

**INFLUENCE OF AUTOMATION ON THE INTERNATIONAL
OPERATIONS OF IQPLUS (K) LIMITED**

BY

NG'ANG'A OSCAR GITHINJI

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS
ADMINISTRATION DEGREE, SCHOOL OF BUSINESS, UNIVERSITY OF
NAIROBI**

OCTOBER, 2013

DECLARATION

This research project is my original work and has not been presented for examination in any other university

Signature: _____

Date: _____

NG'ANG'A OSCAR GITHINJI

D61/62001/2010

This research project has been submitted for examination with my approval as university supervisor

Signature: _____

Date: _____

LECTURER

DR. JOHN YABS

SCHOOL OF BUSINESS

UNIVERSITY OF NAIROBI.

ACKNOWLEDGEMENTS

I wish to thank The Almighty God for His grace and favour upon me all this while. I wish to express my gratitude to my supervisor; Dr. John Yabs for his professional guidance and motivation that enabled me compile this project. I also extend gratitude to my parents for their unending support throughout my education.

DEDICATION

I dedicate this project to my mother, Lucy Muthoni Ng'ang'a and the faculty of business and administration at the University of Nairobi for being a strong pillar stone throughout my MBA course. I have been deeply humbled by the knowledge acquired and support accorded to me during my studies at the university.

ABSTRACT

Automation has proved to be very critical in increasing the efficiency in most business processes leading to an increase in sales, profits and relative growth in market share of most companies. The objective of the study was to identify to determine the influence of automation on international operations of IQPlus (K) limited and the challenges of automation of business processes. IQPlus is a private company in Kenya have overseen full automation of all key processes in the organization. As much as IQPlus (Kenya) Limited has fully automated its systems, a lot still needs to be done to seal the gaps on all key business operations that needs to be automated to manage international operations.

The study adopted a descriptive survey design. Data was collected from the use of an interview guide with the respondents being from the managerial positions. Analysis of data collected was compared with the theoretical approaches and documentations cited in the literature review. Results from the study shows that automation of business process helps IQPlus in gaining a competitive advantage internationally as the decision makers track the market trends together with the marketing activities of rivals both local and at the international level. Further results indicate that automation leads to improvement IQPlus improving their sales performance internationally. Findings also show that automating manual process as indicated by the respondents helps in lowering management costs, increases quality and controls access to very important and confidential data. Automation can be a solution to companies desiring to gain a competitive advantage through increased productivity and profitability. Respondents highlighted major challenges that they face in IQPlus Kenya when automating its business processes are high resistance by staff and lack of adequate resources.

TABLE OF CONTENTS

Declaration	ii
Acknowledgement.....	iii
Dedication	iv
Abstract.....	v
Acronyms.....	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study.....	1
1.1.1 The Concept of International Business	2
1.1.2 Information Communication and Technology Industry	6
1.1.3 IQ Plus (Kenya) Limited.....	7
1.2 Research Problem.....	9
1.3 Research Objective.....	11
1.4 Value of the study	11
CHAPTER TWO: LITERATURE REVIEW.....	13
2.1 Introduction	13
2.2 Theoretical Underpinnings.....	13
2.2.1 Theory of Absorptive Capacity.....	13
2.2.2 Resource Based View Theory.....	14
2.2.3 Diffusion of Innovation Theory	15
2.3 Automation Timeline	16
2.4 Challenges of Automation.....	17
2.5 Automation and Business Process Efficiency.....	19
CHAPTER THREE: RESEARCH METHODOLOGY	22
3.1 Introduction	22

3.2	Research Design.....	22
3.3	Data Measurement.....	22
3.4	Data Collection.....	23
3.5	Data Analysis	23
3.6	Validity and Reliability	23
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION		24
4.1	Introduction	24
4.2	Basic Information.....	24
4.3	Influence of Automation on the International operations of IQPlus (K) Limited.....	25
4.4	Summary of Findings	29
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....		33
5.1	Introduction	33
5.2	Summary	33
5.3	Conclusions	35
5.4	Implication of Results	36
5.5	Recommendations	36
5.6	Areas for Further Studies	37
REFERENCES.....		39
Appendix I: Interview Guide		43

ACRONYMS

CRM: Customer Relationship Management

SCM: Supply Chain management

ERP: Enterprise Resource planning

ICT: Information & Communication Technology

KRA: Kenya Revenue Authority

RBV: Resource-based view theory of the firm

TQM: Total Quality Management

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the contemporary business environment, the need for automation cannot be over emphasized. Automation has proved to be very critical in increasing the efficiency in most business processes leading to an increase in sales, profits and relative growth in market share of most companies (Lifehack, 2012) However, these benefits can only accrue as a result of correct and precise implementation of relevant methods of automation. Correct and relevant methods of automation refer to the adoption of the best and most efficient way of automation. Businesses should aim at ensuring that the software they choose for automation is the best fit for that particular organization and that it ultimately leads to the increase of efficiency in that organization. What should be avoided at all times is automating just for the sake of it; Clear cut plans should be drawn to ensure that the best fit software for the organization is implemented (Aron, Clemons, & Reddi, 2005). This study seeks to find out both the positive and negative effects that would result from automation of key business processes and operation by international businesses. The study will attempt to gather facts and figures on the effects of automation on international businesses. Using IQPlus as the case firm, the study examines the requirements for automation, processes that may be automated, the departments involved in automation, the best-practice in automation, and the best implementation process (Benaroch et al., 2007).

The researcher hopes that the study will serve as a reference point for future businesses who wish to adopt automation of business processes to strengthen their operations and increase productivity of their businesses.

1.1.1 The Concept of International Business

In international business, automation involves delivery of efficient and consistent performance. Various cases on automation in the international business show that automation of key business processes improves productivity, minimize occurrence of human errors, reduce overall staff workload, enhance disaster recovery effectiveness, and increase overall application and system availability. In turn, these enable better control of technology on business, reduce operational and staff expense, timely response to business and technical problems, and increase line profitability for the firm. The list of firms that have implemented system automation successfully is endless, and so is the list of failures (Gebauer & Scharl, 1999). It is imperative that a firm understands which business processes to automate and the best practice approach.

A prime example is Coca Cola. The company began automating most of its business processes, including manufacturing and auditing processes. In 2008, the giant soft drink maker advanced its automated expense reporting to over one million transactions in North America. Practically, the automated system reduced the workforce by over 100,000 employees. Other international firms with automated include Google, Apple, Toyota, and Microsoft, among others. Analysis of firms with successful system automation shows that effective automation approach provides visibility of the health of application and other resources, control of applications and systems, and reacts to change to facilitate continuity of business and IT operations. This essentially revolves around organizational theory. In

essence, organizational theory refers to the study of organizational structures and designs, their relationship with the external environment, and the overall behaviour of stakeholders within the organization. This theory is paramount to this study. With IQPlus as the case study, this study seeks to understand the impact of automation on efficiency of the organization.

In terms of efficiency, an end-to-end systems automation approach in an international business reaches across the mainframe and distributed environments of the enterprise with a distinguished scalability that can accommodate the largest IT infrastructures. Its scope is broad to manage the ever-increasing complexity of IT complexity. In international business, multinationals organizations can implement system automation that integrates all the low-level information from critical resources with high-level control and view of the business. The efficiency logic in this instance is that the whole system is greater than the sum of its individual parts, a strategy that facilitates operational efficiency, consistency, and simplicity (Premaratne, 2009).

In the current global business environment, organizations need to be ready to conduct business. The nature of international business means that partners, customers, and vendors are everywhere, which further increases the need for consistent access to business application and systems. Most importantly, businesses need tools to collect, interpret, understand, and process the data they receive. In essence, interconnected, intelligent, and instrumented automation systems provide organizations with an unprecedented scale of information (Stohr & Zhao, 1997).

Automation, which largely falls under the Information and Communication sector, is slowly penetrating the industry. Today, Kenya is considered one of the most dynamic economies in east and Central Africa, with significant contribution from the ICT development over the past decade. The country is set to be the ICT hub in the region. In 2008, the country set out to complete on the global stage in several areas. First, the country created the Vision 2030 goals, which seek to position the republic as one of the most industrialized nations in the region. The government seeks to increase the contribution of the ICT industry to the country's GDP from the current 3% to 10% by 2015. In the past five years, the country increased its internet access and bandwidth with the addition of two undersea fibre-optic cables. Most importantly, the Kenya Information and Communication Technology Board is spearheading efforts to develop digital villages in rural areas.

Automation is the use of control systems to control processes, reducing the need for human intervention (Nof, 2009). Putting this into context, automation is having technology do things for you so that you don't have to. In this study we'll focus on automation in terms of companies adopting enterprise systems. These are software packages used for data storage and computational of information technology. With these packages, all employees of the company are able to communicate since all the data is collected and made accessible by and to all departments (Benaroch et al., 2007).

There are different types of enterprise systems namely; Customer Relationship Management (CRM) which track customer experience with an aim of delivering better services to the customer, Supply Chain management (SCM) which handles supply automation and Enterprise Resource planning (ERP) which combines all the functional areas that would be easily accessible to the employees of the enterprise. All these when done in a firm end up

improving efficiency and ultimately leading to increased profits, turnover and market share of that company (Gebauer, & Scharl, 1999).

Not many firms in Kenya have adopted automation to increase their efficiency e.g. According to Kinyanjui and McCormick (2002) the textile and apparel industry in Kenya, who have automated their operations to come up with an automated system, only 33 % of them have implemented automation as a way of improving services and increasing efficiency. Generally, most firms are struggling to adopt automation despite its proven benefits. Kenya government has taken a pioneering step by automating its key operations coming up with an e-government platform where most of its services can now be accessed online. However, gaps still remain as to which is the best way for Kenyan firms to approach automation. Recent studies have not fully underlined the best way to do it and it's the purpose of this study to address this.

Most international firms aim at achieving maximum if not full automation of their key business processes. From the departments of sales to even customer relations, most international firms will aim at ensuring manual processes are eliminated and full automation is achieved. E.g. many supermarkets and even smaller stores are rapidly introducing self check out systems and thus reducing the need for employing check out workers (Stohr & Zhao, 1997).

Wal-Mart, for example, was able to reclaim the top spot in 2012 in the annual ranking of fortune 500 companies as a result of successful implementation of automation. It was able to grow its sales by 5.9% to \$443.9 billion ("Wal-Mart Stores - Fortune 500 2013 - Fortune", 2013). Through the adoption of automation, the international firms aim at first increasing

productivity. Moreover, automation increases quality of the goods that the firm produces and also the predictability of that quality. Some firms have also reduced their labour costs and other expenses as a result of the adoption of automation (SMC Data Systems, 2010)

However, as much as there are benefits associated with automation, there are also disadvantages (Bussler & Stefan, 1994). One major limitation of any automated process is that an automated system will have limited level of intelligence and thus be prone to errors as it's unable to apply reasoning outside its scope of knowledge. Another drawback is the expensive nature in regards to the adoption of automation. For instance, the research and development costs may surpass the cost saved by adoption of the automated process e.g. installing a very expensive ERP system and your operations are very small to warrant such expenditure. However, automation benefits can still be realised if a firm plans and adopts the best fit software in regards to its operations (Davenport, 1993).

1.1.2 Information Communication and Technology Industry

IQPlus (Kenya) Limited is a company in the Information, Communication and Technology industry which was formed in February 1997. According to Kenya's ICT profile report (2005) Information & Communication Technology (ICT) may be defined as a computer hardware, software and telecommunications technology. It is the world's fastest growing economic industry and the sector has turned the globe into an increasingly interconnected network of individuals, firms, schools and governments, communicating and interacting with each other through a variety of channels and providing economic opportunities transcending borders, languages and cultures. ICT has opened new channels for service delivery in areas such as electronic government, education, health and information dissemination.

In Kenya, the Information and Technology industry is governed and regulated by The

Communications Commission of Kenya which was established by the Kenya Communication Act 1998. The National Communications Secretariat was also formed under the Kenya Communications Act 1998 to serve as the policy advisory arm of the Government on all matters pertaining to the info-communications sector. Since the launch of the telecommunication sector reform, Kenya has made great strides in the expansion of telecommunications services.

According to Kenya's ICT report (2005) Rapid development of ICT accompanied by the convergence of telecommunications, broadcasting and computer technologies is creating new products and services, as well as new ways of learning, entertainment and doing business. At the same time, more commercial, social and professional opportunities are being created through the unique opportunity provided by ICT. While the growth of the ICT sector in Kenya has been significantly influenced by global trends, it can be evaluated in terms of number of fixed and mobile telephone lines; the number of computers and services; Internet Service Providers (ISPs), the number of Internet users; broadcasting stations; and market share of each one of them. Realizing that ICT is a primary instrument for economic growth, Kenya offers presents various investment opportunities for potential investors such as wide market for their products and services in the utilization of ICT.

1.1.3 IQ Plus (Kenya) Limited

IQPlus (Kenya) Limited is an information technology company committed to providing small, medium and large sized organizations with business software for the automation of their accounting, payroll, and customer relationships operations. IQPlus is a private company and is led by 2 directors who oversee the day-to-day running of the company. They have

overseen full automation of all key processes in the organization. This has led to the company gaining a competitive edge in the delivery of its services and thus earning it the coveted 'outstanding accounting solutions provider award' by the computer society of Kenya for the years 2004, 2006, 2007, 2008, 2009 and 2010.

To ensure smooth running of the organization and that clients maximize benefits through the use of IQPlus solutions, the organization is divided in five key departments namely; business development, implementation and training, support and Business review department. Business development department is responsible for effective identification of what clients require and matching those requirements with the products IQPlus has to offer. This is done through discussions and product demonstrations where client's requirements are partially automated as an example of what IQPlus products can offer when the client purchases the products.

The implementation and training department is responsible for installation, design and creation of the client's automation structures and reports to accommodate both their current and anticipated institutional growth requirements. Transfer of skills is also done where the clients are taught on how to use the products (Wei, Macwan, & Wieringa, 1998). The support department handles the customer care on the range of products whereas the business reviews department visits all the over 700 clients to ensure all clients are deriving maximum benefits from the software and also provide practical guidance on the same. Being an information, communication and technology company, the company has done what it can to fully automate its processes so that as it automates other companies it can bear witness to the benefits that accrue from that automation.

Automation could also help IQPlus (Kenya) Limited as an international firm in growing its

branch network to reach other customers who do not have a taste of what they provide. However, automation should be essential to the business operations departments since it will help in easy management of the extended networks. In the wake of technological advancement across the world, several computer-manufacturing companies have developed hardware that fit business firms' more than home users. This trend led to many professionals in the information technology sector bringing in several software that could make business run with a few number of personnel and many machines. The systems require international business firms to make policies that support the use of information technology in improving businesses' efficiency. This trend prompted another research work that seeks to get feedback on the empirical study investigation involving three aspects of a firm (Dumitras, 2011). The study looked at the relationships between manufacturing efficiency and adoption of the manufacturing automation, business network and managerial use of information technology in operations. With groundwork from several companies that connected their manufacturing organization's performance to adoption of automation, this study extended the process by including the managerial use in the information technology departments (Winata, 2011).

1.2 Research Problem

Many organizations have been pulled into the style and fashion of automating. Sadly, this has proved counterproductive as they have adopted automation for the wrong reasons. After much cost, time and labour hours, many companies have not realized the benefits they set out to achieve from the initial start. Bill gates rightly captures this when he says, 'The first rule of any technology used in a business is that automation applied to an efficient operation will

magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency' (Turney, 2009)

Automation should increase efficiency for the organization thus making the firm increase profits, turnover and growth. But these benefits can only accrue to the organization if it adopts the best automation for its business and also if the operations to be automated run efficiently in the first place (Premaratne, 2009). Therefore, companies should at first evaluate all the effects, both positive and negative, that would accrue as a result of international businesses automating the key aspects of their operations. Facts and figures are needed first to be a guidance on how automation can and will affect an international business (Balasubramanian, & Gupta, 2005).

Organizations are required to understand what is required in automation, what operations can be automated and which cannot, who are the main personnel who should be in charge of automation, what type of automation works and which don't and what is the best criteria to adopt in terms of automation (Nikolaidou, Anagnostopoulos, & Tsalgaidou, 2001). In respect to this, there exists few studies that act as guidelines as to which is the best roadmap in regards to automation. A roadmap is needed to ensure that international firms can depend upon it in respect to automation so as to achieve the intended results of increased profits, turnover and growth (Sheridan & Parasuraman, 2000).

As much as IQPlus (Kenya) Limited has fully automated its systems, a lot still needs to be done to seal the gaps I.e. all key business operations need to be automated. However, a lot can be learnt from IQPlus (Kenya) Limited in respect to the advances it has made in relation to automation. It is as a result of this problem that leads to the research question; what are the

influences of automation on the international operations of IQPlus (Kenya) Limited?

1.3 Research Objective

The study objectives were;

- i) To determine the influence of automation on international operations of IQPlus (K) limited
- ii) To identify the various challenges of automation of business processes.

1.4 Value of the study

The study will benefit the following groups;

The directors of IQPlus (Kenya) limited who will use it for decision making. This includes optimization of automation in every key business processes and identification of gaps not covered in the automation already covered. An automated management system will enable the IQPlus manager to streamline business processes and organizational objectives, as well as eliminate time-consuming management and tedious tasks.

The study will also benefit Kenyan firms on the value of moving from manual processes and how automation will transform their key business operations. The insights gained will transform them and show them how benefits accrued from automation can help them cross local boundaries and be international (Balasubramanian, & Gupta, 2005).

The Government of Kenya especially government organs like the Kenya Revenue Authority (KRA) may use the findings of these study to identify companies fully automating their key operations. Operations that may be automated may include assurance from automated

systems that taxes reported are correct and accurate (Grove, 1995). Research institutions and the general public will learn on the benefits of automation. Other benefits for government organs include adequate control over tax collection, increase in efficiency of information storage, clarity of tax collection methods, and improve accountability of revenues and staff.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Automation provides an essential part of business operation in the world today. In the last three decades, the world changed from an industrial revolution situation to a communication revolution situation that has led to drastic changes in operations strategies. This situation prompted several researches that touched on ways that information technology systems could improve the efficiency of business in the communication sector of the firms.

2.2 Theoretical Underpinnings

This chapter discusses the theories that support the study. The various theories that have been looked at include; theory of absorptive capacity, diffusion innovation theory and resource based theory.

2.2.1 Theory of Absorptive Capacity

Absorptive capacity is defined as a firm's ability to gather, use, and implement new information technology to produce commercial value (Cohen & Levinthal, 1990). The theory is based on two prerequisites – prior-related knowledge and communication. A firm's innovative capability and its ability to evaluate and to use outside knowledge are mainly functions of that firm's prior related knowledge and the communication of related information to all concerned parties. Therefore, prior knowledge, communication, practices, and experience create the necessary foundation for the assimilation, selection, and implementation of profitable business operations. This prior knowledge indirectly includes

the cost and the direction of future business opportunities that the firm is seeking. Employees in various areas of the firm become the firm's main information repository (Zahra & George, 2004)

According to Cohen and Levinthal (1990), a firm's absorptive capacity depends on that firm's structure of communication between the external environment and the organization, as well as among the subunits of the organization to support operational or strategic activities. This structure includes individual members. The development of individual members' capacities tends to be cumulative and eventually extends to corporate capability. In summary, absorptive capacity includes the acquisition of information by an organization in terms of appropriate innovation and the ability to exploit it.

2.2.2 Resource Based View Theory

The resource-based view theory of the firm (RBV) involves the use of different combinations of a firm's rare and valuable resource; that is external and internal environment, as a prerequisite for the achievement of competitive and strategic advantage Wernerfelt (1984). He further indicates that the unique use of a firm's resources, such as competencies, assets, know-how, and capabilities, can lead to a specific combination of these that is difficult for others to imitate, and thus leading the firm to achieve competitive and strategic advantages.

Major concern in RBV is focused on the ability of the firm to maintain a combination of resources that cannot be possessed or built up in a similar manner by competitors. Further this theory provides us with the base to understand that the sustainability strength of competitive advantage depends on the ability of competitors to use identical or similar resources that make the same implications on a firm's performance. This ability of a firm to avoid imitation of their resources should be analysed in depth to understand the sustainability strength of a

competitive advantage. This theory provides the understanding that certain unique existing resources will result in superior performance and ultimately build a competitive advantage. Sustainability of such an advantage will be determined by the ability of competitors to imitate such resources. However, the existing resources of a firm may not be adequate to facilitate the future market requirement, due to volatility of the contemporary markets. According to Parker and Castleman (2009), the RBV theory seems relevant to e-business related research, as it does address tangible and intangible resources, including e-business tools.

2.2.3 Diffusion of Innovation Theory

This theory describes the relationship between members of a social system and innovation adoption. The decision to adopt a technology innovation is based on relative advantage, compatibility, trial-ability and simplicity of the technology Rogers (2003). Innovation can be defined as the implementation of an idea perceived as new, whether radical or incremental in its environment even if the idea exists somewhere else (Schilling, 2008). This definition is also applicable to technical innovations, such as new technologies, products, and services as well as administrative innovations, such as new procedures, policies, and organizational structures.

Innovation requires risk-taking, forward and creative thinking, the ability to combine resources and expertise, and a culture and management that are supportive of change. The importance of innovation is based on the assumption that innovations can create a winning streak for firms when implemented. When a firm implements a new technology, that firm's business model will have undergone innovation, and the new business model then mediates

between the newly implemented technology and the value created by changing the business configuration (Chesbrough & Rosenbloom, 2003).

(Parker & Castleman, 2009) diffusion of innovation theory addresses important issues that relate to innovation adoption and social network effects. This study concerns automation of business software products and the associated innovations in business models, based on the effects of automation on firms' activities thereby reducing manual work, the diffusion of innovation model is relevant for this research. An empirical study that supports this study done to support this theory was on the role of stages of diffusion in technology to individuals and organizations. In the Gatignon and Robertson study (2010) a sales organization was considered to have adopted laptops if any sales representatives were using a laptop. This study did not distinguish between stages of diffusion, although, given the comparatively recent commercial availability of industrial-strength laptops, most adopters were probably clustered in an early stage.

2.3 Automation Timeline

In the past, firms used to rely on mails and letters for delivering and receiving information from its branches or associate businesses across the world (Winata, 2011). This trend was good at that time but in a constantly changing environment, the firms found that the method of communication was not the best since it was bringing business down or slogging operations because of time. Therefore, some firms resorted to increasing budget in the communication department and cutting expenses on other departments that were seen as less important (Dumitras, 2011). This decision brought good and bad effects together. The good side was that money could help the firms acquire the best communication gadgets at that time and influence the communication systems at a speed higher than their competitors. On the

other hand, the bad side of the decision comes through delays within the firm or incomplete processes within the firm. When the budgets use internal funds to influence an external operation, the company remains at a state of confusion internally since some departments will have to operate on a lean budget to execute normal firm's operations (Winata, 2011).

In addition to that, the firm faces several challenges on the personnel management because the few employees will have to double their efforts within the same pay in meeting the company's needs. With these challenges at hand, many studies focused their efforts in ways that international firms could implement communications operations that could help in cutting cost and improving efficiency across the world. The studies used several international companies that had interest in the third world economies because of the challenges they faced in communication infrastructure. Most of the studies looked at various strategies that the international firms used in improving their systems to fit into the under developed structure of the third world economies communications network. These studies led to questions that explored the efficiencies within the firms in terms of automation. Automation could help the firms manage their branches from a single office several miles away and still meet the business objectives (Winata, 2011).

2.4 Challenges of Automation

These studies had short falls in their method of data collection and analysis since not all the variables in businesses were given considerations. The variables could help in covering the anticipated changes in the business environment and involvement of information systems in bringing automation. In the study, most of the empirical formulas focused on the organizations methods of adopting automation and the efficiency it brought within their

communication infrastructure (Dumitras, 2011). From the analysis and conclusion that this study brought it deduced that adoption of the manufacturing automation and engagement in the business network were directly associated with manufacturing efficiency through managerial use of information technology. To greater lengths, this study projected massive changes in the business landscape through integrating managerial department in the automation system. However, the use of automation in the managerial department could affect efficiency in the communications, purchase and marketing departments of different businesses (Winata, 2011).

From this invention, other studies have looked at different ways in which international firms have adopted automation to make operations efficient and at a lower cost. With reference to research done in India about computerization and efficiency of rural credit cooperatives, the study focused on cooperative banks. It explored the efficiency of rural corporative banks on improving efficiency through computerization. The research methods used a quantitative approach in collecting and utilizing the data to focus on rural banks used information technology in their operations. The results showed that stand-alone computers in branches improved the efficiency of rural credit cooperatives and led to value added benefits on the automation of systems in the banks. This study was a step in changing systems in the banking and other financial institutions sectors to meet the growing needs of local banks in meeting challenges brought by serving low-income earners (Winata, 2011).

The results have seen several financial institutions around Africa and other third world economies transform their operations to automated systems in order to increase customer base while maintaining international standards of banking. The technological advancements brought by other firms focused on skills in relation information technologies of bank staff and the absorptive capacity of service users. In addition to the entire community with the crucial

aim of improving the efficiency of systems, the studies have shown that automation can undergo enhancement in the face of business developments. IQPlus is a company just like any other company and may focus on automation to improve its efficiency through personnel management and integration of departments. This process could help them and any other businesses focus development ideas on other projects like expansion and meeting a large customer base (Dumitras, 2011).

2.5 Automation and Business Process Efficiency

Studies done by Bishnoi (2013) on customers' perception on use of automated teller machine. The study used 220 respondents of Indian Banking Industry. The researcher concluded that automated teller machines are very convenient mode of electronic banking. The aim of the study was to establish the critical determinants of automated service quality by including those attributes of each main banking delivery channel. The results were that the automated service quality in banks can be conceptualised as five factor structure consisting of ATM service quality, telephone banking service quality and internet service quality. An increasing number of banks are using technology to deliver regular service to customer thus quality assurance on their operations is necessary.

In the last part of the literature review, focus shifts into a study done by Allen, Tim on the topic called 'Improve your business process for ERP efficiency'. This study explores several ways in which businesses can cut costs, reduce labour, and increase profitability by automating processes. However, the study lays more emphasis on the automation process using readily available software. The software acts as the backbone of several improvements that each business has to undertake and the outcomes will go through another process of assessment within the same framework. Therefore, the businesses that intend to make

automation as the guide to improving efficiency its operations should have a software that instructs and assesses the operations and outcomes (Winata, 2011).

The study shows that improvements proposed were geared towards addressing operations in the back office and its administrative processes. All businesses rely in the operations from the back office to initiate the processes of other departments. In the case of a chain store, when merchandise arrives through the back office an efficient system should allow other departments take the stock and allow smooth sales through the marketing department (Winata, 2011). The automated system in this scenario is essential to the management and financial department. The other departments that the study linked were contract administration, self-service and order handling departments. There are clear indications of the importance of automation to the daily operations of any business. Therefore, this research proposal using IQPlus as the case study firm will help in uncovering other potentials that automation can bring to firms in terms of efficiency. The methodology and data analysis should help the researchers bring more light on technological improvements that firms can acquire to improve efficiency. However, these improvements should work under the communication infrastructure within the firm to allow smooth transition (Dumitras, 2011).

Arifet al. (2005) states that if a company is not already conducting its business in the manner assumed to be the best practice according software package they acquire, then the organization must reengineer its business processes, operations and practices. Therefore, BPR can be considered as a key practice in change management process. In BPR the goal is to replace the existing business processes with ones that are much more effective for both the customer and the organization itself. Therefore, BPR can be conceived as a technique for restructuring business operations to achieve improvements. Improvement of business operations can also be

achieved through TQM or process improvement, but with BPR the targeted improvements will be more significant and radical. Eardley et al. (2008) states that the aim of TQM or process improvement approach is to streamline the system operations in the organization's value chain in order to add value incrementally.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the methodological approach that the researcher followed to carry out the study. The chapter also included the data collection and analysis approaches.

3.2 Research Design

Research design, according to Upagade and Shende (2012) is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and control variance. The study adopted a descriptive survey design because it involved examining and collecting of evidence from a small number of people selected from the population and reporting the findings just the way they are.

The survey was based on IQPlus (K) Ltd, an international firm specializing in the information technology solutions to small, medium and large sized organizations with business software for the automation of their accounting, payroll, and customer relationships operations.

3.3 Data Measurement

This study adopts a content analysis thus the type of data in this case is qualitative. Miles and Huberman (1994) describe interpretative approach as one method of measuring qualitative data. This orientation allows researchers to treat social action and human activity as text. The interviews carried out in this survey will be transcribed into written text for analysis. Content analysis was more appropriate for this study as it involved in depth interview data from

respondents who constituted of five managers of the sample study.

3.4 Data Collection

Data collection methods in this study involved the use of an interview guide. The advantage of this method is it involved interviewing of a number of different persons in a more systematic manner. It also involved preparation of an interview guide that lists a pre-determined set of questions or issues that are to be explored during an interview. The interviews were done on five key respondents that were managers of the different departments in IQPlus (Kenya) Limited i.e. Implementation and Training, Office Administration, Support, Business Development and Business Review departments. The appended interview guide was used for the primary data collection stage. The interview was a face to face interview which was self-administered.

3.5 Data Analysis

Content analysis used to make analysis of the findings as the research results was qualitative. Analysis of data collected was compared with the theoretical approaches and documentations cited in the literature review. The data was obtained from five managers in the Implementation and Training, Office Administration, Support, Business Development and Business Review departments.

3.6 Validity and Reliability

According to Mugenda and Mugenda (2003), validity is the accuracy and meaningfulness of inferences, which are based on the research results. In other words validity is the degree to which results obtained from the analysis of the data actually represent the phenomenon under

study. Reliability is the consistency of measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. In short, it is the repeatability of measurement. A measure is considered reliable if a person's score on the same test given twice is similar. Validity exists if the data measure what they are supposed to measure. In order to test and enhance the validity of the questionnaire, the researcher selected two managers (business development and office administration departments) and discussed the contents of the questionnaire. This aimed at assessing the content validity and reliability of the questionnaire. The comments from the two managers was reviewed and incorporated to enhance the validity and reliability of the questionnaire.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter contained the findings and conclusions of the data collected from the interviewees. The study findings were in line with the objectives of the study; to determine the influence of automation on international operations of IQ Plus (K) limited and to identify the various challenges of automation of business processes.

4.2 Basic Information

The respondents in the interview included the Heads of Implementation and Training, Office Administration, Support, Business Development and Business Review departments. Majority of the respondents indicate to have worked for the company for a period of 6 years. This indicates that IQ Plus provides a good working environment with good working conditions thus the lengthy stay of heads of staff. All the heads of the department understand the meaning of automation and agree that business processes at the company can be automated.

Respondents indicated that business processes that can be automated include procurement, customer relations, logistics and transport management. They further said that business logistics and implementation of software for clients could however not be automated. Responses agree that automation of business process tends to improve overall organizational efficiency which basically is the main objective of automation. Automation of business

process influences business operations positively as it provides easier and faster way of performing work at the same time reducing the bulk paper work in most organisations.

Responses from the interview indicate that business processes automation improves efficiency in service delivery which if well done tend to increase sales of a company. Automation on the other hand reduces utility cost, thus increasing the profits which relatively lead to increase in the company's growth. It is important to note that automation may not have advantages only attached to it, there are some few drawbacks to automation which may include the inability to deal with unique circumstances as a result of changes in technology or adaptation of an already outdated technology. The systems created for automation may also generate some errors thus giving wrong or misinterpreted results. Automation also involves high costs to the provider which arises from the point of installation, training of end users and support of the systems. High costs are also experienced by the end users who have to part with some amount of resources to acquire the systems for business automation.

4.3 Influence of Automation on the International operations of IQPlus (K) Limited

Respondents highlighted challenges that they face in IQPlus Kenya when automating its business processes. Some of the challenges they highlighted was a high resistance by the management and staff. Automation of business operations is a strategic change that not most people in organisations support. This change tends to increase efficiency in business processes which at the long run brings out success to the company's operational activities. In addition lack of sufficient resources, hardware and software for operation makes automation of business processes quite challenging. Organizations need to have sufficient funds and

enough time to support the operation of the automation of business processes.

Respondents suggested that the most effective strategy to be applied in moving from manual process is to convince others in the department or in the company how automation of manual processes will be beneficial at the end and make the same a priority. It is true that people do not like change, change is inevitable and as a result preparation of others in the company on the automation change highlighting the advantages provides easiness in adoption business processes automation. It is always important to get the business to agree on the end-state that is what the company wants to accomplish automation of business processes. One of the reasons why companies decide on automation is to take the activities in the company from manual so as to have them done faster and faster at higher volumes increasing efficient and effectiveness. From the results, another advantage of automation of business process is that it improves communication and working systems of a company thus enhancing effectiveness since automation enables users to share information. This is quite important in the sales and marketing department who require constant communication and feedback from their managers and clients.

In IQPlus the CEO has the authority to approve business process automation. He is in charge of making decisions concerning the same of course with the advice of other departmental heads. Through the CEO delegation of who can modify the plan data and evaluate the automation of business operations is made possible. Once the CEO has approved the plan and submits it up the approval chain that is the other managers who are respondents in this study, the plan is perused by them to make recommendations and changes prior a second approval by the CEO for implementation.

On the question of the cost implication of business automation processes, the responses received indicated a high initial capital required for investment and high maintenance cost. As stated earlier resources adequacy are very essential for business thinking of automating their business processes. Just like a car, that needs adequate service to promote its efficiency in the roads, business process ought to be maintained as well. Maintenance tag along costs which in certain cases may be used to improve the systems in place or replace them with others as the technology gives rise to new innovation and ideas throughout the world.

Responses from the IQPlus Staff management team on the key staff needed for automation indicate that the staffs are adequately equipped with the skills and knowledge for business automation. When there is new technology adoption is only when employees will either be unfamiliar with the technology. In this case the managers in IQPlus establish a quality education program for employees, and set up a framework in which workers can provide input on the positive and negative aspects of new automation technology since the applications of automation technology may be growing, but the human factor still remains paramount in determining organizational effectiveness.

Results on the question of effective strategies to be applied automating manual process indicate that IQ Plus engage customers and the staff in the same. IQ Plus main objective is to provide automation services to business organisations with the effort of reducing operation task and make work easier done and effectiveness and efficiency in business operations. Business process automation should be made a priority especially when is the main objective or when the systems are new in the company. In this way, one makes sure that the voice of the customer is included in priorities of the overall project, along with other requests and requirements that will provide internal benefits to the firm and client. As established by IQ Plus having the CEO spearhead the automation of business processes with collaboration of

other managers, gives opportunity for the other managers to collaborate with one another throughout the cycle.

Results further indicate that automation leads to improvement IQPlus improving their sales performance internationally. Internationally, IQPlus is able to operate accounts, sustain a great level of client support or customer benefits at a lower cost which at the end improves the overall productivity and profitability. In addition, automating sales of sales ventures also lead to IQPlus save substantial amount of time. The ability of the company to internationally manage customer inventory, track leads, be in constant contact with clients and get new data regarding sales and new demands from the clients. These efforts displayed by IQPlus influences their international operations and relations with their clients thus enabling the company gain a competitive advantage in the market. In addition, Upgrading to new technologies or current automation software versions and modifying the automation processes to best suit the clients and the operations of the company are ways that IQPlus ensure efficiency and effectiveness in their international operations.

Automation of business process helps again IQPlus in gaining a competitive advantage internationally. This is possible as the results from the respondents indicate that the decision makers track the market trends together with the marketing activities of rivals both local and at the international level. Automation provides the sales force with an advantage in the sense that it becomes easier to identify and reach new prospective customers before competitors and maintaining a grip of the market they dominate. A competitive advantage allows companies to build and sustain profitability while revenue grows. Managing of international operations in IQPlus contributes to having the company targeting to gain competitive

advantage as well internationally which helps the company build relationships with its suppliers. It is evident from the finding of the study that well defined automated business process allows a company to bring products to the market sooner. Reduction in costs which is an advantage that comes from automating business processes is as a result of increased efficiencies that make the company more competitive.

Respondents agreed to advice other companies to seek automation as automation leads to an increased productivity thus leading to growth of a company. Automation can be a solution to companies desiring to gain a competitive advantage through increased productivity and profitability. Automation of business processes reduce production time, increase efficiency, flexibility and eliminates error. Business processes that can be automated by other companies and that IQPlus has also automated is the procurement, accounting, Human Resource Management processes. The automation includes use of software programmes makes work easy and does not involve use of paper as all data is done electronically. In the accounting operations, procurement and accounting tasks have been made easier using the Sage Pastel where invoices, receipts, other financial records and statements are easier generated. The Human Resource management operations on the other hand are able to generate employee payroll and maintain employees' documents and information electronically. Additionally, through automation it is easier to control and manage staff within branches of the company in the country. In Kenya for instance, most banks have partially automated their business operations such as the accounting, banking operation such as; telephone, internet banking service ,easy access of money by use of the automated teller machines and more importantly in their accounting operations where financial reviews and reporting are made easy.

4.4 Summary of Findings

Study by Winata (2011) focused on strategies that international firms use to improve their

systems to fit into the under developed structure of the third world economic communications network. This study led to questions that explored the efficiencies within the firms in terms of automation. The results were similar to the findings in these study that automation could help the firms manage their branches from a single office several miles away and still meet the business.

The results from the study indicate that banks in Kenya for instance the Standard Chartered Bank automate their business operation. Automating businesses operations makes work easier, makes serving consumers fast and improves efficiently in all banks accounting functions. The findings in the study support that of Bishnoi (2013) who used 220 respondents of Indian Banking Industry. The researcher concluded that automated teller machines are very convenient mode of electronic banking. Further the results were that the automated service quality in banks can be conceptualised as five factor structures consisting of ATM service quality, telephone banking service quality and internet service quality. An increasing number of banks are using technology to deliver regular service to customer thus quality assurance on their operations is necessary.

Additional findings from the study that businesses in Kenya are moving from manual processes giving way to business process automation. IQPlus being one of the companies that focuses on automation to improve its efficiency through personnel management and integration of departments. This finding supports that of Dumitras (2011) who studied banks operations in the back office and its administrative processes. The other departments that the study linked were contract administration, self-service and order handling departments. His conclusions were that the automated systems are essential to the management and financial

department and that there are clear indications of the importance of automation to the daily operations of any business.

The findings that automation of business processes in IQPlus has better software that supports fast and better communication, confer with Winata (2011) who argued that automation is a more intelligent approach to cost containment and reduction. She examined past firms who used to rely on mails and letters for delivering and receiving information from its branches or associate businesses across the world. This trend was good at that time but in a constantly changing environment, the firms found that the method of communication was not the best since it was bringing business down or slogging operations because of time.

Automating manual process as indicated by the respondents helps in lowering management costs, increases quality and controls access to very important and confidential data. It is evident from the finding of the study that well defined automated business processes that uses the right technology, allows a company to bring products to the market sooner. Reduction in costs which is an advantage that comes from automating business processes is as a result of increased efficiencies that make the company more competitive. This finding supports study done by Allen, Tim on the topic called 'Improve your business process for ERP efficiency'. This study explores several ways in which businesses can cut costs, reduce labour, and increase profitability by automating processes. Their recommendation was that the businesses that intend to make automation as the guide to improving efficiency in its operations should have the right technology that instructs and assesses the operations and outcomes (Winata, 2011).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains the summary and conclusions of the data analysed in chapter four. It also includes recommendations based on the findings of the study and further area of study.

5.2 Summary

Results from the study show that IQPlus provides a good working environment with good working conditions. The managers of the same organisation seem aware and very well knowledgeable on business automation processes. Further findings show that business processes such as finance and accounting, human resources and procurement can be automated.

Automation on the other hand reduces utility cost, thus increasing the profits which relatively lead to increase in the company's growth. However, automation also involves high costs to the provider which arises from the point of installation, training of end users and support of the systems. High costs are also experienced by the end users who have to part with some amount of resources to acquire the systems for business automation. As a result companies in need of automating their business operations need sufficient resources for implementation, training and systems maintenance. Organizations need to have sufficient funds and enough time to support the operation of the automation of business processes. Another advantage of

automation of business process is that it improves communication and working systems of a company thus enhancing effectiveness since automation enables users to share information.

Automation of business operations is a strategic change that if well adapted and monitored brings great advantages to the company. Business automation reduces cost, improves productivity and ensures effectiveness and efficiency in operations. It is a result that business move from manual to automation of businesses. From the study respondents suggested that the most effective strategy to be applied in moving from manual process is to convince others in the department or in the company how automation of manual processes will be beneficial at the end and make the same a priority. However, anything that comes along with advantages goes through a few challenges. Managers in the IQPlus company highlighted high resistance from the management and staff on the idea of business automation processes.

Skills and knowledge on automation processes are highly recommended to any company planning to move from manual way of operation. Results indicate that IQPlus hires employees with the required skills and knowledge. Training is however done in cases in cases where new technology has been adopted as most will tend to be unfamiliar with. IQPlus further includes customers in evaluation of automated processes. In this way, one makes sure that the voice of the customer is included in priorities of the overall project so as to provide internal benefits such as automation improvements to the firm and client.

Results from the study provided recommendation to other companies seeking automation of business processes because automation leads to increased productivity thus leading to growth of a company. Further recommendation from the IQPlus management indicate that automation can be a solution to companies desiring to gain a competitive advantage through

increased productivity and profitability.

5.3 Conclusions

Business organizations automate their processes to achieve increased productivity so as to gain competitive advantage. Automation also offers low operational variability. Variability is directly related to quality and productivity. Some businesses automate processes in order to reduce production time, increase manufacturing flexibility, reduce costs, eliminate human error, or make up for a labour shortage. Decisions associated with automation are usually concerned with some or all of these economic and social considerations. Automation software is a better and more intelligent approach to cost reduction while increasing customer service. It is also important to note that as technology increases, productivity becomes a concern. However, reliability is the main concern that defines the significance of automation.

Automation is set of tools and procedures to make things work more effectively, however it is evident from the study that automation if not well implemented can lead to great disadvantages. For instance, if employees are not taken through proper training, knowledge of how a process is operated could be lost if automated processes are not well documented. Another disadvantage is that some flexibility on unplanned situations are lost which is not the case when working manually. It is prudent to conclude that automating business processes can cost a lot of money, it will also take long time to implement especially when resources are scarce. In addition, automation as a change is not really acceptable by most staff in organizations as employees feel quite demoralized as automation leads to some employees losing their jobs

Findings on management cooperation in IQ Plus makes it necessary to conclude that the organizational leaders in IQ Plus seem organised and carefully analyze decisions to automate their business processes. The results also indicate that the company takes the automation of business operation quite seriously as the same goes through a step by step procedure prior implementation. This further shows that the company experiences good leadership from the CEO and other managers who constitute as respondents in the study.

5.4 Implication of Results

These results imply that automation has helped firms manage businesses from a single office several miles away and still meet the business requirements. Further the results imply that automation has assisted several number of banks to deliver regular service to customer thus quality assurance on their operations is necessary. Businesses in Kenya are moving from the manual processes to business process automation, IQPlus being one of the companies.

Based on the study findings, results imply that automation of business processes in IQPlus provides better software that supports fast and better communication. In addition, automation can be a solution to companies desiring to gain a competitive advantage through increased productivity and profitability.

5.5 Recommendations

Failure of having a strategy for handling staff concerns and managing staff participation is one of the easiest ways to fail at implementing automation. It is possible that as organisations automate their business, some employees end up losing their jobs. However the solution or the recommendation rather to such companies is that instead of firing the employees, managers should review the job description of those particular employees as such old

positions would be no longer needed, since new technology gives rise to new and greater responsibility.

Establishing business process automation requires one system that from the manager's perspective should be reliable, one that will improve productivity, performance and reduces cost. However, achieving these benefits requires discipline to overcome the challenges. It is recommended when business try to balance these obstacles against potential benefits of automation, the same should not interrupt other goals of the firm.

Another recommendation organisation must put in consideration when thinking of business automation is to ensure that the company has enough people to maintain and support the system. In addition, many managers would tend to think that the main reason why business processes are automated is to reduce cost, however, the focus is usually mainly on improving service to end users as the quality of service improves with automation thus improving costs at the end.

5.6 Areas for Further Studies

Further research could concentrate on automation of key business processes in the banking industry to examine whether automation is effective as in IQPlus Kenya. The study creates a gap that other researchers or academic students can address through concentrating on challenges encountered when adopting business automation. Suggested research could also be done to examine the influence of automation of business operations by companies in gaining competitive advantage. This study will be able to broadly discuss and analyze one major advantage of business automation; the gaining of competitive advantage by companies.

REFERENCES

- Al-Hawari, M., Hartley, N.H. & Ward, T. (2005), Measuring Banks' Automated Service Quality; A Confirmatory Factor Analysis Approach. *Journal of Marketing* 16(1).
- Aron, R., Clemons, E. K., & Reddi, S. (2005), Just Right Outsourcing: Understanding and Managing Risk. *Journal of Management Information Systems*, 2(22), 37-55.
- Balasubramanian, S., & Gupta, M. (2005), Structural Metrics for Goal based Business Process Design and Evaluation. *Business Process Management Journal*, 6(11), 680-694.
- Benaroch, M., Jeffery, M., Kauffman, R. J., & Shah, S. (2007), Option-Based Risk Management: A Field Study of Sequential Information Technology Investment Decisions. *Journal of Management Information Systems*, 2(24), 103-140.
- Bishnoi, S. (2013), Empirical Study on Customers' Perception Regarding Automated Teller Machines in New Delhi, India. *A Journal of Management*, 6(1)
- Bussler, C. & Stefan J. (1994), An Approach to Integrate Workflow Modelling and Organization Modelling in an Enterprise. Proc. *Third Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises*, IEEE Computer Society Press, Morgantown, WV. (Bussler & Stefan, 1994)
- Chesbrough, H. (2003), *Open innovation: the new imperative for creating and profiting from technology*. Harvard Business School Press, Boston. Schilling, M. (2008). *Strategic Management of Technology and Innovation*. Boston: McGraw-Hill

Cohen, W., and Levinthal, D. (1990), Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152

Davenport, T. H. (1993), *Process Innovation: Reengineering Work through Information Technology*, Harvard Business School Press.

Dumitraş, V. (2011), Improving The Quality Of The Information Presented In Financial Statements By Using Information Technology. *Annals of the University Of Petrosani Economics*, 11(4), 109-118.

Fortune Magazine.(2013), Wal Mart Stores. Retrieved from

Gebauer, J., & Scharl, A. (1999), Between Flexibility and Automation: An Evaluation of Web Technology from a Business Process Perspective. *Journal of Computer-Mediated Communication*, 5(2).

Grove, V., et al. (1995), The Implementation of Business Process Engineering. *Journal of Management Information Systems*, Vol. 12(1), 109-144.

<http://money.cnn.com/magazines/fortune/fortune500/2013/snapshots>

Kinyanjui and McCormick (2002), E- commerce in the garment industry: Usage, obstacles and policies. *International Journal of Scientific & Engineering Research*, 3(10).

Lifhack (2012, July). *The Benefits of Automation - Lifhack*. Retrieved from <http://www.lifhack.org/articles/productivity/the-benefits-of-automation.html>

Miles, M. B. & Huberman, M.A. (1994). *Qualitative Analysis*. An expanded source book, 2nd

Ed.Thousands Oaks, CA.

Nikolaidou, M., Anagnostopoulos, D., & Tsalgatidou, A. (2001), Business Process Modelling and Automation in the Banking Sector: A Case Study. *International Journal of Simulation Systems, Science & Technology*, 2(2), 65-76.

Nof, S. Y. (2009), *Springer handbook of automation: With DVD-ROM and 149 tables*. Berlin: Springer.

Parker, C., and Castleman, T. (2009). Small Firm E-business Adoption: A Critical Analysis of Theory. *Journal of Enterprise Information Management*, 22(1/2), 167-182

PKF Consulting Ltd & International Research Network, (2005), Kenya's Information and Communication Technology.

Premaratne, S. (2009), Business process integration, automation, and optimization in ERP: Integrated approach using enhanced process models. *Business Process Management Journal*, Vol. 15 (4), pp.504 – 526.

Rogers, E. (2003), *Diffusion of Innovations*. Free Press. New York, USA.

Sheridan, T. B., & Parasuraman, R. (2000), Human versus Automation in Responding to Failures: An Expected-Value Analysis. *Human Factors*, 3(42), 403-407.

Stohr, E. A., & Zhao, J. L. (1997), A Technology Adaptation Model for Business Process Automation. *Proceedings of the 30th Hawaii International Conference on System Sciences*, 4.

Turney, J. (2009), *Technology: Ethical debates about the application of science*. Mankato, Minn: Smart Apple Media.

Wade, M. and Hulland, J. (2004), The resource-based view and information systems research: review, extension and suggestions for future research. *MIS Quarterly*, 28(1), 107-138

Wei, Z. G., Macwan, A. P., & Wieringa, P. A. (1998), A Quantitative Measure for Degree of Automation and Its Relation to System Performance and Mental Load. *Human Factors* 2(40), 277-295.

Wernerfelt, B. (1984), The resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.

Winata, L. (2011), The Role of Information Technology, Business Network and Adoption of Manufacturing Automation in Manufacturing Efficiency. *Journal of International Business Research*, Vol.11 (1), pp 191-202.

Appendix I: Interview Guide

The below structured questions will be used as the interview guide;

1. How long have you worked for IQPlus (K) Ltd?
2. Do you understand the meaning of automation?
3. In your own opinion, can the business processes at the company be automated?
4. What are some of the business processes that can be automated?
5. What processes cannot be automated?
6. Will automation of business processes improve overall organizational efficiency?
7. What should be the number one aim of automation?
8. In your own opinion, does automation influence efficiency either positively or negatively?
9. What are the potential benefits of automation?
10. What are some of the drawbacks to automation?
11. What challenges might IQPlus (Kenya) Limited face in automating its business processes?
12. What are the best strategies to automate the current manual processes?
13. What do you think are the cost implications when automating the key business operations?
14. Who, in your opinion, should be in charge and spearhead the automation process at IQPlus (Kenya) Limited?
15. Does IQPlus (Kenya) Limited currently have the key staff needed for automation?

16. In relation to automation, what key business processes will need to be integrated to each other?
17. If you were the overall manager of the company, what would you recommend to other companies that seek to automate?
18. Do you any other company that has attempted automating its key business? Did they succeed?
19. What did the other company that succeeded do right?
20. What did the company that failed do wrong?