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## **Evaluating the social organization of innovation in (online) Communities of Practice**

### **1. Introduction**

The Pelican discussion group (<http://www.dgroups.org/groups/pelican>) seems to be a handbook example of a well managed and sustained Community of Practice (CoP): participants have been increasing over the past months, discussions are productive and engaging, and participation has been constantly reaching new highs (ECDPM, 2006).

However, there are still many unanswered questions related to the evaluation of CoPs (Mwakalinga, 2005). This paper hence addresses this still under investigated area, outlining issues that are usually not tackled in the CoP evaluation process, and identifying possible methodological paths that could address them. Finally, this study tries to investigate the possibility of establishing a link (although in very exploratory terms) between individual learning in CoPs and organizational learning. While several attempts have been written on this topic (among the most recent, Bogenrieder & Nooteboom, 2004; Cohendet & Amin, 2006), they all focus on CoP and learning *within* organisation. The link between CoPs involving external actors and learning *by* organisation still has to be explored.

### **2. Communities of Practice: definitions**

The notion of Community of Practice has been conceived by a fertile contribution of ethnographic research applied to the organisational behaviour. Based on the theories of Vygotsky and Piaget, the idea was introduced that learning is essentially social (Huysman, 2004). The learner as a member of a community participates in actual practice and as such gradually learns how to think and act as a community member (Lave & Wenger, 1991). These studies have helped researchers to focus on CoPs as the core social unit where learning in organisations takes place.

The CoP concept inspired many authors to think of it as a tool or social mechanism to support learning processes (for example Davenport & Prusak, 1998; Wenger, 1998; Brown & Duguid, 1991). Probably the most cited article that relates learning with CoP is Brown and Duguid's article in *Organisation Science* (1991). Their argument is that CoPs are social structures that are able to blend learning, working and innovating during their interaction. In his book *Communities of Practice: Learning, Meaning and Identity*, Wenger (1998) provides more theoretical depth while linking the two concepts. Central

to his theory is a “social theory of learning”. Learning thus occurs through active participation in practices of communities, while at the same time identities in relation to these communities are constructed. Learning thus refers both to action and belonging by members of CoP.

Communities contribute to the social learning as they provide the most suitable setting for learning to take shape by providing a suitable “non-canonical”, non-hierarchical, informal and flexible surrounding that is considered a fruitful breeding ground for learning. Such communities are characterised by frequent, patterned social interactions. They produce high volumes of knowledge generated by large number of participants in the network (Desanctis et al. 2003). Dense interactions help them build coherence and homogeneity, and promote shared understanding and practices associated with sense-making. A core group of participants is usually sustaining the network, but the community is able to grow over time and absorb new members.

The Pelican Initiative -a platform for evidence-based learning and communication for social change- that has been set up to provide the sharing of experiences on learning from evidence, so that practitioners from diverse development fields are inspired to mainstream the learning function into their work, is an example of an apparently successful CoP. Nonetheless as outlined in the last report (ECDPM, 2006), the initiative is facing some challenges which might point to needs that aren't assessed with the common evaluation practices of CoPs.

### **3. *Approaches for Evaluating CoPs***

There are several established practices in evaluating CoPs. We will review some of them here in relation to the Pelican Initiative and then map possible alternative approaches that might shed new light on CoP performance and help to assess and overcome the challenges the Pelican Initiative is facing.

#### **3.1 *Numeric highway***

*(Key indicators: number of users; growth of users; active participation rate)*

The first entry point is usually through numeric indicators, with the focus on overall number of participants, patterns and rates of growth and number of messages and resources exchanged. Although it does not tell us anything about the quality of discussions and exchanges, numeric indicators like membership growth can clue us on the perception of the community in the eyes of other networks and actors.

According to this metrics, the Pelican initiative indeed can be labelled a success: participants have been continuously flocking to the community, and participation has been high and dynamic. But in order to be able to dive deeper into the actual added value of such a network one has to leave the highway and enter the networking plaza where different qualities of the content, the participation and the interaction become more obvious.

### **3.2 Networking plaza**

*(Key indicators: content analysis, relevant actors, network analysis, non-participants)*

When we start scratching below the surface of numbers, we discover some other indicators that tackle the dynamics and configuration of the community – its networking qualities.

*Identifying the discussion focus: content analysis.*

The concept of content analysis has been developed by Henri (1992) and relies on breaking down the transcripts of discussions into “units of meanings”, and classifying these units into categories that range from information sharing to meta-cognitive acknowledgement of behavioural change (Aviv et al, 2003). However, as this exercise can become very structured and demanding, we propose to conduct it in a light yet significant format. It can be useful, for example, to look at the ration between request and supply of information. Are users asking for information, or are they supplying their experiences and views voluntarily? Are members actively replying and following up on information requests and questions that others put forward? Such an approach could reveal some indications on the *motivation* for the participation, as well as on the *quality* and *levels* of participation.

*Identifying the relevant actors: snowballing.*

From the perspective of the social organization of innovation<sup>1</sup> the quality of participation and the outcome and impact of networking activities depend also on the involvement of relevant social actors. If the actors relevant to achieve the goal of the network are not involved they should be reached at least by communicating the networks output. Hence, identification of relevant actors is a crucial element for the successful setting up of a network. Identification of relevant actors can be done by asking the stakeholders who they perceive as relevant. According to Bijker (1996) this can be done by first reading relevant literature whereby one can find a limited number of actors to start with and then by applying the so-called “snowball” and “following the actors” method. The “snowball” method increases the number of relevant actors in the beginning very quickly by asking the actors who else would be important. Specifically, every participant that joins the discussion group could be asked to identify one to three other stakeholders that could be invited to join the discussion. The moderator follows up and contacts potential candidates, until no new actors are mentioned anymore. The method “following the actors” can then be applied to examine in more detail the relevant actors, whereby

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<sup>1</sup> *The social organization of innovation (Engel, 1997) explains how different actors with often very different interests and objectives organize themselves to innovate. They actually do this by networking (characterized by creation of joint learning opportunities, by mutual probing of relevant ideas and by pooling energies and often other resources to implement innovation strategies). The perspective thereby offers a way for intermediary institutions or actors to facilitate this process. In addition it offers a way to evaluate the networking activity of social actors and its facilitator. We will elaborate on some of the core issues that this perspective offers for the evaluation of CoP.*

you follow the actors in their description and delineation of social groups that are relevant to them.

Such an approach would be able to substantiate better the claims on members profile made in the report on the Pelican initiative (ECDPM, 2006): while it is true that members come from different networks and practices, it is difficult to claim that Pelican members are key actors in various communities. The implementation of the initiative is characterized as demand-led (ECDPM, 2006) and informed through learning-by-doing because it depends and is influenced to a great extent by the participants. However, the question arises why the authors of the report can be sure that the involved actors can help to reach the objective of the community? The snowballing approach could shed some additional light on the relevance of the stakeholders.

Furthermore, to be able to identify relevant actors a clear understanding of the general objective of the network and its boundaries is needed (see chapter 3.3).

*Understanding the cross-wiring mechanisms and configurations: social network analysis.*

According to Engel (1997), a certain degree of diversity is needed for innovative performance. Networking effort should always accommodate various views on the world, and avoid becoming an “incestuous” and too homogenous group of actors.

The Pelican initiative draws on this approach, and makes involving various communities one of its key strengths. The report claims that the wide variety of participants of the community (in terms of location, type of work and academic discipline) is a strong added-value and essential in order to reach the objectives of the project (ECDPM, 2006). However, we propose here to dig deeper and to investigate how one specific CoP fits and reflects the *general cross-wiring trends of targeted communities*. In the case of the Pelican initiative the question is whether participants addressing the topic can be clustered according to different backgrounds and disciplinary orientations with little more in common than a (superficially) related thematic focus? How do they organize themselves and what are their social organization, institutions and standards? What are the diverse links that exist between various clusters of practitioners and researchers, the sources of inspiration for their work, their participation in conferences and meetings and their views about the most important publishing outlets?

To be able to approach these questions in a proper manner we need to explore the extent to which practitioners in this CoP are part of different networks. In order to do so, we propose to use the social network analysis (Newman & Girvan, 2004) to identify a set of closely knit groups of interacting researchers and practitioners within the broader network. We propose to run a web survey whereby one can identify a broad network of practitioners and researchers, and examine “strong” and “weak” ties among them. This can be a demanding exercise, and we recommend it when there is explicit attempt to build a long-term community aiming at “networking between practices” (Engel, 1997). Such a network exercise could provide information on the networking within the community but could also show what other communication and information channels are used by the actors. It would enable the community to strengthen and focus its communication approach.

*Understanding the non-participants: lurker survey.*

The principle of reciprocity would imply that if an actor doesn't contribute to the network, the network can't support this actor. But according to Hall and Graham (2004) who were exploring online communities of code crackers, it seems as if non-contributors can profit a lot from their passive participation.

Hence, it would be interesting to have more information on the passive or non-participants. Why don't they contribute? Are they just freeriders? Do they lack trust and confidence in their own knowledge? Are they afraid of competitors? What is the value of the network for them? To assess the quality of participation and the reason for non-contribution we suggest a survey among the lurking members. The survey should focus on discovering rationales and strategies of lurking. It should also try to understand if lurkers develop a sense of community and identity through their lurking (Nonnecke & Preece, 1999).

Finally, in order to understand the dynamics of a network and have a look at the power relations and the consensus seeking within the network one has to be able to read the network traffic lights.

### **3.3 Traffic lights**

*(Key indicators: coordination, appreciative system, evaluating the facilitation and governance)*

CoPs should by definition be self-organising: they negotiate their objectives and design jointly their processes. However, a self-organized CoP does not mean a CoP without guidance. On the contrary, good facilitation is one of the key prerequisites of successful online interaction.

In order to understand the coordination within a network and the way how actors achieve a shared consensus one has to analyze its appreciative system and how a facilitator handles this appreciative character and rebalances power relationships.

A network needs to have a shared mission formulated and shared by its actors to which they can refer to in order to evaluate the networking (Engel, 1997). Networks often start informally or encouraged by a charismatic leader and involved actors reflect not enough on the shared mission. When networks become more institutionalized they need a transparent mission, purpose or objective in order to be able to define boundaries, success and failure. The report on the Pelican initiative (ECDPM; 2006) identifies a need to integrate the communication on the network's identity and main agenda in the ongoing networking which takes place by the actors.

The appreciative nature of networking reflects different world views and expectations of its actors. Different actors perceive situations differently and think of different possible interventions (Engel, 1997). This appreciative character becomes clearest if you look at how networking is guided by intentions, how rules for membership are set up, when an approach for running a network is developed (when actors agree on joint activities, requirements, contributions, services, etc) and when success or performance are

evaluated. By assessing these indicators through surveys, interviews and an examination of the networks communication output and mission statement an important framework for assessing the added value and the success of a community of practice can be developed. This framework -reflecting the appreciative character of the network- can guide the evaluation process and can help to evaluate the extent to which actors agree on a shared objective. Furthermore, it can help to make sense of numeric indicators and those reflecting the content and participation of the network.

Besides understanding the appreciative system of a network, there is a strong need for an intermediate institution that is interested in the process and not driven by market logic or own interests in any particular outcome of the networking process (Engel, 1997). This facilitator helps to raise awareness of the appreciative character, rebalances power relationships and coordinates in finding a shared objective.

We suggest that there are fundamentally two ways of evaluating a facilitator: by peer evaluation through surveys and through the Kirkley, Savery and Gabner-Haggen methodology (1998). In the majority of the cases evaluation by peers is the most appropriate, especially if the community is very active and open. However, for more formalized evaluation we recommend the Kirkley, Savery and Gabner-Haggen model (1998) which is based on the content analysis of facilitator contributions. It evaluates the different means of intellectual assistance that online facilitator may render to the learners (Hew & Cheung, 2003). Seven means are described: scaffolding (guidance or comments to move to higher level of understanding), cognitive structuring (providing structure for thinking and processing the “raw” experience), modelling (when facilitator offers behaviour for imitation), instructing (giving information on specific acts) and questioning (using prompts to stimulate and provoke learning).

#### **4. *CoP and Learning as Institutionalization: Further Research***

According to Engel (1997) networks are successful if they help to improve performance. This contribution to performance can be either temporary or permanent. The Pelican initiative builds on this premise: the main objective of the Pelican initiative is to lead through the process of reflection and strategic dialogue in the Pelican community to *changes in the practice* of the platform’s members. Pelican wants the network activity to have an actual impact on the member’s own day to day activities (ECDPM, 2006).

The Pelican initiative is in the process of asking itself how to move to this “next level” and start impacting practices in the real world (ECDPM, 2006). This allows us to put forward several questions that require further research and development of evaluation methodologies.

First, it seems as if the actors in Pelican community feel that this “move to practice realm” cannot be achieved when the community is too loosely organized, and that is why a stronger management structure is called for. Additionally, a need to broaden the management group is identified (ECDPM, 2006). Multiple network leadership needs a coordinating mechanisms and a shared objective that is agreed upon among the actors.

The question remains whether a stronger coordination of CoPs leads to an improved learning and network performance? This question is pertinent as the highly informal character of CoPs (Crummings & Zee, 2005) might be less suited for problem situations that are characterized by high complexity, a high degree of uncertainty and differing interests of relevant social actors.

Second, the question related to “moving to realm of practice” points to the link between individual learning inside CoPs and organizational learning.

While there has been much research on individual learning inside CoPs through “internalisation” (Brown & Duguid, 1991; Gherardi, 2000; Yanow, 2000), the individual exchange and absorption of knowledge does not imply that this knowledge will be collectively accepted in each member organisation. On the contrary, it seems as if the process of organizational learning is similar to sedimentation (Huysman, 2000) and objectification that take much longer than individual learning (Dixon, 2000). In addition, it can happen that lessons acquired through CoPs are disregarded or ignored by the management in the respective organization of the member (Huysman, 2004). Given the scope and size of our paper we are not able to answer these questions here, but we believe that this topic represents an extremely exciting and interesting area of future research.

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