COMMUNITIES OF PRACTICE AND THE CHALLENGE OF MANAGEMENT SUPPORT

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Abstract: Communities of Practice (CoP) are a strategic asset for innovative organisations. However, managers have problems to manage and facilitate CoPs, and therewith to harvest the benefits of these communities for the organisation. The goal of this research is to supply managers with a support framework to facilitate the development of CoPs, the CoP activities, and their contribution to the organisation. A design science study is conducted, which comprises of a literature research to develop a knowledge base and a study of cases to develop an environment base. Combined these sources are used to create a support tool, which was then evaluated by an expert panel.

1 INTRODUCTION

A community of practice (CoP) offers participants a social platform to develop, share, store and elaborate on knowledge in an effective way. CoPs generate innovative products and services and therefore contribute to organisational performance. While CoPs mostly spontaneously emerge, managers generally feel the urge to support and encourage the development and activities of CoPs in order to create an innovative climate in the organisation. However, management involvement is likely to suffer from the management paradox; as traditional management strategies tend to conflict with the core values of a CoP (Wenger and Snyder, 2000).

Using design science as a research approach, we present a tool to support the management and facilitation of CoPs. To this end, findings of a case study at an international consultancy firm will be presented in combination with a literature study on CoP evolvement.

First, the literature study focused on several CoP evolvement models. The model of Gongla and Rizzuto (2001) is used as a basis for a general notion on CoP management and extended with additional practices from (e.g Wenger and McDermott, 2002; Brown and Duguid, 1991; Sunassee and Sewry, 2002 and Tremblay, 2004). The extended model is further used to structure this paper.

Second, interviews and an expert panel were used to identify and validate additional promising practices on CoP management. Both the literature and the lessons learned were then used to develop a tool that can serve as a support framework for CoPs in different phases of their lifecycle.

The support framework for managing CoPs presented in this paper offers new insights for both business managers and scientists. For managers, the paper offers a set of guidelines from literature and practice, which can be used in their daily considerations regarding CoP support. For research the paper offers a framework for the facilitation and management of CoPs that can be used for further research on the use of CoPs to improve the innovative capacity of organisations. Such a framework can be used to:

1. Gain insight in what management interventions to use in which context to support CoPs
2. Develop best practices and techniques to support CoPs in creating innovative solutions for an

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organisation
3. Further develop tools to support the activities of CoPs and to further harvest their value for the organisation.

The focus in this study is on issue one. Further research is needed to deal with the other issues moving towards a framework that helps to decide about the productivity of these CoPs for the organisation.

2 COMMUNITIES OF PRACTICE

The 'Community of Practice-concept' is an approach to generate knowledge by means of social interactions in a human network. In principle, CoPs have been used for centuries, but the concept has only recently been labelled (Lave and Wenger, 1991). Within this research the following definition is used (Wenger et al, 2002):

"Communities of Practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area through interaction at an ongoing basis"

There are four main types of CoPs (Vestal, 2003):

1. Innovation community; cross-functional in nature, works together to figure out new solutions through the knowledge they already have.
2. Helping community; focuses on helping people.
3. Best-practice community; concerned with attaining, validating and disseminating information.
4. Knowledge-stewarding community; focuses on connecting people and connecting and organizing information and knowledge across the organisation.

2.1 Management of CoPs

For CoPs to be effective participants need to have a shared interest, form a community and exchange knowledge within the community on a regular basis. CoP members thus need to have time and means to communicate with one another. Since shared interest is all that is needed to join a CoP, CoPs are considered different from traditional team work approaches (Bryan et al, 2004) and comprise different features including variety, identity, significance, autonomy and feedback (Bryan et al, 2004).

We can look at management interventions to cultivate and support CoPs in their activities on three different levels; Strategic, Tactical and Operational. In this paper we will focus on the way business managers have a direct influence on the in- and output of community processes on the tactical level by providing, for instance, (financial) rewards, time and resources. The tactical level is the most appropriate to influence an organisation's management style to improve CoPs support. Management involvement on the three levels must be aligned with the stages of development of a CoP to correspond with for instance the stage of mutual trust and openness between members, the level of energy within the CoP and the maturity of supporting tools and methods.

2.2 CoP Evolvement within Organisations

CoPs do not simply emerge; they grow, split up, grow further, evolve and might eventually die. There are three evolvement theories: the evolution model of Gongla and Rizzuto (2001), the life-cycle model of Wenger (1998) and the life-cycle model of McDermott (2000).

The research elaborates on the model proposed by Gongla and Rizzuto (2001), because their model is founded on many case studies and extensively discusses organisational involvement in the different stages of development. CoPs evolvement can be described in five stages (2001):

1. Potential stage; individuals find out that they have something in common and group in order to gain insights in the benefits of a community.
2. Building stage; the community defines itself further, creates an identity and etiquette.
3. Engaged stage; all internal processes are now aligned to a common purpose.
4. Active stage; communities' value becomes essential to engaged participants and the nurturing organisation.
5. Adaptive stage; the community starts to adapt to changing environments and deploys new communities themselves.

Tarmizi and Vreede (2005) integrate these stages with the evolution models of Wenger (1998) and McDermott (2000). Gongla and Rizzuto's (2001) model differs in stage 4 and 5 because they consider CoPs' level of energy and visibility to grow even further. At the same time this development model envisages the possibility that CoPs could suddenly fall apart after each stage. To gain insights in the

type of management support to use in what context, it is preferable to use a descriptive model with limited stages. In other words, stages that could either end or continue as being described by Gongla and Rizzuto (see Figure 1).

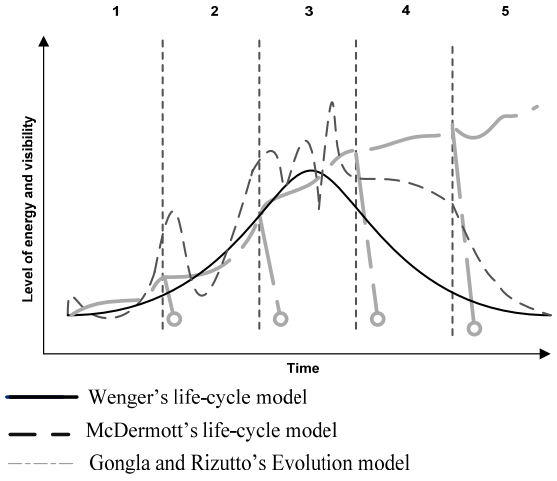

Figure 1: A visual representation of the different evolvement models.

In this paper the adaptive stage 5 will not be considered, because Gongla and Rizzuto (2001) consider a community in the adaptive stage as part of the existing organisational processes. In fact, CoPs in this stage become totally self-organising and self-supporting and they might even create charters for new communities (Gongla and Rizzuto, 2001). Therefore discussing organisational or management requirements for this stage is not very useful for the scope case of this paper.

2.3 The Management Paradox in Support of CoPs

Deploying and managing CoPs in the context of existing business processes is likely to result in the management paradox (based on Wenger and Snyder, 2000):

Business managers are able to cultivate cops by providing the right support (e.g. financial support, resources, knowledge), but managers could rather easily destroy the value of communities by imposing too much or applying counter productive management efforts. Managers are used to carry out 'classical' management strategies which do not seem to fit these very personal, collaborative, informal and spontaneous working formats (processes).

Moreover, the management paradox describes the conflicts resulting from management efforts to stimulate performance and productivity on the one hand and the community core values and spontaneous developing nature on the other hand. Classical management styles do not seem to fit new organisational formats, such as CoPs. Consequently, the organisations' ability to actively facilitate and support the development of such communities remains uncertain (Thompson, 2005).

3 RESEARCH APPROACH

The goal of this study was to increase our knowledge on the management issue while developing a tool to support CoPs development. This design science approach proposes design as a research strategy to gain knowledge and understanding about the object under construction. Design science can be used to research not just instantiations (prototypes or systems) but also models (frameworks and representations) and methods (algorithms and practices) (Hevner et al, 2004). Design science advocates learning from a knowledge base and an environment base to establish rigor and relevance in a design effort with the intention to create new insights and understanding through design, and the evaluation of design (Hevner et al, 2004).

In this study, the object of design is a 'support tool', a framework in which techniques to support CoP development are captured. Such a framework helps to address the problem of a management paradox with respect to CoPs. The research contribution of this paper is therefore to present an overview of effective management support interventions, linked to the different development phases and organisational levels in the CoP's life cycle.

4 GUIDELINES FROM THE LITERATURE

Various search engines and a snowball method was used to gather information on guidelines for the management support of CoPs that form the knowledge base of this design study. In this section, the tactical practices identified in the literature are ordered along the five stages of a CoP's lifecycle. Furthermore we added some generic guidelines for

CoP management on the strategic and operational level.

4.1 Level 1: Strategic

From a strategic perspective it is of great importance that an organisation considers itself as a community-of-communities symbolized as a pile of intertwined communities (Brown and Duguid, 1991). In other words, an organisation should accept that they way people actually work differs fundamentally from the ways this is described by the organisation in manuals, programs, charts and others (Brown and Duguid, 1991). Therefore, knowledge management should be approached from a community perspective that connects to corresponding working practices. .

4.2 Level 2: Tactical

In this research we focussed on the tactical level, because the management paradox is likely to manifest itself predominantly on this level. A selected set of the most important success factors are described here.

Stage 1: Potential Stage

First, a manager should engage an "energiser", a person who actively helps to locate and link individuals. An energiser within an organisation should identify existing informal groups and uncover cross-departmental challenges or problems (Wenger et al, 2002). The appointed 'energiser' should have the skills to lower the thresholds for networking. "Human intermediaries can be quite valuable in helping connect individuals to other community members" (Lesser and Storck, 2001: 84).

Second, managers should lower the threshold for networking by encouraging and supporting face-to-face events (Tremblay, 2004), common education and development processes (Gongla and Rizzuto, 2001), corporate universities, libraries, sporting and diner activities (Wenger, 1998).

Stage 2: Building Stage

In the building stage, managers should consider whether or not they want to support a community. If they decide to, they can carry out several management practices in this stage.

First, a rather trivial management practice is the provision of time to participate in CoPs (Wenger et al, 2002). Because community involvement should not be jeopardized by working activities, people should feel that they have some time available to steward a forming community. However, when business managers provide time, they usually want to assess the value of a community. Managers should use non-traditional methods to measure value, by for instance, listening to members' stories. Members' stories clarify the complex relationships among activities, knowledge and performance (Wenger et al, 2002). The non-traditional methods should be integrated in existing performance assessment arrangements. People that contribute to knowledge management initiatives should be rewarded (Sunassee and Sewry, 2002).

Second, managers can help to define the scope and type of the memberships and determine ways in which to identify, attract, or recruit new members (Gongla and Rizzuto, 2001).

Stage 3: Engaged Stage

In this stage, a community should focus or expand. Success factors are related to the inner relationships between community members.

Because a community at this stage becomes important for the nurturing organisation, managers should set up regular interactions wherein they keep track of the activities and outcomes of a community (Gongla and Rizzuto, 2001). However, a business manager should acknowledge the values of a community and could only attempt to redefine scope, mission or mode of operation, or support growth (Gongla and Rizzuto, 2001).

Furthermore, in this stage, it becomes important that communities' effectiveness is measured and reflected to community participants. It enables them "to learn about themselves and improve internal operations" (Gongla and Rizzuto, 2001: 851).

Stage 4: Active Stage

A community that arrives at this stage needs management that really coordinates multiple work groups and teams (Gongla and Rizzuto, 2001). Business managers should integrate feedback mechanisms with organisational processes and report needs. In this way, the essential self-learning activities of a CoP could be further enhanced (Gongla and Rizzuto, 2001).

4.3 Level 3: Operational

Tools should be flexible and customisable (Simons, 2000). Tools will be used for both directive (e.g.

chat, phone calls and virtual meetings) and nondirective (electronic messaging systems, forums and) collaboration (Gongla and Rizzuto, 2001) and knowledge organisation (e.g. collaborative tagging) (Macgregor and McCulloch, 2006). The last important functionality of tools should be the support of Social Network Analysis (SNA), which is valuable for both managers as well as participants to uncover interpersonal relationships and potential CoPs (Cross et al, 2004).

5 CASE STUDY

In addition to the knowledge base the environment and context in which CoPs evolve was analyzed. For this purpose a case study was carried out at a large international IT consultancy firm. Eight semi-structured interviews were conducted with four business managers and four CoP participants on how the consultancy firm manages CoPs in practice. The aim of the semi-structured interviews was to obtain a rather holistic view on the way the IT consultancy firm dealt with CoPs and therefore both managers and CoP participants were engaged.

Moreover an expert panel session was conducted in a Group Decision Room (GDR). A GDR provides electronic meeting facilities and yields additional benefits over other workshop formats, such as parallel and autonomous brainstorming, automatic generated reports and quick results. Two business managers, four CoP participants and two CoP experts participated in the expert panel which lasted four hours. The aim of the panel was twofold: validating the results of the interviews and brainstorming on new practices.

Practices were validated by raising statements which were ranked by the participants. They could indicate to what extent the statements hold true in their daily business and community face-off. Correspondingly, promising tactical management practices were uncovered by utilising the free format brainstorming techniques covered in the GDR. Participants could raise new practices anonymously which were ranked and prioritised by the group accordingly.

From the case study, we can conclude and confirm the following guidelines on a tactical level:

- Appoint ‘Energisers’ (e.g. highly dedicated and passionate CoP evangelists) in each department;
- Asses individual employees on how they share their knowledge throughout the company and provide rewards (e.g. knowledge sharing award’);
- Lower the thresholds to constitute CoPs; make resources widely and easily available for CoP support ;
- Obligate employees to store ‘lessons learned’ after each project has been finished;
- Utilise ‘intervision’ (exchanging perspectives and lessons learned about a practice or role) as a problem solving technique, instruct managers on how to use it and focus on the autonomy of the professional;
- Empower employees; design an environment where people are able to steward the evolvement of the community.

The utmost important tactical management practices, as denoted in the case study are summarised in table 1. The table categorises these general practices from the different stakeholder perspectives.

Table 1: Summary of the major tactical management practices from the different stakeholder perspectives.

	CoP participant	CoP manager	Expert panel
CoP #1	Provide a new ‘channel’ to influence business decision making	Influence the emergence of a \CoP by involving CoP experts and potential community members	• Appoint energizer • Assess individuals • Lower thresholds • Store lessons learned • Utilise ‘intervision’ • Empower employees
CoP #2	Evangelise the CoP and encourage potential members to join	Provide room and create a culture that encourage employees to take initiatives	
CoP #3	Empower the ‘emerging leader’ to free up resources	Community interaction through the ‘emerging leader’	

6 A SUPPORT TOOL TO MANAGE AND FACILITATE CoPS

The outcome of the literature research and the results of the case study practices are bundled in a ‘support tool’ for CoP management that is presented along the three levels of organisational involvement. In line with the research scope, the tactical level of organisational involvement is specified along the four stages of community evolvement. The ‘tool’ consists of a framework (see figure 2) helps managers to identify managerial interventions that support the development and success of the CoP at the different stages of its life cycle.

6.1 Level 1: Strategic

From a strategic level, the case study discovered the lack of a uniform approach on CoP management at the IT consultancy firm. Consequently, CoP support heavily depends on the particular individual management style of a business manager. One of the key consequences of the reliance of an individual management style is that some employees feel that they have to put great efforts before they get any support where others are actively encouraged to attend various KM development and collaboration programs. An external knowledge management (KM) task force, which engage KM experts, business managers, and various employees of the consultancy firm, has to overcome problems raised by developing such a uniform approach.

6.2 Level 2: Tactical

The case study resulted in several findings on how managers at the IT consultancy firm can support CoPs in their different stages of evolvement. The practices uncovered in the interviews and expert panel add up to the practices denoted in the literature (section 3).

Stage 1: Potential Stage

In order to link potential community members, business managers could assume two different approaches on CoP management. In the first place, business managers carry out 'general' practices which support on their own accord emerging CoPs by making, for instance, 'account-meetings' more accessible so employees get a better understanding of the company's main concerns.

In the second place, managers take the lead by making an attempt to link potential community members before any community has been formed. One successful CoP at the IT consultancy firm was, in fact, planned by a manager. He engaged potential members, experienced KM experts and encouraged members to form a community. However, the way the CoP subsequently emerged was barely influenced by the manager.

Stage 2: Building Stage

Managers can influence CoP building by encouraging employees to store 'lessons learned'. Storing lessons learned helps to activate the reuse of knowledge in later projects. Therefore, by committing employees to store their lessons learned, reuse of their knowledge is likely to improve the knowledge level in similar or related projects.

The idea of engaging 'energisers' was well conceived in the interviews and expert-panel. At the IT consultancy firm, energisers could overcome organisational structures by encouraging collaboration between departments in mini KM task forces.

Lastly, business managers should be instructed (by the KM task force) on how to further encourage CoP building. Managers should utilise intervision as a method to solve problems thoroughly. Briefly, intervision is a problem solving technique in which participants discuss about the context of a problem and not about the solutions. Intervision enhances self-reflection and collective capability development and can therefore encourage CoP forming.

Stage 3: Engaged Stage

In the engaged stage, both managers and CoP participants have knowledge about how community effectiveness could be measured. In this stage, a knowledge-sharing award could further help to emphasise the importance of knowledge sharing. Business managers should acknowledge and eventually reward individuals on the extent they share their knowledge throughout the company.

Second, because community's value becomes more visible, managers should also be assessed on how their team shares its knowledge throughout the company. This is of main importance in order to stimulate cross-departmental knowledge sharing.

Stage 4: Active Stage

The management constituted successful CoP reemphasised the practices found in the literature including the need for management to integrate feedback mechanisms with organisational processes and report needs. In order to do so, the particular manager intertwined community outcomes in strategic decision processes. Members indeed experienced this as a way to improve self-learning activities when their community outcomes where reflected in strategic decisions. Besides the confirmation of this management practice, no additional practices were uncovered for this stage.

6.3 Level 3: Operational

On an operational level, a few promising practices were discovered. First, employees denoted the need for visualising existing (tacit) knowledge maps in

order to be able to search for knowledge instead of information. Therefore, Social Network Analysis (SNA) functionalities should be extended with a voting systems.

Second, tools should provide opportunities to store and utilise lessons learned in an effective way.

6.4 The Support Tool

The objective of the study was to gain insight in what management interventions to use and in which context to support CoPs. This is the first issue in a prospective management support framework that eventually should deal with the productivity of CoPs for the organisation. The outcome of this research is a conceptual management support tool for CoP on primarily the tactical level. Figure 2 provides an overview of the practices identified in the literature, interviews and expert panel. The practices indicated with 'new' were uncovered in the case study.

The support tool provides management guidance on a tactical level per evolvement stage. However, CoP support cannot be limited to the static context of stages. The growth of CoPs *through* the stages is required as well and managing this transition between the stages is therefore of great importance. The case study found three major influence areas to guide a CoP through the transition of stages:

1. Roles and responsibilities; when communities evolve the role of the community initiator can move from a rather directing to a more facilitating role. Managers can support in the transition with coaching members and uncovering lessons learned from former communities.
2. Funding and sponsorship; an evolving community needs (financial) support. Managers can support in the transition by providing time, money and freeing up resources.
3. Awareness and visibility; a community needs interaction with the environment to grow and evolve. Therefore, managers can support a transition by promoting CoPs in and outside the organisation.

A seamless intertwinement of the management support tool and transition management is essential for the first issue in a prospective management support framework.

	Stage 1: Potential stage	Stage 2: Building stage	Stage 3: Engaged stage	Stage 4: Active stage
Strategic	Organisation as a community-of-communities Engage an external KM task force (new) Reserve a central KM budget (new)			
Tactical	• Engage "energisers" • Stimulate common activities • Stimulate face-to-face meetings • Allow natural community forming • Make 'account-meetings' more accessible (new)	• Provide time • Use non-traditional methods to measure value • Help to plan growth and operation • Obligate employees to store 'lessons learned' (new) • Engage mini task forces over divisional boundaries in order to share knowledge between departments (new) • Make managers and employees familiar with 'intervision creation' (new)	• Try to be engaged in community's processes to keep on track • Measure effectiveness • Promote self-learning • Introduce a knowledge-sharing award (new) • Assess business managers on how their team share their knowledge (new)	• Integrate community feedback loops with organisational processes and reports
Operational	Implement easy portals Directive and non-directive collaboration tools Utilise tools that enable sharing tacit knowledge Deploy customisable tools & methods Utilise Social Network Analysis Support self-learning activities by tools and methods Visualise (tacit) knowledge maps (new) Develop methods & tools to store 'lessons learned' (new)			

Figure 2: A support tool for managing CoPs.

7 CONCLUSIONS

The goal of this research was to develop a support tool for managers in facilitating the development of CoPs. Along the community evolution model of Gongla and Rizzuto, guidelines from the literature were added with promising practices from our knowledge and environment base. The practices were subsequently evaluated by an expert panel. Based on the results, a support tool for managing CoPs was built.

The research is based on a study of several cases at (or linked to) the large international IT consultancy firm which makes it on the one hand extensive, profound and detailed but on the other hand the research could be extended by more case studies at other business and in other industries. Further research should therefore focus on the management paradox and management practices in other industries in order to extend this first framework for management support. Besides the

transition management concept needs more elaboration on how to flow through the stages. In other words, how to select the most appropriate practices in which stage and context to catalyse the emergence of a CoP.

Another important area for further research is the measurement of the effectiveness of different management styles on CoPs, and the measurement of CoP's successfulness in general. Such metrics can be based on research on knowledge management effectiveness related to management styles. The Knowledge Governance Framework might be a good starting point in this respect (Smits and Moor, 2005). However, the success and impact of CoPs will remain difficult to measure and assess, consequently making them vulnerable for the management paradox. Solving this issue will therefore require a way to better assess the impact of CoPs on knowledge activation and use in the organisation. The more explicit the value of CoPs the easier it will be to avoid the management paradox and facilitate the cultivation of CoPs.

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