DETERMINANTS OF BUSINESS PROCESS REENGINEERING PROJECT SUCCESS IN KENYA: A CASE STUDY OF SELECTED COMPANIES IN NAIROBI

By:

OWINO PATRICK ODHIAMBO

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DECLARATION

This project is my original work and has not been submitted to any other University for academic purpose.

Signed.....Date..20/11/2009.....

Owino Patrick Odhiambo

Reg. No: D61/P/8545/2001

This management Research paper has been submitted for examination with our approval as the University supervisors.

Signed.....Date..20th November 2009.....

Mr Joel K. Lelei

Signed.....Date..20/11/2009.....

Mr Stephen O. Odock

School of Business,University of Nairobi

DEDICATION

I wish to dedicate this work to my wife Millicent Odhiambo who spent time and money to ensure that I complete the course, and to our children Loyce Odhiambo, Samuel Odhiambo and Javan Odhiambo who understood when I could not be with them all the time. I also dedicate the work to my late father Samuel Owino, whose drive and encouragement towards further education was immense.

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ABSTRACT

Business Process Reengineering (BPR) has been touted in the literature as a dramatic improvement necessary for organization competitiveness, but in practice there are many unsuccessful cases. Thus, the need for a more systematic and rigorous assessment of the factors deemed important to project success. The main objective was to examine this issue.

The study adopted descriptive and diagnostic research design in collection and recording of primary data so as to facilitate and in depth analysis of the research variables
This was a study of 90 managers, three from each of the 30 organizations in Kenya that have conducted BPR projects in the last five years. The managers were purposively chosen and screening criteria adopted in order to only capture those who had been with the company during the last five years and had participated in the implementation of the BPR projects.

Questionnaire survey instrument was used in data collection. Data emanating from the study was analyzed using arithmetic mean, standard deviations and frequencies. The data was further analysed using Pearson's Correlation Coefficient, stepwise multivariate regression analysis, factor analysis. Factor analysis using Varimax rotation was done to reduce the separate success factors subgroups in Section C.

Slightly more than half (63%) of the study respondents were males while the rest (32%) were females. Majority of respondents (79.3%) are aged between 31 and 50 years of age while 17.5% are below 30 years of age and only 3.2% above 50 years. The level of education of the respondents indicated that majority of those interviewed were either gradates or post-graduates (93%) while 5% and 2% respectively hold tertiary and secondary level education.

The professional background of the respondents indicated that a majority of respondents (75.1%) are computer science and engineering professionals while the rest are

accountants (14.3%), lawyers (11.1%), economists (6.3%) and business professionals (2%).

As evidenced, majority of respondents (74.6%) have between 11-30 years of work experience while 17.5% and 7.9% respectively have less than 10 years more than 30 years of work experience.

Majority (93.7%) of firms listed in the NSE which have implemented BPR projects in the last five years are in industrial and allied, finance and investments and commercial and services sectors. Majority indicated that product and service development processes, customer related process and inventory processes were reengineered.

The factor analysis has thus found that cross-functionality of the project team, process used by the project team to implement the BPR project, the expertise available to the project team regarding the processes being reengineered, the quality of the IT support extended to the project; and the project leadership and motivation are the Success Factors of implementing BPR in Kenyan firms listed on the bourse.

A wide ranging implementation difficulties were experienced and these included strong commitment to existing process, resistance to change within the ranks of the organization while others that the process was too much consultant led and dominated.

In general, the findings indicate that BPR projects implemented in Kenya are not emphasizing some of the most important activities and tasks recommended in BPR literature, such as changes to customer and market-related business processes, the value-added element of every business activity and applying the right innovative technology.

In view of the results, implementation of BPR projects in Kenya going forward should focus attention and resources on factors important to BPR project success. It thus behooves top management of companies not to engage in BPR before ensuring the presence of the success factors found to be important in this research.

LIST OF ABBREVIATIONS

BPR: Business Process Reengineering

CEO: Chief Executive Officer

CFO: Chief Finance Officer

CSF: Critical Success Factors

GM: General Manager

IS: Information System

IT: Information Technology

KPLC: Kenya Power and Lighting Company

PCA: Principal Component Analysis

SPSS: Statistical Package for Social Scientists

TQM: Total Quality Management

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CHAPTER ONE
INTRODUCTION

1.1. Background

Most organization processes are simple and efficient when initially designed. However with passage of time, addition of sub-processes to handle exceptions, changes in the business environment and increase in customer expectations and demands, the same processes become more complex and inefficient. Solution design to such complex, inefficient and costly business processes has brought about Business Process Re-engineering (BPR) into the subject of academic research. BPR has been adopted to address whatever ailed business organizations since the early nineties and the years forward (Caccia, Guimaraes and Guimaraes, 2005). The need for BPR arose with increasing power of customers, competitors and today's constantly changing business environment, which have forced many organizations to recognize the need to move away from focusing on individual tasks and functions to focusing on more communicated, integrated and co-ordinated ways of work by looking at operations in terms of business processes (Davenport, 1993a; Parker, 1993; Hammer and Champy, 1993; Linden, 1993).

While the promises from BPR implementation have been impressive, the encountered problems have also been numerous. Few organizations reaped the benefits they expected from BPR (Cummings, 1993). Approximately one quarter of 300 BPR projects in North America failed and the authors speculated industry wide figure at closely 70 percent (Cafasso, 1993; Hammer and Champy, 1993). Specifically, many managers said that the actual BPR project benefits fell short of expectations along the dimensions of customer service, process timeliness, quality, cost reduction, competitiveness, improved technology and revenues (Hayley et al., 1993). With more accumulated experience, however, there is growing realization that Information Technology is a critical BPR enabler, but implementing BPR involves complex socio-technical change in an organization (Davenport and Stoddard, 1994; DeLone, and McLean, 1992; Grover, Jeong, Kettinger, and Teng, Fall, 1995). The most frequent and harsh critique against BPR concerns the strict focus on efficiency and technology and the disregard of people in the organization that is subjected to a reengineering initiative.

1.1.1. The Concept of BPR

A variety of terms have been used to describe BPR. These include core process redesign (Heygate, 1993; Rigby, 1993; Kaplan and Murdock, 1991), process innovation (Davenport, 1993a), business process redesign (Davenport and Short, 1990), organisational re-engineering (Lowenthal, 1994), breakpoint business process redesign (Johansson et al., 1993), and business restructuring (Talwar, 1993). Besides these, several authors have defined BPR in different ways with different emphases. Hammer and Champy (1993) defined BPR as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed. Alter (1990) defined it as a methodical process that uses information technology to radically overhaul business process and thereby attain major business goals while Teng. et al (1994) theorized it as the critical analysis and radical redesign of existing business processes to achieve breakthrough improvements in performance measures.

Despite variations in definitions of BPR, what seems to be the emphasis is on redesigning of business processes using a radical IT-enabled approach to organizational change to achieve substantial benefits. The quest behind BPR is to radically enhance organizations' chances to differentiate themselves and satisfy customers' demands, while maintaining competitive cost structures and flexibility in the market place. This is done by redesigning business processes.

Davenport and Short (1990) define a business process as "a set of logically-related tasks performed to achieve a defined business outcome". A business process has structure, inputs, outputs, customers (internal and external) and owners (Davenport and Short, 1990), and is built up by integrating fragmented functions that contribute to its operations and internal and external flows (Hammer, 1990). As business processes are the manner in which work gets done within an organisation, they are a distinguishing characteristic among organisations (Venkatraman, 1994), and thus a significant factor leading to competitive edge (Hinterhuber, 1995).

BPR results in a number of benefits including: upgrading processes; significant reductions in costs, errors, and times; increased customer satisfaction; and better overall organizational efficiency and effectiveness (Bhatt and Stump, 2001). Other benefits include increased productivity (Smith and McKeen 1992); a higher quality of goods and services offered (Ryan 1995); and a simplified organizational structure (Davenport and Beers 1995; Hammer and Stanton 1995).

With the emergence of BPR, many approaches, methods, and techniques have been proposed and implemented and these constitute the foundations of BPR as it is currently known. Davenport (1993) notes six areas which influenced the emergence of BPR: the total quality approach, industrial engineering, the systems approach, the socio-technical approach, the diffusion of innovations, and the use of information systems for competitive advantage. The recent interest in BPR closely follows the "productivity paradox" observed by Roach (1987) cited in Davenport, Thomas (1993), in regard to information technology. Productivity paradox arises from the fact that despite massive investments in these technologies between the middle of the 1970s and the early 1990s, neither researchers nor practitioners had yet been able to clearly demonstrate that major productivity gains had been made. The concept of BPR was thus seen as a way to change this situation. In this respect, BPR would be expected to succeed where other approaches had failed in making IT investments profitable.

1.1.2. Related BPR Studies

A review of BPR studies in Kenya and other parts of the world brings into focus two issues;

Firstly, the sustainability and efficiency of BPR project implementation in Kenya has come under critical test as companies have opted for generic so-called best-practice processes that do not fit specific company needs and that BPR has been implemented as a one-off project with limited strategy alignment, long-term perspective and benchmarking.

Secondly, local studies in BPR such as by; Thiga (1999), Owuor (2000), Kilonzo (2006) and Munyiri (2000) have all focused on documenting the step-by-step implementation BPR methodology by companies in Kenya and have not empirically ranked, in order of importance, the BPR project success determinants. Foreign studies on the subject area however have been inconclusive in ranking the BPR success determinants in their relative order of importance and have been from the view point of western executives. Ranking the BPR success factors is important for targeted prioritization of implementation, taking into account the limited resources of firms.

1.2. Problem Statement

In today's competitive corporate world, organizations are challenged to improve their business processes to be more efficient and cost-effective in order to remain competitive in the face of fierce competition and dynamic customer demands. Consequently, BPR has emerged and has been embraced by corporations as a fundamental business process change instrument.

BPR implementation is however complex and capital intensive. No doubt, many cases of BPR project failures have been reported. In order to achieve BPR project success and derive the benefits therefore, these BPR project failures should be addressed. Scaling down the failure rates demands that the most important and critical BPR project success factors in the Kenyan context be known, documented and consequently addressed and systematically executed.

This study intends to bridge the knowledge gap of lack a clear and systematic ranking of the BPR project success factors in their relative order of importance. In this regard, the researcher poses the following research questions; what are the most important determinants of BPR project success in Kenya? To what extent has BPR project benefits been derived by organizations in Kenya? How significantly do the BPR success factors determine BPR project benefits? And what are the BPR implementation challenges in Kenya?

1.3. Objective of the Study

a) To establish the most important determinants of BPR project success in Kenya;

b) To determine the extent to which the BPR project benefits have been derived by organizations in Kenya;

c) To test the relationships between BPR success factors and BPR project benefits; and

d) To determine BPR implementation challenges in Kenya

1.4. Importance of the study

a) The study will incisively inform the management of companies intending to undertake BPR projects in the future for successful BPR project implementations.

b) Others for which the outcome of the research would be of interest are the companies that have implemented BPR projects in Kenya like KPLC and Bidco among others. The results will point to the factors that the companies did not accord due consideration and thus inform organizational learning and reference in future BPR projects.

c) The results of the study will also act as the reference for BPR practitioners and consultants in their day to day work as they advice businesses on BPR projects.

d) To the academicians and researchers in organizational management, the results are likely to spur into great heights, the next line of scholarly works as a basis for further research.

CHAPTER TWO

2. LITERATURE REVIEW

The chapter provides a detailed review of related literature. Specifically the following sections are covered; BPR drivers and related change techniques, role of IT in BPR projects, BPR strategy, BPR benefits, BPR implementation challenges, BPR success determinants and the empirics on BPR success factors

2.1. The need for BPR and BPR related Techniques

Literature has it that BPR is motivated by either or jointly by external and internal drivers. External drivers are related mainly to the increased level of competition, the changes in customers' needs, IT changes, and changes in regulations (Grover et al., 1995) while internal drivers are mainly related to changes in both organizational strategies and structures. The current study is however not focused on the key BPR project drivers but rather the factors corporations implementing BPR project should address in order to achieve success.

Green and Wayhan (1995) claim that making the distinction between BPR and other management techniques is vital for BPR projects to be viable. The distinctions are brought out in the following section;

2.1.1. Total Quality Management (TQM)

Firstly, while TQM is incremental, evolutionary and continuous in nature, BPR is, in contrast, radical, revolutionary and a one-time approach (Green and Wayhan, 1995). Secondly, TQM often addresses narrow processes within departments; BPR, on the other hand, is wider in scope and addresses one or more processes that are cross-cutting on multiple functions (Wells et al., 1993). Thirdly, while quality is desired in BPR projects, benefits such as quick cost and cycle-time reduction are also major targets (Kelada, 1994). Fourthly, while IT has a major role in BPR, and understanding its potential and using it is a major ingredient of BPR projects, its role is less important in TQM (Wells

etal., 1993). Finally, TQM adopts a bottom-up approach in its implementation (Zairi and Sinclair, 1995) as opposed to BPR.

Studies conducted suggest that BPR integrated with TQM can achieve better performance (Zairi and Sinclair, 1995; Davenport, 1993b). The reason is that no single approach is believed to be suitable for performance improvement at all times. Davenport (1994) proposes four approaches for integrating TQM and BPR, namely the sequential method, the process portfolio, BPR for high-level design of process and TQM for detailed process, and TQM within BPR.

2.1.2. Restructuring and Reorganization

BPR is also confused with restructuring and reorganization because of their similarity in sound. However, these approaches are different in their motivations, outcomes and processes (Green and Wayhan, 1995).

Restructuring aims to reduce business capacity to meet lower demand and poor financial performance by eliminating unprofitable businesses or personnel (Makridakis, 1996) through a downsizing programme (Vollmann and Brazas, 1993). Downsizing means reducing the number of personnel in an organization (Green and Wayhan, 1995). However, while BPR efforts attempt to change the way work is done, downsizing does not entail reinventing business processes for strategic gains (Dickinson, 1997; Green and Wayhan, 1995). BPR might result in a reduction in organizational staff; nonetheless, it is unlike downsizing, which sets the reduction in personnel as its main target.

In reorganization projects, "the organizational structure is altered by either delayering several levels of middle management or by acquiring or disposing of corporate assets" (Green and Wayhan, 1995, p. 38). In delayering or delevelling, the aim is to reduce the number of layers in the organisation, resulting in a flatter organisational structure with fewer middle management staff (Makridakis, 1996). Projects thus focus on the hierarchical structure of the organisation while the underlying business processes do not encounter any major changes (Dickinson, 1997; Green and Wayhan, 1995).

2.1.3. Automation

While IT may be used to automate existing business processes, the sole automation of inefficiently designed business processes often fails (Dickinson, 1997). As someone once said, it merely helps to "do the wrong things faster". However, organizations which have embarked on BPR in conjunction with automation efforts were able to gain significant benefits from investing in new IT systems (Davenport, 1993a).

2.1.4. Software Re-engineering

Tilley (1996) defines software re-engineering as: The systematic transformation of an existing system into a new form to realize quality improvement in operation, system capability, functionality, performance, or evolvability at a lower cost, schedule, or risk to the customer.

The process of software re-engineering aims, among other things, to use more cost-effective hardware or software platforms, add new functions to existing systems, ease software maintenance and minimize its cost. Though software re-engineering results in more efficient and faster systems and applications, it does not involve business process redesign; although in many cases it is considered part of the BPR implementation process as a whole when it supports the newly-designed business processes (Tilley, 1996).

2.1.5. Benchmarking

According to Zairi and Sinclair (1995), a benchmark can be considered to be anything that is used and measured as a point of comparison or as a standard by which service can be offered. Zairi and Sinclair (1995) also consider benchmarking as "an enabler for achieving and maintaining high levels of competitiveness". They define it as the measurement of business performance against the best of the best through a continuous effort of constantly reviewing processes, practices and methods.

When applied to processes and practices, benchmarking highlights the negative gaps in performance and, therefore, enables suitable actions to be taken in all areas to maximise

the level of performance needed to be the best in the class. Benchmarking has been applied to every aspect of an organisation, including customer service, products, accounts payable, purchasing and information systems (McNair and Leibfried, 1992). Information System is another area in which benchmarking has been applied (Carlson and McNurlin, 1992; McNair and Leibfried, 1992; Betts, 1992). In this field, benchmarking encourages the re-engineering efforts of business processes to measure performance and quality (Carlson and McNurlin, 1992).

Although benchmarking is seen by some researchers as constraining innovation within BPR, many others, such as Harrison and Pratt (1993), Davenport (1993b), and Zairi and Sinclair (1995), believe that it plays an important role. Davenport (1993b) considers benchmarking to be an effective technique for determining process targets and measures, and highlighting innovative process characteristics. Zairi (1995) argues that it can help organisations to make informed decisions about the type of change which should be introduced, and whether the change should be revolutionary or evolutionary. He also says that the continuous adoption of the benchmarking process stops organisations from having to redesign radically because they remain at the forefront of change. He adds that benchmarking highlights areas of change and prioritizes those areas, and refers to the failure of some of those BPR efforts which attempted to introduce change without assessing needs and measuring performance.

Harrison and Pratt (1993) argue that the process of evaluation first conducts surveys of customer requirements and satisfaction, and then goes on to map the current processes' activities, flows, and supporting technologies. A benchmarking process is then used to set improvement targets through identifying the performance and practices of similar organisations.

2.2. Role of IT in BPR-related organizational change

Owing to the complexities associated with IT, its role in BPR has been debated by several authors. While authors like Davenport (1993a), Davenport and Short (1990) and Hammer (1990) believe that IT has a major enabling role in BPR, and that many BPR projects

contain IT as one of its major components, Morris and Brandon (1993), for example, argue that BPR may not make use of IT. Guha etal. (1993) and Teng etal. (1994) suggest that installing new hardware and software, as well as using systems analysis and modelling tools, are major components in BPR efforts.

Additionally, some authors like Davenport and Short (1990), go beyond viewing IT as an enabler for BPR, and consider it to be a driver for the re-engineering process as it is used essentially to model technically the organisational change. However, other authors like (Boudreau and Robey, 1996) believe that IT can also disable the change efforts. They argue that the use of IT in redesigning the business processes involves new structures, which inhibits changes in the future. They note that since the technical backbone of automated processes exists as software applications, any future change to the processes requires a reconstruction of these software systems. They also argue that BPR in itself will continue to build new legacy systems and organizations which need transformation.

However, according to a survey of re-engineering practices, carried out by Business Intelligence, 60 per cent of companies surveyed stated that IT is a critical enabler for their re-engineering efforts (Harvey, 1995). To ensure successful use of IT in BPR, its capabilities, constraints and behaviour need to be exhaustively understood.

Higgins (1993) sees the role of IT in BPR as having three major aspects:

1. knowing what new business opportunities are made possible with computer-based technologies;
2. building an active platform of systems and capabilities; and
3. focusing on the process of delivering new systems.

Childe et al. (1996) classify IT applications in BPR under two groups, namely change technologies and support technologies. By change technologies, they mean analyzing, modeling and mapping existing processes, assessing their efficiency and effectiveness, measuring performance, and providing structured support for the change project's management and associated planning and control functions. They describe support

technologies as relating to implementing IS to support the process configurations needed. Heiman (1988) argues that in organizations' which depend heavily on integrated IT systems, managing change is shaped by these technologies, and that an information planning strategy is necessary to map organizational plans and structure to a business-wide communication infrastructure. Adequate use of open systems, fourth-generation programming languages, advanced Data Base Management Systems (DBMS) (Lucas and Olson, 1994), and software re-usability techniques may reduce the inflexibility of IT systems so they can support BPR more effectively.

2.3. Approaches to Strategy Development in BPR

Different authors have different views on BPR strategy development. Teng et al. (1994) found that many organisations implemented BPR through a systematic approach by which they can ensure that BPR and business strategies are firmly linked. They maintain that a long-term BPR programme can be established by identifying all an organisation's business processes. Harvey (1995), in his survey, found successful BPR to be a product of corporate strategy.

Schmidt (1998) argues that there is a mutual relationship between a firm's strategy and processes. He believes that, in contrast to a traditional "process follows strategy" understanding, which entails that strategies are implemented by means of processes to achieve competitive advantage through core competencies, there is an opposite direction, "strategy follows process", that is implemented by transforming a company's core processes into strategic capabilities that provide superior value to the customer.

Edwards and Peppard (1994b) and Veasey (1994) argue that the gap between strategy formulation and implementation is bridged as BPR defines the business architecture that enables the organisation to focus more clearly on customer needs and core competencies. Makridakis (1996), describes core competencies as "special skills or technologies that provide lasting competitive advantage to firms". Edwards and Peppard (1994b) differentiate between four types of business processes, namely competitive, infrastructure, core and underpinning processes. They claim that a combination of both

competitive and infrastructure processes directly supports business strategy. They further describe five migrating forms for business process and show how these processes change over time.

Bhattacharya and Gibbons (1996) propose a framework of strategy formulation for BPR which focuses on core competencies and processes and defines a link between strategy and structure. They define a strategy as "a specific course of action designed to meet the business objectives". They consider core competencies/capability, functions and processes as three dimensions to link strategy to structure. In their view, competency/capability forms the core of the "strategy content", while processes form the core of organizational structures.

Huizing et al (1997) studied how organizations align their strategy to their environment and bring internal factors, such as structure, systems, style and culture, in line with their strategy, in order to maintain a balance in the process of BPR-related organizational change. Their study showed that five dimensions of change have to be correctly matched to ensure an integrated and successful implementation of BPR, namely breadth, depth, level of ambition, planning and co-ordination. They conclude that distinguished dimensions of organizational change have to be balanced and, if mismatches occur, re-balanced.

2.4. BPR Benefits

The primary objective of BPR is to make business organizations more competitive by improving quality, reducing costs, and shortening product development cycles (Grover, Teng, and Fiedler, 1993). According to Tsang (1993), BPR's distinguishing characteristics are radical change, cross-functionality, operating across organizational units, breaking outdated paradigms, and involving innovative application of technology. The change process itself should emphasize the value-added element for every activity, recognizing time as a competitive weapon, focusing on end results and objectives, ensuring quality at the source, planning for an end- to-end solution, challenging the old ways and proposing new ways, using the right technology, empowering people and

building consensus on making changes, and setting aggressive goals for the new process (Stadler and Elliot, 1992). The right idea for BPR is to look at the end-to-end processes that are really important to a company's success, then rapidly redesign who does what and give workers new tools to get more done. It is a new way to think about information technology, in terms of how it supports new or redesigned business processes, rather than new ways to think about business functions or other organizational entities (Davenport and Short, 1990).

There are many possible business benefits from BPR. When actually encountered in practice, these benefits hopefully will translate into improved company performance. Therefore, the latter should be considered the ultimate measure and dependent variable for studies assessing the overall benefits from substantial reengineering projects. Company performance can be measured in a wide variety of ways (Venkatraman, 1993). Many authors have used one item to measure company performance, such as company profitability (return on total assets). Given the wide diversity of possible benefits from company innovation and the need for content validity, studies assessing the impact of innovation on company performance should use multidimensional scales (Guimaraes, 1999). This study used five commonly emphasized goals: cost reduction, cycle-time reduction, customer satisfaction level increase, worker productivity increase, and defects reduction (Grover et al. 1995).

BPR is known to produce highly positive results for firms, including significant reductions in costs, errors, and times, increased customer satisfaction, and better overall organizational efficiency and effectiveness (Bergeron and Falardeau, 1994; Ramani, Yap, and Pavri 1995). In an interview with Moad (1993), Michael Hammer stated that although 70 percent of firms did not achieve all their BPR objectives, most achieved a large part of what they wanted to do. These figures match the findings of Bergeron and Falardeau (1994) in surveys performed respectively on samples of 134 and 50 Canadian firms. The respondent firms reported success rates of 70 percent, in line with Hammer's assessment.

A number of advantages or benefits have been attributed to BPR (Davenport, 1995): cost reductions (Case 1992); increases in productivity (Smith and McKeen, 1992); a higher quality of goods and services 'offered (Barton, 1993); and a simplified organizational structure (Davenport, 1995; Stanton, Hammer, and Power 1993).

However, to gain these advantages, a specific set of conditions must be met: the BPR project must have the visible commitment and full support of top management (Champy, 1995; Hammer and Champy, 1993); a multidisciplinary and multifunctional steering committee must be formed and assigned to the project (Guha, Kettinger, and Teng, 1992); an explicit methodology must be rigorously followed and enterprises must comply with the fundamental principles of BPR if they are to reap its potential benefits (Kettinger and Grover, 1995).

Jones (1994) and Harvey (1995) believe that BPR efforts transform organisations from a hierarchical to a flat or horizontal structure. However, researchers like Davenport and Stoddard (1994) state that many organisations which have undertaken BPR projects do not encounter this transformation in organisational structure. Applegate (1994) suggests that organisations tend not to change their hierarchical structure directly; rather, new structures of cross-functional teams are layered over the current organisation.

Many other authors have reported major improvements in customer satisfaction, productivity and profitability at companies that have undertaken reengineering projects (Nicholson, 1995; Khandelwal and Lynch, 2000; and Bowns and McNulty, 2000). Foy (2002) reported a 52 percent improvement in turnaround time. The benefits vary dramatically and may include: improved employee empowerment and morale; improved communications between operational units; and improved quality (Farmer, 1993). Similarly, other authors found that benefits derived from BPR include major reductions in process cost and execution time, and improvements in the quality of customer care (Khandelwal and Lynch, 2000).

Other benefits include: greater market coverage; improved quality in goods and services (customer service and satisfaction); improved quality of organizational coordination and communication (less managerial hierarchy, task enrichment, reduced bureaucracy); administrative and production cost savings (in terms of return on investment, personnel costs, operational costs, and profits); and increased productivity from workers and managers (more units produced, fewer delays) (Case 1992; Stanton, Hammer, and Power 1993).

2.5. BPR Implementation Mistakes and Challenges

Harvey's (1995) study found that change management is the biggest challenge in BPR implementation, and Bruss and Roos (1993) consider effective change to organisational culture and structure to be an essential ingredient of BPR. Towers (1996) and Hammer and Stanton (1995) argue that managing change and people together is a major contributing factor to the success of BPR-related organisational change.

In a discussion of the causes of re-engineering failure, Cooper and Markus (1995) refer to the inadequate treatment of the human aspect when implementing BPR-related change. Kennedy (1994) discusses some elements of human change management which he describes as "the more difficult challenge", and explains how BPR represents a danger to people when it introduces new job structures and definitions, and forces employees to change their work style. We know that BPR is a top-down approach that staff may resist. Thus, BPR may lead to ownership loss and employee de-motivation because they are not involved in planning and change management. Generally, change processes are less-well understood by employees (Jones, 1996,):

It is always contested that BPR does not take account of human processes. Such a perspective is seen as promoting the idea that one can design a perfect process, implement it exactly as planned and the organizational machine will carry it out faultlessly (Jones, 1996). It is thus evident that BPR neglects the important role of human creativity in making process work.

King (1994) views the primary reason for BPR failure as overemphasis on the tactical aspects while leaving the strategic dimensions unattended. He notes that most failures of reengineering are attributable to the process being viewed and applied at a tactical rather than strategic level. He argues that there are important strategic dimensions to BPR: developing and prioritizing objectives, defining the process structure and assumptions, identifying trade-offs between processes, identifying new product and market opportunities, coordinating the reengineering effort, and developing a human resources strategy. He concludes that the ultimate success of BPR depends on the people who do it and on how well they can be motivated to be creative and to apply their detailed knowledge to the redesign of business processes.

Malhotra (1996) estimates that 70% of the BPR projects fail and states that the most important obstacles are: the lack of sustained management commitment and leadership, the unrealistic scope and expectations, and the resistance to change.

Prosci (2003) summarizes the mistakes commonly made by top management during a large-scale change: not being directly involved with the project which occurs when the sponsor fails to keep informed about the project's progress, delegates sponsor roles to others, and does not intervene soon enough when problems arise; sending inconsistent signals or not communicating enough ; ignoring the impact of change on employees in which top management tends to focus on the business issues and neglect the employee side resulting in resistance to change; shifting focus or changing priorities midstream in the project, or diverting their attention to other areas before the project was through implementation and; not providing adequate and appropriate resources.

2.6. BPR Success Determinants

These are what companies should do to increase the likelihood that a BPR project will deliver benefits to the organization. The literature contains an abundance of personal opinions and case studies prescribing one or more factors deemed important for BPR project success. Most of the factors discussed are realistic and practical, such as the need

for the BPR project to be driven by customer demand, competitive pressures, and the need to improve financial performance (Nicholson, 1995; Goll and Cordovano, 1993).

The importance of having customer-focused service delivery as a primary driver for reengineering processes is strongly emphasized by Nicholson (1995) and echoed throughout the BPR literature. The need to bring in specialists for the particular industry and the need for employee education and re-education is also widely recognized. Employees must be taught what the reengineering process actually is, how it differs from known work patterns and what role they will play in it (Goll and Cordovano, 1993).

Managers are also encouraged to reconsider mechanisms for reward and recognition to keep the reengineered organization moving forward, to instill in people the willingness to share information, and to use hands-on experience in redesigning new processes (Goll and Cordovano, 1993). Farmer (1993) proposes several important factors: the use of project champions; having an organized and well-disciplined plan of attack; employing a rigorous and detailed analysis process to develop a rough-cut design and identify major issues; avoiding the selection of traditional thinkers as team members; carefully setting up planning details for tooling, scheduling, maintenance, storage, etc. before implementation; having a defined project organization structure (Blyth, 1998) and regularly scheduled meetings of the project manager with every level of this structure to focus attention; using process mapping to distinguish productive activities from those that are non-value-added (Curtis et al., 1992); and clearly defining and communicating the mission and vision of the project.

Browns and McNulty (2000)) also have a list of important factors: because reengineering results in large-scale changes to a business process, organizational structures, management systems, and values, executives must carefully target only a few critical (though cross-functional) business processes; they should correct organizational procedures that are focused on satisfying internal demands rather than the marketplace; and focus on outcome rather than task. Other factors which have been proposed are that: the technology be viewed as an enabler, not a solution (Huff, 1992); let doers be the

decision makers (Hammer, 1990); use automation to reduce costs and response times (Green, 1992); do not compromise on the need for quality improvements (Faier and Shen, 1992; Knorr, 1991); project initiated and led from the top-down by top management willing to be accountable for project success (Khandelwal and Lynch, 2000; Browns and McNulty, 2000); use surveys to find out what's working and what's not; be completely open about what you're doing, when and why (Blyth, 1998; Rasmus, 1992; Margolis, 1992); and adopt an integrated approach to planning (Walston et al., 2004; Grover et al., 1993).

Caccia-Bava, Guimaraes, and Guimaraes (2005) empirically tested the determinants of hospital BPR success and based on the statistical factor analysis classified the success factors prescribed in the literature as important for BPR success into five separate subgroups addressing: the cross-functionality of the project team; the process used by the project team to implement the BPR project; the expertise available to the project team regarding the processes being redesigned/reengineered; the quality of the IT support extended to the project; and the project leadership and motivation for the project. The list of success factors collected from the literature is shown in Table 2.1 :

Table 2.1: BPR Success Factors

Cross-functionality
BPR team was focused on results not politics
BPR project team had representatives from all important departments
Everybody was accountable for accomplishing their tasks and goals
There was good communication among BPR team members
There was good feedback about what was working or not according to project plans
BPR process
Clear definition of roles/tasks/expectations for the project team members
View technology as an enabler, not as a solution
There was a thorough process analysis to identify and eliminate non-value-added activities
There were regularly scheduled meetings between project managers and each level of

project structure
There was careful planning for project details such as tooling, scheduling, maintenance, system user interfaces, quality, etc. before new process implementation
Process expertise
Process redesigners knew the processes well from experience
Some process redesigners have best-in-kind process knowledge
Target only a few critical (though cross-functional) business processes
Information Technology support
IT people were very competent
IT personnel had a positive attitude
Planning for IT support was highly integrated with planning for reengineering processes
Leadership/motivation
Project leader has a politically powerful position in the organization hierarchy
Organization's commitment to continuous improvement
BPR project motivated by need for better performance and competitive pressures

Source: adapted from Caccia-Bava et. al (2005)

2.6.1. Empirical Studies on BPR Success Determinants

BPR results in change, and successful BPR implementation requires fundamental organizational change in terms of organizational structure, culture and management processes (Davenport, 1993a). Change management is a tool used to manage such a change. Janson (1992) and Arendt et al. (1995) classify the human factor as a major dimension that BPR-related improvements should focus on.

Hammer and Stanton (1995), Cooper and Markus (1995) and Arendt et al. (1995) consider leadership to play a vital part in directing BPR efforts towards success. The importance of leadership stems from its role in providing a clear vision of the future, communicating this vision, being able to involve widely other people in the BPR efforts, and being prepared to provide sufficient commitment to the BPR efforts (Hammer and Stanton, 1995). Carr and Johansson (1995) believe that a BPR leader should be able to establish a BPR strategic vision and communicate it to individuals who should then be

motivated rather than directly guided. Additionally, Hammer and Champy (1993) describe a BPR leader as one who is creative in thinking about change and can understand the BPR case of change and its effect on the organization. Commitment to change and sufficient authority over all aspects of the change process are both important in dealing with the cultural and political problems in the form of organizational resistance which often stand in the way of BPR implementation (Hammer and Champy, 1993; CSC Index, 1994).

Employee empowerment is an effective factor leading to the success of BPR implementation, since it promotes self-management and collaborative teamwork principles (CSC Index, 1994; Mumford, 1995; Rohm, 1992/93). When employees are empowered, they become more involved in deciding how work should be approached and which technologies to use, and they are given the chance to partake potentially in the redesign process (Bashein et al., 1994; Arendt et al., 1995).

Communication is another essential change management tool perceived as very important in facilitating BPR (Davenport, 1993a; Hammer and Stanton, 1995; Carr and Johansson, 1995; Rohm, 1992/93; Arendt et al., 1995). Likewise, Carr and Johansson (1995), in their list of best practices, stress the importance of communication in successful BPR implementation. However, it is also considered by organisations to be the most difficult aspect of BPR (CSC Index, 1994). Davenport (1993a) emphasises the need for communication throughout the change process at all levels and for all individuals, and stresses that communication should occur regularly between those in charge of the change initiatives and those affected by them, and that this communication should discuss sensitive issues such as personnel reductions openly and honestly. Hammer and Stanton (1995) suggest ten rules that lead to effective communication and also identify some barriers to effective communication.

While technical analysis of both existing and new processes is important in BPR, a prerequisite is for top management to put forward an imaginative understanding of the future processes, what is called a vision (Rohm, 1992/93; Arendt et al., 1995). BPR is

about redefining the company's vision about its mission and potential customers and competitors (Clemons, 1995). Process vision, as explained by Davenport (1993a), describes the future state of process and therefore links business strategies with procedures and actions. He also suggests a number of tasks that make up a complete development of process vision: evaluating business strategy to anticipate future processes, benchmarking similar BPR efforts, conducting customer-based assessment of performance targets, and developing process attributes and their performance measures and targets.

As effective project management is considered a critical factor in the successful implementation of BPR projects (CSC Index, 1994), Hammer and Stanton (1995) recommend piloting the implementation, particularly when the project involves a large-scale organisational change. A pilot project demonstrates failures and risks involved, and provide the opportunity to make appropriate adjustments to the efforts, thus promoting success and preventing possible disasters.

Planning the future and managing risk in BPR efforts are also essential (Remenyi and Whittaker, 1994). Risk in BPR originates from incorrect or inadequate changes to processes, structure and their supporting IT systems, from making radical changes that lead to political conflicts, from investment decisions, and from introducing new hardware and software systems (Clemons, 1995).

Johansson et al. (1993) view teamwork as the most important value of BPR. Davenport (1993a) assigns three main functions to the BPR team: managing work by making group decisions and co-ordinating activities; managing relationships by promoting trust, openness, and resolving conflicts; and finally, managing exteriors such as customers, suppliers and market partners.

The literature mentions several advantages of teamwork, such as facilitating interactions between functions and speeding up the redesign process (Davenport and Nohria, 1994). Teamwork creates a learning environment in which team members are encouraged to

share knowledge and expertise (Rohm, 1992/93). With empowered team members, teamwork enhances quality of work (Davenport and Nohria, 1994; Davenport, 1993a), and reduces resistance to change, and allows for different perspectives to change (Carr and Johansson, 1995).

Successful BPR implementation is highly affected by the way team members are selected and managed (CSC Index, 1994), and Carr and Johansson (1995) and Kettinger et al. (1997) recommend that they should be experienced in various techniques such as strategic visioning and change management. They also feel that including people with indirect experience is advantageous in bringing new ideas and challenges, and they advocate considering customers in BPR efforts. Hammer and Champy (1993) recommend that teams should always look for a balance between insiders and outsiders of the organisation, since each view processes from different perspectives. Katzenbach and Smith (1993) identify a number of determinants for effective BPR teams: complementary skills among team members, adequate size, interchangeable accountability, clarity of work approach, and specificity of goals.

Davenport (1993a) and Harrison and Pratt (1993) believe that external consultants should be included in BPR teams since they provide a business-wide view, encourage unity between members, and are usually neutral. Shabana (1996) believes they bring specialised skills, experience and required know-how to organisations, and he suggests a number of reasons for their success and failure in BPR projects. Success can be attributed to consultants' experience of implementing similar projects in other organisations and their ability to direct the re-engineering efforts to areas of substantial benefit to the organisation.

Failure, on the other hand, can be attributed to their limited knowledge of the existing business processes, and that delays are caused by the time they spend familiarising themselves with these processes. Shabana (1996) studied the role of consultants in the success of 118 completed BPR projects, using two measures of success: direct outcomes of the project (quality, service level, operating and personnel costs, and reduction in

overall cycle time), and the project's performance in terms of meeting budgetary and time constraints. Contrary to his expectations, he found that the level of consultant's interventions had little effect on the success of the BPR projects in both outcomes and performance dimensions. He explained this result as being due to the fact that there is wide instability in the quality of services currently offered by consulting firms.

2.6.1.1. BPR in Kenya

The practice of redesigning business processes along with associated technologies and organizational structures is continuously becoming more popular in Kenya today than ever before (Kilonzo, 2006). Many companies, numbering more than 30, have attempted to achieve competitiveness and related goals by radical redesign of their business processes. These include KPLC (Thiga, 1999), BIDCO Oil Refineries Ltd (Owuor, 2000), and firms in the Gemstone Industry (Kilonzo, 2006) and Pharmaceutical Manufacturing Industry (Munyiri, 2000) and so on.

A combination of business imperatives and technology availability underpins the motivations for BPR project implementation in Kenya. The companies realized that in order to remain competitive, substantial changes on business processes had to be undertaken. Indeed intensified global and domestic industry competition, worldwide economic downturn, customer demands, sophistication and changing needs and preferences and achieving of economies of scope and cost were some of the key drivers of BPR projects in Kenya (Kilonzo, 2006). BPR project implementation in Kenya has been criticized by both practitioners and experts alike who have cast doubt on the sustainability and efficiency of the projects as companies have opted for generic so-called best-practice processes that do not fit specific company needs. Further, BPR has been implemented as a one-off project with limited strategy alignment, long-term perspective and benchmarking.

Studies on BPR in Kenya include those by Munyiri (2000), Thiga (1999), Owuor (2000) and Kilonzo (2006). Munyiri (2000) surveyed the use of BPR approach in the Kenyan Pharmaceutical Manufacturing Industry. She concluded that the use BPR lags behind

those of developed worlds and that 55% of Kenyan pharmaceutical firms have been at implementing BPR. Further, she concluded that top management support is the most important factor for the success of BPR. Fear among employees and the inability to abandon traditional inherent culture were singled out as the most significant reason for failure of BPR. The main drivers of BPR in the study by Munyiri (2000) were competitive pressure and the need to cut down on operation costs.

Thiga (1999) study was intended to identify how the actual BPR was carried out at KPLC. He concluded that the BPR process was somehow successful since issues related to resistance of change and other project implementation dynamics were adequately addressed. Owuor (2000) study focused on the use of IT as a facilitator of BPR at BIDCO Oil Refineries. He sequentially established how IT was used as an enabler of BPR. Finally, Kilonzo (2006) research study focused entirely on the implementation methodology of BPR adopted by gemstone dealers in Nairobi.

Besides the local studies, there are several foreign studies on the subject. Grover, Jeong, Kettinger, Teng, (1995) empirically explored the problems of implementing reengineering projects and how the severity of these problems relates to BPR project success. The findings suggested that reengineering project implementation is complex, involving many factors. They recommended that change be managed and that balanced attention be paid to all identified factors, including those that are more contextual (management support and technological competence) as well as factors that pertain directly to the conduct of the project (project management and process delineation) in order to succeed in BPR projects. Guimaraes (1999) study is the only one that came closer to addressing the hierarchical importance of the BPR success factors. This study however, has some inherent limitations that the Guimaraes recommended as opportunities for future research. Guimaraes (1999) asserted that as organizations change over time to improve competitiveness by implementing substantial structural changes, flattening hierarchies, forming self directing teams, and adopting distributed configurations for their information systems resources, new BPR success factors are

likely to arise and the relevance of old ones should be questioned. He further recommended that the study be periodically be replicated.

An empirical study by Caccia, Guimaraes and Guimaraes (2005) determined the most important factors for hospital BPR project success. Caccia et. al(2005) defined success as the benefits that the hospital had derived from the BPR project, according to top managers' opinions. They found that in general, hospitals are not emphasizing some of the most important activities and tasks recommended in the BPR literature, such as changes to customer/market-related business processes, the value-added element of every business activity, and applying the right innovative technology. Caccia et.al (2005) emphasize that new processes may be possible in the future due to changes in regulations, managerial policy, and new technologies and researchers must continue their efforts to identify such new success factors and empirically test their importance in practice. Further, they recommend that multivariate statistical analysis should be conducted to identify variables which may have mediating and /or moderating effects in the relationships between the determinants of BPR success studied here and actual BPR benefits. Caccia et al. (2005) recommends that other measures of BPR success which emphasize specific targets of a BPR project such as profitability and customer satisfaction should be studied in order to measure the success of BPR projects.

In summary, two issues arise; Firstly, the sustainability and efficiency of BPR project in implementation in Kenya has come under critical test as companies have opted for generic so-called best-practice processes that do not fit specific company needs and that BPR has been implemented as a one-off project with limited strategy alignment, long-term perspective and benchmarking. Secondly, local studies in BPR such as by Thiga (1999), Owuor (2000), Kilonzo (2006) and Munyiri (2000) have all focused on documenting the step-by-step implementation BPR methodology by companies in Kenya and have not empirically ranked, in order of importance, the BPR project success determinants. Foreign studies on the subject area however have been inconclusive in ranking the BPR success determinants in their relative order of importance and have been from the view point of western executives. Ranking the BPR success factors is important for targeted prioritization of implementation, taking into account the limited resources of firms.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The study adopted descriptive and diagnostic research design in collection and recording of primary data so as to facilitate and in depth analysis of the research variables. The studies concerning whether certain variables are associated are examples of diagnostic studies, (Kothari, 2005). Most of the social and business research comes under this category. According to (Mugenda and Mugenda 1999), a descriptive research design determines and reports the way things are. It is undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in a situation. The goal of descriptive study is therefore to offer to the researcher a profile or to describe the relevant aspects of the phenomena of interest from an individual, organizational, industry oriented, or other perspective, (Sekaran, 2003). It attempts to describe such things as possible behaviour, attitude, values and characteristics and therefore provides for explanation of cause and effect relationship between the independent (predictor) variable and the dependent (criterion) variable.

3.2 Population

This was a study of 90 managers, three from each of the 30 organizations in Kenya that have conducted BPR projects in the last five years. The managers were purposively chosen and screening criteria adopted in order to only capture those who had been with the company during the last five years and had participated in the implementation of the BPR projects. Researchers have found that managers who have a broad view of an organization are in the best position to address that organization's environment, available resources, workflow patterns and values (Buenger et al., 1996). Therefore, the managers seemed to be the most appropriate subjects for this study on cross-departmental processes and changes that might affect the entire organization.

3.3 **Data collection**

Questionnaire survey instrument was used in data collection. The questionnaire was designed in four sections (A, B, C and D). Section A contained the company's general information; Section B contained questions BPR project success factors, Section C was on BPR success while Section D covered BPR implementation challenges. The questionnaire was pilot tested with 10 managers. After final revisions, the researcher adopted "drop and pick" later approach. A set of three questionnaires was dropped with the company CEOs with a cover letter explaining the purpose of the study asking for his participation and those of his managers that were involved in the company BPR, and also offering to share the results.

3.4 **Data Analysis**

Sample data from the field was screened for errors and omissions, and tested for normality and outliers. Section A was analyzed using arithmetic mean, standard deviations and frequencies.

Section B and C were analyzed jointly using arithmetic mean, standard deviations, frequencies, Pearson's Correlation Coefficient, stepwise multivariate regression analysis, factor analysis. Factor analysis using Varimax rotation was done to reduce the separate success factors subgroups in Section C. Sections D was analyzed using arithmetic mean, standard deviations and frequencies. All data analysis was done using SPSS.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.1 Introduction

This research project sought to establish the most important determinants of BPR project success in Kenya and to explore on what really happened in the BPR projects that succeed. The data required for the study was obtained from the survey questionnaire with managers of organizations in Kenya that have conducted BPR projects in the last five years. The questionnaires were sent to 90 managers, of which 63 responded, representing a response rate of 70%. The data so obtained were analyzed and the findings are presented in relation to each section in the questionnaire.

4.2 Demographics

In this section, respondents' individual and organizational characteristics are analyzed. Respondents were asked to indicate their gender, age, educational profile, professional background, experience and the company's sectoral category. As seen in Table 4.1, slightly more than half (63%) of the study respondents were males while the rest (32%) were females.

Table 4.1: Gender of respondents

Variable	Measurement scale	Frequency	Percentage
Gender	Male	43	68
	Female	20	32
	Total	63	100

Source: Survey Data (2009)

Table 4.2 presents the age distribution of study respondents. As evidenced, majority of respondents (79.3%) are aged between 31 and 50 years of age while 17.5% are below 30 years of age and only 3.2% above 50 years.

Table 4.2: Age of respondents

Variable	Measurement scale	Frequency	Percentage
Age	0-30	11	17.5
	31-40	30	**47.6**
	41-50	20	**31.7**
	Above 50	2	3.2
	Total	63	100

Source: Survey Data (2009)

4.3 Education profile of respondents

Table 4.3 presents the educational profiles of study respondents. As seen, majority of respondents (93%) are graduate and post-graduate degree holders while 5% and 2% respectively hold tertiary and secondary level education. Majority of managers in companies that have participated in implementation of BPR projects in Kenya have attained a university level of education.

Table 4.3: Education profile of respondents

Variable	Measurement scale	Frequency	Percentage
Level of Education	University Graduate	32	**50**
	Post Graduate	27	**43**
	Tertiary	3	5
	Secondary	1	2
	Total	63	100

Source: Survey Data (2009)

4.4 Professional qualifications of respondents

Table 4.4 presents the frequency distribution of the professional qualifications of the study respondents. As evidenced, majority of respondents (75.1%) are computer science and engineering professionals while the rest are accountants (14.3%), lawyers (11.1%), economists (6.3%) and business professionals (2%).

Table 4.4: Professional qualifications of respondents

Variable	Measurement scale	Frequency	Percentage
Profession	Engineering	22	**34.9**
	Computer science	19	**30.2**
	Accountancy	9	14.3
	Law	7	11.1
	Economics	4	6.3
	Management/ business	2	3.2
	Total	63	100

Source: Survey Data (2009)

4.5 Experience of respondents

Table 4.5 presents the graphical distribution of study respondents' years of work experience. As evidenced, majority of respondents (74.6%) have between 11-30 years of work experience while 17.5% and 7.9% respectively have less than 10 years more than 30 years of work experience. Majority of managers in companies that were studied had long years of work experience.

Table 4.5: Experience of respondents

Variable	Measurement scale	Frequency	Percentage
Years of work experience	0-10 Years	**11**	17.5
	11-20 Years	**20**	31.7
	21-30 Years	**27**	42.9
	Over 30 years	**5**	7.9
	Total	63	100

Source: Survey Data (2009)

Table 4.6 presents the frequency distribution of study respondents' job titles. As evidenced, majority of respondents (71.4%) are managers while the rest are CEOs, CFOs and general managers.

4.6 Respondents' title

Table 4.6: Respondents' title

Variable	Measurement scale	Frequency	Percentage
Respondents' title	Manager	45	**71.4**
	CEO	4	6.3
	CFO	9	14.3
	GM	5	7.9

Source: Survey Data (2009)

4.7 Sector in BPR has been implemented

Table 4.7 presents the distribution of the sector in which BPR projects have been implemented in Kenya. Majority (93.7%) of firms listed in the NSE which have implemented BPR projects in the last five years are in industrial and allied, finance and investments and commercial and services sectors.

Table 4.7: Sector in which BPR has been implemented

Variable	Measurement scale	Frequency	Percentage
Sectors where BPR has been implemented	Industrial and Allied	17	27
	Finance and investment	23	37
	Commercial and Services	19	30
	Agricultural	4	6
	Total	63	100

Source: Survey Data (2009)

4.8 BPR Project Reengineered

Respondents were requested to indicate the BPR project that was reengineered in their organization. A summary of the responses are summarized in Table 4.8. As shown, majority indicated that product and service development processes, customer related process and inventory processes were reengineered.

Table 4.8: Business Processes Engineered

Process	Frequency	Rank
Product or service development	27	1
Inventory and distribution channel optimization	14	2
Customer inquiry processing and resolution	11	3
Customer order processing and product delivery	9	4
Human resources acquisition, development, and optimization	1	5
Cash management	1	6

Source: Survey Data (2009)

Respondents were requested to indicate the main incentives for implementing BPR projects in their organization. Slightly more than half (52.4%) indicated competition, while 33%, 11.1%, and 3.2% indicated profitability, customer orientation and market focus respectively. Therefore main drivers for reengineering these processes were industry competitive pressures and the need to improve the bottom-line as presented in Table 4.9. The results point to the fact that Kenyan BPR projects were mainly driven by business outcomes- the need for better performance and competitive pressures as opposed to market and customer orientation.

Table 4.9: The main drivers for re-engineering projects

Drivers	Frequency	Rank
Competitive pressures	33	1
Business outcomes-profits	21	2
Customer orientation	7	3
Market focus	2	4

Source: Survey Data (2009)

4.9 Determinants of BPR Project Success in Kenya

Respondents were requested to indicate, on a 5- point scale ranging from 1 (not all), to 5 (to a great extent) the extent and how well the BPR project team faired on the dimensions summarized in Table 4.10. The results show the average and the standard deviations for the wide collection of items prescribed in literature as important for successful BPR implementation. As can be seen from the mean score on Table 4.10, on average, organizations have to a large extent, used BPR project leaders that have a politically powerful position in the organization hierarchy. The relatively small standard deviation around the average for this item shows that most organizations did that. With a somewhat wider difference (larger standard deviation) in behavior, overage, organizations under study, to a significantly large extent started their BPR projects motivated by competitive pressure and the need for better performance. This is entirely in line with findings on Table 4.9.

On the other hand, BPR project managers ignored some of the literature prescriptions for increasing the likelihood of success of their BPR projects. While the variance from firm to firm is relatively wide, on average organizations have to a small to a moderate extent, followed some of the important prescriptions for success (that is, commitment to continuous improvement, viewing technology not as a solution but as an enabler to implement required business process, performing a thorough process analysis to identify and eliminate process activities which add no value to the ultimate target process beneficiaries, and carefully planning for project details before implementation).

Table 4.10: BPR Success Factors

Success factor	Mean score	SD	Extent of the score	Rank
BPR team was focused on results not politics	2.8	1.26	Moderate	13
BPR project team had representatives from all important departments	3.3	1.22	Moderate	5
Everybody was accountable for accomplishing their tasks and goals	3.4	1.16	Moderate	4
There was good communication among BPR team members	2.9	1.11	Moderate	11
There was good feedback about what was working or not according to project plans	3.2	1.14	Moderate	6
Clear definition of roles/tasks/expectations for the project team members	2.8	1.23	Moderate	13
Team members viewed technology as an enabler, not as a solution	2.7	1.29	Moderate	15
There was a thorough process analysis to identify and eliminate non-value-added activities	2.6	1.23	Moderate	18
There were regularly scheduled meetings between project managers and each level of project structure	3.1	1.22	Moderate	7
There was careful planning for project details such as tooling, scheduling, maintenance, system user interfaces, quality, etc. before new process implementation	2.6	1.12	Moderate	18
Process redesigners knew the processes well from experience	3.6	1.11	Moderate	3
Some process redesigners have best-in-kind process knowledge	3.1	1.27	Moderate	7
Target only a few critical (though cross-functional) business processes	2.9	1.16	Moderate	11
IT people were very competent	3.1	1.20	Moderate	7
IT personnel had a positive attitude	3.0	1.22	Moderate	10
Planning for IT support was highly integrated with planning for reengineering processes	2.7	1.25	Moderate	15
Project leader has a politically powerful position in the organization hierarchy	**4.2**	0.72	Large	1
Organization's commitment to continuous improvement	2.7	1.24	Moderate	**15**
BPR project motivated by need for better performance and competitive pressures	**3.8**	1.26	Large	2

Source: Survey Data (2009)

4.9.1 Factor Analysis on the critical success factors for BPR implementation

In order to reduce and classify the above factors into meaningfully functional categories, factor analysis of the factors deemed for success of implementation of BPR projects in Kenya was done. Preliminary analysis was first conducted to determine whether factor analysis is appropriate. Table 4.11 (in Appendix II) shows the Pearson correlation coefficient between all pairs of questions on success factors (as presented in Section B of the questionnaire) whereas the bottom half contains the one-tailed significance of these coefficients. At the extreme bottom of the table is determinant of the correlation matrix. As shown in the table, none of the correlation coefficients is extremely large (all <0.9) and none of the significance values are >0.05. The determinant listed at the bottom of the table is 0.0005271 which is greater than the necessary value of 0.00001. Therefore, multicollinearity is not a problem for our data. In other words, all the questions in Section

B of the questionnaire (BPR Success Factors) correlate fairly well and none of the correlation coefficients are particularly large; therefore there is no need to eliminate any question at this stage.

Table 4.12 shows the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The KMO statistic is 0.930, indicating that the sum of the partial correlations is small relative to the sum of the correlations, an indicator of non-diffusion in the pattern of the correlations. In other words, the pattern of the correlations is relatively compact and so factor analysis should yield distinct and reliable factors. We are therefore confident that factor analysis is appropriate for this data

Table 4.12: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.930
Bartlett's Test of Sphericity	Approx Chi-Square	19334.492
	Df	71
	Sig	.000

Source: Survey Data (2009)

Table 4.13 lists the eigenvalues associated with the linear component (factor) before extraction, after extraction and after rotation. As shown, before extraction, SPSS identified 19 linear components. The eigenvalue associated with each factor represents the variance explained by the particular linear component. Factor 1 explains 23.01% of total variance. It is clear that the first few explain relatively large amounts of variance as opposed to subsequent once. Factors with eigenvalues greater than one were then extracted, leaving us with only 5 factors. The eigenvalues and the percentage of variance explained associated with the extracted and rotated factors are displayed. It is notable that rotation optimizes and equalizes the factor structure as shown- for instance, before rotation, factor 1 accounted for considerable more variance than the remaining four, however after the extraction it accounts for only 22.44% of variance compared to the rest.

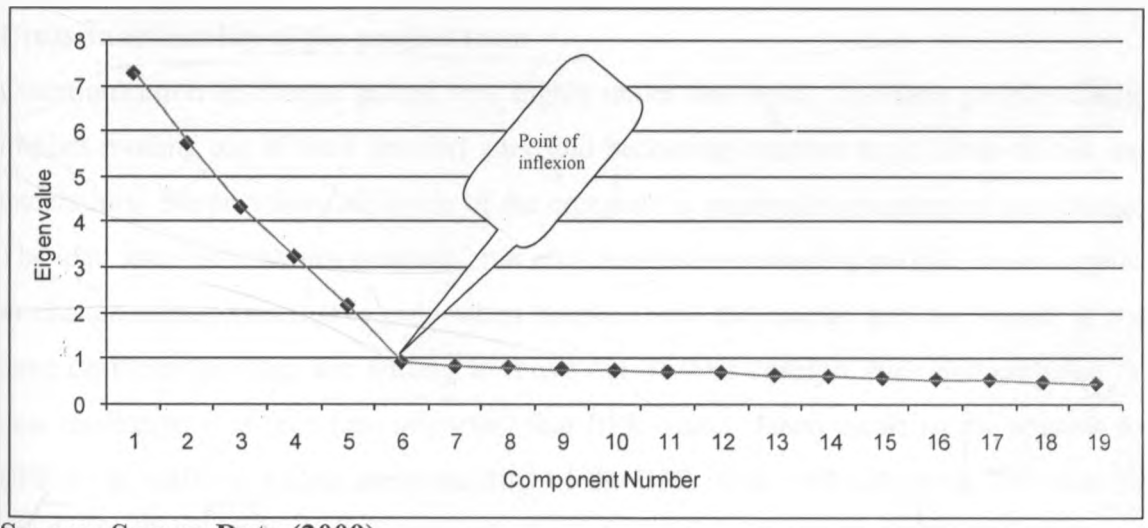
Table 4.13: Factor extraction

	initial eigenvalue			extractions sums of squares loadings			rotations sum of squares loadings		
comonent	total	% of variance	cummulative %	Total	% of variance	cummulative %	total	% of variance	cummulative %
1	7.29	23.01%	23.01%	7.29	23.01%	23.01%	7.11	22.44%	22.44%
2	5.739	18.11%	41.12%	5.739	18.11%	41.12%	5.70	17.99%	40.43%
3	4.317	13.63%	54.75%	4.317	13.63%	54.75%	4.11	12.97%	53.40%
4	3.227	10.19%	64.93%	3.227	10.19%	64.93%	3.36	10.61%	64.01%
5	2.145	6.77%	71.70%	2.145	6.77%	71.70%	2.44	7.69%	71.70%
6	0.895	2.82%	74.53%						
7	0.806	2.54%	77.07%						
8	0.783	2.47%	79.54%						
9	0.751	2.37%	81.91%						
10	0.717	2.26%	84.18%						
11	0.684	2.16%	86.34%						
12	0.67	2.11%	88.45%						
13	0.612	1.93%	90.38%						
14	0.587	1.85%	92.24%						
15	0.549	1.73%	93.97%						
16	0.523	1.65%	95.62%						
17	0.508	1.60%	97.22%						
18	0.456	1.44%	98.66%						
19	0.424	1.34%	100.00%						

Source: Survey Data (2009)

Figure 4.5 presents the scree plot with a pointer to the point of inflexion on the curve. This confirms our choice of five factors as extracted by the PCA.

Figure 4.5: Scree plot



Source: Survey Data (2009)

Table 4.14 presents the Varimax rotated factor matrix. As shown there are five factors and the variables uniquely load very highly onto only one factor. The indicators/

variables that loaded very highly on factor one seem to all relate to BPR cross-functionality and so on. The factor analysis has thus found that cross-functionality of the project team, process used by the project team to implement the BPR project, the expertise available to the project team regarding the processes being reengineered, the quality of the IT support extended to the project; and the project leadership and motivation are the Success Factors of implementing BPR in Kenyan firms listed on the bourse. The following brief discussion presents the rationale for these five factors being critical to the success of BPR projects.

Project leadership and motivation

According to Hammer and Champy (1993), BPR involves a radical rethink of existing functions and operational flows to achieve dramatic involvement. To introduce a complete change from the current practice takes courage from individual staff members and a tremendous amount of support from senior management to fend off resistance and hurdles. The analysis indicates that the most important factor under management commitment was the choice of a politically powerful project leader. It is apparent that once a BPR project receives formal endorsement from senior management, any resistance against it would be seen as acting against the management, or even the company. Nobody would dare to challenge the management, and likewise the BPR activities.

Cross-functionality of the project team

Communication of change scored very highly under this factor. To many people, change implies moving out of their comfort zone and becoming exposed to all kinds of risk and uncertainty. Support from all levels of the company is required to implement any change. The idea that 'information is power' not only applies to managing people, it also applies to change management. It is only when people know the change and the impact it will have on them that they are willing to move out of their comfort zone and embrace the new challenge. It is therefore important that BPR teams clearly explains the reasons for BPR to all staff for a clear understanding of the BPR issues and solutions. The need for regular feedback of progress to all staff cannot be understated.

BPR Process

Thorough process analysis scored very highly under this factor. It is therefore important for BPR project teams to focus on an initial analysis of customer requirements on products, services, and firms that are able to meet customer demand in order to achieve a competitive advantage over their competitors. The finding indicates that BPR projects are about bringing dramatic changes in products and services to better meet customer requirements. Armed with the right products and services that are linked with customer expectations, companies can gain a competitive advantage over their competitors. It is to be expected that BPR is seen as a major management approach to improving customer service by redesigning the workflows with a view to improving both efficiency and effectiveness in serving customers. Building long-term customer relations through providing superior services is key for organizations to remain competitive. It is only by keeping customers that organizations can offer innovative products and services and thus become financially viable in the long run.

Technical Support

There are three variables emphasizing the use of proper IT infrastructure, systems and tools and qualified and competent IT personnel under this factor. The Competency of IT support scored very highly under this factor. It implies therefore that with advances in technology and IT, the bulk of manual work can be replaced by automation. To improve effectiveness and efficiency, automation of manual processes is indispensable. Adequate IT support is therefore one of prerequisites that guarantee the successful implementation of BPR.

Process expertise

Under this factor, the experience and knowledge of the team members played a very critical role. It is therefore important that future BPR projects be composed of teams with reasonable understanding and knowledge of organization process.

The subsequent regression analysis was conducted on the basis of these five subgroups.

Table 4.14: Varimax Factor Rotation

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Items					
Factor 1: Cross-functionality					
BPR team was focused on results not politics	**0.79**	0.17	0.22	0.17	0.07
BPR project team had representatives from all important departments	**0.84**	0.08	0.18	0.23	0.12
Everybody was accountable for accomplishing their tasks and goals	**0.80**	0.16	0.018	0.25	0.13
There was good communication among BPR team members	**0.85**	0.13	0.17	0.23	0.19
There was good feedback about what was working or not according to project plans	**0.75**	0.12	0.08	0.13	0.21
Factor 2: BPR Process					
Clear definition of roles/tasks/expectations for the project team members	0.17	**0.81**	0.14	0.13	0.14
Team members viewed technology as an enabler, not as a solution	0.24	**0.74**	0.15	0.31	0.16
There was a thorough process analysis to identify and eliminate non-value-added activities	0.22	**0.84**	0.13	0.09	0.18
There were regularly scheduled meetings between project managers and each level of project structure	0.32	**0.77**	0.25	0.17	0.13
There was careful planning for project details such as tooling, scheduling, maintenance, system user interfaces, quality, etc. before new process implementation	0.24	**0.67**	0.18	0.28	0.33
Factor 3: Process expertise					
Process redesigners knew the processes well from experience	0.15	0.25	**0.81**	0.11	0.16
Some process redesigners have best-in-kind process knowledge	0.20	0.19	**0.78**	0.23	0.32
Target only a few critical (though cross-functional) business processes	0.21	0.16	**0.76**	0.29	0.08
Factor 4: Technical support					
IT people were very competent	0.14	0.22	0.23	**0.79**	0.07
IT personnel had a positive attitude	0.28	0.26	0.18	**0.71**	0.18
Planning for IT support was highly integrated with planning for reengineering processes	0.33	0.14	0.24	**0.74**	0.13
Factor 5: Leadership/ motivation					
Project leader has a politically powerful position in the organization hierarchy	0.27	0.12	0.17	0.28	**0.75**
Organization's commitment to continuous improvement	0.23	0.18	0.27	0.33	**0.68**
BPR project motivated by need for better performance and competitive pressures	0.16	0.33	0.14	0.26	**0.78**
Notes: Variance explained by each factor: Factor 1=4.57 Factor 2= 4.29 Factor 3= 3.66 Factor 4= 3.39 Factor 5=3.24					

Source: Survey Data (2009)

4.10 The extent to which the BPR project benefits have been derived in Kenya

A list of benefits from BPR implementation identified in the study literature were provided for respondents to rate the extent to which each has been derived from the particular BPR project. The average ratings and the standard deviation for each item across the respondents are shown in Table 4.15. As presented, cost, cycle time and defect reduction and competitiveness were achieved to a large extent. Further, employee productivity, morale and service and product quality improved to a large extent. Notably, customer satisfaction constructs- convenience and responsiveness were achieved to a moderate extent. Overall benefits were derived to a moderate extent. It is notable that a factor analysis with varimax rotation was done on the list of derived benefits, for which one factor solution was achieved. Thus for each questionnaire, the 11 BPR derived benefits were averaged to produce a measure for benefits derived from the BPR project. This measure was used for the regression analysis.

Table 4.15: BPR Benefits

BPR benefits	Mean score	Rank	SD	Comment
Customer convenience	2.8	11	1.33	Moderate
Cost reduction	**3.5**	3	1.19	Large
Cycle time reduction	**3.4**	5	1.20	Moderate
Customer satisfaction level increase	2.9	9	1.32	Moderate
Worker productivity increase and employee morale	**3.3**	6	1.29	Moderate
Defects reduction	**3.6**	2	1.20	Large
Competitiveness	**3.5**	3	1.18	Large
Business leadership/ profitability/ Market share	2.7		1.39	Moderate
Lower inventories- improved logistics	**3.7**	1	1.22	Large
Customer responsiveness	2.9	9	1.32	Moderate
Quality improvements for goods and services	**3.3**	6	1.25	Moderate
Overall BPR benefits	**3.2**	**8**	**1.26**	**Moderate**

Source: Survey Data (2009)

4.11 Testing the relationship between BPR success factors and BPR project benefits

Correlation analysis was used to determine the relationship between the BPR CSFs and BPR project benefits. Specifically, Pearson's correlation coefficients (Table 4.12) were computed to measure the strength of the relationship between each success factor subgroup and the BPR benefits measure. As can be seen from the correlation column of the table, the correlations were significant at 99% level of confidence except for leadership/ motivation which passed the significance test when a 5% error was allowed.

Further, a stepwise multivariate regression analysis was done to assess the percentage of the variance in the BPR benefits measure, which is explained by each success factor subgroup as it entered the regression equation. A total of 79 percent of the variance in the BPR benefits was explained by the success factor sub-groups, providing strong support for the prescriptions on what needs to be done by organizations to increase the likelihood of BPR project benefits. Of this 79%, cross-functionality and BPR process accounted for 45% and 16% respectively while the contribution of the rest- process expertise, technical support and leadership were relatively negligible, at 9%, 6% and 3% respectively. The results are summarized in Table 4.16.

The results of the regression analysis show that BPR project cross-functionality and BPR process are the most significant predictors of quality, customer and profitability oriented firm performance. This is consistent with previous research findings. Scherr (1993) asserted that customers must be used as a perspective point in any BPR initiative. Hall and Wake (1993) argued that for BPR to be successful, redesigning efforts must be concentrated on areas that have the most direct impact on customer value and cost.

Contrary to the popular perception, the findings indicate that project leadership and motivation is not a significant predicator of firm performance (at 99% level of significance). It is therefore conclusive to say that the benefits of management commitment can only be exploited if core customer-related processes are targeted. These

processes must contribute to the organization's sustainable competitive advantage and customer satisfaction. Under these circumstances, management commitment also acts as an 'enabler' in utilizing existing technology and systems.

Table 4.16: Correlation and regression tests between BPR success factors and the BPR benefits

Dependent Variable: BPR Benefits	Standardized coefficient β	t	Correlation coefficient	Incremental R^2	Significance Level
Independent variables[***]					
Cross-functionality	0.321	6.07	0.69**	0.45	0.000
BPR Process	0.293	5.52	0.57**	0.16	0.000
Process expertise	0.172	4.68	0.25**	0.09	0.001
Technical support	0.133	4.07	0.30**	0.06	0.003
Leadership/ motivation	0.49	1.88	0.19*	0.03	NS
Total variance				0.79	

Notes: [***] the sequence in which they entered the regression equation; NS= not significant *p<0.05, **p<0.01

Source: Survey Data (2009)

4.12 BPR implementation Challenges in Kenya

Respondents were requested to rate on a five point scale, the extent to which their BPR teams experienced a number of pre-determined challenges during the project implementation. A wide ranging implementation difficulties were reported but after analysis, the results pointed to four main challenges that the respondents experienced to a large and very large extents. Of these four, 36.5% indicated strong commitment to existing process, 27% mentioned resistance to change within the ranks of the organization while 25.4% were of the opinion that the process was too much consultant led and dominated. The results imply that the company cultures of the organizations that have implemented BPR projects in Kenya were not ready for change. It is therefore important that culture transformation process precede BPR initiatives well in advance. The results are presented in Table 4.17.

Table 4.17: BPR implementation Challenges

Challenge	Frequency (large and very large extents)	Percent
Commitment to existing processes too strong	23	36.5
Resistance to change within the organization	17	27.0
Consultants led/ dominated process	16	25.4
Over trust in technology solutions	7	11.1

Source: Survey Data (2009)

CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

On demographics, majority of the managers of who participated in BPR implementation in Kenya are males aged between 30 and 50 years with graduate and post-graduate university level of education in computer science and engineering fields. In addition, they were mainly managerial staff with more than 10 years of work experience.

Product and service development, customer related process and inventory processes were the main projects reengineered in Kenya. Reengineering these processes were mainly driven by competition, profitability and customer focus.

Respondents were requested to indicate, on a 5- point scale (ranging from 1 (not all), to 5 (to a great extent) the extent and how well the BPR project team faired on the dimensions summarized in Table 4.6. The results show the average and the standard deviations for the wide collection of items prescribed in literature as important for successful BPR implementation. As can be seen from the mean score on Table 4.6, on average, organizations have to a large extent, used BPR project leaders that have a politically powerful position in the organization hierarchy. The relatively small standard deviation around the average for this item shows that most organizations did that. With a somewhat wider difference (larger standard deviation) in behavior, overage, organizations under study, to a significantly large extent started their BPR projects motivated by competitive pressure and the need for better performance. This is entirely in line with findings on Table 4.5.

On the other hand, BPR project managers ignored some of the literature prescriptions for increasing the likelihood of success of their BPR projects. While the variance from firm to firm is relatively wide, on average organizations have to a small to a moderate extent, followed some of the important prescriptions for success (that is, commitment to continuous improvement, viewing technology not as a solution but as an enabler to

implement required business process, performing a thorough process analysis to identify and eliminate process activities which add no value to the ultimate target process beneficiaries, and carefully planning for project details before implementation).

The factor analysis found that cross-functionality of the project team, process used by the project team to implement the BPR project, the expertise available to the project team regarding the processes being reengineered, the quality of the IT support extended to the project; and the project leadership and motivation are the CSFs of implementing BPR in Kenyan firms listed on the bourse. On project leadership and motivation, the analysis indicates that the most important factor was the choice of a politically powerful project leader. Therefore, once a BPR project receives formal endorsement from senior management, any resistance against it would be seen as acting against the management, or even the company. On Cross-functionality of the project team, communication of change scored very highly under this factor. It is therefore important that BPR teams clearly explains the reasons for BPR to all staff for a clear understanding of the BPR issues and solutions. The need for regular feedback of progress to all staff cannot be understated.

On BPR Process, thorough process analysis scored very highly under this factor. It is therefore important for BPR project teams to focus on an initial analysis of customer requirements on products, services, and firms that are able to meet customer demand in order to achieve a competitive advantage over their competitors. The finding indicates that BPR projects are about bringing dramatic changes in products and services to better meet customer requirements. On Technical Support, the Competency of IT support scored very highly under this factor. It implies therefore that to improve effectiveness and efficiency, automation of manual processes is indispensable. Adequate IT support is therefore one of prerequisites that guarantee the successful implementation of BPR. The experience and knowledge of the team members played a very critical success role in BPR project implementation. It is therefore important that future BPR projects be composed of teams with reasonable understanding and knowledge of organization process.

BPR benefits; cost, cycle time and defect reduction and competitiveness were achieved to a large extent in companies that have implemented BPR projects in Kenya. Other benefits include improved employee productivity, morale and service and product quality. However, customer satisfaction constructs- convenience and responsiveness were achieved to a moderate extent.

On the relationship between BPR success factors and BPR project benefits, Pearson's correlation coefficients were highly significant (99% level of confidence) except for leadership/ motivation which passed the significance test when a 5% error was allowed. A stepwise multivariate regression analysis showed that BPR cross-functionality and BPR process are the most significant predictors of quality, customer and profitability oriented firm performance. This is consistent with previous research findings. Scherr (1993) asserted that customers must be used as a perspective point in any BPR initiative. Hall and Wake (1993) argued that for BPR to be successful, redesigning efforts must be concentrated on areas that have the most direct impact on customer value and cost.

Contrary to the popular perception however, the findings indicate that project leadership and motivation is not a significant predicator of firm performance (at 99% level of significance). It is therefore conclusive to say that the benefits of management commitment can only be exploited if core customer-related processes are targeted. These processes must contribute to the organization's sustainable competitive advantage and customer satisfaction. Under these circumstances, management commitment also acts as an 'enabler' in utilizing existing technology and systems.

Strong commitment to existing process, resistance to change and consultant led and dominated processes were the main BPR implementation challenges in Kenya. The results imply that the company cultures of the organizations that have implemented BPR projects in Kenya were not ready for change. It is therefore important that culture transformation process precede BPR initiatives well in advance. The results are presented

5.2 Conclusions

The results indicate that many organizations have derived substantial benefits from implementing BPR projects though some have not. On an average scale, the total benefits are only average. The relatively wide diversity of the extent to which organizations are deriving BPR Benefits is evidenced in the relatively large standard deviations as reported in Table 4.6. The specific benefits which have been derived somewhere between a "moderate extent" and a "major extent" as represented by increases in productivity, improved competitiveness, reduced cost and improved service quality and improvements on staff morale. However, the benefits accruing to customers; satisfaction, convenience, and responsiveness from the reengineered processes and company profitability and market share have, on average, have only been derived only to a "moderate extent".

Organizations that have implemented BPR projects in Kenya have shown significant diversity (relatively large standard deviations) in implementing what has generally been recommended in literature as important for successful BPR projects. On average, organizations have "to a large extent" used BPR project leaders that have politically powerful positions in the organization hierarchy. The relatively small standard deviation around the average for this item implies that most organizations did that. With a somewhat wider difference (larger standard deviation) in behavior, on average, organizations have to a significant extent started their BPR projects motivated by competitive pressure and the need to better performance.

On the other hand, BPR project managers ignored some of the literature prescriptions and recommendations for success.

Based on the statistical factor analysis in Table 4.6, the items prescribed in literature as important for BPR success belong together as five separate subgroups covering:

i. cross-functionality of the project team;
ii. the process used by the project team to implement the BPR project;
iii. the expertise available to the project team for the process being re-engineered;
iv. the quality and the suitability of the IT support extended to the project;

v. the project leadership and the motivation for the project.

These five groups account for a significant (79%) of the variance in the benefits derived from BPR projects. Thus, it is imperative for top managements of organizations intending to implement BPR projects to focus attention on the individual factors composing these groups, to ensure that before embarking on large and expensive BPR projects their organizations have most of these requirements for success in place. The results support the notion that ensuring project functionality is extremely important.

The implementation difficulties tend to suggest that insufficient time is expended at the start of BPR projects to set strategic targets and plan accordingly. The focus of achieving quick results by adopting IT-based solutions probably leads to enhanced peoples' attachment to previous processes and fear of the unknown following a reengineering process. The fact that most of the BPR projects are led and dominated by consultants ultimately heightens staff resistance to change. This indeed has huge implications on the ultimate outcome of the process and deters BPR success if not addressed early in the process.

5.3 Recommendations

From the foregoing, it can be recommended that BPR project managers pay special attention to factors related to project functionality. It is important that the project team is focused on accomplishing BPR project results not worrying about the politics within the BPR project team or within the particular department which the individual team members are representing. Further, the team should have representatives from all the departments related to the process being reengineered, and these representatives must be taught to communicate freely, receive and provide feedback on work progress and what is working (or not) according to the project work plans. BPR project members should also be made aware that accountability for accomplishing their tasks and goals is an important ingredient for ultimate team success.

Equally significant in deriving BPR success is the BPR process implementation- what the BPR project team must do in order to effectively and efficiently perform and deliver their duties. These groups of prescribed factors are strongly correlated with the extent to which BPR projects are derived, therefore the project team should:

1. Clearly define the roles of, tasks and expectations for the project team members and the project team as a whole;
2. Perform a thorough process analysis to identify and eliminate non-value-added activities as integral part of the process design effort;
3. Have regularly scheduled meetings between project managers and team members, and for larger projects, meetings between managers and each level of project organization structure;
4. Develop a detailed plan covering specific requirements such as personnel, tools, software, procedures, schedules, maintenance, system user interfaces, quality before the project implementation phase starts;
5. Keep in mind that technology alone is never to be accepted as a solution but as an as an enabler for new and redesigned business processes.

The other three sets of factors studied (process expertise, technical support and project leadership and motivation) were not as strongly correlated with the extent to which organizations derived BPR benefits. A prima-facie interpretation of the finding is that these factors are not as important as team cross-functionality and how BPR project team works. However, a more likely explanation may be that the standard deviations for two of these factors (process expertise and project leadership/ motivation) are relatively low, indicating that most organizations performed along these factors "to a moderate extent" or higher. In that case, the reason for lower benefits from BPR must be explained by something else, such as how team cross-functionality and how the BPR team worked. Nevertheless, it is important that organization top leadership continue to strive to improve their BPR team performance in terms of proper expertise; not attempting to reengineer large collection of processes all at once; work in close cooperation with IT department in general, and particularly with BPR project IT requirements planners; provide top down

leadership and commitment to continuous improvement for organization business processes, and select BPR projects which have strategic importance.

The CSFs of implementing BPR identified in this study can be used as a planning tool for organizations that wish to implement BPR programmes. By using the CSFs as guidelines, management of organizations should be able to pinpoint problems that require immediate attention. Managers can also use this instrument to evaluate the readiness for BPR implementation within their organizations or departments.

5.4 Limitations of the Study

The study has no doubt contributed significantly to the understanding of BPR projects implementations in Kenya. However, there are some limitations to the interpretations of the study results. It is notable that this study collected only perceptive information from company personnel who participated in BPR projects. The self-reporting data only offered a one-dimensional perspective on the research topic. As the success of BPR implementation demands organization-wide support, it would be desirable to obtain a wider range of information from different parties within an organization.

Respondents could be subject to other sources of bias, such as pressure from top management to provide positive feedback or negative feelings towards top management that could have distorted the feedback.

5.5 Recommendations for Future Study

The scope of the current study was limited to the responses of managers of companies that have implemented BPR projects in the country for the last five years. Future research could expand this scope to include vendors, consultants and end users of BPR.

Further, new BPR success factors may emerge in the future due to changes in regulations, managerial policy and new technologies. Researchers must continue to their efforts to identify such success factors and empirically test their importance in practice.

Also, there is need to for longitudinal studies to more clearly establish the cause and effect relationships between the main variables in this study. Further, multivariate statistical analysis should be conducted to identify variables which may have mediating and/ or moderating effects in the relationship between the determinants of BPR success studied and the actual BPR benefits.

It is strongly recommended that confirmatory factor analysis be conducted for any future studies when larger based samples can be obtained.

Overall, despite the aforementioned limitations, this research study makes significant contribution to empirically testing the factors determining organization BPR implementation success in Kenya.

Hopefully this study will provide impetus for future research with an aim to gain a better understanding of BPR management. Further research will shed more light on the long-term implications of BPR implementation and its effectiveness.

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APPENDIX I: QUESTIONNAIRE

PRELIMINARY INSTRUCTIONS TO RESPONDENTS

Please Select a recently concluded reengineering project in which you participated as a team member as the basis for answering all items on the questionnaire.

SECTION A: BACKGROUND DATA

1. Company name: .....
2. Sector/ industry in which your company is classified

   {A} Industrial and Allied [ ]
   {B}Finance & Investment [ ]
   {C}Commercial & Services [ ]
   {D} Agricultural [ ]
   {E} Any other (specify)..... [ ]
3. Organization size (number of employees).....
4. Indicate the number of years you worked with company.....
5. Highest level of education attained

   {A} Post graduate [ ]
   {B} University Graduate [ ]
   {C} Tertiary College [ ]
   {E} Secondary school [ ]
   {F}Primary school [ ]

6. Age of respondent.....
7. Title of respondent.....
8. Gender: Male [ ] Female [ ]
9. Professional qualifications (please specify)

   Accountant [ ]
   Computer scientist [ ]
   Lawyer [ ]
   Engineer [ ]
   Others (please specify) .....

BPR PROJECT REENGINEERED

10. What were the main drivers for re-engineering the most reengineering project undertaken by the company?.....

11. For the most recently concluded BPR project, please indicate the processes that were engineered (tick all that apply)

Customer inquiry processing and resolution	[ ]
Customer order processing and product delivery	[ ]
Human resources acquisition, development, and optimization	[ ]
Inventory and distribution channel optimization	[ ]
Just-in-time purchasing	[ ]
Product manufacturing	[ ]
Cash management	[ ]
Product or service development	[ ]

SECTION B: BPR SUCCESS FACTORS

12. On the scale provided, please indicate the extent to which the BPR project team faired on the dimensions enumerated in the table below

1 (not all), 2 (to a minor extent), 3 (to a moderate extent), 4 (to a large extent), and 5 (to a great extent)

Dimensions					
	1	**2**	**3**	**4**	**5**
BPR team was focused on results not politics					
BPR project team had representatives from all important departments					
Everybody was accountable for accomplishing their tasks and goals					
There was good communication among BPR team members					
There was good feedback about what was working or not according to project plans					
Clear definition of roles/tasks/expectations for the project team members					
View technology as an enabler, not as a solution					

There was a thorough process analysis to identify and eliminate non-value-added activities					
There were regularly scheduled meetings between project managers and each level of project structure					
There was careful planning for project details such as tooling, scheduling, maintenance, system user interfaces, quality, etc. before new process implementation					
Process redesigners knew the processes well from experience					
Some process redesigners have best-in-kind process knowledge					
Target only a few critical (though cross-functional) business processes					
IT people were very competent					
IT personnel had a positive attitude					
Planning for IT support was highly integrated with planning for reengineering processes					
Project leader has a politically powerful position in the organization hierarchy					
Organization's commitment to continuous improvement					
BPR project motivated by need for better performance and competitive pressures					

SECTION C: BPR BENEFITS

13. Please indicate the extent to which the goal(s) of reengineering have been fulfilled. Leave blank if the presented goal was not applicable to your project.

1 (not all), 2 (to a minor extent), 3 (to a moderate extent), 4 (to a large extent), and 5 (to a great extent)

BPR benefits	1	2	3	4	5
Customer convenience					
Cost reduction					
Cycle time reduction					

Customer satisfaction level increase					
Worker productivity increase					
Defects reduction					
Competitiveness					
Sales/ revenues					
Business leadership					
Lower inventories- improved logistics					
Customer responsiveness					
Effectiveness					
Others (please specify)					

SECTION D: BPR IMPLEMENTATION CHALLENGES

14. Please enumerate the extent to which your BPR team experienced the following challenges during the project implementation

To a very great extent [5].... to a very small extent [1]

	5	4	3	2	1
{A}Desire to Change Not Strong Enough	[ ]	[ ]	[ ]	[ ]	[ ]
{B}Commitment to Existing Processes Too Strong	[ ]	[ ]	[ ]	[ ]	[ ]
{C} Quick Fix Approach	[ ]	[ ]	[ ]	[ ]	[ ]
{D} Inadequate Preparation (Vision, Policies, and Capacity)	[ ]	[ ]	[ ]	[ ]	[ ]
{E}The Costs of the Change Seem Too Large	[ ]	[ ]	[ ]	[ ]	[ ]
{F}BPR Isolated Activity not aligned to the Business Objectives	[ ]	[ ]	[ ]	[ ]	[ ]
{G} Lack of top management support/ leadership	[ ]	[ ]	[ ]	[ ]	[ ]
{H} Consultants led/ dominated process	[ ]	[ ]	[ ]	[ ]	[ ]
{I} Poor project management	[ ]	[ ]	[ ]	[ ]	[ ]
{J} Exaggerated expectations on the potential benefits	[ ]	[ ]	[ ]	[ ]	[ ]
{K}Resistance to change within the organization	[ ]	[ ]	[ ]	[ ]	[ ]

{L} Implementation of generic best-practice processes that do not fit specific company needs. [ ][ ][ ][ ][ ]

{M}Over trust in technology solutions [ ][ ][ ][ ][ ]

{N}Performing BPR as a one-off project with limited strategy alignment and long-term perspective. [ ][ ][ ][ ][ ]

{O} BPR Goals were not clear [ ][ ][ ][ ][ ]

{P} BPR not customer-centric [ ][ ][ ][ ][ ]

{Q}Poor communication [ ][ ][ ][ ][ ]

{R} Insufficient training [ ][ ][ ][ ][ ]

{S} Ineffective project work-groups / lack of dedicated teams [ ][ ][ ][ ][ ]

{T} Cross-functional barriers [ ][ ][ ][ ][ ]

{U} Management interference [ ][ ][ ][ ][ ]

{V} others (please specify)

..... [ ][ ][ ][ ][ ]

..... [ ][ ][ ][ ][ ]

APPENDIX II: LIST OF COMPANIES THAT HAVE IMPLEMENTED BPR

1. KPLC
2. BIDCO Oil Refineries Ltd
3. Rockland (K) Ltd
4. Bridges Exploration Ltd
5. KQ
6. Mumias Sugar Ltd
7. KCB
8. Equity Bank
9. Barclays Bank of Kenya
10. Standard Chartered Bank
11. Sameer Africa Ltd
12. Mearsk Kenya Ltd
13. Ruby Baraka Mining & Minerals Ltd
14. Bridges Exploration Ltd., P.O. Box 49192, Nairobi Green Garnet &
15. Geo-Exploration Mining Co. Ltd., P.
16. Kutima Investments Ltd.,
17. Amhar Gem Centre (K) Ltd., P.O. Box 13407,
18. Bridges Exploration Ltd.
19. Muthama Gemstones (K)
20. Swastik Kenya Gems Ltd
21. Ketepa Ltd
22. Bayer East Africa Limited
23. Beta Healthcare (Shelys Pharmaceuticals)
24. Cosmos Limited
25. Dawa Pharmaceuticals Limited
26. Elys Chemical Industries Ltd
27. Glaxo SmithKline
28. Mac's Pharmaceutical Ltd
29. Phillips Pharmaceuticals Limited
30. Regal Pharmaceutical Ltd

APPENDIX III: RESULTS

Table 4.1: Gender of respondents

Variable	Measurement scale	Frequency	Percentage
Gender	Male	43	**68.3**
	Female	20	31.7
Age	0-30	11	17.5
	31-40	30	**47.6**
	41-50	20	**31.7**
	Above 50	2	3.2
Highest level of education	Secondary	1	1.6
	Tertiary	3	4.8
	University Graduate	32	**50.8**
	Post Graduate	27	**42.9**
Profession	Accountancy	9	14.3
	Computer science	19	**30.2**
	Law	7	11.1
	Engineering	22	**34.9**
	Economics	4	6.3
	Others	2	3.2
Experience	0-10	11	17.5
	11 – 20	20	**31.7**
	21 – 30	27	**42.9**
	Over 30	5	7.9
Respondents' title	CEO	4	6.3
	CFO	9	14.3
	GM	5	7.9
	Manager	45	**71.4**
Sector	Industrial and Allied	17	**27.0**
	Finance & Investment	23	**36.5**
	Commercial & Services	19	**30.2**
	Agricultural	4	6.3

Table 4.11: Correlation Matrix

		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19
Correlation	Q1	1.00	-.90	.10	.42	43	.305	.19	.15	-.12	.37	.305	-.41	.32	.21	.50	.36	-.61	-.16	.37
	Q2	-.09	1.00	-.34	-.12	.25	.33	.23	.12	-32	-.12	-.09	.03	-.34	-.12	-.20	-.19	.34	-32	-.12
	Q3	-.34	.32	1.00	-.38	-.56	-.09	.45	.62	-.36	.20	-.34	.32	0.26	-.38	-.16	.34	.25	-.36	.20
	Q4	.44	.43	.305	1.00	.09	43	.21	.37	-.61	.34	.44	43	.305	.04	.305	.35	.50	-.61	.34
	Q5	.40	.25	.33	.40	1.00	.44	.35	-.16	-17	-.19	.40	.25	.33	40	-.19	.26	.37	-17	-.19
	Q6	.22	-.56	-.09	.28	.18	1.00	.21	.305	-.24	-.17	.22	- 56	-.09	.28	-.35	.40	.37	-.24	-.17
	Q7	.305	-.32	.21	.50	.34	.22	1 00	.33	.23	-.16	.31	-.32	.21	.50	-.13	.31	-.19	.23	-.16
	Q8	.33	-.12	.36	.37	.37	.07	.05	1.00	.29	.47	.29	.25	.33	.23	-.20	-.19	.21	-.10	.04
	Q9	-.09	-32	.34	.37	-.09	1.00	-.34	-.12	1.00	.17	38	-.56	-.09	.45	.37	-.16	-.13	.31	-.05
	Q10	.21	-.36	-.20	-.19	-.34	.32	1.00	-.38	-.10	1.00	41	.09	.43	.21	.37	.305	-.41	.32	-.06
	Q11	.36	-.61	-.16	.34	.44	.43	.305	1.00	-.08		1.00	.22	.15	.49	-.19	.33	-.32	.09	-.06
	Q12	.34	-17	.305	.35	40	.25	.33	.40	-.34	.32	.17	1.00	.16	.23	.21	-.26	-.42	.03	-.09
	Q13	.25	-.24	-.19	.26	.22	-.56	-.09	.28	.44	.43	.31	.27	1.00	- 03	-.03	43	.47	- 10	-.04
	Q14	.50	-.20	-.35	.40	.305	-.32	.21	.50	.40	.25	.33	.19	.23	1.00		-.06	-.19	-.61	-.16
	Q15	.37	-.16	-.13	.31	-.09	.28	.18	.305	-.41	-.56	-.09	.28	34	.15	1.00	.03	.34	-17	.305
	Q16	.37	.305	-.41	.32	.21	.50	.34	.33	-.32	-.32	.21	.50	.305	.33	.51	1.00	.35	-.24	-.19
	Q17	-.19	.33	-.32	.09	.36	.37	.37	-.26	-.42	-.12	.36	.37	.33	.40	.19	.02	1.00	-.05	-.07
	Q18	.21	-.26	-.42	.03	.34	.37	-.09	-.37	.27	.43	.16	.19	-.09	.28	.01	.06	.51	1.00	.23
	Q19	-.10	-.15	.15	.42	.14	.16	.28	-.33	-.20	-.35	.40	.305	-.32	.21	.09	.05	-.21	-.39	1.00
Sig (1-tailed)	Q1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00
	Q2		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q3		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0 00	0.00
	Q4		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0 00	0 00	0.00
	Q5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q6		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q7		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0 00	0.00
	Q8		0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q9		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00
	Q10		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q11		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00
	Q12		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q13		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q14		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q16		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q17		0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q18		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Q19		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Determinant = 5.271E-04

Source: Survey Data (2009)