Learning in inter-organizational projects - A view from systems perspective

Anandasivakumar Ekambaram*

Norwegian University of Science and Technology (NTNU), Trondheim

Abstract

This paper describes learning in inter-organizational projects. This learning is viewed from systems perspective and is described in two dimensions; within a project and beyond a project. This description includes discussion on how diversity of project participants can influence the learning process.

*Department of Industrial Economics and Technology Management
Gløshaugen – NTNU
N-7491 Trondheim, Norway

Phone: +47 73 59 08 11
Fax: +47 73 59 35 65
E-mail: siva@iot.ntnu.no

Introduction

A project is a one-time activity that is intended to materialize a specific goal within a limited time frame. The specificity of the goal that reflects special requirements from the customer primarily makes a project a unique endeavor. In addition to the limitation of time, resources are also restricted for carrying out projects. Projects are conducted in many work-forms, such as department-oriented projects, intra-organizational projects or inter-organizational projects. In this paper, I shall look at inter-organizational projects - projects in which two or more organizations are involved.

Projects generally deal with risks, complexity, uncertainty and dynamic environment. Nevertheless, they are considered as one of the proper alternatives to carry out special or unique requirements from the customer, without interfering the normal activities (mass production) of parent organizations. Projects are viewed as vehicles for learning. They provide opportunities for and/or demand learning. In this paper I shall look at learning in inter-organizational projects from systems perspective.

Systems perspective primarily considers inter-related elements as a whole - as a system within a boundary. The emphasis is placed not only on the elements that constitute the system, but also on the interactions between the elements. Ramsay *et al* describe key points that are aimed at in a systems thinking approach are (Ramsay, Boardman, Cole 1996):

- The recognition that the whole consists of both the sum of its parts and interaction of these parts.
- The recognition that the extent and nature of these system interactions are just as important as the characteristics of the basic elements which make up the system.
- The explicit recognition of the elements of uncertainty that are inherent in a high-level or large-scale organizational undertaking.

I shall look at the systems thinking approach in two dimensions in order to view learning in inter-organizational projects. The two dimensions are within a project and beyond a project.

Within a project

Projects are per definition unique. Even though all kinds of projects do not necessarily have all of their respective elements unique, projects do have to deal with certain amount of uniqueness. The degree of uniqueness varies from project to project; for example, normally, traditional building construction projects have lower degree of uniqueness, whereas organization development projects or information systems projects have higher degree of

uniqueness. Uniqueness is embedded in various elements of projects, for example in goals, tasks, means and contexts.

Having an opportunity to deal with uniqueness is a learning process. When project members dealing with unique environments, their perception - for example, perception of the world, work setting, knowledge and behavior of themselves and others etc - is susceptible to change, or at least the perception is susceptible to be questioned. What happens here is an emergence of new understanding of cause and effect relationship. Causality can be viewed from systems perspective. Causality contributes to define the system boundary and relationships between the elements within the boundary. Unique settings have the potential to modify the pattern of causal relationship that project members possess in their mind. In other words, project members' mental models can be modified. According to Senge,

> Mental models are deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action (Senge 1990).

Though the modification in mental models does not happen automatically when project members deal with uniqueness, we cannot ignore the modifying potential of the unique work settings. Dealing with and knowing different patterns of causality is a worthy learning process in the organizational world, especially in the business organizational world, which frequently involves with changes and competitions.

Knowing new patterns of causal relationships can be seen as a process of sense making. The need to understand a unique situation initiates an interaction between our experience / knowledge and the inherent characteristics of the unique situation. Current state of mind and external conditions such as time pressure can influence the interaction. This interaction leads us to test out, at least mentally, different patterns of causal relationships, find select satisfactory alternative(s), and even move or modify the system boundary. The attempt to understand implicitly and/or explicitly new knowledge, that is, new patterns of causal relationship, can occur individually and/or collectively.

Systems perspective can be seen through a categorization - hard and soft systems - especially when dealing with problems or complex situations. Hard systems thinking deals with structured problems whereas soft systems thinking deals with unstructured or ill-structured problems (Checkland 1981).

Hard systems problems are problems that can be defined without any difficulties or are problematic situations, which assume that the problems are already defined. What they focus most is *how* to solve the problem, how to perform the task or what alternative solution-proposals are available. They assume that *what is to be solved* is already given or defined. But there are work-situations where the problem itself cannot be defined. These ill-structured

problems are called as soft problems. Yeo argues that projects require both hard and soft systems approaches to deal with their challenges and problems effectively and efficiently (Yeo 1993). He further says,

> However, the hard systems approach was found to be inadequate in dealing with the many soft, ill-structured problem situations in the real world, such as those encountered in the conceptual stage of project definition, or those dealing with strategic planning issues, when the definition of clear objectives and formulation of viable alternatives can itself be problematic. The soft and probably 'messy' real world problems often defy precise formulation in the hard sense. For instance, project management situations outside traditional engineering construction, especially those dealing with the development of large information systems, the formulation of a long term marketing strategy, the research and development of a new drug, or even the launching of a major organizational restructuring initiative, are potentially soft, ill-structured and ambiguous, at least during the initial stage of the project (Yeo 1993).

When there are two or more organizations participate in a project, then there is a possibility of having two or more major sets of mental models, each set relates to a corresponding organization that participates in the project. These mental models perceive and interpret a project situation in their own, respective way, and thus modify themselves if necessary. In the following description, we shall look at the influence of soft systems problems on preproject planning.

In his another article, Yeo says that the prime focus of preproject planning is not the plan, but the processes of planning and learning (Yeo 1995). He further says,

> A soft systemic perspective is recommended as a complement to, not a substitute for, the well proven systematic (hard systems) approach, which places great emphasis on thorough and purposeful preproject planning that preproject planning and learning. The preproject planning provides vital opportunities for concentrated multilearning and inquiries with a view to creating adequate and relevant mental models or cognitive maps among the decision makers and problem solvers. There is a need to study in depth the intangible factors, from politics, culture and value systems to the quality of human resources in the preproject planning team, in terms of their perception and attitude, and their capacity to create and to learn rapidly and effectively (Yeo 1995).

Preproject planning in an inter-organizational project gives opportunity for or demands project members to put forward their opinions on issues that are under consideration. These opinions are reflections of project members' mental models that have been developed / shaped through a considerable influence of their respective organizations or their usual work settings. These mental models perceive and interpret a unique situation based on their own understanding of causality. Each mental model can, at least in the beginning, suggest or

conclude different pattern(s) of causality from the situation in hand. The difference in understanding - when it is shared, discussed, confronted and negotiated - can provide possibilities for project members to know new ideas and/or expand known ideas and understand them in higher levels. In addition, sharing and discussion of this difference can trigger new ways of thinking. When looking at new ideas or when being questioned by others on our own understandings, we may start to reflect on what we (want to) do, and why we (want to) do. This reflection can question tacit assumptions that lie underneath our understandings and behavior. Schön says,

> A practitioner's reflection can serve as a corrective to overlearning. Through reflection, he can surface and criticize the tacit understandings that have grown up around the repetitive experience of a specialized practice, and can make new sense of the situations of uncertainty or uniqueness which he may allow himself to experience (Schön 1991).

I believe that the repetitive experience of a member of an organization is influenced or partly constructed by performance norms, values and other cultural elements that are unique to the organization in which the member belongs to.

The reflection on understanding and behavior can lead to radical thinking and innovative solutions. Application of business process reengineering (BPR), which aims at making dramatic improvement through fundamental rethinking and radical restructuring of business processes (Hammer, Champy 1995), can be seen as a potential outcome of the reflection (on understanding and behavior) process during the preproject planning.

Soft systems methodology that Checkland describes suggests the importance of participation of project members and exchange of their ideas when dealing with soft problems (Checkland 1981). As I have mentioned earlier, diversity of project members who represent different organizations in an inter-organizational project can lead to deal effectively with soft problems. This same diversity ironically can create problems when project members try to communicate their different perceptions and interpretations of the situation or an issue that is in hand.

Schein explains difficulties in communication between different departments within an organization (Schein 1996). He says that the difficulty of communication in a cross-functional team arises also from (among other things) the more fundamental issue that the very meaning of the words that the team members use will differ. He further gives an example. The word *marketing* will mean product development to the engineer, studying customers through market research to the product manager, merchandising to the sales person, and constant change in design to the manufacturing manager. This intra-organizational scenario can be compared with inter-organizational project settings where each organization tends to bring its cultural elements to the project setting.

Communication problems can arise in relation with how human beings perceive the world and take action in it. Isaacs says

> … people have learned to divide the world into categories in thought and make distinctions within those categories. Though these categories are a natural mechanism to develop meaning, we have a tendency to become almost hypnotized by them, forgetting that we created them. We act mindlessly, as if our assumptions and categories of thought were perfectly representative of reality. Our own creations, our thoughts take on a seemingly independent power over us. Perhaps most striking is the realization that we do this collectively (Isaacs 1993).

The last sentence indicate, at least indirectly, the considerable influence of organizations on their respective members when these members develop their assumptions, interpretations and realities.

In addition to differences and difficulties caused by different organizational orientations or frames, there are other problems that are related to communication, such as

- Selective perception / stereotyping (people want to hear and see what they want to, according to their beliefs, that is having pre-determined ideas about other people and refusing to look at individual behavior of these people)
- Perceptual defense (the tendency for people to protect themselves against ideas, objects or situations that are threatening)

Beyond a project

In the last section, I described learning within inter-organizational projects from the systems perspective. In that regard, I considered a project as a system, and discussed about causality within the boundary of a project. In this current section, I shall use the systems perspective to look at learning beyond a project; that is, the system boundary is modified now. Here, the system represents primarily an organization that engages in inter-organizational projects. This systems view directs a strategic focus on projects.

The extent of the role which knowledge plays in projects can reach strategic level. But, the traditional definition of projects does not seem to possess the strategic focus. The traditional definition focused mainly on cost, time and quality (Björkegren 1999) that are related to one single project, that is, to a project that is currently under consideration. But, the focus of a project can go beyond this limitation, and hence the project concept can encompass new foci in addition to the traditional one, so that more benefits of projects can be perceived and gained. Concepts of learning and knowledge can contribute in this regard. Knowledge gained in one project can be applied in future projects (and in parent organizations). Knowledge transfer deserves special attention in project settings, especially because of time and

resource limitations of projects. For instance, *re-inventing the wheel* in work settings where time and resources are limited is probably not desirable.

Organizations, correctly saying business organizations, strive for gaining sustainable competitive advantage, not only to succeed but also to survive. There are many ways to achieve the competitive advantage, and one of the ways is through learning. Projects can be, as I mentioned earlier, vehicles for learning. *Core competencies* that Prahalad and Hamal [1990] mention and *the learning organization* that Senge (1990) mentions can emphasize the strategic importance of learning in business organizations.

Dealing with and learning to cope with uncertainty, complexity, risk, uniqueness and dynamic environment effectively and efficiently are valuable assets in modern organizations, especially business organizations. This learning provides, among other things, flexibility, ability to adapt to new and demanding work settings and ability to experiment. These characteristics are some of the elements that are expected or highly favorable in the modern business world. These characteristics contribute to construct learning organizations (Argyris, Schön 1996).

Inter-organizational projects provide opportunities for and/or demand project members, especially project management, to gain knowledge in working with different organizations, different mind-sets and different cultures. This knowledge is useful and the usefulness can be seen in different levels. In macro level, this knowledge can play a significant role in creating or determining possibilities for future cooperation - business alliances, joint ventures and new cooperative project endeavors - between same or new organizations. Knowledge about other organizations and about working with them is an asset when it comes to, among other things, dealing with future inter-organizational work settings. This knowledge, in micro level, can reduce or eliminate misunderstandings, especially in multicultural work settings. This knowledge can also facilitate socialization process in inter-organizational work settings. Socialization process has a significant impact on knowledge creation according to Nonaka and Takeuchi (1995). Gaining knowledge on working in inter-organizational work settings can determine the extent of efficiency and success in future cooperation. One of the four determining factors that influence knowledge transfer in a cooperative context, according to Wathne *et al*, is prior experiences in managing alliances and prior relationship between partners in alliances (Wathne, Roos, von Krogh 1996). Gaining knowledge on working with different organizations and developing its own organizational knowledge-base through transferring knowledge from/to sources of other organizations can give an organization some sort of power, higher degree of preference to cooperate with and competitive advantage in its relevant industries.

Conclusion

Systems thinking is one of the notable perspectives that is applied to study organizational aspects. In order to carry out projects effectively and efficiently, a holistic approach is needed. Systems perspective provides this approach. I tried to look at learning in inter-organizational projects from systems perspective. An interesting aspect of using systems perspective is to understand the changing degree of focus on different elements and on different patterns of interactions between elements when the system boundary is modified.

The two sides of the diversity - one that constructs learning and the other that hinders communicating knowledge - is another interesting and important aspect.

The learning that I mentioned in my discussion does not happen automatically, and the hindrances and challenges related to the learning do not resolve themselves in due course. Management's genuine involvement is necessary, among other things, to ensure a proper and encouraging atmosphere for learning through diversity, complexity and uncertainty.

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