Collective Learning in Innovative Networks

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1. Abstract

There are different forms for boundary-crossing learning in and between organizations. One growing form is network. This paper will present a study of collective learning in two innovative networks at the west coast of Sweden. One network is about regional health and growth, the other about leadership development among general directors. Representatives from different organizations meet to learn from each other's practice. How does this learning take place? What supports and what prevents it? Does it have any effects in their own organizations? Data has been collected through questionnaires, observations, systematic reflections and focus interviews. Results show that the participants express great satisfaction with their outcomes on a personal base. It gives them inspiration, ideas, knowledge and contacts. It also gives them support, strength and self-confidence. One important factor in this context is differences. The participants are coming from different organizations, have different perspectives and experiences. The findings show interesting variances between the two networks that has effects on the type of learning. A problem is the transformation of learning from the network, by the participants into their organizations. There seems to be some important learning barriers. This will be further discussed in the paper.

2. Introduction

There is a lot of innovative work going on in organizations. Few of those involved in this work meet to learn from each others experiences. One growing form for boundary crossing learning in and between organizations is network. A network can be seen as a horizontal meeting arena where the members engage voluntary based on interest and commitment. Representatives from organizations exchange concerns and problems as well as experiences and solutions. A network creates a possibility for collective learning, to learn from each other. Innovation networks are central mechanisms for maintaining competitiveness of firms but also of regional economies. This paper will present a study of collective learning in two innovative networks at the west coast of Sweden. The aim is to answer some crucial questions: *How does learning in networks take place? What support and prevent learning? Does this learning have any effects?*

The two networks in this study are different. Lust H is an open network were a lot of people can come and go as they wish. The network meetings are like public bonfires were people gather to listen to interesting stories and get learning output from others. New people at each meeting make relations weak. Kraft on the other hand is a small, closer, network were the same group of people meet regularly to develop their questions, express their needs and seek learning input. Same people all the time make relations strong.

2.1 Network A – Lust H

This network is about regional health and growth. The network is organized by a project called Lust H. Lust H, which stands for quality of life through development, co-operation and economic growth in Halland, is a project that is in progress 2003-2005. The vision is improved health and fewer people absent from work due to illness. Thus we can create opportunities for a sustainable growth in Halland. The supposition is that managing the process towards the aims of the project is the key to success. The aims are:

- *Co-operation*. Sustainable, boundary crossing and new thinking forms of co-operation shall be created.
- *Communication.* The awareness of the importance of communication as a tool for development and learning shall increase. This process is to be stimulated by new forms of communication and meeting places.
- *Comprehension.* The comprehensive view of aspects, influencing health in working life and leisure-time and how these aspects interact, shall increase.
- *Development*. Knowledge about what stimulates development and learning shall increase.

The network brings together people who work with health aspects in working life and leisure time. The project makes communication and the exchange of experiences easier through finding different ways for the participants to meet and co-operate. In this way they can give and also receive knowledge, experiences and ideas from the others. The participants are those who then pass on and incorporate this knowledge into their own organisation. This makes innovative work possible.

To become a participant in Lust H one chooses to come to a meeting place or sign up through the project team. The number of participants today is nearly 600 and represents a broad selection of working-life in the region. In total twelve activities have been arranged and about 40-70 persons have attended each time. The project team is constituted by an evaluator/researcher from Halmstad University, a communicator/information officer, a project leader and an administrator.

There are different needs articulated in the project that are input to the project team. The team transforms these needs to activities, that are offered to the participants. During and after such an activity the evaluator collects data that adds new input to the process. The evaluation and communication wheel gives learning fuel to the process. The project team transforms all information and maneuvers this complex project to take the next step in an ongoing development process. And so on. This learning process can be illustrated by the "transformation snake" below.
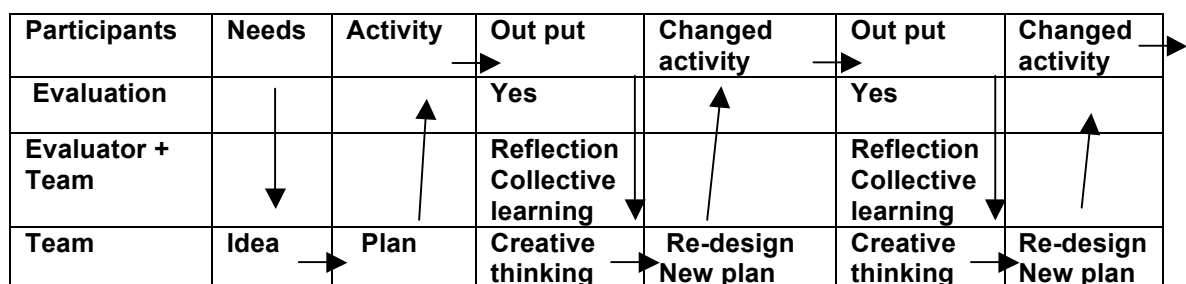
| Participants	Needs	Activity	Out put	Changed activity	Out put	Changed activity
Evaluation			Yes		Yes	
Evaluator + Team			Reflection Collective learning		Reflection Collective learning	
Team	Idea	Plan	Creative thinking	Re-design New plan	Creative thinking	Re-design New plan

Figure 1: The transformation snake

2.2 Network B – Kraft

The other network is about leadership development among female entrepreneurs and directors. It is connected to a national program named **Kraft; k** for competence, **r** for reflection, **af** for business development and **t** for growth. The major aim of the programme is to contribute to a continuing collaboration between SMEs and universities on the basis of networking. Kraft is based on the assumptions that business development is about "getting your act together" and that knowledge is something that develops in the minds of people when they are exposed to stimuli (competence/knowledge) that make them reflect on their present situation. The Kraft activities follow a pedagogical style based on dialogue and problem-based learning. The ultimate goal is not to make participants learn a lot of theory but to encourage them to develop and grow their businesses. Leading words are flexibility and customization.

The Kraft programme is based on an action-oriented approach. The process is characterised by mutual exchange between practitioner and researcher, and the results are supposed. Kraft is built upon the idea that if you can engage managers in working with their own business development they will also improve their managerial, leadership and team-work skills.

There must be at least a handful of managers from SMEs with a similar business development task. This will give the participants an opportunity to learn about themselves, as individuals, as a team and as an SME. You can get your own blind spots into perspective and realize that you have to rethink your position. Out of this can grow a new understanding.

Kraft groups containing 5-7 companies (2-3 representatives from each company) are created. Each group meets at 12 occasions during a one-year period together with a leadership team consisting of one Kraft t tutor, usually a consultant or some kind of business broker, and a project leader from the university. The participants decide about the content in their Kraft project and, in co-operation with the leadership team, suggest the topics for the different meetings, where university teachers and researchers are invited as lecturers or consultants.
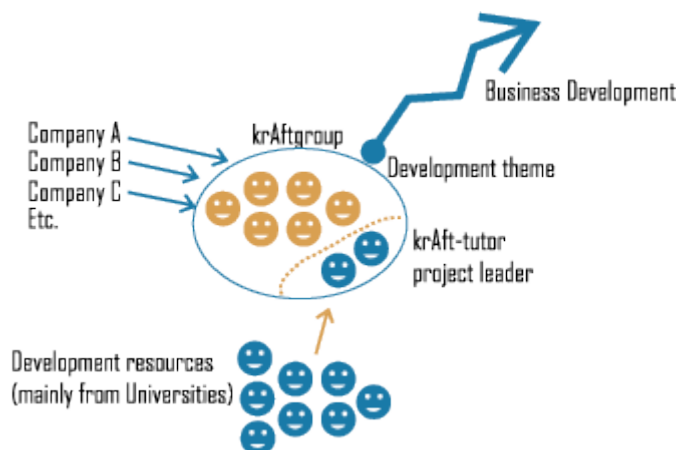
Figure 2: The krAft concept

3. Literature review

3.1 Innovation Networks

Problems in the work process are important opportunities for learning, improvement and developmental activities. A process of innovative development can be supported in organizations by examining alternative views of organizational activity (Brown & Duguid 1996). Networks offer such a place. Allowing parts of an organization to step outside traditional limits and try something new can drive innovation.

Networks of people that cross ordinary borders in and between organizations are examples of new organizational forms that can have positive effects on learning because they stimulate dialog and reflection. Innovation processes is often connected to interaction between individuals with different practical experiences. They need an organized structure to form new ideas, a room for growth and a universal instrument to handle insecurity (Johannisson 1999). The ideal organizational context seems to be loose connected systems were individuals can engage in collective learning.

Horizontal networks were knowledge is connected to change, resemble an imaginary organization (Hedberg, 1994). This is a system were crucial values, processes and actors also exist outside the company's legal unity, accounts and language, but with out a business relation or expectation on a direct economic exchange. Focus is instead on social relations, knowledge creating and personal competence development.

A network is formed and unformed depending on what relations different actors develop. It is morphogenetic (Lundgren & Snehota, 1998). The interactive relations unite the partners and open up possibilities that they don't have in isolation. At the same time it binds actors and limits their freedom to take actions. A network is build on activity and the relations that arise, their content and effects, depends on the interaction. The relation is distinguished by both continuity and change. The complexity and interaction means that each relation is unique, every network is specific.

Innovation and learning occurs in various kinds of networks were different actors become involved and were different kinds of knowledge are exchanged and exploited. Innovation systems are constituted by actors which interacts in the production of useful knowledge were learning is in the centre (Todtling, 1999). Innovation networks are institutional arrangement aiming at accruing and sharing resources. They are relatively loose, informal and implicit system of interrelationships, facilitating learning processes and knowledge exchange, in particular of a tacit nature.

The imagination in networks (Burell & Morgan, 1993):
- Raises our ability to see and understand reality in new ways
- Helps us to find forms to organize in new ways
- Gives empowerment and inspiration to individuals
- Helps us to develop our ability to learning and personal development

3.2 Collective learning

Theories on individual learning can explain how and why learning occurs in groups, but not how a group can constitute a learning system. To do this you need theory that look at the group as a learning system that constructs knowledge. A theory on collective learning can better explain how individuals and groups are engaged in collective action (Kilgore, 1999). Development and learning are important concepts in such a theory.

A group is a learning system that can take collective action. Common values and shared vision, goal and strategies can lead the group to collective action. A group has unlimited development possibilities due to the members difference. They interact and influence each other and develop their point of view. A group also has an unlimited destructive potential through their inherent contradictions and conflicts. There are opinions and experiences that collide in all groups. At the same time these differences are necessary for collective learning.

Collective learning is defined by Todtling (1999) as a dynamic process of knowledge creation and exploitation taking place among economic agents via interactive mechanisms based on common rules and common organizational and managerial procedures.

3.3 Type of learning

The character of the individual and/or organizational changes in beliefs, norms, values, practices etc., which are implied by the concept of learning, concerns the distinction between adaptation and development (Ellström, 1999). This is about whether the changes occur within a given framework or imply a break that goes beyond the given and represent something new. This can also be connected to March (1991) and his concepts of exploration and exploitation in organizational learning. Exploitation has to do with making use of existing knowledge whereas exploration has to do with examine and discover new knowledge.

Argyris & Schön (1996) make a similar distinction between single and double loop learning. By single-loop learning they mean instrumental learning that changes strategies of action or assumptions underlying strategies in ways that leave the value of a theory of action unchanged. Instrumental because it is primarily concerned with improving effectiveness. By double-loop learning they mean learning that results in a change in the values of a theory in use, as well as in its strategies and assumptions. You cannot deal with the problem by doing better what you already know how to do. There is a double feedback loop that connects the detection of a problem not only to the strategies and assumptions of effective performance, but to the values and norms that define effective performance.

4. Research method

The empirical data from network A in this paper is based on formative evaluation of the Lust H project including several questionnaires: ten surveys to the participants at the end of each activity (n=30-70), six surveys 3-9 months after each activity (n=15-25), one web based survey to all participants (n=135). Observations at the activities,

regular and systematic reflections with the project team was also part of the research method.

An effective method if you want to interview many people about a specific subject is focus interview. This was practiced in network B. To know more about how the members of the Kraft networks valued the learning process and what results it gave, we gathered the network participants to a round table talk. Everyone was invited. Eleven out of 20 network members participated. The participants reflected on a few focused questions about the learning process and results in a round table situation. The discussion was documented directly on computer by one of the Kraft tutors.

5. Findings and discussion

5.1 In network A

Selection of results and answers from the web questionnaire.

How does learning in networks take place?
- To hear of good examples, this creates thoughts that will effect our work in a positive direction
- Possibility to take benefits from experiences
- A meeting point for active and engaged people
- A forum to see how and what others are doing
- Examples of new ways to work with health

What support and prevent learning?
- Possibility to meet others that are interested of the health area and to take part of experiences and information
- Contact with others with the same function
- Information about projects that are going on, hope to connect new contacts for possible cooperation

Only 25 percent in the questionnaire answer that they to a great extent have shared their knowledge and experiences with others or got it from others in the network. Even if there were some free time to do this many tended to sit and talk with people they already knew and about things that had not to do with health. It seems to have been to much one-way communication at the activities and a lack of exchange competence among the participants.

Does this learning have any effects?
Question: What benefits have you and your organization got out of the project Lust H? Result: 25 percent answer great, 75 percent small.
Question: What has the benefit mostly consisted of?
Answers: Knowledge, inspiration/ideas and contacts.
- Inspiring thoughts and ideas.
- Personal development
- New insights and ideas
- A wider view on the overall picture, that there are other alternatives then the traditional
- New impressions

- Our questions have been illustrated from one further point of view and actor
- New knowledge about our organization and the connection to health
- A larger net of contacts that makes the everyday practice easier

Around 25 percent answered in the questionnaire in the questionnaire that they have reached three of the four project goals: To engage in a new network, to work active for new forms of communication and venues, to experience a greater understanding of the overall picture. Only ten percent answered that they had reached the fourth goal, to try new forms of learning and development. At the same time the participants were very satisfied with the activities (mean 8 on a scale from 1 to 10). They even answered that they plan to use the outcomes at work. Still so few have had benefits. Why is this? There seems to be a problem to transfer the learning outcomes from the network into organizational change. The answers indicate organizational barriers like lack of strategy, low priority, lack of knowledge of how to do organizational change in this difficult area. Further research is needed to examine this deeper.

5.2 In network B

Selection of quotation from the documentation of the focus interview.

How does this learning take place?
- To mirror your own problems in the face of others.
- New angels of approach.
- It gives me such inspiration when several people meet and exchange ideas.
- There are the same organizational problems at all. You can see your old problem in a new light.
- When someone look upon your problems from outside they see other things.
- We have had lot of time for conversation. They have been giving me unbelievable much.
- Things became reel when you can discuss them with others.
- They have giving me time for reflection. To rest and think over my work. It is difficult to complain at work when you are director. But here you can do it together and recognize your self.

What support and prevent learning?
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- Different background has definitely been an asset.
- We are not a homogenous group, there are big differences, but that has been a supply.
- Enormously successful with people from different activities. It gives more objective comments when other people have different visual angles.
- The connection to the University gives curiosity to the group. How can I develop my company and myself? What can I get help with outside my organization?
- It is important that everyone give priority to the network meetings. Everybody has to participate and be involved.
- Our own experiences have dominated. Theory has confirmed. The mix is important.
- Reflective dialogue is important.
- The similarity is to be directors and women.

- A good mixture between differences and security is important for learning, and time for reflection.

Does this learning have any effects?

- It has given me new energy to learn to know other people from different branches.
- I have got better self-insight that has improved my leadership.
- You get perspective on your own through others. An overall picture. My problems decreased.
- Sometimes it has been like a mental breathing. You go away and leave your problems at home for a while. When you come back, stimulated, maybe you solve the problems in a new way.
- A result is that conflicts take less energy. I put them in front of me instead of inside me.
- I make small problems smaller. I see them for what they are. Things that should work in the long run I put in the organization.
- Confirmation gives me support. Clear leadership for example. I new it before but now I now it for sure. This gives me strength to do it.
- It has giving me more result on a personal level. This gives also organizational results if I am more secure in my leadership role. But it takes time to reach effects in the common process at work.

In network B directors can meet on a neutral arena to talk about their complains and listen to different solutions from other directors. They can stop up, get away, and see themselves and their organizations from outside. Thanks to different angels they can reconsider other ways and other choices activity (Brown & Duguid 1996). The network has stimulated new thoughts and new ways to look at leadership roles and development possibilities in their organizations. The network group functions as a system for reflection and collective learning (Kilgore, 1999).

The type of knowledge to be found in network B is mainly experience based. It is practical experience that each participant brings with her into the network meetings. The accumulated experience-knowledge gives reliable advice and interesting hints that strengthen the participants and give them relevant learning to take back to the organization.

Through the meetings with directors in other organizations they have changed some of their values guiding them in their every day life at the companies (Argyris & Schön, 1996). This learning process seems over time have resulted in changed values and norms at some of the participators.

As in network A there seems to be low effects on the organizational level. Our data in network B does not give any explanation of why. This is an interesting research question to follow up in both cases.

6. Conclusions

	Network A	Network B
How does learning take place?	Meeting point Information Examples, experiences	Arena for dialogue Interaction Time for reflection
What supports it?	Similarities - interest (in health) - function	Differences - organizations - experience - perspective Similarities - woman only - roles
What prevents it?	Lack of interaction Lack of exchange competence	Lack of time Lack of commitment
Effects on a personal level	Inspiration Ideas Knowledge Contacts	Support Strength More secure Self-confidence
Effects on an organizational level	25 % has gain benefits	Low
Organizational barriers	No mandate Lack of strategy	Difficult Lack of knowledge by the

Figure 3: Conclusion

New organizational forms like networks that cross ordinary borders in and between organizations, can stimulate learning based on practical experiences (Johannisson 1999). The participants can use the network as an arena for knowledge creating (Hedberg, 1994) and collective learning (Todtling, 1999). The use of a network in order to questioning the guiding value system could be one way of overcoming the often locked positions internally (Argyris & Schön, 1996). By asking different questions, by seeking different sorts of explanations and by looking from different points of view, different answers emerge (Burrell & Morgan, 1993). Time and space for this constructive dialog can shape a collective learning with innovative character (Brown & Duguid, 1996). The two networks in this paper have different aims and settings that give different conditions for learning (Lundgren & Snehota, 1998)

	Network A	Network B
Number of participants	Many (500)	Few (20)
Relations	Weak	Strong
Dominant type of knowledge	Expert based	Experience based
Dominant knowledge process	Exploiting existing	Exploring new
Dominant type of learning	Single-loop	Double-loop
Dominant communication	One way	Interaction and reflection

Figure 4: Type of learning

The network A concept can reach many people with valuable information about good examples that gives the participants important ideas and knowledge. Through mainly one way communication they exploit existing knowledge (March, 1999). The dominant type of learning is single loop (Argyris & Schön, 1996) that more supports adaptive learning (Ellström, 1996). The network B concept can only reach a few with an arena for interaction and reflection about different perspectives that makes the members more secure and self-confidence.

7. References

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