BUSINESS CONTINUITY PLANNING, IMPLEMENTATION AND PERFORMANCE IN SAFARICOM LIMITED

ROSE KATUNGE PAUL

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DECLARATION

This research project is my original work and has not been presented for award of any degree in any University.

Signature……………………… Date……………………………

ROSE KATUNGE PAUL
REG NO: D61/60033/2013

This project has been submitted for examination with my approval as University of Nairobi supervisor.

Signature……………………… Date……………………………

SUPERVISOR’S NAME
DR. MURANGA NJIHIA
DEDICATION

This is dedicated to my husband Andrew for his love, support, patience and encouragement. Thank you for inspiring me to scale to greater heights. Thank you for stepping in where I could not and for keeping me company while burning the midnight oil.

To baby Laura for understanding why mummy needed to "work" and not play at times.
ACKNOWLEDGMENT

First and foremost, I thank God for His grace, wisdom and for protection throughout this course. In deed I have seen His hand.

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Special thanks to my classmate Alex for always challenging me and providing the critical third eye.
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### LIST OF ABBREVIATIONS AND ACRONYMS

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<tr>
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<tr>
<td>BCM</td>
<td>Business Continuity Management</td>
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<td>BCP</td>
<td>Business Continuity Planning</td>
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<td>BCT</td>
<td>Business Continuity Team</td>
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<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>ERM</td>
<td>Enterprise Risk Management</td>
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<td>EXCO</td>
<td>Executive Committee</td>
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ABSTRACT

Business Continuity Planning (BCP) is a program which primarily assesses existing operations, risks to these operations and the organizational preparedness in case these operations are disrupted. It develops an integrated approach to ensure that critical operations and processes continue to function after interruption e.g. due to an incident or disaster. The purpose of this study was to evaluate Safaricom’s BCP process and its performance and how it is related to the overall performance of its key services i.e. M-PESA and M-Shwari, establish the challenges of implementing BCP at Safaricom and establish the benefits of Safaricom’s BCP process. The research design employed in this study is descriptive case study of Safaricom the biggest telecommunications company in Kenya. The study used both qualitative and quantitative data collection methods. The study targeted a total of 37 employees in the company. Primary data was collected using self-administering questionnaires and one on one in-depth interviews. Data collected from this study was analysed with aid of Statistical Package for Social Sciences (SPSS). The study found out that BCP had been successfully implemented at Safaricom for all key services which include M-PESA and M-Shwari. Safaricom had benefited much from the implementation of BCP. The study concluded that the steps for BCP process were followed at Safaricom. The findings of this study could benefit not only Safaricom, but also other mobile service providers. BCP process is found to be a critical function that involves many different personnel and departments over multiple phases. Therefore the study recommends that for entire BCP process to succeed the organization should include participation from all levels of an organization, including an organization’s board of directors, senior management, business and technology managers, and staff. Further research is also recommended in the implementation of BCP for the other products especially on Voice and data services. There is also need for further research extended to the other mobile service providers.
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The Telecommunications industry has advanced rapidly in the world and especially in Kenya over the past 15 years. Computer systems are key in the telecommunications industry and organizations cannot operate without them (Barbara, 2006). As the telecommunications industry continues to invest heavily in computer systems, there is increased reliance on data. This is even as new threats emerge constantly affecting companies. Many companies have experienced or witnessed the devastation that occurs when an information technology disaster strikes (Barbara, 2006).

With the evolving of Information technology systems, they need to be protected against today's considerable number of threats to the information they process, transmit and store. Any failure or disaster in information technology systems could have serious consequences for a company (Botha and Solms, 2004), and as a result of this dependence, no company can afford to ignore the need for business continuity and disaster recovery planning regardless of its size, revenues, or number of staff. The need to plan for potential disruptions to technology services has increased exponentially and business continuity and disaster recovery planning has become imperative (Snedaker, 2007). The goal of the paper was evaluate business continuity planning on the organizational and departmental levels at Safaricom Ltd. The focus shall be on service delivery options in Safaricom especially M-Shwari and M-PESA mobile banking service options.
1.1.1 Business continuity Planning

Business Continuity Planning (BCP) is a program which primarily assesses existing operations, risks to these operations and the organizational preparedness incase this operations are disrupted. It develops an integrated approach to ensure that critical operations and processes continue to function after interruption e.g. due to an incident or disaster.

The Business Continuity Plan (BCP) serves as an essential component of an organization’s response planning (Lindstrom, 2010). Thus, an effective BCP details out the manner in which a business entity shall operate in the event of an incident; including the different ways it expects to return to “normal business operations” in the most optimum and quickest period possible (Savage, 2002). Further, a BCP does not require to have specific modalities like for terrorists incidences but rather ought to make application of any potential major disruptions like incidences of fire, power fault or flooding (Botha, 2004). A BCP plan by and of itself forges an agreed framework for ensuring disruptive events are kept under control; ensures critical and appropriate resources are reinstated to maintain and sustain critical business functions; and also facilitates the staffing process to ensure there right personnel required to coordinating activities are on board (Pitt, 2004).

A BCP must be clear and well-presented so as to avoid vagueness and be in a way that all persons can understand its content and act in what is expected of them (Karakasidis, 2007).

To have a good framework for BCP a few considerations must be fulfilled; key would be an evaluation of the roles and individuals that are fundamental in meeting the business
needs and commitments. It is also important to perform an assessment of the equipment, IT, or logistics measures et cetera that the staff need to sustain operations. It would also be important to review the degree to which a business can function prior to undertaking full restoration of disrupted operations. The evaluation of alternative resources is also important as well as the consideration of the departments that are vital in fulfilling specific and critical orders or contractual obligations. The final one would be the critical analysis of the suppliers including third parties that are considered integral to daily routines of the business.

Further to the issues above is that a BCP should have sequential steps which staff members may follow during-post a disruptive event so as to maintain essential operations as well as return to “business as usual” in the shortest time possible. It is so the case that a BCP is critical to any business and may vary widely depending on the kind of operations undertaken by an organization; the same may also vary given the location, however the following must be included (Lindstrom, Samuelsson, and Hagerfors, 2010): plans, arrangements and measures geared towards ensuring the continuous delivery of major services or products; thus enable Safaricom, for instance, to recover its facility, assets and even data. The other inclusion criteria is the highlighting of necessary resources needed to boost business continuity even encompassing personnel, equipment, financial allocations, infrastructure, accommodations and protection (Karakasidis, 2007).

1.1.2 Challenges of Business Continuity Process

BCP faces a lot of challenges (Lingeswara, 2012). Key challenges in the implementation of BCP include issues like lack of senior management commitment and involvement. In
most organizations, BCP is left to middle and junior staffs that are not empowered to make decisions and do not even control budgets making the process fail. The other key challenge is the lack of thorough understanding of data dynamics and dependencies involved in data recovery by the BCP practitioners. This especially manifests itself when BCP does not consider all necessary components leading to a failure of the BCP. A good example would be preparing a good BCP for a system and forgetting dependencies such as a transmission link.

BCP also faces challenges of having a technology only approach to BCP when panning for organizational resilience. In such cases, other resources such as people are forgotten introducing a serious risk to the BCP. BCP process does also face a challenge of incorrect and/or inappropriate assumptions in formulating BCP. The implications of these challenges points directly to weak BCP plans which are not able to safeguard organizations against failures. Organizations end up losing opportunities as well as customers or having very dissatisfied customers.

1.1.3 Safaricom Limited

Safaricom Limited is the largest mobile operator in Kenya and this is because it has huge customer base, vast infrastructure and annual revenue running into Billions of shillings. According to Safaricom Limited official website, the company was started as a department of the Kenya Posts and Telecommunications Corporation in 1993 and was later incorporated on 3rd April 1997 under the Companies Act as a private limited company. It was later converted into a public company with limited liability on 16th May
2002. The main shareholders of Safaricom limited are the public, Vodafone PLC and the government of Kenya.

In terms of heritage research indicates that Safaricom Ltd was based on analogue ETACS but later upgraded to GSM in the year 1996. Further, its license was awarded in the period 1999 upon its incorporation on 3 April 1997 under the Companies Act. Thus, incorporated as a private limited liability company and eventually turned into a publicly traded company around 16 May 2002. The Government of Kenya owned 60% shareholding rendering Safaricom to be a state corporation with much influence from the government. In 20 December 2007, the GoK shares were owned by Telkom Kenya Limited being a state corporation under the Act. Later, a 25% of the Safaricom issued shares owned by the government to the public in March 2008 led the GoK to cease control and interest in Safaricom; this way it nullified the validity of the provisions under the State Corporations Act.

In terms of strategy, Safaricom asserts its key vision which has been transforming lives. Thus, aims to have a transformative impact to the very lives of its customers as they access and use different products and services; thus implying that the focus of the company is provision of need-driven and appropriate solutions that extend unrivaled value to the target market (Safaricom Limited, 2015). The company expresses commitment to engage all the stakeholders in the most meaningful manner; the main stakeholders for Safaricom include, the customers, employees, shareholders, business partners, regulators, media, society, and future generations. Further, the key strategic pillars include being the best Network in Kenya thus aims to have a world class network
process, cutting edge technology, enhanced quality and coverage. Secondly ensure delighting customers by delivering to their needs and create products and services that exceed their expectations; to mention specifically is the aim to extend a WOW (Walk out Working) experience in every customer touch point. Third key strategic pillar is democratizing data where this basis on the need for internet accessibility; here Safaricom has taken deep commitment to ensuring growth of the internet economy by providing universal access to the same. Other main strategic pillars include the deepening of financial inclusion, YOLO framework (Youthful, Original, Local, and Outstanding), partner of choice for business and the quest to stay ahead of the curve (Safaricom Limited, 2015). Later on, the researcher shall revisit the strategy for Safaricom in a more in-depth manner so as to demonstrate the key touch points that align with BCP. In other words assess if the strategy in itself is a model framework for sound and viable BCP for the company. This and more shall be expounded in chapter four of the study.

This case study will mainly concentrate on Safaricom limited, the undisputed king in the Kenyan telecommunications market. It will further narrow down to two key services that the Company offers i.e. M-PESA and M-Shwari.

This is because Kenyan's dependency on the two services has soared to great heights to the extent that we can say a service like M-PESA is a necessity. Kenyan's economy largely depends on the service with billions of shillings are exchanged every day. One can feel the frustrations in the country when M-PESA is not working. This basically means that there is no transfer of funds from banks, no payment of bills and settling of
service bills, almost grinding the economy to a halt. It is for this reason that Safaricom's BCP is a concern and a good candidate for this study.

1.2 Research Problem

In Safaricom Limited BCP depicts a commitment of the company to adhere to business continuity requirements in respect to the customers and entire stakeholders by operating a business continuity management system (BCMS); the BCMS for Safaricom is in compliance to the ISO 22301:2012 (Safaricom Limited, 2015). Further, Safaricom has commitment to improving the flexibility of its infrastructure for the aim of reducing potential disruption of key services, minimizing the disruption, mitigating the operational and financial impact while at the same time complying to legal and regulatory requirement on business continuity.

The BCP process in Safaricom can be deemed to be working relatively well as evidence in the fact that the company was ISO certified (ISO 22301) in 2014. While the company has invested in a BCP process for its M-PESA and M-Shwari services, it can be noted that downtimes have been experienced on these services at times despite the heavy investments on BCP. This brings us to the aim of this study which was evaluating the BCP process around these two services, with the aim of identifying any gaps and improvement opportunities.

Previous studies established different findings in terms of BCP initiatives. In Palestine, for instance, a study was conducted to analyze the role of business continuity planning in information technology departments. Firstly, it was established that majority of the
selected firms had implemented a BCP planning model but then had failed to follow the necessary procedural aspects and components of the plan (Enshasy, 2009). For instance, the models for the studied companies lacked risk assessment, business impact analysis and control strategies; the other gap identified was the lack of project initiation techniques throughout the BCP planning (Smith, 2005).

Further studies indicate that plan development procedures pegged on various BCP models for companies consisted of inadequate pillars which weakened the entire model (Snedaker, 2007). Another study was performed in Kenya which assessed the scope of BCP implementation in Agricultural Research Institutes in Kenya. In the findings a few gaps were stated, which included: that the studied institutions lacked a BCP committee; further, inadequacy in terms of documentation regarding the information systems adopted in the organizations; absence of a budgetary process to perform the BCP; absence or inadequate period tests in terms of BCP; and lastly ineffective user involvement throughout the BCP process (Shivo, 2010). Worth mentioning is another study based on the Insurance Sector in Kenya and the adoption of BCP.

The key problems cited in the work pertaining to business continuity plans development included: timelines in developing the BCP initiative; identification of a cost effective mitigation strategy, risk analysis assessment, internal audits management, plan implementation, focused testing of the BCP model and lastly monitoring and evaluation (Ongas, 2013). More problems cited included personnel perception and involvement in the BCP plan success, inadequate training and inability of the employees to manage and utilize the BCP process (Ongas, 2013). This study aimed at answering one key question;
how robust is Safaricom’s BCP process in relation to M-PESA and M-Shwari which are critical services to the Kenyan economy?

1.3 Research objectives

The main objective of this study was to evaluate the BCP process in Safaricom.

The specific objectives were:

i. To evaluate Safaricom’s BCP process and its performance and how it is related to the overall performance of its key services i.e. M-PESA and M-Shwari.

ii. To establish the challenges of implementing BCP at Safaricom

iii. To establish the benefits of Safaricom’s BCP process.

1.4 Value of the Study

In terms of practical implications is that the current paper has its methodology description and findings useful for explaining the issues to senior managements and forms the foundation for a business continuity plan process, which is part of an organization’s IT and information security program. It may also be used to explain business continuity planning to other staff in an organization. The methodology can also be used to model business continuity planning, as a basis for training planning, and as support in different training contexts to achieve individual and organizational learning on business continuity plans and activities.

The findings of the study have established that the current state of Safaricom's BCP process, its scope and reliability. These are expected to be of great value to the
company’s management as the identified gaps can be closed leading to an effective BCP process. Literally, the management for Safaricom Limited may adopt this report and its submitted findings to enhance existing policy on BCP initiative for the holistic operations of the company.

On the other hand, with the closure and the gaps, this guarantees the general public better services and a reduction in lost opportunities. The study can also be adapted by other telecommunications companies to assist them in providing unmatched customer experience. Academic researchers can also use this for future reference for BCP processes in the telecommunications industry in Kenya.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In the current chapter the purpose is to develop differentiated literature review so as to build more on concept and theories related to BCP. Therefore, have a critical look on what past scholars have addressed in regard to the same matter. In the end proceed to make a focused conceptual framework.

2.2 Business Continuity Planning Process

Noteworthy, is that the BCP process sought in this proposal is that involving the system developed from a framework of information security (Sikich, 2003); including providing overall security and backup solution for entire possibilities related to threats and disasters. Business continuity planning serves as a cyclic process in which has unique phases in every process (Bennet and Bennet, 2005). Therefore, a BCP model provides an organization with clear analysis and provision of security solutions to different processes. The Business continuity planning (BCP) comes as a solution emanating from the information security initiative in an organization (Ogilvy, 2002). The other thing is that BCP plays a fundamental role in the provision of advanced and upscale security solution. The only thing is that solutions emanating from BCP model may differ from one organization to another and so solutions advanced from it are based on objectives and functionalities of the business enterprise (Penz, 2003).
2.2.1 Steps in the Business Continuity Plan Process

The implementation of the BCP process has several steps (Tittel, 2013). The first step would be to identify the main/real assets of an organization. By doing this the company aims at identifying those assets which it cannot do with or which it needs to always have running. When you mention assets, this would be either physical equipment or systems. The second step would then be the identification of risks and threats with respect to these organizational assets. This essential mean a nose dive in to any event or occurrence that would lead to the unavailability or non-functionality of the assets.

The organization would then need to develop a BCP and implement it. This would assure that key business activities are not disrupted. But again developing the BCP is not enough, it has to be tested and the implementers are well trained. The BCP tests need to happen frequently and plans updated accordingly should that be deemed necessary.

The BCP does also require frequent monitoring and maintenance, what this essentially means is that with the BCP testing, observations on how well it serves need to be made and corrections made in areas that are deemed not to work appropriately and finally reviewing of the BCP need to be done frequently to assure that it is fit for purpose.

In the main dissertation upon approval of the current proposed study, the steps for BCP shall be analyzed more in-depth. Upon occurrence of an emergency, business continuity teams (BCT) start to implement BCP plans in order for the organization to resume normal business operations (NEPA, 2004).
2.2.2 Teams involved in a Business Continuity Plan Process

In developing a BCP framework such cannot be done by a single person rather but from a group with BCP expertise. It needs team working to have a viable and comprehensive BCP (Reiss, 2001). The graph below has been reformulated based on the works by (Verman, 2011) which indicate the level of involvement of key personnel on BCP development.
The relevance of noting on the key personnel needed to take part in the development of BCP is because it anticipates sampling criteria to be proposed later in the study; by this indicate the most preferable sample that need to be targeted so as to unravel the BCP issues. In point of fact, the rationale for having the mentioned team is because it further tells the reader the existing facets of the organization upon which a solid BCP model may be about (Barnes, 2001). Consider this case: IT department may give a solution to an identified problem which would also be considered to be good; however, the risk and safety team may regard it as futile due to the ensuing problems in the future; thus that would need the two teams to come together and advance their proposals so as to have a comprehensive and satisfactory BCP model. In this regard, BCP does not only underscore the risks there are and solutions therewith but that it enables companies to enhance their business processes as well as methods. Moreover, BCP renders an organization to validate its own positive achievements and weaknesses (Beck, 2005). Noteworthy, BCP
serves as a chain process and involves a number of steps as shown below (Scheneider, 2004):

2.3 Benefits of the Business Continuity Process

Business continuity planning serves as a major part of running an organization in the modern business environment; moreover, there are quite a number of roaming disasters which end up affecting businesses and it would sound imprudent to fail to take precautions that may alleviate such problem (Scheneider, 2004). Therefore, BCP extends a specific disaster management system which makes it possible for the employees to respond to any eventualities in case disaster strikes or other related shortfalls. In addition, an effective and sound business continuity planning makes a company to be viewed in a more favorable manner by insurance companies; furthermore, a BCP model makes the senior management fully cognizant of the risks ahead and the way to deal with each of them (Barnes, 2001). Business Continuity planning also creates sound awareness of the different ways an organization may be improved including areas that might have been ignored before (Beck, 2005). A Business Continuity plan makes an organization more robust and gets to create more solid measures for toppling both small and large scale problems which may have suppressed continuity. The other issue is that business continuity plan is an outward way to create more confidence to the investors that the management is taking the business in a serious manner; again, indicating the management is keen to enhance productivity so as to safeguard shareholder value. In the same respect, Business Continuity plan is a good way to protect the image of the organization in terms of image, brand, and reputation (Verman, 2011).
On the other hand a bad BCP plan would be close to having none at all. This is because a bad BCP that does not work would definitely not protect an organization from risks. It would in fact lead to serious loses in the event of say for example system failures.

2.4 Challenges of Business Continuity Process

In the current telecommunications business world, BCP is imperative to the sustainability of the business. Without proper BCP plans being in place, an organization would be unable to recover from huge service affecting failures (Techadvisor, 2015). There are several challenges that affect the BCP process, the first is prohibitive costs, and this is because many BCP resources require a substantial amount of investment on installation and the maintenance of additional hardware, software and human resource. Firms are advised to counter this by avoiding physical hardware and instead invest in cloud solutions.

The other challenge faced on BCP processes is that most BCP processes are complex to implement, manage and also to execute. This is because they encompass complex plans and time consuming procedures which have to be undertaken on top of the normal operations, many firms are thus unable to focus their attention on BCP initiation. This can be addressed by outsourcing the complex work to experts so as not to interfere with the normal operations. They should however be closely supervised and ensure that proper knowledge transfer is done to the organization’s workforce. The lack of staff involvement is also another key challenge to BCP processes. To create a long-lasting BCP program, it would be key to get the entire organization on the same page (Techadvisor, 2015). This is because business continuity planning is a very important aspect of a business and
deserves the involvement of all staff. The risk to not involving all staff would result in the implementation being left to only a handful of people with no support thus resulting to a failed BCP process.

2.5 Resource Based View Theory (RBV)

RBV serves as a competitive advantage model; therefore, the proponents of this model advocate that organizations should internally analyze their company to pick out the key sources of competitive advantage and not look at the competitive environment surrounding it (Rothaermel, 2012). A resource based model can be as shown below:

Figure 2.2 Resource-based model

Source: Barney, 2007
The RBV model proposes that it is more viable to exploit the outward opportunities based on existing resources; thus it is not necessary to obtain new skills and so resources within the organization are the ones that drive higher performance. As such there are two categories of resources namely (a) tangible and (b) intangible (Barney, 2007). The other significant point is that RBV assumptions are that resources ought to be heterogeneous and immobile. By being heterogeneous is where capabilities, skills, and other resources within the organization differ from one organization to another; thus heterogeneity is critical to a company if it is to be competitive (Barney, 2007). Immobility is the RBV assumption that resources are not mobile including they do not move from one company to another; for this matter such companies would not be in a position to replicate rivals in terms of resources. Intangible resources like brand equity, processes and intellectual property are the immobile aspects of an organization (Rothaermel, 2012).

The resource based theory applies in BCP in that BCP is all about having the knowledge about what resources an organization has and utilizing then in efficient manner to operationalize business processes in the event of the invocation of a BCP.

2.6 Decision Theory

Decision theory serves as a methodical process involving the determination of optimal course for a given action in light of the available alternatives or options whose end-results cannot be anticipated with certainty (Peterson, 2009). In business, for instance, it would be worthwhile to undertake reasonable alternatives that may drive profits or revenues; or those decisions that may minimize costs or losses on the average performance and in the long run (Gilboa, 2009). However, such a decision process anchored on optimality has its
limitations although it should serve as a guide to the best course of action in different situations (Giovanni and Inoue, 2009).

Decision Theory is the part of probability theory that is concerned with calculating the consequences of uncertain decisions. This can be applied to state the objectivity of a choice and to optimize decisions (Versluis, 2011). Decision theory can apply to conditions of certainty, risk, or uncertainty meaning that each alternative leads to one and only one consequence, and a choice among alternatives is equivalent to a choice among consequences. Aspects of decision theory include risk appetite, risk attitude, expected value, expected utility, loss aversion and prospect theory. The decision theory and risk management are similar in that they both exist in uncertainties. Risk management is all about assessing risks, prioritizing them and dealing with them while decision theory mainly prioritizes risks. Risk management will help in making decisions to manage uncertainties while the decision theory can prescribe the correct course of action to deal with uncertainties (Versluis, 2011). Decision theory can be applied to prioritize risks in a similar fashion to the risk matrix. When sufficient information on the decision maker’s risk taking behavior is available, the decision maker’s quantitative risk matrix can be predicted by calculating the utility of the cells in the risk matrix, each of which indicates a range of risks. The result can be used as an indication of priority, with risks in cells of the largest absolute utility having higher priority than risks with lower absolute utility (Versluis, 2011)
2.7 Summary of chapter

Overall, the main ideas and concepts have been captured in as far as Business Continuity planning is concerned. These are just but a few issues that may be addressed but in the main dissertation more concepts will be explored. The RBV model is to emphasize on the need to build on competitive advantages that may add more impetus to Business Continuity planning. A Business Continuity plan makes an organization more robust and gets to create more solid measures for toppling both small and large scale problems which may have suppressed continuity. The other issue is that business continuity plan is an outward way to create more confidence to the investors that the management is taking the business in a serious manner; again, indicating the management is keen to enhance productivity so as to safeguard shareholder value.

There has been very little study on BCP that focuses on mobile money, specifically for telecommunication companies in Kenya given the rapid uptake of mobile money. This presents a gap in the existing knowledge that this study will seek to fulfill.
CHAPTER THREE: RESEARCH METHODOLOGY

This chapter discussed the research design which was used for this study, the target population, data collection and data analysis methods employed to analyze the collected data.

3.1 Research Design

The research design constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). This study adopted case study research design. Basically, a case study is an in depth study of a particular situation rather than a sweeping statistical survey. This method is used to narrow down a very broad field of research into one easily researchable topic. Whilst it will not answer a question completely, it gives some indications and allows further elaboration and hypothesis creation on a subject (Baxter and Jack, 2008). That is, it was used to find out the current state of business continuity planning, implementation and performance in Safaricom Limited.

3.2 Target Population

A target population is the entire group a researcher is interested in; the group about which the researcher wishes to draw conclusions (Easton and McColl, 1997). The study targeted employees of Safaricom. Safaricom was chosen due to its vast product and services offered and therefore considered fit in testing how BCP should be implemented as it has been able to offer fairly stable services to its customers for a long period of time.
3.3 Data Collection

According to Creswell (2002), data collection is the means by which information is obtained from the selected subject of an investigation. The study collected primary data during the research. This was data using a questionnaire which contained both structured and unstructured questions. The open-ended questions were used to limit the respondents to given variables in which the study is interested while unstructured questions were used in order to give the respondents room to express their views in a more realistic manner (Kothari, 2003). Questionnaires were prepared and sent to 37 IT experts working in Safaricom with special focus on BCP issues on both M-PESA and M-Shwari initiatives.

Unstructured interview was conducted to allow the individual interviewee freedom to expand on points as they chose and elaborate on their specialist interest. This data was mainly qualitative and triangulated with data from the questionnaires and the case study. The interview was conducted on 2 key IT executive officers in Safaricom i.e. The Senior Manager, Business Continuity Management who sits in the risk division and the Technology Business Continuity process owner who sits in the strategy department of the technology division; the interview process was face-to-face. The interview was recorded using an audio gadget so that the researcher can keep for future reference and decoding or review of critical feedbacks from the interviewees.

3.4 Data Analysis

The study used both quantitative and qualitative data. The completed questionnaires were collected, coded and edited for completeness and consistency. Quantitative data was
analyzed by employing descriptive statistics with the aid of Statistical Package for Social Sciences (SPSS). Descriptive analysis technique gives simple summaries about the sample data and presents quantitative descriptions in a manageable form (Gupta, 1996). Descriptive statistics included: mean, standard deviation, frequencies and percentages. Content analysis was used to analyze qualitative data in line with the interviews conducted to shed more light on the BCP outcomes. Stemler (2004) suggests that when comparing the two methods i.e. interview and questionnaire, consensus of scores is deemed to be present if the exact agreement between the methods is 70% or better.
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.0 Introduction

The current chapter highlights the feedback results from the surveyed participants. The data analysis was carried out based on the objectives of the study. Further, the analysis has been developed such that it links different variables with the aim to provide meaning to the findings. Out of the 37 questionnaires given out to the targeted population, only 30 of them were completed and return for analysis accounting to 81%. This response rate was found to be excellent for analysis and reporting and recommended by Mugenda & Mugenda (2003) that a response rate of 70% and over is excellent.

4.1 Data Cleaning and Reliability

Data cleaning was done so as to ensure validity of the data collected; reliability of the questionnaire, checking and replacing missing data. All this were meant to ensure the actual data analysis generated reliable results that could be used to make recommendations and determine direction for future research. The results for the validity of the questionnaire were worked out using Cronbach’s Alpha in the SPSS and the expected score to be 70% or more.

From the results shown in table 4.1, it can be seen that after careful data cleaning and replacement of missing values the valid cases were 100%. Thus, confirming no missing data. Moving to Cronbach’s Alpha it can be seen that the reliability statistics is at 71.8% which is within the threshold. Thus, the questionnaire administered to the respondents was reliable.
Table 4.1: Reliability of the Questionnaire

Case Processing Summary

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>30</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<sup>a</sup> Listwise deletion based on all variables in the procedure.

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.718</td>
<td>30</td>
</tr>
</tbody>
</table>

4.2 General information

General information of the participants encompassed the following: their departments, age, and gender, position in the organization, and the period they served. The results are as explained below.

4.2.1 Name of Department

The study sought to determine the name of department in which the respondents were working and the responses are as shown in figure 4.1. Majority (30%) of the respondents were enrolled in the technology strategy assurance and governance. 27% were in IS
operations department. Those who were in the departments of network and service operations and product and service development had a representation of 17% each. Network engineering, risk management, and other scored had a representation of 3% each. This is an indication that Safaricom is comprised of different departments. Thus, importance of having noted on the departments was because these are the personnel in a better position to give valid and expert opinion on BCP planning. The departments also bring out the scope of BCP in Safaricom but as perceived in different departmental functions.

Figure 4.1: Department Name

Source: Author, 2015
4.2.2 Age of the Respondents

The researcher made the decision to divide respondents’ age into different reasonable ranges from 18 to over 55 years. From the responses given in figure 4.2, respondents were found to fall only in two categories where majority of the respondents fall in age bracket of 26 – 35 years with 77%, while the remaining set were in age bracket of 36 – 45 years. Therefore, this representation indicates that the people who participated in the study were mature and the majority of the labour force at Safaricom is comprised of mixed age groups. Therefore, the generational aspects within the sampled group and BCP implementation at Safaricom is represented mostly by younger age group of which the study would assume are familiar with modern BCP processes.

Figure 4.2: Age of Respondents

Source: Author, 2015
4.2.3 Gender of Respondents

The study sought to establish the gender of the respondents of the Safaricom limited who participated in this research. 80% of them were male while 20% were female as shown in table 4.2. This shows that Safaricom does need to relook at the gender balance especially within its technology division.

Table 4.2 Gender of the Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>24</td>
<td>80.0</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Author, 2015

4.2.4 Position in the Organization

On the question of position held by the respondents in the organization, 56.7% of the respondents were found to be in the position of an engineer while 36.7% served as technical managers. 6.6% were serving in other positions apart from the two aforementioned. The position held was important for the analysis because BCP is an administration process and could be part of the job description for the different officers working in Safaricom.
Table 4.3 Position in the Organization

<table>
<thead>
<tr>
<th>Position</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Manager</td>
<td>11</td>
<td>36.7</td>
</tr>
<tr>
<td>Engineer</td>
<td>17</td>
<td>56.7</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>6.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Author, 2015

4.2.5 Duration of Years Respondent Has Worked with the Organization

Similarly, the study required to establish the length of time that the respondents had worked in Safaricom. 50% of the respondents indicated to have worked for a period between 1-5 years. 40% had worked for a period ranging between 6 – 9 years, while 10% had been in the organization for over 10 years. These results indicate that most of the respondents had worked long enough in the organization to understand how it works and its operations. Thus, a sign that the respondents had adequate working experience at Safaricom and therefore, possess the necessary knowledge and information which is considered valuable for this study. This was critical information because the duration also influences much perception on BCP planning initiative.
4.3 Evaluation of the BCP Process

4.3.1 Organization BCP Process Awareness

The study further sought to establish whether the respondents were aware of the organizations BCP process and the outcomes are as illustrated in figure 4.4. From the responses shown in this figure, it can be deduced that all (100%) of the respondents who participated in this study agreed that they were aware of the organization’s BCP process. An indication that, the study made appropriate choice to research on Safaricom since the organization seem to have a clear and steady BCP which is known to its employees.
4.3.2 Employees Involvement in BCP Process

For those who agreed that they were aware of the organization’s BCP process were further required to indicate whether they were involved in this process. From the responses shown in figure 4.5, overwhelming majority (90%) said that they participated in the process of BCP while 10% felt that they were not being involved in this process. This is an indication that Safaricom Company to a large extent allows its employees to participate and contribute to decision making on plans of business continuity.

Source: Author, 2015
4.3.3 BCP Implementation

The study sought to get the findings on the question of the extent of BCP implementation and the results are as summarized in table 4.4. These results are based likert scale rating of 1 – 5 where 1 represented not applicable, 2 represented less extent, 3 represented moderate extent, 4 represented great extent, and 5 represented very great extent. From the results it can be revealed that to a great extent (Mean = 4) Safaricom follows steps like development and implementation of BCP, identification of the risks and threats with respect to the organizational key assets, testing of the BCP process and identification of the organizations assets when implementing BCP process. Review of the BCP process and monitoring of the BCP process are followed but to a moderate extent.
Table 4.4 BCP Implementation

<table>
<thead>
<tr>
<th>Responses</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Rank</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development and implementation of BCP</td>
<td>4.3000</td>
<td>.79438</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Identification of the risks and threats with respect to the organizational key assets</td>
<td>4.2333</td>
<td>1.00630</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Testing of the BCP process</td>
<td>4.1000</td>
<td>.88474</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Identification of the organizations assets</td>
<td>4.0667</td>
<td>.98027</td>
<td>4</td>
<td>30</td>
</tr>
<tr>
<td>Review of the BCP process</td>
<td>3.9333</td>
<td>.94443</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Monitoring of the BCP process</td>
<td>3.9333</td>
<td>1.04826</td>
<td>6</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: Author, 2015

4.3.4 More Details on BCP process

The further sought the provision of more details on business continuity planning process at Safaricom. This was done on likert scale rating of 1 – 5 where 1 represented not applicable, 2 represented less extent, 3 represented moderate extent, 4 represented great extent, and 5 represented very great extent. The analysis was done based on the sections provided in the questionnaire as shown in table 4.4. Details linked to business continuity process were all found to be of great extent (Mean = 4) and these included plan being supported from top management, employees being involved in setting the plan, plan scope and schedule are clear, and plan Objectives are clear. The study also determine to find out more details based on risk management in the process of BCP and the results show that business continuity planning considered all possible threats to the M-PESA and M-Shwari services, such as natural disaster, hardware and software failure, and human
error. Information was as well collected about, hardware, software, system interfaces, data and information, and System and data criticality.

On the area of business impact analysis, all the details stated were significant (Mean = 4), where the business impact analysis helped the organization understand the degree of potential loss which could occur; business impact analysis informed a management decision on maximum tolerable outage for each system and maximum tolerable downtime recovery time objective; and during business impact analysis, critical business processes were identified and analyzed. BCP auditing was put under scrutiny with the following details great influence in BCP process: plan is audited to ensure risk mitigation strategies are in place and properly implemented/configured and plan is audited to ensure systems identified by the BCP are in place and functioning.

On the section of BCP Maintenance, it was found out that to great extent (Mean = 4) BCP maintenance procedures were documented to avoid introducing additional risks. But to a moderate extent (Mean = 3) the plan was revised and versioned to ensure that team knows whether the latest plan is in use, the up to date plans are easily accessible as well as key contact information is revised, reviewed and updated regularly. The study checked the details on BCP Training and the findings show that they were moderately (Mean = 3) practiced at Safaricom. These included training needs assessment being done to fill skills gaps; training being monitored to ensure key personnel attended the required training and staff being well trained on the plan activation.
Table 4.4 Details on BCP process

<table>
<thead>
<tr>
<th>Details</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Continuity Process</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan is supported from top management.</td>
<td>4.5000</td>
<td>.93772</td>
<td>1</td>
</tr>
<tr>
<td>Employees are involved in setting the plan.</td>
<td>4.3333</td>
<td>.80230</td>
<td>2</td>
</tr>
<tr>
<td>Plan scope and schedule are clear</td>
<td>4.2667</td>
<td>.86834</td>
<td>3</td>
</tr>
<tr>
<td>Plan Objectives are clear</td>
<td>4.2000</td>
<td>.80516</td>
<td>4</td>
</tr>
<tr>
<td><strong>Risk Assessment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business continuity planning considered all possible threats to the M-PESA and M-Shwari services, such as natural disaster, hardware and software failure, and human error.</td>
<td>4.2667</td>
<td>.90719</td>
<td>1</td>
</tr>
<tr>
<td>Information was collected about, hardware, software, system interfaces, data and information, and System and data criticality.</td>
<td>4.2667</td>
<td>1.14269</td>
<td>2</td>
</tr>
<tr>
<td><strong>Business Impact Analysis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Business impact analysis helped the organization understand the degree of potential loss which could occur</td>
<td>4.3667</td>
<td>.88992</td>
<td>1</td>
</tr>
<tr>
<td>Business impact analysis informed a management decision on maximum tolerable outage for each system and maximum tolerable downtime recovery time objective</td>
<td>4.2667</td>
<td>.73968</td>
<td>2</td>
</tr>
<tr>
<td>During business impact analysis, critical business processes were identified and analyzed.</td>
<td>4.2333</td>
<td>.77385</td>
<td>3</td>
</tr>
<tr>
<td><strong>BCP Auditing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan is audited to ensure risk mitigation strategies are in place and properly implemented/ configured</td>
<td>4.2000</td>
<td>.84690</td>
<td>1</td>
</tr>
<tr>
<td>Plan is audited to ensure systems identified by the BCP are in place and functioning</td>
<td>4.0000</td>
<td>1.08278</td>
<td>2</td>
</tr>
</tbody>
</table>
### BCP Maintenance

<table>
<thead>
<tr>
<th>Description</th>
<th>Rating</th>
<th>Raw Value</th>
<th>Likert Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCP maintenance procedures are documented to avoid introducing additional risks</td>
<td>4.0000</td>
<td>4.0000</td>
<td>1.00344</td>
</tr>
<tr>
<td>The plan is revised and versioned to ensure that team knows whether the latest plan is in use</td>
<td>3.9000</td>
<td>3.9000</td>
<td>1.21343</td>
</tr>
<tr>
<td>The up to date plans are easily accessible</td>
<td>3.7667</td>
<td>3.7667</td>
<td>0.85836</td>
</tr>
<tr>
<td>Key contact information is revised, reviewed and updated regularly.</td>
<td>3.7000</td>
<td>3.7000</td>
<td>0.95231</td>
</tr>
</tbody>
</table>

### BCP Training

<table>
<thead>
<tr>
<th>Description</th>
<th>Rating</th>
<th>Raw Value</th>
<th>Likert Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training needs assessment is done to fill skills gaps.</td>
<td>3.6000</td>
<td>3.6000</td>
<td>1.00344</td>
</tr>
<tr>
<td>Training is monitored to ensure key personnel have actually attended the required training</td>
<td>3.5000</td>
<td>3.5000</td>
<td>0.97379</td>
</tr>
<tr>
<td>Staffs are well trained on the plan activation.</td>
<td>3.3333</td>
<td>3.3333</td>
<td>0.99424</td>
</tr>
</tbody>
</table>

Source: Author, 2015

### 4.3.5 Motivation to Development of BCP Process

The inquired to determine the reasons which motivated the organization to developing a BCP process and the outcomes are illustrated in table 4.5. On likert scale rating of 1 – 5 where 1 represented not applicable, 2 represented less extent, 3 represented moderate extent, 4 represented great extent, and 5 represented very great extent, customer centricity and internal drive were found to motivate BCP process to a great extent (Mean = 4). While regulatory requirement could only motivate the BCP process at a moderate extent (Mean = 4).
Table 4.5 Motivation to Development of BCP Process

<table>
<thead>
<tr>
<th>Reasons to motivation</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer centricity</td>
<td>4.4000</td>
<td>.93218</td>
<td>1</td>
</tr>
<tr>
<td>Internal drive</td>
<td>4.2000</td>
<td>.96132</td>
<td>2</td>
</tr>
<tr>
<td>Regulatory requirement</td>
<td>3.5333</td>
<td>1.13664</td>
<td>3</td>
</tr>
<tr>
<td>Do not know</td>
<td>2.1333</td>
<td>1.13664</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Author, 2015

4.4 BCP Process Performance

4.4.1 Times of which BCP Process Have Invoked

On the question of how many had BCP process been invoked in their organization, majority of the respondents with a representation of 73% stated that BCP process had been invoked 1 – 5 times while 27% indicated that BCP process had never been invoked as shown in figure 4.6.

Figure 4.6 Times of which BCP Process Have Invoked

Source: Author, 2015
4.4.2 The BCP Performance When Invoked

On the same note of BCP performance the study sought to review BCP performance when invoked and the upshots are as displayed in table 4.6. The analysis was done based on likert scale rating of 1 – 5 where 1 = not applicable, 2 = less extent, 3 = moderate extent, 4 = great extent, and 5 = very great extent. To a great extent (Mean = 4), the process was well coordinated with one person being in command of the activities. On other hand, to moderate extent (Mean = 3) the BCP process was largely considered a success; each team member understood their role and played it well; activities took the documented timelines; and services were restored on time as per plan.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>The process was well coordinated with one person being in command of the activities.</td>
<td>4.1000</td>
<td>.88474</td>
<td>1</td>
</tr>
<tr>
<td>The BCP process can largely be considered a success.</td>
<td>3.9000</td>
<td>.99481</td>
<td>2</td>
</tr>
<tr>
<td>Each team member understood their role and played it well.</td>
<td>3.8000</td>
<td>.84690</td>
<td>3</td>
</tr>
<tr>
<td>Activities took the documented timelines.</td>
<td>3.5667</td>
<td>1.10433</td>
<td>4</td>
</tr>
<tr>
<td>Services were restored on time as per plan.</td>
<td>3.5333</td>
<td>.93710</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Author, 2015
4.5 Challenges of BCP Implementation

4.5.1 Leadership Team in BCP Process

On the scale of 1 – 5 where 1 = not applicable, 2 = less extent, 3 = moderate extent, 4 = great extent, and 5 = very great extent. To great extent (Mean = 4) senior management was found to be key leadership team involved in the process of business continuity plan. While the chief executive officer, the board of directors and consultants were moderately (Mean = 3) involved in the BCP process as shown in table 4.6.

Table 4.6 Leadership Team in BCP Process

<table>
<thead>
<tr>
<th>Leadership Team</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Management</td>
<td>4.4667</td>
<td>.77608</td>
<td>1</td>
</tr>
<tr>
<td>The Chief Executive Officer</td>
<td>3.7000</td>
<td>1.23596</td>
<td>2</td>
</tr>
<tr>
<td>The Board of Directors</td>
<td>3.5333</td>
<td>1.13664</td>
<td>3</td>
</tr>
<tr>
<td>Consultants</td>
<td>3.5000</td>
<td>1.38340</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Author, 2015

4.5.2 Challenges to Implementation of BCP Process

On scale of 1 – 5, the respondents were asked to rate the several challenges to implementation of BCP process and the results are as shown in table 4.7. From the responses given, only lack of proper training was found to be a challenge but to moderate extent (Mean = 3). However, lack of human resources, lack of financial resources, identification of right stakeholders, identification of critical services, and lack of senior
management support were not a challenge at Safaricom in its process of implementing business continuity process.

Table 4.7 Challenges to Implementation of BCP Process

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of proper training</td>
<td>3.0667</td>
<td>1.20153</td>
<td>1</td>
</tr>
<tr>
<td>Lack of human resources</td>
<td>2.9333</td>
<td>1.01483</td>
<td>2</td>
</tr>
<tr>
<td>Lack of Financial resources</td>
<td>2.7667</td>
<td>1.33089</td>
<td>3</td>
</tr>
<tr>
<td>Identification of right stakeholders</td>
<td>2.6333</td>
<td>1.18855</td>
<td>4</td>
</tr>
<tr>
<td>Identification of critical services</td>
<td>2.5667</td>
<td>1.30472</td>
<td>5</td>
</tr>
<tr>
<td>Lack of senior management support</td>
<td>2.4333</td>
<td>1.38174</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Author, 2015

4.6 Benefits of BCP Implementation

The benefits of implementing BCP process were measured on scale rating of 1 – 5 where 1 = not applicable, 2 = less extent, 3 = moderate extent, 4 = great extent, and 5 = very great extent. The results in table 4.8 indicate that to great extent (Mean = 4) Safaricom benefited from increased customer confidence, reduced downtime, minimized financial losses, increased value of business, safeguard of shareholder’s value, improved internal processes, competitive edge and international certification. But the organization benefited from legal compliance only to a moderate extent (Mean = 3).
Table 4.8 Benefits of BCP Implementation

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased customer confidence</td>
<td>4.8000</td>
<td>.55086</td>
<td>1</td>
</tr>
<tr>
<td>Reduced Downtime</td>
<td>4.7667</td>
<td>.50401</td>
<td>2</td>
</tr>
<tr>
<td>Minimize financial losses</td>
<td>4.7333</td>
<td>.52083</td>
<td>3</td>
</tr>
<tr>
<td>Increase Value of Business</td>
<td>4.6667</td>
<td>.54667</td>
<td>4</td>
</tr>
<tr>
<td>Safeguard of Shareholder value</td>
<td>4.5667</td>
<td>.67891</td>
<td>5</td>
</tr>
<tr>
<td>Improved internal process</td>
<td>4.4333</td>
<td>.67891</td>
<td>6</td>
</tr>
<tr>
<td>Competitive Edge</td>
<td>4.3000</td>
<td>1.02217</td>
<td>7</td>
</tr>
<tr>
<td>International certification</td>
<td>4.1333</td>
<td>.93710</td>
<td>8</td>
</tr>
<tr>
<td>Legal Compliance</td>
<td>3.9667</td>
<td>1.06620</td>
<td>9</td>
</tr>
</tbody>
</table>

Source: Author, 2015

4.7 Interview Results

In this section the interview results were analyzed; the data feedback forms the qualitative part of the data. Most importantly, to pursue and ensure that they are in line with the objectives such as: the benefits of BCP implementation at Safaricom; the challenges of BCP implementation and; the BCP process and its performance.

4.7.1 BCP process and its performance

The first interviewee held the position of a “Company Wide BCP Coordinator” at Safaricom. The idea of the inception of business continuity plan at Safaricom came to existence after post-election violence in 2008; this is according to first interviewee who stated that:
“The post-election violence led to enormous staff movement making the management to want to formalize BCP officially in 2008. The main issues revolved around airtime and availability of sufficient float; this was a major process in M-PESA service.”

In addition to the above question, the second interviewee, a 2nd level support engineer said that the service owner and had the responsibility in BCP Design, Implementation and Testing stated that:

“BCP implementation in Safaricom is implemented for key services. Need to collaborate during design and reduce cost implications. Moreover, critical services had to be refined due to their contribution to the economy”.

On the interview question which aimed at understanding the personnel accountable for BCP in Safaricom and the support rendered by the rest of the team. The interviewee stated that chief executive officer is the one who was accountable for implementation of BCP planning whereas risk director was the sponsor and EXCO was the steering committee the response is as below.

“CEO is accountable for implementation and success of the BCP planning. Then Risk Director is the sponsor. Further, the entire EXCO is the steering committee”. The second interviewee said as follows: “Overly, it is the CEO. Tasking the ERM team but responsible to support teams such as the Senior Manager for M-PESA who ensures the BCP is executed for process, resources and all elements in the plan.”
4.7.2 BCP Implementation

The study sought to establish how Safaricom did go about the development of the BCP process. One of the interviewees had the following to say:

“The first step was the identification of the critical services and key processes supporting operations; then proceeded to identify key stakeholders, suppliers and impact of the appointed process. Then identified risk to unavailability of processes eventually coming up with strategies to mitigate or reduce the risks.”

This was found to be good practice in implementation of BCP at Safaricom since Tittel (2013) suggests that the first step would be to identify the main/real assets of an organization. The second step would then be the identification of risks and threats with respect to these organizational assets. The organization would then need to develop a BCP and implement it. The BCP tests need to happen frequently and plans updated accordingly should that be deemed necessary. The BCP does also require frequent monitoring and maintenance and finally reviewing of the BCP need to be done frequently to assure that it is fit for purpose.

The second interviewee expressed as follows:

“Adopted from the existing enterprise wide BCP process; the same was leveraged with M-PESA and M-Shwari services which then underwent scrutiny to confirm its effectiveness and ability to deliver to key objectives especially superior customer value. Then the initiative was to identify key assets and assets DB
created. Lastly, a thorough testing was done on each component, for instance, network, DB, and resource availability.”

Similar to the issue above the other concern was to learn from the interviewees the manner in which they went about the implementation of the BCP process. One of the interviewees said as follows:

“Documented to strategies and mitigations; after this came up with services such as pin-less service to supplement airtime purchase”. The second interviewee stated: “Process was now available and outlined BCP readiness, testing and operations.

The other issue was on how the company went about their identification of key assets that required to be incorporated in the BCP planning. The first interviewee said as follows:

“We performed a detailed business impact analysis based on the critical services. After which we focused on the assets enabling the execution of the identified services”.

The other interviewee reported that key assets were identified by their weight within the environment. Another concern was to learn how Safaricom identified a team for the BCP implementation. The feedback for the first interviewee was as follows:

“Task had to come through risk department because of governance (central governance). Different personnel with knowledge and experience on key areas identified risks and also the control measures. In addition, the team went through
training to acquire more skills so as to be able to make informed decisions, develop strategic goals and operations.”

The second interviewee had the following to say:

“It was easy to identify an effective team due to vendor support and operational team that were knowledgeable having handled the previous environment.”

The study learnt that BCP training is done periodically at Safaricom. For instance, first interviewee said as follows:

“The BCP training is done once in every two years”. Then in terms of testing the BCP process one of the interviews said as follows: “BCP undergoes testing in a minimum of 1 year. It depends on the criticality and complexity of the situation. Precisely, the BCP process testing takes place quarterly.”

The second interviewee also had the following to say regarding BCP training:

“Yes, there is standard training, general and general ITIL training.”

The other concern was to understand from the interviewees how frequently the company reviews its BCP process and whether there is a management system in place to ensure the response strategy and BCPs remain current and effective as business circumstances change. The first interviewee said as follows:
“Process is reviewed annually and in compliance to ISO 22301. Also involved is the external audit certification, evaluate strategy, assets, and business model. Basically, align BCP with strategy.”

In terms of testing the BCP process the second interviewee said this is done every 3 months especially on the September 15. In addition, the review of the BCP process, according to the second interviewee, is reviewed often for instance: performed on a daily basis to ensure everything is in place. There are also daily and quarterly assurance meetings.

4.7.3 Benefits of BCP Implementation

In the interviews the study sought to understand why it was necessary to come with a BCP plan specifically for M-PESA and M-Shwari. From the interviewee’s responses it was said that like in the case of M-PESA it was critical because it is an important contributor to the overall Kenya’s economy. Moreover, the service provides a platform for transactions of huge money from different entities. For instance, the interviewee expressed that 40% of Kenya’s GDP derives from M-PESA. Further, when asked to quantify the loss/gains of the failed/successful BCP the interviewees had the following to say:

“If there was no BCP we would not have recovered from the failure or taken too long in its mitigation.”

For the second interviewee the study learnt that BCP has not been a loss. The success has been attributed to customers having minimal service disruption and transparent service
delivery. When asked how BCP has been valuable to the business on general, the first interviewee expressed as follows:

“It has promoted comfort and assurance of the users; this has created alternatives to risks which gives more assurance to the user.” The second interviewee also expressed as follows: “Yes. Very valuable to the business because we are able to recover the system quickly with no losses in case of a failure”.

The second interviewee said as follows:

“BCP has been quite valuable to the business because we are able to recover the systems quickly with no losses. “

In relation to why it was necessary to come up with a BCP plan specifically for M-PESA and M-Shwari, the second interviewee stated as follows:

“The two services are critical to the Kenyan Economy and generate revenue for the company; therefore, failures would have great impact on the company and the entire Kenyan economy. The other importance was the need for internal and regulatory policy to ensure data is accessible.”

Worth mentioning is that the two interviews asserted that BCP was invoked in both M-PESA and M-Shwari when there were technical failures and poor functioning. Moreover, they also confirmed that BCP process at Safaricom has greatly been a success.
4.8 Discussion of the Findings

The Business Continuity Plan as a set of documented processes and procedures can enable Safaricom to continue or recover time sensitive processes to the minimum acceptable level within the timeframe acceptable to the entity. According to Lindstrom, (2010), the BCP serves as an essential component of an organization’s response planning. In the phase of the BCP process, the relevant teams can be put in place to design, develop, and implement the continuity strategies approved by the entity and document the recovery plans to be used in response to an incident or event.

This study found out that Safaricom employees were aware of the organization’s BCP process, with majority of them participating in the whole process of BCP. These results are found to be positive indication that Safaricom has a clear BCP and allows employees to participate in entire process. These findings concurs with Karakasidis (2007) who asserted that a BCP must be clear and well-presented so as to avoid vagueness and be in a way that all persons can understand its content and act in what is expected of them.

Findings on the extent of BCP implementation revealed that to a great extent Safaricom followed steps like development and implementation of BCP, identification of the risks and threats with respect to the organizational key assets, testing of the BCP process and identification of the organizations assets when implementing BCP process. BCP performance at Safaricom is reviewed when invoked through well coordination of the entire process with one person being in command of the activities. Karakasidis (2007) further found out that the inclusion criteria is the highlighting of necessary resources
needed to boost business continuity even involving personnel, equipment, financial allocations, infrastructure, accommodations and protection.

The study findings indicate that Safaricom does not have much challenges hindering BCP implementation process as the only challenge was lack of proper training. This is contrary to Lingeswara (2012) who echoed that BCP faces a lot of challenges and the implications of these challenges points directly to weak BCP plans that are not able to safeguard organizations against failures. Organizations end up losing opportunities as well as customers or having very dissatisfied customers. Therefore, these results can be a sign that Safaricom has strong business continuity plans.

Safaricom was found to have benefited from BCP process implementation. This results echo the findings of Verman (2011) that a BCP makes an organization more robust and gets to create more solid measures for toppling both small and large scale problems which may have suppressed continuity. He also found out that BCP is a good way to protect the image of the organization in terms of image, brand, and reputation. Contingency planning is a critical function that involves many different departments over multiple phases. The strategy set by an organization will allow it to recognize benefits from their investment, placing them to take advantage of knowledge gained and lessons learned through the development, testing, and maintenance of a business continuity program.
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section presents a summary of the study findings, comes up with conclusions based on the results and gives viable recommendations based on the analysis the subject under investigation. The objective of this study were to evaluate Safaricom's BCP process and its performance and how this is related to its key services, that is, M-PESA and M-Shwari, establish the challenges of the BCP implementation as we as it benefits.

5.2 Summary of Findings

The study established that Safaricom had various departments which are involved in the process of BCP and these included technology strategy assurance and governance; departments of network and service operations; department of product and service development; network engineering, as well as that of risk management. 77% of the respondents who participated in this study fall under age bracket of 26 – 35 years and 80% of them were male while 20% were female.

The only daring challenge hindering BCP implementation at Safaricom was found to be lack of proper training. To a great extent (Mean = 4) Safaricom benefited from increased customer confidence, reduced downtime, minimize financial losses, increase value of business, safeguard of shareholder value, improved internal process, competitive edge and international certification.
100% of the respondents who participated in this study agreed that they were aware of the organization’s BCP process. Majority (90%) of the respondents said that management of Safaricom allows them to participate in the process of BCP. Safaricom was found to follow steps like development and implementation of BCP, identification of the risks and threats with respect to the organizational key assets, testing of the BCP process and identification of the organizations assets when implementing BCP process. BCP process was motivated to a great extent (Mean = 4) by customer centricity and internal drive. The findings show that to a great extent (Mean = 4) the process was well coordinated with one person being in command of the activities.

5.3 Conclusion

The study concludes that BCP has successfully been implemented at Safaricom for all key services which include M-PESA and M-Shwari. This study revealed that Safaricom had great benefits especially in minimizing downtime of the services in question which is the key issue to its customers. The implementation of business continuity planning process at Safaricom highlighted the importance of ensuring continual service provision and minimizing service downtimes. It is also evident from the findings that the employees are largely aware of the BCP process.

From the interviews conducted, the study concludes that the steps for BCP process were followed; the company has been able to identify its key assets and also identify the risks and threats to these organizations. It is with this information that they were able to develop a robust BCP process which from the information provided is tested regularly, monitored and the plans reviewed to ensure that it is in line with the company's strategy.
In general there is a perception that the BCP process in Safaricom has performed well. This is evident in the fact that services have been restored on time as per plan. The sampled group indicated that the BCP process can largely be considered a success at Safaricom. We can also conclude that Safaricom is largely customer centric because the drive for the process was largely an internal drive and customer centricity.

Lastly, these findings are not only vital to Safaricom, but also to other mobile service providers. BCP process is found to be a critical function that involves many different personnel and departments over multiple phases. As with many business continuity programs, a recursive process is most effective in developing a refined set of procedures and plans. This strategy can allow an institution to recognize benefits from their investment, placing them to take advantage of knowledge gained and lessons learned through the development, testing, and maintenance of a business continuity program.

5.4 Recommendations of the Study

The study recommends that for entire BCP process to succeed the organization should include participation from all levels of an organization, including an organization’s board of directors, senior management, business and technology managers, and staff. There is also a need to continue capitalizing on the CEO's and consultants support for the process to enhance the benefits of BCP process in the company. The organizations should improve and support the training of employees on BCP as this does come out as a challenge to the BCP implementation.
5.5 Suggestion for Further Study

This study has reviewed business continuity planning on only two key services in Safaricom. Further research is recommended in the implementation of the same for the other products especially on voice and data services considering the fact that Safaricom is the largest mobile service provider in Kenya. There is also need for further research extended to the other mobile service providers.
REFERENCES


55


Dear Sir / Madam 

I am conducting a study entitled “Business Continuity Planning, Implementation and Performance in Safaricom Limited.”

Business continuity planning has been adopted widely to ensure that organizations are able to offer services to their customers when key systems fail. In line with this, Safaricom Limited has a Business Continuity Process for 2 of its key services i.e. M-PESA and M-Shwari.

Attached is a self-administered questionnaire necessary for determining the level of BCP implementation in Safaricom and its outcomes whether positive or negative with the aim of determining if it is adequate and offering recommendations for improvement.

Please take a few minutes to complete the enclosed questionnaire and email to rkatunge@gmail.com. You have my personal and professional assurance that all responses will remain anonymous.

Yours Sincerely,

Rose Katunge
Section A: General Information

1. Name of Respondent (Optional) __________________________________________

2. Department Name ______________________________________________________

3. Age

   18-25 years [ ] 26-35 years [ ]

   36-45 years [ ] 46-55 years [ ]

   Over 55 years [ ]

4. Gender

   Male [ ] Female [ ]

5. Position in the organization

   Technical Manager [ ] Technician [ ]

   Engineer [ ] Other [ ]

6. Duration with the organization

   Less than 1 year [ ] 1-5 year [ ]

   6-9 years [ ] Over 10 years [ ]
## Section B: Evaluation of the BCP process

1. Are you aware of the organization's BCP process?
   - Yes [ ]
   - No [ ]

2. If Yes in (2) above, are you involved in the process or any of its components?
   - Yes [ ]
   - No [ ]

3. To what extent were the below BCP implementation steps followed to the best of your knowledge?
   - (1 - Not applicable, 2 - to a less extent, 3 - to a moderate extent, 4 - to a great extent, 5 - to a very great extent)

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of the organizations assets</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Identification of the risks and threats with respect to the organizational key assets</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Development and implementation of BCP</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Testing of the BCP process</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Monitoring of the BCP process</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Review of the BCP process</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
</tbody>
</table>
4. Please provide more details on your business continuity planning process

Use the key below:

(1- Not applicable, 2- to a less extent, 3- to a moderate extent, 4- to a great extent, 5- to a very great extent)

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a) BCP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan is supported from top management.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees are involved in setting the plan.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan Objectives are clear.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan scope and schedule are clear.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>b) Risk Assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business continuity planning considered all possible threats to the M-PESA and M-Shwari services, such as natural disaster, hardware and software failure, and human error.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Information was collected about, hardware, software, system interfaces, data and information, and System and data criticality.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>c) Business Impact Analysis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>During business impact analysis, critical business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
processes were identified and analyzed.

<table>
<thead>
<tr>
<th>The Business impact analysis helped the organization understand the degree of potential loss which could occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business impact analysis informed a management decision on maximum tolerable outage for each system and maximum tolerable downtime recovery time objective.</td>
</tr>
</tbody>
</table>

### d) BCP Auditing

- Plan is audited to ensure risk mitigation strategies are in place and properly implemented/configured
- Plan is audited to ensure systems identified by the BCP are in place and functioning

### e) BCP Maintenance

- The plan is revised and versioned to ensure that team knows whether the latest plan is in use
- Key contact information is revised, reviewed and
The up to date plans are easily accessible

BCP maintenance procedures are documented to avoid introducing additional risks

f) BCP Training

Staff are well trained on the plan activation.

Training needs assessment is done to fill skills gaps.

Training is monitored to ensure key personnel have actually attended the required training.

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal drive</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Regulatory requirement</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Customer centricity</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Do not know</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>other</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
</tbody>
</table>

5. Which of the following reasons motivated the organization to developing a BCP process?

Use the key below:

(2- Not applicable, 2- to a less extent, 3- to a moderate extent, 4- to a great extent, 5- to a very great extent)
**Section C: BCP Process Performance**

How many times have the BCP process been invoked in the organization?

- Never [ ]
- 1-5 times [ ]
- more than 5 times [ ]

1. Please review the BCP performance when invoked.
Use the key below:

(3- Not applicable, 2- to a less extent, 3- to a moderate extent, 4- to a great extent, 5- to a very great extent)

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each team member understood their role and played it well.</td>
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<tr>
<td>The process was well coordinated with one person being in command of the activities.</td>
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<tr>
<td>Activities took the documented timelines.</td>
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</tr>
<tr>
<td>Services were restored on time as per plan.</td>
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<tr>
<td>The BCP process can largely be considered a success.</td>
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</tbody>
</table>
Section D: Challenges of BCP implementation

1. To what extent is the leadership team in your organization involved in the BCP process?
   (2- Not applicable, 2- to a less extent, 3- to a moderate extent, 4- to a great extent, 5- to a very great extent)

<table>
<thead>
<tr>
<th>The Board of Directors</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>The Chief Executive Officer</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
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<table>
<thead>
<tr>
<th>Consultants</th>
<th>5</th>
<th>4</th>
<th>3</th>
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<table>
<thead>
<tr>
<th>Senior Management</th>
<th>5</th>
<th>4</th>
<th>3</th>
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</table>

2. Which of the following would you rate as the challenges most experienced when implementing the BCP process?

<table>
<thead>
<tr>
<th>No</th>
<th>Challenge</th>
<th>5- to a very great extent</th>
<th>4- to a great extent</th>
<th>3- to a moderate extent</th>
<th>2- to a less extent</th>
<th>1- Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lack of senior management support</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Lack of Financial resources</td>
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<td>3</td>
<td>Lack of human resources</td>
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<td>4</td>
<td>Lack of proper training</td>
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<tr>
<td>5</td>
<td>Identification of right stakeholders</td>
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<td>6</td>
<td>Identification of critical services</td>
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</table>
Section E: Benefits of BCP implementation

<table>
<thead>
<tr>
<th>No</th>
<th>To what extent do you consider the following as benefits of having BCP</th>
<th>5- to a very great extent</th>
<th>4- to a great extent</th>
<th>3- to a moderate extent</th>
<th>2- to a less extent</th>
<th>2- Not applicable</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Competitive Edge</td>
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<td>2</td>
<td>Legal Compliance</td>
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<tr>
<td>3</td>
<td>Increase Value of Business</td>
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<td>4</td>
<td>Increased customer confidence</td>
<td></td>
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<td>5</td>
<td>Reduced Downtime</td>
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<td>6</td>
<td>Minimize financial losses</td>
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<td>7</td>
<td>Safeguard of Shareholder value</td>
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<td>8</td>
<td>Improved internal process</td>
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<td>9</td>
<td>International certification</td>
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</table>
APPENDIX II: INTERVIEW QUESTIONS

1. Please introduce yourself, name, title and the role you play in Safaricom’s Business Continuity planning.

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2. Please give me a background on BCP implementation in Safaricom.

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3. Who is accountable for BCP in Safaricom, please give me more information on how he is supported by the rest of the teams?

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4. Why was it necessary to come up with a BCP plan specifically for M-PESA and M-Shwari?

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5. What are the likely risks and threats to your M-PESA and M-Shwari services??

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6. How did you go about the development of your BCP process?

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7. How did you go about the implementation of your BCP process?

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8. How did you go about the identification of your key assets?

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9. How did you identify the correct team for the BCP implementation?

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10. Have you ever had to invoke BCP for the two services i.e. M-PESA and M-Shwari? Can you take me through?

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11. Would you consider this to have been a success or a failure?

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12. Are you able to quantify the loss/gains of the failed/successful BCP?

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13. How often do you receive BCP training?

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14. How often do you test your BCP process and when was the last time you tested it?

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15. How frequently do you review your BCP process and do you have management systems in place to ensure that your response strategy and BCPs remain current and effective as business circumstances change?

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16. How has BCP been valuable to the business in general?

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