A CASE STUDY TO INVESTIGATE IF PROCESS RE-ENGINEERING IN AN ASSET CONTROL MANAGEMENT DIVISION PROVIDES ENHANCED CUSTOMER SATISFACTION WITHIN AN ELECTRICAL UTILITY IN THE EASTERN CAPE

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ABSTRACT

Asset management is a systematic process of, cost-effectively, operating and maintaining electrical assets by combining engineering practices and economic analysis with sound business practice, which is at the forefront of customer satisfaction. Business Process Reengineering (BPR) increases asset lifespan by implementing changes in structures and in processes within the business environment. The entire technological, human, and organizational dimensions may be changed in BPR. Information Technology plays a major role by allowing businesses to operate in different locations, provides flexibility in operations, permits quicker delivery to customers and supports rapid and paperless transactions. In general it allows an efficient and effective change in the manner in which work is performed.

The aim if this study was to investigate how the satisfaction levels of internal and external customers of Eskom are enhanced when internal processes are re-engineered with the use of technology and IT infrastructure in the Asset Control Management Value Chain (ACMVC) in Eskom – Eastern Cape (EC). This research identified the key factors that contributed to processes efficiencies, discipline in BPR, and how IT influenced customer satisfaction.

For the purpose of this study, quantitative research methodologies were used. A pilot was conducted where BPR was implemented on a Pre paid replacement process within the ACMVC for a duration of six months. The total sample of 200 respondents was targeted, with a 93% response achieved. A questionnaire was used to gather data from the sample, in which the Likert scale was used. Questionnaires were return via three mediums to avoid discomfort to respondents.

This study was significant in that it provided valuable theoretical insight to the ACMVC managing members. The results of this study highlighted that 60.17% agree that management have started to work together, 73% agreeing that customer care has improved within the piloted area and 84.75% started to follow set processes in a disciplined manner post the implementation of BPR. It was recommended that Management focus on educating unqualified staff, address the VC hierarchy, coach staff that have less than one year of experience and perform a system capability audit prior further implementation of BPR.
Introduction

Eskom is a South African (SA) State Owned Company (SOC) which was established in 1923. It is the largest electricity producer in Africa and is among the top seven utilities in the world in terms of generation capacity (Moller, Lots, Hasse, Boucher and Hoyrup, 2012: 34). The entity also ranks among the top nine electricity utilities in the world in terms of the company’s sales (Moller et al., 2012: 35). It is divided into four divisions, namely Generation, Transmission, Distribution and Customer Services (Raj, 2009: 42). This SOC has a customer base of 4.9 million and collectively produces approximately 95% of electricity used in SA. Due to their demographics, customers often opt for prepaid electricity as they are able to micro-manage their consumption and expenditure on electricity better than traditional means.

The three integrated pillars that consolidate the activities of Eskom are processes, systems and employees. The purpose of the above pillars is to work together to achieve the vision of the utility, which is providing a sustainable future in the form of electricity security and for Eskom to become a stimulator of economic growth. The utility faces the reality that their ability to react to the environment and the market determines whether they are successful or not. This is a result of the current organizational climate becoming more turbulent, chaotic and challenging than ever before (Davenport, 1993: 22). A process is a structure for actions by which an organization does what is necessary to produce value for its customers (Davenport, 1993: 56). Customers are only satisfied when they receive a product or service that meets or exceeds their expectation. The ACMVC is one that does not meet the expectations of electricity consuming customer and for purposes of increasing the performance level of Eskom’s Asset Control Management Value Chain, Eskom’s current organisational activities within this VC requires re-engineering.

This study had investigated how process re-engineering within the Asset Control Management environment enhanced customer satisfaction with the use of technology and IT infrastructure within the ACMVC. The investigation had examined the prepaid market, with particular emphasis on how customer faults were managed and addressed.

Background to the Problem

The ACMVC was created with the intention of establishing a synergistic approach to business operations by infusing the Engineering and Customer Service (CS) departments. Areas of focus within this VC are customer connection time to electricity, customer data quality captured, revenue generated thereof and prepaid metering (PMM) fault management. The engineering segment of Eskom focuses on technical matters while customer services aims to meet the expectations of electrical consuming consumers. For this reason, the engineering and customer services departmental business activities are overseen by independent line managers, however due to the effect one department has upon the other in services rendered to customers, they are managed at a VC level. The PPM fault management process within the ACMVC encapsulates aspects that have an impact on the continuity of electricity supply to the customer. This includes a functional prepaid meter, the customers prepaid meter being replaced with the correct type upon a change-out, the customer being registered on Eskom’s billing system within 24 hours of having their meter replaced and the customer having access to a vending station within 5km from where the customer resides, as per the National Regulator of South Africa (Bendi, 1990: 32).

The PPM process within the ACMVC was one that was defragmented with departments working in silos, even though they form part of the same value chain. Furthermore, the process had not been reviewed in 6 years which resulted in inefficiencies within the process. An aged mind-set and process limitations negatively impacted the level of customer satisfaction experienced by
customers within the Eastern Cape. To this plight, when Eskom’s customers experience electrical supply problems (ESP’s) and report it through Eskom’s touch points (contact centres or walk in centres), they have had to make an average of 5 follow-up calls for feedback requesting status updates on their service type disposition (Moyo and Bayaga, 2011: 32). At other times, many customers had receive more than 9 reference numbers for the same query, with response time from Engineering being 55% lower than the set target.

The departments that are included in this study are Field Services (Customer Network Centres), Revenue Protection, Minor Engineering Works, Programme Management, Customer Services, Commercial, Information Technology Management, Contact Centres and Walk In Centres. All the above mentioned departments form part of the ACMVC.

In order for Eskom to meet its Customer Service objective of achieving fully satisfied and serviced customers who consistently promote Eskom as a company, the ACMVC fault management process will be re-engineering.

Contributing factors that may have led to the misalignment of business activities to the CS charter is a lack of integration between systems which result in a duplication of activities within inventory management, a limited dispersion of technical information from suppliers and Eskom touch points resulting in an inefficient Human Resource Deployment, a lack of discipline by employees within engineering to conform to data quality standards and customers unable to purchase electricity within the prepaid electricity market due to extended travel time of delivering source data. At the end of it all, the ACMVC requires re-engineering. The re-engineering aims to eradicate the sub-standard service experience by customers and drive towards business efficiencies for all role-players in the ACMVC. This research will investigate the impact of how process re-engineering influences customer satisfaction, with the aid of technology and IT infrastructure within the prepaid market of the ACMVC.

**Objectives of the Study**

The main purpose of the research objective is to focus on the research problem, to avoid the collection of unnecessary data and to provide direction to the research study. Objectives should be specific, measurable, achievable, realistic and timely, so that research problems could be explored effectively.

The research objectives within this study are thus as follows:

a) To determine how process re-engineering influences the manner in which customers electricity faults are addressed.

b) To examine how technology and IT infrastructure influences the way business operations evolve.

c) To determine how employees commitment and discipline to organisational processes affects business efficiencies.

d) To make recommendations to the Eskom on how best to optimise business processes with the use of technology.
LITERATURE REVIEW

Strategy in Technology

Today, technological innovation is in many industries the most important driver of competitive advantage. Reasons for the increasing importance of innovation in many industries include deregulation, globalization, rapid technological progress, and accelerating diffusion rates for technology-based products (Porter and Emmons, 2003:34). These factors combine to increase the competitive intensity of almost all industries (Porter et al., 2003: 34). Information Technology (IT) has become one of the key differentiating factors in determining a firms’ performance. In general, traditional industries, once considered low tech, are increasingly becoming technologically intensive industries (Porter et al., 2003:35).

One could argue that technology intensive industries like the software industry, changes so rapidly and in such unpredictable fashion, that strategic planning is not necessary and thus, is a futile exercise (Libecap and Claudia, 2008: 222). The opposite holds, where strategy becomes even more important in technology intensive industries (Jones, 2010:27).

The continuous introduction of new products or services is important in order to keep up with trends and preferences (Rothaermel and Shay, 1999:55). At the same time, innovations in manufacturing and in business processes, such as re-engineering, allows firms to lower their cost structure. Thus, innovation works simultaneously to maximize the overall value created by lowering the costs required to create the product or service, thus resulting in increased profit margins and profitability respectively.

Strategic Management Process

Strategic management entails both strategic planning and implementation. It can be said that it is, “the process of identifying and executing the organization’s strategic plan, by matching the company's capabilities with the demands of its environment.” Strategic planning comprises (as per Figure 1) the first 5 steps out of 7 in strategic management tasks, namely (Gibbert, Leibold and Probst, 2001: 184):

1. Defining the business and developing a mission,
2. Evaluating the firm’s internal/external strengths, weaknesses, opportunities, and threats,
3. Formulating a new business statement,
4. Translating the mission into strategic goals, and
5. Formulating strategies or courses of action.
The Strategic Fit

To create and sustain competitive advantage, a firm’s managers must understand the firm’s internal strengths and weaknesses as well as its opportunities and threats that present themselves in the firm’s external environment (Bohm, 2008: 25). This is done through a Strength, Weakness, Opportunity and Threat (SWOT) analysis.

Internal strengths and weaknesses concern issues such as quantity and quality of the firm’s resources, capabilities, and competencies. The goal here is that a firm’s strategy should leverage a firm’s strengths while mitigating its weaknesses, or acquire new resources and building new capabilities and competencies to turn weaknesses into strengths (Bohm, 2008: 30).

To understand the external environment, managers must analyse the structure of the industry in which s/he competes in, as the overall profitability of a firm is determined not only by firm’s unique effects but also by industry effects (Porter et al., 2003:36). The latter point implies that not all industries are equally profitable, and thus some industries are more attractive than others. The ultimate goal of the SWOT analysis is therefore to aid managers in formulating a strategy that allows a coherent fit between the company’s resources, capabilities, and competencies on the one hand, and its industry structure on the other hand (as depicted in the figure 2 below).
Competitive Advantage in Technology

Gaining and sustaining competitive advantage is the defining question of strategy. Accordingly, strategy research is motivated by attempting to answer fundamental questions such as, “why do some technology start-ups succeed, while others fail?” or “what determines overall firm performance?” and “what can you as an entrepreneur or manager do about it?” (Libecap et al., 2008: 202).

Strategy researchers believe that the answer to these fundamental questions lies in the differences in firm strategy. A dictum of strategy, therefore, is that overall firm performance is explained by a firm’s strategy. A firm’s strategy is defined as the managers’ plan about how to gain and sustain competitive advantage (Guan, 2009: 377). This strategic plan reflects the managers’ assumptions about the company’s strengths and weaknesses as well as the competitive dynamics in the external industry environment.

A firm’s strategy details a set of goal-directed actions that managers intend to take to improve or maintain an overall firm performance. If the managers’ assumptions align closely with the competitive realities, successful strategies can be crafted and implemented, resulting in superior firm performance. This definition of strategy highlights the vital role managers play in setting and implementing a firm’s strategy, and thus in determining the firms’ performance (Libecap et al., 2008: 203).

Achieving sustained superior performance over a company’s direct rivals, therefore, is the ultimate challenge in strategy. A firm that outperforms its competitors has a competitive advantage. If this firm is able to dominate its competitors for prolonged periods of time, the company is said to have sustained a competitive advantage. A firm that enjoys a competitive advantage not only is more profitable than its competitors, but also grows faster because it is able
to capture more market share, either directly from competitors or from overall industry growth, due to the firm’s stronger competitiveness (Libecap et al., 2008: 204).

**The Value Chain and Activity Systems**

The concept of the value chain captures the notion that a firm engages in a number of activities to transform inputs into outputs, and through this process each value chain partner adds value at each stage (Libecap et al., 2008: 209). This transformation process is composed of a set of distinct activities, such as research, development, production, marketing and sales, and customer service.

While these so called primary activities directly add value by transforming inputs into outputs as the firm moves a product or service horizontally along the value chain, each of the distinct primary activities along the way is supported by other activities, such as information systems, operations management, human resources, finance, accounting, and general management (Libecap et al., 2008: 210).

Together, the latter activities are called support activities, as they add value indirectly, while primary activities add value directly. Figure 3 depicts a generic value chain containing both primary and support activities. Competitive advantage requires different positioning strategies through strategically choosing a different mix of value chain activities in order to deliver a unique value at a competitive price (Holloway and Hessel, 2002: 27). Activities are therefore the basic units of competitive advantage. It is important to note, however, that competitive advantage or competitive disadvantage at the firm’s level is the outcome of the interplay among all of the firm’s activities, not only a selected few.

A sustainable strategic position requires important trade-offs. It is often not possible to provide innovation at low cost, because innovation requires high and on-going research and development investments over time (Fukushige, 2006: 410).

Strategic positions are sustainable if a firm requires trade-offs with other positions. Therefore, the essence about strategy is to choose what activities to engage in, and more importantly, what not to do. Companies with a clear strategic profile and posture outperform companies that attempt to be too many things to too many customers (Fukushige, 2006: 412). Strategy therefore is about combining activities into a complex system that not only creates a competitive advantage, but also protects from imitation. Ideally, the activities pursued are consistent to one another, while at the same time they also reinforce one another.

This implies that the interconnected system of activities is more than the sum of its parts (Zgurovsky, 2007: 5). Understanding competitive advantage as embedded in a system of activities also explains why imitating an entire system of complex activities is so difficult. While one can easily observe several elements of an activity system, what cannot be observed are the capabilities necessary to orchestrate and manage the network of activities.

Figure 3 provides a summary which highlights interdependencies between strategic positioning based on a diverse set of consistent and reinforcing value chain activities (Fishburne, 1999: 54).
Figure 3: VC Activities

Source: Malik (2005: 35)

Definition of Business Processes

Hammer and Champy define a process as, “a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer” (Champy and Hammer, 2004: 35). Davenport argues that, “A process is a specific ordering of work activities across time and space, with a beginning, an end, and clearly identified inputs and outputs: a structure for action” (Davenport, 1993: 5). While Warboys (1999:32) defines a process as being a structured change, where there is a pattern of events which an observer may recognise across different parts of the process, or which may be implemented, in many different occurrences of the processes. Davenport goes on to elaborate that a business process is a simply structured, measured set of activities which were designed to produce specific outputs for a particular customer or market (Davenport, 1993: 5). Although this can be argues, Riemer describes business processes in an object-oriented style, “business processes are series’ of steps that change states of business objects, thereby causing business events” (Riemer, 1998: 70).

We should note, however, that BPR is concerned with customer-orientation. Thus, the outputs of business processes should not only achieve the company’s objectives, but also needs to satisfy customers’ requirements. From these definitions we can conclude that business processes start and end with customers, and the value of business processes is dependent upon customers.

Definition of Business Process Re-engineering

Chen argues that there is no commonly agreed definition of Business Process Re-engineering (BPR) (Chen, 2001: 69). This lack of an accepted definition of BPR makes it difficult to assess
the overall success or failure of this concept (Peltu and Dutton, 1996: 32). According to Talwar, the definition of BPR is, “the ability to rethink, restructure and streamline the business structures, process, methods of working management systems and external relationships through which we create and deliver value” (Talwar, 1993: 26).

Davenport further describes ‘business process re-engineering’, as the analysis and design of workflows and processes within and between organisations (Davenport, 1993: 45). Business activities should be viewed as more than a collection of individual or even functional tasks; they should be broken down into processes that can be designed for maximum effectiveness, in both the manufacturing and service environment. Hammer and Champy define BPR as the essential rethinking and redesigning of business processes in order to achieve dramatic improvements in critical measures of performance, such as cost, quality, service and speed (Champy et al., 2004: 32).

When applying the BPR management technique to a business organization, the implementation team’s effort should be focused on the following objectives (Zigiaris, 2000: 8):

- **Customer focus** - Customer service oriented processes aiming to eliminate customer complaints.
- **Speed** - Dramatic compression of the time it takes to complete a task for key business processes.
- **Compression** - Cutting major tasks of cost and capital, throughout the value chain.
- **Organizing the processes** a company develops transparency throughout the operational level reducing cost.
- **Flexibility** - Adaptive processes and structures to changing conditions and competition. Being closer to the customer the company can develop the awareness mechanisms to rapidly spot the weak points and adapt to new requirements of the market.
- **Quality** - Obsession with the superior service and value to the customers. The level of quality is always controlled and monitored by the processes in the same manner and does not depend mainly on a person who is serving the customer.
- **Innovation** - Leadership through imaginative change, thus adding to an organizations competitive advantage.
- **Productivity** - Improving effectiveness and efficiency extensively.

If BPR is implemented holistically to a business re-engineering problem, the above should be the results, as indicated in figure 4 below.
Characteristics of Business Process Re-engineering

Business processes are characterized by three elements: the inputs, (data such as source documents or extraction of raw materials), the processing of the data or materials (which usually go through several stages, delays in processing are time and money consuming), and the outcome (the delivery of the expected result) (Engel, 2010: 54).

The 3 R’s of Re-engineering

The whole process of BPR is based on key steps and principles which include re-design, re-tool, and re-orchestration. Each principle step embodies the actions and resources as presented in figure 5 below.

Source: Zigiaris (2000: 9)

Definition of Customer Relationship Management

Customer Relationship Management is a comprehensive business strategy to empower the internal functioning of an organisation with the aim to identify, acquire, deliver, develop and retain customers. With the use of technologically innovated equipment, the process integrates various functions of an organisation, such that it becomes effective and efficient in the long run. This enables the organisation to have a high customer share and market share to gain a long term competitive advantage.

The value of targeting the right kind of customers has become so important that the entire success and failure of an organisation depends on customer acquisition and retention. It is for this reason that technology has become very important in marketing in the form of CRM. To provide a wholesome understanding about customers, effective data generation and data analysis is very important, backed with appropriate data mining, organisations can reap such benefits.
Customer Relationship Management as a Strategic Tool

A restricted view of Customer Relationship Management would be database marketing focusing on how promotional marketing is linked to database management tools. A more widely accepted idea states that it is the application of technology that emphasizes on individual or one to one relationships with customers by integrating database knowledge with the long term prospects of growth and customer loyalty.

An integrated and balanced approach to technology, process and people are used in order to manage a successful CRM implementation (Chen, 2001:526). Customer Relationship Management is an enterprise wide initiative that belongs to all areas of an organisation (Singh and Agrawal, 2006: 23). It reflects the comprehensive strategy and process of acquiring, retaining, and partnering with selective customers to create superior value for the company and the customer. Customer Relationship Management is a term for the methodologies, technologies and e-commerce capabilities used by the firms to manage customer relationships (Lancasster and Jobber, 2006: 357). In particular CRM software packages aid the interaction between the customer and the company, enabling the company to co-ordinate all of the communication efforts so that the customer is presented with a unified message and image.

CRM coordinates touch points around a common view of the customer (Eckerson, 2005: 24). As the business gets larger and number of customer relationships to be managed increase exponentially, it calls for integration of different business departments to collaborate the customer information to provide a unified view of customer interaction to serve the customers better.

Customer Relationship Management is the strategic process of shaping the interactions between a company and its customers with the goal of maximizing current and lifetime value of customers for the company as well as maximizing satisfaction for customers (Sanchez, 2005: 54). CRM can be viewed as an application of one-to-one marketing and relationship marketing, responding to an individual customer on the basis of what the customer says and what else is known about that customer (Peppers, 2010: 35). It is a management approach that enables organisations to identify, attract, and increase retention of profitable customers by managing relationships with them and further identifying strategically significant customers (Buttle, 2001: 53).

In order to maximize profitability, revenue and customer satisfaction, CRM was created, which is an IT business strategy used, by implementing a customer-centric process through understanding and targeting customer segments and fostering customer satisfying behaviour (Chittenden, 2006: 48).

Definition of Information Technology Business Value

The term IT business value is commonly used to refer to the organizational performance impact of IT, including productivity enhancement, profitability improvement, cost reduction, competitive advantage, inventory reduction, and other measures of performance (Melville and Goddard, 2004: 1). The business value of IT is the influence of IT on a firms’ performance. Based on IT business value literature, there is no convention regarding the incorporation of costs of systems development and implementation (Mukhopadhyay, Kekre and Kalathur, 1995: 138). Moreover, researchers have used the term performance to denote both intermediate process-level measures as well as organizational measures. Barua, Kriebel and Mukhopadhyay (1995:7) developed a model by incorporating both “first-order effects on operational level variables” such as inventory turnover, as well as “higher level variables” such as market share.
Analysts have also revealed the existence of two formulations of performance, being efficiency and effectiveness (Williams, 2011: 145). Efficiency emphasizes an internal perspective employing measurements such as cost reduction and productivity enhancements in the assessment of a given business process, or, “doing things right” (Williams, 2011: 145). In contrast, effectiveness denotes the achievement of organizational objectives in relation to a firm’s external environment and may be manifested in the attainment of competitive advantage (Williams, 2011: 145).

IT may provide a firm with a competitive advantage, thus enabling a firm to improve efficiencies regardless of whether mimicked by competitors, or, may yield performance impacts unique to a particular firm relative to its competitors. Upon inspecting these observations, one can define IT business value as the organizational performance impacts of information technology at both the intermediate process level and the organization-wide level, comprising both efficiency impacts and competitive impacts.

**IT and Process Redesign – The Relationship**

Hammer *et al.*, (2003:32) say that IT cannot play an effective leadership role in BPR, though many IT personnel do not agree with this view. A number of authors suggest that IT can support fundamental changes to the underlying processes (Stickland, 1996: 72). Harrington and Davenport promote the idea that process improvement should be combined with process automation (Davenport, 1998: 125). Kaplan and Murdock in supporting this view suggest that it is important to take an integrated look at both process and information flows simultaneously, focusing on how information is used in the process and how people interact with systems on both a formal and informal basis. IS should be used to primarily reshape the way business is done, and should be viewed as more than merely an automating or mechanising force (Mcmanus, 1997: 10).

Automating processes for the sake of automation will not lead to significant improvements. Hammer and Harrington both agree that automating an inefficient process only helps to produce a ‘faster mess’ (Ungan, 2006:56). The applicability of some of the commonly used IT methodologies to practical business environments is questioned on a regular basis, thus existing IT methodologies such as Structured Systems Analysis and Design (SSADM) and Information Engineering (IE) overlap with BPR (Mcginnes, 2000: 306).

Earl’s view on the relationship between BPR and IS stresses that systems analysis and BPR have a lot in common and share common methods, and suggests that process thinking is the same as systems thinking. Moreover, some researchers suggest that the initiative to move towards BPR frequently originates in the IT department (Malik, 2005: 281). A comparison of the systems analysis, design methodologies and the more recent BPR literature reveals that approaches to both these areas are based on the traditional, structured lifecycle approach. The traditional systems analysis and design lifecycle is based on the following stages: preliminary investigations and determination of requirements, systems analysis and design, software development, systems testing and implementation (Arunesh, 2011:6).

Thus, the majority of BPR approaches are centred on a cycle of process identification, analysis, redesign and implementation (Mcmanus, 1997:13). Therefore, it can be argued that both BPR and IT development lifecycles share a set of guidelines that are based on the same principles. Although it is recognised that IT strategic planning and business process change activities should be feeding off each other, BPR and IT systems development often proceed independently.
resulting in a mismatch (Zachman, 1997:511). Some firms have been able to achieve multiple objectives when redesigning processes with IS (Gray and Yan, 1994: 494).

Without IT, companies may lose much of its power to transform performance. However, as outlined before re-engineering, legacy systems often require more effort in comparison to the rest of the process re-engineering work (Weerakkody and Hjort-Madsen, 2007:305). The increased level of IT and the complexity of systems used by organisations make the re-engineering process even more complex. In such an environment, it is helpful to compare the re-engineering process with some form of logical construct in order to understand the IT process re-engineering relationship.

Like the different stages of the IS development process, the BPR process involves a number of phases. With a view of rationalising these phases, Zachman’s representation of the IS development process can be extended and placed in perspective with the BP and ISR process (figure 6) (Zachman, 1997: 280). This places the BP and IT process in context with a non-technical (no use of IT) as well as a technical (the use of IT) process, and helps to understand and justify the relationship between BPR and IS re-engineering.

Using Information Technology for Competitive Advantage

Organizations of all sizes are using various information technology tools and applications in order to become more competitive. In many organizations a percentage of total sales are devoted to the information technologies budget. Experts believe, if information technologies are employed properly, they should make organizations more efficient and effective. Michael Porter identified three strategies for competing in the marketplace successfully; these are overall cost leadership, differentiation and focus (Bidgoli, 2011: 13).

Information systems can help organizations reduce the cost of products and services and, if designed correctly, assist with differentiation and focus strategies. Information technologies can also help bottom-line and top-line strategies in order to decrease costs and increase profits. The focus of a bottom-line strategy is to improve efficiency by reducing overall costs. A top-line strategy focuses on generating new revenues by offering new products and services to customers or increasing revenues by selling existing products and services to new customers (Morton, 1994:126).

The Impact of Information Systems upon Organisations

Three metaphors of organisations have been created, being: machines, organisms and processes, which represent three waves of the organisation theory (Watson and Arrillaga, 2004: 47). The first wave, to perceive an organisation as a machine, suggests that IT can be seen as a controllable resource which is not part of the organisation and is used to achieve certain objectives. The introduction of IT does not affect the organisational structure but only the relationship between management and workers (Watson et al., 2004: 50).

The second wave, when an organisation is seen as an organism, IT is seen to be more integrated and less controllable. IT is an element of organisation and also a determinant of organisational structure which cannot be predictable like a resource. The ownership of it is with workers rather than the management (Watson et al., 2004: 51). The third wave perceives an organisation as a
process and IT as a behavioural phenomenon. IT is managed by the users and determines the perceptions of human beings and thus affects their behaviour (Watson et al., 2004: 52).

**Re-engineering and Information Technology**

As indicated in figure 7, work processes, information needs, and technology are interdependent (Forsythe, 1991: 35). When a re-engineering project leads to new information requirements, it may be necessary to acquire new technology to support those requirements. It is important to bear in mind, however, that acquiring new information technology does not constitute re-engineering. Technology is an enabler of process re-engineering, not a substitute for it. Acquiring technology in the belief that its mere presence will somehow lead to process innovation is a root cause of bad investments in information systems.

![Figure 7: Technology within Re-engineering](source)

**Asset Management**

In many organisations, physical assets are the foundation for success and future growth, as they are resources owned and controlled by the entity which result from a past event and will lead to future economic benefits for the company. The effective management of these assets, also known as asset management, is essential to the overall success of such organisations (Willett, 2008: 20). Around the world, hundreds of billions of Rands are spent on managing assets. However, along with monetary significance, the rising importance of asset management is being fuelled by other factors, such as the general ageing of asset, changing stakeholder and service level requirements, an increased emphasis on public health and safety and increasingly stringent requirements set by regulating bodies (Aashto, 1997: 41).

Organisations are acknowledging such factors as being significant to their operations and are thus looking to continually improve their asset management practices. In turn, this has led to an increase in research on asset management in both the academic and practitioner arenas, evident in the amounts of literature being published by both fields (Frolov, 2010, 34). Physical asset management is a systematic, structured process covering the whole life of physical assets, whereby the underlying assumption is that assets exist to support the organisation’s delivery strategies, requires a certain level of management insight and expertise from diverse organisational disciplines (Willett, 2008: 35).

It is incorrect to consider asset management as simply the maintenance of an asset (Penrose, 2008: 67), but rather as a holistic approach to the management of assets, incorporating elements
such as strategy, risk measurement, safety, environment and human factors. In order to maximize outcomes when managing physical assets, asset management will need to be diversified into a set of processes (Brown and Osborne, 2005:56).

An asset management process is a set of linked activities and the sequence of these activities that are necessary for collectively realising asset management goals, normally within the context of an organisational structure and resource constraints (Ma, Sun and Mathew, 2007: 31). Business process modelling is proposed as an approach to manage the complexity of asset management through the modelling of asset management.

Business process modelling is an approach for visually describing how businesses conduct their work and is used for a variety of purposes in domains other than asset management to increase awareness and knowledge of business processes, deconstruct organisational complexity, identify process weaknesses, adapt best business practices, design and communicate new business blueprints to relevant stakeholders and design and configure software and workflow systems (Ungan, 2006: 62).

Business process modelling typically includes graphical depictions of at least the activities, events or states, and control flow logic. The combination of which constitutes the necessary elements of a process. (Willett, 2008: 22).

**Engineering Asset Management**

Engineering Asset Management (EAM) is an emerging inter-disciplinary field that combines technical issues of asset reliability, safety and performance with financial and managerial requirements. Asset owners are increasingly focused on improving competitive advantage and cost-effectiveness but are handicapped by lack of technical and managerial skills and processes specific to EAM at all levels of their organization.

Engineering Asset Management is, “systematic and coordinated activities and practices through which an organization optimally manages its assets, and their associated performance, risks and expenditures over their lifecycle for the purpose of achieving its organizational strategic plan” (Wijnia, Lei and Herder, 2012:1). The emphasis of EAM is clearly on sustainable business outcomes, risk management and value.

EAM is concerned with assets throughout the lifecycle. This is the time interval that commences with the identification of the need for a physical asset, through defining the requirements, the acquisition and system implementation processes, in-service operation and maintenance management, and asset decommissioning and disposal. The entire process involves a wide range of disciplines and requires a range of technical and management tools and skills. Companies who own and operate physical assets rely on what we commonly call the ‘maintenance’ team or department to maintain the assets and ensure that it can deliver on the desired function.

The process of performing maintenance has changed remarkably over the last 30 years due to influences including but not limited to equipment design, computerization, electronics and communication, cost pressures and social acceptance of risk and failures (Hodkiewicz, 2007: 1). As maintenance absorbs a significant percentage of operating costs, it is now on the radar of senior business leaders. The evolution of the term “engineering asset management” is largely in response to the desire to better manage maintenance and associated efforts, and to align internal processes with strategic objectives (Tomlingson, 2005: 35).
Components of Asset Management Systems

An asset management system undertakes several procedures, enhancing different components, tools, and activities. Asset management systems provide decision makers with tools for evaluating probable effects of alternative decisions. These tools develop decision support information from quantitative data regarding the agency’s resources, current condition of physical assets, and estimations of their current value. According to Hidayat, to effectively support the asset management process, an asset management system should include the following (Hidayat, 2008: 8):

- Strategic goals, inventory and valuation of assets.
- Quantitative condition and performance measures.
- Measures of how well strategic goals are being met.
- Usage information and performance-prediction capabilities.
- Relational databases to integrate individual management systems.
- Consideration of qualitative issues and links to the budget process.
- Engineering and economic analysis tools.

These asset management elements can be grouped into five major building blocks: basic information, performance measures, needs analysis, program analysis, and program delivery. Figure 8 shows in detail the individual components of each building block, providing a comprehensive view of an asset management system (Hidayat, 2008: 9).

Goals, objectives, and policies as well as inventory data are considered in the basic information block. Condition assessment and desired levels of service are components of the performance measures block. Performance modelling and prediction along with action and funding analysis constitute the needs analysis block. Alternative analysis and program optimization are in the program analysis block (Hidayat, 2008: 10).

Program development and program implementation belong to the program delivery block. Finally, performance monitoring and feedback complete the cycle of the asset management process (Hidayat, 2008: 10).
Employee Discipline Enhances Business Process Efficiencies

Employee discipline and training allows for less supervision by those in authority, thus a well-trained employee who is also well disciplined will be acquainted with the job and will need less supervision. There will therefore be less wastage of time and efforts, and therefore there will be higher business efficiency (Cihon and Castagnera, 2010: 363).

Inefficient processes and ill-disciplined employees are a recipe for businesses not achieving their intended purpose, however the contrary is valid. A process is only as good as the people who implement such, if employees are able to adapt to changes in processes that are structured to eliminate wasted time and money (Allen, 2008: 77).

An organisation may go on to achieve the following with disciplined employees (Raj, 2009:44):

- Increased productivity
- Greater revenue recovery
- Improved employee morale
- Fewer accidents
- Chances of promotion

RESEARCH METHODOLOGY

Rationale for the Study

Research such as this is notably useful in solving the operational and planning problems of industry and business (Shajahan, 2005:2). The rational for this study is to investigate how customers (internal and external) are affected by an organisation when internal processes are re-engineered with the use of technological and IT infrastructure. It is intended to report the findings and make recommendations to the Asset Control Management VC to solve the problem of not being Customer Centric.

Limitations of the Study

The findings of this study would be viewed with certain limitations in mind. Within the ACMVC, it will only be directed at the prepaid electricity consuming customers. This study will only focus on role-players within the ACMVC that are on the prepaid meter supply within Grahamstown – Eastern Cape. The second limitation will be that only active employees within the re-engineered process may participate in the survey questionnaire only if they applied the process within the pilot period (within the six (6) months).

A third limitation of this study was the low response rate. Respondents in Eastern Cape may not be keen on, or familiar with answering questionnaires. They also may be sensitive about revealing certain information, which could add to the difficulty of doing this research.
RESULTS, DISCUSSION AND INTERPRETATION OF FINDINGS

What gender are you?

Figure 11: Gender

For the purposes of the research, the Eskom’s Asset Control Management Value Chain (ACMVC) selected 118 members of staff within the sample. Of the 118 employees, 68 (58%) were females and 50 (42%) were male (see annexure C). The April 2015 HR goal within the organisation is to have a well-represented and diverse workforce which is mapped in the companies’ employment equity plan. This plan indicates that the ACMVC should have a headcount of 320 employees to the current 263. Of these employees, the equity plan stipulated that 60% of the Value Chain (VC) are to be made up of women, with 42% of the 60% are aimed to represent black races (Black, Indian, Colored, other) due to the nature and cultural ties to the communities that allow efficient operations respectively.

Management is currently meeting its gender targets due to more women entering the ACMVC that are in possession of degrees. Women are needed in value chains as they prefer coordination more than their male counterparts (Zoogah, Vora, Richard and Peng, 2008:11). Nadiadwala suggests that women priorities their group attributes over their personal ego, considering that they prefer to work more collaboratively in teams (Nadiadwala, 2011: 4). Zoogah et al. (2008:13) mentions that men often produce behaviors of self-promotion, individualism, and competitiveness which disrupt team cohesion and effectiveness. The ACMVC is headed to meet its 2015 HR manpower targets, however more effort is required in increasing the number of employees within the VC as well as balancing races amongst the genders.
What is your designation?

Figure 12: Designation

A VC is often seen as a full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to consumers, with final disposal after use (Kaplinsky, 2000: 35). Managers are well represented within the ACMVC to lead the value chain activities by directing people, gathering resources and creating budgets (Ramjee, 2006: 49). According to the findings within the ACMVC, 10.88% of staff holds a management designation, with 50.26% being employees and 38.86% representing external customers.

Figure 12 shows that the number of employees is just four (4) times more than that of the number of managers that are represented. This indicates that there are too many first line managers and not enough employees to expedite the work. Employees, as a result of too many leaders (and strategies), may become confused due to a different strategic approaches by departmental managers.

It is however evident thought that through re-engineering, the ACM employee headcount reduced substantially as efficiencies were created with the use of technological equipment (eg. data was transferring electronically instead of manually). Resources that were used for this task (drivers, assistant officers and so forth) were re-deployed to areas that were understaffed.

What is your age?

Figure 13: Age Analysis
From figure above, the age of the workforce within the ACMVC are indicated. A collective of 53.89% of employees are under the age of 39 years old, 31.61% between 40 and 40 years old and 14.51% over 50 years old. The differences in age demographics create a professional environment that is rich with experience and maturity as well as youthful exuberance. Companies that employ workers in wide ranges of age have the advantage of creating a dynamic, multi-generational workforce with a diverse range of skill sets that is beneficial to the company.

According to Kooij, De Lange, Jansen, Kanfer and Dikkers, (2011:6), staff between the 21-39 groups is more flexible to shift from task to task, or from process to process and are more technologically advanced when compared to the 40 - 60 group. Syed and Murray (2008:2) emphasises that a younger workforce are more eager to work, they catch on quickly and can adapt to changes with less resistance. The collective of 31.61% are between 40 – 49 years old. These employees have been characterized by Hammer et al., (2003:16) as being the most effective workforce in strategic change within BPR. They offer both technology adaption and experience that allows for insight to process alterations. These employees are also seen as semi-qualified. A collective of 14.51% are over 50 years old. Such older workers may respond differently to technology because impending retirement reduces their time horizon as they consider whether to upgrade their skills. MacDondald and Makin (2004:1) state that while experience may offer the older worker a certain amount of income protection, technology advances always turn them into has-beens to some degree. Unless older workers have a special advantage in updating their skills, emerging BPR technologies will tend to depreciate those skills.

The practice of a multi-generational workplace offers mentoring advantages. In a mixed-age workforce where companies value knowledge, experience and skill above age, seniority or gender, employees of all ages have the opportunity to teach, share and learn from one another (McQuerrey, 2008:8).

What is your business area?

Figure 14 – Department Representation
The departments that constitute the ACMVC are indicated in the process mapping in annexure F(a) and the re-engineered process in annexure F(b). The majority of the representation in the research is made up of customers who receive electricity and require electrical fault resolution from this value chain in Grahamstown.

Customer satisfaction is taken very seriously within Eskom. This is represented with almost one fifth (18%) of the value chain having departmental representation in the customer service environment. This department allows customers to voice their concerns and requests regarding ESP’s. VC owners often overlook customer services, with little thought into the negative effects of verbal and psychological influences customers have on their employees. This is most common when customers are frustrated with long waiting periods for fault resolution and the ability to purchase electricity after their prepaid meters have been replaced, however data integration is key to speedy customer satisfaction, as indicated in the section 4.6.4.

As this is within an Electrical Utility, 25% of representatives are within the engineering department that is responsible for executing the field work. This is relatively a big constitution comparatively, but this can be justified when considering the nature of work and the risks associated when working within the engineering environment.

**How many years of service do you have?**

**Figure 15: Years of Service**

![Year of Service Chart]

The number of years employees have been in service within the ACMVC is depicted in the figure above. From the cross tabulation in Annexure A, it indicates that 12% of the workforce had 10 years or more of experience within this discipline, as it indicates that 15 of the 21 employees are in management positions. The majority of the workforce (38%) has between one to five years of service to the value chain. This is a good sign that Eskom – Grahamstown is injecting younger employees with a market related technologically leveling viewpoints as oppose to a historically outdated business mindset. The younger generation embraces technology and adapts to changes with the use of IT far easier that the older generation. A collective of 16% of employees have more than 5 years of service, with the majority of these employees performing a mentoring or
advisory role to new employees. Six (6) of the 16% of these employees occupy operational management roles.

Unfortunately 33% of employees have only contributed between zero and one year of service to the value chain. This poses a big challenge as they do not have the necessary experience to provide insight to changes in business operations. However, as they are very new to the value chain, their learning curve is very steep and thus is able to adapt to the use of technology as a means of optimizing on business processes. Mentors and advisors need to nurture such a workforce to create a competent staff compliment.

**What is your highest qualification?**

**Figure 16: Qualification Composition**

This value chain has a collective of 56% of its employees that do not have a professional qualification, with 33% (63) of these employees not having completed matric. This breeds difficulties in managing these employees. The results are high levels of resistance to change and ill-disciplined actions due these employees not being able to understand how organisational processes fit together to serve a customer. Further, when customers come in contact with these "less-qualified" individuals, they may not be happy with the service they receive. The risks are that the moral of the rest of the staff in the value chain may deteriorate if they are burdened with an additional workload due to hired workers who are unable to do their job. The cost of turnover is also high, as the value chain may be faced with this expense if veteran staff deciding to leave the ACMVC. However, due to the limited marketability of the unqualified employees within this VC, it is seen that there is a strong committed to their jobs and processes become more effectively applied, due the experience they gain over years of service.

The ACMVC has 44% of their staff in possession of a tertiary level qualification which provides many benefits to the ACMVC. Individuals who pursue post-secondary education are perceived to be more ambitious, motivated, self-confident and teachable than their non-degreed associates (Silman, 2011: 1). This is supported by Nadiadwala who states that academic qualifications are important, because in order to gain good exam grades or a degree, students have to work hard, master demanding skills and learn a great deal of specialist knowledge (Nadiadwala, 2011: 2). The education level affects the way people work and think when applying themselves in business processes and essentially when processes change. In order for business processes to be applied efficiently, both experienced and qualified personnel are required for disciplined actions to be applied.

**Human Resources**
BPR involves changes in structures and in processes within the business environment. The entire technological, human, and organizational dimensions may also change with the use of BPR. The degree of an employee’s discipline and abilities impacts on a business process efficiencies when it is implemented, as it has effects on employee’s idle time and include capacities to empower employees as drivers within processes. This involves redefining organizational boundaries, the reconsideration of jobs, tasks and skills.

I am confident that the employees that are within the different departments in the AMCVC are competent enough to perform their roles timeously.

Figure 17: Employee Competency

According to Richards, employee competencies are those traits, skills or attributes that employees need to perform their jobs most effectively (Richards, 2008:2). Clearly, these competencies will vary by job and position, but there are some commonalities that apply to just about any job in any organization. Organizational competencies relate to the ability to effectively organize and manage work and work-related activities. Employees with strong organizational competencies are efficient and effective in the work that they do. Figure 17 indicates that 71.61% of the staff within the ACMVC is confident that they are competent to perform their respective tasks in the reengineered process. This is a sign of a value chain that embraces BPR and can adapt to new methods of performing organisational activities through process re-engineering. Zigiaris indicates that the more confident a staff member is in a process, the greater their commitment to apply it in a disciplined manner (Zigiaris, 2000: 73). When a staff member is unsure of what is expected of them or have a high degree of resistance due to fear of failure, management is required to lead such a change. A collection of 15.25% requires this intervention as they remained neutral. A collective of 13.32% don’t feel that they are competent enough to address ESP’s in an effective manner in the re-engineered process. This may be a reflection on the medium in which the training is being conducted. Face to face communication and training should be the preferred means when BPR is implemented.

I am willing to go beyond my job scope to assist a customer.

Figure 18: Employee Commitment
Figure 18 indicates that a collective of 83.9% of employees go beyond their job description to ensure that the customer is satisfied. This emphasises the commitment that the value chain has in displaying a customer centric attitude and expediting tasks that continuously promote the reputation of Eskom. Such degrees of commitment further suggest that employees have the capabilities and processes to perform business activities efficiently.

By understanding the customer expectations and knowing how to meet them, one can go a long way to achieving higher levels of customer satisfaction. When customers have high expectations and the reality falls short, they will be disappointed and are likely to rate their experience less than satisfying (Beard, 2013:2). It was also evident upon receipt of the CSQ, that the moral of the workforce was very high due to management continuously engaging employees of the changes that were going to be implemented, in which employees had an opportunity to provide input to influence the process mapping. Miksen states that when companies bring employees onboard when making decisions about the company's future, it helps strengthen relationships with each employee and the overall commitment to a process once implemented (Reddy, 2012:4).

A collective of 8.47% remained neutral as they did not feel they were remunerated appropriately to do anything other than the minimum expectation. After further analysis it revealed that the majority of these employees were unqualified and over the age of 50 years. Eskom should implement a reward system to employees. This incentive method would encourage employees to strive for customer satisfaction at all times. This would also address aspects of the 8.47% that felt they did not need to satisfy customers, as long as the customer had the services renders in a timely manner.

**I understand my role within the piloted ACMVC process.**

**Figure 19: Conformance**

A collective of 72.03% agreed that they understood their role in the new re-engineered process while 20% strongly agreed that they were fully aware of what was required by the ACMVC re-engineered process during the pilot. Each staff member had in their possession a copy of their job description and of the re-engineered process. Employees’ responsibilities were clearly spelled out by management as to what their tasks were in a training manual. Kotter states that insights can accelerate the process of understanding between manager and employee, resulting in increased job satisfaction and commitment to the organization as a whole. Without insights, this awareness of role clarity may take months, years or may never develop at all (Kotter and Schlesinger, 2008: 53).
A collective of 2.54% indicated that they did not understand or were unsure of their involvement in the process changes in the ACMVC. When understanding does not exist, often the manager perceives that the employee lacks the skill to do their job (Liden, Wayne and Sparrowe, 2000: 72). It was further established that these employees did not conform to the process and tried to apply some of the old phases in the new process, some of these items were automated, which resulted in a duplication of activities. Employees were requested to consult their training manuals in the event where they were unsure of their role, as well as to gain advise from their respective coach or line manager. In addition, Kotter highlights that an employee may be highly competent but his or her style is very different from that of the manager. Keeping employees well informed about change and the reasons creates participation which is an important factor in shaping the employees effectiveness to process changes (Kotter et al., 2008:3).

I duplicate job related activities as the business processes do not have the capabilities to allow me to log and address issue seamlessly

**Figure 20: Employee Effectiveness**

![Employee Effectiveness Chart](chart)

Figure 20 depicts that a collective of 41.53% disagreed that they duplicate process activities, while 31.36% strongly disagreed with this statement. Many indicated on further evaluations that the process and systems that was implemented integrated were operated independently in the past. Zeichick argued this by stating that Enterprise software with many applications save time, increases profitability and increases customer satisfaction (Zeichick, 2002:3).

While the majority did not think that process activities were being duplicated, 19.49% indicated that they will remain neutral, while 6% agreed that they were duplicating activities and 1.69% strongly agreed that they was no integration to business applications as committed to as per the process manual. When management does not communicate in a clear and concise manner that is relative to the target audience, it creates confusion and differences in expectations. Many informed the researcher that customers are now dealt with more timeously due to more efficient processes, however, there was still area for improvement as not all application were integrated. Subsequently, management informed the researcher that the integration would be phased in as the IT department needed to determine the architectural compatibilities of the hosting server and how they all could be accommodated, however the majority of required systems were integrated in the pilot (CC&B, MATS, GTX and OVS) that supported the re-engineered process, thereby enhancing customer satisfaction and organisational effectiveness.
I often do not follow the set processes as they are cumbersome.

**Figure 21: Employee Discipline**

![Bar Chart](chart.png)

Figure 21 indicates a collective of 34.75% strongly disagree that they do not follow set processes while 32.20% indicated that they disagree as the processes are not cumbersome but rather efficient and reduced the handling time on each customer complaint. The Material Management employees, a department who forms part of the ACMVC suggested that the approach to BPR within the ACMVC should take a similar stance to all value chains. The researcher was informed that due to efficient processes and a centralized system being created that infused all internal stakeholders in the organisation; inventory holding periods were reduced by 42% as the Just in Time (JIT) system was applied.

A collective of 22.88% remained neutral to this statement as they did not understand the technology that was being utilized. As majority of employees in the process were not computer literate, they were not aware of the integration points in the process, as well and how data is transferred with the use of LAN and data loggers. For this reason, many employees kept manual copies of all field work completed (disconnections, reconnections, change-outs, etc.), which impacted on their ability to gain efficiencies. A collective of 10% stated that they agreed and strongly agreed that the process was cumbersome. Mayer’s (2010:2) suggestion that employees may feel that when work is being taken away, it influences job security. For this reason, employees in this category did not want to follow the process and wasted time performing activities of the prior outdated process. Management failed to effectively utilize lower level staff by deploying them timeously to more critical areas of the business and allowing greater efficiencies to be created in the ACMVC, thereby avoiding the fear BPR created.

**There is a relationship between process re-engineering and employee discipline within an organization**

**Figure 22: Discipline/Process Relationship**
Discipline-to-processes in the workplace is the means by which an employee displays behaviour that is in accordance with the rules established by a company (David, 2004:3). Figure 22 shows that a collective of 50% of respondents strongly agreed that there is a relationship between process re-engineering and the discipline of employees that make up the ACMVC. A noteworthy comment was made by the human resource manager indicating that the number of grievances and employee complaints reduced dramatically in Grahamstown due to operational structural pillars being put into place. This supports Iverson claim, as he states that any discipline comes with “its structures, its hierarchies, its inspections, exercises and methods of training and conditioning” (Iverson et al., 1998:153). BPR aims at increasing profitability and optimizing on the amount of time a process takes to be completed and enhanced.

A collective of 11.86% of respondents indicated that there was no relationship between process re-engineering and discipline in the value chain. This response is noted when business leaders move their focus on IT performing the work and discard the effect employees have on any given process. Currie (2002: 35) supports the view that processes and people applying such processes often tend to revolve around legacy IT systems, if BPR is not considered. A small collective of 2.54% of respondents disagreed by stating that there was no relationship between BPR and discipline in the value chain, these employees had at least one verbal warning laid against them.

The business leaders have started to work together in solving operational challenges with the implementation of the piloted ACMVC process

Figure 23: Management Collaboration
A collective of 40.68% of respondents agreed that business leaders and managers have started to work together to understand each unique discipline within the ACMVC, and to ensure that a customer focused approach is taken to address challenges relating to ESP’s. BPR theorists insist that companies are to define all of their major processes and then focus on the processes that offered the most return on improvement efforts (Fargus, 2000:2).

A combination of 19.49% of respondents indicated that they strongly agree with the manner in which leaders have collaborated in the pilot of the ACMVC. They felt that managers and employees of seniority were working together, however in the beginning of the process mapping phase and upon initial implementation, each manager was pulling the process to achieve their respective performance area targets. As time went on and a bigger picture approach was shared by Senior Management, business leaders adopted a synergistic approach to the pilot.

A collective of 15.25% disagreed that managers were working together to address challenges in the ACMVC as they felt that they are leaders within their respective areas and were not included in addressing challenges that effected them. A culture of participation is crucial for reducing resistance to change and also offers management an opportunity to communicate and brainstorm ideas or challenging issues at hand (Kotter et al., 2008:1). Staff with the above mindset resists team cohesiveness and ultimately hinder a teams’ effectiveness.

**I get more job satisfaction from the newly piloted ACMVC process**

**Figure 24: Job Satisfaction**

A collective of 62.72% of employees agreed that they were satisfied with their jobs as they were directly involved in the process mapping and thus had taken ownership of the process. Such respondents also gave recognition to the manner in which the process conceptualisations and mapping took place. Fargus highlights that people-orientated leaders are believed to be thoughtful
and considerate toward their followers, focusing on their needs of employees by building capabilities, confidence and relationships (Fargus, 2013:4). People oriented leadership results in higher employee satisfaction, but there are questions over its efficiency.

A collective of 22.88% of respondents were neutral about their level of job satisfaction, while 14.41% disagreed that they were satisfied with the re-engineered process. From the cross tabulation in annexure B, it indicates that many of these employees were over the age of 40 and had been with the company for more than 15 years. Upon consultation with the employees and according to Maslow’s needs theory, it is suggested that these workers have the wrong perspective towards their jobs due to their ability to adapt to change and need for self-actualization. Malik shares that attitude, especially about senses, have importance because of the fact that they give continuity to the personality to individual, they give meaning to their daily activities and mentalities and facilitate the attempt made in order to gain various goals within an organisation (Malik, 2005:3). Management needs to look at rotating these employees, as this would allow for employees to understand the greater business and thereby attempt on gaining a multi-skilled workforce that is satisfied with their job outputs due the understanding of what inter-related departments achieve. Leaders need to facilitate positive interactions with those that they lead. They must, through influence, impact on how team’s interact with each other, the level of employee wellbeing, employee commitment and job satisfaction but always with the purpose of delivering the organisational goals.

The Maxi-Care score has increased over the last 12 weeks due to departmental integration, with the use of IT.

**Figure 25: Customer Centricity**

A collective of 34.75% strongly agreed while 38.46% agreed that the level of customer care had increased from the prior processes that were applied in the organisation. Many respondents indicated that the time it took for information to be submitted to Customer Service followed a more efficient manner, in addition that the quality of data had incremental changes. Engineering employees shared this sentiment by stating that customers commended them on the response time it took to resolve ESP’s. Finance representatives specified that financial reconciliation processes ran a lot smoother as the information was centralized and available on a mainframe application, this allowed for timely reporting of operational expenditure to Senior Management.

A collective of 19.65% denoted that they did not agree that the levels of customer care had increased over the pilot period. After further investigation it was found that these employees were located in areas with intermittent internet bandwidth capabilities. Fargus emphasises that the main concept behind BPR is to enhance customer satisfaction and increase profitability of a business.
Currie supports this statement by indicating that an increasing number of business managers are looking at BPR as a way of applying IT to their business in order to gain a competitive advantage and provide quality products and services to their customers (Currie, 2002:2). Davenport cautions that without the support of IT in BPR, automation and process efficiencies are held ransom (Davenport, 2005:47). Managers need to perform a technical audit on all areas where BPR was implemented, in order to confirm the applicability of the technical requirements which supports business changes prior to the implementation of the reliance on technology, as a platform to support change.

Process

The ACMVC is a critical section that affects the level of customer satisfaction. The ACMVC is a process that takes into account the entire prepaid metering (PPM) units lifecycle within Eskom, from the moment the metering unit's information enters the organizations billing system till it is retired. The feedback below determines how process re-engineering influences the manner in which ESP’s are resolved.

The piloted AMCVC process increased customer satisfaction after it had been re-engineered.

Figure 26: Productivity

From the feedback from respondents, a majority of 77.97% agreed that the degree of customer satisfaction had increased over the older systems and processes that were over a decade old. This question took both internal and external customers responses into consideration as part of the TQM system. Key improvements noticed were a lower cost to serve, reduced cycle times, quality improvements and a reduction on the number of overloaded transformers that was on the overhead transmission line. The root cause behind this was that employees were now being provided with accurate field information and could make informed decisions in a timely manner. The improvements meant that employees performed an activity relative an ESP once, with no return complaints from that specific customer. Many of the employees felt a sense of empowerment as they were part of an effective solution. Madrok highlights that when an employee likes the job s/he does, and is made to feel as a precious person in an enterprise, he won’t spare to exhibit beneficial attitudes for the enterprise. He will work as if he were working in his own job for satisfaction (Malik, 2005: 2).

A collective of 6 (5.08%) respondents disagreed that customer satisfaction had increased with the use of BPR, these were external customers who had waited for more than 36 hours for their ESP to be addressed. Upon further investigation it was noticed that integration points with other value chains in Grahamstown influenced these customers restoration time.

Process management is an important element to enhance business efficiencies.

Figure 27: Process Efficiencies
Figure 2 shows that respondents indicated that process management is an important element in business efficiencies. 56.78% of the respondents agreed that process management influences business efficiencies. Many respondents highlighted that processes were designed to assign resources in a directed manner so that the organisational objectives may be met. Rao reiterates that process management requires the ability to understand the processes that impacts on the objectives of the organization (Rao, 2004:4). Currie supports this by mentioning that process management leads to greater degrees of performance and efficiency benefits such as cost reductions and improved cycle times, which are some of the objectives within the ACMVC (Currie, 2002:57).

A collective of 22.88% did not support the above statements and disagreed by indicating that process management is not an important element to enhance business efficiency. Respondents felt that they did not need to perform the activities in a process, but rather hand walk a customer from customer contact to fault resolution phase as they were not confident in the process. Such employees duplicated process activities out of fear of failure. These respondents did not have a view of the bigger picture due to line managers not sharing the detail on process execution.

Management thus needs to provide each employee with a mapping of the aged process and perform a correlative view respectively. Further to this, the financial savings and field work execution processes need to be shared which will allow the 20.34% of respondents an appreciation of the efficiencies that have been created. Rao supports this by stating that managers need to simply state what a given process wants to achieve, so that all employees in an organization could understand and contribute towards its success (Rao, 2004:4).

**Customer satisfaction has little to do with process re-engineering within the ACMVC**

Figure 28: Regulation

Figure 28 reveals that a collective of 39.83% of respondents disagreed with this statement and indicated that customer satisfaction hinges on the processes that are applied in organisations. Davenport highlights that BPR involves changes in structures and processes within the business
environment, such processes need to be customer focused (Davenport, 2005:152). Many respondents informed the researcher that customer’s perception of Eskom – Grahamstown had positively changed since the implementation of the re-engineered ACMVC process. Section 4.4.10 indicated that customer care increased by 73%, as well as three employees further added that they had received written compliments commending employees on clearing ESP’s 40% ahead of the expected restoration time.

A collective of 49.15% of respondents agreed while 2.54% strongly agree that customer satisfaction has little to do with process re-engineering within the ACMVC. Upon administering the questionnaire it was noted that many respondents felt that processes support customer satisfaction, but highlighted that processes independent to employee involvement cannot be credited in achieving satisfied customers. Respondents stated that employee satisfaction drives customer satisfaction, or else a process will not fully achieve its intended purpose. This thought is supported by Sutherland who adds that positive attitudes of employees towards the whole business environment (including customers) is as a result their experiences, skills and their degree of job satisfaction (Sutherland, 2006:1). Management needs to make efforts in motivating their employees, as indicated by Kotter, who states that job satisfaction has a close relationship to motivation (Kotter et al., 2008:2). Latham predicts that motivation in the future will be a combined activity where all members of the organisation will need to take responsibility for ensuring that there are conditions available for high motivation (Latham and Jobber, 2006:191).

As a member of the ACMVC team, I often follow organisational processes as they are in line with the business objectives.

Figure 29: Teamwork

A collective of 84.75% agree that they apply themselves in a disciplined manner within a team by following VC processes, as they are in line with the business objectives. Operational managers are responsible for the commissioning of organisational processes that are relative to a department. James highlights this by stating that BPM is a management discipline that provides governance in a business process environment with the goal of improving agility and operational performance (James, 2006:1).

Davenport emphasises that a process is a structured, measured set of activities designed to produce a specified output for a particular customer or market (Davenport, 2005: 4). It implies a strong emphasis on how work is done within an organization. The cross tabulation in annexure C indicates that 55% of engineering employees were under the age of 40, in which 74% are in possession of a university qualification. The Eastern Cape Data manager reported to the
researcher that prior to the implementation of BPR, Eskom Eastern Cape incurred huge financial losses due to the duplication of field work. She further added that the root cause (from an audit finding) was that the prior process put little emphasis on data and its value in the execution of engineering activities. After BPR’s implementation, critical areas of customers’ data quality improved on the billing system, customers could purchase electricity faster as data was submitted to CS timeously and operational expenditure reduced as duplicate work was limited. Sayer advises that BPR needs to result in business efficiencies, or else it should be abandoned (Sayer, 2005: 3).

BPR’s objectives are in line with the value chain values.

Figure 30: Value Chain Objectives

A collective of 38.27% of respondents agreed that BPR’s objectives are in line with the VC values and supported Johannes when he advocates that when BPR is undertaken on core business processes, it should drive the companies’ values (Johannes, 2005:5). Wagner and Hollenbeck state that it is important to know exactly what a value chain’s objectives are, so that they can work effectively (Wagner and Hollenbeck, 2005:16). A number of respondents suggested that the re-engineered process tighten relations with customers, streamline operations (clearing electrical faults), reduced wasteful expenditure and eliminated none value-added steps in the identified processes. Zygiaris adds by advising that when applying the BPR management technique to a business organization the implementation team effort is focused on the customer, speed, flexibility, compression, quality and productivity, all of which capacitated the achievement of business objectives.

A collective of 47.46% did not agree that BPR’s objectives were aligned to the VC values. The challenge was that the 57 (48%) of respondents did not know what the values were, as it was not formalized in a Strategy document. Whilst this may be the case, management of departments in the VC did aligned their resources and functional outputs to the organisational values. As BPR is a technique that implements organizational change based on the close coordination of a methodology for rapid change, such change needs to support the values of a value chain, and thereby supporting the organisational values. Pramlal indicates that many experts in the field of team performance point to an ambiguous team value as the single largest reason for a team’s failure to perform at optimal levels (Pramlal, 2004:85). VC Management is the need to educate employees of what its values are and how it interlinks with the organisational values to avoid confusion.

Systems
Hammer highlights that the previous generations of managers had settled for, by using information technologies to simply improve departmental functions. In most cases, the departmental functions had not been redesigned but simply automated (Forgus, 2010:5). In recent times, the use of BPR has resulted in complete organisational transformation. In addition to the sections already discussed, the next sub-section will indicate how technology and IT infrastructure influences the way business operations evolve.

There is enhanced integration within the ACMVC with the use of Local Area Network (LAN), Sequel (SQL) systems and proper management systems.

Figure 31: System Integration

Figure 31 reveals that a collective of 45.77% of employees agree that the ACMVC is more efficient with the use of technology, and in particular with the use of LAN and SQL systems. Many of the respondents agreed with Bidgola who expressed that when Information Technology is applied correctly within a business area, its outcomes are noticeable cost savings on expenditure and supplements an organization to operate more efficiently and effectively (Bidgola, 2011:1). Performance report (see annexure D) in the Grahamstown area indicates that there was a 34.54% increase in the response time within the VC from January to June 2013. Respondents also indicated that they were impressed with the capabilities the data loggers had with respect to communication technologies, such as Bluetooth and Wifi, in which it had a positive impact on the manner in which tasks were done.

A collective of 34.44% remained neutral about the way in which information systems had been integrated and how technology was utilized. This response relates to section 4.4.9 where the capabilities of technology were questioned in an outlying area where it was mountainous. Such employees saw the benefits of technology, however still used certain manual processes due to compatibility issues with the SQL server and the strength of the bandwidth. IT architects need to increase the bandwidth and storage size of the SQL server to attract all employees to work on a system that can be standardized within Eskom.

IT has had a positive influence on the re-engineered process within the ACMVC

Figure 32: Technology Improvements
Figure 32 indicates a collective of 84.75% who agreed that IT had positively impacted on processes within the value chain. This was a result of proper management and specialized skills being used within the BPR phase. This thought is supported by Gurbaxani who advises that the organizational view of applications and information technology may improve, reduce, or have no effect on a firm’s performance; however it is dependent on the business management and BPR’s implementation respectively (Gurbaxani, 2004:7).

The vision of the value chain is to become a world class organisation Customer Service organisation, thus management are required equip the business with the necessary resources that can propel them in achieving this vision (Kunene, 2012:2). An essential element is to utilize cutting edge, up-to-date technology that can support process changes.

Upon administering the questionnaire, it was highlighted that there was a slow learning curve due to the changes to the issuing of prepaid meters to field workers in Field Services. Prepaid meters were being scanned in and out of locations with the use of mobile data scanners that had Bluetooth capabilities, as opposed to the past when manual forms had been populated. This technology was new to RSA, in which Eskom was the 3rd company to use the Dolphin MP120 scanners.

The slow learning curve existed upon the skills transfer phase to support Bradford, who expresses that information technology (IT) is universally regarded as an essential tool in enhancing the competitiveness of the economy of a country; however skilled labour is needed to effectively manage and apply such technology to the optimal benefit to that country (Bradford and Florin, 2003: 54). The challenges originated from lower level employees who struggled to understand how information was being transferred onto their computers wirelessly without someone punching information into a PC. Training assisted in closing the gap and enhances process effectiveness.

Technology has had a negative influence on the way the ACMVC is evolving.

**Figure 33: Strategy**

![Graph showing the responses to the question on the influence of technology on the ACMVC.](image)

Figure 33 indicates that there is a divide on whether technology has negatively influenced the way the ACMVC is evolving, with a collective of 31.36% agreeing with this, 42.37% neutral and 26.27% disagreeing with this question.

After further engagements with respondents that provided a neutral response, the researcher was informed that they did not understand the strategic direction that the value chain was taking, and
hence they did not know if it was evolving or retarding. Johansson et al state that an organization’s strategy should be directed at the foundation of clear and explicit company goals so that all employees can embrace the strategy with understanding (Johansson et al., 2010:8). Managers and team leaders need to share the strategy of the value chain so that employees can commit to, trust and apply themselves to attain the strategy decided upon. Pramlal indicates that some experts in the field of team dynamics point to an unclear strategy, this is the single largest reason for a team’s failure to perform at optimal levels (Pramlal, 2004:85).

The collective of 31.08% had agreed with this statement. Many of these respondents were of a diverse age group and were knowledgeable with the company policies, the value chain model and strategic plan. A business model should be a central element of a firm’s strategic plan. Simply stated, a business model describes the process through which a value chain hopes to meet its deliverables. Martins and Terblanche state that post-industrial organisations today are knowledge-based organisations and their success and survival depend on informed employees (Martins and Terblanche, 2003:64).

The **current system meets my needs to perform my job without time delays and increased data integrity.**

Figure 34: System Efficiency

![System Efficiency Chart]

A collective of 76.28% of the respondents agreed that the systems that were implemented with the use of BPR met their needs and they thus performed their job outputs without being negatively affected. Bidgoli (2011:1) highlights that many organizations use enterprise systems, such as supply chain management, customer relationship management, enterprise resource planning, and collaboration software to reduce costs and improve customer service. Rapp adds to the concept of information architecture and employees as an “extended information system” which embraces people, systems, and processes, in which IT plays a critical role in a total integrated management approach. The goal of these systems is to use information technologies to create the most efficient and effective link between an organisation and the consumers. When this link is well structured, employees perform their jobs with confidence in a timely manner. The results are a positive contribution to the competitive advantage of an organisation. Gaining and sustaining a competitive advantage is the defining question of strategy. Data integrity is an element of a firm’s competitive advantage. Since the only constant in a technology intensive industry is change, sustained competitive advantage can only be accomplished through continued innovation and injection of IT to improve a company’s data relevancy.

IT infrastructure needs to allow employees to perform outputs without time delays, in which 16.10% of respondents disagree and have indicated that the system is time consuming. Many respondents shared that due to additional field of information being required when performing a meter replacement, such data capturing increased the process time by 22 minutes. After such feedback, the data manager initiated a change management program that lasted 2 weeks. The emphasis was on improving the understanding of how disciplined actions in following processes
and capturing data correctly reduces re-works, frustration and contributes to a sound financial health on Grahamstown.

There is a relationship between people, process, systems and Customer Satisfaction in the ACMVC environment specifically

**Figure 35: Compression**

![Bar Chart]

From Figure 35, a collective of 48.31% agreed that integration of elements in a business is essential for customer satisfaction. Jayaratna warns that Information Systems have no independent existence of their own unless taken in the context of processes and its organisational objectives (Jayaratna, 2004: 21). Kaplan and Murdock however suggest that it is important to take an integrated look at both process and information flows simultaneously, focusing on how information is used in the process and how people interact with systems to attach the objectives or a firm (Kaplan and Murdock, 2006:34). For a business to achieve satisfied customers there needs to be proper collaboration between processes, systems and people.

A collective of 29.66% of respondents disagree with this question, which suggesting that customers within the ACMVC will attain satisfied customers, even if there is no integration between processes, people and systems. Steward advocates that when a business makes big strides that people struggle to process, they may become disconnected with change which results in resistance in executing activities in new processes (Steward, 2004:13). Participative management techniques need to be used when BPR incurs changes that may demotivate employees, due to fears such as job security, isolation and not being supported with operational challenges within new systems and processes.
To understand the importance of customer satisfaction and its effect within the ACMVC, one needs to consider the facts as pointed out by Price that 4% of unhappy customers complain, in which 9 other people are told, while satisfied customers tell 5 others (Price, 1997:15). Figure 36 analysis and over the pilot period that lasted for a period of six (6) months, the number of customer complaints regarding electricity supply problems within Grahamstown reduced significantly. Prior to the pilot period, the number of complaints that related to ESP was 73%, however reduced substantially to 27% six months later. This figure indicates that for every 10 customers that complain in Grahamstown – Eastern Cape, approximately 3 relate to activities within the Asset Control Management Value Chain.

Customer complaints are likely to be regular users of a services or products. Not all complaints should be seen in a negative light as a well-handled complaint can actually increase customer loyalty. This is done by educating a customer on how Eskom operates, thus ensuring that the customer will be easier to deal with on future contacts and it could be an opportunity for customer service to impress the customer with the sense of responsibility the organisation takes (Hill, Brierley and Macdougall, 2004:1).

These results have indicated the effectiveness of BPR, as well as a reflection on how business efficiencies are created with the use of technology, by eliminating unnecessary steps and introducing activities that provide the realisation of the restoration time being reduced from 24 hours to 15 hours. This has positively impacted on the reputation of Eskom.

CONCLUSIONS AND RECOMMENDATIONS

Findings from the Study

The findings are presented in four main sections which are demographic, human resources, processes and systems information in relation to BPR.

Findings from the Literature Review
A firm’s internal strengths and weaknesses and external opportunities and threats need to be addressed for a firm to gain a competitive advantage.

Women are preferred in areas where teamwork is required such as value chains, as they put their group attributes over their personal ego, seeing that they prefer to work more collaboratively in teams. Men often produce behaviours of self-promotion, individualism, and competitiveness which disrupt team cohesion and effectiveness.

In a mixed-age workforce where companies value knowledge, experience and skills above age, seniority or gender, employees of all ages have the opportunity to teach, share and learn from one another.

Academic qualifications are important, because in order to gain good exam grades or a degree, students have to work hard, master demanding skills and learn a great deal of specialist knowledge which they can apply in their professions.

High education levels of employees renders a VC that is more effective due to the fact that the complex skills acquired through education makes it more versatile and efficient in handling difficult situations. Such employees possess ambition, motivation, self-confidence and teach-ability which are vital ingredients for success.

A culture of participation is crucial for reducing resistance and also offers management an opportunity to communicate and brainstorm in addressing challenges at hand.

The concept of the value chain captures the notion that a firm engages in a number of activities to transform inputs into outputs, and through this process each value chain partner adds value at each stage.

BPR may be used as the essential rethinking and redesigning of business processes in order to achieve dramatic improvements in critical measures of performance, such as cost, quality, service and speed.

BPR helps organisations out of crisis situations by becoming leaner, better able to adapt to market conditions, innovative, efficient, customer focused and profitable in a crisis situation.

Re-engineering fails in certain situations, as most business people interpret re-engineering as a word that stands for restructuring, lay-offs and too often, failed change programmes.

Customer satisfaction affects a company’s market share, which impacts profits, recommendations, marketing expenditures and greatly impacts on their corporate image.

Customer satisfaction is an evaluation of what was received and what was expected, emphasizing the perceptual, evaluative and psychological processes that contribute to customer satisfaction.

There is a positive relationship between employee satisfaction and customer satisfaction which is achieved in companies that practice employee motivation and loyalty.

Engineering Asset Management is a systematic and coordinated set of activities and practices through which an organization optimally manages its assets and their associated performance, risks and expenditures over their lifecycle for the purpose of achieving its organizational strategic plan.

IT should be used to primarily reshape the way business is done, and should be viewed as more than merely an automating or mechanising force. Therefore by applying IT to a business, it gains a competitive advantage and provides quality products and services to their customers.

Without IT, companies may lose much of its power to transform performance. However, legacy systems often require more effort in comparison BPR.

The introduction of IT does not affect the organisational structure only, but also the relationship between management and workers. It is managed by the users and determines the perceptions of human beings and thus affects their behaviours.

A main contributor to BPR failure is the neglect of the human element, whereby the approach emphasises the scale of the change and fails to consider that such change may be made through people.
• It is crucially important that team members know exactly what their personal tasks are and perform them well, so as to effectively achieve VC and organisation goals in a disciplined manner.

• Commitment may have different consequences for work-related behaviours. Employees that accept this are less likely to engage in withdrawal behaviour and more willing to accept change.

• Discipline is a condition within an organisation whereby employees know what is expected of them in terms of the organization’s rules, standards and policies and what the consequences are of going against these rules, standards and policies.

• Employee discipline and training allows for less supervision by those in authority, thus a well-trained employee who is also well disciplined will be acquainted with the job and will need less supervision. The results are less wastage of time and efforts, and greater business efficiency.

• Good leaders have the power to chart courses of movement appropriately within the abilities and limits of an organisation, and make periodic adjustments to their planned routes. Leaders must inspire team members to work toward desirable destinations and work with followers to reach that goal, which will also create an all-embracing team spirit.

**Findings from Primary Research**

• A collective of 56% of staff does not have basic education such as a matric, which contributes to deterioration in the VC’s moral as the workload shifts to the 44% of qualified employees that are able to adapt to change and perform in new processes.

• Primary research indicated that the 20-29 and the 30-39 age group categories make up 53.89% of the staff. Management had done a good job in introducing young employees that are able to flex and embrace technology as a means of performing job outputs, hence attaining efficiencies.

• Primary research shows that there is a fairly well distributed profile amongst genders between males (42%) and females (58%), which is an indication that management and the VC departments are conforming to its equity plan; however the races are not aligned to the gender profile targets according to the 2015 ACMVC equity plan.

• Primary research indicates that the ACMVC displays a skewed distributed profile in terms of first line management position occupied (18%), thus creating an environment that is unstable due to a long hierarchy and chain of command. BPR often results in flatter organisation structures with employee’s responsibilities increasing.

• Primary research indicates that 25% of respondents hold designations within the Engineering environment. This suggests that managements understand the complexity of field work execution for ESP’s and have prioritized resources in attending to such.

• Primary research indicates that 38% of respondents have between 1 – 5 years of experience within the VC. A young yet experienced workforce creates a learning environment due to employees being able to learn quickly and have not become stagnant in their ideologies.

• Primary research indicates that 33% of employees have less than one year of service to the value chain. This poses a big challenge as they do not have the necessary experience to provide insight to changes in business operations.

• Collectively, 67% of respondents indicated that they do not follow set processes as they are not cumbersome, highlighting that such processes are efficient and reduced the handling time on each customer complaint.

• Collectively, 60.17% of respondents agreed that business leaders and managers have started to work together to understand each unique discipline within the ACMVC, and to ensure that a customer focused approach is taken to address ESP’s faults.
Collectively, 73% of respondents agreed that customer care had increased since BPR was implemented. This indicates that BPR has had positive effects within the VC, thereby gaining internal efficiencies to serve customer.

Collectively, 77.97% agreed that the piloted AMCVC process increased customer satisfaction after it had been re-engineered.

Collectively, 29.66% disagreed that there is a relationship between people, process, systems and Customer Satisfaction in the ACMVC environment specifically while 77% of respondents agreed that process management is an important element to enhance business efficiencies.

Collectively, respondents noticed a 46% reduction in the number of customer complaints reported to Eskom, with 62.72% of employees agreeing that they got more job satisfaction from the newly piloted ACMVC process as they were directly involved in the process mapping and thus had taken ownership of the process.

Collectively, 84.75% of respondents agreed that IT had positively impacted on the re-engineered processes within the value chain, however 54.24% of respondents remained neutral or disagree that systems had integrated within the ACMVC with the use of Local Area Network (LAN), Sequel (SQL) systems and proper management systems. This indicates the confidence and reliability employees have in technology.

Collectively, 72% of respondents agreed that they were confident that employees were competent to perform their respective tasks in the re-engineered process. A constitution of 83% of respondents indicated that they go beyond their job description to ensure that the customer is satisfied.

Collectively, 84.75% of respondents agreed that they apply themselves in a disciplined manner within a team by following VC processes, as they are in line with the business objectives.

Conclusions of the Study

The following conclusions were drawn from this study:

1. BPR is a strategic initiative that allows an organisation to remain customer centric.
2. The ACMVC has becomes leaner as technology and IT infrastructure was employed.
3. Employee discipline is centered on leadership providing clear direction and is thereby responsible to motivate employees in taking ownership in the implementation of process changes.
4. Unqualified staff prohibited the effectiveness of BPR.
5. Customer complaints relating to ESP’s had significantly reduced and the customer satisfaction index had improved.
6. As IT automates business activates, it also eliminates manual labor. This provided Eskom an opportunity to assign more resources to challenging areas within the VC.
7. Cohesion among business units within the VC had enhances through the implementation of BPR.
8. Eskom’s network assets life cycle had extended as the number of ESP’s complaints reduced, resulting in less electrical disruptions and network interference.
9. The quality of customer data captured in the field had improved through BPR.

Recommendations

The recommendations include the following areas are below.

Educating unqualified staff
The ACMVC has 33% of its employees that do not have basic education, a matric qualification and 23% only having a matric. Unqualified staff has difficulties in solving complications in a company, they make more mistakes, are inflexible to change and often are unable to integrate themselves into a team or business area.

Management need to offer bursaries to employees that are legible and send delegates to colleges. In addition, management should take ownership in the development of staff by providing positive reinforcements in the form of study leave. Many employees may not have the drive to enhance their qualification levels, hence management need to attract employees to gain a qualification in the form of salary increases, employee benefits and possible promotion that will motivate staff.

**Addressing Hierarchy**

Collectively, 18% of the VC constitutes managers, and 11.5% holding first line management positions. As BPR has been implemented, the business needs to review the roles of management due to a flatter organisation structure being created with the use of BPR. Such managers need to deploy to areas where further improvements in efficiencies can take place where technology cannot.

A flatter organisational structure improves the relationship between managers and employees. A flat organisational model further promotes employee involvement through a decentralized decision-making process. By elevating the level of responsibility of baseline employees and eliminating layers of middle management, comments and feedback reach all personnel involved in decisions more quickly. Expected response to customer feedback becomes more rapid. Since the interaction with workers is more frequent, this organisational structure generally depends upon a much more personal relationship between workers and managers.

**Resource Allocation**

BPR is achieving dramatic performance improvements through radical change in organizational processes, architecting of business and management processes. It involves the redrawing of organizational boundaries, the reconsideration of jobs, tasks, and skills. As the ACMVC needs to increase its headcount from 263 to 320, HR managers need to co-ordinate the recruitment process to interview only competent, qualified and skilled individuals to fill vacancies.

Management should consider employees internal to the VC. Such candidates have knowledge of the business and have established relationships. Promoting internal employees also emphasises the need to qualified employees and thus creates a learning organisation, thereby increasing its competencies. Management should also reduce the headcount in areas where IS was used to perform activities that employees conducted prior BPR. Such employees should be trained and deployed to CRM or Commercial departments to increase the moral and reputation on the ACMVC as being truly Customer Centric.

**Coaching staff with less than 1 year of experience**

It is important for management to maintain the right balance between young and older employees. The findings revealed that 14.51% are over the age of 50 years old and 53.89% below 40 years old. From the older age group staff are closer to their retirement and will take with them a strong work ethic, absolute dependability and stability, as well as continuity, vast knowledge, expertise,
experience, and invaluable ability as coaches to upcoming talent (Moodley, 2010: 73). It is important for Management to focus on the future growth and deployment of the 20-39 age groups in order to avoid major disruptions to the current teams. Newly qualified younger graduates bring to teams a ‘cutting edge’ in terms of technology and other ‘current’ practices, which enhances VC effectiveness, but need the guidance of the older group. The younger employees require coaching from the older group who has vast experience.

**Systems Availability**

A representation of 26.27% of staff responded that they experienced frustration and a lack of organisational effectiveness due to systems that were not available in the outlying areas in Grahamstown. Whenever changes are made to a business process, technical and capability assessment need to be conducted to ensure its optimal effectiveness.

Providing information to help the VC employees perform their work is a primary purpose of most information systems although they provide information in many different ways. Some systems provide information that is essential in informing a business process, such as the amount of time it would take to restore supply. Management need to request the system architects to perform a Capability assessment to determine where the gaps exist in the VC process. In addition, a strengthening exercise must be embarked upon so that customer data may flow freely from one department to another.

**Business Integration**

Business Integration is one of the fundamental advantages in BPR. As 29.66% of respondents stated that integration is a challenge, managers need to unpack the role of each employee in the established process, with the aid if IT. Managers must also address technophobes and that employee jobs are not at stake, as organisation embarked on BPR due to efficiencies it has offered.

The VC must develop a strong culture around excellence and managers must proactively seek out technologies that could add to their business advantage. This can be done by benchmarking the VC against similar VC’s in other business areas within Eskom, or undertake a competitive intelligence study to find out what others in the same industry are doing. The organizations must also strategically select from the wide range of available technologies, the best tools that would add value to the ACMVC. Further to this, the organization must be prepared to train its workers, and must plan for and manage the transitional period which is inevitable when new technologies are deployed. Lastly, managers must develop an evaluation and monitoring framework for the purposes of measuring the impact of the technology on business performance.

**Areas for Future Research**

This research study investigated how BPR in an Asset Control Management provides enhanced customer satisfaction within Eskom, Eastern Cape. As BPR was applied to a localized area within Eskom, further study can be carried out on another two areas within RSA to determine aspects not identified within this research. In addition to the above, the impact of technology on integrated VC’s should be investigated to determine how leadership influences the success of BPR.
Conclusion

The primary findings assisted the researcher in answering the research questions that was formulated for this study. The study concluded that BPR has positively impacted customer satisfaction within the Asset Control Management environment. Effective change management and technical capabilities in driving processes is a key factor in ensuring that BPR is successfully implemented. It is clear from both the findings that leadership has significant impacts on customer satisfaction and forms an integral part when outdated processes are reviewed. It ensures that employees are being lead through a fearful yet exciting stage of an organisation in which it motivates individuals towards achieving personal and organisational growth. A drawback to the research was the number of technophobes that hampered BPR’s effectiveness and thereby customer satisfaction. Technical enhancements are here to stay in the current digital age organisations find themselves operating in, adaptation is critical.

NOTE: This study was presented by the principal author to the Regent Business School, Durban, South Africa, for the award of the Master of Business Administration Degree (MBA) in the year 2014. The dissertation was supervised by Dr, Clever Chisoro, an academic attached to the school. The dissertation was edited by Professor Anis Mahomed Karodia for purposes of producing the study as a journal article.

The entire bibliography is cited for purposes of this article and the references applicable to this article are contained within the bibliography cited.

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