THE ROLES AND TOOLS OF INTERMEDIARIES IN INNOVATION COMMUNITIES

Umair Khalid Khan, Department of Logistics, University of Boras, Sweden
Hans Sarv, Department of Logistics, University of Boras, Sweden

Abstract

The concept of innovation communities has emerged in recent years. It has connections to the older concepts of knowledge management and communities of practice. The aim of this paper is to explore the conceptual links between the three concepts and from there on the possible roles and tools of innovation intermediaries in developing the operational links between knowledge, practice and innovation. The paper presents a literature review on knowledge management, communities of practice, innovation communities and innovation intermediaries. Connecting to this review it uses systemic theory to explore the links between the four concepts, with a particular emphasis on how intermediaries can boost innovation communities through better knowledge management and through better connections to communities of practice Systemic theory and systemic meetings have proven useful for the development of intermediary cluster roles and tools. Systemic meetings have provided practical insights of the functioning of the community, insights that can be reflected against using systemic theory as an umbrella theory for the explored conceptual theories. Innovation intermediaries of different sorts have an increasing role in the strengthening of innovation and entrepreneurship in clusters and regions. Systemic theory can be used to clarify the roles of intermediaries and systemic meetings can be used as tools for intermediary and community development.

Keywords – Knowledge management, Communities of practice, Innovation communities, Innovation intermediaries, Systemic theory, Systemic meetings

Introduction

In an effort to develop the next generation of business structure and function, Knowledge Management has emerged as discipline helping companies make better use of knowledge. Knowledge Management became a concept in the early 90’s in connection with terms such as
“knowledge workers” and “knowledge society” (Drucker, 1992, 1993). It is still seen as a vital governing idea for organizational learning and growth (Perrott, 2007). The idea was formulated by Davenport (1998): “The only sustainable advantage a firm has comes from what it collectively knows, how efficiently it uses what it knows and how readily it acquires and uses new knowledge”.

Ladders of knowledge creation have been formulated, often distinguishing between data, information, knowledge and wisdom (Pan and Leidner, 2003; Perrott, 2007). Distinctions between individual and collective knowledge have been made (Spender, 1996), as well as between tacit and explicit knowledge (Nonaka and Takeuchi, 1995; Milam, 2003). Tacit knowledge embedded in the lives of the people is hard to codify and transfer and call for a new management approach where the interplay between explicit and tacit Knowledge is seen as a source for knowledge creation as well as and knowledge transfer and usage (Nonaka et al., 2001, Love, 2009). The concept of sense making (as developed by Weick and others) can be seen as the “conductor” of this interplay, and we may also talk about wisdom, the highest step on the knowledge level, as guiding integration.

Communities of practice

Communities of practice (CoP) have been recognized for centuries (Wenger, 2000; Plessis, 2008) but the term was first coined by Lave and Wenger (1991) in their seminal work, “Situated learning” and defined as: “An activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their community” (Lave and Wenger, 1991, p. 98). Later Wenger has defined communities of practice as: “Groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their understanding and knowledge of this area by interacting on an ongoing basis”. (Wenger et al., 2002, p.4).

The importance of knowledge creation and dissemination in informal groups has led some researchers to investigate the continuous and evolving nature of Cop’s and their roles in knowledge communities (Kimble and Bourdon, 2008). Knowledge is created through social relationship and networking of the informal groups knit together by a common interest (Lave and Wenger, 1990). The groups share knowledge based on daily life experiences, often based on stories and storytelling (Milam, 2005). The networking facilitates the flow of knowledge (Brown and Duguid, 1991) and weaves the competence across the organization (Pan and Leidner, 2003). It leverages knowledge for strategic advantage (Snyder et al., 2003).

Communities of practice are not just communities of practice. They are also communities of knowledge (Michael Earl 2001 and David Malone 2002), of learning (Richard Dufour 2004) and of innovation (Lyn et al. 1996 and 1997). They can have a technological mission and be seen as technological communities (Rosenkopf and Tushman 1994 and 1996). They can have a strategic role and be seen as strategic communities (Mitsuru Kodama 2005a, 2005b and 2007).
Innovation intermediaries

Intermediaries are seen in this paper as primarily innovation intermediaries (Howells, 2006) or “Innomediares” - (Mohabir et al. 2003), although they have also been called “infomediaries” (Cillo, 2005). With the new business landscape characterized by “Open innovation” (Chesbrough, 2003) and “User innovation” (von Hippel) innovation intermediaries provide many times of innovation supporting links. Chesbrough (2006) and P. Frank and D. Kathleen (2009) have studied the growing roles of innovation intermediaries in the emerging open innovation landscape. Innovation intermediaries with a range of new business models provide linkage services of various sorts, for example IP trade, commercialisations of patents (Howells, 2006) and more generally for creations of different types of innovation partnerships and communities (Lynn et al., 1996). Adding the concept of user innovation the intermediating role mix will increase even further.

An innovation intermediary put together many different innovation community members to work collectively on a diversity of tasks or functions within innovation processes (Frank and Kathleen, 2009). An innovation intermediary has roles in the knowledge ecosystem, as pointed out by Smedlund (2006, p. 210) as working “in the midst of the users and producers of knowledge”.

Howells (2006) defined an innovation intermediary as: “An organization or body that acts as an agent or broker in any aspect of the innovation process between two or more parties. Such intermediary activities include: helping to provide information about potential collaborators; brokering a transaction between two or more parties; acting as a mediator, or go-between; bodies or organizations that are already collaborating; and helping find advice, funding and support for the innovation outcomes of such collaborations.”

The network roles of innovation intermediaries working on higher level of innovation systems has been investigated by Howells (2006). The findings include that they can work both in simple triadic ‘one-to-one-to-one’ relationships - for example between a supplier and its customer in some kind of vertical relationship and in more complex relationships, such as ‘many-to-one-to-one’, ‘one-to-one to-many’, ‘many-to-one-to-many’, or even ‘many to many to many’ collaborations, forming both vertical and horizontal relationships in increasingly distributed innovation networks.

Systemic approach to intermediaries has a growing attention (Klerkx and Leeuwis, 2009) and they are playing vital role in regional, national and international innovation systems at higher levels and policy formulations and bridging the gaps between the various system actors. But there is a need to develop the tools for the complex interaction of the actors in the innovation intermediaries. This paper will use systemic theory as a basis for role clarification and role
development of innovation intermediaries. It will also present the *systemic meeting* as a tool for bridging gaps and enhancing collaborations.

**Systemic meeting**

Systemic meeting is based on learning theory, systems theory and complexity theory and has following 5 steps:

*Storytelling* – Spontaneous storytelling in contrast with the planned or edited storytelling.

*Questions and answers* – Clarifying the story and dealing with the complexities.

*Patterns recognition* – Identification of the patterns in story and reflecting on the story.

*Choices* – Altogether presenting the possible solutions.

*Suggestions* – Presenting the Concrete solutions followed by the reflections from the storyteller.
Systemic theory as an integrating theory for key innovation concepts

Systemic theory can be used to propose the following links between the four key innovation concepts:

The “knowledge ladder” suggested by Pan and Leidner (2003) and Perrott (2007) – the one that creates information out of data, knowledge out of information and wisdom out of knowledge – can be seen as a metaphor or symbol for the knowledge creation suggested by Swan et al., (1999) as one of the processes central of the concept Knowledge management, with “acquiring, capturing, sharing and using knowledge” as their other processes. The knowledge ladder can be said to be active in the basic agenda controlled innovation process, that where prepared analytical investigations, using data and information, is transformed into proposed selective knowledge in the form of for example new products, new methods, new work processes or new pieces of research (note that we use the term knowledge in a very general sense here, including knowledge embedded in products, methods and processes, not only in research results). The process is agenda controlled to the extent that a company initiates innovation through projects focusing on certain themes, the same way as a research board when it comes to this type of
knowledge. A knowledge creating perspective within a certain company or research agenda determines what is done within the projects.

The concept of the knowledge ladder, as we see it, is primarily relevant for explicit knowledge. The results of the knowledge creating project processes are presented in the form of explicit product, method, process and research presentations.

When we turn to the Communities of practice that in some way or other are to benefit from the different sorts of explicit knowledge, also tacit knowledge enters the picture. Tacit knowledge is active also in the agenda controlled innovation processes, as it is embedded in the people engaged in those processes. But as stated above tacit knowledge in itself is of paramount importance for communities of practice. Such communities “share” and “use” (Swan et al 1999) tacit knowledge through what Nonaka (2001) calls socialization, not only through externalization (Nonaka, 2001) of explicit knowledge out of tacit knowledge and then presenting it for community of practice usage by internalization (Nonaka, 2001).

Nonaka refers to the basic agenda controlled innovation process as a combination of knowledge, and this can be seen to take place through the ladder of knowledge type of analytical investigations resulting in selective knowledge. There is a corresponding “ladder” involved also the tacit turning of personal experiences into personal insights. The socialization in a work team, for example, gives insight meaning to team members. Experiences are ad hoc and connected to events unfolding in team practices, but socialization in the form of for example shared reflection and unified action help develop experiences into insights.

Innovation intermediaries have a linking role between centres of knowledge management and communities of practice. The innovation intermediaries described by Chesbrough under the concept of open innovation (Chesbrough, 2003) help problem owners like the Ely Lilly (in the case of Innocentive connect to the global community of relevant explicit and tacit knowledge as a problem solving community. The researchers at Ely Lilly can be seen as a community of (research) practice and in the same time also involved in an agenda controlled innovation process. (Roles shift with our select perspective according to systemic theory. A community of practice may well get involved in an agenda controlled innovation process, thus turning to knowledge management. In a research community of practice this is a most likely work form).

Innovation intermediaries may have a role also when it comes to the concept of user innovation, as described by Franke (Franke and Shah, 2003) and by von Hippel (Thomke and Hippel, 2002). Here they work with solution providers letting their solutions become components in others creation of knowledge, for example in the shape of products (like T-shirts in the case of http://www.threadless.com or like wrist watches in the case of http://www.idtown.com). The solution providers, like the two mentioned) don’t announce their problems to the global community of knowledge, they announce their solutions to the global community of insight, insights like “I would like to have a new T-shirt or a new wrist watch”), that is communities that are looking for knowledge that they can use to create their own solutions or knowledge.
Innovation communities like for example the Skåne Food Innovation Network (SFIN) community (Magnus et al., 2010), work both ways. They consist of problem owners or insight holders (like food consumers, grocery stores or research communities of practice) looking for solutions or knowledge that they can use for coming up with their own solutions or knowledge and in the same time of solution or knowledge providers (like other food consumers, stores and research communities of practice). Proctor & Gamble is a much described innovation community. In this community insights regarding diaper usage (for example) are spread amongst solution or knowledge providers all over the world, providers that help P&G develop good diapers. In the same time diaper users (parents) can gain new insights based on their own (children) diaper experiences the community of practice way, while also being exposed to the various diaper types offered by P&G the knowledge management way. In this case P&G can be seen as an innovation intermediary linking knowledge management with communities of practice. Communities of practice benefit from contacts with knowledge management and knowledge management benefit with contacts with communities of practice.

Another well known example on a company that has taken an intermediary position in a larger innovation community is Dell, linking the global community of PC users with the global community of PC solution providers. In this larger community roles will shift depending upon what system level is the select focus. This shift or roles takes place also in the SFIN community. A grocer for example will look for help in presenting better products (or better groceries, better grocery distribution services) while at the same time also offering its customers looking for help in their insight based developments. A grocer anxious to work both the open innovation and user innovation way can therefore preferably learn to adopt and develop the roles and tools of intermediaries, just like P&G and Dell in their communities.

A cluster management, like the SFIN cluster management, likewise can benefit from developing its intermediary roles and tools, also based on acknowledging the two innovation concepts as they link knowledge management with communities of practice. On this system level our attention turns into the types of intermediary services that can be developed and launched by the cluster management. This is where systemic theory and systemic meetings enter the picture.

Systemic meeting, if we start there, have their own “ladder”, a ladder which is acknowledging the complexity of daily events, just like in the socialization of communities of practice, but also stretching out towards the global community of knowledge management. This is done through the steps of storytelling, story recognition and story creation. Systemic meetings basically work with shared interpretative reflection (recognising stories) to come up with unified experimental action (creating stories). These two basic steps should be contrasted with the two basic steps of the agenda controlled innovation process, those of prepared analytical investigation and proposed select knowledge; the latter aim toward reducing complexity rather than toward acknowledging it.

Cluster managers for large innovation communities – like the SFIN community incorporating food consumers and food researchers, food legislators etc not just food companies and that
essentially on a global basis – have to acknowledge complexity. They cannot rest with agenda controlled innovation processes for their internal affairs, developing their own services, and those services cannot aim for helping community members just in their agenda controlled innovation processes.

Food cluster managers, just like food researchers and food grocers, moving up and down the system levels, can benefit from taking a third position, not isolated that of community of practice (as a first position) or not isolated that of knowledge management (as a second position) but that of integrating the two through the third intermediary position. This is what system theory suggests and this is what systemic meetings help them do.

Two-legged innovation ladders

A community of practice is a view on a work conglomerate of many sorts. The same conglomerates can also be viewed as communities of knowledge and communities of innovation. It is all a matter of perspective or mindset, or of language, or of what to look for in the conglomerate, or of what is discovered. We may also apply a view or perspective where we combine the three mindsets into a common mindset and when we try to develop a language that describes the thus identified whole. We may then talk about a two-legged ladder, a ladder that works concurrently in the two dimensions of explicit and tacit knowledge, or of knowledge and practice.

This is the type of ladder that the systemic meeting tries to emulate. It is a bridging ladder, connecting the explicit knowledge leg with the tacit knowledge leg. It holds the two legs together, so that the ladder becomes a standalone ladder:

![Two-legged Innovation Ladders Diagram](image)

The systemic meeting as providing a bridge, and a standalone capacity

The explicit ladder (or knowledge ladder)

The tacit ladder (or practice ladder)

Figure 3

The bridging can be internal to a specific work conglomerate. Many times a work team, for example, is not able to use all the (explicit) knowledge available to it, and use it for better
practice. Or (tacit) knowledge may stay with certain individuals not influencing the work patterns the ways it could.

The bridging can also be external to the specific work conglomerate, linking it to other conglomerates. Many times one department in a company has little influence on other departments. Its (explicit and tacit) knowledge is not used in other departments, not influencing their practices. And even more often we see such a lack of bridging between companies in value chains or clusters or regions. The stand alone capacity of the systemic meeting is signified by the phenomenon that any story will do as a base for the meeting, as long as it is authentic and seen as meaningful to the story teller. When the story is focusing on the end consumer of the value chain or cluster, or on the citizen of a region, the story will normally have a high level of meaning also to other meeting participants, also if widely spread within the larger community.

The systemic meeting should be contrasted to the agenda controlled meeting. In most formal organizations we meet the agenda controlled innovation logic, the one that transforms prepared analytical investigations to proposed select knowledge. This is also the logic that steers research. It builds the explicit knowledge ladder. This ladder can be characterized as a corridor ladder, as opposed to a bridging ladder. It is restricted to the company or department having the agenda controlled meeting. It may combine explicit knowledge from other corridors, and it may also externalize tacit knowledge from its own corridor, or from other corridors. But is normally has a one corridor focus. It the meeting is at an intermediary, it is restricted to the services that this intermediary can provide.

We rightfully honor the prepared analytical investigation/proposed select action logic. Research as well as decisions within business and other organizations should be fact based. But in the same time we live in a world of complexity where most decisions are personal and based on the personal experience/personal insight/personal gain logic. We need ways to bridge what goes on “above and below surface”, to use a complexity theory phrase, i.e. in the explicit world and in the full complexity/real world. The systemic meeting provides such a bridge.

The corridor ladders can only be raised against those parts of the full complexity/real world that consists of “buildings with walls”, i.e. of institutions of different sorts. Already a group of people getting together on an ad hoc basis for a specific task or a specific shared interest, like that of a neighborhood watch or a school fiesta or a web community, will become institutionalized and show corridor, rather than bridging patterns. Stories of individual experiences, the ones starting up a systemic meeting, cut across institutional barriers. An individual telling his/her story in connection to a neighborhood watch, a school fiesta or a web community is not reduced to the shared task or shared interest perspective. The individuals’ story will connect the corridor to other corridors in life, and to what goes on between corridors.

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