisation

Update organisational processes, procedures, work-flows, execution methodologies, templates, specifications, training material

Inform organisation through engineering bulletins and e-mails

ICT set up to communicate with project timeously through for example instant messaging

Foundation of organisational KM: Culture and Management focus through motivation/consequence

Formal Transfer Mechanisms

Institutionalised + Personalised
Institutionalised + Codified
Individualised + Codified

Project learning

Learning processes
• Experiential learning
• Knowledge articulation
• Knowledge codification

Informal Transfer Mechanisms

Individualised + Personalised
Institutionalised + Personalised

Figure 1: Knowledge-Pull Framework

Organisational Knowledge

A Paradigm shift

KM practices have evolved from the initial simplified idea of only focusing on a central repository to support easy access by relevant resources, although this remains an important aspect. Knowledge within the PBO can be considered within the context of the knowledge stock, enabling environment and knowledge practices (Reich et al., 2012; Faraj and Sproull, 2000; Nonaka and Takeuchi, 1995). It is the responsibility of the organisation to create the KM enabling environment, as well as to implement and maintain the knowledge practices.

In addition to this, the organisation should put systems in place to build the knowledge stock within the organisation. Here comes the paradigm shift: contrary to popular belief, the organisation should ensure that all KM aspects, processes and procedures are in place. Only then does the focus shift to the project manager (PM). It is the responsibility of the project manager and project team to focus on KM and adhere to and make use of the knowledge practices established within the enabling environment (Wiig, 1997; Pemsel and Müller, 2012; Ajmal et al., 2010). If the organisation does not have the

processes in place and does not cultivate the correct culture, the PM and project team will not be able to do their part.

Knowledge Transfer within the context of the Organisation

The way in which knowledge is converted, disseminated and applied within the organisation will ultimately enable success. Literature shows that, when studying the transfer of knowledge between the project and the organisation, the important factors to take into consideration are the characteristics of the knowledge source, the recipient, the knowledge itself, the characteristics of the context within which the knowledge transfer took place and the absorptive power of the recipient (Yang, 2010; Lin and Huang, 2010; Szulanski, 1996; Bakker et al., 2011; Berg et al., 2012; Gold et al., 2001)). Let's focus on two of these aspects, namely absorptive capacity of the recipient of the knowledge, which in turn also relates to the timing of the transfer.

The absorptive capacity of the recipient can be increased through initial training and continued accumulation of experience as well as mentoring, coaching and the correct resourcing strategy.

Resourcing strategies should allow for placing resources on different types of projects and projects at different stages of the project life-cycle. The tacit knowledge context that is created through training and experience will support the full utilisation of the organisational explicit knowledge. The organisational policies and procedures required to ensure that this context is created within the respective resources is the responsibility of the organisation itself, specifically management. The motivation to mentor another resource is a personal attribute and is underpinned by a learning culture within the organisation (Adenfelt and Lagerström, 2006; Yang, 2010; Eskerod and Skriver, 2007; Rezgui et al., 2010; Gold et al., 2001; Pemsel and Müller, 2012).

However, how can you ensure that the context or depth of this codified knowledge is captured when the knowledge is transferred to the respective resources? Also, how do you ensure that the specific knowledge that is required is transferred to a specific project team? Two examples are discussed below.

The dissemination of knowledge requires a receptive audience (this talks to the timing of the transfer). Project teams are most susceptible at the beginning of each project stage. The project execution methodology should require a session where the pertinent disciplines and project tracks gather knowledge from other resources or teams that executed similar projects or worked with the same technologies. In preparation for the session, the other project team can prepare to present their lessons learned document. This way the context of the codified knowledge is created and the detail of the issues experienced on another project can be discussed.

Another example is the streamlining of training sessions. Bigger sessions tend to lose effectiveness. Use an experienced resource to present a specific topic to a small group

of employees. Send the reading material beforehand. Ensure the resource explains the topic at the hand of concrete, current examples. This will elicit questions and communication, resulting in comprehension.

The characteristic of the knowledge itself will impact the knowledge transfer mechanism used. The more formal transfer mechanisms require a value assurance step. This is discussed in more detail below.

Value Assurance through a Centralised Function

How do you make sure the correct knowledge is captured and disseminated, not only in a localised manner, but throughout the entire organisation? Organisations can employ a centralised KM function or identify specific positions in the organisational structure responsible for KM. The centralised function acts as the organisation tacit database, as can be seen in Figure 2. All projects have access to this tacit knowledge base timeously and throughout the life-cycle of the project. The use of experienced resources will give the required context to the codified organisational database.
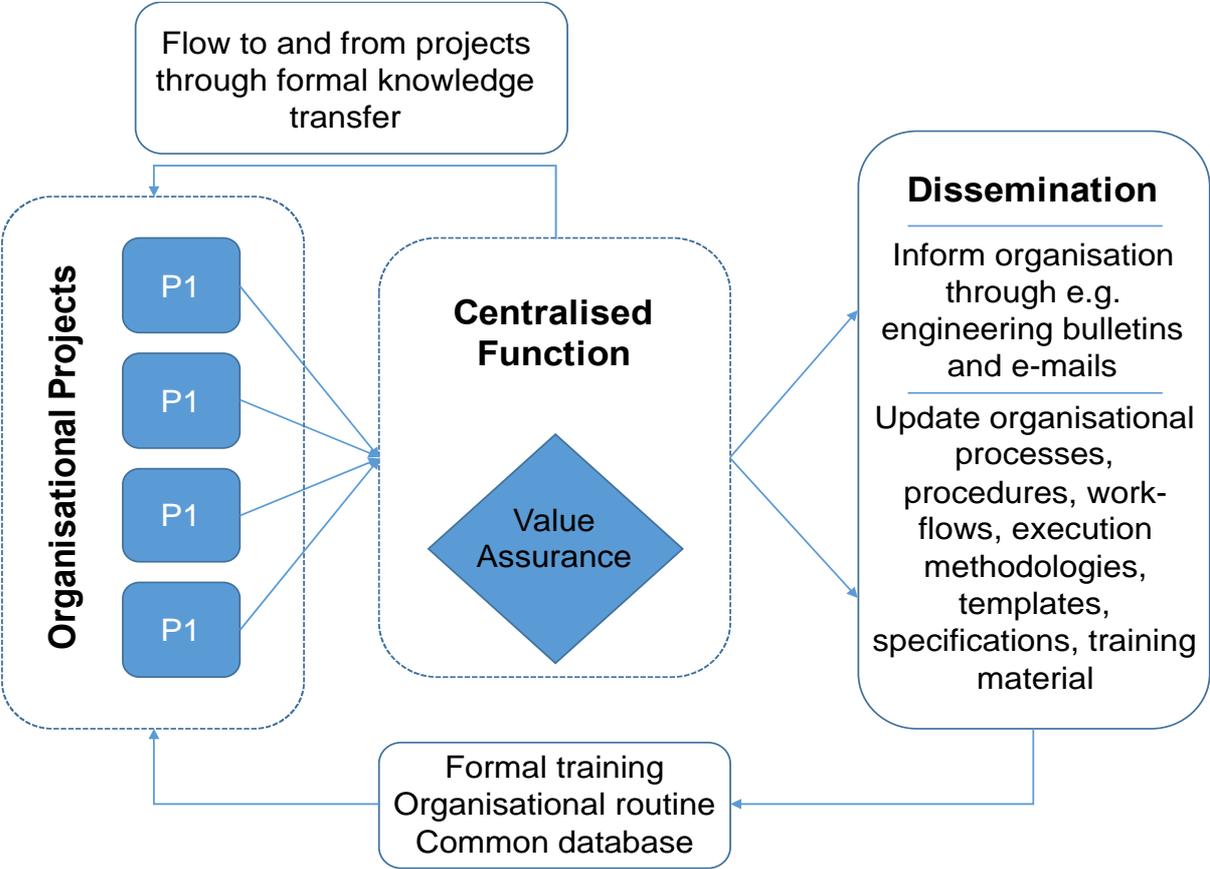
Figure 2: Value assurance to support KM within the PBO

As can be seen from Figure 2, knowledge can flow from the project to the centralised function, as well as from this function to the project team. This means that knowledge

should not flow directly to a database, but rather to the centralised function. The centralised function resources are able to identify trends based on the transferred knowledge (from all projects) and determine the required actions to be taken based on the gathered knowledge and trends.

Considering the transfer mechanisms, it makes sense that the transfer of knowledge from the project team to this centralised function requires a specific formal process in order to ensure the knowledge will be transferred as part of the normal project execution process flow. A value assurance step also ensures that the knowledge is an improvement to the current knowledge base. This mitigates possible information overload, an unwieldy database and engineering specifications with illogical requirements.

The centralised function, or other relevant resources, determines if the new knowledge should be used to update specific processes, procedures, work-flows, execution methodology, templates, check-sheets or training material. This way the updated knowledge is transferred throughout the entire organisation, through the normal organisational routine (training and a common database). The question is then if this centralised function should be used for all knowledge transfer, seen in context of the previous statement that governance processes should not hinder access to knowledge.

Any organisation requires a fit for purpose KM strategy. Formal transfer mechanisms should follow a value assurance step and be transferred into the organisational database. The resource that supplies the knowledge is responsible to codify the knowledge and to ensure that it is disseminated. The centralised function will direct the actions and ensure the processes are in place to receive this knowledge. The same requirements do not apply to all knowledge. If you are in the process of commissioning a compressor and encounter a problem, you need quick access to specifications, design information as well as resources with experience on the matter. You require a more informal knowledge transfer mechanism such as a phone application that gives access to specification and design information or a web-based community of experts. This site functions as a chat room where any employee can post a question and receive a response from an expert.

In this case, the organisation should trust in the capabilities of the resources to support the flow of knowledge. The organisation should ensure that processes are in place to support both formal and informal transfer mechanisms, which will require different levels of quality control.

Dissemination within the context of the PBO

Some aspects of dissemination were covered under value assurance. To ensure that knowledge is disseminated throughout the entire organisation a formal transfer mechanism is used. Knowledge is transferred to a centralised function. If the knowledge is an improvement on the current organisational knowledge, this function

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determines how to best incorporate it in a permanent manner into the organisation. This is achieved through updating the relevant training material, specifications and/or procedures.

The organisation should ensure that there is a structure and work processes in place to receive the knowledge from projects. Use of the organisational database and the search for knowledge within the organisation should be supported by management actions. It is important that organisation management enforce the KM system. This is possible by incorporating this requirement into the organisations' performance appraisal system, embodied in key performance indicators.

In addition to the learning culture required within the organisation, a culture of trust is also required (Yang, 2010; Wang et al., 2009; Eskerod and Skriver, 2007). Organisational trust in employees' capabilities perpetuate open communication. An open communication platform will support real time knowledge transfer as it is learned and required. First-hand knowledge of the benefit of KM, seeing how the knowledge transferred was used, experiencing the organisations' reaction to the communicated knowledge are all factors that will motivate PMs to take the time and energy to complete and participate in the KM system.

The organisation must be set up to motivate, guide and ensure knowledge transfer and give a definitive framework of where and when this should happen.

Concluding remarks

Based on the considerations outlined above, the following key recommendations were identified throughout the development of the knowledge-pull framework:

- The main focus of the dissemination process should not solely be centred on the functionalities of the database. The focus should rather be on how the knowledge can be incorporated into the project work-flow as updated process, template or specification;

- A centralised value assurance step is required before knowledge is incorporated into the current knowledge database. This is required for both technical and organisational knowledge;

- The centralised function responsible for value assurance of the knowledge is also responsible for value assurance on the project. Project deliverables should be validated against predetermined requirements. This ensures that the project will be able to utilise knowledge gathered on similar projects to update project specific deliverables and procedures. A centralised function is required for receiving knowledge, however project-specific updates should be decentralised;

- The centralised function should be responsible to transfer relevant knowledge to the new project team at the beginning of each stage during project or stage initiation. The project team should drive the process and the organisation must

make the centralised function available;

- Minimise organisational and physical interfaces, as this restricts knowledge flow; and

- The organisation should perpetuate a learning culture and discernibly support KM.

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