

**FACTORS INFLUENCING BUSINESS PROCESS IMPROVEMENT AT NAIROBI  
CITY WATER AND SEWERAGE COMPANY IN NAIROBI COUNTY.**

**BY**

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THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTERS OF ARTS  
IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI.**

**2012**

## **DECLARATION**

This research project is my original work and has not been presented for a degree at any other university.

Signed .....

Date ..... 08/08/2012

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**L50/60865/2010**

This research project has been submitted for examination with our approval as the candidate's  
University Supervisors.

Signed .....

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## **DEDICATION**

This study is dedicated to my loving wife Catherine, my daughter and son Naomi and Joseph, for their support, encouragement and patience during the entire period of my study and continued prayers towards successful completion of this course.

May God bless you all.

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## **LIST OF ABBREVIATIONS**

<b>AWSB</b>	-	Athi Water Services Board
<b>BPI</b>	-	Business Process Improvement
<b>BPR</b>	-	Business Process Re-Engineering
<b>CCN</b>	-	City Council of Nairobi
<b>CPI</b>	-	Consumer Price Index
<b>ISO</b>	-	International Organization for Standardization
<b>NCWSC</b>	-	Nairobi City Water and Sewerage Company
<b>PI</b>	-	Process Improvement
<b>QMS</b>	-	Quality Management System
<b>RBV</b>	-	Resource-based View
<b>SPSS</b>	-	Statistical Package for Social Sciences
<b>TQM</b>	-	Total Quality Management
<b>WASREB</b>	-	Water Services Regulatory Board

## **ABSTRACT**

Business process improvement is the holy grail of any company's operations. Many companies that undergo a process improvement programme have found that the application of process improvement techniques has lead to significant improvements in operational areas. The adoption of process improvement techniques has been inspired by the dramatic improvements demonstrated by such techniques as Lean, Value Stream Mapping, Process Mapping, 5S, Six Sigma, Kaizen and DMAIC. In order to be effective and efficient, process improvement approaches need to be closely integrated with strategy and other organizational elements such as culture, top management commitment and staff motivation. Despite these numerous strategies to improve the processes at Nairobi City Water and Sewerage Company, its performance has been wanting. This study therefore sought to determine the extent to which people issues, technology, strategy, management commitment and organizational culture has affected the business process improvement at the company. The purpose of the study was to determine factors effecting business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. A descriptive research design was used this study. The target population of this study was the 119 management staff working at Nairobi Water Company. The study used a census approach. The study used both primary and secondary data. Primary data was obtained through self-administered questionnaires with closed and open-ended questions. Secondary data was collected by use of desk search techniques from published reports and other documents. Descriptive statistics and regression analysis were used to analyze the data. The study findings showed that all the five variables explained 79% of the business process improvement at Nairobi City Water And Sewerage Company. The study found that technology had the greatest effect on the business process improvement at Nairobi City Water And Sewerage Company followed by management commitment, then organizational culture and staff related issues in that order while organizational strategy had the least effect. The study found that the education and training provided in Nairobi City Water and Sewerage Company was not evaluated in terms of expectations and impact on the effectiveness and efficiency of the organization. This study recommends that Nairobi City Water and Sewerage Company should fully adopt technology in decision support and databases so as to enhance the business process improvement.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

Process is any activity or group of activities that produce required outputs by taking a variety of inputs and adding value from the perspective of internal or external customers (Grant, 2002). Process improvement is a strategy and a tool to help an organization meet its long term goals and objectives. Process improvement is defined in terms of customer satisfaction, resulting in higher quality products and services. Improvement is defined in five basic ways, namely: reduction of resources, reduction of errors, meeting or exceeding expectations of downstream customers, making the process safer and making the process satisfying to the person who does. One key goal for all organizations is to meet the demands of their clients – both internal and external. Clients' needs change – whether due to economic factors, new product introductions, mergers or acquisitions, expansion or contraction. Continuously reviewing processes for potential improvements and efficiencies enables companies to adapt effectively to their clients' changing needs.

The constantly changing hyper-competitive markets demand higher levels of organizational flexibility and performance (cost, time, and quality). In response to this need, the 1990s witnessed a breakthrough in organizational re-structuring. Organizations were shifted from their traditional function-based operations to new process- and cross-functional based operations (Giaglis, 1999). Companies use BPI to keep pace with the changing business environment which means adapting their business processes to persistent technological, organizational, political and other changes (Coskun *et al.*, 2008).

Business process improvement initiatives are frequently key projects within an organization regardless of the size of the organization or the size of the business process improvement initiative (Towill, 2009). Even if a business process improvement initiative is targeted at an individual department, the impact of the change will be organization-wide. By ensuring that the initiative is managed as a strategic project, there are increased opportunities for success. Process

improvement initiatives are continuous. As organizations grow, they need to continuously analyze and refine their processes to ensure they are doing business as effectively and efficiently as possible. Fine-tuning processes gives an organization a competitive advantage in a global marketplace.

According to Naagarazan and Arivalagar (2006), a process refers to an activity, where there are some inputs and some outputs. The inputs may be human resource, material, money, data, methods, equipment, etc. outputs maybe profit, information, product, service, etc. The process is the interaction of some combination of human resources, materials, equipments, method, measurements and the environment to produce an outcome such as a product or service or an input to another process. ISO 9001:2000 stipulates that the understanding that a process can be represented as a sequence of activities aids management in defining the process inputs. Once the inputs have been defined, the necessary activities, actions and resources required for the process can be determined, in order to achieve the desired outputs. According to Naagarazan and Arivalagar (2006), a process must be effective, efficient, under control, and adaptable, within certain conditions imposed by policies, and constraints, state laws or regulations.

### **1.1.1 Process Improvement**

Firms are increasingly setting quality management as an organizational priority to improve their competitiveness in the global arena. Improvement aims at reaching the levels of performance that are significantly higher than current levels, either incrementally or in quantum jumps. According to Buttles-Valdez (2008), today's organizations are largely dependent on high-technology to develop, build, and maintain their products and services. This has created a dependence on a workforce with specialized knowledge and skills. People bring knowledge, skills, and process abilities ("competencies"). For organizations to maintain a competitive advantage in a global, rapidly changing, and technological environment, they must ensure that: People, Process, Technology, and Organizational Culture are adaptable, in alignment, and support the organization's business objectives and strategies.

Studies also show that disjointed efforts on adopting and implementing process approaches do not produce desired effects. In order to be effective and efficient, process improvement approaches need to be closely integrated with strategy and other organizational elements (Vakola

and Rezgui, 2000). Thus, recognizing the shortcomings of traditional technology-oriented process approaches, broader aspects are now being imbued into the construction process related research, the concept of “re-valuing construction” being one.

Recent times have witnessed the emergence of process orientation as a concept for organizational improvement and success in both the private and the public sector. With directed attention towards how value is actually being created within organizations (that is: the process) instead of the outcome (i.e. the product), process orientation has been described as perhaps the most important management idea (Deming, 2000). Considering this recognition and the widespread work of process orientation in today's organizations there is great reason to examine its applications further.

Never-ending or continuous improvement is probably the most powerful concept to guide management. It is a term not well understood in many organizations, although that must begin to change if those organizations are to survive (Hindle, 1997). To maintain a wave of interest in improvement, it is necessary to develop generations of managers who not only understand but are dedicated to the pursuit of never-ending improvement in meeting external and internal customer needs. The concept requires a systematic approach to management which has the following components: planning the service delivery processes and their inputs; providing the inputs; operating the processes; evaluating the outputs and outcomes; examining the performance of the processes; modifying the processes and their inputs. This system must be firmly tied to a continuous assessment of customer needs, and depends on a flow of ideas on how to make improvements, reduce variations, and generate greater customer satisfaction. It also requires a high level of commitment, involvement, and a sense of personal responsibility accepted by those operating the processes (Hindle, 1997).

The never-ending improvement cycle ensures that the organization learns from results, standardizes what it does well in a documented form, and improves operation and outputs from what it learns. But the emphasis must be that this is done in a planned, systematic, and conscientious way to create a climate, a way of life, that permeates through the whole organization (Hindle, 1997).

There are four basic principles of never-ending improvement: Focus on the customer (internal and external) - communicate, inform and be informed. Understand the processes - design and control to eliminate bottlenecks and reduce waste and to gather and provide useful (timely, current, accurate), usable information. Involve the people - communicate, inform and be informed. Provide the necessary capacity and capability to work the processes efficiently and effectively, and for the information generated to be used to best effect (Hindle, 1997).

Continuous Improvement (Kaizen) is both a mind-set and a range of techniques to review and evaluate work processes. As a mind-set, it is a way of approaching work so that involvement in innovation and creativity is encouraged. As a range of techniques, Continuous Improvement includes approaches such as benchmarking, process mapping, work flow analysis, cycle time analysis, just in time, quality planning, problem solving, current state analysis, project planning, change management and Value stream mapping (Davenport, 2005).

Kaizen' or 'Continuous Improvement' is a policy of constantly introducing small incremental changes in a business in order to improve quality and/or efficiency. This approach assumes that employees are the best people to identify room for improvement, since they see the processes in action all the time. A firm that uses this approach therefore has to have a culture that encourages and rewards employees for their contribution to the process. Kaizen can operate at the level of an individual, or through Kaizen Groups or Quality Circles which are groups specifically brought together to identify potential improvements. This approach would also be compatible with Team working or Cell Production, as improvements could form an important part of the team's aims.

When organizations embark on Business Process Improvement (BPI) projects, unnecessary non-value adding activities are eliminated, and core activities are improved in order to achieve higher levels of process efficiency and effectiveness. This outcome is achieved by optimizing a number of factors, such as decreasing time and/or cost of processes, increasing quality of processes or improving allocation of resources, while being attentive to the expectations of external stakeholders (Valiris and Glykas, 2004).

The people, process, technology, and culture work together to support the organization's values, policies, processes, and strategic business objectives. Therefore, people should be put back into

the equation. To increase organizational capability on multiple levels, organizations need: a way to attract, develop, organize, motivate, and retain a workforce that has the appropriate knowledge, skills, and process abilities (competencies) that are adaptable to rapid changes in a technological environment(Buttles-Valdez, 2008).

According to Naagarazan and Arivalagar (2006), process improvements are made by one or more of the following ways: viewing all work as a process; making each process adaptable, effective and efficient; controlling in-process performance; anticipating changing customer needs; eliminating waste and rework; investigating and eliminating non-value adding activities; eliminating all non-conformities; using benchmarking to improve competitive advantage; innovating; incorporating lessons learnt into future activities, and; using technical tools such as statistical process control, experimental design, benchmarking, quality function deployment, etc.

Approaching a process improvement effort holistically increases the alignment of the interrelated and interacting “parts of the organization”, increases the effectiveness and sustainability of the improvements and, positively impact the organization’s business performance and its bottom-line. Buttles-Valdez (2008), posits that improvement efforts should be holistic encompassing vision, resources, capable workforce, capable processes, organizational culture, incentives, and action plan. All these elements holistically contribute to change and any missing element will affect process improvement.

According to Buttles-Valdez (2008), no vision results in confusion. Additionally, missing resources cause anxiety and frustration. Lack of a capable workforce means slow or little progress and missing capable processes will mean re-inventing the wheel every time. A bad organizational culture is a barrier to change while missing incentives only leads to sporadic change. Missing an action plans lads to false starts.

Improvements in business processes translate directly to better profits by cutting costs and increasing competitiveness at the same time. In many cases, business process improvements have accelerating cumulative effects on the company's profits. The lack of a holistic methodology for Business Process Management has resulted in much confusion for organizations wishing to deploy Business Process Improvement projects.

### **1.1.2 Nairobi City Water and Sewerage Company**

Nairobi City Water and Sewerage Company (NCWSC) is a Limited Liability Company incorporated under the Companies Act CAP 486 and empowered by the Water Act 2002 to provide efficient and sustainable water and sewerage services in Nairobi and its immediate environs. The company is a wholly owned subsidiary of the City Council of Nairobi (CCN). The latter Act brought about reforms in the Water Sector that were aimed at facilitating access to clean water and sewerage services to all Kenyans. The reforms saw creation of regional water boards which were tasked with the responsibility of regulating water companies in their respective areas of jurisdiction besides major asset development. Within this structure, NCWSC falls under Athi Water Services Board (AWSB).

Prior to the Water Act 2002, similar services were provided by the Water and Sewerage Department of the CCN. At inception, the Company inherited certain assets and liabilities from CCN which continue to pose challenges. The operations of the company were also adversely affected by the prolonged drought which caused dams and rivers to dry up. A further complication to the efficiency of service delivery by the Company has been the scenario where demand has significantly outstripped the supply. This is due to construction of new housing estates and industries as well as the increasing rural-urban migration. Another challenge is the aging water and sewerage infrastructure which have increased maintenance costs besides breaking down frequently.

### **1.2 Statement of the Problem**

Business process improvement is the holy grail of any company's operations. Many companies that undergo a process improvement programme have found that the application of process improvement techniques has lead to significant improvements in operational areas (Bateman, 2005). Companies use business process improvement to keep pace with the changing business environment which means adapting their business processes to persistent technological, organizational, political and other changes (Coskun et al., 2008).

Nevertheless, anecdotal evidence also suggests that organizations are having much difficulty in identifying their processes, let alone being innovative enough to optimize them. Partly to blame

for the difficulties faced by organizations is the lack of holistic and versatile methodologies for business process improvement in academic literature. In literature, it is widely agreed, that the most value-adding phase in a business process management (BPM) project namely the act of improving lacks guidelines and is only poorly supported (Vergidis *et al.*, 2006; Forster, 2006). Owing to that fact BPI seems to be rather art than science (Davenport, 2005; Hall and Johnson, 2009).

Previous studies done in Kenya on process improvement (Omondi, 2008; Ngure, 2001; Kiilu, 2006; Munyiri, 2000 and Atebe, 2000) have not focused on factors affecting process improvement. None of these studies have focused on the factors effecting business process improvement in the Nairobi Water and Sewerage Company. This is despite the fact that Nairobi City Water and Sewerage Company has been undertaking various business process improvement strategies since its inception in 2004. Some of the strategies include the implementation of the Quality Management System (QMS) that lead to the certification of the ISO 9000:2008. The other strategy is the implementation of the various Information communication technology systems to enhance service delivery that led to the development of an ICT master plan. A comprehensive staff training program in change management and customer service was also carried out between 2004 and 2006. The company has consistently developed three year rolling business plans since 2004.

Despite these numerous strategies to improve its processes, the company's performance has been wanting. The customer perception surveys for the company carried out by independent organizations, in 2007, 2008, 2009 and 2010 have given an overall rating of below 70 percent. The Impact report by WASREB for 2011 also ranked the company at position 32 among the other water utilities. This clearly indicates that the company's performance has not been in line with the rigorous process improvement strategies applied. This study therefore sought to determine the extent to which people issues, technology, strategy, management commitment and organizational culture has affected the business process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

### **1.3 Purpose of the Study**

To determine factors influencing business process improvement at Nairobi City Water and Sewerage Company in Nairobi County

### **1.4 Objectives of the Study**

- i. To investigate the effect of staff related issues on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County
- ii. To establish the effect of organizational strategy on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County
- iii. To determine the effect of organizational culture on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County
- iv. To assess the effect of management commitment on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County
- v. To establish the effect of technology applied on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County

### **1.5 Research Questions**

- i. What is the extent to which staff related issues affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County?
- ii. To what extent does organizational strategy affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County?
- iii. How does organizational culture affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County?
- iv. What is the effect of management commitment on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County
- v. What is the extent to which technology applied affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County?

## **1.6 Significance of the Study**

The study offers valuable contributions from both a theoretical and practical standpoint. From a theoretical standpoint, it contributes to the general understanding of the factors effecting business process improvement. The study is invaluable to the following:

**Stakeholders:** Study provided the stakeholders with deeper insights into what the company needs to do to ensure proper process improvement strategies. The results of this study would benefit other companies in particular in terms of improving service delivery for increased customer satisfaction, with serene and conducive work environment.

**Government:** The research findings also provided vital information that would assist government particularly policy makers, planners and programme implementers to formulate policies and strategies on operation management.

**Academicians:** The research findings also provided vital information that would benefit future academicians and researchers on operation management and specifically process improvement.

## **1.7 Limitations of the Study**

There were expected challenges during data collection because some of the target respondents may fail to give the required information due to the nature of the data and also the subject matter. The researcher however worked at winning the confidence of those involved in this research by giving them the reasons for the research and assuring them of confidentiality.

## **1.8 Delimitations of the Study**

The study focused on factors influencing business process improvement at Nairobi City Water and Sewerage Company. The study was carried among the middle and senior level managers at Nairobi City Water and Sewerage Company in Nairobi County.

## **1.9 Basic Assumptions of the Study**

The researcher made the assumption that the respondents were cooperative enough in order to give the required information in the study. It was assumed that all information collected from respondents is correct and gives a clear and true picture.

The researcher also assumed that external factors like strikes will not arise as this would affect the process of data collection and hence the completion of the project. The researcher assumed that the cited respondents have some knowledge on BPI. The researcher also assumed that the results of this study provided a guide to the Government and other development partners dealing with the issue of BPI.

### **1.10 Organization of the Study**

The study is organized into five chapters, each of which contains specific information. Chapter one contains the introduction to the study. It gives background of the study, statement of the problem, objectives of the study both general objectives of the study, specific Objectives of the study, research questions, significance of the Study, limitations of the study, delimitations of the study, basic assumptions of the study and assumption of the study. On the other hand, chapter two reviews the literature based on the objectives of the study. It further looked at the conceptual framework and the knowledge gap. Chapter three covers the research methodology of the study. The chapter describes the research design, target population, sampling procedure, tools and techniques of data collection, pre-testing, data analysis, ethical considerations and operational definition of variables. Chapter four presents data analysis, presentation and interpretation of the findings of the study while chapter five presents the summary of findings, discussion, conclusions drawn from the analysis of data and the recommendations made.

## CHAPTER TWO

### LITERATURE REVIEW

#### **2.1 Introduction**

This chapter summarizes the information from other researchers who have carried out their research in the same field of study. The specific areas covered here are concept of business process improvement, approaches to continual process improvement, theoretical review and the empirical review. The knowledge gap for this study has also been discussed.

#### **2.2 Theoretical Review**

In the first steps to developing a theory-backed set of guidelines to enhance the success for Business Process Improvement initiatives, we turn to existing organizational theories in order to investigate whether these can suggest what an organization must consider in order to increase the chances of their BPI initiative being a successful one. This study provides an expose of theories that can be applied to the field of BPI in order increase levels of BPI success. We identify three theories in particular, *viz.* Agency Theory, Resource-based View (RBV) of the firm Theory, and Stakeholder Theory which are selected as relevant theories because they offer different organizational focus and understanding.

##### **2.2.1 Agency Theory**

Sometimes called *the principal-agent problem*, agency theory is based on a fundamental premise that owners (principals) establish a relationship with managers (agents) and delegate work to them. Principals and agents have different self-interests (Jensen and Meckling, 1976), which creates an agency problem and requires mechanisms to minimize the problem in each instance.

Eisenhardt (1989) differentiates between two different uses of agency theory – the positivist and the general approach. The positivist approach focuses mainly on the “principal-agent relationship between owners and managers of large, public corporations”. The more general approach, followed in this paper, is the ‘Principal-Agent’ relationship that introduces Agency Theory as the “theory that can be applied to employer-employee, lawyer-client, buyer-supplier, and other agency relationships” (Harris and Raviv, 1979). The general Principal-Agent relationship can be

applied to all levels in the organization, thus, providing this study a wider and more relevant coverage. Eisenhardt's (1989) view of agency theory has several implications for BPI. First, agency theory assumes that the basis of the organization is 'efficiency' (Eisenhardt, 1989), which is one of the fundamental drivers of BPI. It is in the interest of managers to make sure performance within their organization is efficient. Second, cross-departmental changes, such as those resulting from BPI, can have both positive and negative impacts on organizational structures and performances and can be faced with strong opposition. It is therefore suggested that providing strong management involvement for newly introduced changes delivers a sense of obligation and provides incentives for subordinates to accept newly introduced changes.

Moreover, Yu and Mylopoulos (1994) identify three different types of agency dependency in BPI within the organization, namely: goal, task, and resource. In addition, they provide three different levels of agency relationship: general, committed, and critical, which depend on the degree to which the agent will be affected if the job fails. This general understanding of agency theory is also applicable in process-based organizations and translates into different levels of commitment and into chains of hierarchical responsibilities that establish accountability and control and thus assist in minimizing the agency problems associated with BPI change.

Therefore, agency theory, through its understanding of the different interests of staff in the organization, is capable of explaining the rationale in assigning agents (process owners) to different processes as well as explaining the effects of their involvement in BPI projects. It is also argued that business process ownership provides both commitment and a wealth of knowledge to BPI projects.

### **2.2.2 Resource-Based View of the Firm Theory**

RBV focuses on the internal characteristics and performance of the organization (Porter, 1991). The theory suggests that organizations have different types of resources that fall under two categories: (a) cooperative and strategic, and (b) competitive and financial. The theory is based on the assumption that firms have idiosyncratic, not identical strategic resources. Resources are not perfectly mobile and therefore heterogeneous. Thus, organizations are collections of resources, and the scarcer the organizational collection of resources the less the competitive advantage they actually hold.

Moreover, aside from resources, RBV theory also focuses on capabilities. Capabilities are accumulated knowledge in organizations resulting from using its existing resources in an efficient and effective way to achieve its final goals (Idris, Abdullah, Idris, and Hussain, 2003). Capabilities are divided into four main categories: functional differential, positional differential, cultural differential, and regulatory differential. These capabilities develop from existing skills and experience (functional), as preferences of previous actions (positional), as a result of the perceptions of the individual of the organizational stakeholders (cultural), or from organizational policies and regulations (regulatory). Therefore, in the context of BPI, the theory implies that an organization with a culture supportive of BPI, with existing process-based change regulations, and with previous experience in conducting BPI projects, will attain higher levels of BPI capabilities.

BPI shares common standpoints with RBV theory. The commonality is embedded in the belief that resources and capabilities of the organization are limited, thus, surviving organizations tend to use their resources in a cost-effective way. Functioning at optimum levels can lead organizations to create competitive advantage.

Sustaining competitive advantage, however, may require continual improvements to differentiate themselves from competitors (Attaran and Attaran, 2004). Sustained competitive advantage is achieved when capabilities are able to produce value, are rare, are imperfectly imitable, and are exploited by the organization. Similarly, BPI's fundamental philosophy focuses on improving existing operations within organizations allowing them to use resources more efficiently and effectively (i.e. produce value), and provides tailored solutions to solve specific organizational problems (i.e. unique and imperfectly imitable) (Valiris et al., 2004). Sustaining competitive advantage is specifically related to the human and technical capabilities. Organizational capability in terms of staff with existing BPI-related experience and the ownership and exposure to a variety of technical BPI tools have a major impact on the final results of the BPI project.

This accumulated experience has value, is hard to imitate, transfer or substitute and can be exploitable by the organization and thus creates 'sustainable competitive advantage' in accordance with RBV theory. Therefore, RBV theory and its competitive advantage sustainability are tightly related to BPI.

### **2.2.3 Stakeholder Theory**

A stakeholder in general as defined by Freeman (1984, p.41) is “any group or individual who can affect or is affected by the achievement of the organization’s objectives”. Freeman (1984) traces the term ‘stakeholders’ back to the Stanford Research Institute in 1963 defining the term as “those groups without whose support the organization would cease to exist” (Donaldson and Preston, 1995, p.31). Stakeholder theory helps to improve the value of the outcomes of the stakeholder decisions by identifying the interests of various stakeholder groups and prohibiting them from being disadvantaged, ultimately resulting in greater returns to shareholders.

Modern businesses have become more transparent and accountable in order to meet their new, interactive and responsive relationships with stakeholders. Stakeholders should be defined through their legitimate interests in the organization rather than the organization’s interest in them. Therefore, recognizing obligations to stakeholders helps organizations to become successful (Andriof et al., 2002). This idea is also heavily supported by the agency theory. *Stakeholder focus* is the effort expended by the organization intending to satisfy the majority of the key stakeholders. Key stakeholders in BPI are identified in terms of the degree of reliance and interaction with the process to be improved.

Thus, the larger the process the higher the number of key stakeholders involved. Clarkson (1995) affirms that persistence in dissatisfying principal stakeholders may cause the organization to fail. However, building a trust relationship can significantly lower costs, and therefore impact their performance. The impact of key stakeholders is asserted in a variety of fields such as firms performance, decision-making, and corporate social performance.

Furthermore, this argument does not deal with the moral foundation of the stakeholder theory and the principle of fairness. The theory does not imply either that all stakeholders should be equally involved in processes (Donaldson et al., 1995). The focus of this research is on the capability of the theory to accomplish multiple purposes although these purposes are not necessarily entirely congruent. Thus, the theory assists in identifying a mechanism to recognize cross points among the different requirements of key stakeholders in a BPI project.

While BPR literature recommends that executives and key staff members to be involved in BPI, Davenport et al. (2004) discovered that less than 30 percent of organizations have achieved even

limited information exchange with their suppliers and customers (who are also part of the key stakeholder vision). From the stakeholder theory perspective, BPI personnel should consult with affected key people throughout the different phases of the project (i.e. analysis, design, and implementation) and identify middle ground solutions.

In summary, stakeholder theory, in the context of BPI, suggests that recognizing and aligning key stakeholders' concerns can have a positive impact on the results of the project in particular and the organizational performance in general. This area is largely neglected in the field of BPI. Accordingly, we argue that identifying and aligning with the interests of various key functional based personnel, as well as other external key stakeholder groups, during a business process improvement project has a significant and positive impact on BPI projects' final results.

## **2.3 Empirical Review**

A process is a lateral or horizontal organizational form that encapsulates the interdependence of tasks, roles, people, departments and functions required to provide a customer with a product or service. A business process is “comprised of the people who conduct it, the tools they use to assist them, the procedures they follow and the flows of material and information between the various people, groups and sub-activities. The process improvement is affected by various factors some of which are discussed here under.

### **2.3.1 Staff Issues**

It is important to create enthusiasm in the staff so that, ultimately, all employees will have the opportunity to become engaged in continual improvement activities. Initially, it is beneficial to identify those who have personally demonstrated the principles of process improvement to be the first staff to become involved in CPI activities. Staff involved in CPI should be trained in the tools and techniques appropriate to their needs (Coskun et al., 2008). The senior management team should demonstrate high regard for those who are directly involved in continual improvement as well as those affected by changes due to CPI. It may be necessary to identify those who oppose continual improvement and to identify to either change their attitudes or to minimize their impact.

Employees need to have confidence that participation in continual improvement is in their best interest. There are many intrinsic rewards including knowing that one's work knowledge and opinions are respected through implementation of process improvements. It is also important to recognize that people who are involved in or being subjected to change go through a number of phases and that their need for communication, discussion, coaching and support at each stage can be quite different. Indeed, different individuals may need completely different management approaches. It is normal for stress levels experienced by staff to be raised during periods of change (Shin and Jemella, 2002). This phenomenon can affect behavior and create a potential threat to safety and product quality. It is essential that all managers who are leading change initiatives take this into consideration, as it will help minimize problems during the change programme and result in a better organizational environment.

The most underestimated (and frequently forgotten) way of recognizing the good contribution of staff is a simple, personal, 'Thank You' from management. This is as true at lower levels of management as it is from the uppermost levels of senior management. Peer pressure is universally recognized as one of the most powerful factors that influence an organization's culture (Naagarazan and Arivalagar, 2006).

Rewards based upon the monetary savings of a process improvement may benefit employees; however, they can also be sources of discontent and jealousy between employees. Individuals not on the CPI team being recognized may feel slighted if they indirectly contributed key information to the CPI team's work but were not rewarded because they were not 'official' team members. Also, because of 'sphere of influence' to budget and production costs, not all individuals can affect savings to the same degree. For example, individuals performing clerical duties may not be able to eliminate waste and save money to the same amount as a programme coordinator with a large budget. Including CPI team participation into employee personal performance review and incentive bonuses has proven to be an effective reward. There is also a need to recognize that interpersonal skills can help people to be more effective in continual improvement activities (Idris, Abdullah, Idris, and Hussain, 2003).

Training and development can be used to reinforce certain behaviors and attitudes which contribute to effective service while stressing the need for improvement in behaviors which do

not facilitate the attainment of desired service quality goals. Such training and development interventions are, however, posited on the assumption that employees have a capacity for change. Ishikawa (1985) posits that development of human capital can be done in a variety of ways such as selection, training, performance and rewards, as quoted by Grant (2002). According to Gee and Nystrom, continuous quality improvement hinges on training. Auringer (2009) provides a definitive four-level schema depicting various levels of quality management practices. These are level 1 called inspection, level 2 called quality control, level 3 called quality assurance and level 4 called Total Quality Management (TQM). Corresponding levels of skills training are needed to fulfil implementation requirements for each quality level. For example, inspection (level 1) requires limited problem solving, team-building, fact-based decision-making, process analysis and improvement skills training. In contrast TQM (level 4), requires very high levels of all nine critical employee skills. At level 4, the need to continuously improve pertinent processes throughout the organization on an ongoing basis is recognized. Quality goals become moving targets constantly reset at increasingly high levels. Improvement efforts are directed at all resources, processes, equipment and tools, environment and safety, information and measurements. Extensive quality-related education is provided for all employees. The authors argue that different levels of skills training are strategically related to different levels of quality management practices. There is a certain strategic fit between skills training and quality management

According to ISO 9004:2000, (QMS: Guidelines for Performance Improvements), the organizational management should ensure that the resources essential to the implementation of strategy and the achievement of the organization's objectives are identified and made available. This should include resources for operation and improvement of the quality management system, and the satisfaction of customers and other interested parties. Resources may be people, infrastructure, work environment, information, suppliers and partners, natural resources and financial resources. Issues to be considered include: enhancement of competence via focused training, education and learning. Management should improve both the effectiveness and efficiency of the organization, including the quality management system, through the involvement and support of people. As an aid to achieving its performance improvement

objectives, the organization should encourage the involvement and development of its people by providing ongoing training and career planning.

Planning for education and training needs should take account of change caused by the nature of the organization's processes, the stages of development of people and the culture of the organization. The objective is to provide people with knowledge and skills which, together with experience, improve their competence. Education and training should emphasize the importance of meeting requirements and the needs and expectations of the customer and other interested parties. It should also include awareness of the consequences to the organization and its people of failing to meet the requirements (Hindle, 1997). To support the achievement of the organization's objectives and the development of its people, planning for education and training should consider: experience of people; tacit and explicit knowledge; leadership and management skills; planning and improvement tools; teambuilding; problem solving; communication skills; culture and social behavior; knowledge of markets and the needs and expectations of customers and other interested parties, and; creativity and innovation.

To facilitate the involvement of people, education and training also include: the vision for the future of the organization; the organization's policies and objectives; organizational change and development; the initiation and implementation of improvement processes; benefits from creativity and innovation; the organization's impact on society; introductory programmes for new people, and; periodic refresher programmes for people already trained. Training plans should include: objectives; programmes and methods; resources needed; identification of necessary internal support; evaluation in terms of enhanced competence of people, and; measurement of the effectiveness and the impact on the organization (Grant, 2002).

Higher levels of skills training are positively associated with higher levels of quality management, and some types of skills training are more important than others. Naagarazan and Arivalagar (2006) propound that one of the barriers to TQM is absence of continuous training and education, both formal and informal, essentially on principles of TQM. Continual process improvement is designed to utilize resources of the organization and to achieve a quality-driven culture and every individual must think, act and speak quality. Naagarazan and Arivalagar (2006) further states that the dimensions of quality include: performance, features, reliability, conformance, durability, serviceability, aesthetics, reputation, maintainability, availability and

manufacturability. Accordingly, the authors argue that continuous improvement along any of these dimensions increases the customer value.

### **2.3.2 Organizational Strategy**

All organizations exist in an environment that impacts how they formulate and implement strategies and how they carry out their processes. This relationship with the environment creates both problems and opportunities. Strategy refers to the machinery of the resources and activities of an organization to the environment in which it operates. According to Davies and Walters (2004), it is through strategic management that a firm will be able to position and relate itself to the environment to ensure its continued success and also secure itself from surprises brought about by the changing environment.

The strategy of an organization involves matching its corporate objectives and its available resources. In this development of strategy, managers are concerned with reconciling the business the organization is in with the allocation of resources. This allocation process is concerned with the general purposes of an organization, whether it is part of the grand plan, the overall objectives or a ‘strategy’ designed to keep the organization in business (Grant, 2003). Strategy management is applied for the purposes of moulding, directing and relating an organization effectively to its environment. The purpose of strategy is to provide directional cues to the organization that permit it to achieve its objectives while responding to the opportunities and threats in the environment (Pearce and Robinson, 2007).

Porter (1996) has defined strategy as a creation of a unique and vulnerable position of tradeoffs in competing, involving a set of activities that neatly fit together, that are simply consistent, reinforce each other and ensure optimization of effort. Pearce and Robinson (2007) defines strategy as the company’s “game plan” which results in future oriented plans interacting with the competitive environment to achieve the company’s objectives. Johnson and Scholes (2002), view strategy as the direction and scope of an organization over the long-term, which achieves advantage for the organization through its configuration of resources within a changing environment, and fulfill stakeholder’s expectations.

The strategy should be flexible enough to allow the selection of the most appropriate approach for each improvement. A rigid approach that restricts the use of the most suitable tools and

methodologies should be avoided. It is important to develop a strategy that outlines to the staff the plan (or roadmap) for the introduction of the phases of the continual improvement programme. A major action timeline should be developed as part of the plan. The phases typically include preparation, launch and full-scale implementation (Grant, 2002).

Once managers have gained an understanding of how its own operations shape up, they should gauge the performance of other, comparable organizations. Comparisons against the standards set by other industries and environmental groups can be instructive. This task should be relatively easy if there is reasonable public disclosure, organized industry associations and co-operative sustainable development programmes (Andriof et al., 2002). However, if these structures do not exist, management could approach other businesses to discuss sharing information and possibly establishing an industry group.

Management should then consider ways to narrow the gap between the current state of the corporation's performance and its objectives for the future. A strategy will need to be developed, outlining where the company hopes to position itself relative to its competitors and its stakeholders' expectations. A general plan is needed to describe how and when management expects to achieve that goal, together with the various milestones it will reach along the way. Senior management should review and approve the strategy and the plan before submitting them to the board of directors for final approval. Because of the pervasiveness of sustainable development, it is essential that members of the senior management team (representing all facets of the company's activities) 'buy in' to the project. Anything less than full commitment may doom the plan to failure (Attaran and Attaran, 2004).

Once the strategy and the general plan have been approved, detailed plans should be prepared indicating how the new strategy will affect operations, management systems, information systems and reporting. These should set out measurable goals to be achieved in each area, and explain how progress will be monitored. They should also specify spending and training requirements. These plans should be developed through consultation with employees throughout the organization, possibly with the assistance of outside specialists. It will be a time consuming and dynamic process, which will entail frequent modifications as input is obtained from several sources (Harris and Raviv, 1979).

### **2.3.3 Organizational Culture**

Most modern-day managers would quickly agree that the shared values, attitudes, commitments, beliefs, and overall patterns of thinking socially constructed among members of an organization have a tremendous influence on its long-term effectiveness and performance. The impact of an appropriate organizational culture on the well-being of the business organization has been explicitly recognized by many organizational researchers. Tucker and Pitt (2009) proposes that a company's culture is the amalgam of shared values, behavior patterns, mores, symbols, attitudes, and normative ways of conducting business that, more than its products or services, differentiate it from all other companies. Further, culture may influence what organizational strategies are selected and whether they are successful. Existing cultural orientations may be quite supportive of the mission and success of a firm at a particular point, but not at all appropriate when significant strategic change becomes necessary. This paper addresses the need for cultural evaluation, feedback, and possible change facilitation as needed to successfully align with necessarily imposed strategic change.

Organizations, like fingerprints, are unique. Each has its own history, patterns of communication, systems and procedures, mission and vision statement, stories and myths which in total constitute its distinctive culture. Organizational culture is manifested through many aspects. Observed behavior regularities, when people interact, language used and rituals surrounding deference and demeanor characterize culture. The norms that evolve in working groups for example a fair day's work for a fair day's pay and dominant values as spelt out by an organization e.g. product quality, low prices are also evident. Organizations exhibit philosophy guiding their policies toward employees and customers. New comers are taught the rules of the game for getting along in the organization in order to become accepted members. The feeling/climate conveyed in an organization by the physical layout and way in which members interact with each other, customers and outsiders (Gomez-Meija, Balkin 2001).

Culture has traditionally been recognized as a consideration in the strategy implementation process. Culture is assumed to explain the success of some organizations, to represent an essential element in effectiveness of organizations if it fits the strategy, to act as a determinant of strategy, or as an influence on the implementation of strategic decisions (Schwartz and Davis, 2001). Such claims contribute to the recognition that culture plays a large role in the overall

implementation of strategy. As such, culture must play a critical role when dramatic, significant strategic change is mandated.

An organization's culture is said to be the characteristic traditions, norms and values that employees share and is casually put 'as the way we do things here.' In most organizations, these shared values and practices have evolved over time and determine to a large extent, what employees perceive about their organizational experiences and how they behave in the organization. It influences what employees can do how they view, define, analyze and resolve problems and issues. An organization's culture also determines whether a company can attract and keep the best employees and whether in confusing situations, the employees know how they should behave (Coulter, Robbins 2003).

A learning culture should be created within the organization that allows continual improvement to take place as a normal and expected part of business activities for all staff. This can be achieved in a number of ways, but will usually require sustained attention over a long period of time. For example, it may include establishing an appropriate set of values for the organization with senior managers demonstrating their personal commitment to continual improvement through their personal involvement, sponsorship and prioritization of continual improvement projects. A key objective is to establish a culture where all staff feel they have an important role in continual improvement, and that they are supported and recognized by their senior management team.

The importance of achieving the right attitude and involvement of the staff of the organization cannot be underestimated. It is important that senior management focus its time and effort on this area. It is essential to foster an environment where staff can also implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management (Auringer, 2009).

One of the major challenges in business process improvement appears to be more cultural and behavioural in nature, including the impact of poor integration of activities and diminished feelings of ownership and commitment. Corboy and O'Corrbui (1999), meanwhile, identify the deadly sins of business process improvement which involve: a lack of understanding of how the

strategy should be implemented; customers and staff not fully appreciating the strategy; difficulties and obstacles not acknowledged, recognized or acted upon; and ignoring the day-to-day business imperatives. Marginson, (2002) contend that business process improvement evolves either from a process of winning group commitment through a coalitional form of decision-making, or as a result of complete coalitional involvement of implementation staff through a strong corporate culture.

In order to ensure that the organization and its people give their backing to the sustainable development policies, an appropriate corporate culture is essential. In the process of implementing sustainable development or environmental management policies, many companies have experienced a kind of organizational renewal (Coskun et al., 2008). The increased participation of employees not only generates practical ideas, but also increases enthusiasm for the programme itself. Most customers and employees enjoy being part of an organization that is committed to operating in a socially responsible manner.

Implementing sustainable development objectives will probably require managers to change their attitudes. This may be accomplished only after retraining. For example, some executives may feel that their sole responsibility is to maximize the wealth of the enterprise's owners. As a result, they may have difficulty understanding the sustainable development concept and in accepting it as a legitimate business objective. Meanwhile some managers may not be accustomed to identifying the need for ecoefficient practices such as energy efficiency and recycling. Some may never have explicitly considered the effect of their actions on any stakeholder group other than shareholders. Others may resist changing the way in which their performance is measured (Davenport, 1993).

Managers may not think it appropriate to redesign their programmes in order to ensure that contribute to sustainable development in poorer countries. Effective communication is essential. Internally, all levels of management, and all employees, must understand the policies and objectives that have been established. For business enterprises, this means broadening the outlook of many people, including some senior executives.

To continue to improve corporate policies, programmes and environmental performance, taking into account technical developments, scientific understanding, consumer needs and community

expectations, with legal regulations as a starting point and to apply the same environmental criteria internationally. Internal reporting systems can have a significant effect on corporate culture. They must be designed to reinforce positive behaviour with respect to sustainable development. They also need to be linked to the enterprise's recognition and promotion systems, The active and visible involvement of senior executives and directors can be a powerful force in forming attitudes, and in creating a supportive culture in which sustainable business practices can flourish. Executives are the people who set the policies and the norms by which business is done. Equally, it is important that the board provide an oversight in the allocation of responsibilities for sustainable development objectives. This umbrella role should include ensuring that responsibilities are assigned in a manner that holds key executives accountable. It also means ensuring that reward and promotion systems recognize those people who achieve, or help to achieve, sustainable development objectives (Harry and Schroeder, 2006).

### **2.3.4 Management Commitment**

It is fundamental to the success of the Management System and to the implementation of continual improvement throughout the organization that senior managers provide strong leadership; visible and active support; and, demonstrated commitment. Appointing an executive sponsor is a demonstrable way of showing support and commitment. Senior managers play a crucial role in the success of continual improvement programmes. Without the leadership, commitment and involvement of senior management, a continual improvement programme is unlikely to be successful (Harry and Schroeder, 2006).

The most important thing when implementing a process improvement is the top level management's commitment to the strategic direction itself. This is undoubtedly a prerequisite for strategy implementation. Therefore, top managers must demonstrate their willingness to give energy and loyalty to the implementation process. This demonstrable commitment becomes, at the same time, a positive signal for all the affected organizational members (Rapa and Kauffman, 2005).

To successfully improve the overall probability that the process is improved as intended, senior executives must abandon the notion that lower-level managers have the same perceptions of the strategy and its implementation, of its underlying rationale, and its urgency and instead, they

must believe the exact opposite. They must not spare any effort to persuade the employees of their ideas (Rapa and Kauffman, 2005). Overall though, it is increasingly acknowledged that the traditionally recognized problems of inappropriate organizational structure and lack of top management backing are the main inhibiting factors to effective strategy implementation.

Chakravarthy and White, (2001) suggest that education and training policies depend on a firm's management culture and forms of management-led organizational change. While such policies are affected by a firm's market, production technologies and strategic goals, managers have the discretion to pursue varied strategies regarding three issues: entry-level education and training, employee development, and company-school relations. His survey of 406 firms in 1991 indicates that two management characteristics, innovation commitment and resistance to change, and two forms of management-led organizational change, firm downsizing and work redesign, shape education and training strategies.

The executive must mandate the programme and actively support continual improvement by insisting on the support of all other managers. Sustained attention will be needed to avoid the tendency to think the new programme (continual improvement) is a fad or 'topic of the month'. To encourage improved individual and organization performance, executive sponsors should empower and make individuals accountable for their work. The role of senior management in continual improvement includes the following responsibilities: establishing a vision for continual improvement, establishing overall goals for continual improvement, creating the motivation for change, establishing commitment and alignment of the senior management team, managing the continual improvement programme and creating a continual improvement culture (Harrington, 1991).

### **2.3.5 Technology**

Technology has historically played an important role in the business process improvement concept. It is considered by some as a major enabler for new forms of working and collaborating within an organization and across organizational borders (Harry and Schroeder, 2006). In the mid 1990s, especially workflow management systems were considered as a significant contributor to improved process efficiency. The adoption of computer technology in the BPI apply a variety of methods to test the validity of data, identify problems and needs, design an

experiment, plan or model that systematically defines a problem, identify information sources appropriate to special needs or problems, and formulate questions relevant to clarifying a particular problem topic or issue.

Firms are increasingly setting quality management as an organizational priority to improve their competitiveness in the global arena. Improvement aims at reaching the levels of performance that are significantly higher than current levels, either incrementally or in quantum jumps. According to Buttles-Valdez (2008), today's organizations are largely dependent on high-technology to develop, build, and maintain their products and services. This has created a dependence on a workforce with specialized knowledge and skills. People bring knowledge, skills, and process abilities ("competencies"). For organizations to maintain a competitive advantage in a global, rapidly changing, and technological environment, they must ensure that: People, Process, Technology, and Organizational Culture are adaptable, in alignment, and support the organization's business objectives and strategies.

The people, process, technology, and culture work together to support the organization's values, policies, processes, and strategic business objectives. Therefore, people should be put back into the equation. To increase organizational capability on multiple levels, organizations need: a way to attract, develop, organize, motivate, and retain a workforce that has the appropriate knowledge, skills, and process abilities (competencies) that are adaptable to rapid changes in a technological environment(Buttles-Valdez, 2008).

Feigenbaum emphasized that efforts should be made toward the prevention of poor quality rather than detecting it after the event. He argued there are two factors affecting product quality: The technological—that is, machines, materials, and processes; and the human—that is operators, foremen, and other firm personnel. Of these two factors, the human is of greater importance by far. Feigenbaum considered top management commitment, employee participation, supplier quality management, information system, evaluation, communication, use of quality costs, and use of statistical technology to be an essential component of TQM. He argued that employees should be rewarded for their quality improvement suggestions, quality is everybody's job.

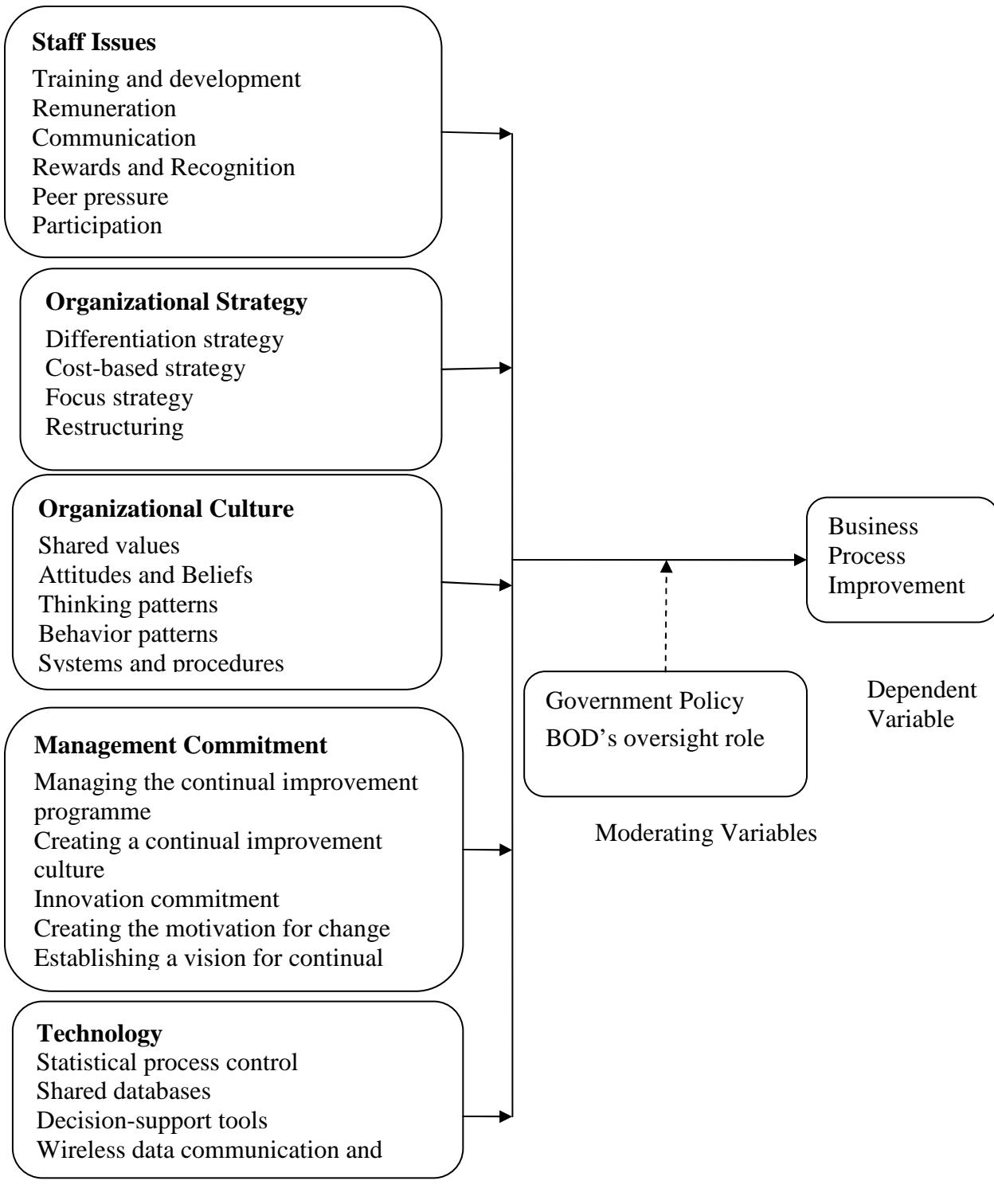
## **2.4 Knowledge Gap**

The literature reviewed has discusses the importance of several aspects of process improvement. Previous studies done in Kenya on process improvement have not focused on factors effecting process improvement for example, Omondi, (2008) investigated application of lean thinking to business process management at Kenya Revenue Authority, Ngure (2001) conducted a survey of the perceptions of process improvement consulting among the manufacturing sector in Kenya.

Kiilu (2006) established employees perception of the implementation of ISO 9001 Certification and process improvement initiatives through a case study of KenGen, Munyiri (2000) carried out a survey of the use of business process reengineering approach in the Kenyan Pharmaceutical Manufacturing Industry and Atebe (2000) studied the effect of business process reengineering on business process cycles through a case study of Kenya Power and Lighting Company. None of these local studies have focused on the factors influencing the business process improvement. Most of the studies quoted in this chapter are conducted in develop countries whose strategic approach and financial footing is different from that of Kenya. This study, therefore, seeks to determine factors effecting process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

## **2.5 Conceptual Framework**

This part of the research will seek to give clear and consistent definition of the research questions. The conceptual frame work will be used to show the relationship between the dependent variable which is the research problem and the independent variables.



The study used three theories in particular, *viz.* Agency Theory, Resource-based View (RBV) of the firm Theory, and Stakeholder Theory which are selected as relevant theories because they offer different organizational focus and understanding. Staff involved in CPI should be trained in the tools and techniques appropriate to their needs. Employees need to have confidence that participation in continual improvement is in their best interest. All organizations exist in an environment that impacts how they formulate and implement strategies and how they carry out their processes. Once the strategy and the general plan have been approved, detailed plans should be prepared indicating how the new strategy will affect operations, management systems, information systems and reporting.

Most modern-day managers would quickly agree that the shared values, attitudes, commitments, beliefs, and overall patterns of thinking socially constructed among members of an organization have a tremendous influence on its long-term effectiveness and performance. Organizational culture is manifested through many aspects. Observed behavior regularities, when people interact, language used and rituals surrounding deference and demeanor characterize culture.

It is fundamental to the success of the Management System and to the implementation of continual improvement throughout the organization that senior managers provide strong leadership; visible and active support; and, demonstrated commitment. To successfully improve the overall probability that the process is improved as intended, senior executives must abandon the notion that lower-level managers have the same perceptions of the strategy and its implementation, of its underlying rationale, and its urgency and instead, they must believe the exact opposite.

Technology has historically played an important role in the business process improvement concept. It is considered by some as a major enabler for new forms of working and collaborating within an organization and across organizational borders. Firms are increasingly setting quality management as an organizational priority to improve their competitiveness in the global arena. Improvement aims at reaching the levels of performance that are significantly higher than current levels, either incrementally or in quantum jumps.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter sets out various stages and phases that was followed in completing the study. The following subsections are included; research design, target population, sampling design, data collection instruments, data collection procedures and finally data analysis.

#### **3.2 Research Design**

Research design refers to the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in the procedure (Babbie, 2002). In addition Kothari (2004) observed that research design is a blue print which facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible hence yielding maximum information with minimal expenditure of effort, time and money. A descriptive research design was used this study. The design was chosen since it is more precise and accurate since it involves description of events in a carefully planned way (Babbie, 2002). This research design also portrays the characteristics of a population fully (Chandran, 2004). The research design was both quantitative and qualitative with the aim of determining the relationship between the five factors (independent variables) and business process improvement in-term of output (dependent variables).

#### **3.3 Target Population**

The target population of this study was the 119 management staff working at Nairobi Water Company. The study focused more on the section and particularly on the top and middle level management staff who are directly dealing with the day to day management of the company since they are the ones conversant with the subject matter of the study. The population characteristic is as summarized in the Table 3.1 below.

**Table 3.1: Target Population**

	<b>Frequency</b>
Senior managers	31
Middle level managers	88
Total	119

**SOURCE: HR RECORDS (March 2012)**

### **3.4 Sampling Design and Sample size**

Some populations are too large to use in totality for research. In such cases, a sample is used. A sample can be defined as the subset of a population (Hair, Celsi, Money, Samouel, & Page, 2011). Due to the population size of Nairobi City Water And Sewerage Company senior and middle level managers, the research took the census approach. A census is where data is collected from all members of the population (Hair, Celsi, Money, Samouel, & Page, 2011).

### **3.5 Data Collection Procedure**

The study used both primary and secondary data. Primary data was obtained through self-administered questionnaires with closed and open-ended questions. The questionnaires include structured and unstructured questions and was administered through drop and pick method to respondents. The closed ended questions enabled the researcher to collect quantitative data while open-ended questions enabled the researcher to collect qualitative data. The questionnaire was divided into two sections. Section one was concerned with the general information about respondents, while section two deals with the issues of risk management practices and performance. Secondary data was collected by use of desk search techniques from published reports and other documents. Secondary data includes the governments' publications, journals, and periodicals.

### **3.6 Pre-testing**

Mugenda and Mugenda (2003) asserted that, the accuracy of data to be collected largely depended on the data collection instruments in terms of validity and reliability.

#### **3.6.1 Validity**

Validity as noted by Robinson (2002) is the degree to which result obtained from the analysis of the data actually represents the phenomenon under study. Validity was ensured by having objective questions included in the questionnaire and by pre-testing the instrument to be used to identify and change any ambiguous, awkward, or offensive questions and technique as emphasized by Cooper and Schindler (2003). Expert opinion was requested to comment on the representativeness and suitability of questions and give suggestions of corrections to be made to the structure of the research tools. This helped to improve the content validity of the data that will be collected. Content validity was obtained by asking for the opinion of the supervisor, lecturers and other professional on whether the questionnaire was adequate. This helped to improve the content validity of the data collected.

#### **3.6.2 Reliability**

Reliability on the other hand refers to a measure of the degree to which research instruments yield consistent results (Mugenda and Mugenda, 2003). In this study, reliability was ensured by pre-testing the questionnaire with a selected sample which will not be included in the final analysis. This pre-testing involved 10 respondents from the target population. The respondents were conveniently selected since statistical conditions are not necessary in the pilot study. In order to test the reliability of the instruments, internal consistency techniques was applied using Cronbach's Alpha. The alpha value ranges between 0 and 1 with reliability increasing with the increase in value. Coefficient of 0.6-0.7 is a commonly accepted rule of thumb that indicates acceptable reliability and 0.8 or higher indicated good reliability (Mugenda, 2008).

### **3.7 Data Analysis and Presentation**

Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was then be coded to enable the responses to be grouped into various categories. A descriptive analysis was employed. Descriptive statistics such as means and frequency distribution was used to analyze the data. The quantitative data on was measured in real values by normalizing. Tables were used to present the data collected for ease of understanding and analysis. Cooper and Schindler (2003) notes that the use of percentages is important for two reasons; first they simplify data by reducing all the numbers to range between 0 and 100. Second, they translate the data into standard form with a base of 100 for relative comparisons.

In addition, multiple regressions was used to measure the strength of the relationship between the dependent and independent variables. Multiple regression is a flexible method of data analysis that may be appropriate whenever quantitative variables (the dependent) is to be examined in relationship to any other factors (expressed as independent or predictor variable). For this study, the researcher is interested in measuring the extent to which various factors affect business process improvement at the NWSC. The regression equation is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \alpha$$

Where  $Y$  is the dependent variable (Business Process Improvement),  $\beta_0$  is the regression coefficient/constant/Y-intercept,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$  and  $\beta_5$  are the slopes of the regression equation,  $X_1$  is the staff issues independent variable,  $X_2$  is the organizational strategy independent variable,  $X_3$  is the organizational culture independent variable,  $X_4$  is the management commitment independent variable,  $X_5$  is the technology independent variable, while  $\alpha$  is an error term normally distributed about a mean of 0 and for purpose of computation, the  $\alpha$  is assumed to be 0. The equation will be solved by the use of statistical model where SPSS will be applied.

### **3.8 Ethical Considerations**

Ethics as noted by Minja (2009) is referred to, as norms governing human conduct which have a significant impact on human welfare. In this study, confidentiality was of concern in view of the

fact that information relevant to the study will be of strategic importance to Nairobi City Water and Sewerage Company in Nairobi County. In this regard, the names of the respondents were not disclosed and the names of the information collected were held in confidence. Due to sensitivity of some information collected, the researcher held a moral obligation to treat the information with utmost propriety. Since the respondents might be reluctant to disclose some information, the researcher reassured the respondents of confidentiality of the information given. The researcher also carried an introduction letter from the university to indicate that the data was to be used for academic purposes only.

### 3.9 Operational Definition of Variables

**Table 2.3: Operationalization Of Variables**

Objectives	Variables	Indicators	Scale	Tools of analysis	Type of analysis
To investigate the extent to which staff related issues affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County	Staff Issues	<ul style="list-style-type: none"> <li>- Training and development</li> <li>- Remuneration</li> <li>- Communication</li> <li>- Rewards and Recognition</li> <li>- Peer pressure</li> <li>- Participation</li> </ul>	Nominal ordinal	Frequency distribution tables and percentages	Descriptive Content analysis Regression
To establish the extent to which organizational strategy affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County	Organizational Strategy	<ul style="list-style-type: none"> <li>- Differentiation strategy</li> <li>- Cost-based strategy</li> <li>- Focus strategy</li> <li>- Restructuring</li> </ul>	Nominal ordinal	Frequency distribution tables and percentages	Descriptive Regression
To determine the extent to which organizational culture affects business process improvement at Nairobi City Water and Sewerage	Organizational Culture	<ul style="list-style-type: none"> <li>- Shared values</li> <li>- Attitudes and Beliefs</li> <li>- Thinking patterns</li> <li>- Behavior patterns</li> <li>- Systems and procedures</li> </ul>	Nominal ordinal	Frequency distribution tables and percentages	Descriptive Content analysis Regression

Company in Nairobi County					
To assess the effect of management commitment on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County	Management Commitment	<ul style="list-style-type: none"> <li>- Managing the continual improvement programme</li> <li>- Creating a continual improvement culture</li> <li>- Innovation commitment</li> <li>- Creating the motivation for change</li> <li>- Establishing a vision for continual</li> </ul>	Nominal ordinal	Frequency distribution tables and percentages	Descriptive Content analysis Regression
To establish the extent to which technology applied affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County	Technology	<ul style="list-style-type: none"> <li>- Statistical process control</li> <li>- Shared databases</li> <li>- Decision-support tools</li> <li>- Wireless data communication and portable computers</li> </ul>	Nominal ordinal	Frequency distribution tables and percentages	Descriptive Content analysis Regression

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### **4.1 Introduction**

This chapter presents the data analysis, interpretation and presentations of the study findings. The findings were presented as the purpose and the objectives of the study. The main aim of this study was to determine factors effecting business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. The study further sought to investigate the effect of staff issues, organizational strategy, organizational culture; management commitment and staff motivation affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

#### **4.1.1 Response rate**

The researcher in this study target a sample size of 119 respondents out of which 92 filled and returned their questionnaires. This represents a 77.08% response rate. According to Babbie (2002) any response of 50% and above is adequate for analysis thus 77.08% is even better.

#### **4.2 General Information**

As part of the general information, the study sought to find out the participants gender, age bracket and work duration.

**Table 4. 1: General information of the respondents**

		<b>Frequency (N)</b>	<b>Percent (%)</b>
<b>Gender</b>	Male	60	64.9
	Female	32	35.1
	Total	92	100.0
<b>Age bracket</b>	18-30 yrs	25	27.0
	31-40yrs	67	73.0
	Total	92	100.0
<b>Work duration</b>	1-5 yrs	55	59.5
	5-10yrs	10	10.8
	Above 10 years	27	29.7
	Total	92	100.0

As indicated in table 4.1 above, 64.9% of the respondents indicated that they were male while 35.1% indicated that they were female. Further, 73% of the respondents indicated that they were aged between 31 and 40 years and 27% were aged between 18 and 30 years. In relation to the duration of time they had spent in their organization, 59.5% of the respondents indicated that they had spent between 1 and 5 years, 29.7% indicated that they had spent 10 years and above in their organization and 10.8% indicated that they had been working in their organization for between 5 and 0 years.

### **4.3 Process Improvement**

This study aimed at establishing the extent to which Nairobi City Water and Sewerage Company successfully implemented the stated aspects of process improvement. The results are shown in table 4.2 below.

**Table 4. 2: Aspects of process improvement**

	<b>Mean</b>
Adoption of consultative leadership style/management approaches	2.9143
Availability of financial resources to fund the process improvement initiative undertaken by the company	3.1351
Availability knowledgeable and skilled human resources that can be dedicated to process improvement.	3.4167
Adoption of appropriate public relation strategies (speaking at conferences, working with the press, and employee communication)	2.7500
Clear communication of company's goals, mission and vision.	3.1892
Training programs are conducted for all staff	2.6944
Ensuring that workers are performing the process in the correct manner.	3.2857
Continually monitoring operations to determine if the predicted results are being achieved.	3.0541
Soliciting for feedback from workers to see if there are problems, issues, or additional benefits that team may have missed.	2.4595
Adoption of new technology	2.9459

A five point Likert scale was used to interpret the respondent's responses. According to the scale, those statements which were not considered at all were awarded 1 while those which were considered to a very great extent were awarded 5. Within the continuum are 2 for low extent, 3 for moderate extent and 4 for great extent. Mean (weighted average) and standard deviation were used to analyze the data. From the findings those factors with a mean above 2.5 were rated as to a very great extent while those with a mean below 2.5 were rated to a low extent. On the same note, the higher the standard deviation the higher the level of dispersion among the respondents

As indicated in the findings, the respondents agreed to a great extent that availability knowledgeable and skilled human resources that can be dedicated to process improvement as shown by a mean of 3.4167. The respondents also agreed to a moderate extent with a mean of 3.2857 that ensuring that workers are performing the process in the correct manner. Further, the respondents agreed to a great extent that Nairobi City Water and Sewerage Company had clear communication of company's goals, mission and vision as shown by a mean of 3.1892. In addition, the respondents agreed to a moderate extent that Nairobi City Water and Sewerage Company had available financial resources to fund the process improvement initiative undertaken by the company as shown by a mean of 3.1351. The respondents also agreed to a moderate extent that Nairobi City Water and Sewerage Company was continually monitoring operations to determine if the predicted results are being achieved as shown by a mean of 3.0541. The respondents agreed to a moderate extent that Nairobi City Water and Sewerage Company had adopted new technology as shown by a mean of 2.9459. Further, the respondents agreed to a great extent that Nairobi City Water and Sewerage Company had adopted a consultative leadership style/management approaches as shown by a mean of 2.9143. The respondents also agreed to a moderate extent that Nairobi City Water and Sewerage Company had training programs conducted for all staff as shown by a mean of 2.6944. The respondents also agreed to a moderate extent with a mean of 2.7500 that Nairobi City Water and Sewerage Company had adopted appropriate public relation strategies (speaking at conferences, working with the press, and employee communication). Lastly the respondents agreed to a low extent with a mean of 2.4595 was soliciting for feedback from workers to see if there are problems, issues, or additional benefits that team may have missed.

#### **4.4 Training and Development and Business Process Improvement**

This study aimed at investigating the effect of training and development on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. The results are shown in table 4.3 above.

**Table 4. 3: Influence of technology on business process improvement**

	<b>Mean</b>
Experience of people	3.5405
Tacit knowledge	3.6486
Leadership and management skills	3.6216
Planning and improvement tools	3.1892
Problem solving skills	3.3514
Communication skills	3.1081
Knowledge of markets	3.0541
Needs and expectations of customers and other interested parties	3.1351
Fact-based decision-making	3.0811
Process analysis	3.0270
Quality-related education	3.2432

Table 4.3 above shows the extent to which the respondents agreed that Nairobi City Water and Sewerage Company training and development include the stated aspects to support the achievement of the organization's objectives.

According to the findings, the respondents agreed with a mean of 3.6486 that their company's training included tacit knowledge, leadership and management skills ( $M=3.6216$ ) and experience of people ( $M=3.5405$ ).further, the respondents agreed to a moderate extent that their organization was including problem solving skills ( $M=3.3514$ ), quality-related education ( $M=3.2432$ ), planning and improvement tools ( $3.1892$ ), communication skills ( $M=3.1081$ ), needs and expectations of customers and other interested parties ( $M=3.1351$ ), fact-based decision-making ( $M=3.0811$ ), knowledge of markets ( $M=3.0541$ ) and process analysis ( $M=3.0270$ ).

**Table 4. 4: Increasing competence**

	<b>Mean</b>
Staff involved in Continuous Process Improvement	3.0541
Appreciation of good performance	2.6216
Encouraging creativity	2.8108
Encouraging competitiveness	2.9730
Open door policy	3.1351
Pep talk	2.6486
Money, rewards and other gifts	2.7838
Incentive bonuses	2.7838
Wage Increments	2.8649
Overtime payments	2.9730
Opportunities to pursue new challenges	2.5676
Plaques/certificates	2.6216
Clear Instructions	2.6757

Table 4.4., above shows the extent to which the Nairobi City Water and Sewerage Company considers the stated factors in the analysis of both the present and expected competence needs as compared to the competence already existing in the organization. From the findings, the respondents agreed with a mean of 3.1351 that their organization was considering open door policy, staff involvement in continuous process improvement ( $M=3.0541$ ), overtime payments ( $M=2.9730$ ), encouraging competitiveness ( $M=2.9730$ ), wage Increments ( $M=2.8649$ ), encouraging creativity ( $M=2.8108$ ), money, rewards and other gifts ( $M=2.7838$ ) and incentive bonuses ( $M=2.7838$ ). The study also found that Nairobi City Water and Sewerage Company was considering clear Instructions ( $M=2.6757$ ), pep talk ( $M=2.6486$ ), appreciation of good performance ( $M=2.6216$ ), plaques/certificates ( $M=2.6216$ ) and opportunities to pursue new challenges ( $M=2.5676$ ) to a moderate extent.

**Table 4. 5: Effect of training and development and business process improvement**

	<b>Mean</b>
Continuous quality improvement hinges on training of staff	4.1351
The organization encourages the involvement and development of its people by providing ongoing training and career planning	3.0000
Planning for education and training needs take account of change caused by the nature of the organization's processes, the stages of development of people and the culture of the organization.	3.7568
Education and training at the company emphasize the importance of meeting requirements and the needs and expectations of the customer and other interested parties.	3.0556
The education and training provided is evaluated in terms of expectations and impact on the effectiveness and efficiency of the organization	2.8333

Table 4.5 above shows the extent to which the respondents agreed with the above statements in relation to the effects of training and development and business process improvement. From the findings, the respondents agreed with a mean of 4.1351 that continuous quality improvement hinges on training of staff. Further, the respondents agreed with a mean of 3.0000 that the organization encourages the involvement and development of its people by providing ongoing training and career planning. In addition, the respondents agreed with a mean of 3.7568 that planning for education and training needs take account of change caused by the nature of the organization's processes, the stages of development of people and the culture of the organization. The respondents also agreed with a mean of 3.0556 that education and training at the company emphasize the importance of meeting requirements and the needs and expectations of the customer and other interested parties. Lastly, the respondents agreed with a mean of 2.8333 that the education and training provided is evaluated in terms of expectations and impact on the effectiveness and efficiency of the organization.

#### **4.5 Organizational Strategy and Business Process Improvement**

The study also sought to find out the extent to which organizational strategy affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

**Table 4. 6: Organisational strategies**

	<b>Mean</b>
Differentiation strategy (offering different services to various groups of customers)	2.5000
Cost-based strategy (lowering the cost of operations)	2.4118
Focus strategy (carrying out research to allow concentration on important areas)	2.3056
Restructuring (reorganizing the operational, or other structures of the company)	3.0909

Table 4.6 above shows the extent to which Nairobi City Water and Sewerage Company employ the sated organizational strategies in a bid to enhance business process improvement. As indicated above, the respondents agreed to a moderate extent with a mean of 3.0909 that Nairobi City Water and Sewerage Company employ restructuring (reorganizing the operational or other structures of the company) in a bid to enhance business process improvement. Further, the respondents agreed to a low extent with a mean of 2.5000 that Nairobi City Water and Sewerage Company was employing differentiation strategy (offering different services to various groups of customers). The respondents also agreed to a low extent with a mean of 2.4118 that their organization was employing cost-based strategy (lowering the cost of operations). Lastly the respondents agreed to a low extent with a mean of 2.3056 that their organization was employing focus strategy (carrying out research to allow concentration on important areas).

**Table 4. 7: Effects of organizational strategy on Business Process Improvement**

	<b>Mean</b>
Matching its corporate objectives and its available resources	3.1944
Strategy provide directional cues to the organization that permit it to achieve its objectives while responding to the opportunities and threats in the environment	3.5143
The organizational Strategy ensure optimization of effort in process improvement	3.4167
The organizational Strategy results in future oriented plans interacting with the competitive environment to achieve the company's objectives	3.3333
The organizational Strategy achieves advantage for the organization through its configuration of resources within a changing environment, and fulfill stakeholder's expectations	3.2000
The organizational strategy is flexible enough to allow the selection of the most appropriate approach for each improvement	3.4571
The organizational Strategy consider ways to narrow the gap between the current state of the corporation's performance and its objectives for the future	3.5714

Table 4.7 above shows the respondents level of agreement with the stated statements that relate to organizational strategy and its effect on Business Process Improvement. According to the findings, the respondents agreed to a great extent with a mean of 3.5143 that strategy provides directional cues to the organization that permit it to achieve its objectives while responding to the opportunities and threats in the environment.

The respondents also agreed to a moderate extent with a mean of 3.4571 that the organizational strategy is flexible enough to allow the selection of the most appropriate approach for each improvement. The respondents also agreed to a moderate extent with a mean of 3.4167 that the organizational strategy ensure optimization of effort in process improvement. The respondents also agreed to a moderate extent with a mean of 3.3333 that the organizational strategy results in future oriented plans interacting with the competitive environment to achieve the company's objectives. Further, the respondents agreed to a moderate extent with a mean of 3.2000 that the

organizational strategy achieves advantage for the organization through its configuration of resources within a changing environment, and fulfill stakeholder's expectations. The respondents further agreed to a moderate extent with a mean of 3.3714 that the organizational Strategy consider ways to narrow the gap between the current state of the corporation's performance and its objectives for the future. Lastly, the respondents agreed with a mean of 3.1944 that organizational strategy helps an organization in matching its corporate objectives and its available resources.

#### **4.6 Organizational Culture and Business Process Improvement**

This study also aimed at determining the extent to which organizational culture affects business process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

**Table 4. 8: Aspects of organizational culture that enhance business process improvement**

	<b>Mean</b>
Shared values	3.9429
Attitudes	4.2000
Commitments	3.8571
Beliefs	3.5294
Overall patterns of thinking socially constructed among members of an organization	3.6176
Behavior patterns	3.9714
Normative ways of conducting business	3.8857
Patterns of communication	3.9714
Systems and procedures	3.9429
Mission and vision statement	3.8286
Observed behavior regularities, when people interact	3.4571
Rituals surrounding deference and demeanor	3.2647
Integration of activities	3.7059
Internal reporting systems	3.9118

Table 4.8 above shows the extent to which the respondents agreed with the stated aspects of organizational culture that enhance business process improvement. From the findings, the respondents agreed to a great extent that attitudes ( $M=4.2000$ ), behavior patterns ( $M=3.9714$ ), patterns of communication ( $M=3.9714$ ), shared values ( $M=3.9429$ ), systems and procedures ( $M=3.9429$ ), internal reporting systems ( $M=3.9118$ ), Normative ways of conducting business ( $M=3.8857$ ) and commitments ( $M=3.8571$ ) were enhancing business process improvement. The respondents also agreed to a great extent that mission and vision statement ( $M=3.8286$ ), integration of activities ( $M=3.7059$ ), overall patterns of thinking socially constructed among members of an organization ( $M=3.6176$ ) and beliefs ( $M=3.5294$ ) were enhancing business process improvement.

The respondents also agreed to a moderate extent that observed behavior regularities, when people interact ( $M=3.4571$ ) and rituals surrounding deference and demeanor ( $M=3.2647$ ) were enhancing business process improvement.

**Table 4. 9: Effects of organizational culture on business process improvement**

	<b>Mean</b>
Culture influence what organizational strategies are selected and whether they are successful.	4.0882
Existing cultural orientations at the firm are not supportive of the mission and success of the firm in process improvement	3.6000
Culture determines whether a company can attract and keep the best employees for process improvement	3.8857
A learning culture should be created within the organization that allows continual improvement to take place	4.1429
The company fosters an environment where staff can implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management.	2.9118
There is a complete coalitional involvement of implementation staff through a strong corporate culture.	3.3429

Table 4.9 above shows the extent to which the respondents agreed with the statements in relation to organizational culture and their effects to business process improvement. According to the findings, the respondents agreed to a great extent with a mean of 4.1429 that a learning culture should be created within the organization that allows continual improvement to take place. The respondents also agreed to a great extent with a mean of 4.0882 that culture influences what organizational strategies are selected and whether they are successful. The respondents also agreed to a great extent with a mean of 3.6000 that existing cultural orientations at the firm are not supportive of the mission and success of the firm in process improvement. In addition, the respondents agreed to a great extent with a mean of 3.8857 that culture determines whether a company can attract and keep the best employees for process improvement. The respondents agreed to a moderate extent with a mean of 3.3429 that there is a complete coalitional involvement of implementation staff through a strong corporate culture. Further, the respondents agreed to a moderate extent with a mean of 2.9118 that the company fosters an environment where staff can implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management.

#### **4.7 Top Management Commitment and Business Process Improvement**

The study also sought to assess the effect of management commitment on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

**Table 4. 10: level of commitment of top management and business process improvement**

	<b>Frequency</b>	<b>Percent</b>
No extent	5	5.4
Great extent	12	13.5
Very great extent	75	81.1
Total	92	100

In relation to the extent to which the level of commitment of top management affects the business process improvement at the company, 81.1% of the respondents indicated to a very great extent, 13.5% indicated to a great extent and 5.4% indicated to no extent at all. From these findings we can deduce that the level of commitment of top management affects the business process improvement at the company to a very great extent.

**Table 4. 11: Activities of senior management in continual improvement**

	<b>Mean</b>
Establishing a vision for continual improvement	4.1143
Establishing overall goals for continual improvement	4.2000
Creating the motivation for change	4.1765
Establishing commitment and alignment of the senior management team	4.0571
Managing the continual improvement programme	3.9429
Creating a continual improvement culture	3.6000
Innovation commitment	3.3235
Resistance to change	4.2857
Empowering and make individuals accountable for their work	4.0000

Table 4.11 above shows the extent to which the stated activities of senior management in continual improvement affect its effectiveness. From the findings, the respondents agreed with a mean of 4.2857 that resistance to change by senior management in continual improvement affects the business process improvement to a great extent. Further, the respondents agreed with a mean of 4.2000 that establishing overall goals for continual improvement by senior management in continual improvement affects the business process improvement to a great extent. In addition, the respondents agreed with a mean of 4.1765 that creating the motivation for change by senior management in continual improvement affects the business process

improvement to a great extent. Further, the respondents agreed with a mean of 4.1143 that establishing a vision for continual improvement by senior management in continual improvement affects the business process improvement to a great extent. The respondents also agreed with a mean of 4.0571 that establishing commitment and alignment of the senior management team by senior management in continual improvement affects the business process improvement to a great extent. In addition, the respondents agreed with a mean of 4.0000 that empowering and making individuals accountable for their work affects the business process improvement to a great extent. Further, it was established that managing the continual improvement programme affects the business process improvement to a great extent as shown by a mean of 3.9429. The study also found that creating a continual improvement culture affects the business process improvement to a great extent as shown by a mean of 3.6000. The respondents also agreed with a mean of 3.3235 that innovation commitment by senior management in continual improvement affects the business process improvement to a great extent.

**Table 4. 12: Effect of level of commitment of top management on the business process improvement**

	<b>Mean</b>
The top management's commitment to the strategic direction itself is the most important factor.	3.9143
The top managers must demonstrate their willingness to give energy and loyalty to the improvement process for it to succeed.	4.5143
The managers must not spare any effort to persuade the employees of their ideas for business process improvement to be effective.	4.1714
Lack of top management backing is the main inhibiting factor	4.2857
Lack of manager's commitment to performing their roles leads to the lower ranks of employees missing support and guidance through encouragement of entrepreneurial attributes.	3.9714

Table 4.12 above shows the extent to which the respondents agreed with the statements in relation to the effect of level of commitment of top management on the business process

improvement. According to the findings, the respondents agreed with a mean of 4.5143 that the top managers must demonstrate their willingness to give energy and loyalty to the improvement process for it to succeed. The respondents also agreed with a mean of 4.2857 that lack of top management backing is the main inhibiting factor. It was also established that the managers must not spare any effort to persuade the employees of their ideas for business process improvement to be effective as shown by a mean of 4.1714. The respondents also agreed with a mean of 3.9714 that lack of manager's commitment to performing their roles leads to the lower ranks of employees missing support and guidance through encouragement of entrepreneurial attributes. Lastly, the respondents agreed with a mean of 3.9143 the top management's commitment to the strategic direction itself is the most important factor.

#### **4.8 Technology and Business Process Improvement**

The study also sought to establish the extent to which technology applied affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

**Table 4. 13: Technology and business process improvement at the company**

	<b>Frequency</b>	<b>Percent</b>
No extent	7	8.1
Moderate extent	5	5.4
Great extent	25	27.0
Very great extent	50	54.1
Total	87	94.6

In relation to the extent to which technology affects the business process improvement at the company, 54.1% of the respondents indicated that technology affects the business process improvement at the company to a very great extent, 27% indicated to a great extent, 8.1% indicated to a moderate extent and 5.4% indicated to no extent at all. From these findings we can deduce that technology affects the business process improvement at the company to a very great extent.

**Table 4. 14: Effects of staff motivation and business process improvement**

	<b>Mean</b>
Shared databases, making information available at many places	4.3125
Expert systems, allowing generalists to perform specialist tasks	4.0000
Telecommunication networks, allowing organizations to be centralized and decentralized at the same time	4.0625
Decision-support tools, allowing decision-making to be a part of everybody's job	3.7353
Wireless data communication and portable computers, allowing field personnel to work office independent	3.8788
Automatic identification and tracking, allowing things to tell where they are, instead of requiring to be found	3.9412

Table 4.14 above shows the extent to which the respondents agreed with the statements in relation to effects of staff motivation and business process improvement. According to the findings, the respondents agreed with a mean of 4.3125 that Nairobi City Water and Sewerage Company had shared databases, making information available at many places. The respondents also agreed with a mean of 4.0625 that Nairobi City Water and Sewerage Company had telecommunication networks, allowing organizations to be centralized and decentralized at the same time. In addition, the respondents agreed with a mean of 4.0000 that Nairobi City Water and Sewerage Company had expert systems, allowing generalists to perform specialist tasks. Further, the respondents agreed with a mean of 3.9412 that Nairobi City Water and Sewerage Company had automatic identification and tracking, allowing things to tell where they are, instead of requiring to be found. The study also found that Nairobi City Water and Sewerage Company had wireless data communication and portable computers, allowing field personnel to work office independent as shown by a mean of 3.8788. Lastly, the respondents agreed with a mean of 3.7353 that Nairobi City Water and Sewerage Company had decision-support tools, allowing decision-making to be a part of everybody's job.

#### 4.9 Regression Analysis

For the purpose of identifying the important variables influencing the dependent variable the researcher used the regression analysis. Regression analysis was used to investigate the impact of Technology, staff related issues, Organizational Culture, Management Commitment, Organizational Strategy on business process improvement.

**Table 4. 15: Model Summary**

Model	R	R Square	Adjusted R Square	Estimate	Std. Error of the
1	0.898	0.806	.79	1.02440	

R-Square (coefficient of determination) is a commonly used statistic to evaluate model fit. R-square is 1 minus the ratio of residual variability. The adjusted R<sup>2</sup>, also called the coefficient of multiple determinations, is the percent of the variance in the dependent explained uniquely or jointly by the independent variables and is 79%.

**Table 4. 16: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94.676	5	18.935	3.750	.022
	Residual	302.935	32	25.245		
	Total	397.611	37			

a. Predictors: (Constant), Technology, staff related issues , Organizational Culture , Management Commitment , Organizational Strategy

b. Dependent Variable: business process improvement

The p-value value is 0.022 which is less than 0.05 thus the model is statistically significant in predicting how technology, staff related issues, organizational culture, management commitment, organizational strategy affect business process improvement. The F critical at 5%

level of significance was 2.11. Since F calculated is greater than the F critical (value = 3.75), this shows that the overall model was significant.

**Table 4. 17: Coefficients**

Model	Unstandardized		Standardized		t	Sig.
	B	Std. Error	Coefficients	Beta		
1 (Constant)	1.239	25.013			2.849	.012
Staff related issues	0.662	.601		-.033	4.103	.020
Organizational Strategy	0.567	.330		-.253	3.505	.022
Organizational Culture	0.724	.436		.218	4.744	.021
Management Commitment	0.800	.547		.169	5.366	.020
Technology	1.019	.255		.021	3.074	.042

a. Dependent Variable: business process improvement

According to the findings, the regression model for the stated variables was;

$$Y = 1.239 + 0.662X_1 + 0.567X_2 + 0.724X_3 + 0.800X_4 + 1.019X_5$$

From the findings, the study found that putting all the independent variables constant at zero business process improvement will be 1.239. Further, the study found that taking all other independent variables at zero, a unit increase in the scores of staff related issues would lead to a 0.662 increase in the scores of business process improvement. Further study found that taking all other independent variables at zero, a unit increase in the scores of organisational strategy would lead to a 0.567 increase in the scores of business process improvement. In addition, the study found that taking all other independent variables at zero, a unit increase in the scores of organisational culture would lead to a 0.724 increase in the scores of business process improvement. The study also found that taking all other independent variables at zero, a unit increase in the scores of management commitment would lead to a 0.800 increase in the scores of business process improvement. Further, the study found that a unit increase in the scores of

technology would lead to a 1.019 increase in the scores of business process improvement. This depicts that technology had the greatest effect on the business process improvement at Nairobi City Water And Sewerage Company followed by management commitment, then organizational culture and staff related issues in that order while organizational strategy had the least effect.

## **CHAPTER FIVE**

### **SUMMARY, DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of findings, discussion, conclusion drawn from the findings and recommendations made therefore. The main aim of this study was to determine factors effecting business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. The study further sought to investigate the effect of training and development, organizational strategy, organizational culture; top management commitment and staff motivation affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

#### **5.2 Summary of the Findings**

Majority of the respondents in this study were male (64.9%) aged between 31 and 40 years (73%). This shows that Nairobi City Water and Sewerage Company had not put into consideration the issue of gender equity and mainstreaming in its management. In relation to the duration of time they had spent in their organization, the study found that majority of the respondents (59.5%) had spent between 1 and 5 years.

The study also found that availability knowledgeable and skilled human resources that can be dedicated to process improvement ( $M=3.4167$ ). The study also found that ensuring that workers are performing the process in the correct manner ( $M=3.2857$ ). The study also found that Nairobi City Water and Sewerage Company had clear communication of company's goals, mission and vision ( $M=3.1892$ ). In addition, the study revealed that Nairobi City Water and Sewerage Company had available financial resources to fund the process improvement initiative undertaken by the company ( $M=3.1351$ ). It was established in this study that Nairobi City Water and Sewerage Company was continually monitoring operations to determine if the predicted results are being achieved ( $M=3.0541$ ), had adopted new technology ( $M=2.9459$ ) and had adopted a consultative leadership style/management approaches ( $M=2.9143$ ).

The study also revealed that Nairobi City Water and Sewerage Company had training programs conducted for all staff ( $M=2.6944$ ), had adopted appropriate public relation strategies (speaking at conferences, working with the press, and employee communication) ( $M=2.7500$ ). However, the study found that Nairobi City Water and Sewerage Company was not soliciting for feedback from workers to see if there are problems, issues, or additional benefits that team may have missed ( $M=2.4595$ )

### **5.2.1 Staff issues and Business Process Improvement**

This study established that Nairobi City Water and Sewerage Company's training included tacit knowledge ( $M=3.6486$ ), leadership and management skills ( $M=3.6216$ ) and experience of people ( $M=3.5405$ ). further, the respondents agreed to a moderate extent that their organization was including problem solving skills ( $M=3.3514$ ), quality-related education ( $M=3.2432$ ), planning and improvement tools (3.1892), communication skills ( $M=3.1081$ ), needs and expectations of customers and other interested parties ( $M=3.1351$ ), fact-based decision-making ( $M=3.0811$ ), knowledge of markets ( $M=3.0541$ ) and process analysis ( $M=3.0270$ ).

The study also established that Nairobi City Water and Sewerage Company was considering open door policy ( $M=3.1351$ ), staff involvement in continuous process improvement ( $M=3.0541$ ), overtime payments ( $M=2.9730$ ), encouraging competitiveness ( $M=2.9730$ ), wage Increments ( $M=2.8649$ ), encouraging creativity ( $M=2.8108$ ), money, rewards and other gifts ( $M=2.7838$ ) and incentive bonuses ( $M=2.7838$ ). The study also found that Nairobi City Water and Sewerage Company was considering clear Instructions ( $M=2.6757$ ), pep talk ( $M=2.6486$ ), appreciation of good performance ( $M=2.6216$ ), plaques/certificates ( $M=2.6216$ ) and opportunities to pursue new challenges ( $M=2.5676$ ) to a moderate extent.

In relation to the effects of training and development and business process improvement, the study found that continuous quality improvement hinges on training of staff ( $M=4.1351$ ).

Further, the study found that the organization encourages the involvement and development of its people by providing ongoing training and career planning ( $M=3.0000$ ). In addition, the study found that that planning for education and training needs take account of change caused by the nature of the organization's processes, the stages of development of people and the culture of the organization ( $M=3.7568$ ).

The respondents also agreed with a mean of that education and training at the company emphasize the importance of meeting requirements and the needs and expectations of the customer and other interested parties ( $M=3.0556$ ). The education and training provided is evaluated in terms of expectations and impact on the effectiveness and efficiency of the organization ( $M=2.8333$ ).

### **5.2.2 Organizational Strategy and Business Process Improvement**

The study revealed that City Water and Sewerage Company employ restructuring (reorganizing the operational or other structures of the company) in a bid to enhance business process improvement ( $M=3.0909$ ). Further, the respondents agreed to a low extent with a mean of 2.5000 that Nairobi City Water and Sewerage Company was employing differentiation strategy (offering different services to various groups of customers). The respondents also agreed to a low extent with a mean of 2.4118 that their organization was employing cost-based strategy (lowering the cost of operations). Lastly the study found that the organization was employing focus strategy (carrying out research to allow concentration on important areas) ( $M=2.3056$ ).

This study also established that strategy provides directional cues to the organization that permit it to achieve its objectives while responding to the opportunities and threats in the environment ( $M=3.5143$ ). The study also revealed that organizational strategy is flexible enough to allow the selection of the most appropriate approach for each improvement ( $M=3.4571$ ). The study also found that organizational strategy ensure optimization of effort in process improvement ( $M=3.4167$ ). The study also revealed that organizational strategy results in future oriented plans interacting with the competitive environment to achieve the company's objectives ( $M=3.3333$ ). The study also found that organizational strategy achieves advantage for the organization through its configuration of resources within a changing environment, and fulfill stakeholder's expectations ( $M=3.2000$ ). This study established that organizational Strategy consider ways to narrow the gap between the current state of the corporation's performance and its objectives for the future ( $M=3.3714$ ). Lastly, the study found that organizational strategy helps an organization in matching its corporate objectives and its available resources ( $M=3.1944$ ).

### **5.2.3 Organizational Culture and Business Process Improvement**

This study established that attitudes ( $M=4.2000$ ), behavior patterns ( $M=3.9714$ ), patterns of communication ( $M=3.9714$ ), shared values ( $M=3.9429$ ), systems and procedures ( $M=3.9429$ ), internal reporting systems ( $M=3.9118$ ), normative ways of conducting business ( $M=3.8857$ ) and commitments ( $M=3.8571$ ) were enhancing business process improvement. The study also mission and vision statement ( $M=3.8286$ ), integration of activities ( $M=3.7059$ ), overall patterns of thinking socially constructed among members of an organization ( $M=3.6176$ ) and beliefs ( $M=3.5294$ ) were enhancing business process improvement. The study also found that behavior regularities, when people interact ( $M=3.4571$ ) and rituals surrounding deference and demeanor ( $M=3.2647$ ) were enhancing business process improvement.

This study revealed that a learning culture should be created within the organization that allows continual improvement to take place ( $M=4.1429$ ). This correlates with Coulter and Robbins (2003) argument that a learning culture should be created within the organization that allows continual improvement to take place as a normal and expected part of business activities for all staff. The study revealed that culture influences what organizational strategies are selected and whether they are successful ( $M=4.0882$ ). The study also revealed that existing cultural orientations at the firm are not supportive of the mission and success of the firm in process improvement ( $M=3.6000$ ). This confirms Tucker and Pitt (2009) argument that existing cultural orientations may be quite supportive of the mission and success of a firm at a particular point, but not at all appropriate when significant strategic change becomes necessary. In addition, the study found that that culture determines whether a company can attract and keep the best employees for process improvement ( $M=3.8857$ ).

The study found that there is a complete coalitional involvement of implementation staff through a strong corporate culture ( $M=3.3429$ ). Further, found that the company fosters an environment where staff can implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management ( $M=2.9118$ ).

#### **5.2.4 Management Commitment and Business Process Improvement**

The study also established that resistance to change by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.2857$ ). Harry and Schroeder, (2006) had indicated earlier senior managers play a crucial role in the success of continual improvement programmes. Without the leadership, commitment and involvement of senior management, a continual improvement programme is unlikely to be successful. Further, the study found that establishing overall goals for continual improvement by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.2000$ ). In addition, the study found that creating the motivation for change by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.1765$ ). Further, the study found that establishing a vision for continual improvement by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.1143$ ). The study also found that establishing commitment and alignment of the senior management team by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.0571$ ). In addition, the study found that empowering and making individuals accountable for their work affects the business process improvement to a great extent ( $M=4.0000$ ).

Further, it was established that managing the continual improvement programme affects the business process improvement to a great extent ( $M=3.9429$ ).

The study also found that creating a continual improvement culture affects the business process improvement to a great extent ( $M=3.6000$ ). The study also found that innovation commitment by senior management in continual improvement affects the business process improvement to a great extent ( $M=3.3235$ ).

In relation to the effects of effect of level of commitment of top management on the business process improvement, the study found that the top managers must demonstrate their willingness to give energy and loyalty to the improvement process for it to succeed ( $M=4.5143$ ).

The study also found that that lack of top management backing is the main inhibiting factor ( $M=4.2857$ ).

It was also established that the managers must not spare any effort to persuade the employees of their ideas for business process improvement to be effective ( $M=4.1714$ ). The study also found that lack of manager's commitment to performing their roles leads to the lower ranks of employees missing support and guidance through encouragement of entrepreneurial attributes ( $M=3.9714$ ). Lastly, the study found that the top management's commitment to the strategic direction itself is the most important factor ( $M=3.9143$ ).

### **5.2.5 Technology and business process improvement**

In relation to the effects of technology and business process improvement, the study found that Nairobi City Water and Sewerage Company had shared databases, making information available at many places ( $M=4.3125$ ). The study also found that Nairobi City Water and Sewerage Company had telecommunication networks, allowing organizations to be centralized and decentralized at the same time ( $M=4.0625$ ). In addition, the study found that Nairobi City Water and Sewerage Company had expert systems, allowing generalists to perform specialist tasks ( $M=4.0000$ ). Further, the study established that Nairobi City Water and Sewerage Company had automatic identification and tracking, allowing things to tell where they are, instead of requiring to be found ( $M=3.9412$ ). The study also found that Nairobi City Water and Sewerage Company had wireless data communication and portable computers, allowing field personnel to work office independent ( $M=3.8788$ ). Lastly, the study found that Nairobi City Water and Sewerage Company had decision-support tools, allowing decision-making to be a part of everybody's job ( $M=3.7353$ ).

## **5.3 Discussion**

### **5.3.1 Staff issues and Business Process Improvement**

This study aimed at investigating the effect of staff issues on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. This study established that Nairobi City Water and Sewerage Company's training included tacit knowledge ( $M=3.6486$ ), leadership and management skills ( $M=3.6216$ ) and experience of people ( $M=3.5405$ ). further, the respondents agreed to a moderate extent that their organization was including problem solving skills ( $M=3.3514$ ), quality-related education ( $M=3.2432$ ), planning and improvement tools

(3.1892), communication skills ( $M=3.1081$ ), needs and expectations of customers and other interested parties ( $M=3.1351$ ), fact-based decision-making ( $M=3.0811$ ), knowledge of markets ( $M=3.0541$ ) and process analysis ( $M=3.0270$ ). These findings are in line with Grant, (2002) argument that to support the achievement of the organization's objectives and the development of its people, planning for education and training should consider: experience of people; tacit and explicit knowledge; leadership and management skills; planning and improvement tools; teambuilding; problem solving; communication skills; culture and social behavior; knowledge of markets and the needs and expectations of customers and other interested parties, and; creativity and innovation.

The study also established that Nairobi City Water and Sewerage Company was considering open door policy ( $M=3.1351$ ), staff involvement in continuous process improvement ( $M=3.0541$ ), overtime payments ( $M=2.9730$ ), encouraging competitiveness ( $M=2.9730$ ), wage Increments ( $M=2.8649$ ), encouraging creativity ( $M=2.8108$ ), money, rewards and other gifts ( $M=2.7838$ ) and incentive bonuses ( $M=2.7838$ ). The study also found that Nairobi City Water and Sewerage Company was considering clear Instructions ( $M=2.6757$ ), pep talk ( $M=2.6486$ ), appreciation of good performance ( $M=2.6216$ ), plaques/certificates ( $M=2.6216$ ) and opportunities to pursue new challenges ( $M=2.5676$ ) to a moderate extent.

In relation to the effects of training and development and business process improvement, the study found that continuous quality improvement hinges on training of staff ( $M=4.1351$ ). Coskun et al., (2008) had earlier observed that it is important to create enthusiasm in the staff so that, ultimately, all employees will have the opportunity to become engaged in continual improvement activities. Further, the study found that the organization encourages the involvement and development of its people by providing ongoing training and career planning ( $M=3.0000$ ). In addition, the study found that that planning for education and training needs take account of change caused by the nature of the organization's processes, the stages of development of people and the culture of the organization ( $M=3.7568$ ). These findings correlate with Hindle, (1997) argument that planning for education and training needs should take account of change caused by the nature of the organization's processes, the stages of development of people and the culture of the organization. The respondents also agreed with a mean of that

education and training at the company emphasize the importance of meeting requirements and the needs and expectations of the customer and other interested parties ( $M=3.0556$ ). The education and training provided is evaluated in terms of expectations and impact on the effectiveness and efficiency of the organization ( $M=2.8333$ ).

### **5.3.2 Organizational Strategy and Business Process Improvement**

The study also sought to find out the extent to which organizational strategy affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. The study revealed that City Water and Sewerage Company employ restructuring (reorganizing the operational or other structures of the company) in a bid to enhance business process improvement ( $M=3.0909$ ). Further, the respondents agreed to a low extent with a mean of 2.5000 that Nairobi City Water and Sewerage Company was employing differentiation strategy (offering different services to various groups of customers). The respondents also agreed to a low extent with a mean of 2.4118 that their organization was employing cost-based strategy (lowering the cost of operations). Lastly the study found that the organization was employing focus strategy (carrying out research to allow concentration on important areas) ( $M=2.3056$ ).

This study also established that strategy provides directional cues to the organization that permit it to achieve its objectives while responding to the opportunities and threats in the environment ( $M=3.5143$ ). The study also revealed that organizational strategy is flexible enough to allow the selection of the most appropriate approach for each improvement ( $M=3.4571$ ). The study also found that organizational strategy ensure optimization of effort in process improvement ( $M=3.4167$ ). The study also revealed that organizational strategy results in future oriented plans interacting with the competitive environment to achieve the company's objectives ( $M=3.3333$ ). The study also found that organizational strategy achieves advantage for the organization through its configuration of resources within a changing environment, and fulfill stakeholder's expectations ( $M=3.2000$ ). This study established that organizational Strategy consider ways to narrow the gap between the current state of the corporation's performance and its objectives for the future ( $M=3.3714$ ). Lastly, the study found that organizational strategy helps an organization in matching its corporate objectives and its available resources ( $M=3.1944$ ).

### **5.3.3 Organizational Culture and Business Process Improvement**

This study also aimed at determining the extent to which organizational culture affects business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. This study established that attitudes ( $M=4.2000$ ), behavior patterns ( $M=3.9714$ ), patterns of communication ( $M=3.9714$ ), shared values ( $M=3.9429$ ), systems and procedures ( $M=3.9429$ ), internal reporting systems ( $M=3.9118$ ), normative ways of conducting business ( $M=3.8857$ ) and commitments ( $M=3.8571$ ) were enhancing business process improvement. The study also mission and vision statement ( $M=3.8286$ ), integration of activities ( $M=3.7059$ ), overall patterns of thinking socially constructed among members of an organization ( $M=3.6176$ ) and beliefs ( $M=3.5294$ ) were enhancing business process improvement. The study also found that behavior regularities, when people interact ( $M=3.4571$ ) and rituals surrounding deference and demeanor ( $M=3.2647$ ) were enhancing business process improvement. Tucker and Pitt (2009) had earlier proposed that a company's culture is the amalgam of shared values, behavior patterns, mores, symbols, attitudes, and normative ways of conducting business that, more than its products or services, differentiate it from all other companies. Further, culture may influence what organizational strategies are selected and whether they are successful.

This study revealed that a learning culture should be created within the organization that allows continual improvement to take place ( $M=4.1429$ ). This correlates with Coulter and Robbins (2003) argument that a learning culture should be created within the organization that allows continual improvement to take place as a normal and expected part of business activities for all staff. The study revealed that culture influences what organizational strategies are selected and whether they are successful ( $M=4.0882$ ). The study also revealed that existing cultural orientations at the firm are not supportive of the mission and success of the firm in process improvement ( $M=3.6000$ ). This confirms Tucker and Pitt (2009) argument that existing cultural orientations may be quite supportive of the mission and success of a firm at a particular point, but not at all appropriate when significant strategic change becomes necessary. In addition, the study found that that culture determines whether a company can attract and keep the best employees for process improvement ( $M=3.8857$ ). Coulter, Robbins (2003) had earlier argued

that an organization's culture also determines whether a company can attract and keep the best employees and whether in confusing situations, the employees know how they should behave.

The study found that there is a complete coalitional involvement of implementation staff through a strong corporate culture ( $M=3.3429$ ). Further, found that the company fosters an environment where staff can implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management ( $M=2.9118$ ). Auringer, (2009) had earlier indicated that it is essential to foster an environment where staff can also implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management.

These findings correlate with Schwartz and Davis, (2001) argument that culture has traditionally been recognized as a consideration in the strategy implementation process. Culture is assumed to explain the success of some organizations, to represent an essential element in effectiveness of organizations if it fits the strategy, to act as a determinant of strategy, or as an influence on the implementation of strategic decisions.

#### **5.3.4 Management Commitment and Business Process Improvement**

The study also sought to assess the effect of management commitment on business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. This study established that level of commitment of top management affects the business process improvement at the company to a very great extent. This correlates with Harry and Schroeder, (2006) argument that it is fundamental to the success of the Management System and to the implementation of continual improvement throughout the organization that senior managers provide strong leadership; visible and active support; and, demonstrated commitment.

The study also established that resistance to change by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.2857$ ). Harry and Schroeder, (2006) had indicated earlier senior managers play a crucial role in the success of continual improvement programmes. Without the leadership, commitment and involvement of senior management, a continual improvement programme is unlikely to be successful. Further,

the study found that establishing overall goals for continual improvement by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.2000$ ). In addition, the study found that creating the motivation for change by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.1765$ ). Further, the study found that establishing a vision for continual improvement by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.1143$ ). The study also found that establishing commitment and alignment of the senior management team by senior management in continual improvement affects the business process improvement to a great extent ( $M=4.0571$ ). In addition, the study found that empowering and making individuals accountable for their work affects the business process improvement to a great extent ( $M=4.0000$ ). Further, it was established that managing the continual improvement programme affects the business process improvement to a great extent ( $M=3.9429$ ). Harrington, (1991) had earlier indicated that the role of senior management in continual improvement includes the following responsibilities: establishing a vision for continual improvement, establishing overall goals for continual improvement, creating the motivation for change, establishing commitment and alignment of the senior management team, managing the continual improvement programme and creating a continual improvement culture. The study also found that creating a continual improvement culture affects the business process improvement to a great extent ( $M=3.6000$ ). The study also found that innovation commitment by senior management in continual improvement affects the business process improvement to a great extent ( $M=3.3235$ ).

In relation to the effects of effect of level of commitment of top management on the business process improvement, the study found that the top managers must demonstrate their willingness to give energy and loyalty to the improvement process for it to succeed ( $M=4.5143$ ). According to Rapa and Kauffman, (2005) the top managers must demonstrate their willingness to give energy and loyalty to the implementation process. This demonstrable commitment becomes, at the same time, a positive signal for all the affected organizational members. The study also found that that lack of top management backing is the main inhibiting factor ( $M=4.2857$ ). This is in line with Rapa and Kauffman, (2005) argument that it is increasingly acknowledged that the traditionally recognized problems of inappropriate organizational structure and lack of top

management backing are the main inhibiting factors to effective strategy implementation. It was also established that the managers must not spare any effort to persuade the employees of their ideas for business process improvement to be effective ( $M=4.1714$ ). The study also found that lack of manager's commitment to performing their roles leads to the lower ranks of employees missing support and guidance through encouragement of entrepreneurial attributes ( $M=3.9714$ ). Lastly, the study found that the top management's commitment to the strategic direction itself is the most important factor ( $M=3.9143$ ).

### **5.3.5 Technology and business process improvement**

The study also sought to establish the extent to which technology applied affect business process improvement at Nairobi City Water and Sewerage Company in Nairobi County. This study established that technology affects the business process improvement at the company to a very great extent. Harry and Schroeder, (2006) had earlier indicated that technology has historically played an important role in the business process improvement concept. It is considered by some as a major enabler for new forms of working and collaborating within an organization and across organizational borders.

In relation to the effects of technology and business process improvement, the study found that Nairobi City Water and Sewerage Company had shared databases, making information available at many places ( $M=4.3125$ ). The study also found that Nairobi City Water and Sewerage Company had telecommunication networks, allowing organizations to be centralized and decentralized at the same time ( $M=4.0625$ ). In addition, the study found that Nairobi City Water and Sewerage Company had expert systems, allowing generalists to perform specialist tasks ( $M=4.0000$ ). Further, the study established that Nairobi City Water and Sewerage Company had automatic identification and tracking, allowing things to tell where they are, instead of requiring to be found ( $M=3.9412$ ). The study also found that Nairobi City Water and Sewerage Company had wireless data communication and portable computers, allowing field personnel to work office independent ( $M=3.8788$ ). Lastly, the study found that Nairobi City Water and Sewerage Company had decision-support tools, allowing decision-making to be a part of everybody's job ( $M=3.7353$ ). Buttles-Valdez (2008), had earlier argued that today's organizations are largely

dependent on high-technology to develop, build, and maintain their products and services. This has created a dependence on a workforce with specialized knowledge and skills.

#### **5.4 Conclusion**

The study concludes that there is a positive relationship between staff related issues and business process improvement. The study found that taking all other independent variables at zero, a unit increase in the scores of staff related issues would lead to a 0.662 increase in the scores of business process improvement.

In relation to the effects of training and development and business process improvement, the study concludes that continuous quality improvement hinges on training of staff. Further, the study concludes that the organization encourages the involvement and development of its people by providing ongoing training and career planning. Planning for education and training needs take account of change caused by the nature of the organization's processes, the stages of development of people and the culture of the organization. Education and training at the company emphasize the importance of meeting requirements and the needs and expectations of the customer and other interested parties. The education and training provided is evaluated in terms of expectations and impact on the effectiveness and efficiency of the organization.

This study also concludes that there is a positive relationship between organisational strategy and business process improvement. The study found that taking all other independent variables at zero, a unit increase in the scores of organisational strategy would lead to a 0.567 increase in the scores of business process improvement. Organizational strategy provides directional cues to the organization that permit it to achieve its objectives while responding to the opportunities and threats in the environment. The study also revealed that organizational strategy is flexible enough to allow the selection of the most appropriate approach for each improvement. Organizational strategy also ensures optimization of effort in process improvement. The study also revealed that organizational strategy results in future oriented plans interacting with the competitive environment to achieve the company's objectives. The study also found that organizational strategy achieves advantage for the organization through its configuration of resources within a changing environment, and fulfill stakeholder's expectations. This study established that

organizational Strategy consider ways to narrow the gap between the current state of the corporation's performance and its objectives for the future. Organizational strategy helps an organization in matching its corporate objectives and its available resources.

In addition, the study concludes that there is a positive relationship between organisational culture and business process improvement. The study found that a unit increase in the scores of organisational culture would lead to a 0.724 increase in the scores of business process improvement. A learning culture should be created within the organization that allows continual improvement to take place. The revealed that culture influences what organizational strategies are selected and whether they are successful. The study also revealed that existing cultural orientations at the firm are not supportive of the mission and success of the firm in process improvement. In addition, the study found that that culture determines whether a company can attract and keep the best employees for process improvement. The study found that there is a complete coalitional involvement of implementation staff through a strong corporate culture. Further, found that the company fosters an environment where staff can implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management.

The study also concludes that there is a positive relationship between management commitment and business process improvement. A unit increase in the scores of management commitment would lead to a 0.800 increase in the scores of business process improvement. In relation to the effects of effect of level of commitment of top management on the business process improvement, the study concludes that the top managers must demonstrate their willingness to give energy and loyalty to the improvement process for it to succeed. The study also found that that lack of top management backing is the main inhibiting factor. It was also established that the managers must not spare any effort to persuade the employees of their ideas for business process improvement to be effective. The study also found that lack of manager's commitment to performing their roles leads to the lower ranks of employees missing support and guidance through encouragement of entrepreneurial attributes. The top management's commitment to the strategic direction itself is the most important factor.

The study further concludes that there is a positive relationship between technology and business process improvement. The study found that a unit increase in the scores of technology would lead to a 1.019 increase in the scores of business process improvement. In relation to the effects of staff motivation and business process improvement, the study found that Nairobi City Water and Sewerage Company had shared databases, making information available at many places. The study also found that Nairobi City Water and Sewerage Company had telecommunication networks, allowing organizations to be centralized and decentralized at the same time. In addition, the study found that Nairobi City Water and Sewerage Company had expert systems, allowing generalists to perform specialist tasks. Further, the study established that Nairobi City Water and Sewerage Company had automatic identification and tracking, allowing things to tell where they are, instead of requiring to be found. The study also found that Nairobi City Water and Sewerage Company had wireless data communication and portable computers, allowing field personnel to work office independent. Nairobi City Water and Sewerage Company had decision-support tools, allowing decision-making to be a part of everybody's job.

## **5.5 Recommendations**

The study found that the education and training provided in Nairobi City Water and Sewerage Company was not evaluated in terms of expectations and impact on the effectiveness and efficiency of the organization. This study recommends that Nairobi City Water and Sewerage Company should evaluate its trainings in terms of expectations and impact on the effectiveness and efficiency of the organization.

The study also found that Nairobi City Water and Sewerage Company does not foster an environment where staff can implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management. This study therefore recommends that the company should foster an environment where staff can implement smaller, local continual improvement projects.

It was also revealed in this study that the level of commitment of top management highly influences business process improvement. This study therefore recommends that the

management of Nairobi City Water and Sewerage Company should show commitment in to the organization in terms of innovation and technology adoption.

This study established that technology affects the business process improvement at the company to a very great extent. This research study recommends that Nairobi City Water and Sewerage Company should fully adopt technology in decision support and databases so as to enhance the business process improvement.

### **5.6 Suggestions for Further Studies**

From the study and related conclusions, the researcher recommends further research in the area of the relationship between organizational culture and business process environment in other organizations. The study also recommends further studies in the area of factors affecting the adoption of technology in Nairobi City Water and Sewerage Company.

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## **APPENDICES**

### **Appendix I: Letter of Introduction**

#### **RE: PARTICIPATION IN RESEARCH**

I am a postgraduate student pursuing my master degree in Project Planning and management at the University of Nairobi and conducting a research entitled “Factors Effecting Process Improvement at Nairobi City Water and Sewerage Company in Nairobi County.” as one of the major requirements.

In this regard, you have been selected to take part in this study as a respondent. This interview will investigate process improvement strategies and their effectiveness and factors influencing process improvement at Nairobi City Water and Sewerage Company in Nairobi County.

Kindly respond to all items to reflect your opinion and experience. Please answer all the questions freely. You will not be identified from the information you provide and no information about individuals will be given to any organization. The data collected will be used for this academic research only.

Your participation is important for the success of this project and I greatly appreciate your contribution.

Yours Sincerely,

JOSIAH WAWERU GITU

## **Appendix II: Research Questionnaire**

Instructions: Please tick in the appropriate bracket or provided spaces

### **PART A: GENERAL QUESTIONS**

1. Please provide responses to the questions below.

a.	Sex:	Male [ ] Female [ ]
b.	Age bracket	18-30 yrs [ ] 31-40yrs [ ] 41-50yrs [ ] Above 50 yrs[ ]
c.	Designation in the organization:	
d.	Work duration:	Less than 1 yr [ ] 1-5 yrs [ ] 5-10yrs [ ] Above 10 years [ ]

### **PART B: PROCESS IMPROVEMENT**

2. To what extent has Nairobi City Water and Sewerage Company successfully implemented the following aspects of process improvement? Tick appropriately using a likert scale of 5 where 5= Very great extent, 4= Great extent 3= Moderate extent and 2= Less extent and 1= No extent at all.

		Very great extent	Great extent	Moderate extent	Less extent	No extent
a.	Adoption of appropriate leadership style/management approaches					
b.	Availability of financial resources to fund the process improvement initiative undertaken by the company					

c.	Availability knowledgeable and skilled human resources that can be dedicated to process improvement.				
d.	Adoption of appropriate public relation strategies				
e.	Clear communication of company's goals, mission and vision.				
f.	Training programs are conducted for all staff				
g.	Ensuring that workers are performing the process in the correct manner.				
h.	Continually monitoring operations to determine if the predicted results are being achieved.				
i.	Soliciting for feedback from workers to see if there are problems, issues, or additional benefits that team may have missed.				
j.	Adoption of new technology				

### **Staff Issues and Business Process Improvement**

3. To what extent does your training and development include the following to support the achievement of the organization's objectives? Use a scale of 1 to 5 where 1 is to a very great extent and 5 is to no extent.

	1	2	3	4	5
Experience of people					
Tacit and explicit knowledge					
Leadership and management skills					
Planning and improvement tools					

Problem solving skills					
Communication skills					
Knowledge of markets					
Needs and expectations of customers and other interested parties					
Fact-based decision-making					
Process analysis					
Quality-related education					

4. To what extent does your organization employ the following in order to enhance business process improvement? Use a scale of 1 to 5 where 1 is to a very great extent and 5 is to no extent.

	1	2	3	4	5
Staff involved in CPI					
Appreciation of good performance					
Encouraging creativity					
Encouraging competitiveness					
Open door policy					
Pep talk					
Money, rewards and other gifts					
Incentive bonuses					
Wage Increments					
Overtime payments					
Opportunities to pursue new challenges					
Plaques/certificates					

Clear Instructions					
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5. What is your level of agreement with the following statements that relate to the effect of staff issues on business process improvement? Use a scale of 1-5 where 1= strongly agree and 5= strongly disagree.

	1	2	3	4	5
Continuous quality improvement hinges on training of staff					
The organization encourages the involvement and development of its people by providing ongoing training and career planning					
Planning for education and training needs take account of change caused by the nature of the organization's processes, the stages of development of people and the culture of the organization.					
Education and training at the company emphasize the importance of meeting requirements and the needs and expectations of the customer and other interested parties.					
The education and training provided is evaluated in terms of expectations and impact on the effectiveness and efficiency of the organization					

### **Organizational Strategy and Business Process Improvement**

6. To what extent does your firm employ the following organizational strategies in a bid to enhance business process improvement? Use a scale of 1 to 5 where 1 is to a very great extent and 5 is to no extent.

	1	2	3	4	5
Differentiation strategy					

Cost-based strategy					
Focus strategy					
Restructuring					
Other (specify) .....					

7. What is your level of agreement with the following statements that relate to organizational strategy and its effect on Business Process Improvement? Use a scale of 1-5 where 1= strongly agree and 5 = strongly disagree.

	1	2	3	4	5
Matching its corporate objectives and its available resources					
Strategy provide directional cues to the organization that permit it to achieve its objectives while responding to the opportunities and threats in the environment					
The organizational Strategy ensure optimization of effort in process improvement					
The organizational Strategy results in future oriented plans interacting with the competitive environment to achieve the company's objectives					
The organizational Strategy achieves advantage for the organization through its configuration of resources within a changing environment, and fulfill stakeholder's expectations					
The organizational strategy is flexible enough to allow the selection of the most appropriate approach for each improvement					
The organizational Strategy consider ways to narrow the gap between the current state of the corporation's performance and its objectives for the future					

## **Organizational Culture and Business Process Improvement**

8. What is the extent to which the following aspects of organizational culture enhance business process improvement? Use a scale of 1 to 5 where 1 is to a very great extent and 5 is to no extent.

	1	2	3	4	5
Shared values					
Attitudes					
Commitments					
Beliefs					
Overall patterns of thinking socially constructed among members of an organization					
Behavior patterns					
Normative ways of conducting business					
Patterns of communication					
Systems and procedures					
Mission and vision statement					
Observed behavior regularities, when people interact					
Rituals surrounding deference and demeanor					
Integration of activities					
Internal reporting systems					

9. To what extent do you agree with the following statements that relate to organizational culture and their effects to business process improvement? Use a scale of 1-5 where 1= strongly agree and 5 = strongly disagree.

	1	2	3	4	5
Culture influence what organizational strategies are selected and whether they are successful.					
Existing cultural orientations at the firm are not supportive of the mission and success of the firm in process improvement					
Culture determines whether a company can attract and keep the best employees for process improvement					
A learning culture should be created within the organization that allows continual improvement to take place					
The company fosters an environment where staff can implement smaller, local continual improvement projects that can be completed with line management involvement, alongside the major continual improvement projects sponsored by top management.					
There is a complete coalitional involvement of implementation staff through a strong corporate culture.					

### **Management Commitment and Business Process Improvement**

10. To what extent does the level of commitment of top management affect the business process improvement at the company?

Very great extent [ ]

Great extent [ ]

Moderate extent [ ]

Little extent [ ]

Not at all [ ]

11. To what extent do the following activities of senior management in continual improvement affect its effectiveness? Use a scale of 1 to 5 where 1 is to a very great extent and 5 is to no extent.

	1	2	3	4	5
Establishing a vision for continual improvement					
Establishing overall goals for continual improvement					
Creating the motivation for change					
Establishing commitment and alignment of the senior management team					
Managing the continual improvement programme					
Creating a continual improvement culture					
Innovation commitment					
Resistance to change					
Empowering and make individuals accountable for their work					

12. What is your level of agreement with the following statements that relate to the effect of level of commitment of top management on the business process improvement? Use a scale of 1-5 where 1= strongly agree and 5= strongly disagree.

	1	2	3	4	5
The top management's commitment to the strategic direction itself is the most important factor.					
The top managers must demonstrate their willingness to give energy and loyalty to the improvement process for it to succeed.					
The managers must not spare any effort to persuade the employees of their ideas for business process improvement to be effective.					
Lack of top management backing is the main inhibiting factor					
Lack of manager's commitment to performing their roles leads to the lower ranks of employees missing support and guidance through encouragement of entrepreneurial attributes.					

## **Technology and Business Process Improvement**

13. To what extent does technology affect the business process improvement at the company?

Very great extent [ ]

Great extent [ ]

Moderate extent [ ]

Little extent [ ]

Not at all [ ]

14. What is the extent to which the following aspects of technology enhance business process improvement? Use a scale of 1 to 5 where 1 is to a very great extent and 5 is to no extent.

	1	2	3	4	5
Statistical process control					
Shared databases, making information available at many places					
Expert systems, allowing generalists to perform specialist tasks					
Telecommunication networks, allowing organizations to be centralized and decentralized at the same time					
Decision-support tools, allowing decision-making to be a part of everybody's job					
Wireless data communication and portable computers, allowing field personnel to work office independent					
Automatic identification and tracking, allowing things to tell where they are, instead of requiring to be found					