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From a reactive to a proactive approach

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Abstract

In order to enhance a constructive approach to technological and organisational development it seems important to involve employees proactively. This implies the need for a changing role of employee representatives, trade unions and management. It can, however, be observed that many systems of representative participation are reactively rather than proactively oriented. A proactive approach requires other competences and resources on the side of the involved employees and managers than a reactive approach. In absence of the necessary prerequisites there is a risk of undermining the efficacy of the participatory bodies. Hence, this paper suggests a model to analyse and reflect the prerequisites for transformation of values, norms and behaviour.

Keywords: Reactive / proactive approaches, interactive leadership, participation, transformational learning , knowledge flow ,

Introduction

A variety of participatory approaches exist. Some of them include the employees in defining the problems and in discussion and analysis of the problems. Others involve them in the design of improvements and / or in taking action. The majority of these approaches have been *reactive*, meaning that they are initiated *after* a change has occurred. However, due to the increasing levels of complexity the companies and institutions are challenged to be more and more proactive in their decision making. A *proactive* approach means that planning and actions are initiated *before* a threat or an opportunity occurs. According to this rationale, the future is not just something coming. Instead certain future possibilities can be shaped or avoided when the organisation involves the employees in a continuous transformation process.

It can, however, be observed that many systems of representative employee bodies still are characterised by a defensive or passive attitude. Some employers also seem to pay attention to immediate effects only. Such an approach may create an 'organisational improvement paradox' Changes successfully implemented in one part of the company often fail to translate into gains in firm-level performance as a whole (Goodman and Rousseau, 2004). The reasons of this paradox are manifold, but some of the key-factors seem to be: 1) defensive attitudes towards change; 2) obstacles to recognize the

importance of interactive rather than one-way communication; 3) lack of methods to combine short and long term perspectives and challenges.

The questions focused on in this paper are as follows:

- Is it possible to develop a precise conceptual framework about various forms of reactive and proactive approaches?
- Which are the different rationales for employee participation?
- How is it possible to develop and implement proactive and participatory approaches?
- Which are the possible outcomes of proactive, participatory employee approaches?

Reactive / proactive: a continuum rather than a dichotomy?

At least four different modes of participation can be identified as illustrated in figure 1:

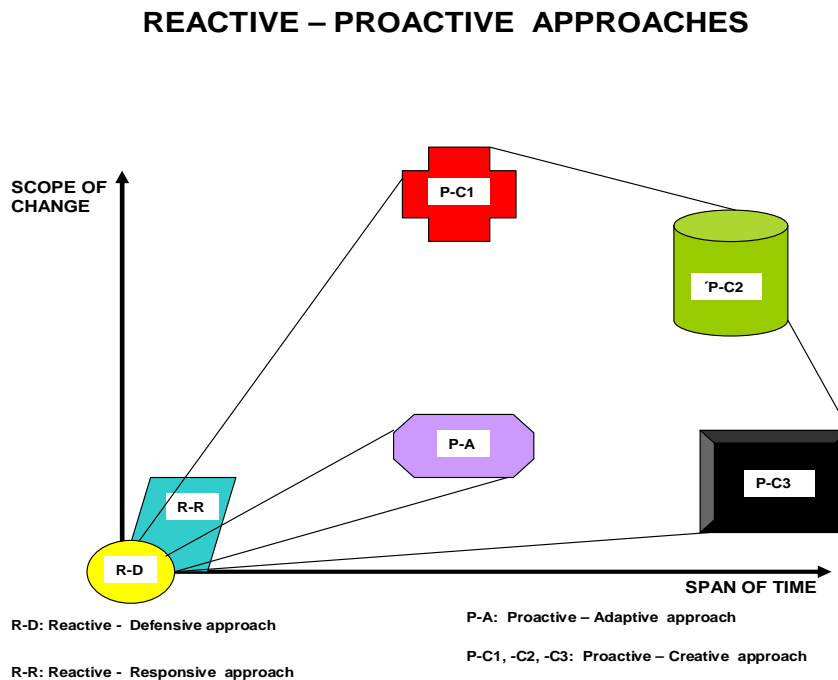


Figure 1: Reactive and proactive participatory approaches.

The four approaches, illustrated in figure 1, differ in regards to the time-horizon and the scope of change. They are also to be seen in relation to the specific contexts of economic, technological and political power relationships.

A *reactive-defensive* approach (in figure 1 shown as R-D) is characterized by a non-change attitude against any novel technological, organisational, economic or political challenge. Examples are worker collectives with a strong internal cohesion and a powerful position in the organisation (Lysgaard, 1961). They fight against any change, because they fear that it may decrease their power. However, as time has passed, many of these worker collectives were defeated. Some of them for instance the typographers and compositors have disappeared. The economic and technological developments proved to be too overwhelming. Reactive-defensive approaches can temporary prevent change, but

history shows that it is an approach, which may result in either a total collapse or more serious problems and conflicts.

A *reactive-responsive* approach (in figure 1 shown as R-R) is focusing on needs created by changes which have already occurred. A classical example is the Hawthorne studies conducted in the 1920s and 1930s under the leadership of Elton Mayo of the Hawthorne plant at the Western Electric Company in Chicago (Mayo, 1949). With these studies the whole question of work motivation became a legitimate research issue to study. Another example is the classical socio-technical approach coined in the 1950s by the Tavistock Institute of Human Relations based on analysis of technical changes in post war British coal mines (Trist et. Al.,1963). Both approaches are examples of reactive-responsive approaches. They assess a current situation, identify the existing problems, needs and unbalances, and then develop a strategy and practical action plan to meet those needs by involving the workers in the investigation and/or the solution of the problems. Reactive-responsive approaches have been the most common form of collaboration between researchers, employees and employers since the 1920s (Rasmussen, 2004; Emery and Thorsrud, 1976). In the 1960s the socio-technical projects in NOBOE Household appliances/metal and Norsk Hydro received a lot of attention in the literature (Emery and Thorsrud, 1969, 1976; Gustavsen and Hunnius, 1981). But the socio-technical approaches were not adopted by other companies in Norway at that time: “..In their turn, the ‘experimental gardens’ became isolated from the rest of the organisations which even built up some kind of resistance against such a change” (van Eijnatten, 1993). However, the socio-technical approach diffused from Norway to Sweden and Denmark during the 1970’s. In *Denmark* socio-technical projects in seven firms of the Danish metal industry was carried out between 1969 and 1973 (Agersnap et. al., 1974). But the results were limited and did not diffuse to other Danish companies at that time. In *Sweden* the Swedish Employer Association (SAF) launched a new socio-technical strategy in 1975, termed ‘New Factory’ project. The aim of this approach was to develop more stable production systems (Argurén and Edgren, 1980; Ehn, 1988). In particular, Kalmar and Uddevalla Volvo Factories became the major symbols of this strategy in Scandinavia. Both factories followed the socio-technical principles of minimum specifications, task autonomy for the workers, fluid divisions of functions and local solutions. However, the reforms were restricted to the shop floor production level. Participation for democracy was in no sense included in this Swedish approach. Management’s overall control was rather strengthened (Ehn, 1988). Similar programmes were initiated by the German humanization of working life (Humanisierung des Arbeitsleben). Most of the projects focused on reduction of stress with assembly-line production. Using the Norwegian and Swedish models they conducted experiments to introduce semi-autonomous groups and reduce machine-paced work by introducing buffer zones at the assembly-line (Fricke, 1983).

In a somewhat critical reaction to these employer-initiated projects, some action researchers and trade unions developed the so called *Collective Resource Approach*. In 1970 the Norwegian Iron and Metal Workers Union (NJMF) decided to initiate research of their own. In Sweden the DEMOS project on ‘trade unions, industrial democracy and computers’ started in 1975. A parallel project in Denmark was the DUE project on ‘democracy, education and computer-based systems’. All these three approaches emphasized democratisation of the design process of the new computer technology and its implementation at the work places. However, the impact of these activities did not meet the initial expectations. As pointed out by Ehn: “It seemed that one could only

influence the introduction of the technology, the training, and the organization of work to a certain degree. Important aspects like the opportunity to further developed skills and increasing influence on work organization were limited (Ehn, 1988:278). In Germany after 1975, some projects were initiated by researchers and trade unions too. An example is the Peiner Project where five researchers from the Friedrich Ebert Foundation collaborated over four years with workers at the Peiner AG Screw factory to study and improve working conditions. According to Fricke (1983), the Peiner Project achieved four main results. First, the working conditions were improved in a number of ways. Secondly, worker project groups were developed whereby workers could participate in improving their working conditions. Thirdly, an approach for continual worker education was established. Fourthly, the researchers gained practical experiences with the participatory action research methods. Thus the Peiner Project demonstrated that workers are able and willing to make improvements in their own working environment, when they are offered the methods and possibilities to do so (Fricke, 1983). The Peiner project started as a reactive- responsive approach but changed gradually to be more proactively oriented towards more long term changes too.

At the universities, new types of action research grew up. Most of them focused on health and safety problems in the industrial sector. They were typically joint action research projects between students, local trade unions and employees at the individual companies. However, for some reasons it was difficult to disseminate examples of ‘best practice’ from one company to another.

The *proactive-adaptive* approaches (in figure 1 shown as P-A) differ from the reactive approaches. They do not focus on the current situation only, but try also to anticipate the future situation and develop more appropriate technology to cope with future challenges. An example is the Swedish-Danish project, UTOPIA. As an attempt to broaden the scope, the Utopia project was started in cooperation between the Nordic Graphic Worker’s Union and researchers in Sweden and Denmark in 1981. A mock-up workstation was established by primitive means which could be used to simulate a computer-based page make-up. It was cheap and easy to change during the experimental process. Besides, it allowed the users to express their know-how in action, and the researcher to be actively involved during the design process. However, the method contains some pitfalls too. For instance, prototypes have a tendency to freeze users as well as researchers into a certain perspective. The result of the UTOPIA project was never implemented in a company, but the methodology of collaboration between researchers and users soon became well known in computer and social scientist circles worldwide.

Another example of researcher-user collaboration within a tool-perspective was the Danish part of the ESPRIT 1217: “*Human Centred CIM Systems*” (1986-1990). In collaboration with industrial designers of a Danish company, social scientists and system engineers developed a prototype of an Electronic Sketch Pad (ESP). This project started to make concrete improvements of the tools used by industrial designers in collaboration with some of these designers. Later on it focused on more long term scenarios about how to improve the organisation, skills and communication between the design office and the other departments of the company (Corbett, Rasmussen and Rauner, 1991). Similar to the UTOPIA project, the direct influence of the ESPRIT project 1217 on the technology development was limited at that time. However, the methodological experiences gained from the approach influenced the ways of teaching students at the Scandinavian Universities. Based on the experiences from projects like UTOPIA and ESPRIT 1217

new user oriented courses were introduced at several universities in Sweden and Denmark (Brulin, 2001; Rasmussen, 1998; Laessoe and Rasmussen, 1989).

Another type of proactive-adaptive approaches is the network approaches starting from 1985. The *Swedish national program, LOM*, (Leadership, Organisation and Co-determination) was emerging by the early 1980s and took place between 1985 and 1990. The central concepts of the LOM Program were networking, learning and democratic dialogue. The aim was to motivate collaboration and networking between the participating companies and universities. The *networking* was organised around clusters of four enterprises. The *learning aspect* focused on the capabilities to conceive new ideas. The *democratic dialogue* was defined as 'good communication', that is the capacity to engage in open discussions, all-level participation, and in reaching agreements (Gustavsen, 2001). The LOM program focused mainly on current problem areas and short term development trends. And less on more radical strategies for development and employee participation.

In this respect they differ from the *proactive-creative* approach (P-C) as shown in figure 1. According to the rationale of this approach it is not possible to make exact foresights on the future, except within a very limited time-horizon. This approach builds on the premise that it is possible to shape creative and constructive strategies by creating scenarios of possible futures (in figure 1 illustrated as P-C1, P-C2 and P-C3). Another premise is, that such a shaping process includes change of values, norms and behaviour throughout the organisation and hence includes all its members in a continuously learning process. The combination of participatory search conference and interactive scenario analysis is an example of a method which can be applied in proactive-creative approaches (Garibaldo, 2003; Rasmussen, 2003). The origins of the search conference can be traced back to the Tavistock Institute, namely Fred and Merrillyn Emery (Emery, 1974; Emery and Purser 1996). According to them, people are seen as subjects, entitled to have their own say in their work environment. Based on this principle they structured a participative methodology termed search conference. This method has been revised by Francesco Garibaldo and his colleagues adding a diagnosis phase to the deliberative one in the classical search conference method (Garibaldo, 2003). A part of this revised search conference method has been combined with interactive scenario analysis (see figure 2).

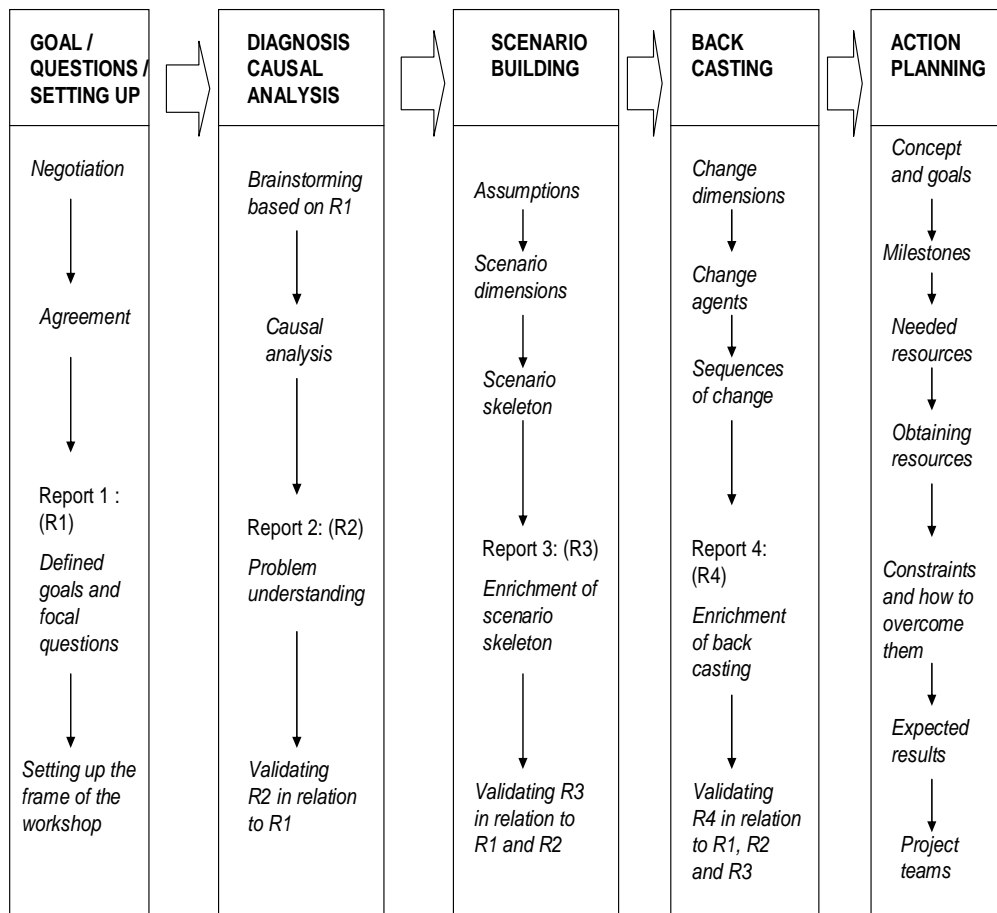


Figure 2: The combined approach of participatory search conference and interactive scenario analysis.

As shown in figure 2, the phases of *setting up goals* and making *diagnosis* from the search conference method are followed by the phases of *scenario building*, *back-casting* and *action planning* from the scenario analysis method as shown in figure 2.

This combination has been tried in practice with a promising result (Garibaldo, 2003; Rasmussen, 2003). Two of the participants of this proactive-creative workshop evaluated the outcomes as follows:

“It was a very satisfying experience by all the participants in terms of learning the action research methodology as a tool and the outputs of the workshop had real practical value for all the stakeholders.... Both the European and the Indian groups gained the experience of building new traditions of Action Research in India in the dairy sector. It was cross-cultural exchange between two continents on the global level” (Mehra and Kalra, 2003).

The various phases are only briefly described in this paper, but they are more extensively described elsewhere (Rasmussen, 2003, Mehra and Kalra, 2003). The first phase, setting up the goals and questions, intends to make an agreement among the participants

regarding the intended outcomes and focal questions to frame the succeeding phases. The participants are facilitated to discuss and negotiate their respective opinions. The outcome of the first phase (see figure 2) is a report (R1) framing the following phases of the approach.

Based on this framework, the next phase consists of an interactive *diagnosis* of the past and current problems and challenges facing the participants. A brainstorming session is followed by a causal analysis in which the participants are discussing how the various aspects are to be understood and related to each other. Based on this discussion, the facilitators and some of the participants draft a second report (R2) of the causal relationships between the current and prospective areas. Finally, R2 is validated according to the goals and questions mentioned in the framework report (R1).

The scenario-building phase (see figure 2) is initiated by presenting the main issues from R1 and R2. Then follows the creation of a *scenario skeleton* as an iterative process between focal questions, assumptions, scenario dimensions and features / actors in the scenario skeleton as illustrated in figure 3:

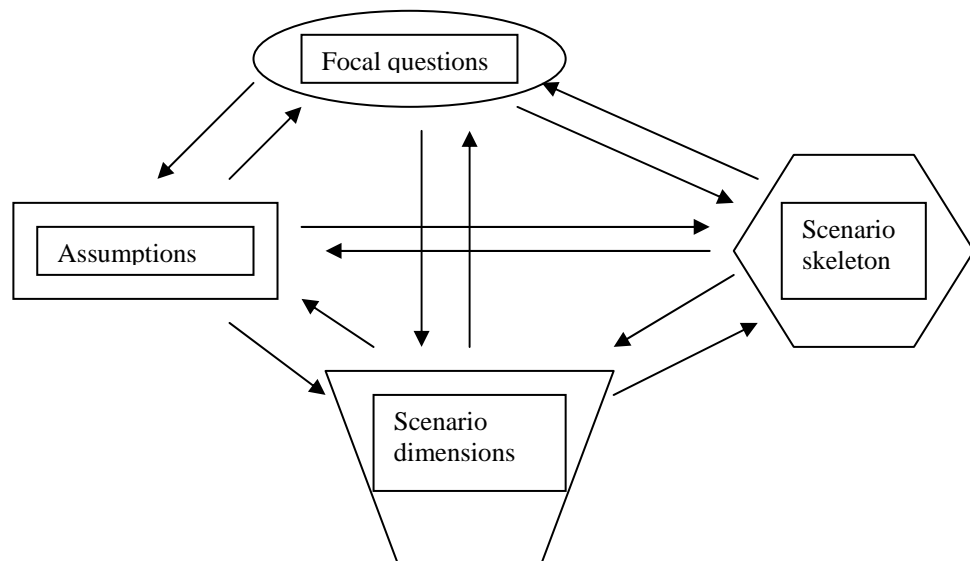


Figure 3: The interactive process of building the scenario skeleton

However, the scenario skeleton is an abstract structure, which needs to be enriched. The *enrichment* of the scenario skeleton (see figure 2) is like adding ‘flesh and blood’ to the skeleton. By the means of story-telling it is possible to enrich the skeleton by adding fictive cases of future events (Rasmussen, 2005; Boje, 2002; Johnson, 2000).

“...It is in the twists and turns of a written plot that one observes the workings and structural inter-relationships of the driving forces. And it is also in the twist and turns of

the plot that one observes most clearly where understanding is lacking and further analysis would be productive” (van der Heijden, 2004:258).

The enriched scenarios are described in report 3 (R3). They should be validated in accordance to the goals and focal questions (R1) and the analysis of the problem areas (R2) by the participants of the workshop (Alexander and Maiden, 2004).

The *fourth* phase is *back casting* (see figure 2). The *back casting* is a process of moving back from the scenarios to the current situation (Rasmussen, 2003; Keune and Gordon, 2002; Dreborg, 1996). It is a method to explore alternative development paths and their implications. The back casting implies a functional description of the possible routes and enables the development of action plans. The process of *back casting* includes the following steps. The *first* step is to identify the *change dimensions*, for instance educational, technological, social and political dimensions. The *second* step is to identify possible *change agents*. The *third* step is to create *sequences of change* between the present and the scenarios. The *fourth* step is to create relationships between the current circumstances, the change-agent strategy, the sequences of change and the scenario. The construction of the back casting is like developing some possible ‘paths’ connecting the scenario with the present.

The *fifth* phase is the *action planning* phase (see figure 2):

The action planning phase is based on the results from the scenario building and the back casting process. Such an action plan can be *structured* as follows:

- (1) The concept for action, that is, what is the overall frame of taking action?
- (2) Precisely defined goals for whom and with whom?
- (3) Milestones to reach the defined goals, for instance achieved changes after 3, 5 or 10 years.
- (4) A list of resources needed to reach the goals, for instance money, technical advices, training, resources and abilities for networking and so on.
- (5) How to obtain the resources needed, and from whom?
- (6) Expected results and the innovative aspects of these results?
- (7) A list of people or institutions that may resist the planned actions.
- (8) Strategies how to overcome the resistance or opposition? For instance, the use of bargaining or the creation of more powerful coalitions.

When the action plans have been developed for each scenario, they should be compared in order to identify similar or different actions. Such a comparative analysis can help the decision makers to identify which actions should be initiated depending on which scenario the participants consider as the most relevant to focus on. Key linkages across time, space and themes should be identified and analysed regarding their relevance for the focal issue. Other examples of proactive methodologies are future creating

workshops, interactive planning, design games, participatory SWOT and causal mapping (Rasmussen, 2008).

Possible outcomes of using proactive methodologies

Focusing on future possibilities should not be an excuse for neglecting current problems. However, using proactive approaches can help to reduce the number of 'current problems' in the future. The contextual determinants some times suggest a reactive and sometimes a proactive approach. In some cases, a reactive approach can change perspectives towards being proactive (Fricke, 1983, Rasmussen, 2004). They are not mutually exclusive dichotomies, but rather a continuum of complementary approaches depending on the historical context, available resources, and the political climate.

The interactive mode of participation made possible by such a proactive-creative approach can enhance formal and informal knowledge creation and knowledge sharing (Robinson, 2003; Schwartz, 1991). Work allocation, work pacing, regeneration and social experiments presuppose participatory and proactive approaches rather than being designed by external experts without practical experiences in the work content and work relationships (Broberg, 2007; Quist and Vergragt, 2004).

In difference to forecast approaches, *one of the strengths* of a combined use of search conference and scenario workshops is that it does not pretend to predict the future. Instead it provides stories of several possible futures (van der Heijden, 2004; Alexander and Maiden, 2004; Godet, 2000). Hence, in a world characterised by many uncertainties this approach is able to cope with uncertainty, because it can help the participants to visualise and describe what might happen, *if* certain kind of trends are becoming stronger, weaker or perhaps 'overruled' by other trends (van der Heijden, 2004; Mintzberg, 1994). As they evolve over time, the scenarios are like 'laboratories' in which different strategies and development plans can be tested. *Another strength* is that search conferences and scenarios can provide a common platform for interdisciplinary knowledge sharing and strategy formation. For instance, scenarios may rely on knowledge from technical, social, psychological and economic disciplines as well as practical experience from managers and employees. The narrative techniques of storytelling are well suited for the creation of a mutual relationship for many bits of information. Stories are not only to be seen as effective communication devices. They are also creative tools to expose hitherto implicit anticipations or assumption. By stimulating the mind to think about different possibilities, it becomes more and more trained to move into non-conventional directions, thus improving the ability to imagine unusual situations (Lindgren and Bandhold, 2003). Hence, it may inject an element of caution, asking 'what can go wrong' if we do it in this way or in that way?

A potential risk is to develop scenarios as utopian dreams of '*paradises on earth*', in which all kinds of problems or conflicts have disappeared. Instead they may inject naive anticipations and perhaps successive frustration. *Another type of risks* is to make '*pseudo-forecasts*'. Such a risk is overwhelming, when the scenario builders rely on almost ensured trends or mainstream thinking only. The scenarios may content no surprises or new ideas, but just represent 'conventional wisdom' in two or three slightly moderated versions. *A third kind of risk* is to *oversimplify* complex issues in order to facilitate the communication and discussion of the key aspects. Often scenarios are presented as rough skeletons without enrichment and back casting. However, such a superficial approach

may turn out to be considered more like an entertaining event than a serious use of a participatory approach. A *fourth type of risk* is to generate *too many alternate scenarios*. It is quite easy to be overwhelmed with possibilities and complexities in a scenario building process. Instead, there should only be a few alternations with internally consistent or opposing pathways into the future (Wack, 1985).

Search conference and scenario analysis possess the power to break old stereotypes and enforce managers and employees to question their assumptions about how things are working. They are useful devices throughout the life cycles of system development, including for instance local community approaches, organisational development projects, human-computer interaction and health care.

The four different approaches described above rely on various economic, social and political rationales briefly described in the following section.

Different rationales for employee participation

At least three different rationales for introducing employee participation can be observed in the literature. Each of these rationales is related to the four different reactive and proactive approaches described above.

The economic rationale of employee participation

The economic rationale is based on the assumption that participation improves the employees' motivation to work effectively towards achieving the goals of the company. Participation within this rationale aims at securing the consent and commitment of the workforce to new working arrangements. It can include initiatives which directly engage employees in planning and implementing change. In addition, influenced by such a participatory rationale, some managers seem to adopt more facilitative leadership towards their subordinates and hence try to improve their abilities to share responsibility and promote creative behaviour (Summers and Hyman, 2005; Marchington, 2000; Butt and Appelbaum, 1995). This rationale is typically underlying the reactive-responsive and proactive-adaptive approaches, depending on the conditions of the environment, the type of company, the management and the education level of the work force.

The social rationale of employee participation

The social rationale is focusing on the possible health and safety improvements as an effect of employee participation. The assumption is that active employee involvement reduces accidents and work related ill health. Another assumption is, that it develops more effective risk control measures by promoting a positive and realistic health and safety culture.

The social rationale has often been associated with the proactive-adaptive approach in the literature (Rasmussen, 2004). However, often it seems to function more as a rationale for reactive-responsive approaches, though these may be changed gradually in a more proactive orientation as part of a shift in a more proactive health and safety culture (Rasmussen, 2004; Cressey and Williams, 1990). For instance the workspace design research program in Denmark have developed a proactive approach to be used by

workplace consultants, managers and employees based on participatory design of healthy workplaces in industrial settings (Broberg, 2007).

The political rationale of employee participation

The political rationale is focusing on more democratic and equal relationships in organisations as an outcome of employee participation. The assumption is, that a social partnership can improve the democratic attitude and behaviour of management as well as of the employees. This development is seen as a goal in itself, and not just as means to work more effectively. Such participation often forms part of the formalised system of representation in the organisation, and may be sustained by legislation, by sectoral or national contracts, or by agreements between the social partners. This approach to participation is directly influenced by the particular industrial relations systems involved. Within this rationale it is often assumed that a situation will be improved only if employees and their representatives have access to all levels of decision making, and can successfully protect workers' rights during technological and organisational change. The political rationale is mainly associated with proactive approaches (DeLeon, 1997). Sometimes it has developed gradually from a more economic rationale to becoming a social and political experiment too (for instance Lucas Aerospace in UK in the 1970s, Cooley, 1987).

Governmental rationale of employee participation

Governmental rationale of employee participation encompasses economic, social and political rationales. It is designed to improve the national economic efficiency, health and safety level of the labour force and the democratic abilities of the employees and the managers. Comparative studies of changes in job quality (Lorenz and Valeyre, 2006; Green, 2006) and participatory approaches (Summers and Hyman, 2005) indicate, that the national institutional structures have an effect on organisation of work and numbers and level of participatory programs. However, the use of direct legislative intervention in the promotion of workplace participation seems to be rare. Instead, a great variety of persuasive forms of regulation are more in use (Alasoini et. Al, 2008; Forsyth et. Al., 2006). An example is the TYKES Governmental R&D Program for promoting simultaneous improvements in productivity and quality of working life by funding development projects at Finnish workplaces. Similar programs are also funded by other European Governments. On a wider scale, the EU has claimed an interest in employee participation (European Commission, 2002). Currently there seems to be a wide variation between different European nations in terms of frequency and intensity of participation (Summers and Hyman, 2005). This reflects differences in culture, structure and political strategies of the social partners and their varying frameworks of national legislation. The question is, if these participatory practices across Europe will remain patchy or they will develop towards a larger degree of convergence? The governmental rationale seems so far mostly to be related to the reactive-responsive approach. However, it may change towards a more proactive-creative perspective, for instance challenged by the rising complexity of actual and prospective economic, environmental and social challenges facing Europe today.

Obstacles and Requirements to develop proactive approaches

The obstacles against proactive approaches following the literature are:

- A large hierarchy of formal management positions, where authority is defined by the position, and unconditioned discipline is expected towards hierarchical chain of command (Debowski, 2006; EU Commission, 2002).
- A low level of informal interaction (Alasoini et. al. 2008).
- A lack of available information technology systems to store and accumulate knowledge in such a manner, that it is easily updated and accessible to relevant stakeholders (Campagnolo, 2008; Alasoini, 2008; Debowski, 2006).
- The lack of education and training to enhance creative and convergent abilities among the members of the organisation (Rasmussen, 2008; Debowski, 2006).
- Poor access to proactive methods including facilitation in the use of these methods in a participatory way (Rasmussen, 2005).

Addressing these obstacles against proactive approaches is not a simple task. The challenge is to change values, norms and behaviour in parallel throughout the organisation, or in other words, to initiate transformational learning as shown in figure

4:

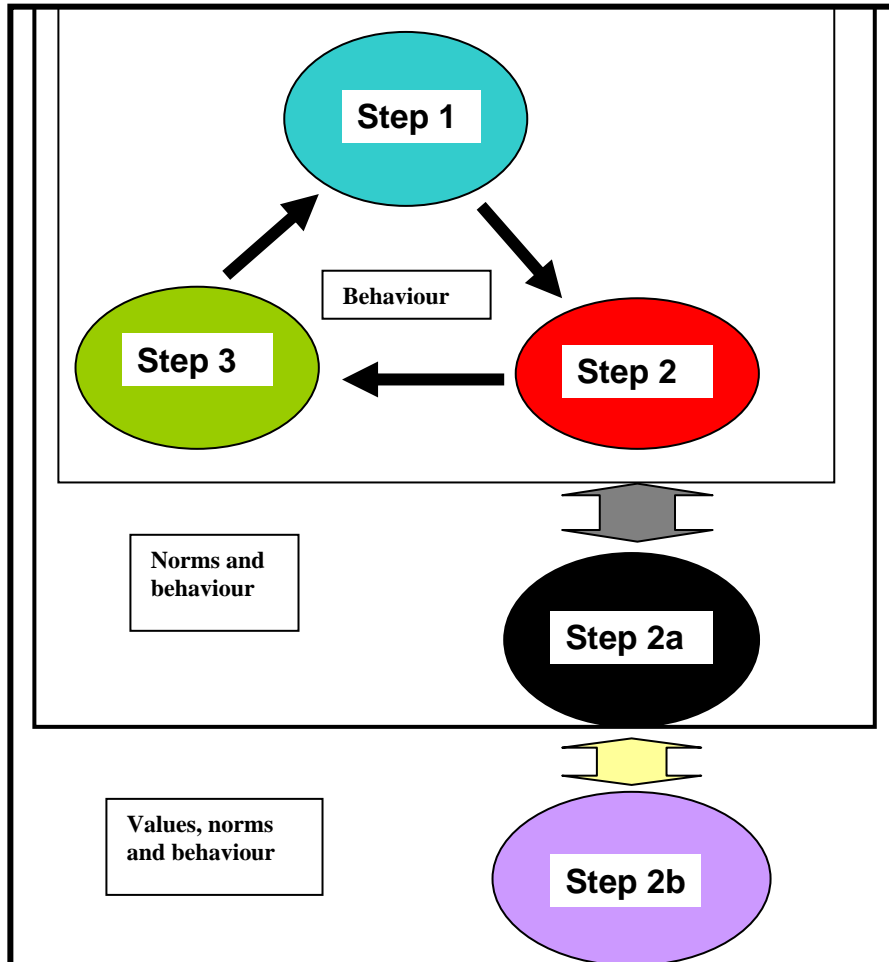


Figure 4: single-loop (1,2,3), double-loop (1,2,2a,3) og triple-loop (1,2,2a,2b,3) learning as different phases of transformational learning

Single loop learning depends on three steps (Jackson, 2003; Morgan, 1986) as shown in the smallest box in figure 4:

1. The system must be able to sense, monitor and scan relevant issues of the environment.
2. The system must be able to relate this information to the operating norms that guide the behaviour of the entities included in the system.
3. The system must be able to detect significant deviations from these norms and the initiate correcting actions when too much deviation is detected.

This form of learning corresponds to the reactive-responsive approach as it is defined in this paper. However, if the operative norms are becoming insufficient to manage the system may include an ability to question and change the operating norms. This ability has been termed *double loop learning* (see figure 4: 1,2,2a,3) or learning to learn by Argyris and Schön (1978, 1983, 1996). This ability corresponds to the reactive-responsive approach at a higher level of complexity. The proactive-creative approach includes the ability to change not only the behaviour or the operating norms, but also the *values* behind these norms (see figure 4: 1,2,2a,2b,3). This form of learning has been termed *transformative learning* by Hawkins (1994). For instance when a company or network of companies move from a conventional focus on profit to include values of social, cultural and environmental responsibilities too, they are changing not only actions or norms but also the values behind these norms. In order to make learning possible at these three different levels, the flows of knowledge must be accessible to all relevant entities of the organisation, as showed in figure 5:

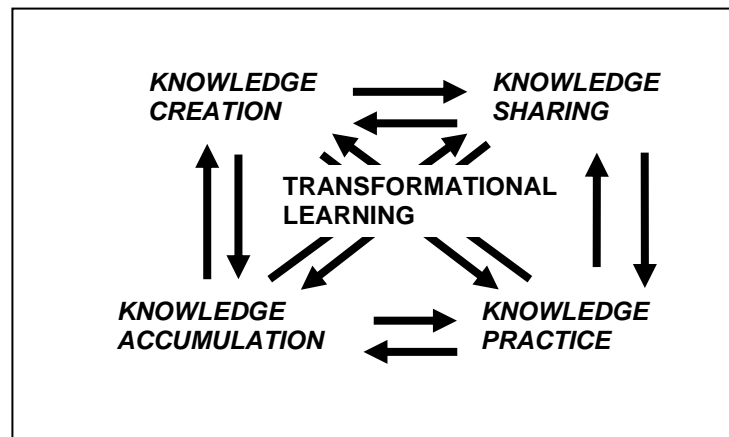


Figure 5: Relationships between transformational learning and knowledge flow

The challenge is to transform parts of tacit and explicit knowledge into a model form of knowledge, which more easily can be shared, used and accumulated (Campagnolo, 2008). Tacit knowledge, however, is typically less easy to transform than explicit knowledge captured in documents and manuals. Some aspects of tacit knowledge are actually impossible to replicate or too costly to imitate. In addition, tacit knowledge often includes a social dimension deeply embedded in the culture of the organisation or network of organisations. Hence, far from all knowledge can or should be transformed into a model form.

Such an unrestricted flow of knowledge can be enhanced by various devises as follows:

- The creation of learning spaces or work space laboratories where managers and employees can perform proactive-creative workshops using for instance search

conferences and scenario workshops, design games, interactive planning, participatory SWOT or future creating workshops (Rasmussen, 2008).

- The creation of opportunities for networking or peer exchange between companies and knowledge institutions as a means of combining novel and already practiced ideas and knowledge (Rasmussen, 2005).
- The development of repository systems to share and accumulate knowledge created anywhere in the organisation (Debowski, 2006).
- Education and training of managers and employees to use the new opportunities and methods as means to create new forms of work organisation (Broberg, 2007; Fricke, 1983).

However, such devices are useless, when the conventional management paradigm of top-down commands continues to keep the creative abilities in the organisation in an 'iron-cage', as Max Weber termed the restrictive version of bureaucracy (Barber, 1993; Weber, 1930). Hence, an interactive leadership paradigm must accompany the implementation of proactive devices and methods. Three different forms of leadership roles should be encouraged as shown in figure 6:

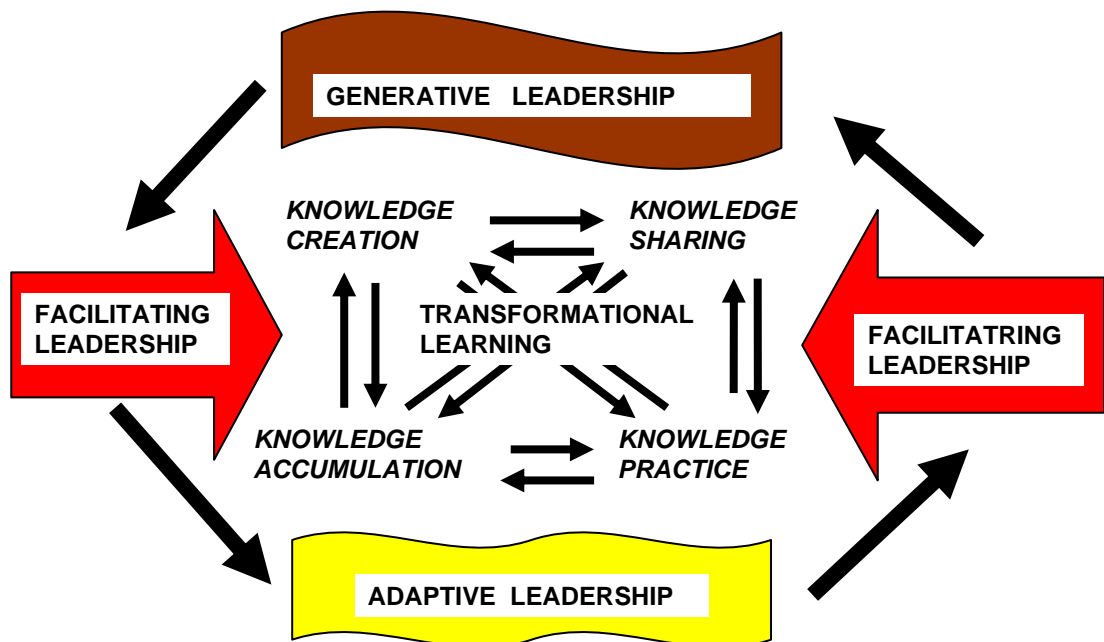


Figure 6: Relationships between interactive leadership, knowledge flow and transformational learning

Generative leadership is focusing on the creation of structures and interaction patterns that stimulate creativity and innovation, for instance learning spaces, communication networks, repository systems and/or resources to use proactive methods.

While generative leadership is framing the structural and procedural context for creative knowledge flow (Surie and Hazy, 2007), *adaptive leadership* is a participatory and collective form of leadership that draws upon the combined knowledge of various members. It is non-positional, informal and oriented to make appropriate change of actions or norms when necessary. Adaptive leadership can occur anywhere in the organisation for instance when unexpected challenges require fast and adaptive responses. In order to ensure the dynamics between those two forms of leadership, a third form of leadership is necessary, which sometimes is termed enabling leadership (Marion and Uhl-bien, 2007). In this context the author prefers *facilitating leadership*, because it provides a more precise connection to the use of proactive approaches. As shown in figure 6, *facilitating leadership* contains two main functions. One is to guide the interaction between the generative and adaptive levels. The other main function is to ensure, that the novel ideas and experiences made anywhere in the organisation is communicated and used in the organisation. The effective outcomes of these three forms of leadership depend on the balances between four organisational principles:

- redundancy
- requisite variety
- minimum specification of rules
- multi-levelled cohesion

as shown in figure 7:

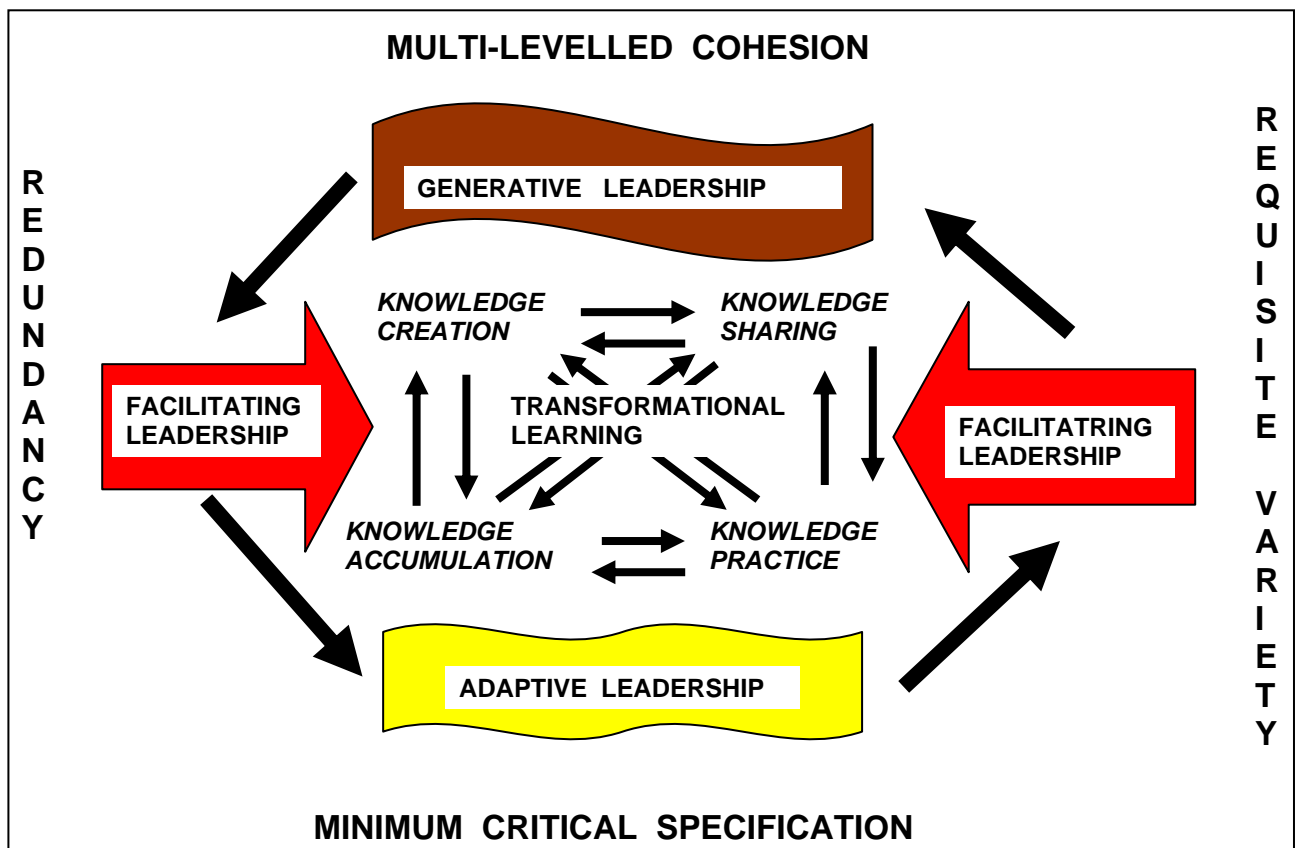


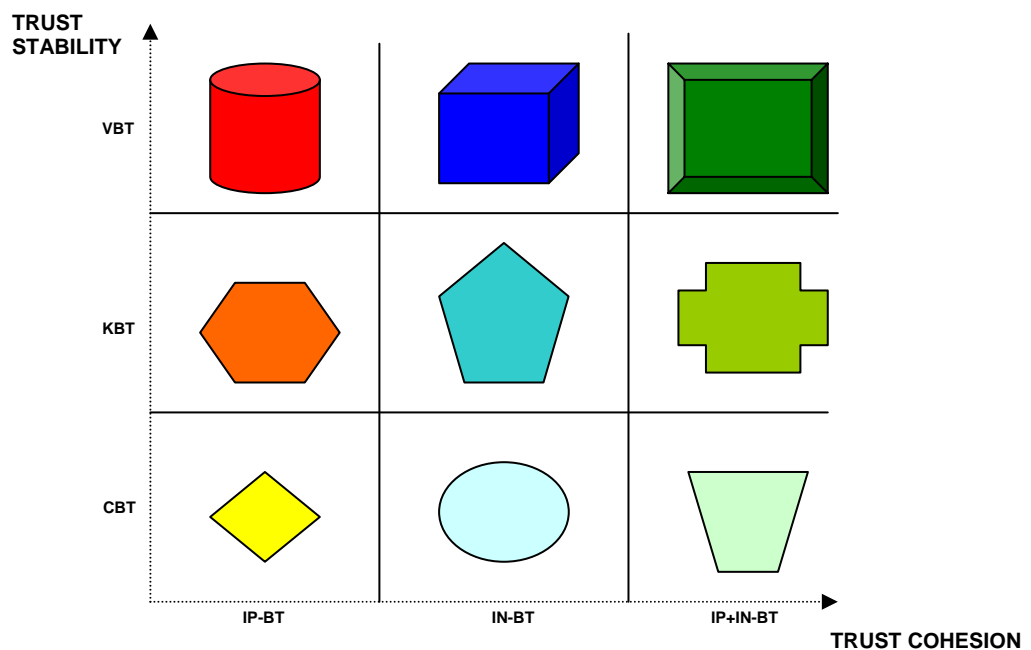
Figure 7: Relationship between organisational principles, leadership, knowledge flow and learning

The principle of *redundancy of functions* is coined by Fred Emery (Emery, 1969). Instead of spare parts being added to a system, extra functions are added to each of the entities. Each entity is able to engage in a variety of functions, rather than just perform a single, specialised function. An example is semi-autonomous work groups, where members acquire multiple skills and thus being able to substitute for each other when the needs arise (Morgan, 1986). The question is, however, how much redundancy of functions should be built into each entity? In practice it is impossible for everybody to be skilled in all the jobs in the organisation.

Hence a second trait is necessary to counterbalance the principle of redundancy, namely *requisite variety*. This principle was originally coined by Ross Ashby (1960). He suggested that the internal diversity of any self-regulating system must match the variety and complexity of its environment. In an organisational context this means that all entities of an organisation should embody critical aspects of the environment thus being able to cope with the challenges they are facing or likely to face (Morgan, 1986). The combined effect of the two principles matches the reactive-responsive and proactive-adaptive approaches as defined in this paper. However, to be proactive-creative two more principles are needed: the principle of minimum critical specification and the principle of multi-levelled cohesion (see figure 7).

Minimum critical specification suggests that leaders should create conditions to enhance flexibility and creativity rather than define organisational procedures as detailed as possible. Flexibility means that roles and behaviour can respond adaptively and creatively to changes in the environment. According to the interactive paradigm, inquiry provides a much better form of proactive-creative approach than pre-designed procedures and position-fixed roles. Minimum critical specification reverses the bureaucratic principle of clear and precise description of every role and procedure in the organisation. It helps to keep the organisation adaptive and creative in relation to current and prospective challenges from the environment. However, there is a risk that it may result in chaos. Even though chaos cannot be predicted, it is possible to set up some frames to handle such a risk, namely multi-levelled cohesion.

In general, *multi-levelled cohesion* are the forces which keep the organisation together by providing a shared sense of trust not only within special groups but also across groups and sections. It is providing a frame of common interpretation and meaning by sharing values, visions, and occasional rituals. A high degree of division of labour and flexibility may result in fragmental groups and competing sub-cultures, and thus less cohesion. For instance, development engineers may take a different view than production engineers or people in the sales division. Employees at the shop floor may be grouped in several sub-cultures. Different ethnic groups may also give rise to different norms and pattern of behaviour. These forms of sub-cultures can contribute creatively to proactive approaches and transformational learning, but the precondition is, that they all share a sense of value or knowledge based trust across the sub-cultures as illustrated in figure 8:



CBT: Calculus Based Trust IP-BT: Inter-Personal Based trust
 KBT: Knowledge Based Trust IN-BT: Institutional Based trust
 VBT: Value Based trust IP+IN-BT: Inter-Personal + Institutional Based Trust

Figure 8: Levels of trust stability and trust cohesion.

Calculus based trust (CBT) is grounded in rewards and punishments depending on the pursuing respectively violating of the trusted agreements. Potential sanctions in outsourcing relationships include loss of repeat business or of reputation. Hence, CBT fasten only limited levels of knowledge sharing necessary to fulfil the formalised requirements of the contract.

Knowledge based trust (KBT) relies on knowledge about the involved actors developed through interaction over time. The assumption is that more knowledge about each other makes one able to predict the other's behaviour in a more precise way. KBT is more stable and stronger than CBT, because it is based on a more consistent understanding of why the actors is pursuing or deviating from the initial agreements.

Value based trust (VBT) means that the actors are sharing common values and interests. The common ground facilitates the sharing of knowledge, norms, needs and preferences. VBT is created either because the actors are belonging to the similar cultural roots, or because they have recognized and learned from each other through interaction and collaboration. VBT is more stable than CBT

and KBT, because sharing of common values is normally associated to deeper levels of the individual or organisation than common knowledge and calculus based behaviour.

The other dimension illustrated in figure 8 is the level of *trust cohesion*. Cohesion refers to the degree in which different elements is bound together either by interpersonal, institutional or both kinds of relationships. *Interpersonal based trust (IP-BT)* is a trust relationship developed between two or more individuals based on either CBT, KBT or VBT. *Institutional based trust (IN-BT)* is formal agreements between two or more institutions independent of the persons involved. Finally, *IP+IN-BT* is trust where interpersonal as well as the institutional trust relationships are existing based on either CBT, KBT or VBT (see figure 8). The assumption is that a trust relationship becomes stronger when it develops more stable and/or more cohesive attributes, and weaker when it is developing less stable and/or less cohesive attributes. Thus the strongest trust relationship is a VBT bound together by both interpersonal and institutional relationships. The weakest trust relationship is CBT depending on interpersonal based trust only. By focusing on the relationships between organisational routines and how they affects and are affected by experiential learning, it is possible to enhance the level from calculus and interpersonal based trust to knowledge and value based trust sustained at the institutional as well as at the interpersonal levels. Proactive methods like search conference, scenario workshops, future creating workshops, interactive planning, interactive design games, participative SWOT helps the participants to focus on these relationships and transform them into learning at a higher complexity level (see figure 4).

Summing up, transformational learning requires:

- An unrestricted and transparent knowledge flow between knowledge creation, knowledge sharing, knowledge practice, and knowledge accumulation anywhere in the organisation.
- A continuous and parallel interaction between generative, facilitating and adaptive leadership to ensure the unrestricted and transparent knowledge flow and transformational learning.
- A dynamic and interactive relationship between four organisational principles: redundancy of functions, requisite variety, minimum critical specification and multi-levelled cohesion. The implementation of these relationships helps to create space and surplus resources and willingness to participate in both reactive and proactive approaches of knowledge flow and transformational learning.

On the one hand, proactive methods can only be successfully applied where knowledge flow, interactive leadership and the four principles of organisation are already existing to a certain extent. On the other hand, the application of proactive methods can help the members of the organisation to achieve a higher level of transformational learning.

Conclusions and perspectives

Reactive and proactive approaches are to be considered as complementary along a continuum, rather than as a mutually exclusive dichotomy. However, past and current participatory approaches tend to be reactively oriented, rather than focusing on prospective needs. Some of these approaches have proved to be successful within a short

term perspective as ‘experimental gardens’. But often these ‘gardens’ have been isolated from the other parts of the organisation and created ‘an organisational improvement paradox’ (Goodman and Rousseau, 2004). Others have faded away as soon as the external funding of the project have ended. Though not being able to survive in an ordinary organisational structure, many of them have contributed with new methodological knowledge and devices to be used in other approaches. However, more comprehensive and long term approaches are needed to cope with the rising complexity and dynamics of global and local environments. A number of proactive methods are available for instance search conferences, scenario workshops, future creating workshops, interactive planning procedures, design games or participatory SWOT. Each of them can be used to initiate organisational transformation through participatory approaches. Or they can be combined as in the example of search conference and interactive scenario analysis. Using these methods proactively enhance the integration of academic knowledge and daily experiences in a transformational learning process (Streck, 2007). The challenge is to transform implicit assumptions and experiences into explicit themes of action in order to achieve practical change and theoretical understanding at the same time (Dick, 2007). However, to be able to apply these methods successfully presupposes certain requirements and abilities of the organisations. The main obstacles to participatory proactive approaches are lack of time and incentives, rigid hierarchies, the piece-rate payment system, the resignation of employees, and the role conflict between middle-managers and workers. On the other hand, the ideal conditions for proactive approaches are unrestricted knowledge flow, interactive leadership and the implementation of principles like redundancy of functions, requisite variety, minimum critical specification and multi-levelled cohesion and trust. When these conditions are present to a certain extent and one or some of the above mentioned proactive and participative methods are used, a higher level of transformational learning can be achieved, focusing on an interactive change of values, norms and behaviour. Participatory and transformational learning is about aligning the operational and strategic levels of change and development by using *all* the possible abilities and resources in the organisation rather than specialised ‘experts’ and managers only. Participatory and transformational learning approaches can no longer meaningfully be considered as approaches to help shop-floor workers to achieve better working conditions only. This social rationale has to be considered as a part of a much more comprehensive rationale including the economic rationale of much more effectively working employees and the political rationale of less power hierarchies. Such an integrative rationale can be developed and implemented by using proactive-creative methodologies in a participatory manner, because they can enhance the cross-sector and cross-cultural understanding and promote the creative and innovative capabilities of all the participants in the organisation. Though the practical outcomes of participatory approaches have varied during the last decades (Summers and Hyman, 2005), two scientifically documented evidences are still in favour of promoting participatory approaches. *The first evidence* is, that the navigation in a complex and dynamic world does not only depend on the excellence and price level of the products or services, nor just its market share, networks or technology. It depends on the organisational capabilities to elicit, harness and improve the human resources resident in their employees and managers too. Only when these resources get energized and activated both in short and long term perspectives, the organisation becomes an innovative and effective ‘player’ in a complex and dynamic environment (Steger, 2007).

The second evidence is, that if people don't participate in and 'own' the novel idea or solution, the implementation will be only half-hearted at best and most likely fail (Schön, 1983; Rasmussen, 2004).

Despite these evidences *further research and methodological development* are needed:

- Concerning the question of organisational obstacles of proactive approaches, further research is needed to identify other possible obstacles, and the possible interactive relationships between them.
- Further studies are also needed of the combined use of proactive-creative methods. For instance, which methods or combination of methods can meaningfully be applied in which situations and contexts?
- Further research is needed to study how the interactive processes between generative, facilitative and adaptive levels are influencing the use and outcomes of participatory approaches?
- So far, the majority of studies of the effect of employee participation have been 'snapshots' carried out within a relative short time span. More longitudinal studies of the economic, social and political effects of employee participation are needed to gain insight into the complex interaction between organisational structure, forms of leadership, knowledge flow systems and learning practices.

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