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Kaikaku – A Complement to Emergence based Development

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Abstract. Radical change, or Kaikaku, is typically organized as a top-down change project based on a design process strategy. Creative processes are emergent and tend to refuse goal-steering. Still, group creativity and emergence could play an important part in Kaikaku projects. A vision formulated in a creative process, may be an order parameter in emergence and continuously direct, align and commit the actions of the people involved in the Kaikaku.

Keywords: emergence, creativity, design, order parameter, Kaikaku, Kaizen

1 Introduction

This is a position paper written in the beginning of a research project supporting and studying Kaikaku processes at four Swedish engineering companies. The writers of this paper believes in emergence (Glăveanu, 2010; Sawyer, 2005) and creativity on group and organizational level (Paulus & Nijstad, 2003; Thompson & Choi, 2005) as the main organization form for development of production systems or organizations. But for Kaikaku "a top-down approach is often mentioned" (Yamamoto, 2010, p 26).

The paper will unfold our thinking about change organized as an emergence process based on group creativity. It will describe a contradiction between this and change organized as a project; a top-down initiated and controlled design process. At the end it will discuss how to combine them in a Kaikaku project.

The conclusion is that group creativity and emergence could play an important part in especially two occations of the Kaikaku project. Firstly, in the creative task of formulating a vision for the Kaikaku. Secondly, in using this vision to continuously direct, align and commit the actions of the people involved in the Kaikaku.

2 Kaikaku

The Japanese word Kaikaku means reformation, drastic change, or radical change and is often mentioned in contrast to Kaizen, meaning improvement (Yamamoto, 2010). Kaizen maintains and improves the work system through incremental change and Kaikaku means a radical improvement, replacing existing practices and obtaining dramatic results. A rather recent trend in Japanese industry is to combine Kaizen with infrequent Kaikaku (Yamamoto, 2010). A Kaikaku is a radical performance improvement in production (>30%).

Tidd & Bessant (2009) introduce a pattern of 'punctuated equilibrium' in order to explain how incremental and radical processes are related. Most of the time innovation is about exploiting and elaborating but occasionally there is a need for a breakthrough which creates a new trajectory for iterative and incremental processes.

Vedin (1985) maintain that rapid growth adds a dimension of freedom in that the organization simply has to be re-shaped frequently, allowing both for spontaneous creative organizational ideas and for implementing lessons from earlier mistakes.

Incremental development processes has typically a broad array of divergent initiatives contributing to gradual improvement. But such bottom-up emergence of change has a limit. Radical change, or Kaikaku, where the frames for work are changed, is beyond the reach for bottom-up processes. It typically has to be organized by the management as a top-down change project, preferably based on a design process strategy.

The initiation and control of a Kaikaku is normally performed by top-management and their representatives, e.g. the establishment of aggressive goals, resource allocation, authoritative and forceful backing. This does not mean that collaborative and participative processes are impossible.

3 Emerging Change

The emergence perspective of change is implicit in some theories of organization using a bottom-up strategy with collaborative and participative processes. For example, lean production system and Kaizen, or

continuous improvement, has several connection points with the emerging change perspective that we are using.

There are several reasons behind our focus on creativity, emergence and bottom-up development processes. Change processes on societal level is leading us into a world where emergence is more common. Information is more accessible for everyone, more and more action is decided using communication in networks and the boundaries between different activities and organizations is diminishing. This global connectivity between organizations, markets and humans logically increase the speed of change and increase the demands on flexibility and creativity for organizations to be long term competitive. The workforce of the western society is more and more educated, and have higher demands than materiel outcome of their work. Distributed responsibility and bottom-up processes is one way to make use of their increasing competence and make it possible for them to reach self-fulfillment at work. At last, there has been a development towards flat and lean organization of work giving the lower levels of managers an increasingly demanding work situation, with a lot of subordinates and scarce support. Bottom-up solutions with more responsibility given to employees, is one way to deal with managers work situation.

Group creativity is one starting point in our study of emergence as a form of organization of development. Group creativity appear when individuals with divergent competence offer their ideas to a group and, at the same time, subordinate their ideas to converging group ideas emerging in their interaction (Olsson, 2008). The group members are at the same time autonomous, following their individual way of acting and thinking, and simultaneously integrated to the group, following the way of acting and thinking of the group.

To be able to scout unknown areas of knowledge and ideas (Marion, 1999) between the individual competences of each group member, their interaction has to fulfill a duality of two conflicting qualities. The first quality is diversity. Each team member has to be willing and able to both express and argue for his/her perspective and understanding in the interaction. The diversity quality is important to be able use all relevant individual competence of the group in the creative process. The second quality is convergence. Each team member has to be willing and able to both understand and be influenced by the others. Convergence is needed to be able to talk about the same thing; a group idea (Olsson, 2008). The group members will focus and relate their actions to an emerging group idea. The group idea is the vehicle the group uses to travel together and be able to scout places of knowledge and ideas between each of them.

The group idea is an emerging order parameter structuring or organizing the interaction of the group. Order parameter is originally a mathematical concept; it is a way to reduce the amount of information needed to describe a complex system (Haken, 1996). The traditional way to handle complicated systems is to analyze, i.e. divide the system in understandable parts and describe each part, and synthesize, i.e. make a sum of these descriptions. But complex systems have macro features emerging out of the interaction of the parts (the whole is greater than the sum of the parts). This crucial feature will be missed, if we only look at one part at the time. An alternative strategy is to find order parameters at macro level, which describes the most important features of each agent at micro level. The mathematical proofs of the concept are valid only close to instability points, but it has empirically showed to useful even far from such points. An order parameter emerges when fluctuations of individuals strengthen and stabilize each other and thus forms a pattern at macro level which wins the competition with all other possible patterns. This pattern will then control actions of all individuals.

There are different levels of order parameters. A human being is at the same time involved in different processes of different length and with different pace, and all these different processes may have different order parameters. In a group meeting, for example, a weave of different group ideas will function as order parameter for shorter or longer periods of the meeting. On a higher level, in a project, including several meetings with individual work between, an order parameter of the project may emerge. In the last part of the paper, we will talk about how order parameters can be used to commit the members of a Kaikaku project to align their work in the same direction.

To lead emergence is a specific task for managers, complementing other tasks like administrate to ensure that the organization continue to function as planned, and drive change projects and individual competence development to ensure that the organization adapt to changes in the environment (Backström, Granberg, & Wilhelmson, 2008). The task leading emergence has a focus neither on the system nor the individual, but on the collective. The normal leader-follower duality is replaced by a collective including the manager and all subordinates (Drath et al., 2008). The ideal is a collective with members having different roles, but following the same order parameters and acting with heedfulness towards the whole organization (Hagström, Backström, & Göransson, 2009). The role of the leader in the collective is to represent the wholeness, the goals of the organization, the visions of

the top-managers, and the long term perspective in the communication. The role of the others is to represent their specific competence and understanding of the local situation they are in. The manager has to give prerequisites for this collective to emerge; e.g. develop the communication habits of the collective and support solution of role conflicts (Åteg et al., 2009). There has to be a focus on continuous development and good results, if not, the collective will stagnate and become petrified in their habits.

The ideal is a creative dynamic balance between autonomy and divergence, on one side, and integration and convergence, on the other. Some organizations have more of autonomy than integration and others have the opposite, and neither is good for emergent development (Backström, 2009). Too much integration, compared to autonomy, makes it hard for individuals to develop their work at all. The opposite decreases the possibility for individual development initiatives to contribute to the development of the whole organization. In figure 1 and 2 we expand our thinking about the concepts of autonomy and integration in organization.

Fig. 1. Importent aspects of organization to reach autonomy of the employees.

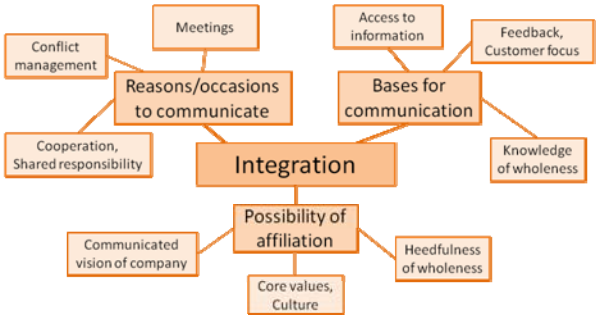

Fig. 2. Importent aspects of organization to have the employees integrated in it.

4 Contradictions between Design and Emergence

Design and emergence is seen by some authors as two exluding cathegories of development processes (Capra, 2002). The designed parts of an organization are formed for certain aims and are manifestations of consious meaning and pupose. The emergent parts are formed in interaction between members of the organization while working, without no-one trying to control it or even knowing about it. The designed parts have a purpose to ensure effectiveness and high quality. The emergent parts make it possible continuously and immediately adapt to different situations locally and to learn from it.

This paper is dealing with this contradiction between design and emergence. Design, “the network of activities performed with a goal of producing design” (O'Donovan, Browning, Eckert, & Clarkson, 2005, p62), is a planned and structured process with a formulated goal. Creative processes tend to refuse goal-steering but house improvisational openness; these processes emerge towards something earlier unknown. Both processes have an aim, e.g. a problem to solve. The design process formulates a controlled path towards the goal. The creative process suggests attitudes for people involved and prerequisites for their work, and the importance of sensitivity towards each unique process, sooner than control. The designed parts of a solution or product were consciously elaborated; the creative parts were a unforeseen.

To focus on emergence means to have certain way to understand change and control. One control philosophy is to react on signals, to stay passive until there is a need to act. Using this philosophy you are controlled by the external world and the signals from it. Another control philosophy is to proactively formulate a strategy how to create and reach the goal. This has similarities with a design strategy. You are active and try to control the external world. The philosophy behind emerging change is reciprocal development processes, where partners together build their common part of the world and form their own future.

Kaikaku, and traditional production system development, is normally organized in projects. Design science deals with this type of change processes. Kaizen, or continuous improvement, on the other hand is a way to organize for development as emergence. Does the perspective of emergence have any implications for a Kaikaku project?

5 Kaikaku – Combining Design and Emergence

A Kaikaku is a development process giving a radical performance improvement in production (>30%). It usually goes through the following stages (Yamamoto, 2010), p 6): analyzing the current status quo, identifying the production strategy, formulate the desired future state of production, transition, and manage and improve the transformed system.

One step of a Kaikau is to formulate the desired future state of production. The formulation of this vision is a creative task. In our research we plan to have a work shop in the beginning of the project with the goal to form the vision of the Kaikaku. The vision will be emerging in a creative process involving representatives from the company, researchers and persons invited in order to increase the divergence concerning competence and way to understand the world.

We believe that a common vision of the Kaikaku is very important. It is the guideline to be used in the design part of the project: formulating goals, planning the work and forming a strategy how to reach the goal. But even in well planned projects there will be unplanned parts where individuals will have to decide by themselves how to deal with things. A good vision also function as a guideline in these situations, and thus as an order parameter for all processes of emergence (Backström, Strömberg, & Sjödin, 2010).

A model of how to form and use a common vision is described by (Källström, 1995). The model consists of five parts:

1. *Vision*, the top-managers understanding, developed in dialogue, of what the organization is striving for, giving direction, inspiration and support communication. It should be so simple that everyone can understand and remember it. The vision should also be open and unclear, because it has be usable in every situation and it is good if there is always a need of interpretation.
2. *Communication*, to sell the vision and reach consensus, making it possible for employees to act accordingly. This show respect to the employees, and gives them information and understanding about the work context.
3. *Consensus*, when accepted, the vision is a law against which managers and colleagues may judge action.
4. *Force*, to be used very seldom, only in situations e.g. due to lack of time or the inability of single employees to accept the vision.
5. *Control*, continuous dialogue and feed-back around the use of the vision to study if the vision is understood and used correctly, to show that managers care, and to motivate use of the vision.

6 Conclusions

Group creativity and emergence could play an important part of development processes, such as Kaikaku projects, using a design strategy. Especially in two occations. Firstly, in the creative task of formulating a vision for the Kaikaku. Secondly, in using this vision to continuously direct, align and commit the actions of the people involved in the Kaikaku.

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