

**CHANGE MANAGEMENT: THE IMPACT ON SYSTEMS IMPLEMENTATION.A  
BUSINESS APPLICATION SOLUTIONCENTRE (BASC) CASE STUDY**

by

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submitted in accordance with the requirements for  
the degree of

MAGISTER TECHNOLOGIAE

in the subject

HUMAN RESOURCE MANAGEMENT

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF A BEZUIDENHOUT

JANUARY 2013

## **Declaration**

I declare that CHANGE MANAGEMENT: THE IMPACT ON SYSTEMS IMPLEMENTATION. A BUSINESS APPLICATION SOLUTION CENTRE (BASC) CASE STUDY is my own work and that all sources I have used and quoted have been indicated and acknowledged by means of complete references. This mini-dissertation is submitted in accordance with the requirements for the degree Master Technologiae in the subject Human Resource Management, at the University of South Africa.

# Acknowledgements

I would like to thank God, myCreator, for giving me the necessary energy, strength and wisdom during this trying time, and for assisting me with the completion of this study.

Secondly, I would like to thank and acknowledge all those people who have assisted me – for their dedication, continued support and contribution towards this Research Study – especially during the time the dissertation was being prepared and written.

A special “Thank You” goes to the following:

Mr Nico Harris, the Business-Application Solution-Centre Manager for allowing me to do the research at BASC during working hours, and to interview employees, as well as for his guidance during the research.

Dr Marie de Beer, for acting as my supervisor, and for giving useful comments and feedback on the dissertation. I have benefited greatly from your intuition, and technical knowledge.

All those people, who participated in the survey and took some time out of their busy schedules to participate and give comprehensive answers to the questions. Many thanks to all those who also participated in the add-on research questionnaire, by enriching me with their views on the research.

Dr Patrick Goldstone for editing the dissertation.

Professor Adéle Bezuidenhout, for acting as my supervisor;although it was a brief relationship. I would like to especially express my sincere appreciation to her for assisting me in reachingthe conclusion of this project.

Lastly, I would like to thank my family, especially my husband,BillyAbner, who has been a pillar of strength and support throughout the time of writing this dissertation. My children, Kabelo and Khutso, for their assistance in taking care of the household chores, while I was staying late at the office during the research project.Without them, this dissertationwould not have been possible.

## **Abstract**

The dissertation discusses the impact of change management during the implementation of an IT system. The theoretical part of the dissertation is aimed at gaining information about human performance, and the implications during the implementation of the system, and also post-implementation. Literature suggests that the human factor is the key to the successful implementation of system projects.

The study, which is qualitative in nature, makes use of face-to-face interviews for the collection of evidence, as well as questionnaires as add-on tools to support the underlying constructs and research questions posed within the study. The use of data obtained from the research interviews, as well as survey data, has provided the research study with the necessary validity, reliability and trustworthy data to support the research results, findings – and to be able to make some recommendations.

The reason for the failure of system implementation projects is often due to poor implementation during the project. It is important to place the importance of people on a par with technology and processes. A holistic approach would be the most likely to result in the acceptance – and the efficient and effective use of the implemented system. Communication, training and management participation are common means of addressing any fears of change, and to build trust.

This information should be utilised by project teams during implementation projects, as it should help to provide the necessary framework to ensure the success of the change initiatives.

## **Key terms**

Change management; IT systems; Information systems; Change resistance; Impact of change management; End user perception; Performance management; Change management factors; Forces of change; PEST factors; Communication; Training; Participation; Behaviour.

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# Chapter One

## 1.1 Introduction

The environment in which organisations operate has become increasingly complex, turbulent, and uncertain (van Tonder, 2004:47). Only those organisations able to respond quickly and effectively to changing environmental conditions will be able to survive (Burnes, 2004: 444). It is held that changes in the environment are due to various factors such as:

- Increased global competition and competitors;
- Technological innovations;
- New or different government and international regulations;
- Economic and social restructuring;
- Growth;
- The changing nature of the workforce;
- The ecological dilemma – with increased attention on the environmental impact of organisational practices; and
- Shifts in client and stakeholder expectations.

For organisations to remain in business, they have to change, in order to keep in balance with the environment. However, to remain in business and maintain the competitive edge in a changing environment, managing change needs to be a core competency in which managers are skilled. The ability to manage change will be more important in the years ahead than at any time before (Nadler and Tushman, 1989: 194). It is also claimed that while the future may be uncertain, it is clear that organisations and managers without the ability to respond successfully to the accelerating changes would have no future (Harper, 2004: 327).

## **1.2 Background: Change Management**

Change management is one of the biggest tasks in which a business may be involved. It is a deliberate approach in the bringing major changes for meeting people's expectations to move the business forward smoothly (Cameron and Green, 2004: 65). When the need for change arises, organisations and businesses have no option, but to respond— or else they will lose their competitiveness in the market.

Burnes (2004: 448): states that change management can support a range of change projects, including the implementation of a new process, new systems, updated structures, or technology – in the establishment of a new working culture or set of values in any particular area.

Clark and Wheelwright, (1992: 9–28) report that extensive research shows that technology, in general, imposes change on many levels in an organization. Burnes (2004: 444-448) also reports that the implementation of information systems brings with it new ways of doing business in organisations. It is clear that information systems will bring about some degree of change in an organization; and hence, information-system projects should be treated as change projects.

## **1.3 Change management and system implementation**

Kotter (1995: 59-67) argued that the amount of significant, often traumatic change in organizations has grown tremendously over the past few decades. Organizations try to improve with the help of change efforts, such as new system implementations, change programmes and change champions. However, in too many situations the improvements are disappointing, and the changes do not work out as they were intended to (Kotter, 1995: 59-67). This author recognized the downside of change, and stated that whenever human communities are forced to adjust to shifting conditions, pain is ever-present; and he goes on to say that managers and organizations also make mistakes in developing and implementing the change

efforts. Kotter (1979:106) concluded that a significant number of the mistakes made are avoidable.

There are various aspects involved in change management, and they vary, according to the application of different systems. Change management is required in separately functional areas, where the systems are to be applied, such as human resources, training department and the programme management office (Journal of Information Technology, 2003: 53). This is likely to happen locally within internal departments. However, if the implementation involves a more complex area, such as applying the system in all departments in the organisation and at different branches, this would certainly require collaborative participation and support throughout the business components, including higher management areas and executives (van Tonder, 2004:53).

When initiating changes during the implementation of new systems, it is nearly impossible to get absolutely affirmative feedback from all the departments of the organisation. It is held that this problem would become even more serious when resistance is higher than the tolerable amount (Mincu, 1999). Many experts agree that it is not resistance itself that leads to failure, but how the management level deals with such resistance (Dawson, 2003:19).

In order to understand clearly what the actual sources of resistance are, project leaders need to talk to all their employees, especially lower-level employees. Understanding their fears, curiosity and sensing the level of opposition, when determining the right way to approach their resistance, is necessary (Dawson, 2003: 19).

There are two primary reasons why people resist change: lack of motivation and lack of ability (Mincu, 1999). Many employees within an organisation usually have not been informed sufficiently in regard to the purpose of change, and how an information system could benefit them. That is why many of them are not motivated to support these new systems. This can be resolved by initiating a good communication and vision-sharing (Dawson, 2003: 174).

Meyer and Allen(1991: 61-89) state that lack of ability often becomes the main reason for such resistance. On the one hand, people may agree, and understand the need for change.However, they are afraid to accept such change because of their limited ability. In most cases, new systems mean back-to-school; and they require further training for each individual involved in the organisation, with accompanying learning curves, Degradation of productivity can become a major issue.Kotter and Schlesinger (2008:27-40)further arguethat end-user resistance to the introduction of a new technology, such as an information system, normally comes from users' perception of the risks associated with that technology.

This condition is strengthened by their preference for doing their work in the habitual manner. Most users would rather do their jobs in the way they have normally done this, rather than being innovative to find a better way of doing things.

Kotter (1995: 73) feelsthat change efforts take a long time, some as much as six to eight years to be fully implemented. One reason for this is that people within organizations can be resistant to organizational change. According to Kotter and Schlesinger (2008:27-40), managers are generally aware of the factor of human resistance. But, surprisingly few take time before a change to assess systematically who might resist the change initiative, and for what reason. Kotter and Schlesinger (2008: 27-40) further acknowledge that individuals and groups can react to change in many different ways:from passively resisting it, to aggressively trying to undermine it, to sincerely embracing it.

Failure in handling such conditions will inevitably bring major damages: both tangible and intangible, such as employees persistently resisting the change.Customers are also affected by the impact of change Upset employees, and valued staff may leave the business (Kotter and Schlesinger (2008: 27-40). These authors further state that good project leaders will successfully carry out change management – resulting,in a better feeling throughout the organisation – and how the employees would gradually move their expectation along with clearer understanding of the new system.

Schein (1980: 228) argued that many people are assuming that change management is part of system implementation. In fact, because of the level of

complexity of the system, change management has always been a continuing process required throughout system implementation. Some experts agree that information systems would not be successfully implemented without a massive dose of change management; otherwise, the organization would not be positioned to best use the new system.

That is why the implementation of a new system is a costly process; and yet most of the organisations that have implemented new information systems were mostly over budget and behind schedule. The main issue in any new system implementation is replacing the existing system with a new one. In a minor environment, change can be done quite easily. However, for a compound system, such as ERP (Enterprise Resource Planning system), change management become a crucial component to manage the changes systematically.

Changes must be efficiently planned, scheduled, carried out, and documented, in order to minimize the cost and disruption during implementation (van Tonder, 2004:47).

The following are success stories where change management was planned, and carried out successfully, during the ERP system-implementation projects.

Harreld (2000) states that when the Houston Independent School District (HISD), which consisted of 288 schools tried to implement ERP systems (SAP and PeopleSoft), they successfully implemented eleven system modules joined together to support 2000 end-users at 400 remote sites; but this took eight months. Compared with average time required to implement an information system, they deserved an absolute thumbs-up. Their key success was their dedication, a lot of effort and time in preparing change management to ease the transition. They dedicate their best employees to configure the system. HISD has achieved a 42 percent return on investment within two years.

Another success story occurred in the company named Bombardier Aerospace. Because of the nature of the company, they had to implement multi-disciplinary (people, organisation, technology and processes) change management to cover

various expertise areas, in order to successfully implement a new system. Bombardier Aerospace realised that change management is not just dealing with human behaviour, but that it also requires industrial psychology, organizational development, human resources, training and communication (Greiner, 1998: 55-68).

## **1.4 The Problem Statement**

To a large extent, system implementations have mainly focused on the success of the system implemented, and not on the impact the change has had on employees (van Tonder, 2004: 46). This author further remarks that the literature on change management of people is curiously silent about the impact on employees, or the way employees attempt to cope with these changes.

Adams, Hayes and Hopson (1976: 5) argued that minimal progress had been achieved in the after-effects on individuals' wellbeing in response to change. Focusing on research, they concluded further that there has been no focus on how system changes within an organisation will affect the employees. In the process of developing a best-practice model for change management, Stuart (1996: 12) referred to the tendency of excluding the human element in change management. It may thus be concluded that comprehensive research information on employees' experiences of change and the impact of such change processes on the wellbeing of employees – other than from a management perspective and the success of the change – is virtually non-existent.

This author further stated that the lack of information on the impact on employees and their subsequent wellbeing does not mean that there is no information on change. What seems to be the problem is lack of communication and the training of employees during the implementation of the system, the identification of critical success factors for the management of change, in addition to a valid framework for organisational change.

Furthermore, the establishment and identification of employees' perceptions on the impact of change management, is a vital necessity.

## **1.5 Research Objectives**

### **1.5.1 Main Objective**

The purpose of this research is to identify and examine the factors (in terms of training, communication and the perceptions of end-users), which would have an impact on change management during the implementation of an e-contract system, in order to facilitate the operationalization of the system.

### **1.5.2 Supporting Objectives**

In order to achieve this, the research intends to:

- Define the characteristics and components of the e-contract system;
- Identify the change-management factors that have an impact on the implementation of the e-contract system;
- Establish the skills required to operationalize the system;
- Establish end-user perceptions on the impact of change management.

### **1.5.3 Research Questions for this study**

#### **Research Question 1:**

What are the components of an e-contract system being implemented?

#### **Research Question 2:**

What are the change-management factors that have an impact on the implementation of an e-contract system?



### **Research Question 3:**

What are the skills required to operationalize the e-contract system?

### **Research Question 4:**

What are the perceptions of the critical issues for the management of system-driven change?

## **1.6 Scope**

The research is limited to a department, namely: the Business Applications Solution Centre (hereafter referred to as BASC), within the organisation dealing with all the system-implementation projects across the organisation. The e-contract system is used to measure employee performance in the department. The impact of change management during an e-contract system's implementation will be examined.

## **1.7 The Limitations of the study**

It must be noted that twenty interviews were conducted; and it could well be questioned whether there is enough information to generalise the findings. Due to time and logistical constraints, the sample was relatively small. The minimum sample size differs from discipline to discipline for a credible study. It may be advisable to expand the sample size in further change management research studies.

## **1.8 Research methodology**

This is a qualitative research, with the data being collected through structured interviews. A questionnaire is also used as an add-on to get more views, and to enable the researcher to include a much broader range of respondents in the research and evidence of patterns amongst bigger populations.

## **1.9 Importance of the study**

The fact that little or no research has been conducted on the impact of change management on employees when implementing new IT systems indicates that management in organisations still fail to see the importance of dealing with those affected by the change initiatives(van Tonder, 2004: 177).

The results should add value to the existing body of knowledge on change management upon which the research community, South African organisations, and industries, in general,could build on and utilize to rectify any unsubstantiated perceptions they might have had regarding the importance of change management.

Iacovini, (1993: 56-68) further stated that the organisation's owners, management and employees should have the intellectual, functional, emotional, social skills and competencies to deal with the change process.

For the change process to be effective, it requires the presence of change agents in the organisation. Change agents are individuals or groups of individuals, who act as catalysts in the organisation. These people are responsible for managing the change process in the organisation. They should already know and understand what the change is all about, and be able to transmit this message to their employees. In essence, they should sell the change to get the employees' buy-in to the implantation thereof(Jick, 1993: 200).

This authorfurther stated that change is part of any business; and organisations should find ways of managing it, in order to render it successful. Leaders are the people expected to lead and manage change in organisations; and they are required to perform their best in managing change successfully.

## **1.10 The structure of the dissertation**

This dissertation will be organised as follows:

Chapter One: This chapter provides an introduction to the study, an overview of the problem statement, and the research objectives. It also defines the scope and limitations of the research, the hypotheses, the research method, as well as the importance of the study.

Chapter Two consists of the Literature review that deals with various concepts in the research areas of performance management, e-contract systems, and change-management factors that would include end-user communication, end-user training, in addition to end-user perceptions.

Chapter Three consists of the research methodology, and explaining the different methods that are utilised to answer the research questions. Furthermore, an overview is given on how the gathered data were analysed and the results were achieved through quantitative and qualitative research, as well as the reliability and validity of the instruments; it further provides a discussion on the various sources of information and the way in which the data are to be analysed and interpreted.

Chapter Four contains the interpretation of the findings of the research, using the research questions. It also explains the critical success factors required for change management to influence the success of the system being implemented.

Chapter Five consists of the summary, together with the main findings, their relationship to the objectives; and additionally, it provides suggestions for the professional practice.

## **1.11 Conclusion**

In this chapter an overview of the research problem has been provided. The related research objectives, the scope and limitations of the research, the research methodology, and the importance of the study were all examined. The current and available literature based on the research problem, and the research propositions that may result from the research conducted will be highlighted, and further explored in the following chapter.

## **Chapter Two**

### **The Literature Review**

#### **2.1 Introduction**

In Chapter 1, a brief background of change management and system implementation during the implementation process was provided. The problem statement building into the research objective of identifying and examining the factors impacting on change management during the implementation of an e-contract system were covered. The Scope, together with the limitations of the study, the research design, and the structure of the dissertation were clearly defined.

The basic components of an e-contract system will be covered, as well as the change-management factors that have an impact on the implementation of the e-contract system. It is also necessary to examine the skills required to operationalise the system, together with the end-user perceptions on the impact of change management. This chapter will also review the theories and models that have been developed; and it will seek to explain the fundamental concepts relating to change management. It also presents an overview of the previous research related to this thesis and the research questions.

It covers studies referring to performance management, performance-management systems, information technology and change management.

#### **2.2 The basic components of an e-contract system**

##### **2.2.1 The e-Contract as a performance-management system**

Meyer and Allen(1991: 61-89) describe performance management as a purposeful continuous process that is geared towards positively influencing employees' behaviour for the achievement of the organisation's strategic goals. Greiner (1972:37-46) noted that performance management is a broader term, a formal and systematic process, where the job-relevant strengths and weaknesses of employees are identified, observed, measured, captured and developed. Performance

management provides the opportunity for the organization to evaluate the performance of its employees.

It also provides information, so that important decisions can be taken, and feedback received for further development of the staff.

Witkin et al. (1974: 9-23) stated that effective systems can significantly contribute to the satisfaction and motivation of employees – if they are correctly used. The objectives of the system fall into two categories: evaluative and developmental, as displayed in Figure 1.

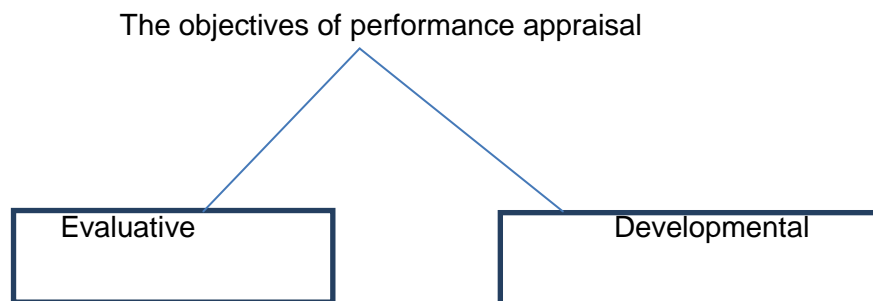


Figure 1: Evaluative and developmental objectives (Greiner, 1972)

### Evaluative objectives Greiner

The most common decisions based on evaluative objectives relate to compensation, which includes merit increases, employee bonuses and other increases in pay. The performance appraisal normally has a two-sided effect on future pay. In the short run, it may determine merit increases for the following year; in the long run, it may determine which employees are going to be promoted into higher paying jobs.

### Development objectives

This objective encompasses employee skills and motivation for future performance. Performance feedback is a primary developmental need, because all employees want to know how their superiors feel about their performance (Greiner, 1972:37-46).

Clarke (2001: 33-41) states that it is generally agreed that performance management is a component of the process of managing human resources – with the aim of achieving employee and organizational goals. This will remain a key concern of HR practitioners and managers alike. Clarke (2001: 33-41) further stated that performance management is an enterprise-class-contract-management system providing full contract lifecycle-management functionality – including collaborative contract creation and negotiation, performance, compliance and risk management, amendment, renewal processing, and event management.

Briggings (1997: 6) described performance management as a tool, a strategy, and something to assist with performance improvement in an organisation. However, there are common problems relating to performance management. He further stated that, firstly, employees can be resentful of the fact that their performance is being measured instead of just permitting them to do their own thing in their own time. There can also be suspicion that the targets would become unreasonable, and that management would change and tighten up targets and goals without notice. Secondly, it may be suspected that staff would try to sabotage the implementation of a performance-management strategy. Employees can be fearful of exposure; and as a result, they might seek to add fuel to the fires of suspicion that surround the implementation of a performance-management strategy. This may also lead to resistance to change.

Thirdly, the fear is that management might fail to ensure that the infrastructure is in place to ensure that performance management is seen as being a continuous event. Often management embraces performance management quite frequently, whereas the employees do not welcome any changes.

Briggings (1997:6) continued to argue that there are problems in terms of performance-management strategies being time-consuming to implement. Sometimes management forget that the strategy requires feedback from top management to bottom and from bottom to top. Management have to be ready to embrace that kind of feedback. It may not always be positive; it may even highlight deficits in terms of management style, but they need to embrace it; or the performance-management strategy would become vulnerable.

Problems, such as these, are often cited as being reasons why a performance-management strategy should not be adopted. However, in reality, these problems are significant, but they are not insurmountable. Often they can be anticipated; and once an organisation is aware that a problem may be encountered, then action can be taken to minimise the risk of these problems undermining the process of adopting a performance-management system throughout the organisation (Briggings, 1997: 6).

Realising these problems and the associated business-improvement opportunities, several software companies started in the mid-1980s to develop performance-management systems. In the late 1990s, a new class of performance-management systems was introduced. Besides the e-Contract, there are other terms and systems existing. These were established by different firms.

### **2.2.2 The e-Contract: an information-technology system**

Kai-ming (2000, 266-282) reveals that an important and far-reaching influence on organisations in almost everything that they do is the increasing power of information technology and systems. At the same time, within the context of Africa, and South Africa particularly – the use of technology is not without problems, as many organisations wanting to reach markets, customers and clients need to acknowledge that not everyone has access to computers, such as for example, internet-connectivity services. Willie (1989) provided a further analysis of the internal forces for organisational change within South Africa. These further indicate that South African firms are changing – as a result of organisational life-cycle evolutions, the re-invention of core structures and processes, culturally diverse workforce talent, and highly unionized workforces that trigger organisational change.

This has created a significant impact on the role of a change-leader, who must now not only meet the needs of the culturally diverse workforce comprising illiterate, unskilled and semi-skilled workers. He further highlights two significant issues impacting organisational change within South Africa at large, namely: that the only way in which South African managers will be able to succeed in resolving a number of organisational change issues is to improve the current human potential that is

available for South African organisations; and that with both the internal and external changes forcing South African firms to continually reassess their strategies and operations – the methods and timing with which employees will respond to change and transformation would necessarily differ.

Greiner (1972:37-46) identified five distinct phases of an organisational life-cycle, which are useful for identifying an organisation’s position as regards change during such organisational change, thereby providing a warning for the organisational change or transformation team of the impending crisis point that they would need to address during the change process. In order to grow, the organisation is supposed to pass through a series of identifiable phases or stages of development and crisis, which are similar, to some degree, to the concept of ontogenic development. The phases of the life-cycle, as stated by Greiner (1998: 55), include creativity, direction, delegation, co-ordination and collaboration, as depicted in Figure 2.

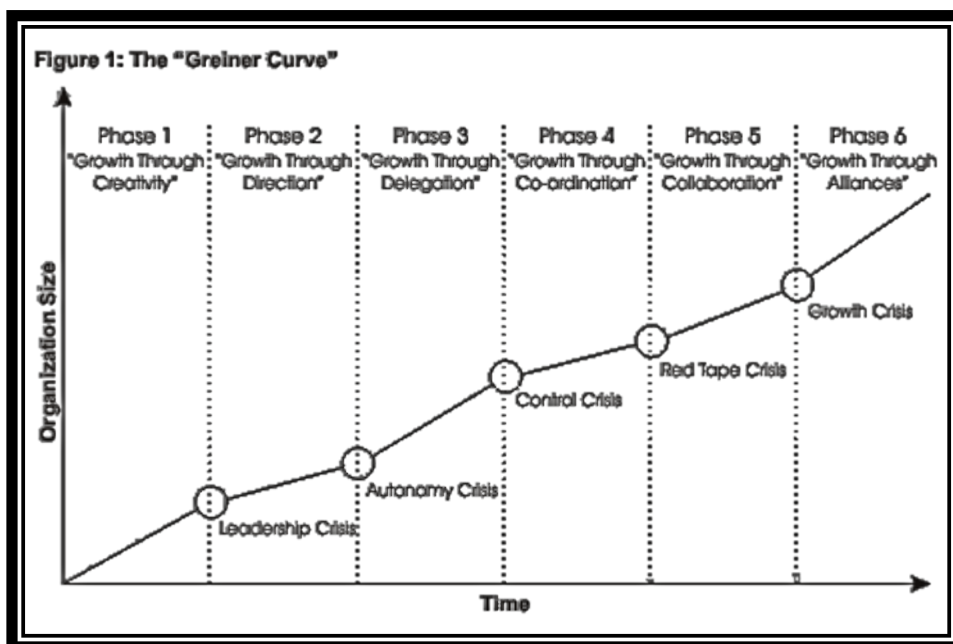


Figure 2: The five phases of organisational growth (adapted from Greiner, 1998)

Greiner (1998:56-67) further highlighted how with each phase of change management experienced within an organisation, the organisation goes through a short-lived crisis period – these periods are respectively known as the evolution and revolution stages.



## **2.3 Change-management factors that have an impact on the implementation of an e-Contract system**

### **2.3.1 Change management**

The available literature provides many definitions of change management and organisational change. These definitions are relevant to this research study. Change management should focus on creating an environment in which the change can be implemented (Kemp & Low, 2008: 228-242). This definition gives a basic starting point when trying to understand the concept and planning change-management practices.

Van de Ven (2005: 510–540) feels that the subject of change management has received much attention, due to the fact that many organisational-change initiatives turn out to be unsuccessful. He further reports that the concept of transformation, which has gained status in South African organisations, continues to do so in most forms of organisational change. Despite the research and the available literature on the topic for this research, there is little consensus on the nature of organisational change, or on the critical success factors needed for change to be successful.

On the other hand, Kash (2002:581-606) argues that change management is important during system implementation, starting at the project phase throughout the project's entire life-cycle. Furthermore, change in the organisation should be correctly managed. This includes people, organisational and cultural change (Nadler, 1981: 191-211). Mariotti (1998:140) argues that the subject of organisational change has received much attention, due to the fact that so many organisational change initiatives and practices turn out to be a failure.

The hidden, informal dimension of change is often explained with the 'iceberg model', describing that only 10-15%, namely: the formal systems, example policies and procedures are visible, whereas the rest, namely, the informal systems, examples include perceptions, feelings, attitudes, norms, behaviour and values are below the 'water surface' (Coker, 2000: 24).

Graetz (2000: 550–562) argues that organisational change and the management thereof is an essential management skill that is required throughout the world, wherever there is increased deregulation, rapid technological innovation, and a growing knowledge workforce. Nkomo and Kriek (2011:453-470) remind us that change is about shifting the organisation's strategy and operations, and returning to the basics or searching for new tools and techniques that would help the organisation to navigate through the changes that lie ahead.

Bennis (1996:14) further defines change as a complex educational strategy intended to change beliefs, attitudes, values and the structure of organisations, so that they can better adapt to new technologies and systems, markets and challenges, and the dizzying rate of change itself. Nadler and Tushman (1989: 194-204) suggested that there are different types of change that require different management strategies, approaches and methods.

In the business context, therefore, the scope of change management ranges from planned evolutions and reforms to business transformation. Duck (1993: 55-81) further stated that, traditionally the change process has been described as moving from a stable state – through, the unstable state of changing – to the desired state, and being stable once again. Lewin (1951) characterised these three stages as: unfreezing, changing and refreezing the organisation. Consequently, Jackson (1999: 306-326) states, that a very useful framework for thinking about the change process is problem-solving. He sees managing change as a matter of moving from one state to another, specifically from the problem state to the solved state.

Jackson (1999:306-326) further indicated that management plays a dominant role in change management. It is the responsibility of management to notice any trends in the macro-environment, and also in the micro-environment, in order to be capable of defining changes and to be skilled to initiate any future programmes. It is also essential to evaluate what affects a change process and impact would have on the behaviour patterns of the employees, the technological requirements, the work processes and motivation. Management must foresee what the employee reactions can be, and to formulate a change programme that would give assistance as workers go through the adoption-of-change process. The programme must then be

implemented, distributed among employees, monitored for efficiency, and adapted when necessary (Jackson, 1999:306-326).

The available literature provides many definitions of change management and organisational change, which are usually relevant to this study.

- Burnes (1996: 11-18) indicated that organisational change is an ever-present feature of organisational life, both on an operational and strategic level; and it is for this reason, that organisations should develop their ability to identify where it needs to be in the future, and the necessary actions it would need to take in managing the changes required to get the organisation safely into the future.
- Change management is also defined as the process of continually renewing an organisation's direction, structure and capabilities to serve the ever-changing needs of the internal and external customers (Moran and Humberman, 1994);
- Moran and Humberman (1994) further state that change management is a structured approach to change in individuals, and/or organisations. It enables the transition from a current state to a desirable future state.

Duck (1993: 55-81) argued that from an individual perspective, the change may be a new behaviour. From a business perspective, the change may be a new business process or new technology. Duck (1993: 55-81) further suggested that there are different types of change that require different management strategies, approaches and methods. In the business context, therefore, the scope of change management ranges from planned evolutions and reforms to business transformation.

Top-Down approaches, such as business transformation or crisis management, are characterised by a high degree of intervention; whereas the bottom-up approaches, such as planned organisational development are characterised by less intervention and by harmonising the goals of the corporation and those of the affected employees (Pagliarella, 2000: 41-56).

Successful change requires the engagement and participation of the people or end-users involvement from the initial stages of the project. However, strong leadership is necessary to be able to drive and manage the change from the top. Change is often resisted if leadership or management have distanced themselves, or are not part of the process.

Many researchers, including Garvin,(1993: 78-90), Stark (1999)therefore state that successful change requires an inner shift in peoples' values, attitudes and behaviours, which means peoples' basic ways of thinking. Marshall and Conner (1996) stated in this context, that change initiatives must be translated into the possible implications, in order for each individual – who would be affected - to clearly understand just how such change would affect him/her personally.

Marshall and Conner (1996) stated, in this context, that change initiatives must be translated into the implications for each individual who would be affected. This definition gives a basic starting point, when trying to understand the concept and planning of change-management practices. Clegg and Walsh (2004) suggest that in many cases, too little attention is paid to the social side of change. According to these authors, the social side is actually the most important aspect in a change initiative. They also list reasons why people are likely to persist with their existing tools and mindsets – as they can see no clear, unambiguous reasons for such a change.

The end-users do not trust the people telling them to change; replacement tools are not proven (or worse); dropping existing tools is perceived as failure to the users, the tools are part of the group's professional identity; and the use of the tools conveys power and legitimacy to the users, and the tools serve to further the interests of the users.

During the past years, more and more emphasis has been placed on the concept of change management within system-project management. The lack of change management has become the number-one reason that researchers suggest as the cause of system failures (Williams & Williams 2007: 32-50). For this reason, change

management and its importance to system-implementation projects has been chosen as the area of interest.

#### *A. Change management methods, tools, and techniques*

Although an extensive amount of literature exists on change management, only a few of them provide a practical set of tools for the job. According to Hughes (2007: 37 - 49), many scholars avoid giving explicit tools for change management because one set of tools is not likely to fit all the situations. The author also makes a distinction between change-management tools and change-management techniques. Hughes (2007: 37 - 49) states that the environment of the company has an effect on the tools and techniques to be used. By environment the author means matters, such as organizational and national culture, the size of the organization, the geographical location, and in some cases, even gender issues.

#### *B. Forces for change and types of change*

The implementation of an organisation-wide system often involves structural, as well as cultural changes within. Significant change, however, is a disruption in the expectations of the future, which is normally viewed as a loss of control (Marshall & Conner, 1996). Resistance to change is, therefore, often the reaction. People are unlikely to change the way they have been executing their tasks, more especially when it is not clear what the real goal of the whole exercise is about; who would benefit from the changes; and how it would impact on an employee (Stark, 1999). Fear of the unknown and uncertainty are often the sources of resistance. People need prediction, which has to do with their basic need for security (Maslow's hierarchy of needs). Uncertainty can also reduce productivity drastically (Stark, 1999). Kotter (1995) states that when changing a culture, organisational structures and processes can become risky, and can even produce negative results; which are proved through other studies. Change must, therefore, be carefully planned and the change process properly managed and evaluated.

The reason for change in an organization can be either external or internal (Lanning, 2001). External reasons include, for example, competition, customer demands, and

regulations, that is to say, these come from the outside of the organization. Internal reasons are due to something that happens inside the organization, and the reason can range from a will to adjust to a newly discovered system (Lanning 2001; Kitchen & Daly, 2002:46-53).

Dawson (1994:19) has suggested that the external and internal factors are, in reality, interdependent. The reason for change is often both external and internal. Salminen (2000) said that enterprises change, in order to better fit the environment, or to soften internal discontinuities. And because some organizations operate in more rapidly changing environments, these are more pressured to change and develop (Kitchen & Daly 2002: 46-53). Organizations do not only change when some specific change effort is launched, organization change every day – as a quite natural process.

All of the (Political, Economical, Socio-cultural and Technological) PEST factors illustrated will exist as part of the organisation's internal and external environments, and these would impact on the organisation's formal and informal subsystems, as well as their related components, such as their products and services offered to the market (Bendix, 2010; Senior, 2002).

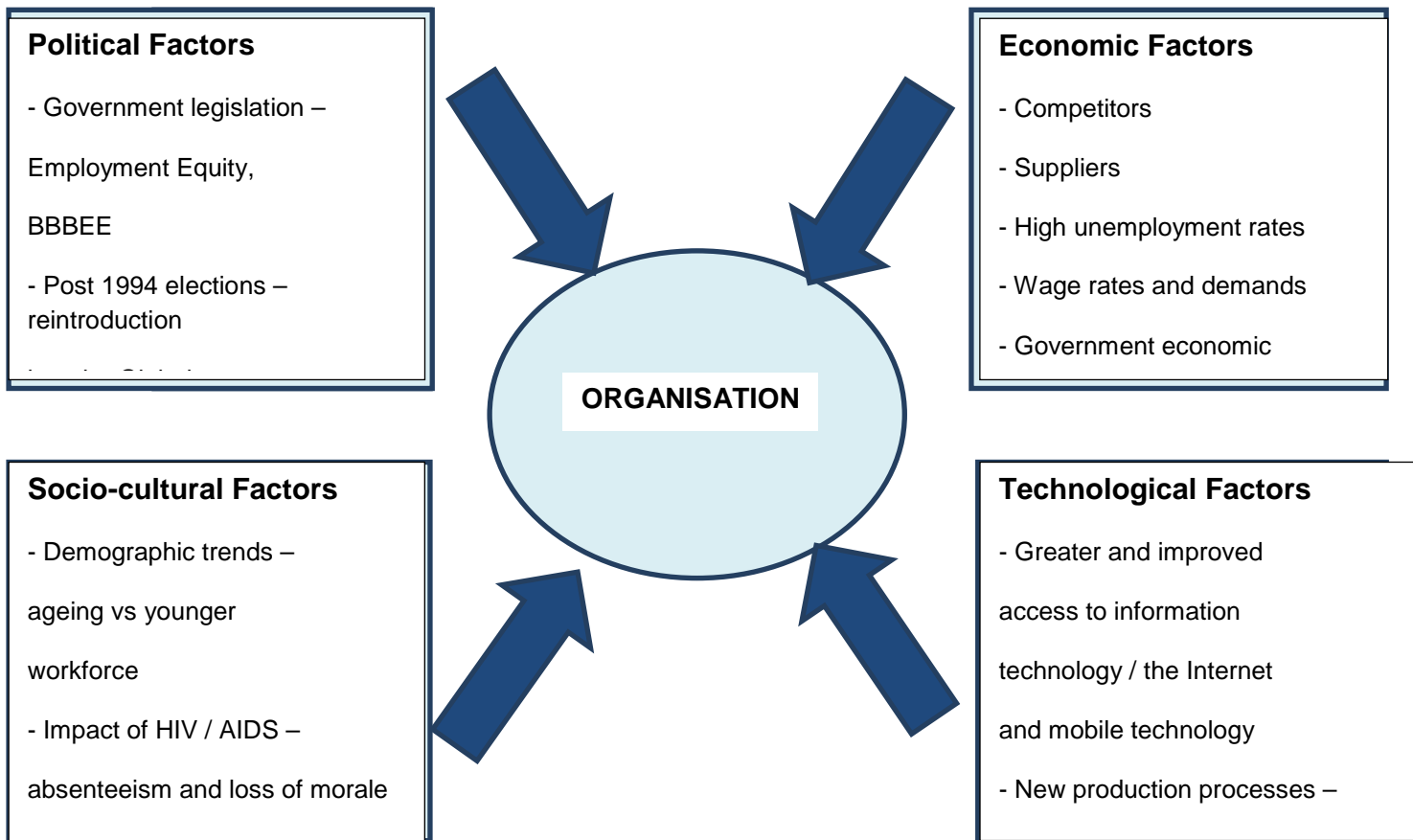


Figure 3: PEST analyses that trigger organisational change (Booyesen, 2007; Nkomo and Kriek, 2011; Bendix, 2010; Senior, 2002; Johnson and Scholes, 1999, Booyesen and Beaty, 1997; Jackson, 1999 and Goodman, 1995)

Dawson (2003: 19-23) has suggested that the external and internal factors are, in fact, interdependent; that is to say, the reason for change is often both external and internal. Davenport(1998:121-131) said that enterprises change, in order to better fit the environment, or to soften internal discontinuities; and because some organizations operate in more rapidly changing environments. These are more pressured to change and develop (Kitchen & Daly, 2002: 46-53). Organizations do not only change when some specific change effort is launched; organizations change every day as a natural process. But the focus of this thesis and change-management literature, in general, is on intended change efforts and the managing of such change. And this is a technological factor – system implementation.

Buhanist (2001) discusses two different kinds of change: radical (or revolutionary) and incremental change. The author defines radical change as change that 'includes a clearly new direction and some action steps towards it'. An example of radical change would be the introduction of some information systems that dramatically change the work processes or organizational structures. Hence, the management of radical change might be interesting for the readers of this thesis.

Austin and Currie(2003: 229-243) argue that 'change is not just about how people act, but it is also about how they think' (Kitchen & Daly 2002:46-53). Therefore, managing people in change includes also working with attitudes, beliefs, and thoughts. Similarly,Buhanist (2001) believes that real change involves both mind and action; and as French and Bell (1999) noted, the organizational culture also has to be shifted if there is going be permanent change.

Furthermore, Austin and Currie (2003: 229-243) state that change causes loss. The loss might be superficial, or very meaningful, which could lead to the loss of jobs;but this is a fact that needs to be acknowledged in change management. Thus, there are many reasons to focus on the end-users in a change effort.

Nelson (2003) describes organisational change as an ongoing process to match the organisation's strategy, processes, people and structure. It is usually manifested at a departmental or divisional level of the organisation. The purpose of fine-tuning is, according to Dunphy (1996), to develop personnel suited to the present organisational strategy, linking mechanisms and creating specialist units to increase volume and attention to cost and quality, and refine policies, methods and procedures.

One of the greatest challenges for organisations is to encourage their employees to participate in the high-risk, unpredictable, but ultimately productive confrontations of stagnant paradigms (Dunphy, 1996). Organisations need to change, in order to respond to changes in their environment.These are frequently driven by the PEST factors, new advances in technology, or the requirements of new legislation. Change management is an organised, systematic application of the knowledge, tools



and resources of change that provide organisations with a key process to achieve basic business strategies.

Greiner (1998: 56-67) identified five critical elements in the current change literature on organisational change. These five elements include the:

- **The Age of the Organisation** – this is an obvious and essential element for any model of development. Historical research has shown that the same organisational practices are not maintained throughout a long lifespan (Greiner, 1998: 55).
- **The Size of the Organisation** – a company's problems and solutions would tend to change, in accordance with the number of its employees, and the rate at which its sales volume increases.
- **The Stages of Evolution** – research has shown that most growing organisations do not expand for the first two years of their organisational life, and will often constrict for at least a year thereafter; while those organisations that normally do survive would normally enjoy from four to eight years of continuous growth within their market environment;
- **The Stages of Revolution**– organisational growth cannot be assumed to be linear (Greiner, 1998: 56). Several organisations would often experience periods of substantial turbulence spread between smoother periods of evolution. During these periods of revolution, organisations have often been subject to, or have experienced serious upheavals in management practices.
- **The Growth Rate of the Industry** – the speed at which an organisation experiences phases of evolution and revolution will largely depend on the environment or market in which it is located (Greiner, 1998: 56).

Change in organisations should be implemented with the needs of employees as the focus. This would ensure that all users are involved, and that they are supported by managers/leaders with the same commitment to improving how things are currently being done.

There are many theories concerning change. Lewin (1951) wrote about sensitivity training and group dynamics, while Greiner (1998) argued that technology and people are interdependent, and that organisations are socio-technical systems in their own right. Carl (1982), meanwhile, theorised about how change affects people personally, and how change is either embraced or rejected by such individuals.

While incremental change is something that happens more slowly and in a much longer timeframe, Buhanist (2001) notes that the two types of change are indeed different in many ways; and hence, they need different kinds of management. Radical change would, for example, need much more support from top management. Buhanist (2001) argues that radical change is something that is much needed in organizations, and insinuates that there has been a negative attitude towards radical change for far too long. Buhanist (2001) thinks that the reason might be that in the case of radical change, force has to be used at some point; and this is not considered wise in organizational management, in general.

However, through case studies, Buhanist (2001) has noted that radical change is sometimes the best and appropriate alternative. Furthermore, it would be unfortunate not to recognize the need for radical change, and then to manage the change as incremental, which – as stated above – needs another sort of management. Kitchen & Daly (2002) also noted that radical change demands a more innovative responsiveness than mere incremental change.

(Kitchen and Daly, 2002:46-53) state that change is not just about how users act, but it is also about how they think, as French and Bell (1999) noted. The organizational culture has to be shifted, if there is a need to obtain permanent change. Van de Ven and Poole (2004) noted that the deep structures, that is to say the deeply rooted organizational values and how these interplay with the visible structures need

attention in change management, and when striving to implement an innovative business, this is vital.

Lanning (2001) argues that successful change initiatives depend largely on how managers use or abuse their power. If they merely implement changes without collaborating with their teams and staff, their actions could well have detrimental effects on employees. Todnem (2005) complements the work of Greiner (1998) by highlighting the primary task of today's managers, namely that of leading organisations through organisational change and by way of the above-related practices; albeit at a specific stage within an organisation's life-cycle, or during a merger and acquisition.

Todnem (2005) bases this recommendation on the following key change triggers being experienced within the organisational world of today. These can be summarized as: increased globalisation, increased deregulation, and the rapid pace of technological change and innovation.

Many researchers, however, emphasise that due to the economic environment of constant and accelerated change, the stable states of organisations are becoming shorter or even diminishing (Pagliarella 2000: 41-56). Consequently, researchers remark that there also has to be a constant change process within an organisation, and that the change process has to be viewed as a learning process (Garvin, 1993: 78-91). He further states that, in order to facilitate a constantly changing organisation, the focus is, therefore, laid on changing the organisation into a learning organisation.

Burnes (2004: 977–1002) states that the approaches to change in organisations, provides a popular framework to managers involved in the management of unpredictable change – albeit that new system implementations are regarded as a form of planned change – but the incorrect management thereof could lead to unprecedented changes. Through the active use of the five change-action roles, a change practitioner can clearly identify which change action role to use when implementing change initiatives at a particular stage within the organisation's life-cycle.

Since companies nowadays are more or less forced to change continually, there is pressure on companies to be able to manage change successfully (Hamlin, 2001:38-45). There is, consequently, a lot of research giving advice in change management. Kotter (1995: 73) has done quite renowned work in the area of change-management research, and has studied companies involved in change efforts. From his findings, he has developed an eight-step model, presented in Fig. 1, for what has to be done in a planned change effort, in order to succeed.

Kotter (1995: 59-67) underlines the fact that every step is important; mistakes in any one of the steps could be devastating for the whole project. Furthermore, it is important not to skip any steps; although some of these steps can be quite difficult to carry out.

### *C. Resistance to change*

Schmidt (1997:88) explains how employee reactions to change can have a significant impact on the initiative as a whole; users could view change as the following: Change can be a force to be feared, or an opportunity to be seized. Successful-change management, thus, not only consists of seizing the opportunity and effectively planning and implementing change, but by focusing on what Jick (1993) referred to as, "managing reactions to change."

Change management, therefore, includes getting all the stakeholders involved and prepared to accept the changes, and the results of the change process, as well as to manage resistance to change effectively (Coetsee, 1999). Kotter and Schlesinger (2008:106), Fernandes (1988), and Margolis and McCabe (1988) all underlined the importance of managing resistance, in order to change effectively.

Milis and Mercken (2002: 105-117) explain that to reduce resistance, the future users of a newsystem must be involved in the project in the early phases of a project. By doing this, a sense of ownership towards the project is created among the users; and the people would become more committed to the project. A feeling of a common, "our project", is created. The authors also explained that by effective communication, the users form realistic expectations for the project; and thereby,

uncertainty is reduced. Communication also encourages teamwork (Milis & Mercken 2002:105-117).

These authors state that support is very important, and that the project team must be focused, committed and motivated to support the users, and that any complaints from the users cannot be ignored. The authors also emphasized the meaning of leadership in reducing resistance, since people management is an important part of a project, and is therefore also an important skill for the project manager. In addition to this, senior management support is important to show the organization that the project is aiming to introduce an outcome with their full support.

Resistance to change can, furthermore, be distinguished at three different levels (Mariotti, 1998; Maurer, 1996), that is to say, resistance based on a lack of information, or on honest disagreement over the facts; this entails personal and emotional resistance and manifests because people are afraid that change may cost them their jobs, reduce their control, or cause them to lose face. Such resistance is often associated with employee's managers or what these managers represent. In these situations, people resist almost any changes that are suggested to them, as they link "change" and "management" with one another. Booysen and Beaty (1997: 203-210) further provided a list of internal and organisational forms of resistance to change:

*D. Individual resistance to change – this would include the following (Booyesen and Beaty, 1997):*

Fear of the unknown – this relates to uncertainty about the causes and effect of change, habit-change requires new ways of doing tasks, and it challenges people to develop new skills, self-interest – this is an unwillingness to give up existing benefits that have predominantly been provided to favour selected and advantaged individuals; economic insecurity – these changes within the organisation have the potential to threaten the job and economic security of the employee: failure to recognize the need for change, general mistrust and social disruptions, selective perceptions – any changes in the organisation may be perceived by some employees as threatening, and by others as challenging.

*E. Organisational resistance to change – this would include the following (Booyesen and Beaty, 1997:203-210):*

Structural issues – organisations are designed to maintain stability;

Cultural issues – organisations have cultures that emphasize stability;

Work group issues – the development of organisational group norms can often help to guide members' behaviour. Threats to the existing power structure, relationships, expertise and resource allocation, as well as any previous unsuccessful change efforts – the new realities of the SA workforce have meant a shift in power and resource allocation to the previously disadvantaged. Gotsill and Meryl (2007: 24-27) suggest that there are three critical aspects that should be concentrated on, when implementing change in the workplace. These are: people, communication and training.

Change resistance is very common in cases of change management; and therefore, individuals and organizations should be ready for it and react adequately. Kotter and Schlesinger (2008: 106) described four primary reasons why people can resist changes. The first reason is parochial self-interest, as there can be some people in the organization that are more self-centred, and care primarily for the changes that would bring them personal benefit or profit, as well as concern on how the future changes would influence their own interests. They are not thinking about the success of the organization in general.

The second reason is misunderstanding, when people can get inadequate or false information about some of the facts, or communication barriers between members can present. The third reason is low tolerance to change, as some people just fear change and any of the uncertainties in the future; and they prefer to live in stability and feel secure, rather than to accept any changes. This is what Flanagan (1995: 57-61) said about people having fears and anxieties: "What happens beyond this point, however, is not so desirable. Most people have experienced the discomfort – maybe even embarrassment – of a dry mouth, shaky voice, pounding heart, sweaty hands, or wobbly legs, at some time or another. Everyone knows what it is to be frightened or worried about something; the "something" could be concrete, such as a bill or

illness, or less tangible, such as the anticipation of a future unpleasantness – an exam, interview, or work deadline, for example”.

The final reason is about different assessments of the situation, as some employees cannot agree with the reasons for future changes, and there are always those with positives and negatives regarding the process of change.

Kotter and Schlesinger (2008:106) also proposed six change approaches to deal with change resistance, or with any obstacles to change. The first approach is education and communication, as when there is an information deficiency or inadequate information and poor analysis. One of the best ways to overcome this problem is to educate and inform people about future changes in advance. And after that, communicate with them and educate them, so that they realize the logic and necessity in change efforts. This would reduce the level of rumours and incorrect information spread regarding the outcomes of the change results for the organization and its employees.

The second approach is involvement and participation. This approach is effective when those people who initiate changes do not possess all the needed information for change design and implementation, and other people have enough power to resist those efforts. Then it becomes obvious, that when employees are being involved in the process of change and could come forward with their own suggestions, they are more likely to desire that change than putting more obstacles in its way.

The third approach is facilitation and support. People usually have adjustment problems, when they resist change. Management should be supportive to employees in any case, and in each situation, and in such a manner that it could prevent any possible resistance. Support of management assists employees to cope with their anxiety, feelings of uncertainty and fear during the period of transition. In such cases, effective management could be in the form of training, counselling, and informal meetings with employees.

The fourth approach is about negotiation and agreement. Some people can lose out because of future change in this situation; they could possess significant power to

resist that change. Management could start an open fight with such people, and tell them what is good about change, and that they should not resist it. This could be effective with some employees; and others could be invited to leave the company with some benefits, or even to retire. If such people do not want to experience change, they are not obliged to, and they are free to make a decision, which would correspond to their views and expectations. So, if it is possible to persuade the person or a group of people, it should be done. This approach could be effective when those who resist change are in a position of power.

The fifth approach is manipulation and co-operation. This approach is used in cases when other tactics do not work, or when in practice, they appear to be very expensive. Authors suggest another efficient manipulation technique that is to co-opt those who resist change. This could be fulfilled by giving the people who resist the opportunity to participate actively in the activity of the change group as an incentive.

And the final approach concerns explicit and implicit coercion. In this approach, speed is the crucial factor, and this approach should be only used as the last resort. Management could implicitly and explicitly make employees accept the coming change, by emphasizing that posing obstacles and resistance to change could result in dismissals, employee transfers, job losses, as well as absence of promotion.

#### *F. Change Management in the implementation of an information system*

Williams and Williams (2007: 32-50) report on the findings that show that business benefits from IT are only likely when the implementation project is supported with change management. Although many organizations would need a better acknowledgment of change management, it should be remembered that only bigger IT projects which affect routines in several places need comprehensive change management (Roy, 2006:8). Markus (2004) has given technology-driven organizational change situations its own name: techno-change. He argues that techno-change situations cannot be managed in merely a traditional IT project management way, but that the situation calls for change-management methods. But Markus believes that it is not enough to only combine these two management fields, because neither of them addresses the key risks of techno-change, the risk of IT-non-usership, misuse, and non-benefits, as well as the risk of a bad IT-solution.



Instead, a special iterative –the so-called techno-change prototyping approach is needed: integrated technical and organizational management.

This idea follows the traditional prototyping approach, which means that something is first realized, and tried out, and then on the basis of that trial, a decision about what to do next, is taken. In the techno-change process, both the technical solution and the organizational change are prototyped on the same time-frame(Markus, 2004).

Organizational change management is about managing people's attitudes and reactions to change. This chapter has discussed the basics of organizational change management, and shown that this concept should be taken into consideration also in IS projects, since it is quite evident that an IS project induces some degree of change in an organization. This chapter also serves as a presentation of some approaches to managing change in an organization. Whether, or not, IT professionals have acknowledged the role of organizational-change management to a sufficient extent, will be further investigated in the empirical part of this thesis.

### **2.3.2 Factors that have an impact on the implementation of a system**

#### **A. Communication**

From Kotter's (2008) perspective, communication is the key factor for a successful change. He focuses on the importance of creating clear and realistic visions, by using an appropriate change team, responsible in communicating visions, ideas, achievements and failures within the organisation. Muller (2006) argues that many people will resist change, especially if they do not understand why the change is being introduced. The resistance to change could prevent the employee from adapting and progressing within the organisation. Organisational change, such as the implementation of a new IT system, usually has a negative impact on employees, especially since they perceive that they do not have any say in the matter, and therefore, believe that such organisational change is not of their own making, and it should, therefore, be feared (Muller, 2006).

Corporate communication plays a major role in change management. When users understand the reasons behind the change, they are more willing to cooperate. However, this is not a one-time task. Once the employees have an understanding of the project and the change, continuous communication is needed to reinforce the mindset (Gotsill & Meryl, 2007: 24-27).

Milis and Mercken (2002: 105-117) explain that effective communication plays a major role in reducing resistance to change, and it also encourages teamwork. However, communication must be focused, rather than being broad-brush, and the timing thereof is very important. Milis and Mercken (2002: 105-117) further state that support is very important, and that the project team must be focused, committed and motivated to support the users, and that any complaints from the users cannot be ignored.

Austin and Currie (2003: 229-243) states that managers assume that when they have communicated clearly with their employees, their job is done. However, there are many reasons why employees may not hear or understand what their managers are saying the first time around. In fact, there is a notion that messages need to be repeated six to seven times, before they are cemented into the minds of the end-users. That is because each end-user's readiness to hear depends on many factors. Effective communicators carefully consider three components: the audience, what is said and when it is said. For example, the first step in managing change is building awareness around the need for change, and creating a desire for such change among the employees. Therefore, initial communications are typically designed to create awareness around the business reasons for change, and the risk of not changing. Likewise, at each step in the process, communications should be designed to share the right messages at the right time. (Austin & Currie 2003: 229-243).

Communication planning, therefore, begins with a careful analysis of the audiences, key messages and the timing for those messages. The change-management team or the project leaders must design a communication plan that addresses the needs of front-line employees, supervisors and executives. Each audience has its own

particular needs for information, based on the people's role in the implementation of the change.

Austin and Currie (2003:229-243) further present a view that human transition happens in three phases, and that in each phase, different areas need extra attention. The first phase is the "letting-go" phase, in which users have to let go of the old system. Communication is important in this phase, in order to keep the level of confusion as low as possible. It is also highlighted that if managers try to convince the users that their emotions in the letting-go process are wrong, the result would only be that the employees would feel that the managers do not understand them, and they would only turn to resist the change (Austin & Currie 2003: 229-243).

The following phase, according to Austin and Currie (2003: 229-243), is the "in-between" phase, which is the longest and most difficult phase. During this phase, users could well have a feeling of fear of the future, accompanied by uncertainty and confusion. The authors argue that this phase is best managed if it is clearly recognized that this is indeed a difficult period for the users.

The last phase starts when people begin seeing the positive side of the new system, and feel that it is better than the old system; they could then get caught up in the excitement of "starting a new" phase. Austin and Currie (2003: 229-243) underline the fact that at this stage, it is important that the managers are consistent in their behaviour and rewarding of the system, so that trust can be maintained and retained. But it is also important to note that there are people who are always eager to embrace new things; these early adopters and the leaders could encourage the rest of the team to move forward much faster. Lastly, Austin and Currie (2003: 229-243) state that by putting one's attention on these different phases, and the user's behaviour in each of them, change would happen in the organization – with much less disruption to the actual business.

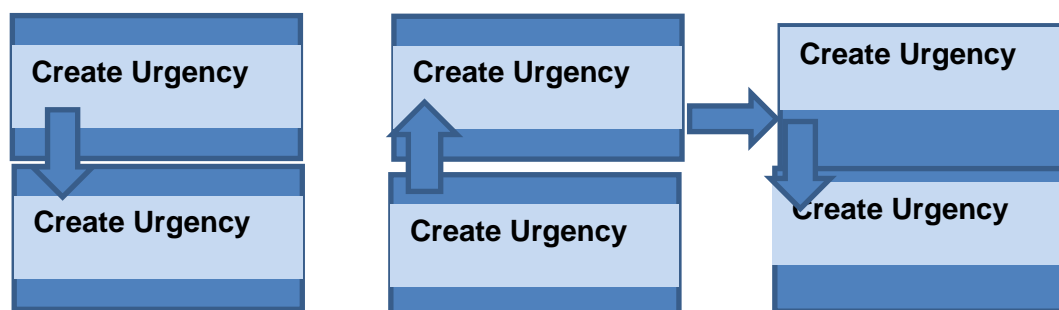
It has become a widely recognized fact that most failures in system implementation projects are due to weak management. It could be poor management in general, as suggested by Legris (2006), together with insufficient communication and underestimation of the required training of end-users.

Hamlin (2001) states that it is difficult to communicate too much in a major change effort. And indeed, communication is a critical success factor, according to several authors, including Loonam and McDonagh (2007: 93-112). Implementation plans and the progress have to be regularly communicated to stakeholders (Mabert, 2003:302-314). Teo and Ang (2001: 400-457) note that if the communication is not floating freely, there would be problems – especially in the launching phase of the project. According to Brown (2007:91), communication is the second-most critical area in system implementation, and it is especially important in the adoption phase.

Lanning (2001) underlines the fact that communication has to be effective. Lanning further argues that using many different means of communication makes it as effective as possible. The communication need to be focused on the strategic and organizational aspects of the implemented system (Davenport, 1998:121-131). But also the technical aspects need to be communicated, so that the end-users, who need to understand the more technical side, can do so (Wognum, 2004: 241).

Loonam and McDonagh (2007) add that this is not necessarily a straight-forward and easy task. Additionally, excessive and unnecessary communication also poses some risks; for example, the possibility of users losing interest in the process, or losing track of the messages.

The need for communication also puts demands on other areas. For example, it is worth noting that a successful vision has to be communicable (Lanning 2001). In Kotter's (1995: 59-67) eight-step model for change management (see *Figure 4*), communicating the vision is given a lot of attention; and it seems that many companies make the mistake of not communicating the vision clearly enough. Furthermore, such communication has to be credible and given a credible image of the vision (Kotter, 1995:59-67).



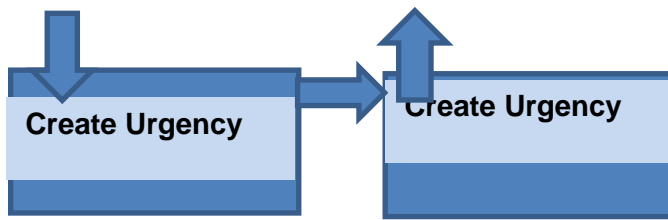


Figure 4: Kotter's Eight-step Change Model

According to Kotter (1995: 59-67), there are many theories about how to execute the change. Kotter introduced his eight-step change process. These include, Create Urgency: For change to happen, it helps if the entire organisation wants it. Develop a sense of urgency around the need for change. This may help spark the initial motivation to get things moving.

Kotter (1995: 59-67) argues that one of the most common ways to overcome resistance to change, is to inform people about it beforehand. Employees should be informed on when the change will take place, how the change will be implemented, what is expected of them, how the change will influence their jobs, and how the company will support and motivate them to be more committed to the change.

The steps, as highlighted by Kotter (1995: 59-67), start with the Forming of a Powerful Coalition: Convince the end-users that change is necessary. This often takes strong management and visible support from the key stakeholders within the organization. Managing change isn't enough; management should lead it.

The next step, according to Kotter (1995:59-67), is to create a Vision for Change: When an organisation first starts thinking about change, there may be many great ideas and solutions floating around. These concepts should be linked to an overall vision that users can grasp easily and remember. This step is followed by communicating the Vision: The message might have strong competition from other day-to-day communications within the organisation; therefore, there needs to be frequent and powerful communication.

This communication needs to be embedded within every phase throughout the entire project. Kotter (1995: 59-67) continues with the next phase, which is to remove obstacles: If these steps are followed, and they reach this point in the change process, the staff would be ready to get busy and achieve the benefits that have been promoted.

Once the obstacles are removed, there needs to be a list of short-term wins: Nothing motivates more than success. Within a short time-frame, there needs to be tangible results that the staff can see. Without this, critics and negative thinkers might hurt and hinder any progress. This step is followed by building on the Change. Kotter (1995:59-67) argued that many change projects fail because victory is declared too early. Real change runs deep. Quick wins are only the beginning of what needs to be done to achieve long-term change. Anchor the changes in a Corporate Culture. Finally, it should become part of the core business of an organization to make any change stick.

Continuous efforts should be made to ensure that the change is seen in every aspect of the organization (Kotter, 1995:59-67). Milis and Mercken (2002: 105-117) suggest that by effective communication, the users form realistic expectations for the project, and any uncertainties are reduced. Communication also encourages teamwork. However, the authors state that communication must be focused rather than broad, and that timing is very important. Milis and Mercken (2002: 105-117) further state that support is very important and that the project team must be focused, committed and motivated to support the end- users – both during and after the implementation of the project.

## **B. Training**

Training is an important part of the overall change process. It helps people to understand what the project and its outcome mean in practice, and how it would affect their work in the future. As communication answers the “why” question,

training answers the “how” question (Gotsill & Meryl 2007: 24-27). It is further stated that training is the cornerstone for building knowledge on the change and the required skills. Project team members will inevitably develop training requirements based on the skills, knowledge and behaviours necessary to implement the change. These training requirements would be the starting point for the training group or the project team to develop training programmes.

Williams and Williams (2007:32-50) state that training is an integral part of any system implementation. Without sufficient and effective training, the benefits of a new system may not be reached, and the investment would be wasted. During a system-implementation project, there are important factors regarding training that should be taken into consideration. Firstly, training must be included in the planning phase of the project, and it must be structured and well-described. Secondly, all end-users who would be impacted by the change, or by the system implemented, must be trained before the actual implementation, in order to keep the momentum going. Thirdly, end-user training and support should be given enough resources and sufficient budget. Lastly, once the system has been implemented, there must be a proper support mechanism put in place. Kotter (1995:59-67) further supports the notion that training needs a remarkable amount of resources, and is therefore often not arranged properly.

Gargeya and Brady (2005: 9) emphasise that end-user training should be handled on two levels. Firstly, there must be training on the newly implemented system, in order to use it to the fullest extent, and realise the full benefits. Secondly, all levels of management should know and understand the implications of the new system. Once there is buy-in at this level, the managers may be charged with the responsibility to share the information with their subordinates.

If this level of management does not buy into the change, there will be no enthusiasm or buy-in which would result in active resistance (Davenport, 1998:121-131). Gargeya and Brady (2005:9) further state that training during system implementation has received the least amount of attention. The paradox is that when training is ignored, or not given the attention it deserves, primarily because it does not have the quantifiable benefits, the result is that expenses are increased in

the long run, or there is even wasteful expenditure, due to the system, which is implemented, but not being fully utilised.

According to Balogun and Hailey (1999), training can facilitate and support the benefits of the new system, as well as any behavioural changes. There may be different focuses of training, one of which seeks a specific outcome in terms of skills or behaviours. Another might be to attempt to open a user's mind to new ways of doing things. Nevertheless, it is important to choose the right delivery channel for the type of change, and to keep in mind the level of those people who are to be the end-users of the system. Stewart (2001:141-152) further states that it is often good to train small groups, as well as to have the managers trained separately ahead of their end-users. He continues by saying that it may be possible for the managers to help in ensuring that the training is holistic and not just a technical how-to.

In addition, according to Stewart (2001:141-152), it is not preferable to include too much information in the first training session. Instead, it is better to divide the sessions so that end-users can practise the basics, and then have more advanced sessions at a later stage.

Lanning (2001) argues that the objective for training during system implementation is to get end-users of the system to understand and accept the change; and then, show them how to use the new system. Hence, the problem of end-user acceptance of the system can be partly solved through proper training (Siddiqui, 2004: 540). Sharma and Yetton (2007: 53) have investigated the effect of training on system implementation's success; and they have a less common view on the issue. They report that the effect of end-user training on user acceptance and implementation success is influenced by two contingencies, namely: the complexity of the system and the degree of mutual dependency between the tasks executed in the system. This would mean, according to Sharma and Yetton (2007: 53), that the success of training is dependent on the characteristics of the system.

Kemp and Louw (2008: 228-242) explain that whenever implementing an IT system, or any other system, users require on-going support from the organization, in order to achieve implementation effectiveness. On-going support mainly means training,



maintenance and equipment upgrades, training being the most important during the implementation project. Kemp and Low (2008: 228-242) further state that user involvement, and user training, could impact on the end-user's feelings towards the implemented system.

Training is an essential and integral part of any IT-implementation. Without proper training, the benefits of a new system would not be achieved, and the investment would not pay off, as planned. Some important factors concerning training should be taken into consideration. First of all, training must be included in the planning, and the structure of the training has to be very well-described. Secondly, all necessary people must be trained before system goes live, in order to achieve the envisaged buy-in. Thirdly, post-launch support must also be in place. After all, people will always have questions once they start using a new system, and there would also be some problems with the technical performance of the system (Williams and Williams, 2007: 32-50).

All in all, training is that part of an IT project that should never be neglected. It can be a turning point in managing the change resistance, since in the training, the users get to use the system for the first time, and they get their first empirical picture of the system.

However, training can also have a negative impact, if it is not planned with care. It must be taken into consideration that training takes time and all users must be trained before the system is taken into full use.

Consequently, Garvin (1993: 78-90) remarked that there also has to be a constant change process within an organisation, and that the change process has to be viewed as a learning process. Senge (1999), Stark (1999), Dobbie and Wagner (2001) further argue that in order to facilitate a constantly changing organisation, the focus should be put on changing the organisation into a so-called 'learning organisation'.

End-user training problems are frequent reasons for system implementation challenges, or even for project failures (Loonam & McDonagh 2007: 93-112).

Lanning (2001) argues that the main objective of training is to get people to understand and accept the change, and then, in application-specific training, to teach people how to use the new tool. Hence, the problem of user acceptance can, at least partially, be solved with training (Siddiqui, 2004:540).

Al-Mashari et al. (2003:352) note that a challenge in system-project implementation is the creation of an appropriate plan for training. Furthermore, it is important to understand that as well as all the other project strategies, the training strategy needs to be updated continuously, so that it can reflect changes in and around the project (Mabert, 2003: 302-314).

Williams and Williams (2007: 32-50) also raise the concern that training and end-user support is not given enough human resources during projects. They believe that this is a sign that the awareness of potential future problems in the usage of the system, is lacking. Loonam and McDonagh (2007: 93-112) report that the figures are worth noting; by reserving 10-15% of the budget for training, the organization would have an 80% chance of succeeding with the IT implementation project. Lanning (2001) further supports this notion, and adds that training needs a remarkable amount of resources for proper planning and execution.

Training is an important part of the overall change process. It helps people to understand what the project and its outcome mean in practice, and how this would affect their work in the future. As communication answers the “why”-question, training provides and answers the “how”-question (Gotsill & Meryl, 2007: 24-27).

## **2.4 Skills required to operationalise the system**

Senior (2002: 37-39) highlights the usefulness of Greiner’s Life-cycle in assisting managers and organisational change agents with the following understanding surrounding organisation change characteristics/features:

A pioneering phase model for planned change is Lewin’s three-stage model (Lanning

2001, Salminen 2000, Cameron & Green 2004). The phases in the model are (1) unfreezing the old, (2) moving to the new, and (3) refreezing the new behaviour or situation. Lewin's model might not be easily applicable in practice, but given good food-for-thought especially in the beginning of a change effort (Cameron & Green 2004, 65-70), it should be applicable in practice.

Hamlin (2001) presented a model for managing change with four dimensions (see *Figure 5*). Hamlin's model is somewhat limited, since it does not expect that managers already have some knowledge of how to manage change efficiently, while the failure rates of change projects give evidence that such knowledge cannot be found in most organizations (Hamlin, 2001:38-45). But this model does highlight the fact that the organization and the people need attention.

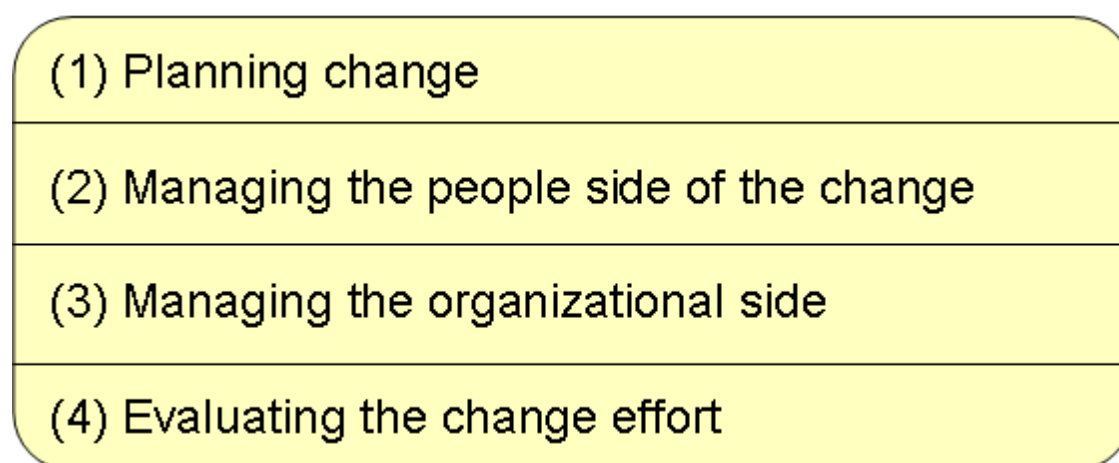


Figure 5. Hamlin's four critical dimensions, when managing change (Hamlin, 2001)

In addition to the external and internal triggers for change, and the nature of organisational change, it is evident that a proper identification of the nature of the resistance of change needs to be discussed further.

Wognum (2004: 241) notes that it is critical to regard system implementation as a process involving organizational change and evolution. He points out that implementing such technology that affects several units and functions "not only induces organizational change, but also requires organizational change" (Wognum 2004: 241). Moreover it is, as Teo and Ang (2001:400-457) argue, important that the change process be accepted and understood by people at all levels of the

organization. One way to get people to accept and understand the change process is to establish a sense of urgency. That is, to make sure that people have realized the need for the change (Lanning, 2001).

Loonam and McDonagh (2007: 93-112) have listed change management as one of the top 10 CSF in system implementation. Al-Mashari (2003: 352) similarly includes “cultural and structural changes” in their list of critical factors. They underline the need for careful planning of the transformation. Mabert (2003: 302-314) also mentions the need for planning the organizational change, and continually updating these plans.

## **2.5 End-user perceptions**

Whenever implementing change, the human element must be acknowledged, and also that resistance is inevitable. Employees need to be a part of the process and they need to be heard, since people are more likely to accept the forthcoming change if they know what to expect in each phase of the project (Gotsill & Meryl 2007: 24-27).

It has already been noted in this dissertation that implementing an information system is actually a change project. Cameron and Green (2004: 65) express it in this way: “It [IT-based change] involves people doing different things in different ways, with different inputs and different outputs”. Cameron and Green (2004: 65), accordingly believe that it would be important for IT-people to learn about managing change and to understand what organizational change actually is.

Hamlin (2001) furthermore, defined technology, and in particular IT, as one of three major drivers for organizational change in companies. Another reason why social and organizational change and innovations should be closer linked to technological change, is that technological change is almost happening too fast for the organization to be able to keep up with the pace (Miles, 2007).

Change Management suggests that resistance is a natural reaction to change, and that it happens on an emotional, and not an intellectual level. Accordingly, it is important not to overcome resistance with logical arguments, or to fight the resistance, but to treat resistance as a process where feelings are involved. It is also viewed as important to pause and deal with resistance immediately, when it appears. This could mean a delay in the project plan (Stark, 1999). Ignoring the resistance means creating barriers, which cause significant delays, since the resistance will resurface later in the process. Therefore, it is important that employees are encouraged to express their concerns, fears and perceptions, so that they can embrace change. This could happen either in an anonymous way, that is, through employee surveys, or in face-to-face meetings.

The challenges of dealing with individual and group issues are impacted by role perceptions due to increasingly diverse workforce issues, and could well be seen by the abdication of performance management tasks, and hypersensitivity towards diversity issues – to the point of paralysis – in managing performance (Arumugam, 2001: 24-25). He further alludes to the fact that there tends to be a gap between the formal and informal cultures, resulting in mixed perceptions of end-users to the system. This tends to create conflict and causes end-users to take the path of least resistance; this often tends to generate mediocre performance.

Lack of celebration when success and high performance have been achieved, tends to promote bad performance. The symptoms and consequences are:

- Perceptions amongst employees that excellence in performance is not valued;
- Blaming and hiding becoming the dominant defence mechanism;
- Creativity, innovation and personal growth are thereby blocked;
- A culture of mediocre performance can result – just to stay out of trouble.

## **2.6 Conclusion**

In this chapter, the basic components of an e-contract system have been highlighted, as well as the change-management factors that have any impact on the implementation of the system. The skills required to operationalise the system,

together with the end-user perceptions on the impact of the change-management process were covered.

## **Chapter Three**

### **Research Design and Methodology**

#### **3.1 Introduction**

In the literature review, the concepts of change management and Information Technology (IT) projects were studied extensively. To gain an understanding of the importance of change management for IT implementation project success, the concept should be viewed from multiple perspectives. General issues concerning IT projects were also covered to better understand the challenges that a project manager faces during the implementation of the project. To gain a holistic picture of the topic, multiple sources of data were used.

In this chapter, the research strategy followed by the research design will be explored in more detail. Data collection through interviews is covered, as well as the validity and reliability of the research.

#### **3.2 Research Design Strategy**

A qualitative study has been followed. A qualitative study allows the researcher to develop concepts more clearly, to establish priorities, to develop definitions and to improve the final research design (Cooper and Schindler, 2001).

#### **3.3 Research Objectives**

##### **3.3.1 General Objective**

The purpose of this research is to identify and examine the factors (in terms of training, communication and the perceptions of end-users). These all have an impact on change management during the implementation of an e-contract system, in order to facilitate the operationalization of the system.

### **3.3.2 Supporting Objectives**

In order to achieve this, the research will:

- Define the characteristics and components of the e-contract system;
- Identify the change-management factors that have an impact on the implementation of the e-contract system;
- Establish the skills required to operationalize the system.

### **3.4 The Research Questions**

**The research questions for this study are:**

#### **Research question 1:**

What are the components of an e-contract system being implemented?

#### **Research Question 2:**

What are the change management factors that have an impact on the implementation of an e-contract system?

#### **Research Question 3:**

What are the skills required to operationalize the e-contract system?

#### **Research Question 4:**

What are the end-users perceptions on the management of a system-implementation project?

### **3.5 Target Population**

In ensuring that the requirements of the research design are met, an overview of the research population and sample approach – for the purpose of clarifying the sources of information used – will be provided.

The target population is the employees of BASC, with a sample of forty (40), including employees from the Training Department, the Technical Department, Business Services and Programme Office (PMO) taking part in the survey. These



employees are affected by the implementation of IT solutions, and the e-contract system, as they are the end-users of the system.

Of the total sample of forty, 20 were invited to do the survey questionnaires. Ten pitched in the training room and filled in the survey questionnaires and twenty (20) did the interviews. The change-management department assisted in identifying the sample.

### **3.6 The Research Design**

According to Mouton (2001:175), the research design serves to plan, structure and execute the research, in order to maximise the validity of the findings. Qualitative research – using structured interviews – was used for the study. Questionnaires were used as an add-on to the interviews, in order to get more views. Collecting different kinds of data by different methods from different sources provides a wider range of coverage that may result in a fuller picture of the unit under study than would otherwise have been achieved (Bonoma, 1999-208).

#### **3.6.1 The Research Interviews**

Qualitative research through interviews was used, in order to provide different perspectives, views and opinions on the topics investigated in the research. Structured face-to-face and telephone interviews were chosen to carry out this qualitative research. In total, twenty (20) interviews were conducted. Given the time constraints of the participants, each interview lasted 15 minutes. In order to get most views, employees and management (senior, middle, lower management and administrative personnel) were interviewed.

Interviews were used, since this is the most appropriate method to get an understanding on the relevance of soft issues during an IT system implementation (King, 1997: 63-65). This method allowed for additional or follow-up questions to get more clarity. Additional administrative questions were asked as follow-up questions to the participants' responses. These questions were posed, in order to gather more information relating to the administrative details surrounding the organisational change.

Classification questions were also asked to gather sensitive information, such as contact details, for further follow-up, preferred language, and the respondents' age. The interviews were conducted at participants' workstations, at the Eskom Convention Centre. The main reason for conducting interviews on site was that it was anticipated that participants would feel more confident and relaxed in their own surroundings, which were familiar to them. Furthermore, privacy would be ensured if the interviews were conducted in private offices.

### **3.6.2 The interview procedure**

In preparation for the interviews, each of the interviewees received a consent letter requesting their participation in the study. The consent letter included the purpose of the research and an assurance of confidentiality and anonymity. The dates and times of the interviews were arranged with the participants directly. On the scheduled dates the participants were called telephonically and requested to make themselves available at their workstations.

At the beginning of the interview, the purpose and procedure of the interview were explained (to allay the participants' fears of being victimised and their status jeopardised, as a result of their participation). The anonymity of their identities and responses was assured; and the participants were invited to propose a pseudonym for use in written report, if they so desired. A copy of the survey report, once completed, was promised to each participant. An assurance of confidentiality of responses and a guarantee of anonymity increased the likelihood that more reliable results would be obtained.

The interviewees were further informed that they were not bound to answer all the questions, and could reserve their comments to any question they may have felt uncomfortable in answering. All the interviews were conducted in English.

### **3.6.3 The survey questionnaire**

A questionnaire including “yes” or “no” questions that required the respondents to indicate whether they agreed, or did not agree, with the statements was used as an add-on to the interviews. For reasons of efficiency and cost, questionnaires enable researchers to include a much broader range of respondents in their research, and thereby find evidence of patterns amongst bigger populations. This provided information about the actual events, as opposed to any perceived ideal situation.

A total of twenty employees were selected to participate in the survey. The sample was composed of training specialists, technical experts, human-resource specialists, programme and project managers from the training and technical departments, business services and programme officers.

The questionnaire for the survey was developed by means of an interactive process, and by discussions with various specialists in the IT and change-management environments (Figure 6).

Mainly closed and partly open-ended questions were used in the survey, in order to identify any trends or patterns. For these kind of questions, answers have been predefined that could be ticked off. However, there was also space left for inserting one's own ideas and comments. Open-ended questions were used in those areas that were selected for further research.

The purpose of the questionnaire was used to get additional information as an add-on to the interviews, in order to evaluate the impact of change management on the success of e-contract IT system implementation, and to find out to what extent, and how successfully, change-management methods were utilised during system implementation.

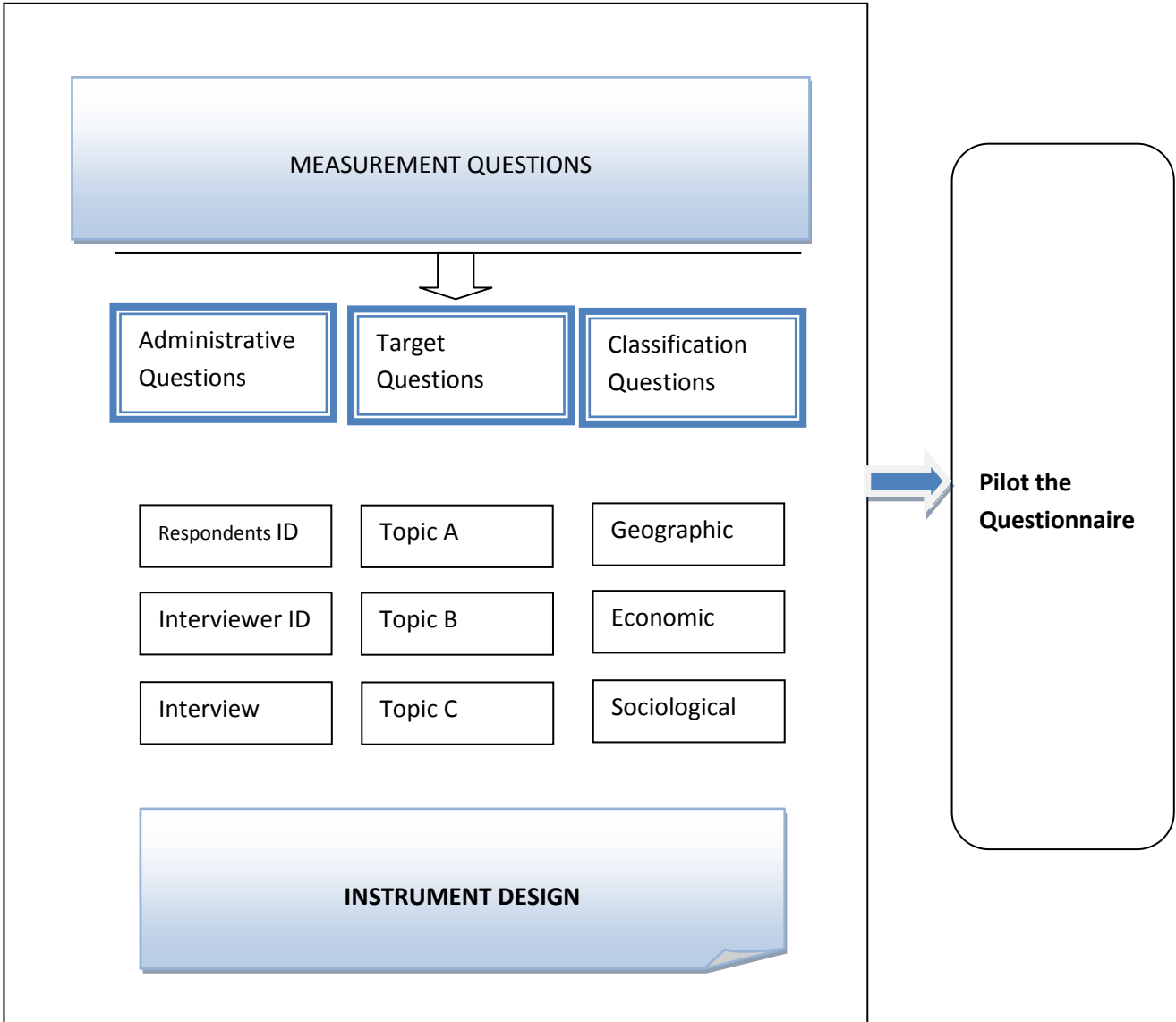


Figure 6 – Flowchart for Instrument Design (Cooper and Schinder, 2001)

The questionnaire was designed (Figure 6), developed and reviewed by the Services Faculty Manager before it was distributed to all the participants. A covering letter of consent was sent with the questionnaire, to explain the purpose of the survey; and this assured the participants that their responses would be kept confidential. The reason for the confidentiality clause was to improve the response rate as they were promised protection against victimisation.

A pilot test of the questionnaire was done. The purpose of the pilot test was to ensure that the faults, if any, were corrected, and to ensure that the questionnaire would gather the information that it intended to gather (Churchill, 1991: 64-73). The following steps were followed during the pilot test:

One individual from each section, namely: the training department, the technical department, the business services and programme office was requested to fill in the questionnaire. A short briefing session was held to explain the purpose of the pilot test. The respondents were asked to give their opinions on whether the questionnaire was comprehensive, whether the questions were clear and simple, and any other comment they may have had regarding the questionnaire.

Changes were made to the questionnaire where this was considered necessary, as highlighted by the respondents.

### **3.6.4 Distribution of the questionnaire**

#### *Logistics:*

Due to time constraints, a twenty-seater training room was booked through the training department, to ensure that all the candidates completed the questionnaire at the same time. Dates and times were set aside for the session. The participants were notified of the date, the time and the venue for the completion of the questionnaire. Ten pitched up for the questionnaire session.

The respondents agreed, by accepting the appointment on their e-mails. A briefing session was held at the beginning of the session; and the respondents were allowed time to ask clarification questions.

## The Research Questionnaire

Questions	Reason for the question
<b>What are the characteristics of the e-contract system?</b>	
Q1. The new system reduces errors.	- To determine if users are able to see the benefits of the system.
Q2. The system leads to better adherence to policies and procedures.	- To determine if end-users adhere to correct policies and procedures on the new system.
Q3. Using the system takes a lot more time than the old way of doing things.	- To determine whether there is time saved by using the new system. A 1 hour transaction now takes me less time to complete.
Q4. The system is more efficient than the old way of doing things.	- To establish whether users perform transactions on the system more efficiently than before.
Q5. I feel the use of the system makes the performance management of employees more objective.	- To establish whether the performance-management process is objective, rather than subjective.
<b>What are the change management factors that have an impact on the implementation of an e-contract system?</b>	
<b>Training</b>	
Q6. The training received during the project was	- To establish whether the training offered during the system implementation enables users to

adequate.	perform their daily tasks on the new system.
Q7. Adequate resources were available to assist the users during training.	- To establish whether resources were made available to assist users in learning the new system.
Q8. Adequate support from management was given during the training on the new system.	- To establish whether management was actively involved – to ensure that training takes place and gives support.
Q9. The contents of the training were relevant to the job.	- To establish whether the training addressed the users' fields of work adequately.
<b>Communication</b>	
Q10. The communication regarding the new system implementation was sufficient.	- To establish whether additional communication is required for employees to be able to cover the implementation.
Q11. The reasons for the decision to implement a new system were communicated.	- To determine whether end-users know what led to the decision to implement.
Q12. A shared vision of the new system was established and communicated.	- To establish whether the vision and mission, goals and objectives of an organisation were worth noting, so that a successful vision could be communicated (Lanning, 2001).
Q13. The communication medium used during the implementation project was effective.	- To determine whether the mediums of communication through posters, internal memos and email were effective.

Q14. Communication regarding the new system is open.	- To determine whether the users felt that communication from management and the project team was open.
Q15. End-users were kept informed about the progress of the project all the time.	- To establish whether end-users were aware at each phase of the project and each milestone communicated.
<b>What are the skills required to operationalize the e-contract system?</b>	
Q16. More end-user training is required to make the end-user comfortable when using the system.	- To determine whether more training is required to improve the skills required for the use of the system.
Q17. More communication messages are required to make end-users feel comfortable in using the system.	- To determine if more communication is required to ensure that end-users are informed and comfortable in using the system.
<b>What are the end-users' perceptions on the impact of change management during the system-implementation project?</b>	
Q18. End-users perception on the impact of change management on system implementation.	- To establish what end-users perceive about the new system.
Q19. The important factors to be considered for a successful system implementation.	- To contextualize the specific requirements and success factors needed for change to become successful during the IT implementation project.



<p>Q20. The satisfaction level on the overall success of the implementation.</p>	<p>To establish whether end-users are satisfied with the process followed during the project.</p>
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The motivation for the selection of the above sample was that:

All four sections within theBASC are impacted by the decommissioning of the old system. Employees in these sections are part of the implementation process during the project-implementation process; and these sections have employees who are referred to as the end-users of the new implemented system.

### **3.7 The datacollection**

Structured interviews were used as measuring instruments for the collection of the data. Questionnaires were used as add-ons to the interviews, in order to get more views, since the population for the interviews was small. According to Yin (2003: 83-85), no source of information is better than the previous source. They should, in fact, be considered as complementary; since a good case study relies on as many sources of information as possible. The use of various methods gives the researcher an opportunity to obtain multiple measures of the same phenomenon. This adds validity to the study. Triangulation was used to compare the data collected from the interviews and the survey questionnaires. This allowed the researcher to gather more evidence.

### **3.8 The data analysis**

Marshall & Conner(1996) indicated that data analysis means bringing order, structure and meaning to the mass of data; and it is a time-consuming process (Figure 7).

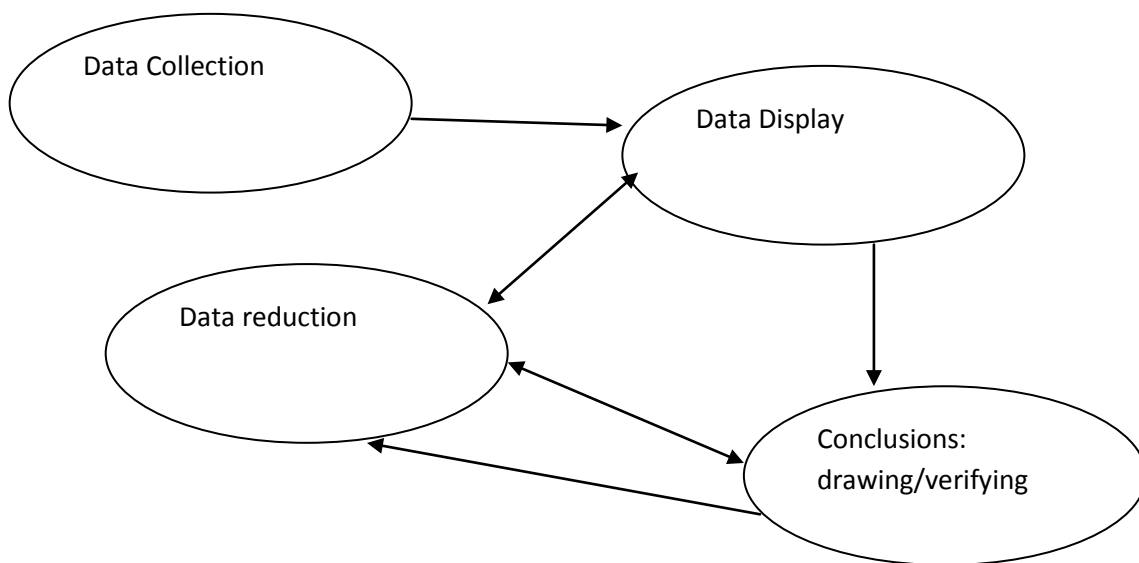


Figure 7. Components of data analysis: Interactive Model (Miles and Humberman, 1994)

**Data reduction:** This refers to the process of selecting, focusing, simplifying, and transforming the data. The purpose is to organise the data, so that the final conclusion may be drawn and verified. A pilot test used to ensure that the questionnaire gathers the information that it is intended to gather and discovering faults before too late in the process. This helps in the reduction of data.

**Data display:** This refers to the process of taking the reduced data and displaying them in an organised compressed way, so that the conclusions can be easily drawn.

**Conclusion drawing/verification:** This refers to the decision on what things mean, noting any patterns and propositions.

McMillan and Schumacher (2001: 461) indicate that qualitative data analysis is an inductive process of organising data into categories, and then identifying various patterns or relationships. However, there are general processes and techniques that are common in data collection and analysing these data from the interviews, questionnaires, and observation. Qualitative data analysis varies widely because of different research purposes, data-collection strategies and modes of qualitative inquiry.

The qualitative data from the interviews were systematically organised and arranged in order of importance, and based on the interviewees ranking of the importance of success factors, change processes –including training and communication – and their respective measurements. According to Atkinson and Hammersley (1994), qualitative social research starts with unstructured data; and through data analysis interprets meaning in a verbal form, in order to achieve a rich, in-depth understanding of people or phenomena.

The process of qualitative research is inductive, in that the researcher builds abstractions, concepts, hypotheses, and theories from the details (Merriam, 1988).

### **3.9 Validity**

The study is mainly descriptive. Yin (2003: 83-85) states that external validity deals with the generalisations that may be made from the case study.

For construct validity, there are three tactics, namely: using multiple sources of evidence, establishing a chain of evidence, having key informants review a draft case study report (Yin, 2003: 83-85). In this study, use was made of interviews and responses documented, as well as questionnaires as sources of evidence. According to Yin (2003: 83-85), establishing a chain of evidence is done by allowing the derivation of any evidence, from the initial research question to reach the ultimate case-study conclusion.

In this study, reference is made to all the sources from which evidence has been collected.

### **3.10 Reliability**

The respondents were asked what time best suited them – before scheduling appointments to reduce the stress factor. On observation, respondents were relaxed and positive during the interviews.

As the interviewees were given an option to be anonymous, without disclosing their positions in the organization, it may be assumed that the answers given were reliable. It must be noted that when conducting an interview, employees may understand the questions differently, and that this obviously has an effect on the answers.

The questions were formulated in such a way as to avoid any misunderstanding. Eskola and Suoranta (2005) suggest that the reliability of a research can be ensured by planning the interview and outlining additional or follow-up questions in advance. In addition to the set of questions, the additional questions were used in some interviews to gain additional information to a specific question. During the interviews, the respondents were asked additional questions to make sure that the researcher had understood the interviewee correctly. The interviews were recorded, in order to be able to gain a realistic and thorough understanding of the opinions of the interviewees.

### **3.11 Shortcomings and sources of error**

Time was a crucial factor in completing this research report. Getting permission to conduct the research took time from departmental heads. The management (senior, middle, lower) lines were not always available, or did not have adequate time to do the interviews. It may be advisable to expand the sample size in further change management research studies to get a broader view.

### **3.12 Ethical considerations**

In ensuring compliance with the ethical considerations, and to ensure the participation by all employees involved in the research study, the following ethical issues were adhered to throughout the research study:

Guarantees that the names and details of the respondents were not disclosed; the respondents were also assured of confidentiality and anonymity; and lastly, the research did not attempt to view the change fraternity as a static framework of change, but rather as a dynamic framework for change management that would be

useful in developing the field of change management during implementation of the system projects.

### **3.13 Conclusion**

In this chapter, an overview of the research methodology and the design strategy has been covered. Although there were limitations, certain sentiments, experiences, issues and problems, which are likely to be replicated in other companies and parastatals, have been revealed. The obtained results and findings from the research will be presented and further explored in the next chapter.

## Chapter Four

### Data Analysis and Interpretation of the results

#### 4.1 Introduction

In the previous chapter, the research design and methodology were presented. In this chapter, the results obtained through qualitative research will be presented. Each interview question and its intention are presented, as well as the results that were obtained therefrom.

Quantitative research has been covered by survey questionnaires, compiled as an add-on to the interviews, and distributed to the ten participants who turned up at the booked training venue. The findings from this survey will be presented and briefly discussed. To gain an understanding of the importance of change management on the success of the system-implementation project, the concept will be viewed from multiple perspectives. The conclusions listed should contribute to the general knowledge of what change-management activities are to be conducted during the implementation of system projects.

The recommendations listed are improvement proposals for organisations when implementing new systems.

#### 4.2 The Response Rate

The interviews with each of the respondents resulted in a relatively diverse range of opinions regarding the implementation of a new system in the organisation, and their considered effects on the end-users of the system. However, there was unanimity among those interviewed that communication, training, openness and management involvement had not been adequate during the implementation process. In order to add structure to the findings, the questions and responses will be presented individually.

The beginning of the thesis starts with the notion that the preliminary assumption is that change management is needed for success in implementing a system project.

## **Research Question 1:**

### **What are the components and the functionality of an e-contract system being implemented?**

In general, all the interviewees raised the concern that little information regarding the new system was being shared, that the specification collection and the related tasks were not being correctly conducted. The end-users of the system expected that the project team would provide them with sufficient information, so that they could know and understand the various components of the system, and how this new system could improve their performance management.

R1 - mentioned that they were given a blank paper to list – without any guidance – what the current system does, so that the functionality could be added to the new system. There might have been a clearer way of working when preparing the specifications of the system, and perhaps the process could have been laid out in advance. It was also stated that more time should have been planned for this activity.

R2 - felt that the processes should have been modelled properly, and on a detailed enough level at the beginning of the project, and that the old system could have been used as a basis for all specifications for a future model.

R3 - agrees somewhat to the R2's comment. However, this respondent added that rigorous consultation with the end-users could have ensured that a proper system would be built.

R4 - mentioned that the application is actually not a process-oriented system, so the whole performance management process would not be able to give a true reflection of the actual performance. It was, furthermore, noted that the relationship between the performance-management system and the reward systems had not been thoroughly thought through.

R5 - stated that the requirements collection should have started with interviews and workshops, where the project team would have been introduced to how the end-users work with the current performance-management system. As this was not done, R4 stated clearly that as end-users they did not know or understand the components and the functionality of the new system.

R6 - commented that the system should have been studied in detail, and end-users should have been made to understand the functionality and benefits before implementation. Furthermore, it was commented that the system should have been implemented in a phased approach, and not by way of a big-bang approach. The first phase of the implementation should have been kept at the level of the basic functions, so that the end-users could first become familiar with the system, the components and the functionality thereof.

R7 - expressed the view that end-users did not know what to contribute, in order to describe their requirements and expectations. It was expected that the project team would first of all clearly communicate information about the new system to be implemented. This led to end-user's lack of interest in the new system, and lack of buy-in, as they did not know what this was all about. The end-users thought that this was simply because the requirements collection was not correctly done. It was, furthermore, pointed out that there should have been more end-user representatives involved from the initial stages of the project-implementation.

The problem with the difficulty of the system was mentioned by the rest of the interviewees. Other comments on the question were that not all the components of the performance-management process are covered by the new system. In general, the whole process was thought to be confusing and unacceptable by most of the respondents. One of the end-users underlined the fact that it should have been mentioned that the new system would have an impact on the reward system.

Generally, the configuration of the system has been anything but smooth, and the number of errors made the end-users negative towards the system. One respondent highlighted that this issue must have affected people's attitude towards the system in different business units. One respondent also pointed out that the



system had been developed largely from a theoretical point of view, and that the connection to practical issues was non-existent.

It was, furthermore, noticed that the system was very slow, from log-in until the completion of the transaction. One respondent was vocal about the quality of the configuration work done by the project team. One respondent also criticised the fact that the system has not been properly tested before implementation, hence there were gaps identified by some of the end-users.

All this could have been avoided, if attention had been given to the end-users' expectations, their dire need to know and communicate on the new system. Involvement from the inception of the project by end-users, divisions, organised labour – and all levels of management – was identified as one of the main contributing factors to end-users' negativity towards the new system.

One respondent admitted that the business units should have been given a bigger role in putting together a blueprint and specifications for the new system.

## **Research Question 2:**

### **What are the change management factors that have an impact on the implementation of an e-contract system?**

The aim of this question was to find out what factors influence the implementation of a new system in an organisation. Generally, it was felt that the early participation and involvement of end-users affected by change are very important issues for a successful implementation. Mobilising a project team comprising all the stakeholders including end-users, management, labour, and subject matter experts, could be viewed as critical for the successful implementation of the new system.

## **Management's Participation**

The overall result was that not enough visible and vocal support from senior management had been given. Other factors highlighted by most of the respondents were training, communication, in addition to management's participation and openness during the implementation of the project.

## **Training**

The training of end-users was highlighted by all the interviewees as being the most critical factor for the success of a system's implementation. It was noted that sufficient time should have been allocated for the training of end-users during the project. Those facilitating the end-user training are in a critical position, since they are regarded as the change champions; and as such, they could contribute to the attitude –either positively or negatively –towards the system, and thereby directly influence the users.

Similarly, the managers and supervisors influence this factor through leading by example, that is, by attending the training sessions themselves, releasing or not releasing end-users to participate in the training interventions.

One interviewee stressed the fact that training should be a deliverable catered for in the project plan. Furthermore, the levels of end-users, their language and culture have to be taken into consideration when rolling out the training to end-users. The focus of the training should be to get the end-users from thinking in the as-is way to thinking in the to-be way of completing their performance management of the system.

Another respondent mentioned that the main objective of the training should be to get the end-users to know and understand the benefits, functionality and components of the new system. It was stated that the actual training should be preceded by communication in the form of awareness campaigns, workshops and "prepare me" sessions. It was also stated that, in general, during system implementation of the project, end-users must be trained in the process; and this should be given a higher priority rating than the actual system training.

According to the respondents, the most difficult part of the project was to get the end-users willing to accept the proposed changes. Respondents thought that one of the important reasons for the failure of the new system was the unwillingness of end-users to accept the changes, which emanated from the lack of training and proper communication.

Most of the respondents felt that the approach of doing testing and training in one session had proved to be unsuccessful. This clearly indicated that the training factors were not given enough focus and not catered for in the project. It was done as a by-the-way after-thought. One respondent stated that training also serves as a formal channel of communication.

### **Communication**

Eight out of ten interviewees rated communication badly. They thought that the communication between project team, end-users and management had not been open and honest. The fact that there had been no workshops, meetings, information-sharing sessions (brown-bag sessions) during the project was proof of poor, or a lack of adequate communication. There was also a lack of communication on the roles and responsibilities of all stakeholders, including the end-users.

One interviewee thought that communication messages between the project team and the end-users were inconsistent. This respondent also stated that the project team itself did not know who was responsible for what, and who the go-to person for end-users was when they experienced problems. Another general comment was that the decision to implement the e-contract system should have been better communicated to all the stakeholders timeously.

### **Research Question 3:**

#### **What are the skills required to operationalize the e-contract system?**

The aim of this question was to find out what kind of skills end-users need during a system-implementation project, in order to be able to use the system effectively and efficiently to perform their daily tasks. Generally, most respondents stated that other

than formal training and communication, conflict-management skills, problem-solving skills were highlighted as a requirement for the success of the system's implementation. According to the results, intercultural training is seldom considered necessary to support the implementation of the system. The reality is that there is a big shortage of skilled IT professionals in organisations (Booyesen and Beaty, 1997). The issue of untrained, unskilled project-team members has been to the detriment of the project.

One respondent stated that project sponsors, on realising that the timelines would not be met, threw more unskilled people into the project. This situation caused more problems, as the new unskilled people had to train end-users with the little information they had regarding the e-contract system. This caused frustration and anger for the end-users.

Most of the respondents suggested that the skills' shortages in the organisation should be addressed through a continuous training programme. Due to the continuous changing of the IT industry, end-users, project-team members, and other stakeholders must be kept abreast of the changes. This training in upskilling staff should comprise self-improvement that is to say university-accredited qualifications, systems training and generic training on upgraded applications.

Throughout this research, unskilled team members are a major contributing factor to failed teams, according to one respondent. The effective training of end-users, project-team players, management and sponsors, should be a high priority of management if they expect to decrease team failure on system-implementation projects. A team member who knows what to do and how to do it is an ingredient that must not be left out of the recipe for team support.

## **Research Question 4:**

**What are the end-users' perceptions on the impact of change management during the system implementation of the project?**

There is a difference between end-users' and management's perceptions on the impact of change management during system-implementation projects. The reason for the differences, according to the respondents is due to failures in communication. One of the respondents felt that the biggest issue was that there was not enough knowledge shared about the project by the project team, end-users blaming management, management blaming the project team, and business units blaming the project sponsors.

In addition, no one knew what could be expected from the new system; and hence, already the requirements collection was perceived to be a mess. Other answers that received a high ranking were the resistance of middle management and users to change. The overall response from end-users at lower levels was that there was not enough management visibility and support during the project.

Management supported the implementation of the new system, but later on lost interest when realising that there is lack of information and communication from the project team to share with their subordinates.

## **The survey questionnaire**

The questionnaires resulted in a response rate of 50%. Of the responses completed, the results are summarized below.

## Survey Results

Questions	1	2	3	4	No.	General Comments:
<b>What are the characteristics of the e-contract system?</b>	<b>Strong Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>		
Q1. The new system reduces errors.			X		8	Do not know the functionality of the new system.
Q2. The system leads to better adherence to policies and procedures.			X		7	The old system was better aligned to business policies and procedures.
Q3. Using the system takes a lot more time than the old way of doing things.	X				9	We took a lot less time to complete the performance management on the old system.
Q4. The system is more efficient than the old way of doing things.				X	8	If proper training is done during the project, this may be the case.
Q5. I feel the use of the system makes the performance management of employees objective.				X	6	It makes no difference.
<b>Change management factors that have an impact on the implementation of an e-contract system</b>						
<b>Training</b>						
Q6. The training received during the project was adequate.			X		8	The project team pushed the numbers to go through training and not ensuring that people understood what they were trained on. There were no assessments.

Q7. Adequate resources were available to assist users during training		X			7	Resources were shared between testing and training; therefore training had to be sacrificed.
Q8. Adequate support from management was given during the training on the new system.			X		8	Management was not visible during and after the project.
Q9. The contents of the training were relevant to the job.			X		10	We did not understand what we were trained on, as the system was not aligned to the business process.
<b>Communication</b>						
Q10. The communication regarding the new system implementation was sufficient.			X		8	Disagree, there was no communication coming from either the project management, nor from top management in the organisation.
Q11. The reasons for the decision to implement a new system were communicated.		X			6	Most of the information was received via the grapevine; but there was no formal communication to the end-users.
Q12. A shared vision of the new system was established and communicated.			X		8	The information we got was that we are migrating from this performance-management system to the new one; but no vision was shared formally.
Q13. The communication medium used during the implementation project was effective.			X		9	Communication during the project was very poor...

Q14. Communication regarding the new system is open.			X		10	Management avoided questions relating to the new system, referring us to the project team – no-one wanted to come clean and open about the change.
Q15. End-users were kept informed about the progress of the project all the time.			X		9	Communication during the project was very poor..
<b>What are the skills required to operationalize the e-contract system?</b>						
Q16. More end-user training is required to make end-users comfortable in using the system.	X				10	Agreed, sufficient time should be allocated to training, additional training sessions to be scheduled, and not lumped on everyone in one room.
Q17. More communication; messages are required to make end-users feel comfortable when using the system.	X				10	More communication is required to get buy-in from end-users of the system, and ensuring the questions are adequately and timeously answered to avoid any suspicion.
<b>What are the end-users' perceptions on the impact of change management during the system-implementation project?</b>						
Q18. More change management activities are required during system implementation.	X				10	Road-shows, workshops, prepare-me sessions, brown-bag sessions were suggested.
Q19. The important factors of change management are given				X	10	Time allocated to change-management activities is insufficient. The focus is put on only getting the system working. The issue is who is going to use



adequate time on the project.						the system if change management is not done correctly?
Q20. The satisfaction level on the overall success of the implementation is high.				X	10	Comments on not being familiar with the system were common, and some said they would not use it.

From this add-onunofficial survey, change management that encompasses training, communication and end-user perceptions seem to be the problem during the implementation project. The highest-rated reasons for failure of the e-contract system were somewhat evenly divided between lack of end-user participation in drawing up the specifications for the system; hence, there is a gap between what is on the system and business policies and procedures relating to poor performance management, lack of senior management involvement, and lack of end-user involvement.

Ten out of tenrespondentsto the question relating to the skills required to operationalize the e-contract system, rated lack of skills as one of the issues causing frustration and negativitytowards the new system.

Unskilled project team, together withunclear roles between project-team members were also highlighted,because end-users were sent from pillar to post when requesting clarity on issues pertaining to the project and the new system:from senior management to project team members, and then referred back to management. Team problems were highlighted by most respondents as an issue that had contributed to the failure.

The largest problem, according to the survey, was the shortage of skilled team members. Secondly, there was the lack of, or insufficient communication between team members, end-users and management.

### **4.3 Conclusion**

The data acquired from this research and the results thereof provide valuable information for organisations intending to implement new IT systems that impact on end-users, system-project teams, top management in the organisation, and system developers. The findings and recommendations could assist with the reduction of system-implementation projects failing – due to human factors, including training, communication, management involvement and change-management activities.

## Chapter 5

### Conclusions and Recommendations

#### 5.1 Introduction

The implementation of a system in organisation is a major investment. The return on investment is a critical element for the project team, system owners and management of the organisation. It needs to be noted that the process of calculating the impact of change management on the success or failure of projects is very difficult. From the research outcomes, it is clear that implementation-related issues and especially those dealing with human factors, such as behaviour, perceptions and attitudes are very important.

This is shown by the fact that all important success factors, as well as implementation barriers can be addressed through change management. The probability is, therefore, very high that understanding the implementation of a system as a change process has a positive impact on the implementation. The assumption, underlying the questionnaire, that change management has a significant impact on implementation success can, therefore, be confirmed.

The implementation of a new system or application in an organisation means change in end-users' behaviour, this and impacts on the human factor, to a certain extent. This may result in challenges for the organisation as a whole: structures, processes and policies. Therefore, change management can play a major role in the operationalization of the system, that is, end-users using the new system once trained.

During system-implementation projects, three pillars are normally covered by the project, namely: technology, process and people. The people, or the human aspect, is covered as a just by-the-way thing. Not much focus is given to people-related issues. This may result in serious problems that have an impact on the operationalization of the system; and these can result in wasted investment. The early involvement of end-users is one of the main critical success factors. Top Management plays an important role in getting end-user's buy-in to the new way of

doing things. Their engagement and support throughout the whole implementation process is viewed as an important factor for the success of the implementation.

## **5.2 Communication**

Sufficient and effective communication through various media and channels plays a major role in ensuring that end-users understand the vision and strategy for change. Management's important role during a system's implementation can be summarised as communication throughout the whole change process – with the aim of achieving two goals. The first goal is to explain why the changes are necessary and what the aims are, in order to address the initial fears and resistance. The second is to involve the users that are affected by the changes, as early as possible to gain acceptance.

Although these are very efficient one-way communication vehicles, a more effective two-way communication means would be workshops or employee surveys, where feedback from employees can be gathered.

## **5.3 Training**

Providing needed training for end-users during the process of system implementation, could help raise their level of self-esteem. This makes them feel that their competence is raised; and they can, therefore, gain confidence to use the newly implemented system. End-user training problems are frequent reasons for system-implementation challenges or even project failure. The main objective for training is to get people to understand and accept the changes, in order to operationalise the system. It may, therefore, be concluded that the effect of training on system implementation success is dependent on the characteristics of the system.

During the system-implementation project, training requires a remarkable amount of resources and time. This is, therefore, often not arranged properly, due to time constraints. End-user involvement and training of the end-users' feelings towards a new system require time and patience. Without proper training, the benefits of a new system would not be reached; and the benefits could not be realised.

Some important factors concerning training should be taken into consideration. First of all, training must be included in the planning, and included in the project plan.

Secondly, all end-users must be trained before the system's implementation, in order to keep the momentum after the implementation. Thirdly, end-user support must also be in place, such as a help desk where users can call in for information and assistance. Users would always have questions –and technical questions –once they start using the new system.

## **5.4 Project Team**

Using a highly cross-functional team is very critical. The team should consist of system owners/sponsors, as the champions, end-users impacted by the change, to be able to define the business process, consultants would bring the expert specialist system knowledge, internal subject matter experts, who will confirm the link between the business process and the system functionality. Support and commitment by senior management both vocally and visibly during the system-implementation project are also critical factors in the success of the new system.

Together, this team should be able to holistically develop a complete solution, covering all the technical issues and the correct business process.

The importance of utilising change-management tools and methods is well-understood by project managers when implementing systems. However, the concept of change management is not always embedded as a strategic activity in the overall project plan. Change-management tools are in most cases reactively used, based on previous project lessons learnt. Change-management tools that are used in major change initiatives are seldom used. This is mainly due to the fact that senior management has to be convinced to approve additional funds for a change-management initiative.

Senior management buy-in and involvement are also recommended. This can be done by writing about the importance of the new system in the internal newspaper, or by actively participating in the implementation process. It is vital that senior management is 'walking the talk'.

## 5.5 Conclusion

The outcome of the dissertation has highlighted the fact that many researchers emphasise the reason for failure of new system implementations in organisations as due to a poor implementation rather than to the change itself. The literature review in Chapter Two explained that not addressing the human factors, such as resistance, is mentioned in most cases for the failure of implementation. Some researchers also emphasise the importance of these issues and remind us on the implications that the redefinition of processes and the need for collaboration might have.

Change management that has its roots in the science of psychology; and it aims to gain acceptance for changes by the affected people. The change-management methods and tools vary. Basic elements of change management are:

- A vision to align the organisation;
- Communicating why the changes are necessary;
- Involving affected people actively in the change process;
- Providing people with the necessary skills to actively support the change process.

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## APPENDICES

### Appendix One: Covering letter

P.O. BOX 911-1603  
ROSSLYN  
0200

#### To whom it may concern

#### **M-TECH DEGREE HRD PROJECT – RESEARCH QUESTIONNAIRE**

My name is Tryphosa Mathakadu Boikhutso, and I am a student at the University of South Africa. I am in the process of completing my required research within the field of Change Management for the purpose of completing my dissertation for the M-Tech in Human Resource Development.

This study deals with change-management interventions taking place during System Implementation in the organisation.

The following questionnaire will take approximately one hour of your time to complete. Please note that it is optional to include your name in the name field. If you agree to participate in this project, please answer all the questions as honestly as possible, and leave the questionnaire on the desk in the training venue. Participation is strictly voluntary, and you may refuse to participate at any time.

Attached, please find a research questionnaire, together with instructions for completion. Please note that all information collected during the survey will be treated with strict confidentiality, and would only be used for research purposes.

Thank you in advance for your participation in this study; and the data collected should provide useful information regarding the importance of change management during a system's implementation.

Should you require any further information or clarity on the requested activity, please do not hesitate to contact me on **011 655 2249** or **082 884 4162**, or email [tryphosa.boikhutso@eskom.co.za](mailto:tryphosa.boikhutso@eskom.co.za)

Yours faithfully,  
**T. M. Boikhutso**