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Knowledge sharing activities in project-oriented organisations

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Abstract

Findings from examining eleven knowledge sharing activities in five mature project-oriented organisations are presented. Based on in-depth case studies, we claim that mature project-oriented companies will prefer knowledge sharing activities that contribute to an intra-organisational common frame of reference. Further, activities that are internal to the companies are preferred to external activities, and non-project-/ programme-specific knowledge sharing activities are preferred to project-/ programme-specific knowledge sharing activities.

Keywords: PM Value, knowledge sharing, competence development, common frame of reference, project managers

Introduction

What kinds of knowledge sharing activities can be identified in mature project-oriented organisations? What are the results of such activities, what problems are being encountered? This chapter will attempt to shed some light on these issues. Further, it will propose a framework for categorizing knowledge sharing, and point out the pattern of such activities in mature project-oriented organisations.

‘Knowledge’ is in this chapter understood as information, ideas, and expertise relevant for tasks performed by individuals, project teams, and the organisation as a whole. This understanding is in line with recent literature on the topic (Bartol & Srivastava, 2002; Alavi & Leidner, 2001). Further, ‘knowledge’ includes both tacit knowledge (Polanyi, 1967) and explicit knowledge (Nonaka, 1994; Nonaka & Takeuchi, 1995). ‘Sharing knowledge’ is an activity, where knowledge is exchanged between individuals (Andrews & Delahaye, 2000), teams or organisations.

In project-oriented organisations, knowledge is shared both within projects and across projects (e.g. Eskerod & Skriver, 2007; Sense, 2008; Davidson & Rowe, 2009). Therefore, two major challenges need to be addressed (Ruuska & Vartiainen (2005): Firstly, how to share knowledge accumulated in one project with subsequent projects — after all, projects are temporary organisations and a lot of knowledge will vanish when a project team disbands (Tukel, Rom & Kremic, 2008). Secondly, how to enhance the communication of peers working in different projects. Project work may increase knowledge sharing yet at the same time will tend to isolate people from peers. Thus, the first challenge is
how to avoid the reinvention of the wheel. The second is how to prevent silo thinking (Eskerod & Skriver, 2007).

Such issues have become increasingly important to project-oriented organisations. Increasingly, they turn themselves into service companies that are divorced from physical work (Fernie, Green, Weller & Newcombe, 2003). This clearly resonates with the notions of a knowledge economy where the issue of how better to share knowledge across teams and between knowledge workers is a central management concern.

Against this backdrop, surprisingly little is known of what actually is taking place when knowledge is being shared in firms and organisations. Are these internal or external activities; are they project-/programme-specific or not project-/programme-specific? How do they affect corporate tasks? There is some research on knowledge sharing in project-oriented organisations (i.e. Eskerod & Skriver, 2007), but even here it has been difficult to determine the nature and effects of knowledge sharing.

The chapter reports on empirical studies from 2007-2008 in five Danish corporations. The authors of this chapter have been involved in an international research project which aimed to determine the value for an organization of implementing project management (in short PMValue) (Thomas & Mulally, 2004; 2007; 2008). The research project was funded by the Project Management Institute and co-lead by Dr. Janice Thomas, Athabasca University, and Mark Mulally, President of Interthink Consulting Incorporated. The project included in-depth case studies in 65 organizations worldwide conducted by a network of 48 researchers.

A key initial observation from the Danish case studies was that all of the case companies were investing heavily in creating and strengthening social processes for enhancing knowledge sharing (Eskerod & Riis, 2008; 2009a; 2009b).

The structure of the chapter is as follows: In the next section, we describe the research method and briefly introduce the case companies. Thereafter, we present and discuss our findings. A framework to classify knowledge sharing activities will be proposed to gain a deeper insight into the nature of such activities. Finally, in the last section we propose hypotheses on preferred knowledge sharing activities in mature project-oriented organisations. We also suggest areas requiring further research for an even better understanding of such activities.

**Method**

The research underlying this chapter is carried out by applying a multiple-case study approach (Yin, 2009). According to Yin, the rational for replication can be either literal replication or theoretical replication. As we were looking for similar results we pursue a literal replication logic.

The five cases were selected due to their size as we were searching for medium to large organizations in order to ensure that the complexity of project management and
knowledge sharing was sufficiently high to be suitable for the research. Further, only mature organizations concerning project-orientation were selected. Work started with desk research about the case companies, their history of project management implementation, and, in particular, their knowledge sharing activities. At the same time, in each company one specific department was chosen as \textit{unit of analysis} for further investigation. Key information about the case companies and the units of analysis are summarised in Table 1.

<table>
<thead>
<tr>
<th>Case</th>
<th>Type of Company</th>
<th>Total Number of Employees</th>
<th>Unit</th>
<th>Unit of Analysis</th>
<th>Number of Staff</th>
<th>Number of Project Managers</th>
<th>Number of Projects Annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>IT</td>
<td>3,000</td>
<td>Sales Department</td>
<td></td>
<td>150</td>
<td>43</td>
<td>130</td>
</tr>
<tr>
<td>B</td>
<td>Financial services</td>
<td>30,000</td>
<td>Corporate IT</td>
<td></td>
<td>1,000</td>
<td>126</td>
<td>200</td>
</tr>
<tr>
<td>C</td>
<td>Manufacturing</td>
<td>22,000</td>
<td>Corporate IT</td>
<td></td>
<td>400</td>
<td>16</td>
<td>50</td>
</tr>
<tr>
<td>D</td>
<td>Consulting engineers</td>
<td>5,000</td>
<td>Regional Office</td>
<td></td>
<td>100</td>
<td>42</td>
<td>500</td>
</tr>
<tr>
<td>E</td>
<td>Pharmaceutical</td>
<td>5,300</td>
<td>Supply, Operations, IT &amp; Engineering</td>
<td></td>
<td>1,000</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

\textbf{Table 1: Case Companies}

Desk research involved reviews of all relevant company documentation, including defined project management practices and procedures; human resource development policies with respect to knowledge sharing and project management, and key data on strategically significant projects during the last ten years. Surveys were carried out with some of the stakeholders including project team members, project managers, project customers, and suppliers/subcontractors. Finally, one completed project file was analysed in detail to understand actual project management and knowledge sharing practices, assess the evidence of compliance with set policies and processes, and to check on the results of both regarding project performance.

Next, at least seven in-depth interviews were conducted in each case company with key stakeholders, including senior management, project sponsors, project management office or project management support staff, project managers and managers in charge of human resource development. The interviews were recorded and transcribed. Afterwards, metamatrices for each corporation were developed for comparisons across the informants. Findings from the interviews were compared with data from the surveys and other collected data. Lastly, the research team participated as observers in one project status meeting.

Besides a broad discussion in the interviews on how relevant information was distributed among the staff concerned, specific data on knowledge sharing were collected. In order to do that the PMValue research team had identified eleven knowledge sharing activities in a workshop and included them in the interview guide for in-depth interviews. The identification was based on the researchers’ prior understanding of knowledge sharing activi-
ties in project-oriented organisations. In the case studies, a representative of each case company was asked a range of close-ended questions such as the ones presented in Table 2. The representative then was interviewed on the case company’s lessons learned database.

Identify the degree to which the following informal training approaches [= knowledge sharing activities] are made available: (1-not at all; 5-very high)

<table>
<thead>
<tr>
<th>Training Approach</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference participation</td>
<td>X</td>
</tr>
<tr>
<td>Association participation</td>
<td>X</td>
</tr>
<tr>
<td>Internal conferences</td>
<td>X</td>
</tr>
<tr>
<td>Lessons learned</td>
<td>X</td>
</tr>
<tr>
<td>Lunch-and-learns</td>
<td>X</td>
</tr>
<tr>
<td>Coaching and mentoring</td>
<td>X</td>
</tr>
<tr>
<td>Communities of practice</td>
<td>X</td>
</tr>
<tr>
<td>Competition participation</td>
<td>X</td>
</tr>
<tr>
<td>Review meetings</td>
<td>X</td>
</tr>
<tr>
<td>Site visits</td>
<td>X</td>
</tr>
<tr>
<td>Self-learning</td>
<td>X</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2: Questionnaire on Knowledge Sharing Activities**

**Findings from the Case Studies**

Table 3 presents a summary of the use of knowledge sharing activities in the case companies. The interview guide allowed the informants to report on other knowledge sharing activities than the ones listed in Table 2. However, none were reported.

<table>
<thead>
<tr>
<th>Use Level</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Use</strong> (avg score 4 or above, out of 5)</td>
<td>Coaching and mentoring, Internal conferences, Self-learning</td>
</tr>
<tr>
<td><strong>Medium Use</strong> (avg score 3 or above but less than 4, out of 5)</td>
<td>Lessons learned, Communities of practice, Conference participation, Review meetings, Site visit</td>
</tr>
<tr>
<td><strong>Low Use</strong> (avg score below 3, out of 5)</td>
<td>Lunch-and-learns, Association participation, Competition participation</td>
</tr>
</tbody>
</table>

**Table 3: Use of knowledge sharing activities in the case companies (based on averages)**

Eight of the eleven knowledge sharing activities were used in all case companies although to a different extent. In the following, further detail on these and the remaining activities is presented.
Coaching and mentoring

Coaching and mentoring was the most common knowledge sharing activity in the case companies, scoring four or five in all five companies. However, the concept was used differently in the case companies.

First, the target group of coaching and mentoring activities varied widely. In one company, only new project managers were assigned a mentor, while in other companies all project managers were assigned someone to coach and/or mentor them. In yet another case, all staff members of a certain department had a coach/mentor. In all companies, coaching/mentoring was mandatory for the coached/mentee.

A second dimension related to the staffing of the mentor/coach role. In four companies, the role was staffed with a superior or a more experienced person within the company, who was called mentor, tutor or coach. In the fifth company, the coach was an external psychologist.

A third dimension related to the time allowed for coaching and mentoring. In three case companies, coaching or mentoring activities were not time bounded. However, it was possible to change the coach/mentor if the needs of the coached/mentee changed over time. In the companies were coaching or mentoring was time bound, two different approaches were found. In one company, coaching was part of a mandatory leadership development programme lasting one year. In the other case company where a mentor was assigned to all new project managers, an initial mentoring was organised for three months. At the end of this period, mentor and mentee agreed on whether they should continue for another three months or not.

Coaching/mentoring involved feedback from the coach/mentor to the coached/mentee to ensure long-term competence development of the person in question. Even though the feedback might relate to activities carried out in a specific project, the specific project was not in focus. The informants in the interviews were all very positive towards the coaching/mentoring and thought that it was very valuable for them.

Internal conferences

The target group for internal conferences was typically project managers. The conferences were held once a year, and they lasted one or two whole days. They were not project-/programme-specific. Instead, they typically covered a specific theme related to project management that top management wanted to promote. This could be ‘professionalism in project managers (attitude and behaviour)’, ‘business benefit and benefit realisation’ and “leadership development”.

Some of the project managers stated in the interviews that the conferences made it much easier for them to share knowledge across projects and even countries, while other informants found that the conferences were nice and cosy but too time-consuming if compared to the benefits.
Self-learning

A significant part of this activity was to study manuals, handbooks on intra-organisational processes, tools and methods and other written material. Most of the case companies had mandatory as well as optional elements e.g. templates that the project manager had to deal with. None of the material for self-learning was project-/programme-specific.

A few project managers reported that they found some of the templates too cumbersome, but most of them were quite happy with the internal material for self-study. However, all would have liked to have more time allocated to self-learning.

Lessons learned

In all case companies, information on lessons learned related to specific projects or programmes, and began once a project had been started. Typically, the project manager presented a summary of learning points at various departmental meetings. When a project had been completed, a wrap-up discussion took place within the project team and a summary could then be distributed to persons within or outside the specific project or programme.

Two of the five companies had a database on lessons learned. However, in one of the two the informants did not consider the database very successful. It was reported to be a mere collection of lessons learned reports of completed projects. The informants claimed that only in one out of ten projects, a project team would be able to utilise information available from this source.

The other company reported more success with its lessons learned database. This was built on a huge IT programme containing 66 projects. All project managers in the programme had been asked to deliver best practice examples, questions and answers about project management challenges and about the use of the company’s project management model, as well as the related tools and methods. The database was content-related and included a FAQ-database on the intranet. Reportedly, the database was used in all projects of the case company.

Communities of practice

Compared to other knowledge sharing activities in the case companies, communities of practice were particularly varied. Both project-/programme-specific and not project-/programme-specific communities were found. In some case companies, internal communities of practice were established, others operated the communities as an external activity. In the latter case, the communities were based on virtual networks and internet communities such as LinkedIn to deal with special methods of project planning and management e.g. the logical framework approach, or with challenges in specific project types such as IT-projects.
Relatively ‘light’ communities were set up in several of the case companies, where project managers were gathered at regular intervals, e.g. every second week, to discuss challenges and lessons learned in the projects since last meeting. Yet, there was also one company, which had set up a whole system of communities of practice. In this case, first the five best performing project managers had been identified and interviewed in order to determine what they were doing differently to make their projects a success. Secondly, based on these best practice examples, seven core project management principles were defined. Thirdly, formal temporary action-learning teams consisting of other project managers were established. The teams would discuss how to apply the principles and how to overcome challenges facing the team members. (A detailed description is presented in Eskerod (forthcoming)). In the same company, more action-learning teams were established for participants of advanced courses in project management. Participants reported that listening to others’ experiences gave great value.

In still another case company, formal temporary knowledge sharing teams were established in the context of a large programme. Staff was assigned to the teams on a mandatory basis. Besides regular face-to-face meetings, the project managers involved in the programme had video-supported sessions. Several informants found the approach more effective than previous knowledge sharing activities that had not been project-/programme-specific. The common approach helped to come up with relevant ideas and feedback. They said the well-integrated implementation of the programme made it a lot easier to share knowledge in a way conducive to the project work.

**Conference participation**

Participation in both national and international conferences and other professional events such as symposia or seminars were reported. They were typically arranged by external professional organisations. Naturally, they were not project-specific or programme-specific.

**Review meetings**

In review meetings, projects were reviewed by peers in order to improve or correct content-related issues. Thus, review meetings were both project-/programme-specific and internal.

In one of the case companies, a specific project management model was developed for a programme. This model was also the subject of review meetings; it was reviewed and adjusted on a continuous basis throughout the whole programme.

**Site visits**

Internal as well as external visits were reported. Some of the visits were arranged by external parties like a project management association or a network. Others were arranged by the clients/customers. Informants reported that knowledge sharing was not the only purpose of these activities. Relationship building was another important purpose.
Lunch-and-learns

In the case companies, lunch-and-learns were rarely used. However, one company tried to establish ‘buddy team meetings’ for the whole staff of a particular department. Each staff member had a formal buddy, meaning a peer on the same level of experience as him-/herself. The buddy teams were supposed to have lunch together once every second week to share and discuss experiences. The teams had to schedule the lunches themselves.

Association participation

Little knowledge was shared by participating in activities offered by professional associations like the Danish Project Management Association. Nevertheless, some informants reported that they were reading material produced by project management associations and published in journals and on websites.

One case company was found to spend a considerable amount of time on association work as both management and staff members in one of its departments were involved in IPMA-certification. To become project manager in this specific department IPMA-certification was mandatory. On top of this, more of the project managers served as assessors in the IPMA-certification, as well as the head of the department had a formal role in the IPMA-certification board.

Competition participation

The least common knowledge sharing activity reported was competition participation. Several informants were aware of competitions like the IPMA’s Project Excellence Award where participants have to produce written material and – if selected – must make an oral presentation at a conference. However, only two of the companies had actually been involved in such competitions. One of the case companies planned to participate in an award on ‘Project of the Year’ offered by a national IT association. However, in the end the competition was cancelled.

Discussion

A two-dimension framework

As reported from the empirical studies, knowledge sharing activities may take place inside or outside the organization. Furthermore, knowledge sharing may be specific to a project or programme or alternatively, it may be general. Thus, a two dimensional framework emerges where the knowledge sharing activities of the case studies can find their place. Table 4 presents the outcome of this taxonomy. In some cases activities have been placed in more than one cell as they may appear in more than one shape.
Table 4: Framework for knowledge sharing activities

Cell I contains knowledge sharing activities that are internal to an organisation and at the same time specific to a project of programme. These include

- Lessons learned,
- Review meetings,
- Communities of practice, and
- Site visits.

Typically, such activities will target relatively small groups. There will be one person responsible for collecting data and disseminating knowledge and generally facilitating the knowledge sharing among all project team members. Except in the case of communities of practice, knowledge will be shared a few times during a project’s life or within certain intervals. In most cases, it will not be needed for the exchange to take place on a continuous basis. The immediate output of the activities will be written material e.g. reports, input to databases etc. Knowledge is mainly shared for a fast improvement of performance and a rapid increase the efficiency of the project at hand. For the activities of the lessons learned type, it may be the project at hand but also another, possibly later project.

Cell II brings together activities, which are external to an organisation while at the same time being specific to a project or programme. These include:

- Participating in competition, and
- Site visits

In the case companies, such activities were among the least used knowledge sharing arrangements. At first sight, this may appear surprising. What better way does exist for get-
ting messages across, for motivating and getting everybody involved than trying to win in a competition? Similarly, seeing is believing – does the old adage not apply to knowledge sharing in project management?

One reason for the lack of enthusiasm among the case companies may be that the activities can tie down substantial resources. Common frames of reference do not exist for external activities to the same extent as for internal activities. Thus, a lot of extra work is needed should a corporation want to participate in a competition. Furthermore, the range of informative, external sites may be small, as no company may want competitors to get to know very much about its projects. Many projects, especially in the IT sector, have little to show to visitors because deliverables are intangible or not easy accessible for outsiders. Site visits are mostly relevant if the projects are within the construction sector and if they are to some extent spectacular, like major building or infrastructure projects.

Cell III contains internal knowledge sharing activities that are not specific to a project or a programme. Here, the following will be found:

- Coaching and mentoring,
- Communities of practice,
- Internal conferences,
- Lunch-and-learns, and
- Self-learning.

Activities typically target project managers with the aim of enhancing the development of individuals’ competencies, both in the short and the long run. As they are not project- or programme-specific they support building relationships across projects/programmes and maybe even across functional and organisational boundaries.

As participation is internal to an organisation, the activities enhance the establishment and maintenance of an intra-organisational common frame of reference. In the case companies, all of them were widely used and highly appreciated.

Finally, cell IV contains external knowledge sharing activities that are not specific to a project or a programme. These are

- Association participation,
- Communities of practice, and
- Conference participation.

All three activities are less intensive, their topics are broader and the knowledge to be shared is not likely to be especially goal-oriented. The emphasis is on getting inspired rather than getting knowledge for immediate action. Inspiration may come from other project environments and project types. The activities take place between independent participants, and building networks is typically an important part of the activities.
From a corporate perspective, results or benefits will appear only after some time. There is also the risk that company secrets will leak out, especially in communities of practice where most communication will be on the internet in virtual communities instead of face-to-face. While there is the great advantage that knowledge sharing and information transfer can take place 24 hours 7 days a week, all participants have to deal with dilemmas concerning company secrets and loyalty to the company. For getting feedback and advice, it may be necessary to reveal a lot of information that rather should not get out.

**Obtaining value from knowledge sharing activities**

In other publications (Eskerod & Riis 2008; 2009b), it was shown that knowledge sharing activities are desirable, but not sufficient to obtain value such as better communication, efficient use of resources, better time management, better project progress, better financial management, better customer satisfaction, higher self-esteem, and improved future possibilities. Typically, four elements must be in place for obtaining such value (adapted from Eskerod & Riis, 2009b):

- A common PM model including tools and methods requiring a common approach to PM. (notice that a PM model is valid for all projects carried out in the organization regardless of type. Thus, it differs from a project model that applies to a specific type of projects – and specifies the required process model, structuring of tasks, organization, tools and so on. (Swedish, Norwegian and Danish Project Management Associations, 2006).) The extent of the models can vary widely (Saers 2003, Cockburn 1998).
- Companywide generic PM training programmes – providing a common terminology and understanding of concepts, PM methods and tools.
- Tailor-made internal examination or external certification of project managers as part of their career development.
- Knowledge sharing activities among project managers to enhance common approaches that are less formal and less systematic than the training and examining efforts.

The elements were similarly found in recent studies of systematic competence development such as Suikkia, Tromstedta, and Haapasalob (2006).

In the case companies, the informants stated that knowledge sharing was made easy if there was a common understanding of project management backed up by appropriate integration efforts. This matches very well the preference for internal not project/programme-specific knowledge sharing activities. These activities ensure that knowledge sharing is not taking place in silos (i.e. the projects) and that a company or department specific common frame of reference must be developed and maintained instead of spending resource on external activities.
Based on the findings we propose the following three hypotheses:

- Mature project-oriented companies will prefer knowledge sharing activities that contribute to an intra-organizational common understanding of project management.
- Mature project-oriented companies will prefer company internal activities to external activities.
- Mature project-oriented companies will prefer not project-/programme-specific knowledge sharing activities to project-/programme-specific knowledge sharing activities.

**Conclusion**

In five mature project-oriented companies in Denmark knowledge sharing was a major precondition for achieving value. Based on empirical findings it appears that among such companies there is a marked preference for internal knowledge sharing that is not project-/programme-specific and that contributes to an intra-organisational common understanding of project management. Coaching and mentoring, internal conferences and self-learning are the most liked types of knowledge sharing.

In the five companies, knowledge sharing was supplemented by a common frame of reference of PM. Clearly, knowledge sharing activities were a necessary, but not a sufficient requirement for achieving corporate value.

Two limitations of these results can be identified: First, the case studies took place in Denmark. Thus, it may not be possible to apply the results in other countries or cultures. Secondly, knowledge sharing in the case companies had to be suited for large projects mainly carried out by larger firms. Thus, it may not be possible to apply the results in different corporate environments. Future research should help overcoming these limitations. Of special interest would further be to investigate how the various types of knowledge sharing interact and to what extent they reinforce or impede each other.

**Acknowledgements**

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