Sustaining and developing disciplinary expertise in project-based organizations:
Balanced and integrated solutions

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Acknowledgements

- This research was funded by PMI and the KITE research program, Linköping University, Sweden (www.liu.se/kite)
Polling Question 1
• What do you regard as most important for a project team to be successful?

1. That the members of the team maintain specialized knowledge within their different areas of expertise.

2. That the members of the team develop a broader set of skills and knowledge outside their own “comfort zone”.
Background

Knowledge Integration

- Requires access to differentiated and specialised knowledge bases
- Is often accomplished through projects and interdisciplinary project teams

Organizing by interdisciplinary project teams

- Allows firms to combine and integrate different knowledge bases
- Creates difficulties to sustain depth in disciplinary expertise
Members of different knowledge domains are co-located.

Over time, they develop more similar knowledge and viewpoints.

Risk of losing depth in disciplinary knowledge.
Risk of less interdisciplinarity.
Risk of less quality future projects.

Members within the same knowledge domain are dispersed.

Lack of situations of knowledge transfer and experience sharing among members of the same knowledge domain.
Disciplinary expertise

• Scientific and/or technical knowledge within a disciplinary domain
• Gives project members abilities and skills that distinguish them from project members within other domains of knowledge (cf. Collinson, 2001)
Gap

- Previous research has identified the problem, but has not addressed potential solutions.

Aim

- To identify and examine organizational solutions for sustaining and developing disciplinary expertise in organizations that rely on interdisciplinary and co-located project teams.
Methodology

Comparative case study
• Three cases; Software Inc, Sentio and MedTech

Focus on R&D units
• Stable interdisciplinary project teams for KI

Interviews
• 18 interviews with management representatives
• 22 interviews with disciplinary experts
We developed and applied an analytical framework to discuss the viability of the solutions identified.
Polling Question 2
• In your experience, what do company initiatives/activities normally support?

The development of…

1. Knowledge
2. Knowing
3. Contextualization
4. A combination of the three
Establishment of organizational units with the aim to sustain and develop disciplinary expertise within particular domains.

Existence of activities that support the maintenance and development of disciplinary expertise.
Two types of structural solutions

Disciplinary leadership
- Secure access to deep disciplinary expertise within several disciplinary domains

Disciplinary community
- Guarding a particular and strategically important disciplinary domain
Two types of structural solutions

<table>
<thead>
<tr>
<th>Members</th>
<th>Solutions for disciplinary leadership</th>
<th>Solutions for disciplinary community</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The most skilled specialists within</td>
<td>Peers from the same disciplinary</td>
</tr>
<tr>
<td></td>
<td>several domains</td>
<td>domain</td>
</tr>
<tr>
<td>Function</td>
<td>Expert support to disciplinary peers</td>
<td>Provide disciplinary expertise to the</td>
</tr>
<tr>
<td></td>
<td>in projects</td>
<td>teams</td>
</tr>
<tr>
<td></td>
<td>Enhance strategic knowledge within the</td>
<td>Enhance knowledge sharing and “story-</td>
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<tr>
<td></td>
<td>main disciplines</td>
<td>telling” among disciplinary peers</td>
</tr>
<tr>
<td></td>
<td>Recognition of skilled co-workers</td>
<td>Recognition of certain disciplinary</td>
</tr>
<tr>
<td></td>
<td>Opportunity for individual studies</td>
<td>domains</td>
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<td></td>
<td>Career opportunity: Motivation for</td>
<td>Arena for development of knowledge,</td>
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<td></td>
<td>individuals to sustain and develop</td>
<td>continuity and common practices</td>
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<td></td>
<td>their disciplinary expertise</td>
<td>development</td>
</tr>
<tr>
<td>Element in disciplinary</td>
<td>Supports primarily Knowledge, and to</td>
<td>Supports primarily Knowing, and to</td>
</tr>
<tr>
<td>expertise</td>
<td>some extent Knowing</td>
<td>some extent Knowledge.</td>
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</tbody>
</table>

- **Members:** The most skilled specialists within several domains. Peers from the same disciplinary domain.
- **Element in disciplinary expertise:** Supports primarily Knowledge, and to some extent Knowing. Supports primarily Knowing, and to some extent Knowledge.
Activity-based solutions

Collaboration among disciplinary peers
- Disciplinary communities
- Informal meetings
- Pair testing

Organized learning arenas
- Conferences and courses
- Wiki pages

External networking
- Web-based communities
- Professional networks
Activity-based solutions

Individual activities
- Garage skunk works
- Individual studies

Seeing the products in action
- Customer visits
<table>
<thead>
<tr>
<th>Activity</th>
<th>Knowledge</th>
<th>Knowing</th>
<th>Contextualizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration among disciplinary peers</td>
<td>HIGH/MEDIUM</td>
<td>HIGH/MEDIUM</td>
<td>HIGH/MEDIUM</td>
</tr>
<tr>
<td>Organized learning arenas</td>
<td>HIGH</td>
<td>MEDIUM/LOW</td>
<td>HIGH/MEDIUM</td>
</tr>
<tr>
<td>External networking</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>LOW</td>
</tr>
<tr>
<td>Individual activities</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH/MEDIUM</td>
</tr>
<tr>
<td>Seeing the products in action</td>
<td>LOW</td>
<td>LOW</td>
<td>HIGH</td>
</tr>
</tbody>
</table>
Polling Question 3
Thinking about the organization you work (or have worked) in, which types of solutions do you recognise? You can choose more than one option.

1. Structures for disciplinary leadership – where senior experts are appointed within several areas of expertise.

2. Structures for disciplinary community – where members of a certain disciplinary domain are co-located instead of dispersed in project teams.

3. Activities for collaboration among disciplinary peers that work in interdisciplinary project teams

4. Activities related to external networking in web communities and professional networks

5. Activities related to studying the product/customer in action
Conclusions: what constitute viable solutions?

**Horizontally integrated**
- Solutions that support Knowledge, Knowing and Contextualizing simultaneously

**Vertically integrated**
- Solutions that are aligned with existing strategies and technological roadmaps, and integrated with everyday work practices.
We developed and applied an analytical framework to discuss the viability of the solutions identified.
Summing up: Practical implications

Choosing a structural solution

- Are all disciplinary domains equally important or are one or a few more essential for the firm’s competitive advantage?
- Given this, do you wish to build disciplinary leadership to secure deep competence in many or do you wish to build disciplinary community to strengthen a particularly strategic domain?

Choosing activity-based solutions

- Can you combine various types of activities to support Knowledge, Knowing and Contextualizing?
- Can you find activities that address these three building blocks simultaneously?
- Can you implement your activities in way that better supports Knowledge, Knowing and Contextualizing?
- Can you link the activities to strategic goals, and integrate them in everyday work?
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