CHALMERS

It must be considered that there is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle than to initiate a new order of things...

Niccolò di Bernardo dei Machiavelli

Change Management

A Case Study of SAP Implementation in a Major Company

Master of Science Thesis in International Project Management

SEVİM GÜLER

Department of Civil and Environmental Engineering
Division of Construction Management

CHALMERS UNIVERSITY OF TECHNOLOGY
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Department of Civil and Environmental Engineering
Division of Construction Management

Chalmers University of Technology
SE-412 96 Göteborg
Sweden
Telephone: + 46 (0)31-772 1000

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ABSTRACT

Today's' dynamic business environment usually has the effect of requiring many organizations to change their IT systems. This study involves a theoretical and practical approach to the activities needed to manage a radical change that comes with an IT project (SAP system). The focus will mainly be on change management process and fundamental issues in managing organizational change, including critical success factors, such as communication, motivation and users' awareness, readiness, willingness and expectations. A single case study served to collect both qualitative and quantitative data. The findings provide evidence that there was lack of focus on information sharing and motivational issues and the level of overall awareness, readiness and willingness to change was relatively low. On the other hand, involvement was explored to have positive effect on willingness and self-belief in ability to change. The main conclusions and recommendations drawn from this research were that it is important to establish organizational readiness prior to roll-out, and a change management process should include attention to human factors. In this regard, communication, motivation, participation, training, leadership and management commitment were determined to be the key success factors in change management.

Key words: change management process, SAP implementation, organization, success factors, user

Ändringshantering
En fallstudie av genomförandet av SAP i ett stort företag

Examensarbete inom International Project Management
SEVİM GÜLER
Institutionen för bygg- och miljöteknik
Avdelningen för Construction Management
Chalmers tekniska högskola

SAMMANFATTNING

Dynamiken i företagens verksamhet har i dagsläget tvingat många organisationer att förnya deras IT-system. I denna studie diskuteras en teoretisk och praktisk metod för att hantera de radikala förändringarna som följer med ett nytt IT-system. Fokuset kommer huvudsakligen ligga på förändringsprocessen och frågeställningar gällande enkla organisatoriska förändringar, inkluderat kritiska framgångsfaktorer som kommunikation, motivation och användarnas medvetenhet, beredskap, vilja och förväntningar. En fallstudie används för att samla både kvalitativ – och kvantitativ data. Resultaten visar att fokus på informationsutbyte och motivation var otillräcklig, samt att graden av medvetenhet, beredskap och vilja till förändring var låg. Men å andra sidan har engagemanget gett upphov till villighet och självtilltro på förmågan till förändring. De viktigaste slutsatserna och rekommendationerna, som följd av denna undersökning, har varit att organisationer bör öka sin beredskap inför förändringar, och att en förändringsprocess även bör uppmärksamma mänskliga faktorer. Kommunikation, motivation, närvaro, träning, ledarskap och ledningens engagemang har i detta avseende varit de kritiska framgångsfaktorerna i förändringsarbetet.

Nyckelord: föreändringsprocess, SAP genomförande, organisation, användare, framgångsfaktorer

Contents

Preface

This thesis is submitted as part of the of the requirements for the Master of Science (M.Sc.) degree in Project Management program at University of Northumbria at Newcastle / U.K and in International Project Management program at Chalmers University of Technology / Sweden. It represents the hard work and the culmination of student learning that has taken place from September 2008 to September 2010 both in U.K. and in Sweden. The research subject was defined at the end of December 2010, based on the company needs, the researcher's education and self interest in the area of information technology (IT), project management and people issues. The motivation for the study also comes from today's dynamic business and technology environment that implies change and a strong need of efficient change management.

This study is an attempt to investigate the change management process followed by a major company during a SAP system implementation and to introduce some key points that should be addressed whilst managing such a change. The investigation has been performed both from process and people perspective. The research has been conducted with managers and potential IT system users.

This study is expected to attract attention of students with interest in change management and managers who are responsible for managing change projects, and aims to help them understanding the importance of people issues and other key success factors in change management.

Göteborg September 2010

Sevim Güler

1. Introduction

In today's fast paced and increasingly complex world change has become inevitable. High speed technological developments, globalization and economic factors are only some of the reasons that fuel the change in the business environment. With the change outside, there is a conceited change inside, thus organizations need to keep up with rapid developments in the business environment to survive. To adjust accordingly, organizations have become more technology driven than ever before. This requires organizations to be open and willing to change and once the organizations decide to undergo a radical change, considerable effort is required to manage it.

Many researchers throughout the history have defined change with their own approach: according to Williams (1969, p.54):

> "…change is a modification of existing relationships; it is an alteration of the status quo".

Bridges (1986, p.25) states:

> "…change happens when something starts or stops, or when something that used to happen in one way starts happening in another. It happens at a particular time or in several stages at different times".

In both definitions it is clear that change requires a shift away from a familiar situation to a new state and this usually has impact on systems, organizations, working standards and people. When this shift takes place it is not an easy process to manage it. Many organizations realize the complexity and the huge efforts required merely when they pass the halfway point into the implementation

Especially in organizational change, usually more than one variable (e.g. organizational structure, tools, procedures, responsibilities, projects) change at the same time. For instance, presently, organizations have shifted from stand alone software applications to company-wide solutions called Enterprise Systems (ES) such as Enterprise Resource Planning (ERP) systems (Dong, 2001) and SAP (System, Applications and Products) systems as a typical example of ERP (Hall, 2002), which integrate business processes across the organization and standardize procedures for data input and retrieval (Dong, 2001). Implementing these systems is not an issue of alteration of the software systems; it is more related with 'organizational revolution' (Bingi, Sharma and Godla, 1999). It affects people's work, responsibilities and it may bring about change in organizational structure. If the organization is complex, it can create turbulence which makes it even harder to perform the implementation or to transform the operations and structure successfully. A good response to this kind of turbulent situation can be given though a comprehensive and strategically planned change management approach.

Change management comprises many aspects such as analyzing the organizational effectiveness and revealing the required changes to achieve better performance, and determining the steps to be followed by managers for a successful change implementation (Hayes, 2007, p.30). It is not an easy process; there is no standard

approach to management. In fact, sometimes a successful change requires more than what is defined as change management, i.e. an appropriate strategy, competence (personnel with skills to adapt the change) and structure including organizational tools (Carter, 2008). Managing change encompasses understanding the drivers of the change and developing strategies to control both external and internal impacts on the organization while taking account of human factors; particularly attitudes and behaviors of people involved and organizational psychology. Change has to do with the human being, and sometimes great effort must be spent on changing the values that people have internalized. When there is a change within the organization it may affect their behavior, shared beliefs, the way they do their jobs or the rules that shape mental models. Shared mental models are a part of organizational culture (Hayes, 2007, p.62), so to achieve the desired result it is important to consider human factors and organizational culture.

This study involves a theoretical and practical approach to the activities needed to manage change that comes with an IT project. The focus will mainly be on change management process and fundamental issues in managing organizational change including critical success factors, such as communication, motivation and users' awareness, readiness and willingness.

1.1. Disposition of the Report and Reader's Guide

This dissertation is structured into 7 chapters (Figure 1.1).

The first chapter gives an introduction to the research subject and presents the report structure. In the second chapter the literature review generate the context of the research field of this dissertation. Chapter 3 describes the case, the purpose of the study and the research questions. Chapter 4 describes the research methods including research strategy, research procedure data collection, limitation and potential risks of the methods chosen. The research results are presented in Chapter 5 and the results are discussed under three main headings in chapter 6. Lastly, a conclusion is drawn based on the research findings in Chapter 7.
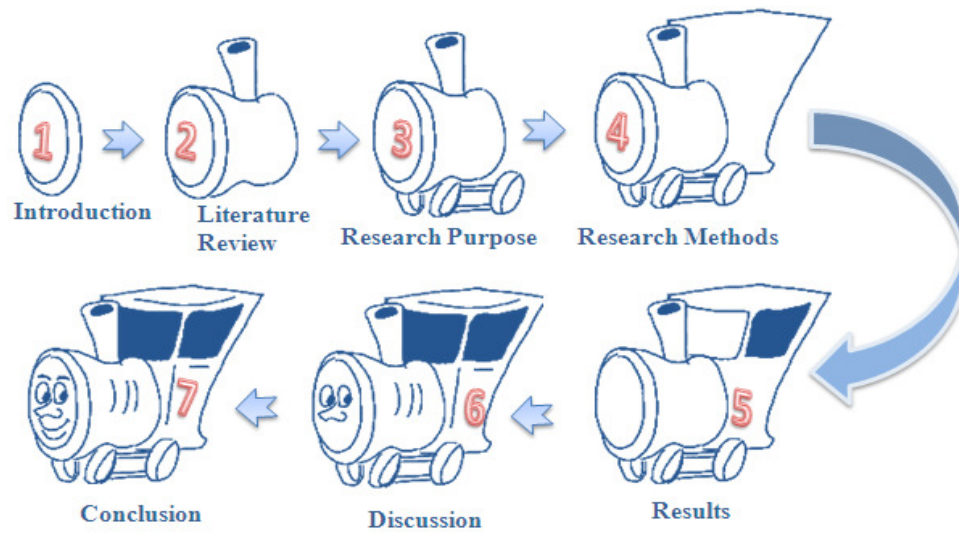
Figure 1.1: Thesis Disposition

2. Literature Review

2.1. **Organizational Change**

Organizations involve "people interacting in some kind of structured or organized way to achieve a defined purpose or goal" (Senior and Fleming, 2006, p.4), and the difference occurred due to the course of time within an organization in terms of shape, state and quality is defined as "organizational change" by Poole and Van de Ven (2004, p. XI). Organizational change has been investigated through various categories, e.g. revolutionary vs. evolutionary (De Wit and Meyer, 2005, p.81; Burke, 2002, p.12), transactional vs. transformational (Burke and Litwin, 1992; Burke, 2002, p.12), incremental vs. transformative (Dunphy and Stace, 1988). Revolutionary change is radical, when it occurs, organizations break of connections with the past (Burke, 2002, p.67, De Wit and Meyer, 2005, p.81) and it is inevitable in the existence of turbulence or if the degree of change in the environment creates a need for readjustment by the organization (Dunphy and Stace, 1988). On the other hand evolutionary changes are small changes, in opposition to revolutionary changes; they actualize within longer period of time and, they do not result in an overthrow of the current system (De Wit and Meyer, 2005, p.83). Evolutionary changes are more common than revolutionary, whereas there is higher resistance to revolutionary changes (Burke, 2002, p.67). Revolutionary change is associated with transformational change (Bruke, 2002, p.12), second-order change (Krovi, 1993) and transformative change by Dunphy and Stace (1988), while evolutionary change is related with transactional change (Bruke, 2002, p.12), first-order change (Krovi, 1993) and incremental change (Dunphy and Stace, 1988).

2.1.1. **Organizational Change during Enterprise System Implementation**

Sometimes there is rigidity within the organization that small movements do not help; radical change is needed to stimulate the organization (De Wit and Meyer, 2005, p.82), for instance, if a company wants to change the enterprise system, usually it should not be by slow degrees (p.84). Because implementing an ERP system in most cases results in a sweeping organizational change (Nah, 2002, p.57). Accordingly, Dong (2001) states that an enterprise systems can entail either revolutionary or evolutionary change depending on the scope and the pace of the implementation and it becomes more risky as you move upwards and towards the right in Figure 2.1.
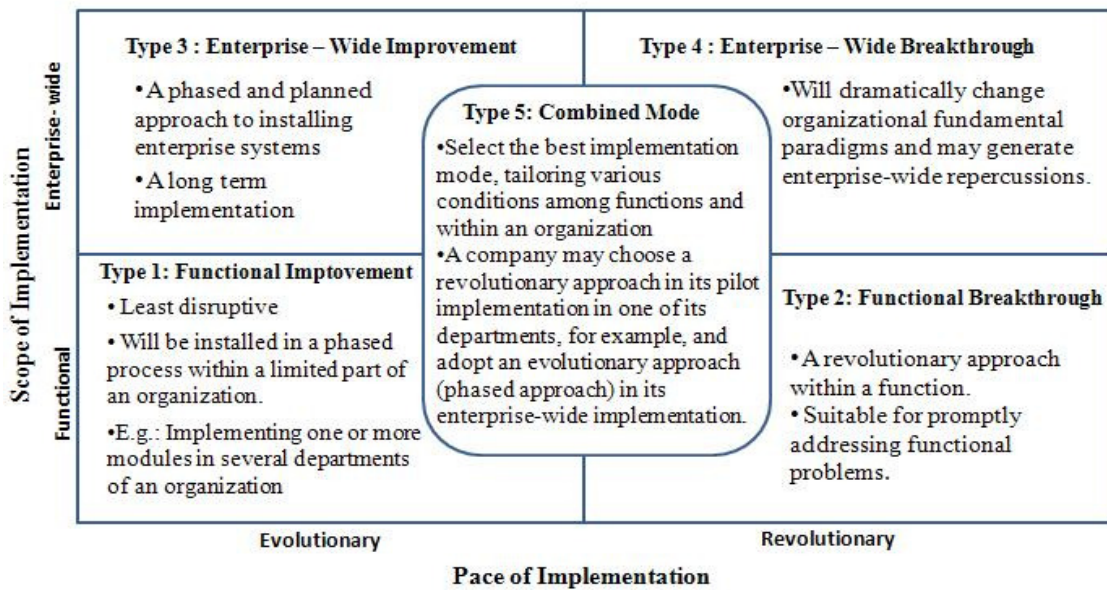
Figure 2.1: Dong's (2001) Enterprise system implementation and organizational change

Davenport (1998) asserts; it is clear that enterprise systems can bring along very high benefits but it is risky as well. To receive these benefits, change management of ES implementation should be performed carefully by applying critical success factors such as top management commitment, process reengineering and people side of change management (e.g. Bingi, Sharma and Godla, 1999; Jarrar, Al-Mudimigh and Zairi, 2000). Suggesting a process-based change management framework Aladwani (2001) notes that ERP implementation needs to include technical, organizational and people oriented strategies. Enterprise systems may encounter various technical challenges. However, they are not the primary reasons of the failure, management and business aspect has higher impact on ERP implementation success (Davenport, 1998). Based on the experience of HP (Hewlett-Packard), ERP implementation has much to do with people rather than technology and processes (Jarrar, Al-Mudimigh and Zairi, 2000).

Some of the organizational strategies can be developing a change plan, using appropriate change management techniques and tools, project management covering the entire business and business process redesign (Al-Mashari and Zairi, 2000). Nah (2002, p.18) and Hong and Kim (2002) point out the importance of ERP packages' fitted to the organization's functionalities, business structure and organizational culture. Organizational culture plays a more significant role if it is more than incremental change, because at that time success cannot be achieved by changing only the structure and the strategy (Senior and Fleming, 2006, p.127).

2.2. Change Management

Change management plays a vital role in ERP implementation (Jarrar, Al-Mudimigh and Zairi, 2000). The actions that are taken during change management process are specific to circumstances, organization and the project. Therefore, it is not easy to

manage change, but it does not mean that it is impossible; different strategies can increase the success (Self and Schraeder, 2009). Sometimes managers believe the fallacy that if the methods for change management were successful in the past it will be successful in the future too. Their direct relationship approach may fail whilst taking account of the dynamic environment and increasing complexity of the organizations (Zeffane, 1996).

2.2.1. Change Management Process Models

Various change management processes are available to market, developed by different researchers, see Table 2.1. Many researchers (e.g. Pugh, 2007, p.71; Carter, 2008; Galoppin and Caems, 2007, p.57; Robbins and Judge, 2007, p.651) cite Lewin's (1951) three-stage change management process model which is one of the earliest change management process model. Based on Lewin's approach Carter (2008) has developed a seven-stage model addressing three factors, 'structure' of the organization, 'skills' and 'strategy' that should be considered whilst carrying out change.

Unlike Carter's non-linear model, Hayes (2007, p.71) cites a linear model created by Hayes and Hyde (1998), but this model includes some feedback loops and some repeatable stages. This linear model starts with analysing the external environment for threats and opportunities to find out if there is a need for change.

Table 2.1: Change management process models

Lewin's (1951) three stage model (cited in Pugh, 2007, p.71)	1. **'Unfreezing'** Creating a healthy organization, being aware of the need for change, persuasion, top management involvement, and building confidence, communication, identifying stakeholders and managing their expectations. 2. **'Moving'** Following a comprehensive strategy by setting unambiguous objectives and challenging targets that helps individuals to develop knowledge while moving to a new level. 3. **'Refreezing'** Making sure that change is a part of organizational culture while changing the attitudes, structure of the organization, spreading the new mindset and information.

Carter (2008)	
Clarke and Garside (1997)	1. Business strategy Primary feasibility analyzes 2. Agree to do the project Collect required information 3. Project manager assignment 4. Develop a team 5. Team building activities, briefing 6. Create a project plan 7. Approve the developed plan 8. Monitor the project to see if plan is being followed 9. Perform the required activities after implementation
Hayes and Hyde's (1998) model (cited in Hayes, 2007, p.83)	

Clarke and Garside (1997) have developed a practical framework on the bases of the best practices gathered from various organizations. They have associated different parts of change management process with some key success factors which are: 'commitment', "people issues" (social and cultural), 'communication', "tools and methodology", 'interactions with other changes' (p.241). Each factor comes forward at different stages of the change process. Due to the importance of engaging higher level staff and increasing the ownership of the project in the early stages, commitment starts taking an active role just after it has been agreed to do the project and a project manager is assigned. Social and cultural issues are linked with developing a project team, whilst 'communication' is essential during team building activities and while running the project plan. The issues related with tools and project management methodology comes

forward during project plan approval and interactions in the organization become prominent whilst monitoring. Based on these success factors they have developed a benchmarking tool (maturity model) by combining good practices in different change management processes, see Appendix I. In this maturity model they have divided the success factors into five levels creating a matrix that includes a checklist of different issues within each factor on different levels. Thus, it can be used to measure the maturity degree of the change management activities.

Although each model has its own approach and benefits, there are some common aspects; they all start by analyzing the present status in order to realize the need for change, proceed with actions and end with process review. Pugh (2007, p.73) and Self and Schraeder (2009) assert that the first step in an implementation process should be ensuring the readiness for change.

In addition to that, the models subsume human factors such as people's behaviours, emotions and some strategies. In this regard Beer and Eisenstat (1996) comment that a change process is required to be systematic; the human factors and hard issues like technology, organizational formation, and strategy should be compatible with each other, so the change model must involve both soft and hard issues within an organization. Furthermore, they specify that the process should foster an "open discussion of barriers" and should provide collaboration development with stakeholders.

2.2.2. People Issues in Change Management

While the project goes through some stages during change management process employees also go through some stages. Hiatt and Creasey (2003, p.38) note the failure of focusing more on business change rather than people issues, saying that successful change can be reached paying attention to both business change and people issues as illustrated in Figure 2.2 below. They also asset that if the emphasis to business change is higher than employees it may result in loosing valued staff, falling behind the schedule and decreased efficiency, On the other hand, if the emphasis is on employees rather than keeping the balance between employees and implementing business change, than it results in not achieving the business objectives. They state:

> "Success is achieved when a business change is introduced and employees have the awareness and desire to implement the change, the knowledge and ability to make it happen and reinforcement to keep the change in place" (Hiatt and Creasey, 2003, p.39).
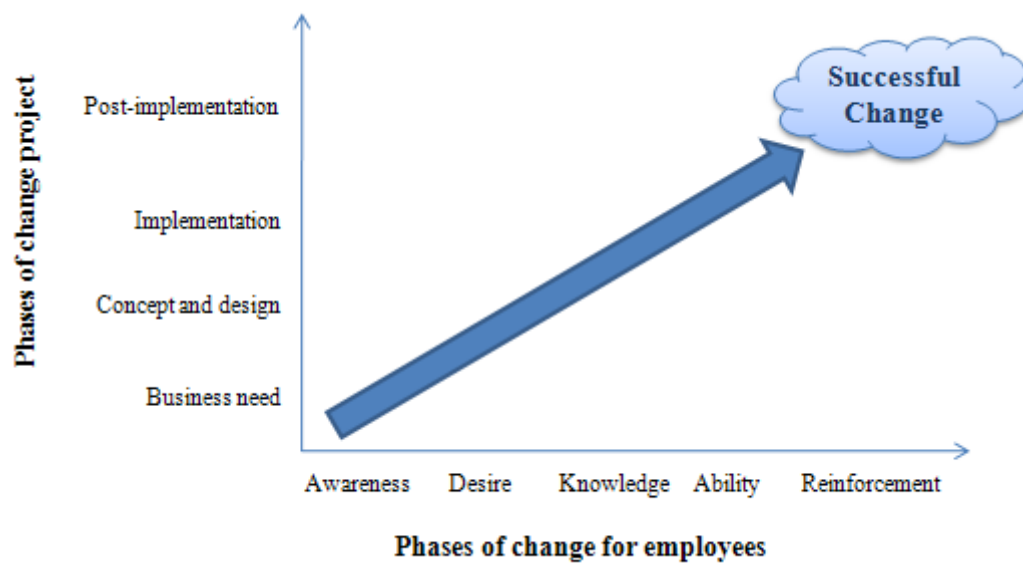
Figure 2.2: Dealing with people issues during change project (Hiatt and Creasey, 2003, p.38)

2.2.2.1. Organizational Culture

Organizational culture is the deep values, attitudes, believes of people and the way they do their business within the organization (Burke, 2002, p.13). It has to do with 'affective' (feeling), 'cognitive' (thinking) and 'behavioural' traits (Senior and Fleming, 2006, p.141). According to Robbins and Judge (2007, p.578) culture is a "social glue that helps hold the organization together by providing appropriate standards for what employees should say and do", and culture has various roles within the organization such as determining the boundaries of an organization, building "commitment to something larger than one's individual self-interest", maintaining the social system and forming peoples' believes and attitudes.

Senior and Fleming (2006, p.138) cite French Bell's (1990, 1999) "organizational iceberg" metaphor (Figure 2.3). In this iceberg metaphor the part that is visible above the surface represents the more formal part of the organizational life which is easier to see and control, while the part below the surface is more related to the things that are invisible but do exist such as attitudes and beliefs. It is much harder to deal with the bottom part (Senior and Fleming, 2006, p.139). Galoppin and Caems assert that it is easy to express what to do and what to know (visible part), but it is quite difficult to manage the hidden part and motivate people.

Figure 2.3: Organizational iceberg (adapted from Senior and Fleming, 2006, p.139)

It is not easy to change the mindset within the organization but there is a strong need to underpin an appropriate organizational culture in order to achieve the success (Zeffane, 1996). Otherwise, people may face "future shock" (Toffler 1970, cited in Hayes 2007, p.19) which means, if it is hard for them to embrace the new culture, they may tend to return back to the previous culture that they are familiar with. Future shock results from 'transience' - the increasing pace of change alters relationships and people respond to this situation in different ways, - rise in 'novelty' ratio and 'diversity' in choices creates confusion after living in a standardized conditions.

2.2.2.2.   Individual's Reaction to Change

Burke (2002, p.92) and Cameron and Green (2004, p.27) cite a psychodynamic approach to change, based on Elizabeth Kubler-Ross's five-stage model (Figure 2.4) which was developed for people with terminal illness; researchers have found that people going through change exhibit similar (maybe less dramatic) reactions to change within the organization.
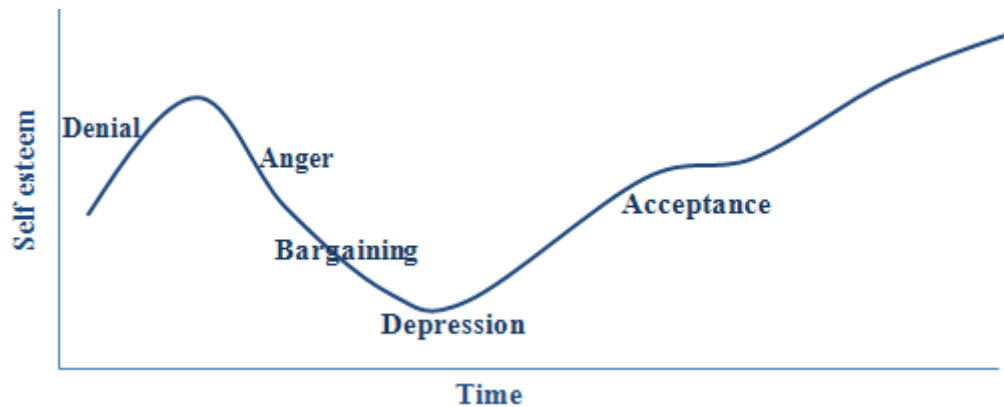
Figure 2.4: The change process and adjustment (Kubler-Ross, 1969, cited in Cameron and Green 2004, p.29)

However, some people do not move through all the stages; they may get stuck in denial phase or fight till death believing that the change is unnecessary, and some in contrast, may accept and adopt to change easily (Burke, 2002, p.92). Some organizational members show resistance, because of their feeling of annoyance, hatred, loosing respect all over and loosing sense of their own value (Pugh, 2007, p.178). Self and Schraeder (2009) group the sources of resistance into three clusters, "personal factors" (e.g. personal apprehension, or other issues creating dislike), "organizational factors" (e.g. dependability of the organization or change agents, history of renewal) and "change-specific factors" (e.g. an imperfect process, worries about the necessity and impact of change). Moreover, Trader-Leigh (2002) states that fear of losing current status or job, contrast with personal interest and benefits, change on balance of the power, and cultural issues can trigger refusal to accept the change.

Resistance is not always negative (Burke, 2002, p.94; Del Val and Fuentes, 2003; Carter, Ulrich and Goldsmith, 2005, p.443; Buchanan and Badham, 1999, p.41); at least it shows that people are caring about the activities within the organization. It is worse if people do not care about anything (Burke, 2002, p.94). According to Pugh (2007, p.184), resistance can be used positively to improve the approach and process. Buchanan and Badham (1999, p.198) state that to have a complete strategy there is a need to look at the reasons for resistance and cite Eccles's (1994) 13 sources of resistance (Table 2.2).

Table 2.2: Sources of resistance to change (Eccles, 1994, cited in Buchanan and Badham, 1999, p.199)

Ignorance	Failure to understand the problem
Comparison	The solution is disliked and an alternative preferred
Disbelief	The feeling that the proposed solution will not work
Loss	The personal costs are unacceptable
Inadequacy	The rewards are not sufficient
Anxiety	Fear of being unable to cope in the new situation
Demolition	Change will destroy existing networks
Power cut	Sources of influence and power will be weakened
Contamination	New ways of doing things are not acceptable
Inhibition	Low willingness to change
Mistrust	Motives for the change are not trusted
Alienation	alternative interests valued above the new interests or state
Frustration	Change will reduce power and career opportunities

2.2.3. Critical Success Factors

There are some key issues that needed to be taken into consideration while managing change because they trigger a high performance (Keck and Lollet, 1995, cited in Clarke and Manton, 1997).

> "Many companies tend to focus on the change process rather than the key factors of success behind it. However, it is not just what you do but how well you do it "(Clarke and Manton, 1997, p.248).

Some of the key success factors are below:

2.2.3.1. Communication

Change introduces a high degree of uncertainty (Lines et al., 2005), and the degree of uncertainty is even higher when the change is radical (Buchanan and Badham, 1999, p.180). Communication, as a significant instrument, can help to diminish the uncertainty, decrease the level of resistance, increase commitment and stakeholder participation (Carter, 2008). It is easier to communicate when goals and visions are uttered clearly and unambiguously (Buchanan and Badham, 1999, p.189), and how the messages are transmitted is as important as the message itself (Galoppin and Caems, 2007, p.212). Sometimes, the messages conveyed can be misinterpreted, so when employees do not fully understand the questions they can invent their own answers which can be worse than the truth (Hiatt and Creasey, 2003, p.19). Therefore, as Carter (2008) emphasizes, a proper language and communication approach should be used to transmit the vision throughout entire organization.

According to Robbins and Judge (2007, p.370), communication can flow either horizontally or vertically (upward or downward). Group leaders or managers communicate downward with employees in lower level to share information, and upward communication is more common when feedback is given to managers. Sometimes people need to communicate within the same group in order to spend less time and make the coordination easier. They also cite (p.383) Lengel and Daft's (1988) approach regarding the information richness of different communication channels, illustrated in Figure 2.5. Face-to-face conversations were found to be most effective communication channel due to the fact that it enables maximum amount of information exchange and it allows quick feedback on the information shared, using different "information cues" such as 'words', 'gestures', 'postures' and 'intonations' (p.382).
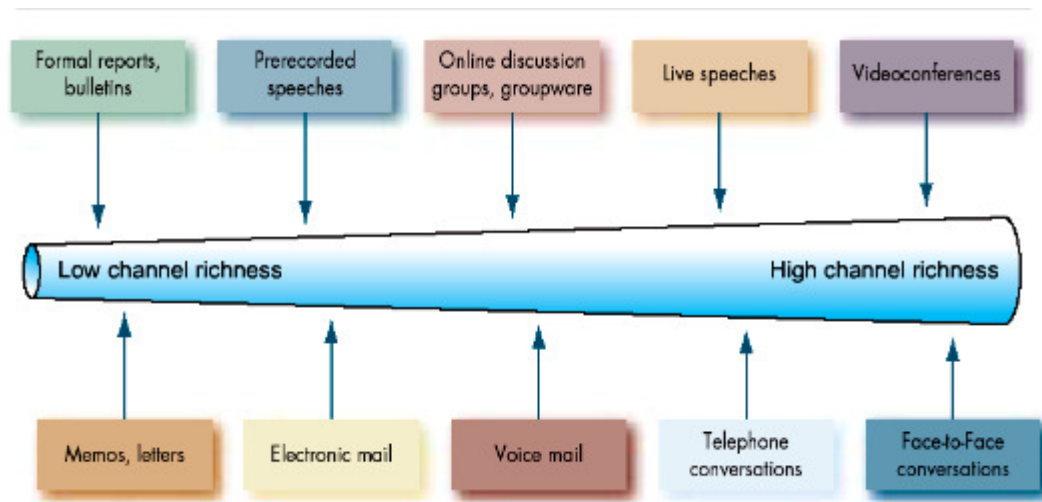

Figure 2.5: Information richness of communication channels (Lengel and Daft, 1988 cited in Robbins and Judge, 2007, p.383)

2.2.3.2.   Participation

Participation is expected to have a higher positive effect on people's emotions and paves the way to accept the change (Lines, 2004; Hayes, 2007, p.217). Because it leads to commitment (e.g. Burke, 2002, p.96; Hayes, 2007, p.288; Lines, 2004), trust (e.g. Lines et al., 2005, Pugh, 2007, p.180) and attenuation of resistance (e.g. Hayes, 2007, p.217; Lines, 2004; Self and Schraeder, 2009).

Lines (2004) asserts that participation will most likely have higher positive effect when changes are less congruent with organizational culture. He further notes that the level of job multiplicity is important for the staff; if they feel that change will reduce the level of job variety, they can show negative attitude towards change, so in this case, but not when change has no or positive influence on job multiplicity, applying an approach that allows higher level of staff involvement can be useful to appease the negative attitudes. This participatory approach also shows that managers trust their staff in decision making which will basically create trust towards management (Lines et al., 2005). This is important, because when the staff does not trust managers they will very probably show resistance (Hayes, 2007, p.206).

Hayes (2007, p.217) states that participation can either involve representatives of groups or all group members. On one hand there is higher productivity when all group members are involved instead of only one representative, because for people who are not involved, it is harder to understand and endorse the new practices. However, on the other hand involving many people can be time consuming and expensive.

2.2.3.3. Motivation

Although motivation depends on the strength of human being's character, it is closely associated with 'communication', 'information-sharing' and 'consultation' (Pugh, 2007, p.185). Based on the research conducted by Del Val and Fuentes (2003), misconception can occur due to lack of information sharing resulting from "organizational silence" or ineffective communication and this can bring resistance or low motivation about. The same problem can be faced when there is high uncertainty thus good communication is utmost important to increase motivation during the time of uncertainty (Lines et al., 2005). Abdinnour-Helm, Lengnick-Hall and Lengnick-Hal (2003) state, people are more positive towards change when they are informed about the project details and the process.

People may think the change will threat their job, so they develop negative feeling towards it (Aladwani, 2001). Trader-Leigh (2002) asserts that in order to better deal with anxiety, leaders should develop guidelines on how to inform, listen and mentor people so that "marginalized voices" can be heard.

People prefer a higher level of variety in their task, so the changes that posses job enrichment are more likely to be accepted (Burke and Litwin, 1992; Line, 2004). Recall that participation is mentioned as being a trigger to positive emotions towards change. Furthermore, Beer, Eisenstat and Spector (1990a, p.57) mention that to achieve change people need to be persuaded that it will not only be beneficial for their job but also for themselves. However, sometimes, in spite of all efforts, managers are not convinced to change. In this case, the managers who have difficulties to adapt can be replaced by changing their position or the role the role they take within the department (Beer, Eisenstat and Spector, 1990b).

2.2.3.4. Commitment

Organizational commitment plays a significant role in achieving the desired change such that if there is low "psychological commitment" within the organization the adjustment to change will be noticeably slow even if not completely rejected (Burke, 2002, p.97; Robbins and Judge, 2007, p.649). Many researchers (e.g. Aladwani, 2001; Krovi 1993; Jarrar, Al-Mudimigh and Zairi, 2000; Motwani, Subramanian and Gopalakrishna, 2005) agree that attaining top management's commitment is fundamental to accomplish successful change implementation. Managers need to be convinced before they invite their staff to accept the change (Pugh, 2007, p.87). Aladwani (2001) propounds that when group leaders are persuaded to participate in the implementation process they get the feeling of being a key person in decision making and show strong commitment, and hereby they endeavor to convince co-workers.

2.2.3.5. Leadership

Today's dynamic organizations require equipped leaders with good communication and planning skills to supervise the interaction between strategy, people and systems (Zeffane, 1996). The required change cannot be achieved unless there is strong leadership (Beer, Eisenstat and Spector, 1990b). Zeffane (1996) notes that top managers can adopt change by exemplifying it in their own behavior and efficient leadership is required to blend system, employees and procedures.

It should be noted that leadership is not same with management, but both are needed to realize the change. According to Senior & Fleming (2006, p.250) managers tend to focus more on "strategy, structures and the systems", whereas leaders give more attention to 'soft' issues such as people issues, shared purpose, communication and motivation. They define the role of leadership as:

> "…leadership is about influencing others in pursuit of the achievement of organizational goals" (Senior & Fleming, p.250).

Managing or leading strategic change can only be carried out in the existence of competent leaders and in an environment where there is trust an encouragement for organizational learning (Zeffane, 1996). Managers can create a motivational environment by getting to know the employees within the organization and determining critical factors in motivation (Pugh, 2007, p.190). Pugh further states that leading change requires some special skills such as communication, motivation, interpreting uncertainty and guiding decision behavior when there is uncertainty, as well as practical skills like the ability to achieve the desired status and to deal with anxiety about the performance and responsibilities (p.165).

2.2.3.6. Training

Training has high effect on successful implementation of a system and acceptance of change. Training can even augment commitment in short period of time (Beer, Eisenstat and Spector, 1990a, p.13). If organizational change comes from an enterprise system training user is imperative in spite of its high costs, because if people do not know how to use the system they cannot benefit from it (Jarrar, Al-Mudimigh and Zairi, 2000).

Moreover, Self and Schraeder (2009) comment that if managers were not successful at arranging effective training programs in the past, this can result in lack of self confidence both for managers and users, and can create a barrier for success. Training leaders may be a solution to demolish the barriers. Zeffane (1996) supports this view adding that some leadership skills can be accomplished by means of training. Another solution suggested by Self and Schraeder (2009), is to assure people that adequate training will be given to support employees.

3. Research Purpose

3.1. Case Description

The research is conducted with a major company, (in order to keep confidentiality the company will be called Company M). Company M has decided to move from stand alone applications to company wide solutions. In this regard, the company has developed a SAP project (to keep confidentiality it will be called M-SAP in this study) that aims to integrate the business processes across the company. This project provides a comprehensive enterprise solution that allows implementing project management processes using one common tool.

The M-SAP project goes through a project management process model (to keep confidentiality it will be called MPX) that is specific to IS/IT projects within the company. The MPX process model provides a common method for successful project control and management of business objectives, solutions and change. The model is composed of several phases describing the activities to be accomplished. These phases are connected through a gate where the steering committee accepts and agrees the proposed issue or takes decisions about the issues.

The change management process followed by the company goes through all the phases of MPX process. However, it is not always possible and needed to accomplish all areas within the process due to the uniqueness, the size of the projects and some other reasons. Moreover, the circumstances, perquisites, scope and people's positions within the organization can change over time with an impact on project complexity and the change management process.

Recall that human factors play a significant role in change management; implementation of a business enterprise system brings about change in people's way of working and most likely in their mindset, behaviours, attitudes which are part of organizational culture. Further, employees' awareness, willingness and ability can also be taken into consideration including their expectations; it is shown in Figure 2.2 that while the project is going through some stages employees also go through some stages and there is a need to pay attention to both stages. There can also be some key success factors that ease the process towards a successful implementation.

Business change management plan has been defined by the company to deal with the people side of change, aiming to enable change acceptance and assimilation by all project stakeholders. The plan involves some strategies (e.g. communication, training, support) to achieve successful change management. However, it is not easy to reach a successful implementation; the change initiatives can result in complex situations that require efficient management. Considering that it is a dynamic company and the solution will be used by many people it brings about a situation that requires massive change management effort.

3.2. **Purpose Statement**

In this study the Company M's way of change management is investigated both from process and people aspects. The process aspect covers the analysis of MPX process to determine how good it is while managing the change and if there can be some improvements by comparing the MPX process with best practices available. Yet, as already mentioned above, it should not be overlooked that projects are unique and the application of a process can differ from project to project. Therefore, the intention is not only to compare the MPX process with best practices available but also to analyze the gap between the MPX process and the process followed during M-SAP project life cycle. This gap can be examined by measuring and comparing the maturity level of the process followed by management team of M-SAP project and the maturity level of the defined MPX process. As a result of that analysis there can be suggestions on how to improve the process followed to achieve best practice as well (Figure 3.1).
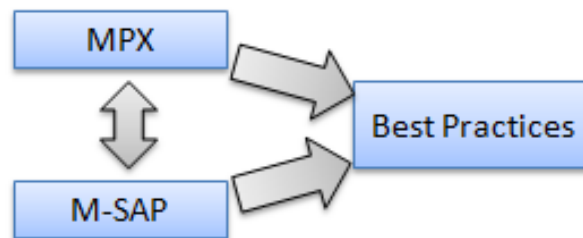
Figure 3.1: Process analysis

Based on the idea that it can be useful to know people's opinion and approach towards change, the people aspect of the study includes investigation of employee's awareness, willingness to change, expectations, proper communication and motivation approaches and other critical success factors.

3.3. **Research Questions**

In the light of information above, the primary research questions guiding the study are:

1. How mature is the change management process followed during M-SAP project?

2. How is users' approach towards change including their expectation, awareness, readiness, willingness and ability to change?

3. What are the critical factors that can have impact on the success of the implementation?

   a) How should be the proper communication approach during change management process?

   b) How should be the proper motivation approach?

   c) What are the other major success factors?

4.   Research Methods

This chapter takes readers on a journey through the research process, describing the overall research strategy, research procedure, the data collection approach and the perceived limitations of the research work.

4.1.   Research Strategy

The research questions above are aimed at evaluating the existing change management approach from process and people perspective, and identifying the proper approach that can make the transition easier. Taking this into account the qualitative research approach, which provides a profound understanding of the research results (Nagy and Biber, 2010, p.6), is perceived to be the most suitable one. The study is based on a single-case study approach, involving observation of a single organization (Gerring, 2007, p.29). The case study approach, generally perceived to be a mainly qualitative approach, provides intensive investigation of a subject within a single unit (or separate units) to gain a wider understanding of the research field (Rudestam and Newton, 2007, p.50).

4.2.   Research Procedure

A formal start to this thesis was made in February 2010 conducting a kick-off meeting with the researcher's thesis supervisor at the company. In this meeting the researcher was informed about the general context of the thesis subject. The next meeting was conducted with the author's tutorial supervisor Dr. Max Rapp Ricciardi from Gothenburg University; presenting the thesis subject and consulting on how to start developing the thesis. At this preliminary stage of the study, a literature review (presented in Chapter 2) was carried out by reading books and articles to gather secondary data, and many other meetings were conducted with supervisors and Chief Project Manager (CPM) of M-SAP project to get a better understanding of the subject and to define the scope of the study. The researcher was given the opportunity to conduct observation prior to the data collection. Internal documents regarding the MPX process were studied to get information about the processes followed while managing change.

On the basis of the literature review and case description (presented in Section 3.1) the research questions were prepared. In order to answer these questions and get more comprehensive results it was decided to undertake surveys for the users and conduct interviews with managers. The questions for the surveys and the interviews were developed based on the literature survey, Clarke and Garside's (1997) maturity model (explained in Section 2.2.1), internal documents, observations and explanatory meetings conducted with managers in the Company M.

Information consent letters were prepared separately for the interviews (Appendix II) and the surveys (Appendix IV) to inform the potential participants about the reasoning behind the research and a decision to their participation willingness to take part. The information consent letters and questions were written in English. They were checked by supervisors and CPM at the company in terms of their suitability and comprehensibility.

Web surveys were designed and published from intranet so that only Company M employees could access to answer the question and the confidentiality of the data could be maintained. The survey link and the invitation letters both for surveys and interviews were sent via e-mail. The interview questions were sent to each interviewee before the interview. The interviewing process started before the surveys and but then continued in parallel.

All interviews were performed face-to-face, audio recorded and transcribed. In average the interviews lasted about 40-50 minutes. In order to obtain an accurate transcription, the interviewees were asked if they would like to receive the transcribed interview as hard copy. This type of delivery (hard copy) was chosen due to the fact that using an e-mail account other than Company M could be inappropriate for the reasons of confidentiality. The hard copies were delivered to the participants who had accepted to read through the transcription and they were asked to contact the researcher if they would like to edit some parts in the script.

4.3. **Data Collection**

4.3.1. **Design**

Both qualitative and quantitative data was collected using parallel mixed method design where the quantitative data was incorporated with qualitative one on the condition that the qualitative results are more dominant (Nagy and Biber, 2010, p.68). The quantitative data was gathered from multiple choice questions based on different scaling formats. The sources of qualitative data were interviews and literature review, explanatory meetings, internal documents that were used to determine the maturity level of the defined MPX process using Clarke and Garside's (1997) benchmarking tool. The reasoning behind this assessment was that the change management was carried out based on the MPX model so the improvement in the defined process could increase the success of the subsequent change management projects. Moreover, the strengths and weaknesses of the process could be identified and the M-SAP project progress could be evaluated.

Stratified sampling technique was used to gather data where the target population was divided into non-overlapping groups and the potential participants were selected randomly from each group (Biggam, 2008, p.89; Nagy and Biber, 2010, p.50). While forming the target population groups the aim was not only to achieve adequate number of respondents but also to include people that will provide more comprehensive data; the managers involved in the change management team or in the pilot stage of the project were grouped according to their departments, and then randomly selected managers from each group were invited for a face-to-face interview. This technique was used because interviewees should have been able to evaluate the change management

teams' approach and the process followed – on the idea that more viable data can be gathered and deeper understanding of the subject can be gained by listening to the people who have experienced the process.

The target population for the survey was also determined using stratified sampling technique; all potential users were divided into groups according to their departments and respondents were randomly selected from each group. Based on Biggam's (2008, p.91) recommendation, an online calculator was used to determine the appropriate sample size.

4.3.2. Instruments

The interview questions (Appendix III) were designed to collect three types of data; (a) quantitative data through 5-point Likert Scale format and 5-point Semantic Differential Scale format (Schwab, 2005, p.46), (b) qualitative data using open-ended questions and (c) demographic data allowing to identify the group each interviewee belonged to. The multiple choice questions were related with participants views on how change management team had been working. On the other hand, the open-ended questions were more related with participants' approach and perception, the problems occurred during the change management process and suggestions for the improvements. The interviews were of structured type (Biggam, 2008, p.109), thus the questions were prepared in advance and presented in the same order achieving a focus on the research problem. However, depending on interviewees' willingness and responses they were asked to expand the answers to some of the questions presented.

The survey (Appendix V) was employed to gather quantitative data by means of 5-point Likert Scale and qualitative data from open-ended questions, as well as demographic data (i.e. gender, age, length of employment, department and position) that would allow disaggregating the data results into different subgroups. The close-ended questions were designed to bring a better understanding of users' awareness, willingness, acceptance and ability to change, while open-ended questions aimed at revealing the expectations of users, and proper communication and motivation approach.

4.3.3. Participants

Twelve interviews were conducted with the people who were involved in the project either as part of the team, pilot or steering committee. Surveys were sent to potential users; both to the ones who had experience with the project and the ones who did not have. 84 people (response rate was 12%) responded to the survey. Using the online sample size calculator, suggested by Biggam's (2008, p.91), it can be commented that the results had validly represented the whole population with 95% confidence level and approximately 10.2 confidence interval. The reasons for the low response rate was short time period and that many of the potential users had not been adequately informed about the project, the messages people heard made them feel uncomfortable to answer the questions, and some employees were on business trip or parental leave. In fact, 8

potential users sent e-mails stating that they had not taken the survey, because they did not have information about the project.

4.3.4. Framework for Data Analysis

The qualitative data like interview transcripts and other internal or external documents were analyzed using content analysis; the data was coded and categorized with NVivo 8.0 to obtain more efficient analysis. The quantitative data from interviews and surveys were analyzed in PAWS/SPSS 18 (Statistical Package for Social Scientists), a statistical computer program. Mean value, correlation and frequency distribution analyzes was performed to get more meaningful quantitative results. Qualitative and quantitative data that complement each other was blended while determining the maturity level of the processes. The most important statistical results was shown in the tables in Appendix VI, due to the huge amount of data it was not possible to go too much into details while presenting the data.

4.4. **Limitations and Potential Risks**

The data collection design provides limited integration opportunities during data analysis; there is no direct link between the datasets so the researcher needs to work on the points of connections while aggregating the collected data into qualitative context. Further difficulty may arise in presenting the huge amount of data collected. Moreover, 84 people may be an appropriate sample size, but using a larger sample size would provide more realistic results.

Another limitation arises due to the lack of time; the researcher tries to complete the study before key people in the company take their summer vacations and before the roll-out of the project. Therefore interviews and surveys were run in parallel, and the data was collected from only a limited number of respondents although in general the results are more representative as the sample size increases (Biggam, 2008, p.91).

Further, 5-point Likert Scale and 5-point Semantic Differential Scale formats were used for questionnaires which might have led respondents to pick an answer without paying attention to the content. Respondents might have also fallen into "central tendency error", defined as clustering responses around the middle of the scale, by Schwab (2005, p.46). In addition to that, research participants might have found some questions (i.e. asking for criticism) to be sensitive; although researcher had promised for the confidentiality and tried to ask questions in a way that respondents can express their "true" opinions instead of being politically correct, it cannot be assured that the answers were obtained without bias.

5. Results

This chapter presents the results of the empirical data collected through this single case study. The findings from the conducted interviews and surveys were analyzed as objectively as possible and presented in three different parts. The first part presents the maturity level of MPX process and the M-SAP project process based on Clarke and Garside's (1997) Change Management Process Maturity Model. The second part reveals the users' expectations, awareness, readiness and willingness to change. The third part highlights the communication and motivation while last part is the suggestions for improvement.

The demographic characteristics of the sample were analyzed through frequency distribution (Table AppendixVI.1). Overall, 71.4% of the respondents were male and 17.9 % were managers. The majority of the respondents (77.4%) were from four main departments which are Department A (15.5%), Department B (25.0%), Department C (19%) and Department D (17.9%). Only 22.6% of the respondents had been involved in the pilot phase of the project. The largest group (35.7%) was between ages of 40 and 49 years.

5.1. Process Maturity

The defined MPX process's maturity assessment (illustrated by the graph on Figure 5.1) was performed using Clarke and Garside's (1997) Change Management Process Maturity Matrix. The information related to MPX comes from a detailed analysis of the internal documents and explanatory meetings. The change management process followed during M-SAP project (highlighted in green colour on Figure 5.1) has likewise been assessed based on the information gathered from interviews, surveys and observations within the company. A more detailed scoring is available on Appendix VII.
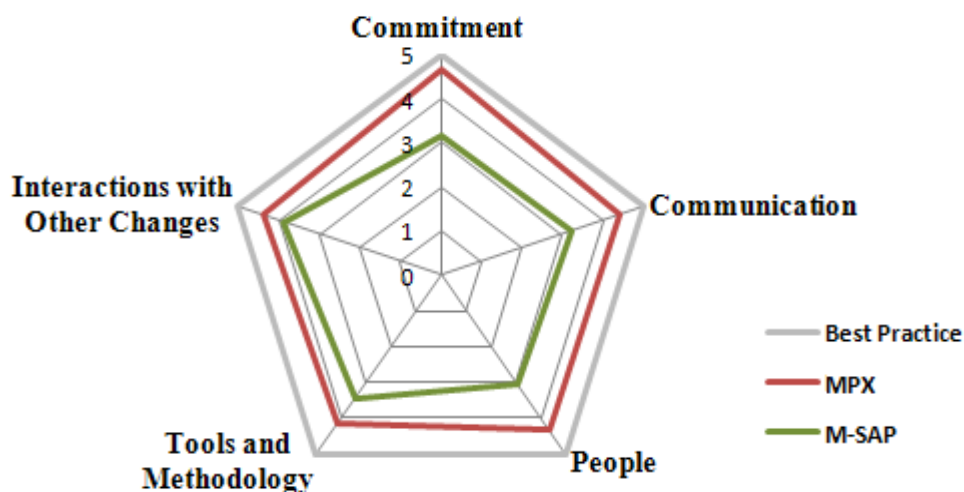

Figure 5.1: The maturity level of the processes (based on Clarke and Garside's (1997) Change Management Process Maturity Matrix)

5.1.1. MPX Model

The documented MPX model includes information about each of the five dimensions covered by maturity matrix. Commitment and Communication, which have highest score, are the main areas that are covered in the internal documents.

In the internal documents regarding MPX process, it was stated that the chief project manager should show and gather commitment and ownership from management, steering committee, key users and project-team to take the leadership in driving through the solution with associated change efforts. In addition to that, all stakeholders' involvement and determining key ingredients of how to achieve the buy-in and changed behaviour across the company are also mentioned. However, maintaining the balance between operational tasks and project appears to be overlooked.

The requirement to confirm the need and management awareness on the change is stated at an early stage of the process. Besides, understanding the impact of the change on the organization and communicating the current situation was mentioned, but, more information could have been provided on how to share information regarding project progress and what could be the right communication channels to distribute the information so that the target population would understand the importance and impact of the change. Besides communication, people issues such as motivation, project culture, support, coaching, and understanding impact of the change on individuals are included in the process model. However, there could be some explanation regarding teamwork, how to build and lead an effective change management team, team meetings and leadership approach.

Different project management areas such as business change management, risk management, integration management, requirements management, program management are covered by plug-in documents. Furthermore, scope, communication, resource management, budget and time planning, project control are mentioned while explaining the MPX process. The training issues were also taken into consideration and the need for appointing a chief project manager was stated. However there was lack of emphasis on carrying out benchmarking throughout the project and making sure that the team members understand the system and can use it.

5.1.2. M-SAP

The maturity level of the M-SAP change management process was determined through conceptual content analysis of the qualitative and quantitative data, and while presenting the results from the quantitative data, the results was broken down into two groups based on the participant's awareness of the project and only the group that was aware of the project (45 people) was included in this maturity level analysis.

According to the interviewees the commitment from top management was high but there was lack of commitment from the middle management. Majority of the interviewees (58.3%) were satisfied with their involvement in decision making and high correlation (.782) was found between one's satisfactions with involvement in decision

making and willing to put extra effort. However, interviewees did not agree (mean= 2.92) that people were affected by change had appropriately been involved throughout the change process. As many as 50% of the interviewees rated the teams' ownership of the project tasks as high, while 33.3% rated it as medium and 16.7% as low. They also indicated that team members and the managers involved in the project were taking part in more than one project and they had some other tasks to do, so it is hard to take full ownership and prioritize this change project. Therefore, currently the prioritization is more on operational tasks due to the deadline and budget reasons. Even so, many of the managers interviewed (66.6%) were willing to put some extra effort in order to drive the change initiatives.

Although all interviewees believed that the vision behind the project was good, they had doubts whether the tool was the right one to meet all stakeholders' needs. The results (Table AppendixVI.2) shows that there was lack of communication and information sharing; the degree of agreement on being informed about the progress being made (mean=2.47), the impact of the change on their work (mean=2.51) and what was expected from them (mean=2.56) was quite low. Majority (7) of the interviewees had shared information with users (mean=3.91). However, they also agreed that there should have been better communication approach. One interviewee commented about it:

> "The rollout of a project like this is a huge change for the organization, so better support and better information is needed on why we are doing this, not only in high level but also with realistic consequences for the organization. I believe it is better to communicate that; here are the benefits, here are the disadvantages, here are the problems and we need to work together to solve it… ".

Another comment regarding information sharing is:

> "The information about how to inform users and how to use the system is poor. Managers need to have enough information packages and education to be able to support people. It is also important from motivation perspective."

There was a strong correlation (Table AppendixVI.3) between the effect of the messages heard (mean=2.42) about the project, and the belief in the importance of the project to the business (mean=2.38) and department (mean=2.49). On the other hand, survey respondents trust that their managers will support them to take the best course of action (mean=3.40), but they were neutral whether they will receive the required support from the project team (mean=3.00). Only 6.1 % of the users, who had not got any training, did not have experience with M-SAP and were not involved in the project, agreed that the messages they had heard about the project made them feel comfortable what the project will mean to them. On the other hand, from the users who had been involved in the pilot, or had experience with the project or received training; 12.5% felt comfortable about the messages they had heard, 62.5% agreed they were encouraged to take part in the change initiatives instead of being forced. However, only 20.8% believed in the added value of the project and 8.4% reflected that the change initiatives will be successful. In general interviewees indicated that the project will succeed but it will need time, and maybe not with the achievement of all objectives and they added that it will replace the existing system but some additional tools may be still in use.

Moreover, majority of the responses (58.3%) regarding team work was:

> "The team members usually work well together and there is a good team spirit".

Regarding people issues one survey respondent expressed:

> "From the information communicated so far it will bring more administration tasks and less flexibility for everyday work".

While one interview participant pointed out that:

> "People who are not directly involved in the project have negative thoughts. We need to inform them and carry out some training".

Based on the interviewees' responses (Table AppendixVI.4), it could be concluded that most aspects of project management was used although resource management was sometimes an issue, having pilot users and delegating tasks within the team was considered to be a good approach. Table AppendixVI.4 also shows that many people in the team understand the impact of the change, and the program itself and can use it, but the benchmarking has not been carried out sufficiently.

Only 24.4 % of the users had indicated that they had received some training and from those, only 16.6% agreed that the training in the past was successful. 24.5 % respondents were confident that necessary trainings will be provided. Likewise, interview participants responded that the training was identified (8 agree) and half of them agreed, it had been given both before and after the project implementation. However, while answering open ended questions they emphasized that only limited training has been provided. Further, they commented:

> "Training has been limited and on very high level"

> "The graphical user interface is not easy to learn so there is a need for proper training."

> "Pilot users should have dedicated training of the tool. So, we can really use it in the proper way and they can promote the tool."

> "I think it is good to have training and push the persons to use the system just after the training"

> "If you have training but do not start immediately you will forget it anyway."

> I think there should be tips and trick program for each employee to follow or some kind of coaching. "

Change was part of the business plan. There was chief project manager as senior person driving the change. However, respondents commented that there was no separate change management team; it could be hard to drive the change (especially people side of change) with only a single project team. Operational tasks had been prioritized due to

the deadline, budget and some other reasons and it was commented that it was not the only project running so people had other tasks to do, they tried to keep the balance but it was not always possible.

5.2. **Users' Approach**

5.2.1. **Awareness, Readiness, Willingness and Ability to Change**

As already mentioned only 45 (53.6%) of the survey participants were aware of the project. The results show that the overall awareness of department C (75% was aware) was the highest (Figure 5.2).
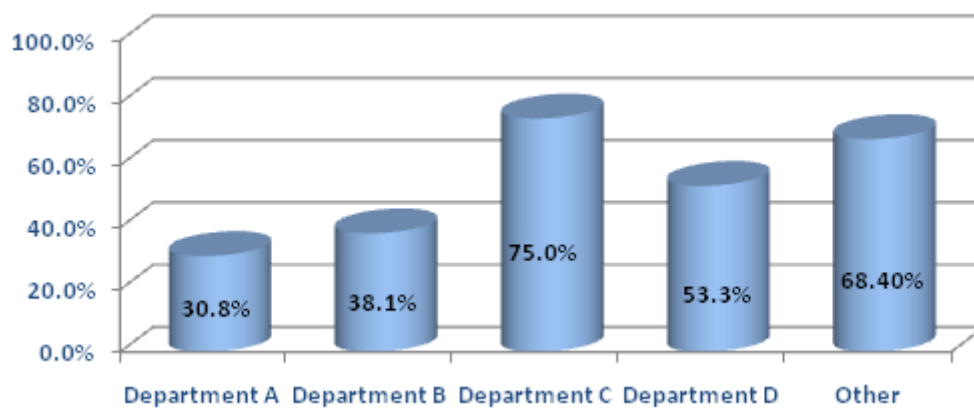

Figure 5.2: The awareness of the project based on departments

The survey results (Table AppendixVI.2 and Table AppendixVI.6) also revealed that there was limited information sharing regarding the change initiatives and its impact; limited number of the potential users, who were aware of the change understood the need (13), scope and objectives (17), and the benefit of the change (13), and only 5 agreed that their department was ready to undertake the change; 1 of them was from department B, 2 were from department C and the other 2 were from other departments.

From the users who were aware of the project, 42.2 % intend to use the system for performing their job as often as they need to, 35.6 % reflected that the change can enhance their career while 64.4% did not agree. They did not find it as a threat to their job (only 6.6% think it can threat) as well. Table AppendixVI.7 shows the correlation between intention to use the system and awareness, messages heard, understanding benefits and the need for change.

From the employees who had not got any training, did not have experience with M-SAP and were not involved in the project only 39.3% believed that they can use the software if enough training is provided. On the other hand, from the users who had been involved in the pilot, or had experience with the project or received training; 50.6% agreed that they can use the software if enough training is provided. This shows that the belief in

their ability to use the system if enough training is provided is higher for employees who are involved in the project.

5.2.2. Expectations

The survey respondents were asked to state their expectations from M-SAP project and from the project management team.

The expectations from the project were mainly:

- A common, global tool for resource managers, project managers and finance that:
    - ✓ will replace the existing tools
    - ✓ is a well working planning tool with improved visibility for a better follow-up of the work actually done, time plan and a better securing of personal resources.
    - ✓ is efficient to work in for all roles to support user' job
    - ✓ is fully integrated with the current processes and the business
- An easy tool that
    - ✓ is user friendly and simple to use
    - ✓ minimizes the time spent on administration

The expectations from the project management team were:

- Providing necessary information about:
    - ✓ the project
    - ✓ the added value for the users and the processes
    - ✓ how to work with the tool
    - ✓ what is needed from the users
- Good training in small groups and good personal support
- Make the tool more user-friendly and increase the performance of the system.
- Having more focus on motivation and the objectives of the system with realistic ambitions and solid anchoring within the organization.
- Listening feedback from the users to make the required changes in the process.

Some people stated that they had low expectations from the project and some did not have information about the project at all. Other comments regarding expectation were:

"My expectations are very low. But anything is better than what we have now".

"My feeling is that if the above cannot be anchored/shown, the introduction of M-SAP will sail against the wind, group managers may short-cut the system (ordering staff to report according to budget rather than actual work) and the quality of reported data will be low. ".

5.3. Key Success Factors for Implementation

5.3.1. Communication

51.2 % of the survey respondents found meeting the most effective way of information sharing (Table AppendixVI.5). Besides, potential users were asked to define the proper communication approach, and the combined results are:

- Meetings
    - ✓ Interactive meetings with first send out materials
    - ✓ Information meetings on group level and dedicated to different type of users
    - ✓ One pager communication at weekly meetings
    - ✓ Information meetings about process changes
- E-Mail with clear instructions that
    - ✓ describes the purpose and benefits
    - ✓ mentions about the existing shortcomings and identifies improvements for the future
    - ✓ states where more questions can be asked after
- Workshop sections in small groups for training purposes, in order to let everybody listen and test the tool
- Written documents
    - ✓ short news via intranet
    - ✓ documents with general scope where everything is explained in details
    - ✓ newsletters
- Management
    - ✓ Using top down approach
    - ✓ Cascade the relevant information down in the organization and make sure that everyone gets the big picture.
- Step by step individual training or training in small groups
- Support personnel on site during implementation period

- Preparing instructions on how to share information and how to motivate people

Other comments from the survey were:

"Motivate us and the rest will be a walk in the park"
"I'm sure that we will be informed as time goes by, or when project is ready for launch in a future".

5.3.2. Motivation

Considering that communication has high impact on motivation (Pugh, 2007, p.85), survey respondents were asked what information they would like to see in 5 minutes slide show to understand the importance of the project, and interviewees were asked to identify proper communication approach in terms of information sharing and motivation and other motivation techniques. Both sides pointed out the importance of information

sharing and having a tool that is user friendly and supports the user needs. The combined answers regarding communication are shown in Figure 5.3.
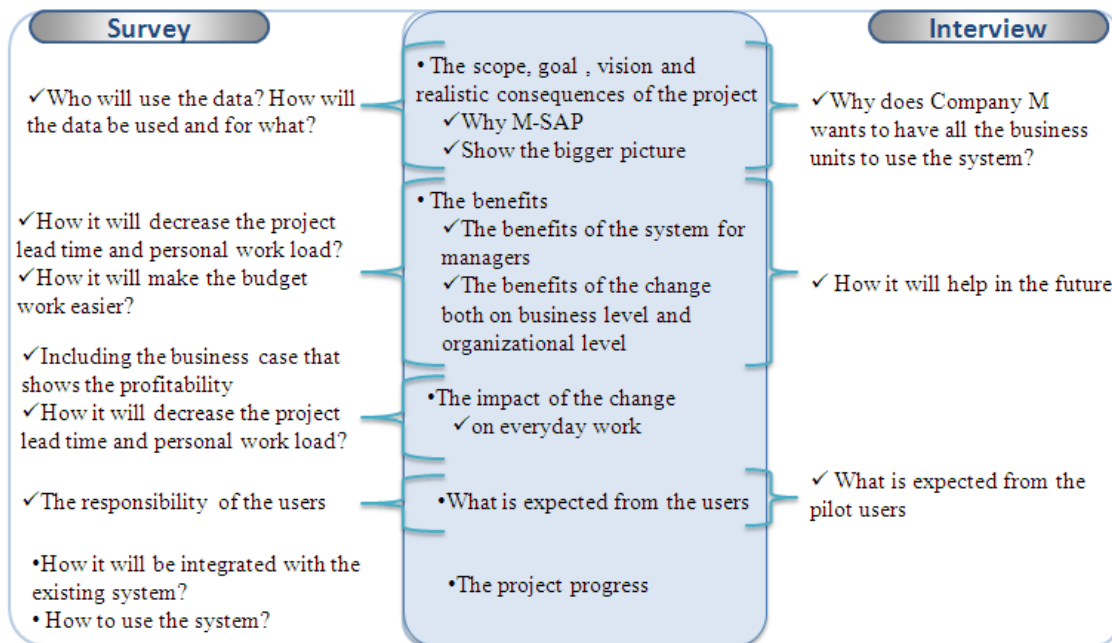

Figure 5.3: Communication approach for motivation

Other motivational approaches that were suggested by interviewees are:

- Dedicated training and good support
- Skilled and well trained coaches
- Strong leadership
- Management support
- Listening feedback on users' change requests
- Promoting the project on intranet
- Making success stories; breaking the system down into pieces and showing how they reached the success
- Having a stable system before the roll out

5.3.3. Suggestions for Improvements

Interviewees were invited to mention about the shortcomings/bottlenecks they had experienced during the change management process and to express their opinion on how to make the transition easier. According to the combined results (Table 5.1), the functionality and user-interface of the tool should be improved based on the feedback from the users. Good training, support and leadership should be provided and required information should be shared with efficient communication to increase the motivation of the users and make the transition easier. According to survey results, there is a strong correlation between encouragement to take part in the change initiatives and feel of confidence that necessary training will be provided (.546) and confidence that the

required support will be provided (0.647). There is also a strong correlation between the success of the previous training programs and the success of the previous change initiatives to achieve the goals (.738). Another correlation exists between the success of the previous change initiatives and the belief in that the new system will be easy to use (.613).

Table 5.1: Shortcomings/bottlenecks of the change management process

	Interview 1	Interview 2	Interview 3	Interview 4	Interview 5	Interview 6	Interview 7	Interview 8	Interview 9	Interview 10	Interview 11	Interview 12	TOTAL #
User-friendliness	*	*		*	*	*	*	*	*	*	*	*	11
Functionality and integration with processes						*	*	*		*	*	*	6
Technical problems	*			*		*	*			*	*		6
Project team is small and not enough key persons	*			*			*		*		*	*	6
Feedback from users	*					*	*				*		4
Training & support	*		*	*	*								4
Too much changes going on				*				*	*			*	4
Lack of information sharing	*		*								*	*	4
Tool (is it right tool)	*	*				*	*						4
Management Commitment – Leadership		*		*						*			3
Willingness to change	*			*	*								3

Interview participants also mentioned that the trainees should be experts and users should start using the system just after the training otherwise they will forget it. There should also be more key users, so they can support other users later on. Managers should take the responsibility with strong leadership to take the road block and make the way smoother.

Interviewees were also asked to identify best case and worst case scenarios that may occur during the implementation:

Best Case

- It may help organization to breakdown projects in the same way
- Company may have better control of budget and resources
- Having a good and global planning tool that enables to see all the projects and time plans
- The tool works well and supports the managers in their work
- It may provide a uniform way of working globally

Worst Case

- The system can be too slow that when all people are in the system can be locked
- Having a heavy or nonuser-friendly system that needs a lot of time and effort
- Having resistance in the organization
- If all projects within Company M should be migrated at the same time some problems may arise and it may effect the budget
- If it does not support the current way of working, then company needs to go for other changes to adapt to the system
- It may be difficult to improve the tool in the future

5.4. **Summary of Key Findings**

The results were presented under three main headings which are maturity level of the change management processes, users' perspective and critical success factors for improvements.

MPX process model has high maturity and is useful in managing change; it covers almost all categories within the maturity matrix. However, more focus could have been given on people issues to foster understanding and willingness, carrying out benchmarking and how to build effective team and perform leadership. When it comes to M-SAP project, it also shows high maturity but limited emphasis was placed on some issues. The main drawback of the M-SAP process was seemed to be in the field of information sharing, communication, middle-management commitment, involvement and benchmarking.

Results show that users' awareness and willingness to accept the change was not high although majority did not think the change would threat their job. Only a few people agreed that their department was ready to undertake the change. Users expected to have a common well performing global tool that would be easy to use, would replace the existing tools and would help resource managers, project managers and finance. Their expectations from project management team were; having more focus on information sharing, listening feedback, training and motivation.

Communication and motivation were key issues for successful implementation. The most effective communication channel was found to be meeting, besides this e-mail, workshop, written documents, training were designated as other appropriate communication channels. Communication was found to have positive impact on motivation by means of information sharing and listening users' feedback. Moreover, training, leadership, technical adjustment of the tool, management commitment and support were also stated to have positive impact on increasing motivation, helping to overcome shortcomings and actualizing the best case scenarios.

6. Discussion

In this section the research findings will be discussed in the light of research questions. The key issues will be examined in three main titles considering the relationship between the research findings and relevant arguments both in the literature review section (Chapter 2) and in other existing literature.

1. The maturity level of the change management process followed during M-SAP project.
2. Users' approach towards change including their awareness, willingness, readiness, ability and expectations.
3. Key success factors that can have impact on the success of the implementation
   a. Proper communication approach
   b. Proper motivation approach
   c. Other major success factors

6.1. The Maturity Level of the Change Management Process Followed During M-SAP Project

Figure 5.1 conveys that there is a gap between the maturity level of MPX process and M-SAP process. Nevertheless, it should not be overlooked that MPX process was analyzed based on the documents while M-SAP process was analyzed based on real life experience; it is a matter of applying theory into practice. Two main shortcomings are identified whilst considering the strengths and weaknesses of the MPX process model and M-SAP change management process maturity assessment. These are:

1. The defined MPX process is more based on what to do; it does not include answers to how to do. There could be some tips answering how to increase the efficiency of teamwork, motivation and leadership.
2. Less priority is given to some aspects; therefore, the change management process followed and tailored to M-SAP project does not fully meet the defined parameters in the maturity matrix.

However, according to Hayes this is not a rare case:

> "Change is often managed less effectively than it might be because those responsible for managing it fail to attend to some of the critical aspects of the change process" (Hayes, 2007, p.82).

So, more effort is needed to meet the key issues within maturity matrix and substantially comply with MPX process.

Getting commitment is an indispensible issue (Beer, Eisenstat and Spector, 1990b); as cited in Section 2.2.3.4, if group leaders are committed they can try to persuade their colleagues for the benefits of the system. Since, using top down approach is an easier (Hiatt and Creasey, 2003, p.25) and most efficient (Beer, Eisenstat and Spector, 1990b) way of managing change. In fact the necessity of gaining commitment from managers, steering committee, project-team and key users was already mentioned in MPX

document, but in reality there was no visible top-down approach and sincere commitment from middle-management. Yet, Hiatt and Creasey (2003, p.21) warn that middle-management's unwillingness to accept the change can jeopardize the success of the project. It is not only middle managers who should support the project, change buy-in across the company and managers' ownership are also included in the maturity matrix. Results shows that more effort is needed to be put forth to increase the ownership and change buy-in. To move to a higher level in commitment, involvement is another issue to be taken into consideration. The strong correlation found between involvement and willing to put extra effort also shows that commitment can be increased through involvement. According to Galoppin and Caems (2007, p.80), this is due to the reason that it gives employees a feeling of having change under control.

Potential users were not satisfied with being informed about the project progress and impact of the change although majority of the interviewees had shared some information with their group. Thus, in order to increase the maturity level in communication, there could be more clear instructions for managers on information sharing and more effort should be made to inform users about project progress and to ensure that users understand the need and impact of the change. Recall, in the literature review part it was cited that sometimes there can be misinterpretation, so how to transmit the message is as important as the message itself. In the present case study, there could be failure in the transmission or receipt of the intended message. The correlation between intention of using the system and the messages heard also shows the effects of the messages transmitted (Table AppendixVI.7).

The process maturity regarding people issues could be increased by paying more attention on motivating people about the importance and impact of the project, providing instructions on how to build an effective team. Training and communication were also mentioned to have positive impact on motivation. Moreover, one of the interviewee pointed out the need for a better communication and information sharing with realistic assessments including both benefits and disadvantages. Abdinnour-Helm, Lengnick-Hall and Lengnick-Hall (2003) state that people react more positively when a detailed explanation is provided. Pugh (2007, p.180) also asserts that once there is a realistic and honest approach to difficulties it is likely to achieve trust through communication, motivation and participation. Realistic approach was also suggested by Galoppin and Caems (2007, p.76) due to the reason that people want to hear reasonable explanations and the reality, "not the details". In fact, the survey results also showed that there is a strong relationship between the positive feelings created by the messages heard and the belief in the importance of the project. However, unfortunately majority of the potential users do not feel comfortable with the messages they heard. As already cited one respondent noted that based on the messages heard so far he/she thinks that it will bring more administration tasks and less flexibility for everyday work. Unlike Aladwani's (2001) assertion (cited in Section 2.2.3.3), the reason behind the negative feelings in this case was not fear of loosing job, it was more about limited communication and involvement.

So, it can be commented that a better guide could be provided for M-SAP project by adding more instruction to MPX process documents regarding people issues, team effectiveness (e.g. how to build an efficient change management team) and leadership.

Because, teams are the key components of the organizations in order to accomplish the tasks (Robbins and Judge, 2007, p.656). Regarding project management approach the interviewees agree that going for pilot tests is a good approach although some interviewees complain about the technical problems occurred during pilot phase. According to the data collected and observations, it can be concluded that pilot users had experienced the positive and negative side effects of piloting that was identified by Kanter, Stein and Jick (1992, p.514); the benefits are getting people's opinion, building support, learning from experience and using it to perform a more efficient roll out in the future, while the risks are high cost, creating resistance and anxiety, increasing doubt about people's commitment. If pilot users cannot receive enough support when a problem occurred in pilot phase their trust in receiving enough support in the future will be low, as in Company M case. Another benefit stated by an interviewee regarding pilot was that key users gained experience during pilot stage could support their colleagues later on.

Performing inadequate benchmarking was seen as one of the shortcoming during process, one interviewee commented:

> "We have spent much time on defining the wanted functionality of a system and I think that is very important thing to do, but not when the answer is already there with its functionality."

According to Pugh (2007, p.75) it is easier to win the employees if the problem is apparent but the solution is not proposed yet.

The maturity level is quite high in keeping the balance with other change initiatives; however some comments shows that people involved in the project management team had other tasks to do so they could not put much effort on dealing with the change issues.

6.2. Users' Approach towards Change Including their Awareness, Willingness, Readiness, Ability and Expectations

Considering organization's overall awareness of the change initiatives and relationship between intention to use the system and the messages heard (Table AppendixVI.7) it can be commented that there should be better communication. In the present case awareness differs across departments, so cooperation and communication between different departments could be a suggestion to increase the awareness. However, being aware of the change is not enough, employees should comprehend that there is a need for change in order to embrace the change (Self and Schraeder, 2009; Cameron and Green, 2004, p. 63). Conversely, as shown in Table AppendixVI.7, a weak correlation was found between willingness to use the system and understanding the need for change. The messages heard and understanding the benefits of the system seems to have higher impact on willingness than being only aware or only understanding the need for change. This can be due to the reason that there were not many people who were aware of the change and who believed in the necessity of the change. Nevertheless, in this

case, top managers can promote an efficient awareness by communicating the benefits of the system (Aladwani, 2001).

In the present study, those who were aware of the change showed lack of understanding the need, benefits, scope and objectives of change and vast majority of the employees did not think that their department was ready to undertake the change. Self and Schraeder (2009) point out the relationship between readiness and resistance; if organization is not ready to undertake the change people are not willing to support it, as in the present case. So, before going for a radical change like this the content and advantages of the change should be explained. If top managers try to implement the change before the organization is ready, the implementation can get into trouble (Motwani, Subramanian and Gopalakrishna, 2005). Recall, it was cited (Section 2.2.1) that organizational readiness should be ensured in the first stage of the change process.

Research results show that people who are involved have higher self-belief in their ability to use the system than those who are not. Supporting this finding, Pugh's statement regarding the effect of presence of involvement is quoted below:

> "… if this is present it is more likely that staff will not only accept change as essential, but feel confident they can perform under the new circumstances" (Pugh, 2007, p.74).

In summary it can be commented that awareness in not enough to increase the willingness; organization should feel ready to undertake the change. If employees do not feel ready to undertake the change it is likely that they show resistance. Involvement can decrease the negative reactions and have positive effect on willingness and self-belief in ability to change.

When it comes to the expectations, employees in different positions (resource managers, project managers and finance) have different expectations based on the work they perform. However, almost everyone agreed that there was a need for a common tool which is easy to use, is fully integrated with processes, helps in their everyday work and can replace the existing systems. Galoppin and Caems (2007) state that:

> "It would be wishful thinking to believe that an SAP implementation will replace all existing legacy systems. So, even when using SAP, there is still a need for interfaces to other SAP or non-SAP environments" (Galoppin and Caems (2007, p.47).

In this regard interviewees express:

> "Currently, I do not think that it will replace the existing system; the data required for input and the output data from the system is not the same as in the old one".

> "I think the SCORE Step 2 project will replace the existing system portfolio properly but it will take time and we need some extra development of SS2".

Their general expectations from the project management team were more on better communication, training, motivation and being listened to. In this regard, Pugh (2007, p.74) argued; the expectation from change process is different for staff, middle management and other managers and in order to create common grounds there is a need for communication, information sharing and involvement. Information sharing can even foster a widespread ownership (Pugh, 2007, p.179).

6.3. **Key Success Factors for a Better Change Management**

6.3.1. **Communication Approach**

In this research, meeting is found to be the most effective way of communication. In addition to the meetings, e-mails with clear instructions, workshop sections, intranet, written documents and top-down management approach are designated to be appropriate communication channels. It was also illustrated on Figure 2.5 that the most effective communication channel in terms of information richness is face-to face communication. So, face to face meeting can be used to increase the communication effectiveness. In fact, Robbins and Judge (2007, p.382) suggest that the proper channel could be picked based on the type of the message; if the message is 'routine', consisting low ambiguity then it is 'former' type, whereas if the message is 'nonroutine' that is difficult to understand then it is 'latter' type. They state that:

> "Managers can communicate routine messages effectively through channels that are lower in richness. However, they can communicate nonroutine messages effectively only by selecting rich channels" Robbins and Judge (2007, p.382).

Step by step individual training is also suggested as an effective way of communicating the change. An important point noted is to start using the system just after training, otherwise, people can forget what they learned. The learning pyramid below (Figure 6.1) might be helpful to build a more effective training program. The pyramid shows that people remember only 50% what they hear and see, but 80% what they have experienced and 90% what is explained and showed. In this regard Henry's (1994) recommendation to trainers is to have a dedicated step by step training which can also be helpful to decrease the negative thoughts about difficulty of the system.
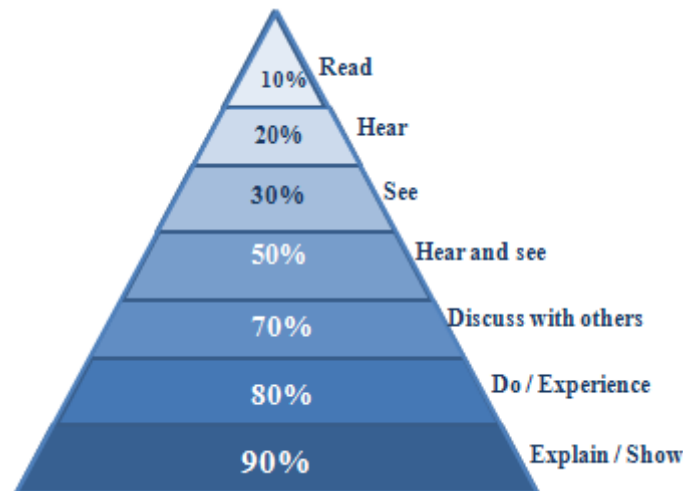
Figure 6.1: The learning pyramid (Galoppin and Caems, 2007, p.217)

The importance of the communication on motivation is evident from the results (Figure 5.3). Robbins and Judge (2007, p.649) suggest two levels to suppress the resistance through communication;

1. Removing the impact of misinterpreted information and lack of communication; if employees get the reality and misunderstanding is clarified they will be less negative.
2. Imposing the need for change using a proper communication approach

6.3.2. Motivation Approach

Research results show that people's motivation is not at desired level. Main factors effecting motivation are defined to be communication (particularly by means of information sharing, listening users' feedback), dedicated training, management support and having a stable system before roll-out.

Although literature takes resistance as a normal and sometimes even desirable reaction, it can be a difficult challenge as well; changing mindset is not that easy. Taking employees' psychological state (individuals' mood) into consideration might be a way to overcome the resistance. In this respect the following figures (Figure 6.2 and Figure 6.3) can be helpful to pick the most proper times for communication and training; figures show that positive moods are more common on Thursday and Fridays around 3:00 PM.
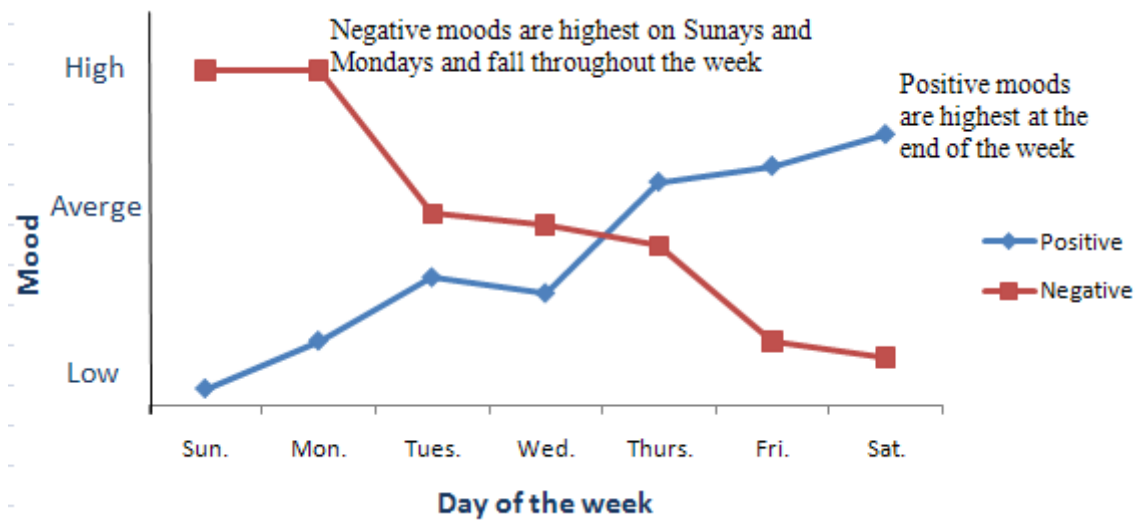
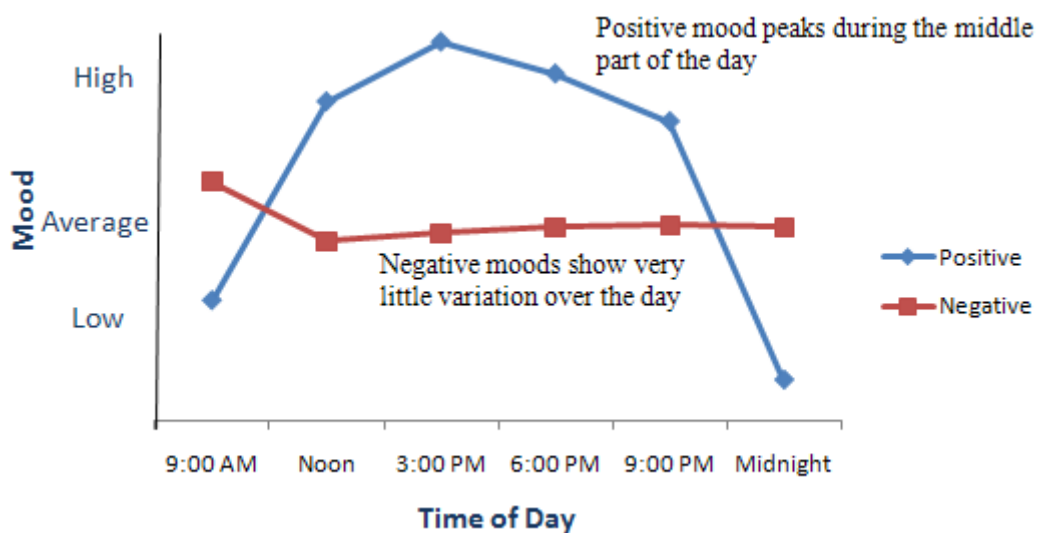*Figure 6.2: Moods affected by day or the week (Watson, 2000 cited in Robbins and Judge, 2007, p.267)*

Figure 6.3: Moods affected by time of the day (Watson, 2000 cited in Robbins and Judge, 2007, p.268)

Looking from psychological perspective, employees' current psychological stage of reaction (shown in Figure 2.4) can also be analyzed. Further research might be required to find out where Company M employees stand in this figure, but on the basis of research results and observation majority of them seem to be in the denial phase. To move negative feelings towards acceptance, organizational culture can be taken into consideration together with motivational factors. According to Galoppin and Caems (2007, p.55) in denial phase the top management's and other employees' participation is low, people make up their own scenarios and project management team is working hard on the implementation.

Burke (2002, p.13) asserts that culture cannot be changed with an approach that focuses directly on the culture so it is better to start with behaviour and it will affect values and

attitudes. Likewise, Beer, Eisenstat and Spector (1990b) point out the fallacy of the belief that attitude changes can bring about behavioural changes and if it is repeated by many people it will lead to organizational change. Instead, they believe that the primary target should be behaviour, the ideas and attitudes should have second priority and the best way to change the behaviour is to assign new responsibilities, roles and relationships within a new organizational framework, because, organizational system has greater impact on people than vice versa. On the other hand, Zeffane (1996) warns that putting excessive effort on behaviours instead of changing culture is one of the frequent mistakes made by enterprises.

6.3.3. Other Major Success Factors

Employees, who have experienced the tool, were not satisfied with the user-interface and functionality of the system; they would like to have a tool which is easy to use, minimizes the time spent for administration, provides better support for managers in their work and is fully integrated with current processes and the business.

However, Galloppin and Cames (2007, p.47) indicate that SAP is an "off-the-shelf product" that can be customized and supplemented, but the aim should not be to redesign the system to fully adapt to organizations' existing way of working. Mostly organizations need to adapt to the SAP system's method of working. They also assert that:

> "The art of successful implementation is to find a balance between integrating
> SAP into the organization and integrating the organization into SAP" (p.47).

Another shortcoming expressed was the technical problems of the system. As suggested by users, technical problems is needed be fixed and user interface should be improved before going for roll-out of the project. Because, if users are not satisfied with the technical quality of the system (e.g. user-friendliness, functionality, performance) they are unwilling to accept it, but lack of involvement and how the system is introduced also makes it to appear unfriendly (Hirschheim and Newman,1998).

It is not only technical problems which have negative impact on willingness; inadequacy of involvement, communication, management commitment, leadership, and motivation, plus other changes going on and feeling of not being listened to also lead to reduced willingness. Employees feel that their feedback is not processed properly and according to Galoppin and Caems (2007, p.60) interruptions of expectations cause negative feelings. On the basis of the investigation, it can be commented that the main sources of low willingness in this case are ignorance, comparison, disbelief, anxiety, contamination and inhibition (Table 2.2).

Information sharing, making the organization to understand that it is not only Company M issue, building a strong leadership, increasing number of key users and well-trained coaches to support staff are also key issues in managing change.

7. Conclusions and Recommendations

Deep organizational change is not an easy process (Burke, 2002, p.1); things do not always work as planned (p.2). Taking uniqueness of IT projects into consideration only limited generalization can be provided on how to manage change during SAP implementation. In fact, Buchanan and Badham (1999, p.194) emphasize that it is not possible to manage change using a checklist of change management steps. It is not difficult to write down what steps should be followed but when it comes to manage it, especially people issues, serious effort should be spent to reach success considering key factors. The objective of this study was to focus on important factors that need consideration while managing change and in this section conclusion will be drawn based on the research findings of this single case study

Research questions covered three main aspects; process, users' approach and key success factors of managing change. The main conclusions and recommendations drawn regarding change management process are:

- The need for change should be emphasized and people should be informed of the project's existence at early stages of the change management process.
- It should not be overlooked that it is easier to win the employees if the problem is apparent but the solution has not been proposed yet. Participative approach and a detailed selection process should be followed to find out the most appropriate solution.
- Organizational readiness should be ensured in the first stage of the change process.
- Realistic information should be provided to the users about benefits and difficulties of the system.
- Carrying out benchmarking with different technologies and similar change management projects should not be neglected.
- An effective change management team should be built.
- Commitment should be gained both from top-management and middle-management.
- A change management process should include both technical and non technical (e.g. communication, motivation, commitment, information sharing, trust, psychological issue, building an effective change management team, leadership) consideration.
- It is beneficial to pilot projects before roll-out although it may bring about some resistance.
- Technical problems should be solved to provide a stable system before project roll-out.
- Strong leadership, good training in small groups and necessary support should be afforded; having adequate number of key users can be helpful to provide support in the future.
- Users' feedback should be taken into consideration.
- A balance should be attained between adapting SAP to organization's processes and adapting organization's processes to SAP.

From potential users' perspective it can be concluded that their awareness about the project should be promoted, but it should not be neglected that it is not enough to only inform people about project's existence; detailed and realistic explanation should be included on pros and cons of the project and why it is needed. If people find it beneficial their willingness to use the system will increase. Likewise if organization is not ready to undertake the change they are not willing to support it. Nevertheless, involvement can increase the participation, willingness and self belief in ability to change.

The main key success factors for a better change management are defined to be communication, motivation, participation, commitment, training, leadership, trust and a system that is free of technical problems. The most effective way of communication is meeting; besides this e-mails with clear instructions, training, help-desk and intranet are preferred. Based on the research findings, the main issues that may increase motivation in Company M are determined to be communication, participation, middle-management commitment, good training and support, leadership, listening users' expectation, resolving technical issues and increasing users' awareness, readiness to change. The relationship between motivation and other success factors is illustrated in Figure 7.1.
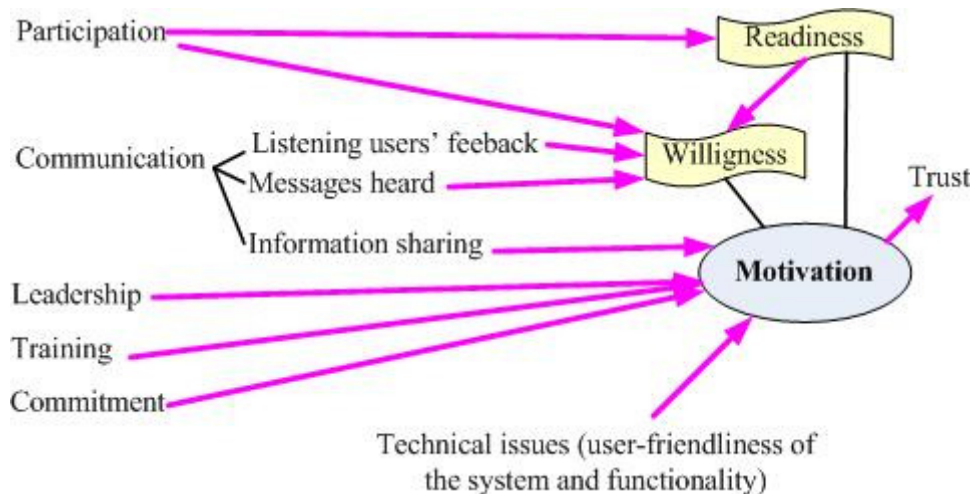

Figure 7.1: Key success factors in change management

7.1. **Limitations**

The applied research strategy, which is a single case study, makes it difficult to generalize the results since it provides an elaborate picture of people's approach and perception within one organization. Thus, this research might be a valuable example for change management including real life experience, but might not be generalized to a larger class.

This research was performed only at one stage in the project life cycle. Organization's approach prior to roll-out can be an important predictor of early improvement and SAP project's success; however, assessing organizations' attitudes over time would be a better indicator of the effectiveness of the change management process followed.

Besides this, huge amount of data and internal documents were analyzed to determine

the maturity level of the management activities. Remarkable effort was spent not to skip any important information, but some information might accidentally be overlooked. Moreover, author cannot ensure that the assessment of maturity level of change management process was made on a purely objective basis although objectivity of the results were taken seriously.

Lastly, the maturity results are provided using Clarke and Garside's (1997) maturity matrix, but other benchmarking tools might have a different approach to change management. Besides, benchmarking is provided only between the defined project management process and its practice. As already mention, putting something into practice is usually harder than defining it, so, the gap between the defined MPX process and M-SAP project process may draw readers into a failure of perception that M-SAP project was not managed according to MPX process.

7.2. Future Research

Similar research could be performed using multiple case studies by including different business units, companies or countries. Thus, more reliable and comparable benchmarking can be performed between different process definitions and different practices separately.

In addition to that, it could be useful to observe users' awareness, willingness, readiness and ability over time. Especially, it can be interesting to see whether a success story can be created in spite of low willingness at early stages of the project. It might be useful to perform continuous improvement in change management process and find out which factors need more attention as project implementation proceeds.

7.3. Self Reflection

This research was substantially worthwhile and enjoyable. Carrying out the thesis work in the company was genuinely beneficial and Company M was particularly open and supportive to the study being conducted. The topic was very interesting allowing dissertations' fulfilment without losing enthusiasm. At the same time, writing this thesis required great effort due to the fact that it was not seamless and easy activity; good planning and hard work was needed. Some difficulties aroused while collecting data due to time mismatch, and potential users' lack of awareness of the project. Analyzing, the huge amount of data collected was not easy either; it required serious effort. However, it was an interesting and enjoyable process. Using software programs that provide more comprehensive quantitative (PAWS/SPSS 18) and qualitative (NVivo 8.0) data analysis was helpful to decrease the complexity of the data analysis process.

8. References

Abdinnour-Helm, S., Lengnick-Hall, M. L. and Lengnick-Hall, C. A. (2003): Pre-implementation attitudes and organizational readiness for implementing an Enterprise Resource Planning system. *European Journal of Operational Research*, Vol. 146, pp. 258-273.

Aladwani, A. M. (2001): Change management strategies for successful ERP implementation. *Business Process Management Journal*, Vol. 7, No. 3, pp. 266-275.

Al-Mashari, M. and Zairi, M. (2000): Information and business process equality: the case of SAP R/3 implementation. *The Electronic Journal on Information Systems in Developing Countries*, Vol. 2, No. 4, pp. 1-15.

Beer, M. and Eisenstat, R. A. (1996): Developing an organization capable of implementing strategy and learning. *Human Relations*, Vol.49, No. 5, May 1996, pp. 597-620.

Beer, M., Eisenstat, R. A. and Spector, B. (1990a): *The Critical Path to Corporate Renewal*. Harvard Business School Press, Boston.

Beer, M., Eisenstat, R. A. and Spector, B. (1990b): Why Change Programs Don't Produce Change. *Harvard Business Review*, Vol. 68, No. 6, November-December 1990, pp. 158-166.

Biggam, J. (2008): *Succeeding with Your Masters Dissertation: A practical Step-by-Step Handbook.* Open University Press, England.

Bingi, P., Sharma, M. K. and Godla, J. K. (1999): Critical issues affecting an ERP implementation. *Information System Management*, Vol. 16, No. 3, pp. 7-15.

Bridges, W. (1986): Managing organizational transitions. *Organizational Dynamics*, Vol. 15, pp. 24-33.

Buchanan, D. and Badham, R. (1999): *Power, Politics, and Organizational Change: Winning the Turf Game.* Sage Publications, London.

Burke, W. W. (2002): *Organization Change: Theory and practice.* Sage Publications, Thousand Oaks.

Burke, W. W. and Litwin, G. H. (1992): A causal model of organizational performance and change. *Journal of Management*, Vol. 18, No. 3, pp. 523-545.

Cameron, E. and Green, M. (2004): *Making Sense of Change Management: A Complete Guide to the Model, Tools and Techniques of Organizational Change.* Kogan Page Limited, Great Britain.

Carter, E. (2008): Successful change requires more than change management. *The Journal for Quality and Participation*, Vol. 31, No. 1, Spring 2008, pp. 20-23.

Carter, L., Ulrich, D and Goldsmith, M. (2005): *Best Practices in Leadership Development and Organization Change: How the Best Companies Ensure Meaningful Change and Sustainable Leadership.* John Wiley & Sons, San Francisco.

Clarke, A. and Garside, J. (1997): The development of a best practice model for change management. *European Management Journal,* Vol. 15, No. 5, October 1997, pp. 537-545.

Clarke, A. and Manton, S. (1997): A benchmarking tool for change management. *Business Process Management Journal*, Vol. 3, No. 3, pp. 248-255.

Davenport, T.H. (1998): Putting the enterprise into the enterprise system. *Harvard Business Review*, July-August 1998, pp. 121-31.

Del Val, M.P. and Fuentes, C.M. (2003): Resistance to change: a literature review and empirical study. *Management Decision*, Vol. 41, No. 2, pp. 148-155.

De Wit, B. and Meyer, R. (2005): *Strategy Synthesis: Resolving Strategy Paradoxes to Create Competitive Advantages – Text and Readings.* 2nd edn. Thomson Learning, London.

Dong, L. (2001): Modeling top management influence on ES implementation. *Business Process Management Journal*, Vol. 7, No. 3, pp. 243-250.

Dunphy D. C. and Stace D. A. (1988): Transformational and Coercive Strategies for Planned Organisational Change: Beyond the OD Model. *Organization Studies*, Vol. 9, No. 3, pp. 317-334.

Galoppin, L. and Caems,S. (2007): *Managing Organizational Change during SAP Implementations.* Sap Press, Bonn.

Gerring, J (2007): *Case study research: Principles and practices*. Cambridge University Press, Leiden.

Hall, R. (2002): Enterprise resource planning systems and organizational change: Transforming work organization?. *Strategic Change*, Vol. 11, August 2002, pp. 263-270.

Hayes, J. (2007): *The Theory and Practice of Change Management*. 2nd edn. Palgrave Macmillan, Basingstoke.

Henry, J. W. (1994): Resistance to Computer-based Technology in the Workplace Causes and Solutions. *Executive Development*, Vol. 7, No. 1, pp. 20-23.

Hiatt, J. M. and Creasey, T. J. (2003): *Change Management: The People Side of Change.* Prosci Research, Loveland, Colorado, USA.

Hirschheim, R. and Newman, M. (1998): Information Systems and User Resistance: Theory and Practice. *The Computer Journal,* Vol. 3, No. 5, pp. 398-408.

Hong, K-K., Kim, Y-G. (2002): The critical success factors for ERP implementation: an organizational fit perspective. *Information & Management*, Vol. 40, No. 1, pp. 25-40.

Jarrar, Y.F., AL-Mudimigh, A. and Zairi, M. (2000): ERP implementation critical success factors-the role and impact of business process management. *ICMIT'00*, Vol. 2, pp. 122- 127.

Kanter, R. M., Stein, B.A. and Jick, T. D. (1992): *The Challenge of Organizational Change: How Companies Experience It and Leaders Guide It*. The Free Press, New York.

Krovi, R. (1993): Identifying the Causes of Resistance to IS Implementation: A Change Theory. Perspective. *Information & Management*, Vol. 25, No. 6, pp. 327-335.

Lines, R. (2004): Influence of participation in strategic change: resistance, organizational commitment and change goal achievement. *Journal of Change Management,* Vol. 4, No. 3, September 2004, pp. 193-215.

Lines, R., Selart, M., Espedal, B. and Johansen, S.T. (2005): The production of trust during organizational change. *Journal of Change Management,* Vol. 5, No. 2, June 2005, pp. 221-245.

Motwani, J., Subramanian, R. and Gopalakrishna, P. (2005): Critical factors for successful ERP implementation: Exploratory findings from four case studies. *Computers in Industry,* Vol. 56, pp. 529-544.

Nagy, S. and Biber, H. (2010): *Mixed Methods Research: Merging Theory with Practice.* The Guilford Press, New York.

Nah, F. F-H. (2002): *Enterprise Resource Planning Solutions and Management*. IRM Press, Hershey.

Poole, M. S. and Van de Ven, A. H. (2004): *Handbook of organizational change and innovation*. Oxford University Press, New York.

Pugh, L. (2007): *Change Management in Information Services.* Ashgate Publishing Limited, Aldershot.

Robbins, S. P. and Judge, T. A. (2007): *Organizational Behavior* 12th edn. Pearson Education, New Jersey.

Rudestam, K. E. and Newton, R. R. (2007): *Surviving Your Dissertation: A Comprehensive Guide to Content and Process*. 3rd edn. Sage Publications, Thousand Oaks.

Schwab, D. P. (2005): *Research Methods for Organizational Studies.* 2nd edn. Lawrence Erlbaum Associates, New Jersey.

Self, D. R. and Schraeder, M. (2009): Enhancing the success of organizational change: Matching readiness strategies with sources of resistance. *Leadership & Organization Development Journal,* Vol. 30, No. 2, pp. 167-182.

Senior, B. and Fleming, J. (2006): *Organizational Change.* 3rd edn. Pearson Education, Harlow.

Trader-Leigh, K.E. (2002): Case study: identifying resistance in managing change. *Journal of Organizational Change Management*, Vol. 15, No. 2, pp. 138–155.

Williams, E.G. (1969): Changing systems and behaviour: People's perspectives on prospective changes. *Business Horizons*, Vol. 12, August 1969, pp. 53- 58.

Zeffane, R. (1996): Dynamics of strategic change: critical issues in fostering positive organizational change. *Leadership & Organization Development Journal*, Vol. 17, No. 7, pp. 36-43.

9. Appendix I –Benchmarking Tool for Change Management

Level	Commitment	People	Communication	Methods	Interactions
5	**Full & visible commitment** visible commitment from top and throughout the company at all stages of project - including post-implementation; everyone in the organisation buys in to the change	**Culture which is fully committed to change** those affected by change are involved from start and throughout; change seen as vital to the business; people issues are addressed throughout the project; impact of the change on individuals fully addressed; team works well together & team spirit is excellent	**Excellent communication** everyone in organisation (including customers and suppliers) understands need for change, what is being done throughout the project, throughout the project to post-implementation and the impact the change will have on the business	**Always used** project management is used well & consistently throughout; everyone in team understands and can use it; benchmarking is always carried out; multi-disciplinary co-located project team with full time project manager; training identified and given before project starts and throughout the project	**Excellent management of interactions** change is part of the business plan; senior person in the business full-time on change management; good balance of long and short term change projects; good balance of operational work and change projects; resource management good
4	**Good commitment but inconsistent or absent at times** clear direction from steering committee; clear ownership of tasks; all those impacted by the change are involved right from the start and throughout the project; virtually everyone across company buys into the change	**Culture which readily accepts change** most of those affected by change are involved from start and throughout; most people consider the change worthwhile; people issues are usually addressed; impact of the change on individuals widely understood ; team works well most of the time & team spirit is good	**Very good communication** most people in the organisation at all levels understand the need for change, what the changes are and how it will impact on the business	**Usually used** project management is used consistently throughout; many people in team understand and can use it; bench-marking usually done; project team is multi-disciplinary, often co-located with full time project manager; training identified and given at start of project	**Very good management of interactions** changes are mostly in business plan; senior person with responsibility for change management; good balance of operations and change projects; little consideration to long and short term balance; occasional problems with resource management an issue
3	**Some visible commitment - often consistent but low level** ; full time project manager; project owner at senior level; many of people in project team own the change; few resource constraints; all members of team attend meetings; operational v project conflicts at times; those involved have input throughout the project; most people buy in to the change	**Culture which accepts change** ; many of those affected by change are involved from start and throughout; change is regarded as important to business but inconvenient; impact of the change on individuals discussed; team works well but lacks team spirit at times people issues are sometimes included	**Good communication** all project team, most senior managers and many people throughout the company understand the need for the change, what the changes are and how it will impact on the business	**Often used** most aspects of project management are used; one or two people in team can use it; multi-disciplinary project team with project manager; training identified and given at start of project	**Good management of interactions** changes are often part of the business plan but some unplanned; senior person in the business full-time on change management; operational work v change projects conflicts; resource management sometimes an issue
2	**Limited & inconsistent commitment** no steering committee; project owner not interested or not senior enough; sporadic attendance at project meetings; operations take priority over project tasks; limited buy-in across company; few people completely buy in to project	**Culture which reluctantly accepts change** few of those affected by change are involved from start and throughout; change seen as necessary evil; few people understand implications of the change on them; limited team work with no real team spirit	**Limited communication** most of project team, and some managers understand the need for the change, what the changes are and how it will impact on the business	**Sometimes used** some aspects of project management are used; at least one person in team uses it; multi-disciplinary project team with project manager; little training carried out	**Limited management of interactions** changes are often planned but seldom formalised; senior person with responsibility for change management; operational work takes priority; resource problems often arise
1	**Poor commitment** project team members often pulled off to operational duties; only select few people buy in to the change; few team members regularly attend meetings; resources (people & equipment) are a problem	**Culture which is very wary of change** virtually no-one affected by change is involved throughout; few people believe the change is worth doing; the impact of the change on individuals has not been addressed; no real team work or spirit	**Poor communication** some managers understand the need for the change, what the changes are and how it will impact on the business but only project team knows progress being made	**Seldom used** only one or two aspects of project management used at certain times in the project; no-one really knows how to use all of it; team approach used; no training given specifically to team before or during project	**Poor management of interactions** ; most changes are unplanned; no one specifically responsible for change management (shared); good balance of operations and change projects operations have to take priority; changes are usually under-resourced
0	**No commitment** little top level support; poorly attended project team meetings; people involved in change only when operational duties are slacker; no support or buy in across the company	**Culture which does not readily accept change** change considered waste of time; no-one in organisation knows or has considered the implications of the project on them; few believe that the change is worth doing; no team work	**No communication** hardly anyone knows the importance of the project, what is going on & how it can influence the business	**Never used** project management never used; benchmarking never used; no real project teams; no training given to people involved in implementing change	**No management of interactions** changes are always unplanned; under-resourced and always take second place to operations; no-one responsible for managing change

10. Appendix II – Information Consent Letter for Interviewees

Dear Managers,

My name is Sevim Guler. I am master student at International Project Management program of Chalmers University of Technology and at Project Management program of Northumbria University /U.K. Currently I am working on the final master thesis and I would like to invite you to participate in a study I am conducting at your as part of my master thesis.

Please take your time to read the information below which may be useful to understand the reasoning behind the research and what your participation would entail if you decide to take part.

The topic for my dissertation is Change Management. The study will focus on the change that comes with M-SAP project. I shall investigate Company M way of change management from process and people perspective. I am especially interested in your views and approach towards change. The questions will be devoted to communication style, information sharing, participation, motivation and any further insights would be very much appreciated.

The interview will take approximately 40-50 minutes and the participation is voluntary. Questions will be sent to you prior to the meeting. You have the right to decline to answer any of the questions if you so wish and you may withdraw from this study at any time without having to give a reason for doing so. Further, the interview will be audio recorded with your permission and transcribed for analysis. After transcribing the interview a copy will be sent to you so that an accurate transcript can be made and you can have an opportunity to edit any points that you wish.

The research success relies upon your honest opinion thus treating information confidentially is of the utmost importance. I would like to assure that participants' privacy and confidentiality will be maintained; they will remain anonymous so that no one will be able to recognize your sayings in the finished thesis. Northumbria University required ethical approval prior to this research and I had signed "Research Project Ethics Register Form". I have also attached the "Research Participant Consent

Form" to this e-mail. If you decide to participate you would require signing the consent form attached.

The research findings will be published in both Chalmers University of Technology's and Northumbria University's library and later may be included in academic conferences and/or publications.

I would appreciate the opportunity to have an interview with you. If you have any comments or questions please contact me on ……. or send me an e-mail.…….. You may also contact my supervisor … at Company M: on ….. , or my tutor/supervisor Max Rapp Ricciardi at Department of Psychology, Gothenburg University.

Thank you in advance for your time and assistance in this project.

Yours sincerely

Sevim Guler

11. Appendix III – Interview Questions

Are you part of M-SAP project management team? ◯ Yes   ◯ No

Department:

1. To what degree would you rate the following statements?

	Very Low	Low	Medium	High	Very high
The support from top management	◯	◯	◯	◯	◯
The change management team's (M-SAP team) ownership of the project-tasks	◯	◯	◯	◯	◯
The team members' understanding of the program and ability to use it.	◯	◯	◯	◯	◯
The team members' understanding of the impact of the change	◯	◯	◯	◯	◯
The proper and effective usage of project management throughout the implementation	◯	◯	◯	◯	◯
The effectiveness in managing resources during change management process	◯	◯	◯	◯	◯

2. Please rate your degree of agreement with the following statements:

	Strongly Disagree	Partially Disagree	Neutral	Partially Agree	Strongly Agree
The people affected by change are appropriately involved throughout the change process	◯	◯	◯	◯	◯
People issues such as motivation, career enhancement are well addressed	◯	◯	◯	◯	◯
I share the information regarding M-SAP project with the members in my team (users)	◯	◯	◯	◯	◯
Training program is identified	◯	◯	◯	◯	◯
Training is given both before and during the project implementation	◯	◯	◯	◯	◯
I think the decision-making approach regarding change	◯	◯	◯	◯	◯

initiatives is effective.

I am satisfied with my involvement in decision-making. ○ ○ ○ ○ ○

I am willing to put in extra effort to effectively drive and
implement the change ○ ○ ○ ○ ○

3. Please rate the frequency of:

	No Idea	Never	Seldom	Sometimes	Often	Usually	Always
Change management teams' attendance to the meetings	○	○	○	○	○	○	○
Carrying out the benchmarking with similar change management projects in the past or with companies similar to Company M.	○	○	○	○	○	○	○

4. How do the change management team (M-SAP team) work?

- ○ The team works efficient and there is an excellent team spirit with shared directions
- ○ The team members usually work well together and there is a good team spirit
- ○ The team members works well but there is lack of team spirit
- ○ The team work is limited and there is no obvious team spirit
- ○ There is not a real team or team spirit
- ○ No teamwork

5. How is the balance between change management activities and other operational tasks within the department? Do you try to set the stage for the change initiatives or do you focus on the other projects while postponing the change initiatives until sometime in the future?

6. Do you take a leadership role in driving the change initiatives? If yes, what is your communication approach in terms of information sharing and motivation? What else can be done to increase the motivation of the users?

7. What bottlenecks and shortcomings do you experience during the change management process of M-SAP project? In your opinion how these problems could be solved to make the transition easier?

8. In your opinion what are the 3 best-case and 3 worst-case scenarios that may occur during M-SAP project implementation?

Best-Case:

1. .
2. .
3. .

Worst-Case:

1. .
2. .
3. .

9. Could you explain whether or not you believe that M-SAP project will succeed? Will M-SAP project replace the existing system properly?

Are the objectives of the project achievable or do you think the organization takes too much change initiatives at one time?

12.   Appendix IV – Information Consent Letter for Survey Respondents

Dear Respondent,

I am master student at International Project Management program of Chalmers University of Technology and at Project Management program of Northumbria University /U.K. Currently I am working on the final master thesis and I would like to invite you to participate in a study I am conducting at Company M as part of my master thesis.

Please take your time to read the information below which may be useful to understand the reasoning behind the research and what your participation would entail if you decide to take part.

The topic for my dissertation is Change Management. The study will focus on the change that comes with M-SAP project. I shall investigate Company M way of change management from process and people perspective. As a user, your participation will provide valuable and complementary information on how the change initiatives are being communicated, perceived and implemented within Company M. During the survey you will be asked to fill in some demographic information about yourself and to complete some multiple choice and open-end questions.

You will not be asked to give your name or any other data that could identify you. The research success relies upon your honest opinion thus treating information confidentially is of the utmost importance. In this regard, I assure that participants' privacy and confidentiality will be maintained: the contribution will be anonymous, the results will be aggregated and no individual results will be published. The data collected will only be used for research purposes.

This survey will take approximately 10 -15 minutes to complete and your participation in this study is completely voluntary. There are no foreseeable risks for participation but if you still do not feel comfortable answering the questions, please feel free to withdraw from this study at any time without having to give a reason.

Finally, I would like to emphasize that the purpose of this survey is different from the **M-SAP** surveys that will be send out later and from the one that was conducted back in 2009. This survey is being conducted for **research purposes** as part of my **thesis work**.

If you have understood the purpose of this research and agree to participate please tick the following **box**:

I understand the purpose of this research and agree to participate:

If you have any questions please contact me on ……. or send me an e-mail: ……. You may also contact my supervisor … at Company M: on ….….. or my tutor/supervisor Max Rapp Ricciardi at Department of Psychology, Gothenburg University:…………..

Thank you in advance for your time and assistance in this research.

Yours sincerely

Sevim Guler

13. Appendix V- Survey

Gender　　　　　　○ Female　　　○ Male

Age:　　　　　　　○ <30　　　　○ 30-38　　　　　　○ 39-50　　　○ 50<

Length of employment:　○ <3　　　○ 3-8　　　　　　○ 9-15　　　○ 15<

Department:　　　○ A　　　　　　　　　　　　　○ C
　　　　　　　　　　○ B　　　　　　　　　　　　　○ D

　　　　　　　　　　　　　　　　　　　　　　　　Other　…………………

Position:　　　　○ Managerial　　　　　　　　○ Non- managerial

Please rate your degree of agreement with the following statements:

1. Awareness and readiness:

	Strongly Disagree	Partially Disagree	Neutral	Partially Agree	Strongly Agree
I am aware of the M-SAP project	○	○	○	○	○
The messages I have heard about M-SAP make me feel comfortable what the project will mean to me	○	○	○	○	○
I understand the scope and objectives of the M-SAP project	○	○	○	○	○
I understand the benefits that the project will bring about	○	○	○	○	○
I am informed about the progress being made	○	○	○	○	○
I know the impact of the change on my work	○	○	○	○	○
I know what is expected from me	○	○	○	○	○
My department is ready to undertake the change	○	○	○	○	○

2. Willingness:

	Strongly Disagree	Partially Disagree	Neutral	Partially Agree	Strongly Agree
I understand the need for change	○	○	○	○	○
M-SAP project is important to my business	○	○	○	○	○

	Strongly Disagree	Partially Disagree	Neutral	Partially Agree	Strongly Agree
M-SAP project is important to my department	○	○	○	○	○
I believe in the added value and efficiency of the M-SAP project	○	○	○	○	○
I intend to use M-SAP project for performing my job as often as I need to.	○	○	○	○	○
The change that comes with M-SAP project can enhance my career	○	○	○	○	○
The change can threat my job	○	○	○	○	○

3. Ability

	Strongly Disagree	Partially Disagree	Neutral	Partially Agree	Strongly Agree
I have experience with M-SAP	○	○	○	○	○
I have received some training	○	○	○	○	○
I think the new software system will be easy to use	○	○	○	○	○
I can use the new software system if enough training is provided	○	○	○	○	○
Previous change initiatives had achieved their goals	○	○	○	○	○
The training programs in the past were successful	○	○	○	○	○

4. Other

	Strongly Disagree	Partially Disagree	Neutral	Partially Agree	Strongly Agree
I am encouraged to take part in the change initiatives instead of being forced to comply with.	○	○	○	○	○
I feel confident that all the necessary trainings will be provided	○	○	○	○	○
I feel confident that I will receive required support that enables me to fulfil the activities effectively within the project	○	○	○	○	○

I trust my manager that he/she will support us and take the best course of actions   ○   ○   ○   ○   ○

I am confident that the change initiatives will be successful   ○   ○   ○   ○   ○

5. What is the most effective way for you to receive the information about M-SAP project?

      ○ E-mail
      ○ Meeting
      ○ Intranet
      ○ Help desk

      Other: ………………

6. What information is still missing: if there is 5 minutes slide show what would you like to see to understand the importance of the change that comes with M-SAP project?

7. What are your expectations from M-SAP project and from the project management team?

8. In your opinion how should be the proper communication approach?

9. Further comments:

14.   Appendix VI – Results

Table AppendixVI.1: Demographic Information

Gender	Age	Manager?	Department	Involvement in the Pilot Phase
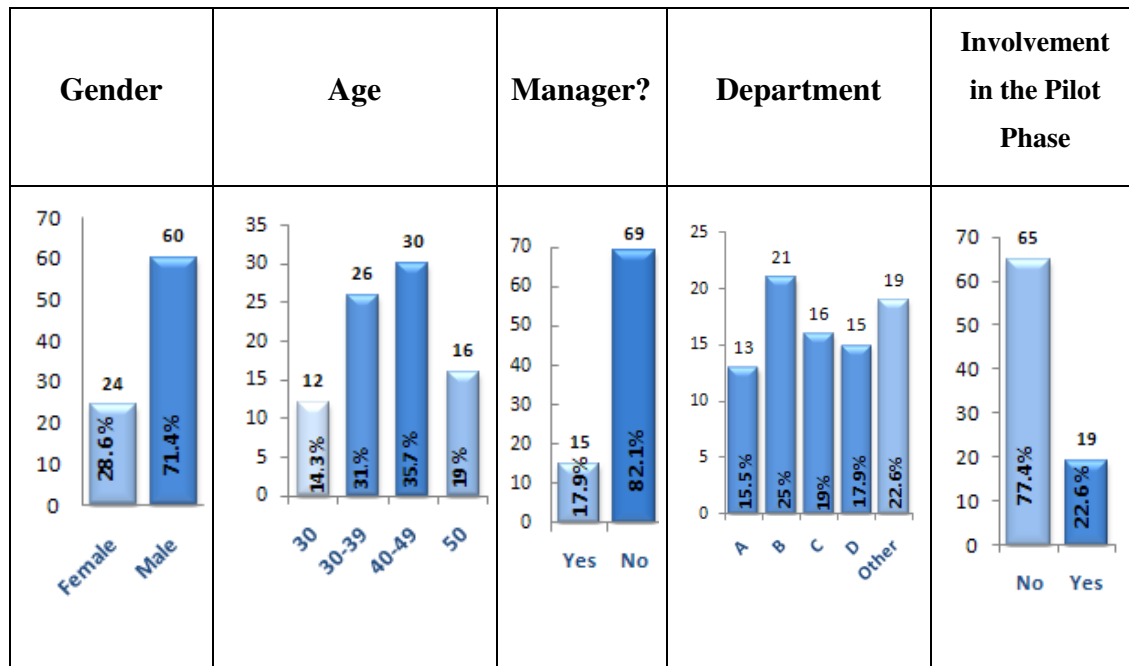
Table AppendixVI.2: Evaluation of information

	Awareness of the project		Informed about the progress*		Knowing impact of change*		Knowing what is expected*	
	#	%	#	%	#	%	#	%
Strongly Disagree	13	15.5	12	26.7	11	24.4	11	24.4
Disagree	11	13.1	12	26.7	14	31.1	13	28.9
Neutral	15	17.9	12	26.7	8	17.8	11	24.4
Agree	13	15.5	6	13.3	10	22.2	5	11.1
Strongly Agree	32	38.1	3	6.7	2	4.4	5	11.1
Total	84	100 %	45	100%	45	100 %	45	100 %

*: Results are obtained using the data provided by the participants who are aware of the project (#: frequency, %: percentage)

Table AppendixVI.3: Correlation between the messages heard and perception of the importance of the project

N= 45 *		Messages heard makes feel comfortable what the project will mean.	The project is important to my business	The project is important to my department
Messages heard makes feel comfortable what the project will mean.	*Pearson Corr.*	1	.732	.779
	Sig. (2-tailed)		.000	.000
M-SAP project is important to my business	*Pearson Corr.*	.732	1	.891
	Sig. (2-tailed)	.000		.000
M-SAP project is important to my department	*Pearson Corr.*	.779	.891	1
	Sig. (2-tailed)	.000	.000	

*: Results are obtained base on the participants who are aware of the project

Table AppendixVI.4: Evaluation of respondent answers regarding "tools and methodology"

	Effective usage of project man.		Understanding and ability to use		Understanding the impact of change		Effectiveness in resource management	
	#	%	#	%	#	%	#	%
Very Low	1	8.3	1	8.3	1	8.3	3	25.0
Low	3	25.0	2	16.7	1	8.3	1	8.3
Medium	5	41.7	1	8.3	5	41.7	4	33.3
High	2	16.7	6	50.0	4	33.3	2	16.7
Very High	0	0	2	16.7	1	8.3	0	0
Total	11	91.7	12	100.0	12	100.0	10	83.3
Missing	1	8.3	1	8.3	1	8.3	2	16.7

Table AppendixVI.5: Most effective ways of information sharing

Meeting		E-mail		Intranet		Help desk		Training		Network		Top-down information	
#	%	#	%	#	%	#	%	#	%	#	%	#	%
43	51.2	22	26.2	11	13.1	2	2.4	1	1.2	1	1.2	1	1.2

Table AppendixVI.6: Awareness and readiness to change

	Understand the scope and objectives *		Understand the benefits *		Understand the need for change *		Department is ready *	
	#	%	#	%	#	%	#	%
Strongly Disagree	6	13.3	11	24.4	11	24.4	8	17.8
Disagree	7	15.6	10	22.2	9	20.0	17	37.8
Neutral	15	33.3	11	24.4	11	24.4	15	33.3
Agree	11	24.4	13	28.9	9	20.0	3	6.7
Strongly Agree	6	13.3	-	-	5	11.1	2	4.4
Total	45	100.0	45	100.0	45	100.0	45	100.0

*: Results are obtained using the data provided by the participants who are aware of the project

Table AppendixVI.7: Correlation with intention to use the system

	Messages heard	Understand the benefits	Awareness	Understanding the need
Intention to use the system	.538	.484	.464	.363

15.   Appendix VII– Maturity Assessment

Sub-titles based on Clarke and Garside's (1997) maturity matrix	Max	MPX	M-SAP
Commitment			
Visible commitment with steering committee and fulltime project manager	5	5	3.3
Project ownership	5	5	3
Involvement throughout the project	5	4.8	2.6
Operational tasks and project tasks	5	3.5	3.5
Change buy-in across the company	5	5	3.3
	5	**4.67**	**3.14**
Communication			
Understanding the need for change	5	4.8	3.3
Understanding and being informed about project progress and what the changes are	5	4	2.7
Understanding the impact the change will have on the business	5	4.5	3.2
	5	**4.43**	**3.2**
People Issues			
Involvement	5	4.8	2.6
Change seen as vital to the business	5	4	2.3
Addressing people issues	5	4.5	3.2
Impact of the change on individuals are addressed	5	4.1	3.2
Teamwork	5	4.3	3.5
	5	**4.34**	**3.05**
Tools and Methodology			
Project management is used well and consistently	5	4	3.2
Everyone in the team understands the system and can use it	5	3.5	3.5
Benchmarking is always carried out	5	3.5	2.8
Multi-disciplinary co-located project team with full time project manager	5	4.8	4
Training is identified and given before project starts and throughout the project	5	5	3.7
	5	**4.16**	**3.44**
Interactions with Other Changes			
Change is part of the business plan	5	5	5
Senior person in the business fulltime on change management	5	4	4
Good resource management	5	5	3
Balance of operational and change project	5	3.5	3.5
	5	**4.38**	**3.87**