

Trajectories in Process Evolution; Applying TIME GUIDE methods in Finnish companies

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Abstract

Eight process development projects applying TIME GUIDE process assessment or simulation game methods in different organizational cultures are analyzed. Their evolution trajectories are described by change initiation, and the subsequent development in manageability, process awareness, and organizational cooperation in the project. Fruitful misfits between change management and organizational culture are found: change projects in informal and non-hierarchical cultures are very successful, when they are systematically managed. In hierarchical and formal cultures, change can be successfully initiated also bottom-up, if there is a strong change champion. The results also indicate, that change projects should start with the informal simulation games, rather than with the more formal and analytic process assessment method. Applied together, the methods can create a spiral of continuous process renewal.

Keywords:

Process change, evolution trajectory, organizational culture, change management

1 INTRODUCTION

1.1 Background

Industrial enterprises are today facing a turbulent and even accelerating restructuring phase. The turbulence stems from hardening competition and structural changes in the global networked market, from the rapid development of technology as well as from the enterprises' own reactive and proactive changes. As a result, competition is rising to a higher level: speed, flexibility, quality and cost efficiency are pursued simultaneously (Stalk and Hout 1990).

The present direction of evolution is towards the process-oriented lean enterprises and lean networks (Womack and Jones 1994, Smeds 1994a). The lean structures can be further enhanced through IT, if be preceded, or at least accompanied, by organizational integration: by new process-oriented thinking, strategies, structures and practices. (Smeds 1994b, 1996, Davenport 1993).

Managers are aware of these huge evolution challenges. Operational process changes for greater flexibility, shorter throughput times and quality are seen as a necessity to survive in hardening competition. The best performing companies are already quite far on their learning curve in managing continuous evolution, but most of them seem only to be entering this organizational learning and innovation process. (Smeds 1996)

Enterprise evolution should not be led as crisis driven "fire fighting". It should be systematically managed. According to Peter Drucker (1985 p 254-255), crisis and revolution are signals of failure in enterprise self-renewal. Instead, he calls for a "purposeful evolution with direction and under control". Drucker refers to product innovations and entrepreneurship, but the same principle can also be applied to process innovations. Even radical process changes should be managed in steps, allowing organizational learning on the "evolution path" (Smeds 1995, 1996).

A systematic and continuous process renewal requires new managerial methods and tools, which support innovation and learning on all organizational levels. To answer to these needs, methods for process assessment, process simulation, and benchmarking are developed in the ongoing EUREKA-project TIME GUIDE (cf Colom et al 1994, Laakso et al 1995).

1.2 Objectives

During the Finnish TIME GUIDE subproject, eight industrial pilot companies have co-developed and tested the new process assessment and simulation game methods and software prototypes. The aim of this paper is to explore the evolution trajectories of these operational, process-oriented change projects, from the viewpoint of managing change.

Differences in organizational culture and change management are sought, to explain why certain projects seem to lead to a trajectory of continuous evolution, while others have reached a halt. Of special interest in explaining the differences are the dimensions of organizational culture. From the results, first tentative conclusions about cultural factors in managing process change can be drawn.

2 PROCESS CHANGE AND ORGANIZATIONAL FACTORS

2.1 Participation, change champions, and top management support

Continuous process renewal requires an organizational culture, that supports and guides the knowledge creation and learning of the whole organization. Process development ideas stem from the interaction of individuals from different functions and organizational layers (Moss Kanter 1983, Burgelman 1983, van de Ven 1986, Morgan 1986). But ideas become innovations only after successful implementation, which improves the productivity and profitability of the enterprise (e.g. Urabe 1988 p 3).

Participation is one main principle to achieve both high quality ideas and their successful implementation. The employees possess important knowledge about the processes, which is indispensable for innovative process redesign, and they are the key actors in realizing these ideas, in implementation. Through interfunctional and interlevel cooperation in development teams, a common understanding and commitment to change is created, more viable ideas are developed, and their implementation into innovations is facilitated (e.g. Mumford 1981, Cotton et al 1988, Zuboff 1991; also Smeds 1996).

Many empirical studies on organizational change show, that a prerequisite for the success of a change project is the existence of a *change champion*, a member of the organization, who acts enthusiastically to get the idea implemented (Moss Kanter 1983, Howell and Higgins 1990, Smeds 1994b). Innovative champions build informal support networks for the change. They possess the power to sell their ideas within the organization: they have the required information, political intelligence and expertise, resources and support. These qualities of key people cannot be created through managerial methods. If however the culture and management of the enterprise supports innovation, then the possibilities are greater that champions of change are found in the organization.

Process change needs a vision, objectives and guidelines, where the role of top management is important. In many change project studies, *top management support* has been identified as a major success factor. But top management support should not be given too early in the innovation process: management decisions concerning the new process solutions restrict the creative interplay of many alternative ideas, and thus also the quality of the outcome (Bartunek 1988). Middle management's role has been found crucial in "reframing" the radical ideas of operational innovators, so that top management in retrospect could rationalize the successful results and justify even a changed vision (Burgelman 1983).

Thus, the iteration of top-down and bottom-up, top management guidance and grass-roots innovation, is a crucial but difficult feature in developing new process structures.

2.2 Dimensions of organizational culture in process change

Gert Hofstede (1991) has presented an empirical classification of national cultures, based on four basic dimensions (power distance, individualism-collectivism, masculinity-femininity, and uncertainty avoidance). Two of these dimensions, power distance and uncertainty avoidance, lie in the heart of organizing and organizational culture, and can thus be used also to distinguish the cultural differences between companies (Hofstede 1991, 150-153).

Small power-distance organizations (Hofstede 199, 26-28) are decentralized and organic: there are few hierarchical layers, and the relations between subordinates and bosses are easy. The emotional difference between them is relatively small, equality and participation are valued. Thus it is easy for an employee to present process improvement ideas and initiatives. *Large power-distance* organizations have high hierarchies and formal authority. The subordinates are unlikely to approach and contradict their bosses directly; the dominant management culture is autocratic and paternalistic.

The other cultural dimension is the "need for uncertainty avoidance" (Hofstede 1991, 111-113). In *strong uncertainty avoiding* organizations, formal plans and rules are appreciated, and managerial attention is focused on day-to-day operational efficiency. In *weak uncertainty avoiding* organizations, there is more tolerance for unstructured problems and deviant ideas;

these organizations are more likely to stimulate creativity and innovation. (Hofstede 1991, 120-123).

Since process changes engage the whole organization in a learning process, cultural differences have an important role in their management. There is no best way for change management. Rather, the detailed management practices should build on the cultural characteristics of the organization, and also be sensitive to the specific micro-cultures inside the different units and functions.

For the management of process change in different organizational cultures, the following hypotheses can be formulated (cf also Smets 1996):

- In a small power distance organization, change projects could get successfully initiated in a bottom-up fashion. Top management support must then be achieved later, e.g. through proven first results and championing.
- In large power distance organizations, successful change projects are likely to be initiated from the top. Later, the engagement of employees in process innovation becomes a crucial factor in successful change.
- In strong uncertainty avoiding organizations, change projects are formally planned and managed; efficient project management is achieved, but maybe at the cost of reduced innovativeness.
- Weak uncertainty avoiding companies are very creative. However, they can be at a disadvantage in the implementation of the ideas, which should be systematically managed.

'Table 1' shows the combinations of these two dimensions in a grid, which typifies change management in different organizational cultures. The grid is in accordance with the typology of Mintzberg(1979), with the exclusion of the Divisionalized form. However, this typology presents only a static view of organizational culture and change management. Empirically found successful "fits" might well differ from the static types in 'Table 1'.

Table 1 The static classification of process change management in different cultures.

<i>Power distance</i>	<i>Uncertainty avoidance</i>	
	<i>LOW</i>	<i>HIGH</i>
<i>SMALL</i>	Bottom-up initiation Informal "muddling through" in project management Strengths: Creativity, commitment Weaknesses: Inefficiency in implementation? Many iterations before management approval? (Mintzberg's Adhocracy, Coordination through mutual adjustment)	Bottom-up initiation Formal project management Strengths: Formal project management & autonomy in idea generation lead to good solutions in an efficient way. Weaknesses: Unclear goals? (Mintzberg's Professional bureaucracy, Coordination through common skills and knowledge)
<i>LARGE</i>	Top-down initiation Informal project management, muddling through Strengths: Clear goals Weaknesses: Authoritative top management restricts creativity (too much top management support?) (Mintzberg's Simple structure, Coordination through direct supervision)	Top-down initiation Formal project management using standard rules and procedures Strengths: Efficiency of project management Weaknesses: Stifled creativity, problems in commitment of employees (Mintzberg's Machine bureaucracy, Coordination through standardization of work processes)

3

TIME GUIDE METHODS FOR PROCESS CHANGE

In the Finnish TIME GUIDE subproject, two methods have been developed to evaluate the current business processes and their characteristics, and to design new process structures. The focus of these methods are in process structure modelling, performance evaluation and social simulation of new process designs.

The two methods developed are process assessment (PA) and simulation games (SG). 'Figure 1' shows the developed overall model of business process improvement, and the hypothesized sequence in which the two methods should be applied to support the different improvement phases towards a spiral of learning.

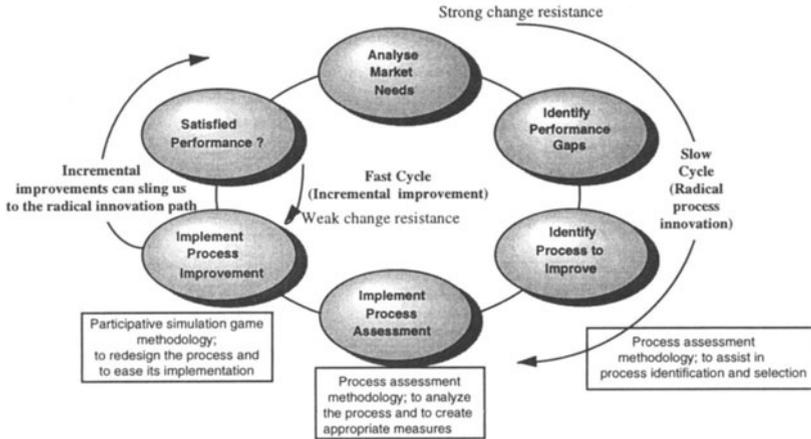


Figure 1 The cyclical business process improvement model introduced in TIME GUIDE (Laakso et al. 1995).

In the model, a change project starts with process assessment (PA). It is an analytical method, that helps the enterprise to become aware of the weak points in its processes, and to define a new set of performance measures that supports process-oriented management. After the PA procedure, the company has a clear picture what is happening in the assessed process. This consciousness is needed in the process redesign. The new concrete performance measures and restructured objectives provide the “red thread” for the design of the new process. PA proceeds through a sequence of seven steps as illustrated in ‘Figure 2’.

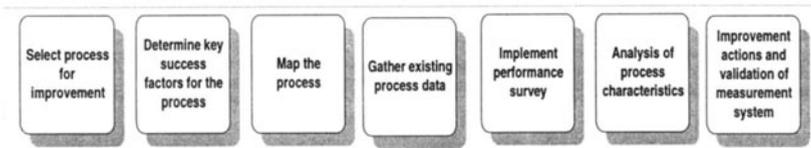


Figure 2 The process assessment (PA) procedure (Laakso et al. 1995).

Process assessment is conducted in participative cross-functional and cross-hierarchical teams, to ensure a broad, common understanding about the studied process. When the basic structure of the business process is captured, a quantitative analysis of quality, cost and time can be performed. The availability of these baseline measures is vital for reliability and credibility, when the capability of current processes is assessed.

After the PA procedure, simulation games (SG) are the next step in the business process improvement cycle. Simulation games allow a rapid, participative process prototyping for business process redesign. (Smeds 1994a). Compared to the analytical PA-procedure, the

basic nature of simulation games is synthesis. The six main phases of the SG method are depicted in 'Figure 3'.

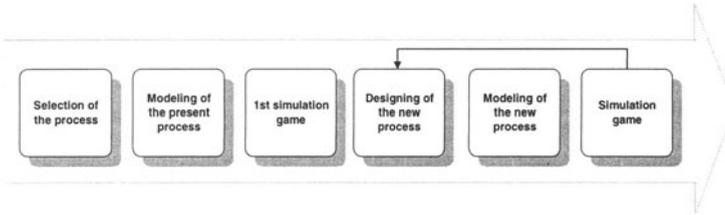


Figure 3 The main phases of the simulation game method.

The first simulation game visualizes to all participants the present state of the process. The game provides a common understanding of the whole chain with its strengths and weaknesses. It shows the interdependence between different departments and activities, and stresses the importance of co-operation and communication (Smeds and Haho 1995 a,b, Laakso et al. 1995).

In the later phase of the change project, simulation games provide a possibility to experiment the functionality of the designed process or even different process alternatives. The simulation game provides also a learning experience to the participants. Thereafter simulation games can be used for employee training before the actual implementation of the new process and for training of newcomers when needed (Smeds 1994a, Forssén-Nyberg and Hakamäki 1996).

Through the use of process assessment and simulation games, it is hypothesized, that an enterprise can start a spiral of continuous process renewal: incremental process improvement steps can lead the enterprise towards managed, radical restructuring (cf the spiral from the Fast Cycle in 'Figure 1'). However, the ways to combine these methods can vary from the ideal model of 'Figure 1', based e.g. on differences in organizational culture, in process characteristics, and in change management skills.

4 PROCESS CHANGE TRAJECTORIES IN PILOT COMPANIES

In the Finnish TIME GUIDE subproject, eight industrial companies have applied and tested the process assessment and/or simulation game methods in their change projects. In the following, the change projects' successes and failures in initiating and continuing process improvement are analyzed, to find guidelines for the choice of the methods, and for the initiation of successful change projects in different types of organizations.

The cultures of the pilot companies' specific units, where the change projects were realized, have been typified by the researchers during their action research. When modelling the current processes, they have observed the prevailing organizational behavior patterns. An understanding of the company's current ways of operation, and the unwritten but underlying business assumptions, are a prerequisite for successful change (Laakso et. al. 1996).

4.1. Initiation of the change projects

The eight change projects differ considerably. They are realized in companies from different industries, and in very different processes, from innovation to maintenance and order fulfillment. The companies have also chosen differently from the two given TIME GUIDE method alternatives. However, they can be compared in their trajectories of process evolution. The initial starting phases of the eight change projects are classified in 'Table 2', according to the organizational culture of the unit, the initiation level of the change project, the role and status of the change champion, and the existing skill in change project management. The criteria are listed in more detail in the following:

- Industry type of the case company
- The target process chosen for change
- Organizational culture in the specific unit or function where change was initiated:
power distance: low / high
uncertainty avoidance: low / high
- Change project initiation level:
who initiated the project: top management, middle management or support staff
- Change champion
organizational status: consultant, support staff or operational staff
influence of the champion in the organization: weak / strong.
- Project management skill (informal, unsystematic / formal, systematic).

Table 2 Change project initiation in the eight cases

Case code	Industry	Process type	Organizational culture		Project initiation level	Change champion		Project organization
			Power distance	Uncertainty avoidance		Who	Influence	
C1	Aviation	Maintenance	Low	High	Top mgt.	Consult	Weak	Informal
C2	Metal	Order fulfillment	High	High	Support	S. staff	Strong	Formal
C3	Electronics	Innovation	High	Low	Mid. mgt.	Consult	Weak	Informal
C4	Metal	Document handling	High	Low	Mid. mgt.	S. staff	Weak	Informal
C5	Textile care	Order fulfillment	Low	High	Top mgt.	O. staff	Strong	Informal
C6	Pharmaceutical	Order fulfillment	High	High	Mid. mgt.	S. staff	Weak	Formal
C7	Electronics	R&D management	Low	Low	Support	S. staff	Weak	Formal
C8	Electronics	Order fulfillment	Low	Low	Support	S. staff	Weak	Formal

4.2 Evolution in manageability, process-orientation and co-operation

The change projects have all been underway at least six months, and their evolution trajectories from initiation until present day are now analyzed for the first time. The trajectories are described by tracking the development in the manageability of the change projects (Table 3), and the resulting evolution in process-orientation and organizational co-operation in the project (Table 4).

The manageability of the change projects is described using the following variables in 'Table 3':

- The method chosen for the change project: process assessment (PA), simulation games (SG) or both (PA&SG)
- Change need (weak / strong):
i.e. is there a clear change need, or more a general interest to learn process management concepts?
- Commitment for change at every level of the organization (weak / strong).
- Scope for the change project (none / vague / explicit)
i.e. are the studied process and its boundaries clearly defined?
- Quantified objectives for the change project (none / vague / explicit).

Table 3. Evolution of the change projects' manageability

Case code	Method used	Change arena							
		Change need		Commitment		Clear scope for change project		Clear change objectives	
		Initial	Now	Initial	Now	Initial	Now	Initial	Now
C1	PA	Strong	→	Weak	↘	Vague	None	None	None
C2	SG	Strong	→	Strong	→	Explicit	Explicit	Explicit	Explicit
C3	PA	Weak	→	Weak	→	Explicit	None	Vague	None
C4	SG	Strong	→	Weak	↑	Explicit	Explicit	Vague	Vague
C5	PA	Weak	↗	Weak	↗	Vague	Explicit	Vague	Explicit
C6	PA&SG	Weak	↗	Strong	↘	Vague	Vague	Vague	Vague
C7	SG	Weak	↗	Strong	→	Vague	Vague	Vague	Vague
C8	PA	Strong	→	Strong	↗	Explicit	Explicit	Vague	Explicit

- Remained at the same level
- ↘ Decreased from the initial level
- ↗ Increased from the initial level
- ↑ Jump to a new level

A trajectory is interpreted as successful, if the applied TIME GUIDE method is adopted for continuous use, and as a failure, if no adopted (Table 4). The evolution in process-orientation and organizational co-operation is tracked by using the following variables in 'Table 4':

- Level of cross-functional co-operation (weak /strong)
i.e. is the project organized inside one function or are there cross functional project teams?
- Level of cross-hierarchical co-operation (weak / strong)
i.e. has the project visible support and acceptance on all organizational levels?
- Level of process awareness in the organization (none / low / middle / high)
- Adoption of the method for continuous use to support change projects in the organization
Yes: successful trajectory / No: failed trajectory

Table 4 Evolution in the change projects' process-orientation and organizational co-operation

Case code	Method used	Process type	Cross functional cooperation		Cross hierarchical cooperation		Awareness of processes		Adapted for continuous use
			Initial	Now	Initial	Now	Initial	Now	
C1	PA	Maintenance	Weak	→	Weak	→	None	→	No
C2	SG	Order fulfillment	Weak	↗	Strong	→	Low	↗	Yes
C3	PA	Innovation	Weak	→	Weak	→	Low	→	No
C4	SG	Document handling	Weak	↗	Strong	→	Med.	↗	Planned
C5	PA	Order fulfillment	Strong	→	Weak	↑	None	↑	Yes
C6	PA&SG	Order fulfillment	Weak	→	Weak	→	None	↗	Yes
C7	SG	R&D management	Weak	↗	Strong	→	Med.	↗	Yes
C8	PA	Order fulfillment	Weak	↗	Strong	→	Med.	↗	Yes

→ Remained at the same level ↗ Increased from the initial level
 ↘ Decreased from the initial level ↑ Jump to a new level

5 SUCCESS AND FAILURE IN MANAGING THE TRAJECTORIES

Six out of eight change projects are on a successful trajectory, and two have failed. The successes and failures are analyzed more deeply by looking at the fits / misfits in project culture and change management. Also the choice of the specific TIME GUIDE method is assessed against this background.

Using the initial static typology of 'Figure 1', we can locate the change projects together with their culturally "fitting" but static management hypotheses into the grid of 'Table 5'.

Concerning the TIME GUIDE methods, following summarizing conclusions can immediately be drawn from 'Figure 5': The choice of the first method in initiation phase of a change project does not depend on the organizational culture of the unit or function where change is initiated. Process assessment or simulation games can both be used as first methods. However, irrespective of organizational culture, the results give some indication that it would be recommendable to use simulation games as first method: all three SG-initiated projects are on a successful trajectory, whereas out of the five PA-initiated projects, two have failed.

5.1 The successful trajectories

The successful trajectories C7 and C8 in the low power-distance, low uncertainty avoidance culture share many common features. They were both initiated bottom-up by support staff members, and driven further by support staff champions with rather weak influence. But contrary to the static hypothesis, they both had *formal change management procedures*. This misfits have led in both change projects to extremely good results: process awareness has improved from its medium level, cross-functional cooperation has risen, cross-hierarchical cooperation has remained strong. Also change need as well as the commitment to change have remained high or even increased during the project.

Table 5 The static hypotheses of process change management in different cultures.

Power distance	Uncertainty avoidance	
	LOW	HIGH
SMALL	<p>C7 SUCCESS SG C8 SUCCESS PA</p> <p>Hypothesis: Bottom-up initiation Informal project management recommendable 1st method: SG Strengths: Creativity, commitment Weaknesses: Inefficiency in implementation? Many iterations before management approval?</p>	<p>C1 FAILURE PA C5 SUCCESS PA</p> <p>Hypothesis: Bottom-up initiation Formal project management recommendable 1st method: PA or SG Strengths: Formal project management & autonomy in idea generation lead to good solutions in an efficient way. Weaknesses: Unclear goals?</p>
LARGE	<p>C3 FAILURE PA C4 SUCCESS (planned) SG</p> <p>Hypothesis: Top-down initiation Informal project management recommendable 1st method: SG or PA Strengths: Clear goals Weaknesses: Authoritative top management restricts creativity (too much top management support?)</p>	<p>C2 SUCCESS SG C6 SUCCESS PA, then SG</p> <p>Hypothesis: Top-down initiation Formal project management recommendable 1st method: PA Strengths: Efficiency of project management Weaknesses: Stifled creativity, problems in commitment of employees?</p>

However, there are also some differences between these two successful projects. The C7 process is a complex R&D process. It had initially vague change objectives and scope, and it is still remaining in this fluid state. Nevertheless, it is able to manage the complex change through formal methods; it started its change with the SG.

The less complex order fulfillment process C8 started with PA. Its initially vague change objectives have become clear during the project, which can be credited to the analytical features of PA. It is also important to mention, that C8 is connected to a huge IT-project; the C8 process is developed first, and the IT-system is designed in parallel to support the new process.

In the opposite high power-distance, high uncertainty avoidance culture of 'Figure 5', we find also two successful trajectories. Projects C2 and C6 are both order fulfillment processes. Against the static hypothesis, they were *not initiated by Top Management*; also the champions were only staff members. Both projects however used formal change management methods, as their culture would require.

The C2 project started with SG, and the influence of the *staff champion was strong*. The results are good: Change need and commitment to change on all organizational levels have remained high, and the scope and objectives of change are explicit. Also cross-functional cooperation and process awareness have increased, even cross-hierarchical cooperation in the project has remained high.

For the C6 project, the results are more mixed: The scope and objectives for change have remained vague. The change need has become more clear, but the initially strong commitment to change has decreased. Organizational co-operation in the project has remained weak. Process awareness has however begun to develop.

Partial explanations to the development of the C6 project can be sought in its pre-history. It had started as a technically oriented IT-project already two years before the TIME GUIDE pilot project. The PA and SG methods applied in TIME GUIDE revealed huge change needs in the processes before IT should be implemented. Thus the old change plans had to be questioned, which caused confusion. However, the company is taking the two methods, PA and SG, into continuous use. The originally very functional and hierarchical organization is gradually learning process management; it is at first applying these methods to develop processes within its different functions.

The two remaining success trajectories represent opposite cultures: the low power distance, high uncertainty avoidance culture of C5, and the high power-distance, low uncertainty avoiding culture of C4.

The C5 project concerns an order fulfillment process, that started with the PA method. The project was *initiated by top management* (misfit), and pushed forward by a strong operative champion. Even with *informal project management* (misfit) it has reached extremely good evolution management results: the scope and objectives of change have become clear, the change need and commitment have risen. The already high cross-functional cooperation has been preserved, and cross-hierarchical cooperation and process awareness have risen dramatically. This case shows the major *importance of a strong champion*, that has also operative responsibility.

The C4 project develops a document handling process, and uses the SG method. The project was *initiated by middle management* (misfit), and pushed forward by a weak support staff champion. However, it has reached positive results by applying *informal project management* (fit): the scope for change has remained clear; objectives are still vague, but the strong need for change is now being supported by a dramatic increase in the commitment to change. Cross-functional cooperation has improved, the high level of cross-hierarchical cooperation has been preserved. Process awareness has risen from its medium level.

5.2 The failed trajectories

The failed project C1 represents a low power distance, high uncertainty avoiding culture. The change concerned the maintenance process, and PA was applied. This project also had a pre-history as an IT-project. Change was *initiated by top management* (misfit) with an external consultant with *weak influence as champion*. *Project management was informal* (misfit). Change management results were extremely poor: In spite of the strong initial change need, the organization's weak commitment even decreased during the project. The change objectives and scope did not clear up, nor did process awareness or organizational co-operation improve. In the culture of low power distance, maybe SG could as a first step have helped to improve the organizational factors and thus the manageability of the change project?

The other failure is project C3. It concerned an innovation process in a high power-distance, low uncertainty avoiding culture, using PA as change management method. The change was *initiated by middle management* (misfit), with a *weak consultant champion*. The *informal project management* (fit) ended with extremely poor change management results: The low

initial change need and commitment did not improve during the project. The initial change objectives and scope were lost, and the weak process awareness and organizational cooperation did not improve. In this high power distance culture case, the most important reason for failure is potentially the lack of top management support and thus of broad commitment, which could not be amended through the weak champion.

6 CONCLUSIONS

The initiation of change projects to a successful trajectory of continuous renewal is clearly dependent on organizational culture. However, the static hypotheses about culture and change management are misleading. The strongest success stories in the eight pilot companies come from a certain type of misfit: from change projects, that have been formally managed in an informal, low uncertainty avoiding culture.

The important role of change champions in successful change was borne out also in this study. It compensates for the misfits in lacking top management support, and systematic project management. Especially in high power-distance cultures, where change is initiated only at staff or middle managerial level, the role of a strong champion is indispensable. And, vice versa, if this support is lacking, these misfitting change trajectories fail.

When choosing the TIME GUIDE method to start a change project, the organizational culture of the initiating unit or function is not a decisive factor. Process assessment or simulation games can both be used as first method. However, the results of the case studies give some indication, that change projects should be started with simulation games. Companies starting with their process renewal most often have only informal change project management. Simulation games are easily introduced into this culture. They increase the change need and the commitment to change, improve interlevel and interfunctional cooperation and create process awareness. After this platform for change has been built, it is easier to proceed with process assessment, or with other more formal and analytic change management methods.

The power of successfully managing process innovations lies in the skillful combinations of formal, analytic change management and creative, synthesis-dominated methods (cf Nonaka and Takeuchi, 1995, Smeds 1996). In this sense, the process assessment and the simulation game methods seem to complement each other in a remarkable way, and to start a learning spiral for continuous process renewal. The first results in combining these two methods are positive.

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