UNIVERSITY OF PRETORIA

Investigation and improvement of customer service within the retail outlets of the South African post office.

BPJ 420: Final Project Report

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Executive Summary

Customer service has become the prominent differentiator for companies around the world as it is the integral reason for success or failure of a firm. The globalisation of products and services has led companies to realise the importance of providing customers with exceptional service. Customers have more buying power than ever before as they are more informed and have global access to any company hence companies have to find methods to remain competitive.

This report addresses the shortcomings of the South African Post Office with regards to providing remarkable customer service. Customer service has become a major problem in the recent years at SAPO as they are failing to satisfy customer needs and requirements. The 2014 annual report indicates the loss of customers which contributed to lower revenues.

To begin with an extensive literature study is presented wherein relevant customer service enhancement frameworks are highlighted and discussed. Based upon the insight gained during this phase the Enhanced Customer Experience Framework is selected for the improvement of customer service within the post office. The framework aims to improve customer experience by aligning key internal business processes with customer requirements.

The Enhanced Customer Experience Framework is adapted and applied within the postal service environment. The framework has seven distinct stages which utilise industrial techniques to achieve the specified outcome. Each stage is explained, elaborated and applied with the associated outcomes discussed.

Specific improvement initiatives are identified and modelled through simulation modelling to gain a visual perspective on the outcomes if each initiative is implemented. The improvement initiatives are then analysed through Analytical Hierarchy Process and thereafter ranked accordingly.

The proposed outcomes of the framework aim to help the South African Post Office better understand their customers' needs whilst advising on how to align business processes with customer requirements. Not only should SAPO benefit from this study, but this model can be adapted to suit other organisations striving to improve customer service.

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List of Acronyms

SAPO South African Post Office
EFQM European Foundation for Quality Management
ECEF Enhanced Customer Experience Framework
QFD Quality Function Deployment
TQM Total Quality Management
BPR Business Process Re-engineering
KPI Key Performance Indicators
AHP Analytical Hierarchy Process
IE Industrial Engineering

Chapter 1: Project Background

1.1 Introduction and Background

The South African Post Office (SAPO) is a parastatal postal service that provides mail, retail, banking and government services to the citizens of the country. The post office operates more than 2400 retail outlets throughout South Africa. The main role of the post office is to utilise their vast reach and infrastructure in order to provide key service offerings to their customers.

The post office is divided into five operational departments which are referred to as business units. Each business unit has its own specific capabilities which contribute to the overall revenue of the post office. These units are retail, mail, digital, Postbank, logistics and e-business.

The postal service around the world has seen a decline in revenue due to decrease in mail volumes. This has been the direct result of the numerous electronic media communication choices available to customers (SAPO, 2014). The postal service value proposition isn't as valuable as it used to be, as the market has shifted (Hartung, 2011). Customers now want immediate means of communication and it is available to them hence making the post office irrelevant in some aspect. It is crucial that the postal services find other means to remain competitive in the market.

SAPO has felt the pressures of technological advancement but the drop in customer volumes has been heightened due to repeated strikes which ultimately result in unreliable mail and parcel delivery (SAPO, 2014). Customers have been left stranded amidst the labour unrest for months which caused them to utilise other channels and businesses to provide the same products and services. Unreliable service together with technology has led to a large number of unsatisfied customers.

As the retail unit of SAPO is the primary contact for customers to access the various products and services they need to be at the forefront of rebuilding and instilling confidence in SAPO once again by providing exceptional customer experience. With the growing challenge of electronic media and mail solution becoming prominent, it is vital that SAPO focuses on improving customer service to retain and expand on the customer base.

1.2 Problem statement

Customer service has become an integral reason for the success or failure of an organisation. Johnston (2004) asserts whether the service is excellent or poor it has an intense emotional influence on the customer. The customer affiliates strong feelings with regards to the company, its staff and its services hence influencing their loyalty to the company (Johnston, 2004).

Customer service has become a major problem in the recent years at SAPO as they are failing to satisfy customer needs and requirements. The 2014 annual report indicates the loss of customers which contributed to lower revenues (SAPO, 2014). This problem is the result of SAPO not having a clear indication of their customer segments and thus not being able to provide valuable product offerings for these specific customer segments. It is vital that SAPO analyse their current customers in order to identify the different customer bases thereafter prioritise them and service each customer segment based on their specific needs. This problem needs to be addressed keeping in mind that all internal business processes need to be aligned with the goal of achieving customer experience excellence as the outcome. The problem cannot be solved in isolation as customer service should be an organisation-wide goal.

1.3 Project aim

The main aim of this project is to investigate the internal business processes and align them with customer requirements in order to increase customer service. The following objectives need to be met in order to achieve this aim:

- The compilation of a comprehensive literature review on existing customer service excellence frameworks.
- The application of a selected customer service excellence framework to address the issues being faced in the organisation.
- The overall enhancement of customer service by improving internal business processes and aligning them with customer needs.

1.4 Project Rationale

According to the post office's annual report the loss of revenue in the previous fiscal year was caused by significantly low revenues as customers utilised other service providers, the loss of their government subsidy as well as the unprotected

strike from 2014 (Vecchiatto, 2015). Figure 1 highlights the net profit loss after tax from 2012 to 2013.
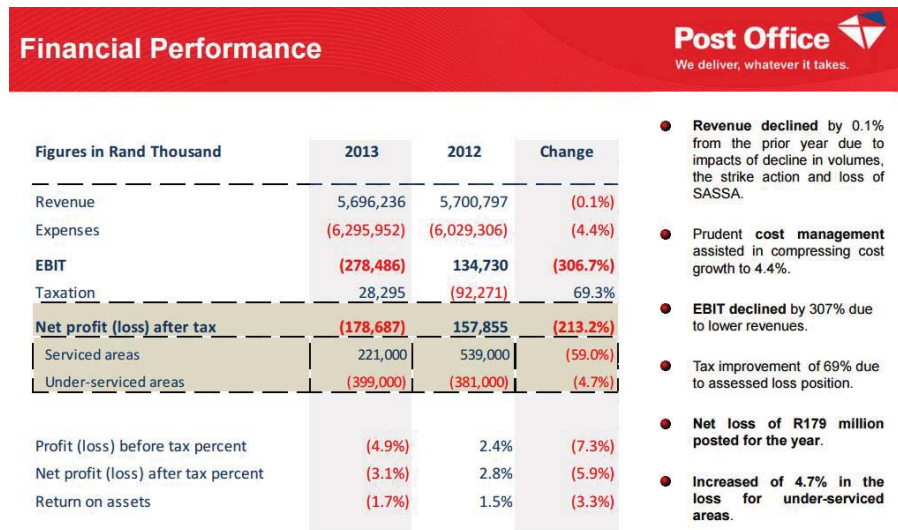
Figure 1: Financial Performance of SAPO in 2014 (Financial Report, 2014)

With a steady decline in mail volumes globally due to the pervasion of other forms of communication it is imperative that the post office reduces its dependency on mail revenue. SAPO needs to focus on expanding their products and services whilst leveraging on their already existing core competencies within the other business units (SAPO, 2014).

The retail division conducted a satisfaction survey mystery shopper and mystery caller reviews at 165 branches of all classification, with the sample size of 11,297 in November 2013 (SAPO, 2014). The following issues were identified:

1. Staff issues
   - Staff shortages

SAPO is experiencing a shortage in their staff which results in fewer personnel being available at each branch to assist customers. Customers are frustrated with the waiting times at the branches due to being understaffed.

   - Staff attitude

Customers complained that the employees are rude and unfriendly. They are neither polite nor courteous in their interaction with the customer as well as being unhelpful in certain instances.

- Staff knowledge on products and services

The current employees at SAPO branches are not well knowledgeable on the products and services they provide. Customers are unhappy as when they enquire about certain products and services the SAPO staff cannot provide insightful and helpful feedback.

2. Process issues
   - Queue length

Customers are frustrated regarding the queue length at SAPO branches. The waiting time to receive assistance is unacceptably long.

   - Parcel arrival notification

Customers do not receive notifications regarding parcel arrival at the post office branch in a timely manner. Customers wait for long periods to receive confirmation that their parcel is available for collection.

3. Infrastructure issues
   - Inadequate signage

There isn't adequate signage in the branches informing customers about the different products and services available. They also lack signage depicting which counter is suitable for what service. Customers queue in the wrong line only to find this out after arriving at the counter.

   - System related issues

This refers to SAPO's operating system being constantly offline. Customers cannot complete certain transaction due to the unavailability and access to the system.

From the above study done it is clear that customer service excellence is an issue that needs to be addressed as unsatisfied customers associate the post office with a negative image due to poor service, thus opt to take their business to other higher priced competitors. As the retail unit is the link between the customer and the business it should focus on expanding and retaining their customer base by providing professional, quality and efficient service.

1.5 Project approach, scope and deliverables

1.5.1. Project Scope
The scope of this project is to research and apply suitable Industrial Engineering (IE) tools and techniques in order to address the issue of customer service. Existing customer service enhancement frameworks will be analysed to determine which is

most suitable to the post office. The implementation phase of the project will not be addressed as this requires approval from various stakeholders which requires a longer period of time.

1.5.2. Project Approach
The approach for this project is outlined as follows:

1. Introduction and background: Provides a comprehensive understanding of the company and their role within the country.
2. Problem statement, aim and rationale: identification of the problems being faced in the organisation, motivating the need for them to be resolved.
3. Literature review: Purpose of this is to identify instances where other organisations have faced similar issues and how they resolved it. It provides a means for the identification of various tools and techniques that can be utilised in the creation of a final solution. During the literature review a comprehensive study will be conducted on existing customer service improvement frameworks.
4. Selection of tools, techniques and a customer service improvement framework: Based on the analysis and outcome of the literature review appropriate tools and techniques will be chosen as well as the most suitable framework which will assist in improving customer service.
5. Data collection and analysis: All data needed for the purpose of this project will be collected and analysed accordingly.
6. Application of tools, techniques and a customer service improvement framework: This phase will deal with the application of the selected IE tools, techniques and framework in the postal service environment.
7. Documentation of the project: The physical documentation of all the work completed during the project.
8. Recommendations and solution: Summarising the issues found during the duration of the project and offering value-adding solutions.
9. Presentation of findings: Presenting the findings to the organisation in order to receive feedback from industry sponsors and study leaders.

1.5.3. Project Deliverables
The deliverables of the project are:

1. An extensive literature review on existing customer service improvement frameworks.
2. Application of suitable customer service improvement framework
3. Recommendations of how SAPO can improve customer service using the framework
4. A final detailed project report
5. A final project presentation

1.6 Document Structure

Chapter 1: This chapter addresses the project background, problem statement, project aim, rationale and approach. It outlines the problem being faced at SAPO and thereafter substantiates the need for the project and the desired outcomes.

Chapter 2: A comprehensive literature review is presented in this chapter. The literature review focuses on identifying existing customer service improvement frameworks that are suitable for the project. At the end of the literature review a decision is made regarding which framework to select for the project.

Chapter 3: The chosen customer service improvement framework is adapted and applied in this chapter.

Chapter 4: Project validation is conducted by revisiting the aims, objectives and deliverables of the project thereafter evaluating if they have successfully been addressed.

Chapter 5: Recommendations based on the findings from the application of the frameworks are discussed in chapter 4. Alternative ranking is conducted through the Analytical Hierarchy Process technique. A conclusion is presented based on the analysis of the phases as well as the recommendations. The proposed solutions are briefly discussed and an action plan for the future is discussed.

Chapter 2: Literature Review

2.1 Importance of Customer Service in Industry

The globalisation of products and services around the world has led companies to realise the need to provide exceptional customer service in order to differentiate themselves from their competitors (Bartl, Giese and Gouthier, 2012). Customer service has become so important in industry and will continue to do so as Johnston (2004) states that evidence supports that simply satisfying customers is no longer enough as even satisfied customers aren't always loyal in several industries (Bowen and Schneider, 1999).

Customer service excellence occurs when the customers perceive that a service exceeds their previous expectations (Horwitz and Neville, 1996). The exceeding of expectations initiates a feeling of pleasure which results in customer delight. Customer delight can reinforce commitment and loyalty to the organisation possibly leading to increased profitability. Successful and leading organisations such as Singapore Airlines, Four Seasons Hotels and Resorts, The Walt Disney Company, McKinsey & Co, and IKEA have acknowledged the importance of customer delight and thus implemented their own customised model of service excellence (Bartl, Giese and Gouthier, 2012).

Existing service excellence models have been used for generations in industry. They can be adapted to suit the needs and requirements of several organisations in pursuit of providing exceptional customer service. In spite of the vast research regarding the benefits of service excellence models, the best method to achieving these benefits remains indeterminate (Bartl, Giese and Gouthier, 2012).

The literature review will focus on analysing four service excellence models that can be applied to the problem of poor customer service at the South African Post Office (SAPO). Each model will be discussed in detail and thereafter analysed to review if it is applicable and compatible with the postal service industry.

2.2 Customer Service Excellence Frameworks

2.2.1 Johnston's framework for service excellence

Service excellence occurs when an organisation exceeds the level of service expected by the customer resulting in great satisfaction. Johnston argues that the definition of excellent service has several drawbacks that make it inappropriate, unachievable in the long term and difficult to operationalise (Johnston, 2004). He

contests the idea that organisations should exclusively strive to provide customers with surprising and unexpected levels of service.

Johnston (2004) acknowledges the importance of extra effort to deliver service but he highlights that constantly exceeding expectations may not be economically justified. The constant exceeding of customer expectations may result in overquality which may be negatively perceived and give customers the impression that the products and services are overpriced. As service delivery quality increases customers expect future service to be beyond exceptional. Consequently previously excellent service is now considered to be adequate and the organisation has to continuously increase service levels to remain sustainable.

Johnston's framework for customer excellence is built on the theory that companies do not need to exceed customer expectations but rather meet them (Bartl, Giese and Gouthier, 2012). He identifies factors that customers regard as excellent service which create a sense of delight and pleasure but are not directly a result of exceeding expectation (Johnston, 2004).

Figure 2 represents the findings of Johnston's (2004) research:
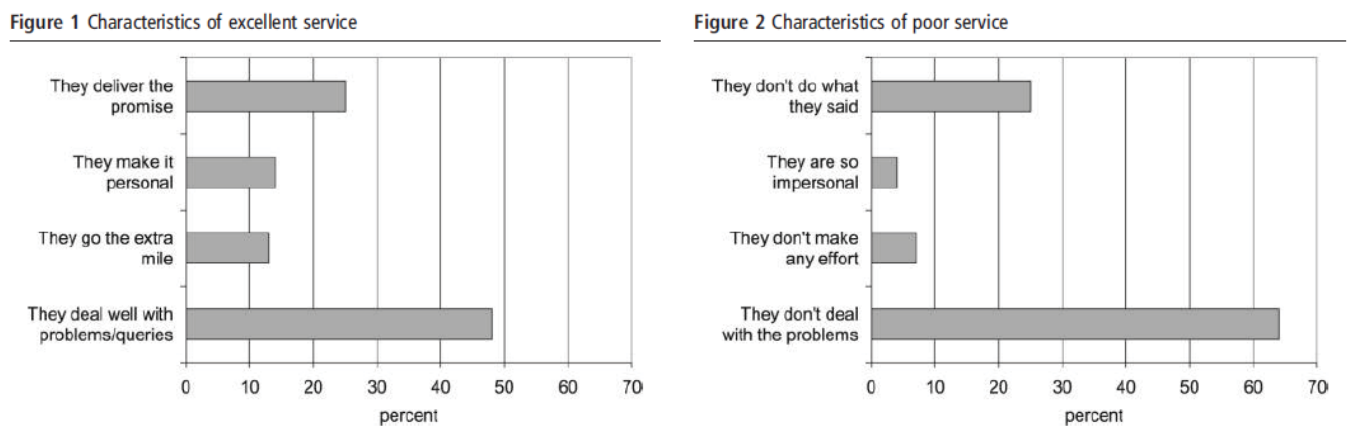
Figure 2: Summary of characteristics of service (Johnston, 2004)

Based on the findings depicted in figure 2 it is clear that customers associate excellent customer service on how well a company deals with problems/queries and thereafter deliver on their promise. Johnston (2004) further substantiates the impracticality of constantly exceeding expectations by noting that "they go the extra mile" had the least amount of responses as to what constitutes as excellent service. He asserts that service excellence was merely about being "easy to do business with" not necessarily surpassing expectations. Using the above figure Johnston categorised the responses of customers into four sets depicted in figure 3.

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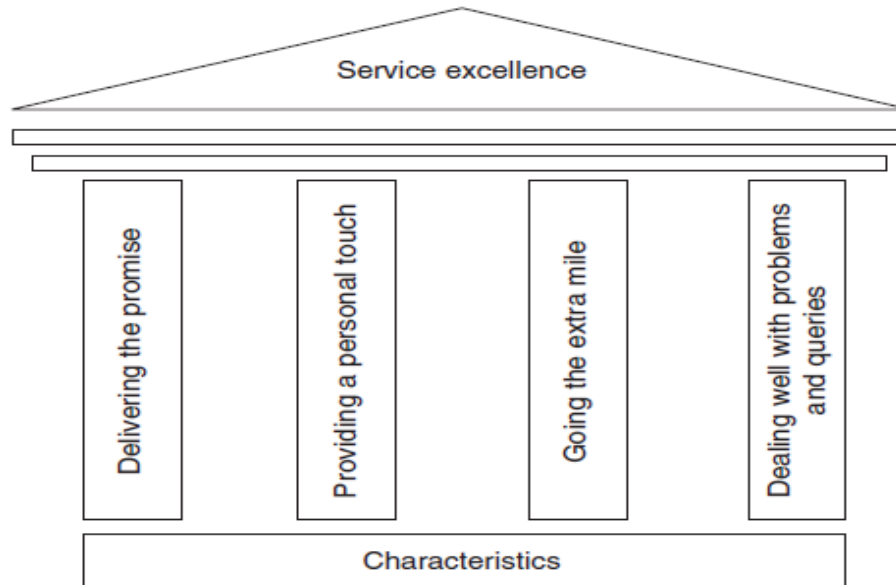
Figure 3: Characteristics of excellent service (Johnston, 2004)

The four pillars of achieving service excellence without exceeding customer expectations are shown in figure 3. The main pillars for service excellence according to Johnston (2004) is dealing well with problems and delivering on their promise. Although providing a personal touch and going the extra mile scored very low in the surveys Johnston (2004) elaborates that these pillars are significant as they are the key to providing exceptional customer service. Each pillar has a particular strength but coupled together they form the foundation for service excellence.

Johnston (2004) suggests the following approach for the application of the framework:

1. Data collection should ideally be based on three sets with around 150 individuals in total. It can be based using the following breakdown:
   - Set one: four focus groups with 20-25 randomly selected people in each group.
   - Set two: should be compromised of senior managers from both the public and private sector as this captures a wide range of opinions.
   - Set three: should include customer service managers from various organisations and industries.
2. All the participants of the study should be asked to identify organisations which they consider offer excellent service and those that provide poor service.
3. The respondents should then categorise what constitutes as excellent and poor service from the above identified organisations.

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4. The statements should then be collected and analysed separately by at least two researchers using open, selective and intuitive coding.
5. The results of the research should be categorised into key phrases and key themes.
6. The use of an iterative process to identify and agree upon a set of characteristics that constitute as excellent and poor service.

An example of an iterative process is shown in figure 4:

Excellent service	Poor service
They deliver the promise	*They don't do what they said*
They do what they said	They didn't have it/do it; it was wrong
They don't let you down	They let me down
They give you what you want, not what they want	They work hard to get you and then when you sign, that's it
You are not disappointed	They just look at you daft when you ask for anything
If you ask them to do it, it just happens	
They make it personal	*They are so impersonal*
They give you the time	There was no eye contact
They know about me, I don't have to keep telling them	They didn't even acknowledge me
They know who I am, or at least appear to know who I am	They looked like they didn't trust me
It feels more like a relationship than a transaction	They were patronising
They make eye contact and smile and they mean it	There was no personal touch
They treat me like an individual	It was plastic service
	They are blinkered by the process
	I was insulted
They go the extra mile	*They don't make any effort*
It's the little touches	They ignored us
They went out of their way	They didn't listen
They explain things	You just get a blank look
They call you back, I didn't have to chase them	They don't care
They had some nice touches quite easy but it really made the difference	They were not interested
They fall over themselves to help	The customer is just a problem to them

Figure 4: Examples of some responses based on a previous study (Johnston, 2004)

The advantages of Johnston's framework (Johnston, 2004):

- It is great tool that establishes the customer needs based on service delivery.
- The framework emphasises that simply meeting customer expectations is deemed as excellent service and there is no need to go beyond what the customer expects which could potentially save costs.
- The framework is holistic as it highlights the need for a proactive service approach through prior planning regarding customer needs as well as a reactive service approach by addressing problems and queries efficiently (Asif and Gouthier, 2014).

The limitations of Johnston's framework (Asif and Gouthier, 2014):

- Johnston's model aids in understanding the basic customer requirements needed for service excellence but it lacks in providing an underlying management approach to achieve service excellence.
- The model can merely be used as a tool to understand customer needs as it does not provide a structured management system as to how the organisation should adapt their organisational structure, processes and routines to develop sustainable service excellence.

Johnston's framework for service excellence was studied in this chapter as it a useful tool to understand the actual needs of the customers at SAPO. Although the framework has not been extensively applied it has been regarded by many as a truthful representation of what constitutes as service excellence which isn't necessarily exceeding expectations. Johnston's framework has been utilised by several industries but as a starting point in the development of a more structured and detailed service excellence model. This framework could be adapted and applied to the needs of SAPO but further contributing factors need to be considered before making a final decision. They will be discussed later in the chapter.

2.2.2 The European Foundation for Quality Management Excellence Model (EFQM)

In 1988, 14 European countries recognised the importance of quality management in an organisation's performance thus decided to form the EFQM (Monteiro, Sampaio and Saraiva, 2012). The institution's objective was to improve the European companies' competitive positions in the international marketplace (Costa, Gómez and Lorente, 2011)

The EFQM excellence model was developed by the institution itself and is based on the concept of Total Quality Management (TQM). It is being used by over 30,000 businesses around the world to drive service delivery and increased profit margins. The EFQM is Europe's most widely applied business excellence model with over 600 organisations utilising it to improve performance including Volkswagen, BMW, Microsoft, Deutsche Telekom, Fujitsu microelectronics to name a few (Cartmell, 2013).

The EFQM is a non-prescriptive model as there are no set rules or standards that have to be adhered to but rather a set of comprehensive and cohesive assumptions required for a good management system (NPP, 2009). Costa *et al.* (2011) assert that an organisation's success regardless of size, sector, structure etc. is dependant solely on a good management system. Thus each organisation can

utilise the EFQM to structure the management of their organisation based on self-assessment.

The EFQM model consists of nine criteria of which five are grouped as 'enablers' and four as 'results'. Each criterion has a specific percentage weighting within the framework with 'enablers' and 'results' accounting for 50% respectively (Bartl, Giese and Gouthier, 2012). The enabler criteria are concerned with the way the organisation functions and the results criteria focus on what the organisation achieves (Bou-Llusar et al., 2008). In essence, enablers drive results of an organisation as represented in figure 5.
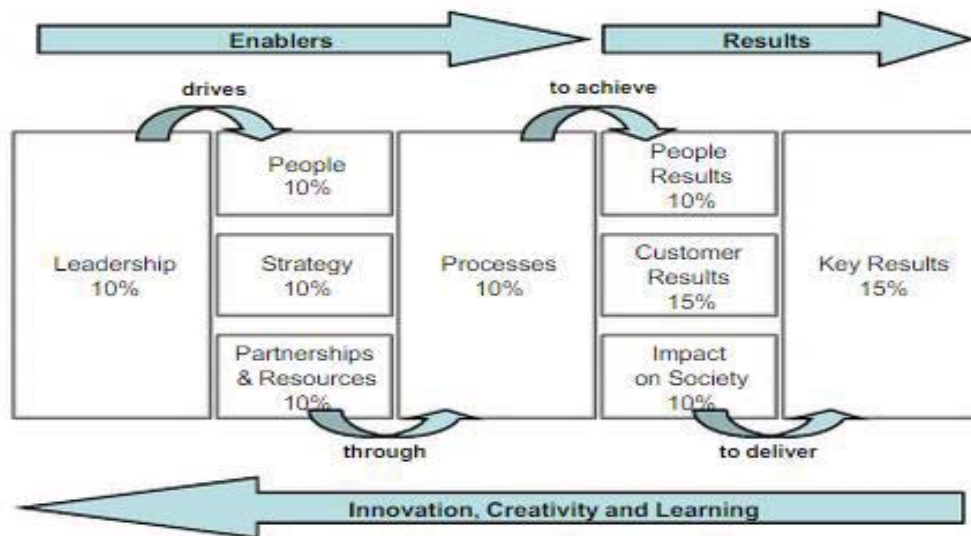
Figure 5: Representation of the EQFM excellence model (Cartmell, 2013)

The enabler criteria are defined as follows:

1. Leadership: This criterion analyses how the leader/leaders within the organisation support and facilitate the culture of excellence through their actions and behaviour.
2. Policy and Strategy: Addresses how policies and strategies are formulated and converted into plans and actions.
3. People: Analyses the organisation's approach regarding how they develop, manage and realise the potential of their human resources. A culture of motivation and participation should be encouraged.
4. Partnerships and resources: Determines efficiently and effectively how an organisation manages its internal and external resources.

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5. Processes, products and services: Determines how the organisation manages and improves their processes to provide quality service and value for money to their customers and other stakeholders.

The results criteria are defined as follows:

1. Customer results: Evaluate to what degree the customer needs and requirements are being met. Additionally, it evaluates the customer's opinion of the organisation and how can it be further improved.
2. People results: This criterion attempts to determine the employees' perception of the organisations and whether the employees are satisfied.
3. Society results: Investigates the society's perception of the organisation with regards to quality of life and environmental protection.
4. Key performance results: Analyses the organisation's performance indicators and financial performance indicators to deduce what their achievements relative to what they planned.

There are no specific steps available in literature which guarantee successful implementation of the model but rather guidelines as stated above. The integration of the model is unique to every organisation as it is customised to suit their specific needs. Although there are several companies that teach or assist organisations with the implementation and continuous improvement process associated with the EFQM model.

The potential benefits of EFQM (NPP, 2009):

- It provides a holistic management approach to systematically address underlying quality issues in the organisation and impacts through the results criteria.
- It allows the organisation to clearly view their activities thus enabling them to link their achievements to how they were possible. This is extremely useful in planning and being proactive.
- The model is highly flexible allowing any organisation to adapt it to suit their individual needs. The flexibility also gives companies the option to implement the model on varying levels (bite-size or for specific issues).
- The widening use of the model around the world facilitates comparison between organisations.
- No external validation needs to be met in order to apply the model as it is a tool not an audit.
- The model can be used as an internally driven tool for self-assessment which makes it possible for organisations to be honest about their performance.

The limitations of the EFQM model (NPP, 2009):

- The senior management need to buy-in to the implementation of the model and its underlying principles. Leadership is essential enabler for the model to be successful hence the need for complete support from senior level.
- Honest self-assessment may reveal the organisation is not as excellent as they thought and this could impact negatively on employee morale.
- Implementation of the model requires time, effort, money and resources and not all organisations can or are willing to invest in it.
- Although successful implementation of EFQM is recognised and awarded through the EFQM award, there is no formal mark or accreditation that will be visible to customers and other stakeholders.

In 1991, the EFQM foundation had developed an award called the European Quality Award (EQA) which is similar to the prestigious Deming Prize and the Malcolm Baldrige National Quality Award (MBNQA) (Monteiro, Sampaio and Saraiva, 2012). The EFQM excellence award recognises Europe's best performing organisation who have implemented the EFQM excellence model in their organisations. It assesses the eligible organisations improvement track record and recognises those that have achieved remarkable results (EFQM, 2015). These are the following companies who have previously won the EFQM excellence award:

- Bosch Bari Plant, 2014
- Alpenresort Schwarz, 2013
- Bilim Pharmaceuticals, 2011
- VAMED-KMB, 2010
- BMW, 2006
- FirstPlus Finanacial Group, 2005
- Springfarm Architectural Moldings, 2002
- St Mary's College Nothern Ireland, 2001
- Rank Xerox, 1992

Based on some of the award winners listed above, it is clearly evident that the EFQM model has been successfully implemented in various product and service based industries. Further education institutions and high schools around the United Kingdom and Europe have adopted the EFQM model to improve efficiency and effectiveness (Cartmell, 2013). Cartmell (2013) has presented a strong case in study stating that more educational institutions should attempt to implement the EFQM model as it has shown very positive results when applied appropriately.

The health care occupation is currently faced with issues of cost management, rivalry amongst health care providers, level of service offered to patients and empowerment of patients, which has resulted in a new paradigm shift of quality management in health care (Klazinga, Nabitz and Walburg, 2000). Klazinga et al. (2000) state that in the health care industry majority of European countries make use of the EFQM approach for the purpose of self-assessment and benchmarking. In most healthcare institutions where EFQM was applied it is important to note that organisations used the EFQM model generically in order to adapt the sub criteria to suit the needs of the organisation, but they maintained full responsibility for quality management.

From the literature it is apparent that EFQM model provides a holistic management approach with the emphasis on improvement and organisational excellence through excellent leadership, formulation of policies and strategies for guidance, developing personnel and designing all the processes in the company towards customers (Camison, 1996). The model is very flexible and could be adapted to suit the needs of SAPO which will be discussed later in the chapter.

2.2.3 Kano's model

The Kano's model was created in 1984 by Professor Noriaki Kano and his colleagues whilst investigating the causal relationship between product/service attributes and customer satisfaction. From the time when the model was introduced in 1984 it has been widely used by academic researchers as a tool to distinguish product/service characteristics which evoke customer satisfaction as well as customer dissatisfaction (Bartl, Giese and Gouthier, 2012).

Kano's model classifies customer requirements into six main groups, namely one-dimensional, attractive, must-be, reverse, indifferent and questionable (Bartl, Giese and Gouthier, 2012). Of the six categories must-be, one-dimensional and attractive are the most important as they impact customer satisfaction in individual ways when fulfilled (Matzler et al., 1996). Figure 6 depicts the Kano's model.
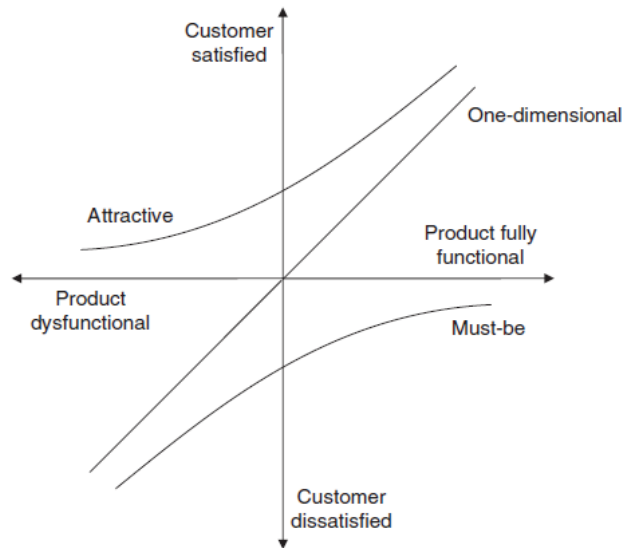
Figure 6: Kano's Model (Bartl, Giese and Goutheir, 2012)

The three curves represented in figure 6 are defined as follows:

1. The Must-be curve:

The must-be curve represents the product characteristics that a customer already expects to be present in the product. These basic features are taken for granted by the customer thus they do not explicitly demand them or consciously look for them. Although, if the basic characteristics are not met it will lead to the customer being extremely dissatisfied to the extent that they might lose all interest in the product (Matzler et al., 1996). Must-be attributes do not provide the opportunity for product differentiation but it is essential that a product meets the customers basic needs as without these the product would not be capable of penetrating the market (Calgary, n.d.).

2. One-dimensional curve:

One-dimensional requirements, also referred to as performance attributes, are features within a product that have a directly proportional relationship between product functionality and customer satisfaction (Holst, 2012). They are the most visible and known requirements of the model and are explicitly demanded by the customer (Matzler et al., 1996). In general the better they are performed, the greater the level of customer satisfaction inversely, the worse they are performed the lower the level of customer satisfaction (Verduyn, 2005). As a result companies are inclined to compete on one-dimensional requirements, differentiating their products by investing more or less on the essential performance attributes (Holst, 2012).

3. Attractive curve

The attractive curve entails all those requirements that are unspoken and unexpected by the customer (Calgary, n.d.). When these requirements are met customers experience a feeling of excitement or delight which results in significantly increased levels of customer satisfaction, conversely their absence does not cause any dissatisfaction (Verduyn, 2005). In a competitive marketplace where there is an abundance of similar products it is essential to identify and address attractive attributes to satisfy customers' latent needs (Shahin et al., 2013). Delivering attractive requirements with surprise features will provide the company with a competitive advantage and as well achieve service excellence (Bartl, Giese and Gouthier, 2012). Figure 7 summaries the main concepts of each type of product requirement.
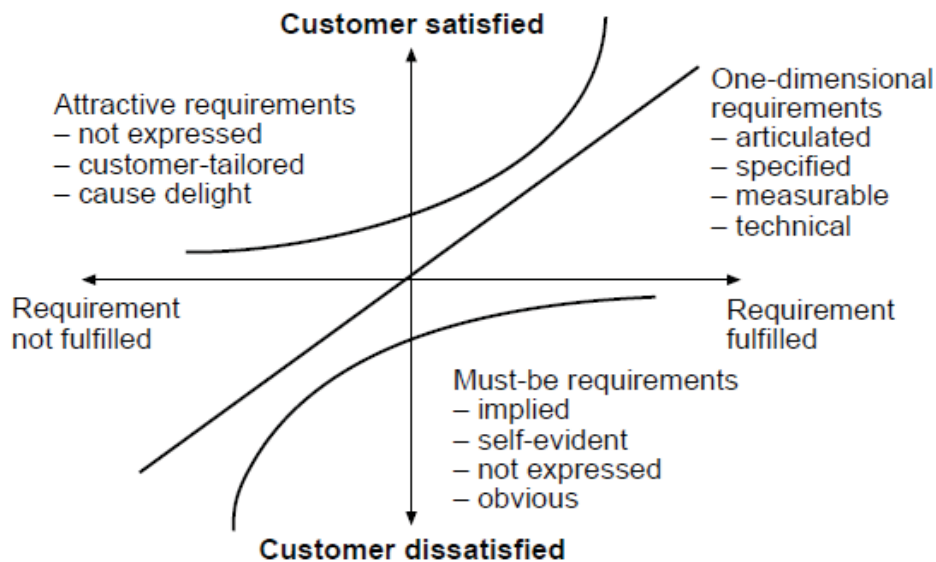
Figure 7: Detailed version of Kano's Model (Matzler et al., 1996)

Indifferent attributes are features in a product that a customer feels indifferent towards. Simply their presence or absence has no effect on the customer's feelings with regards to the product (Olson, 2004).

Questionable attributes are features for which a contradiction exists in customer feedback. Certain customers love these features whereas others simply hate it. These attributes need to be analysed accordingly before any decision is made (Philip, 2011).

Reverse attributes are features whose presence actually causes dissatisfaction and their absence causes satisfaction. These features need to be identified and

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eliminated from the product (Olson, 2004). The steps involved in "Kano's Project" are shown in figure 8.
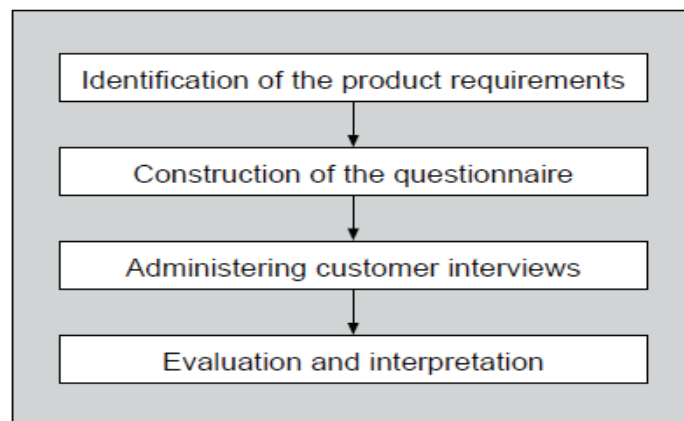
Figure 8: Steps involved in a Kano's model (Matzler et al., 1996)

The steps involved in the application of a complete Kano's project (Olson, 2004):

1. Define the problem you intend to solve and state the target audience the solution will be offered to.
2. Identify and gather people who will be willing to participate in the Kano model analysis, preferably find people from varying groups as this captures a range of different answers.
3. Interview the selected participants and ask them what problem they would like to be resolved with the use of the product and not simply the features the desire.
4. Analyses existing solutions (if any), competitors offering solutions (if any) and current business process. The goal of this step is to identify and features that were not explicitly stated by the customers i.e. attractive attributes.
5. Using the information from steps 3 and 4 the organisation need to evaluate existing features in the product as well as those that were not identified in the previous two steps.
6. After all the features have identified the next step is to rationalise and organise them in order of importance, by function and remove any duplicates.
7. Once the features have been clarified and grouped accordingly a customer survey should be generated. Two questions should be created for each feature identified in step 6. The first question should ask the customer what their reaction would be if the feature was included in the product and the second should ask what their reaction would be if it wasn't included in the product. Additional questions could be asking the customer to rank the

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features on a scale or against each other. Various methods of ranking could be used based on what the survey would like to accomplish.

8. Once the survey is completed it is given to the participants to complete. The participants could be grouped according to varying criteria in order to identify what each type of group values in the product. The interpretation of the results is made more structured and accurate.

9. Once the surveys have been completed, the outcomes are analysed. For each feature that was addressed in the survey, the positive and negative questions are paired to determine which type of attribute they belong to according to the customer's response. Figure 9 represents the criteria and method used along with the answers to determine the category in which the features will be placed.

Customer Survey Responses		Dysfunctional Question Answer				
		1. Like	2. Must Be	3. Neutral	4. Live With	5. Dislike
Functional Question Answer	1. Like	Questionable	Attractive	Attractive	Attractive	One-Dimensional
	2. Must Be	Reverse	Indifferent	Indifferent	Indifferent	Must-Be
	3. Neutral	Reverse	Indifferent	Indifferent	Indifferent	Must-Be
	4.. Live With	Reverse	Indifferent	Indifferent	Indifferent	Must-Be
	5. Dislike	Reverse	Reverse	Reverse	Reverse	One-Dimensional

Figure 9: Example of classifying customer responses (Olson, 2004)

10. Once the surveys have been analysed and the customer responses assigned to a certain category the company should then aggregate the responses and monitors the overall results of each individual feature.

11. After the completion of the analysis the development team/organisation need to decide upon the specifications of the product that will be built or modified based on resources, time and features decided upon.

The Kano's model is a very useful tool for researchers and practitioners as it depicts valuable insight regarding features of a product that cause customer satisfaction and dissatisfaction.

The advantages of the Kano's model are as follows:

- The model provides a better understanding of customer requirements thus allowing the company to identify features that have the greatest positive impact on customer satisfaction (Olson, 2004).

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- Identification of attractive, one-dimensional and must-be attributes allows for prioritisation during the product development phase. It also provides criterion which can be used to address trade-off issues during selection of features stage (Shahin et al., 2013)
- Through the identification and integration of attractive attributes various opportunities are created for product differentiation and competitive advantages (Matzler et al., 1996).

The disadvantages associated with the Kano's model are as follows:

- The implementation of a full Kano's model can be very costly as well as time consuming thus making it difficult to convince top management to buy-in to the idea of utilising the model.
- The model focuses on a limited number of product features which may cause the company to overlook other very important features that the customer may or may not be aware of such as maintainability and support needs (Olson, 2004).

The Kano's model is generally used to identify and analyse features of a product oriented project but it can be utilised in the service industry with some customisation (Arefi et al., 2012). Arefi et al. (2012) have proven that the Kano's model can be adapted for use in a service organisation, namely the State Universities of Tehran. The model was used to assess the quality of the Master's degree program of Educational Psychology based on student requirements and to investigate the effect they have on student satisfaction (Arefi et al., 2012).

Khalid, Mustafa and Haque (2008) have presented a study in which the Kano's model was utilised in order to investigate the satisfaction of students when using university websites. The research was based on the responses of 76 sophomores from the University of Bangladesh from which they concluded that the model was useful in understanding what students perceive as attractive, must-be and one-dimensional requirements (Khalid, Mustafa and Haque, 2008).

Kano's has been applied in various industries for several purposes such as in the analysis of the value of constructing sustainable green buildings (Määttänen, Jylhä and Junnila, 2014), to suggest an effective means of developing innovative ICT-enabled services (Yu and Ko, 2012), the creation of an integrated framework to assess the Ban-Doh Taiwanese hospitality industry (Lin, Yeh and Wang, 2015), Kansei engineering used the Kano's model to evaluate the individual preferences of consumers in real estate (Llinares and Page, 2011) amongst numerous others.

Based on the literature above it is evident that Kano's is a useful tool for both product and service based industries. It could be customised for the application in SAPO but further analysis will be conducted later in the chapter.

2.2.4 The Enhanced Customer Experience Framework (ECEF)

The ECEF is a framework developed in 2010 by Botha et al. that integrates various IE techniques in order to align the key business process with customer requirements. ECEF accomplishes this by "defining a methodical procedure which associates customer experience to various internal business processes in order to translate customer needs into specific design characteristics for each process" (Botha, Kruger and De Vries, 2012).

 The ECEF is based on some of the following theoretical concepts:

- Business Process Re-engineering, BPR provides the principles used within the ECEF
- Business Process Benchmarking, applied in various processes of the framework
- Value Chain Analysis, applied to determine the key business processes and KPIs associated with each process
- Quality Function Deployment, applied in various stages of the framework for the purpose of determining and prioritising customer requirements
- Simulation modelling,

Figure 10 shows the summary the ECEF:

Tools and techniques	Framework stages	Desired output for each stage
Strategic planning	**Stage 1** Develop framework objectives	Selected market segment
Value chain analysis	**Stage 2** Identify all key business processes and define KPIs for each process	Documented business processes
Surveys and individual face-to-face interviews	**Stage 3** Gather customer data	Customer requirements, importance rating and satisfaction rating for each requirement
Quality Function Deployment (QFD)	**Stage 4** Link business processes to customer requirements	Relationship value between business processes and customer requirements
Quality Function Deployment (QFD) and a strategic satisfaction matrix	**Stage 5** Determine the impact and performance of each business process and prioritise accordingly	Prioritised business processes
Benchmarking	**Stage 6** Estimate the desired performance level for each business process	Current and desired business process performance
Simulation modeling	**Stage 7** Specify improvement initiatives and test their impact on customer experience	Improved business processes for enhanced customer experience

Figure 10: The Enhanced Customer Experience Framework (ECEF) (Botha, Kruger and De Vries, 2012)

The steps involved in application of the ECEF within an organisation are as follows:

1. Develop framework objectives: Deriving objectives for the ECEF through strategic planning with the outcome of selecting a customer segment.
2. Key business process analysis: Identify all business process and associate KPI for each process through value chain analysis.
3. Data collection: Collect customer data regarding service ratings through customer surveys and secondary data in order to create customer requirements, importance rating and satisfaction rating for each requirement.
4. Application of Quality Function Deployment (QFD): Link all the identified business processes to customer requirements through QFD in order to define the relationship value between business process and customer requirement.
5. Establish business process impact: Determine the impact and performance of each business process and prioritise them accordingly.
6. Determine desired performance level: Estimate the desired performance level for each business process through benchmarking.
7. Model the solution: Specify improvement initiatives and test their impact on customer experience with the use of simulation models.

The advantages of the ECEF are the following (Botha, Kruger and De Vries, 2012):

- It helps define product specifications based on customer requirements whilst keeping an eye on fellow competitors.
- The framework provides top management with the ability to study the dynamic behaviour associated with business processes.
- It highlights the importance of delivering quality work at each phase as it impacts the quality of the finished product.
- The framework ensures cohesiveness between the planning and operational processes of the company.
- It ensures that customer requirements are effectively translated into significant technical product specifications during the stages of development and production processes.
- Simulation modelling visually displays the results and makes it easy to perform several alternatives to determine the best improvement initiative.

The disadvantages associated with the ECEF are the following (Botha, Kruger and De Vries, 2012):

- The implementation of ECEF might require increased employee effort thus they need to be motivated to work harder in order to satisfy customer needs.

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- The framework utilises the concept of QFD consistently which requires accurate customer data. The non-existence of secondary data would lead to a costly and timely process of conducting surveys.
- ECEF's success is dependent on the commitment from top management as well as resources i.e. people, money and time.
- Simulation models may be expensive to build and difficultly could arise when interpreting the results.

The ECEF was previously applied in the telecommunications industry of South Africa. Although it is not widely been used or implemented it offers valuable knowledge regarding how the improvement of internal business processes has a significant impact on customer satisfaction. It provides a systematic management approach that could be tailored to suit any organisation as it is generics in terms of the steps that need to be followed. SAPO could benefit from the integration of such a tool within their organisation.

2.3 Comparison of the service excellence models

The literature study thus far has revealed that all the models identified have potential benefits and limitations when utilised. The models address varying areas of business thus it is critical to analyse them accordingly. In order to make an informed decision regarding which service excellence model is most suitable for this specific project the following evaluation criteria was developed and presented in table 1.

Table 1: Evaluation of service excellence model (Bartl, Giese and Gouthier, 2012)

Criteria	Johnston	EFQM	Kano	ECEF
Scope of application:				
Holistic	✘	✔	✘	✔
Concentrated	✔	✘	✔	✘
Approach can be applied to:				
Products	✘	✔	✔	✘
Services	✔	✔	✔	✔
Measurement of application	✘	✔	✔	✔
Focus of the approach:				
Customer focused	✔	✔	✘	✔
Product focused	✘	✘	✔	✘
Internal/organisation oriented	✔	✔	✘	✔

Outcome of service excellence-elements:				
Customer surprise oriented	(✓)	✘	✓	✘
Customer delight focused	✓	✘	✓	✘
Customer satisfaction oriented	(✓)	✓	✓	✓

Not applicable ✘, Partially applicable (✓), Applicable ✓

From the above table it can be concluded that the EFQM and ECEF models are the most obvious choices for this project. It is difficult to decipher which of two models would be suitable for SAPO. Thus a further evaluation of the service excellence models was conducted based on how applicable and relevant they are to this specific project. This is shown in table 2.

Table 2: Criteria based on applicability and relevancy

Criteria	Johnston	EFQM	Kano	ECEF
Does the model align with aim of the project	✘	✓	✘	✓
Can the model achieve project objectives	✘	✓	✘	✓
Is it suitable for the issues faced at SAPO	(✓)	✓	✘	✓
Does the model improve internal business processes	✘	(✓)	✘	✓
Does the model provide any visual solution without actual implementation	✘	✘	✘	✓
Is it possible to complete the model within the given time frame	✓	(✓)	(✓)	✓
Does the model provide a systematic management approach that can be followed	✘	✓	✘	(✓)
Realistically can SAPO integrate the model into the retail unit	✓	✓	✓	✓
Is overall customer service increased	✓	✓	✘	✓

Not applicable ✘, Partially applicable (✓), Applicable ✓

Based on results from both decision matrix tables it is apparent that the best model for this project would be the Enhanced Customer Experience Framework (ECEF). The framework aligns with the aim and objectives of this project and it provides a visual representation of the solution without any implementation. This is crucial because the EFQM and ECEF models require copious time and resources for implementation thus the simulation of results will aid in presenting a strong case to top management. The ECEF will be selected for the next chapter of this project but firstly a detailed analysis will be conducted regarding the tools and techniques used within the ECEF.

2.4 Discussion of the tools and techniques in ECEF

The ECEF is comprised of several IE tools of which the three most important ones are Quality Function Deployment (QFD), Business Process Re-engineering and Simulation Modelling. The QFD technique establishes the link between business processes and customer requirements. Thereafter, it prioritises the business processes according to the customer's perspective. BPR is coupled with benchmarking to create a systematic process of re-engineering the processes to suit customer needs. Simulation modelling allows for the assessment of customer experience in relation to any process improvements (Botha, Kruger and De Vries, 2012).

Besides the above mentioned tools the ECEF applies other IE techniques such as value chain analysis and benchmarking. For the application of the ECEF within the postal service environment it is important gain a thorough understanding of the framework and all the individual tools used. This section will analyse the tools applied in the ECEF.

2.4.1 Quality Function Deployment (QFD)

2.4.1.1 Introduction

The Quality Function Deployment was introduced in Japan in the late 1960s by Yoji Akao (Hunt and Xavier, 2003). QFD was born in the era where Japan was transitioning from the traditional imitation based product development methods to product development based on novelty (Akao and Mazur, 2003). The first implementation of QFD was recorded in 1972 at Mitsubishi's Kobe shipyard and in the following years it was adopted into the automotive industry by Toyota who used the technique to revolutionise the vehicle design process (Hunt and Xavier, 2003).

Quality function deployment is a powerful tool that provides a mean for translating customer needs into product requirements. It ensures that product design in an organisation is driven by the needs of the customer (Chan and Wu, 2004). The QFD tool offers a means of listening to the true voice of the customer in the initial stages of product development and thereafter ensuring it echoes through the planning, design, production and delivery processes to attain maximum customer satisfaction (Antony and Preece, 2002). Through the use of QFD organisations are able to determine the qualities the customer desires as well as the specific functions that need to be used to deliver this product or service. Essentially QFD highlights how to best provide exactly what the customer needs.

2.4.1.2 QFD and Quality

In product or service delivery quality is simply what the customer perceives it to be. It is an objective view built upon the organisation's ability to fulfil

requirements, provide on-time delivery and deliver within costs. QFD ensures that customer's definition of quality is met. QFD combines various forms of data such as interviews, customer surveys, focus groups and market analysis to determine customer requirements. The data is captured and evaluated by statistical methods and the results are used for decision making (Selesho, 2009).

2.4.1.3 QFD and Customer

The application of QFD in an organisation causes the focus to be shifted on the customer. Customer satisfaction is improved as the changes made in the business decisions will consequently benefit the customer. Through the use of QFD companies receive customer feedback in the form of customer surveys which is valuable in understanding the level of customer satisfaction regarding certain product/service characteristics (Selesho, 2009).

2.4.1.4 Application of QFD

The QFD process consists of the six following steps (Wollover, 1997):

1. Identifying and evaluating the needs and requirements of customers
2. Identifying the technical performance measures
3. Benchmarking the technical performance measures
4. Prioritising customer requirements
5. Identifying specific design characteristics through technical performance measures
6. Developing technical performance measures into the follow-up phase requirements

These are the general steps associated when applying QFD. They can vary in different organisations as they are adapted to suit the needs of the company. Figure 11 represents an expanded QFD process that is adapted and repeated as many times as need be.
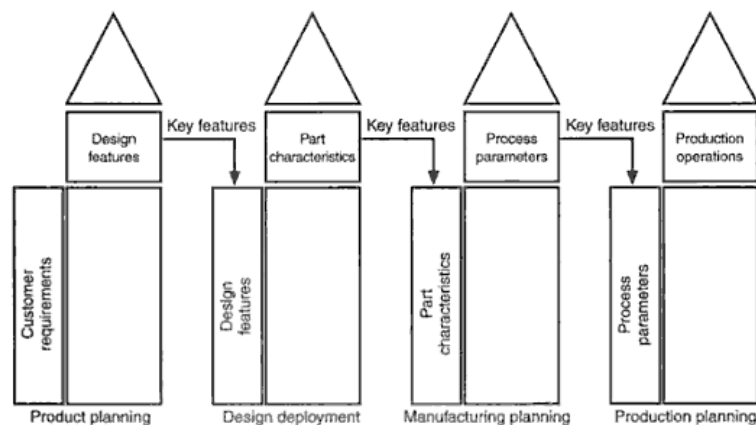
Figure 11: QFD process expanded (Antony and Preece, 2002)

The QFD tool is a very useful tool in analysing customer requirements and thereafter linking them to business processes.

2.4.2 Business Process Re-engineering

2.4.2.1 Introduction

Business Process Re-engineering (BPR) can be defined as the process of bringing about radical change in organisational structures through redesigning of processes. The objective of BPR is to creatively redesign the organisation as a whole to perform its business as effectively as possible whilst improving costs, systems and processes.

2.4.2.2 The impact of BPR of organisational performance

The redesigning of processes in an organisation to improve business performance is a powerful tool to bring about change. Organisations are generally comprised of several departments such as sales, production, research and development, finance, marketing etc. Conventionally managers of the respective departments focused on functional hierarchy as depicted in figure 12 (Peppard and Rowland, 1995):
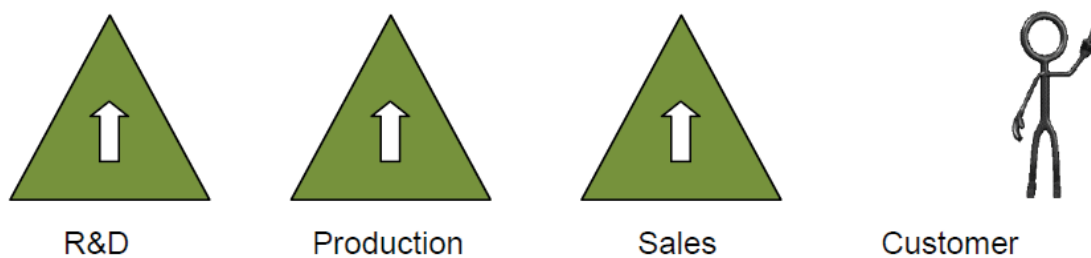
Figure 12: Traditional hierarchical focus (Peppard and Rowland, 1995)

BPR challenges this method of thinking in a business and shifts the focus on a process view which leads to the customer as seen in figure 13 (Selesho, 2009). Processes such product design or fulfilling an order should be customer centric and focus should not be placed upon whether or not functional boundaries are crossed (Peppard and Rowland, 1995).
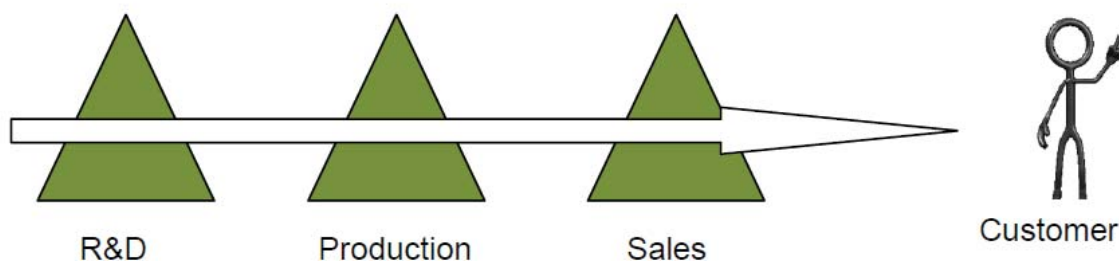
Figure 13: BPR organisation view (Peppard and Rowland, 1995)

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Carter (2005) states that even slight changes in business processes can have drastic effect on service delivery, customer satisfaction and cash flow. The simple act of documenting the business processes has the potential to improve organisational efficiency by 10% (Carter, 2005).

2.4.2.3 Application of BPR

The following is a six-step approach to BPR (Koorts, 2000):

1. Any BPR activity needs to begin with the formulation of clear and measurable objectives. Thereafter an analysis of the organisation needs to be conducted and a need for change has to be justified.
2. Assess the organisation and identify the processes for re-engineering. These are the processes that will result in maximum benefit if reengineered.
3. Enablers for re-engineering should be evaluated.
4. Gain a thorough understanding on the current processes by using the As-Is and Should-Be models.
5. Develop new and efficient process design with To-Be models.
6. Evaluate the re-engineered process and thereafter implement it. A pilot implementation phase can be tested by applying To-Be model on a small scale and, if successful, full scale implementation should occur throughout the organisation.

Overall BPR can be regarded as a tool for the optimisation of end-to-end processes and automation of non-value adding tasks.

2.4.3 Simulation Modelling

A simulation can be described as a synthetic representation of the operation of real-world systems over a period of time. A model builds a theoretical framework that is described by a system. Hence simulation models are developed to investigate the behaviour a real-world system over time (Banks et al., 2015).

Simulation is a powerful tool for designing, visualising and analysing complex systems to test hypotheses without actual implementation. It helps designers and engineers gain knowledge regarding how various changes affect improvement within a process, system or organisation. Simulation models can be difficult and costly to develop in some instances thus they should only be used for problems that cannot be solved analytically (Banks et al., 2015). There are various tools available in the market that develop simulation models such as Simio, AnyLogic, Arena etc. hence it is vital that the program chosen should be handle the level of simulation that is desired. Figure 14 represents the modelling methodology associated during simulation modelling projects.
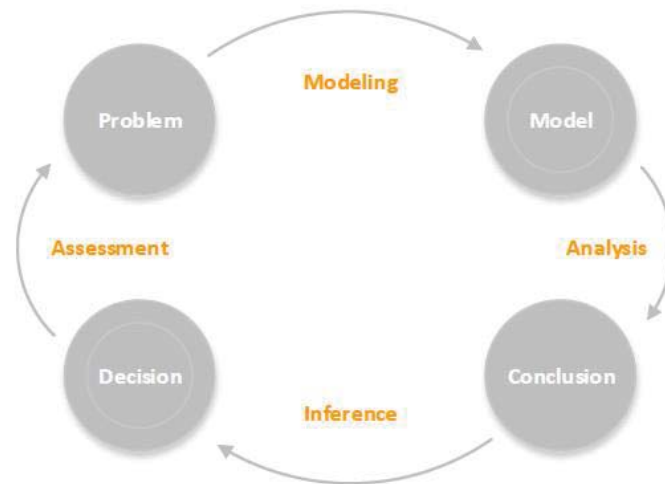
Figure 14: Modelling Methodology

The steps involved in simulation modelling can be summarised as follows (Manning, 2015):

1. Identification of the problem within an existing system
2. Formulate the problem by setting system boundaries and parameters of the problem to be studied. Develop clear objectives and outcomes of the study.
3. Collect data such as system specifications, input variables etc. of the existing system.
4. Develop the model based on the data and parameters from previous steps.
5. Validate the model by ensuring that the model is accurate and performs as the real-world one under various operating conditions.
6. Document the experimental design of the model for future use.
7. Select a handful of performance measures and variables that will probably influence it, as well as the level of each input variable.
8. Perform simulation runs to generate results.
9. Interpret the generated results by using numerical estimates and graphical displays.
10. Conclude on the experiment and make recommendations and suggestions for the future.

Simulation modelling is a valuable tool in visualising results that occur due to process changes.

2.4.4 Benchmarking

Any organisation's success is dependent on their ability to consistently evaluate their own performance. In order to achieve this, businesses need to set specific standards for themselves and thereafter measure their performance against similar

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industry leaders (Benchmarking Process, 2006). Benchmarking is an effective tool in understanding the processes that influence the company's performance in the market against their competitors. It is a relatively uncomplicated tool which can be applied successfully with some knowledge and practice (Benchmarking Process, 2006). Overall benchmarking improves business performance by identifying and applying the best practices throughout the company. Figure 15 shows and explains the steps for applying benchmarking by the authors Ball, McCulloch, Geringer, Minor & McNett (2005):
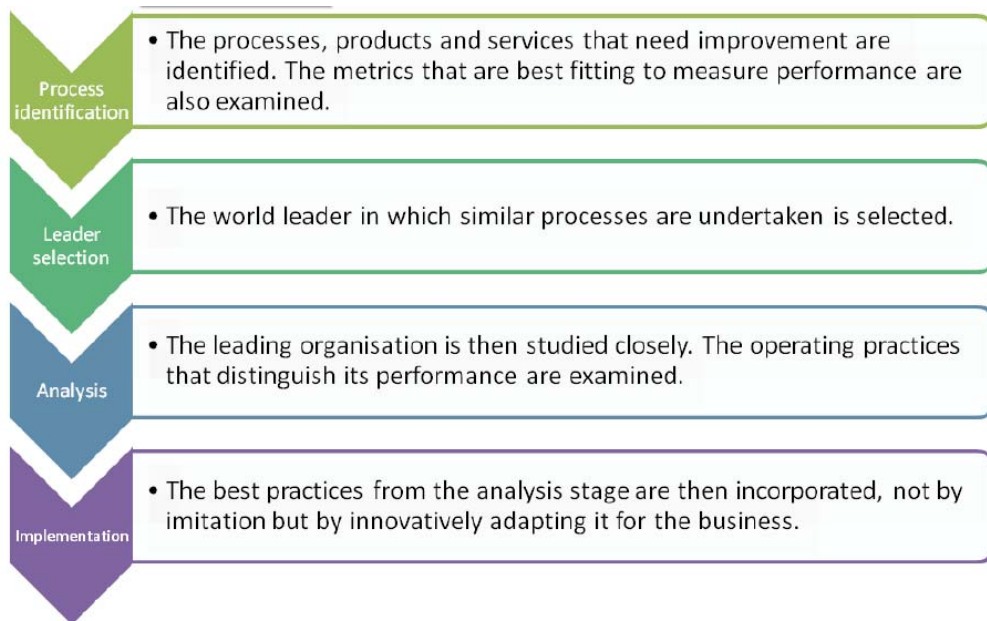
Figure 15: Benchmarking Methodology (Ball et al., 2005)

2.4.5 Value Chain Analysis

Simply states value chain analysis is a tool utilised by companies to identify how they can create the best value for their customers. It is superior method of identifying ways to gain a competitive advantage over your competitors. It consists of the following activities as seen in figure 16.
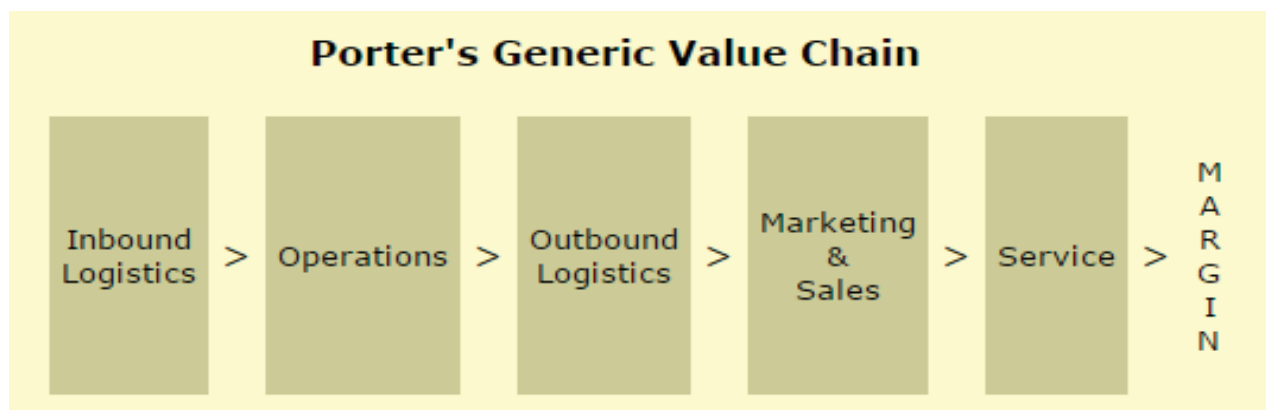
Figure 16: Porter's Generic Value Chain (Barton, 2010)

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The goal of the activities, as seen above, is to provide the customer with a value level that exceeds the costs associated with the activities thus resulting in a profit margin (Barton, 2010).

The value chain can be defined as a three-step approach (Value Chain Analysis: Achieving Excellence in the Things That Really Matter, 1996):

1. Analysis of activities: identify all the activities associated with product/service delivery.
2. Value analysis: for each activity identified in the above step, think of ways that add the most value for the customer.
3. Evaluation and Planning: evaluate whether the changes are cost effective and ultimately worth it thereafter develop plans for action.

Overall value chain can be used to attain a competitive advantage by redesigning the value chain to provide product differentiation or lower costs.

2.5 Concluding Remarks

The main insight gained through the literature study was that ECEF is the most suitable framework. It consists of seven stages each requiring the application of a different IE technique. The IE techniques that will be applied are simulation modelling, QFD, benchmarking, value chain analysis and BPR. The next chapter expands on the actual application of the framework to overcome the problem or poor customer service.

Chapter 3: Application of the Enhanced Customer Experience Framework

The literature review revealed that the Enhanced Customer Experience Framework (ECEF) was the most suitable framework for the improvement of customer service at SAPO retail branches. This chapter illustrates the discussion and application of stages one to seven listed in the ECEF as seen in figure 17.
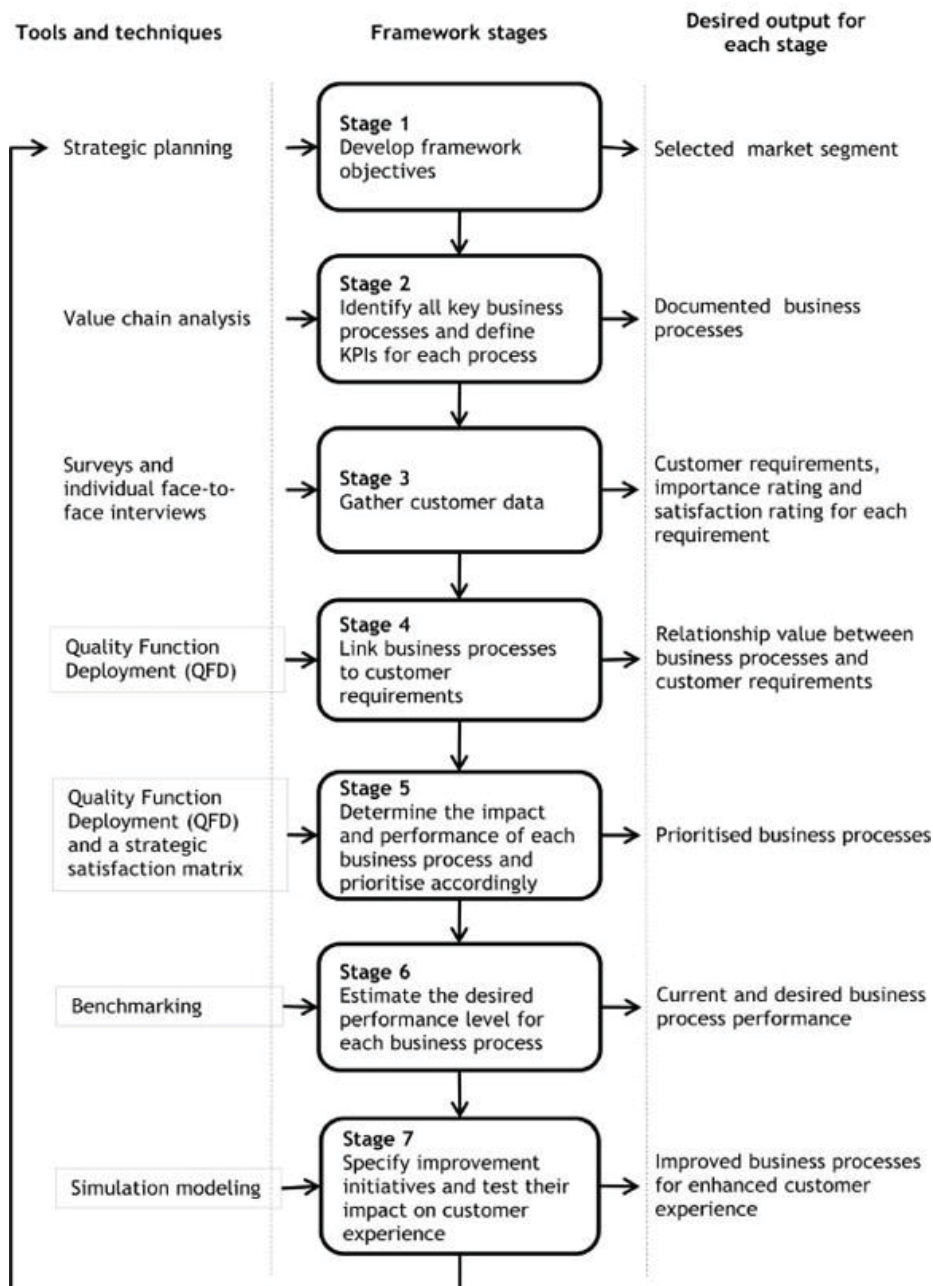
Figure 17: ECEF diagram (Botha, Kruger and De Vries, 2012)

3.1 Stage one: Development of framework objectives and selection of a market segment

The first step for the application of the ECEF within the South African Post Office (SAPO) is to select the appropriate customer market segment. The selection of the correct market segment is crucial as it drives the process of reengineering throughout the project. Customers can be divided into different segments based on various attributes such as personal values served, customer needs and the benefits pursued (Gustafsson and Johnson, 2000). SAPO divides their entire customer base into two distinct customers namely personal and business.

Business customers refer to companies, businesses and governmental departments that utilise the services of the post office to deliver their mails, special promotion letters, cards, documents etc. amongst other businesses as well as customers. Business customers utilise the post office as an intermediary to convey important information, they account for a small to medium percentage of their total revenue.

Personal customers are those that walk-in to the retail branches the utilise services such as mail, courier, pay a bill, motor vehicle license renewal amongst several other for personal reasons. Walk-in customers account for the highest percentage in terms of the total revenue. The revenue over the past five years for business customers is displayed in table 3 and the revenue of personal customers is displayed in table 4.

Table 3: Business customers five year revenue trend

Business Customers of SAPO							
Description	Actual 2009/10	Actual 2010/11	Actual 2011/12	Actual 2012/13	Actual 2013/14	Budget 2014/15	% Contribution
Municipalities	29 866	31 489	29 629	26 574	25 894	26 473	6%
Government Services	4 791	4 640	5 319	5 669	5 764	20 840	6%
National Housing	5 799	7 330	8 830	10 852	12 512	15 784	4%
Retailers	6 089	7 510	8 664	9 488	9 911	11 222	2%
Retail Government Bonds	566	11 570	8 669	3 860	1 888	2 309	0%
Legal	1 116	1 160	1 069	937	940	1 068	0%
Social Grant Revenue	83 772	62 176	56 572	30 349	746	587	0%
Health Services	719	573	471	413	389	392	0%
Educational Institutions	53	48	58	112	49	44	0%
Total Revenue	132 771	126 496	119 281	88 254	58 093	78 719	

Table 4: Personal Customer five year revenue trend

Description	Actual 2009/10	Actual 2010/11	Actual 2011/12	Actual 2012/13	Actual 2013/14	Budget 2014/15	% Contribution
Personal Customers of SAPO							
Motor Licencing	67 625	101 270	150 159	172 783	204 886	234 838	50%
Telkom Services	52 535	46 234	40 152	39 892	34 569	37 051	8%
Fax & Photocopier	25 827	26 161	27 738	27 264	31 135	36 494	8%
Lottery Revenue	15 232	14 350	13 331	12 725	12 159	12 915	3%
Television Licences	13 128	12 564	12 175	12 115	12 234	12 768	3%
Prepaid Airtime	10 551	12 303	11 221	9 454	5 305	10 976	2%
Money Transfer	22 724	19 315	12 458	10 289	9 270	9 768	2%
Pay A Bill	751	161	149	108	142	9 082	2%
Cell phone & Accessory	197	26	12	9	3	3	0%
Total Revenue	**208 570**	**232 384**	**267 395**	**284 639**	**309 703**	**363 895**	
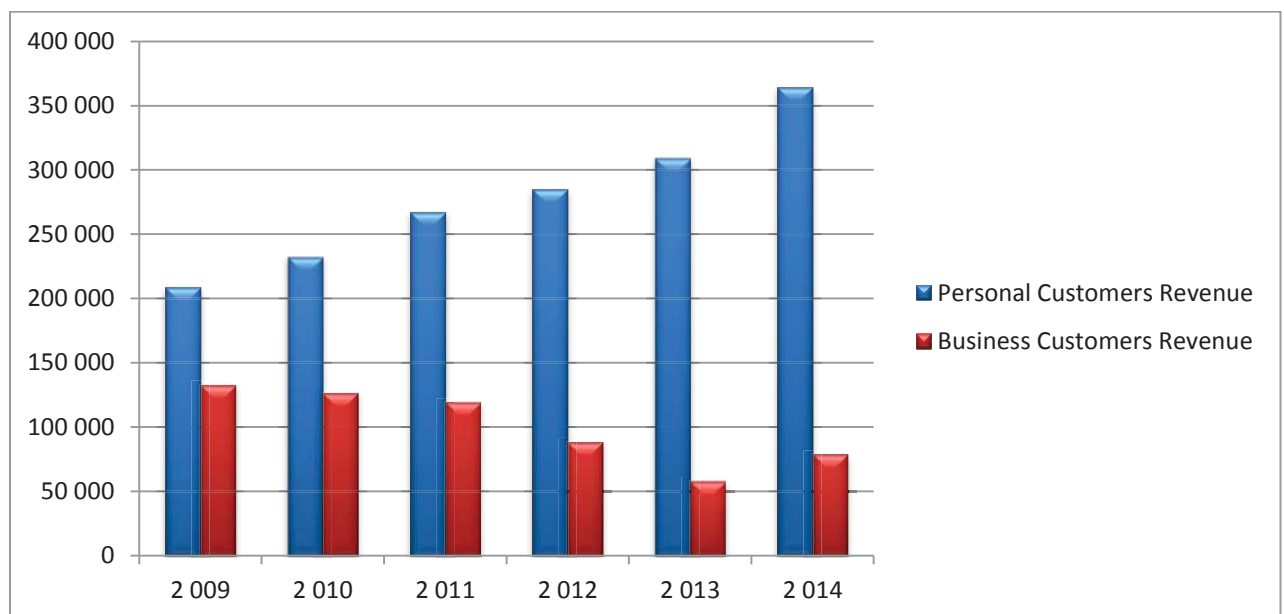
Figure 18: Graph of personal vs business customers' revenue

From tables 3 and 4 as well as figure 18, it is evident that the personal customers segment generated the highest revenue over the past five years. The personal customers segment depicts a growing trend making it necessary to provide exceptional service to retain and expand this customer segment.

Botha, Kruger and De Vries (2012) state that customer segments can also be chosen based on which segments have the highest complaint and dissatisfaction rates.

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SAPO conducted a mystery shopper survey on their personal customer segment the results reflected that the highest number of complaints received were from customers that utilise the retail branches. SAPO believe that their personal customers segment is in dire need of customer service enhancement. The statistics below support why the personal customer segment should be selected.

The 2014 annual report depicted that the personal customer complaints have risen by 556 from March 2013 to March 2014. The statistics of the national performance and regional performance are shown in table 5 and table 6 respectively.

Table 5: Complaints Received by SAPO (SAPO, 2014)

Complaints				
Description	March 2013	March 2014	Increase/Decrease in number (No)	Increase/Decrease in percentage (%)
Complaints Received	2 487	3 043	**556**	**22%**

Table 6: Customer Complaints based on Regions (SAPO, 2014)

Complaints				
Region	March 2013	March 2014	Increase/Decrease in number (No)	Increase/Decrease in percentage (%)
Central	580	200	**-380**	**-66%**
Eastern Cape	530	269	**-261**	**-49%**
KwaZulu-Natal	453	644	**191**	**42%**
North Central	294	417	**123**	**42%**
North East	242	211	**-31**	**-13%**
Western Cape	220	319	**99**	**45%**
Wits	168	983	**815**	**485%**
Total	2 487	3 043	556	22%

It is evident that the personal customer segment depicted a rise in the number of complaints received due to disgruntled customers. These complaints are mainly due to issues such as the IT systems down time which include motor vehicle license, Postbank and point of sale systems, lack of access to photocopying, printing and fax machine, outdated pin pads and terminals, lack of infrastructure such as chairs for the elderly and disability ramps (SAPO, 2014).

Based on the high revenue generated, complaints received and advice from management the personal customer segment is chosen for further evaluation. This coupled with the abundance of data and information available on this segment makes it an ideal selection.

The next step for the application of the ECEF is to fully comprehend the strategic planning of SAPO with regards to the measurement of customer service (Botha, Kruger and De Vries, 2012). The objectives developed need to be line with the company's strategy, vision and mission. The need for clear framework objectives is vital as it be a guideline throughout the project.

Currently SAPO's vision is "To be recognised among the leading providers of postal and related services in the world" whilst their mission is "Enabling South Africans to connect with the world by distributing information, goods, financial and government services; leveraging our broad reach and embracing change, technology and innovation" (SAPO, 2015). In regards to customer service SAPO states that "Our aim is to build a long lasting relationship with both our personal customers and business customers through rendering high quality pro-active services" (SAPO, 2015). Bearing in mind the strategy of the company and selected customer segment the following objectives were developed:

1. The measurement of current customer experience in personal customer segment
2. Improve customer expansion and retention in personal customer segment
3. The alignment of customer experience with the relevant business processes
4. The measurement and improvement of the relevant business processes

These objectives are still aligned with the main objective of the ECEF which is to improve customer experience through improved internal business processes.

3.2   Stage two: The identification of key business processes and KPIs for the identified processes

In this stage is it crucial to identify and document all the key business processes that directly or indirectly influence customer service. Botha, Kruger and De Vries (2012) explain that when products and services are directly delivered to the customer through an explicit business process, the process is labelled as a front-office process which has a significant impact on customer service. These processes are then identified as key business processes in the framework and should be documented as such.

A value chain analysis was conducted in order to determine and link the organisational activities that create value for the customer and profit for the company. The value chain may assist the company in highlighting the key business processes which deliver value to their customers. The value chain represented in figure 19 was constructed based on existing data within the company.

Figure 19: Value chain for SAPO

After thorough understanding of organisational activities and input from management, business processes were determined that deliver value-adding activities to the customer. Table 7 illustrates the list of identified high level business processes for SAPO.

Table 7: High level business processes identified

Process ID	Process Name
A	In-store customer service
B	Motor vehicle license renewal
C	Courier services
D	ID and drivers licence certification
E	Photocopying and faxing
F	Pay a bill
G	Financial services
H	Lottery ticket purchases
I	Human Resources (resource recruitment)
J	Employee training
K	Customer retention

These identified high level business processes are offered at every retail branch nationwide. A brief description of each process is given below:

A. In-store customer service

This is the overall in-store service received by customers each time they enter and use the services of the post office. The service process entails the knowledgeability of the staff, the time taken to receive service, the effectiveness of the staff to solve queries and problems amongst others.

B. Motor vehicle license renewal

The motor vehicle license renewal process was added to the post office services a few years ago. This service allows motor vehicle owners to renew their license disk on a yearly basis at the post office. It is a very popular service amongst customers due to convenience.

C. Courier services

The courier services process deals with the delivery of parcels, registered mail and packages. SAPO delivers parcels to even the remotest areas of South Africa due to their vast infrastructure and reach. They have a universal rate which allows customers to mail parcels are reasonably low prices.

D. ID and drivers licence certification

SAPO offers the service of being able to certify identity documents and driver's license for customers that require them for official use. There are other options available for certification but post offices are more convenient as they are located in almost every suburb.

E. Photocopying and faxing

Photocopying and faxing process involves making copies and faxing of documents. This service is especially useful at post offices that are located in more rural areas that do not have easy access to photocopying and faxing machines.

F. Pay a bill

SAPO has a contract with certain municipalities to accept water and electricity bills on their behalf. They also offer services to pay telephone and retail store bills. This is offers customers a one-stop shop for paying household bills.

G. Financial services

Postbank is a banking service provided by SAPO. Through this service they have managed to reach millions of people who need a bank account but do not access to one. They offer savings accounts, term deposit accounts and transactional accounts amongst other products.

H. Lottery ticket purchases

The post office is a third party provider for lottery ticket sales. Customers can purchase and enter the national lottery at the convenience of any post office branch.

I. Human resources

The human resources process is concerned with the recruitment of all personnel within the retail branches of the post office. It ensures that competent employees who have the necessary knowledge and skills are hired.

J. Employee training

Employee training process refers to the training that is received by employees regarding their role within organisation. Employees are trained for various reasons such as how to interact with customers, how to effectively market products and service amongst many others.

K. Customer retention

SAPO has a policy to retain their customers by ensuring every year they remind them of post box renewal, update customers on their systems regarding new product and service offerings. Management is also in charge of following up on customers complaints.

The high level processes are then linked to the activities in the value chain. Figure 20 depicts where each high level process creates value in the value chain.
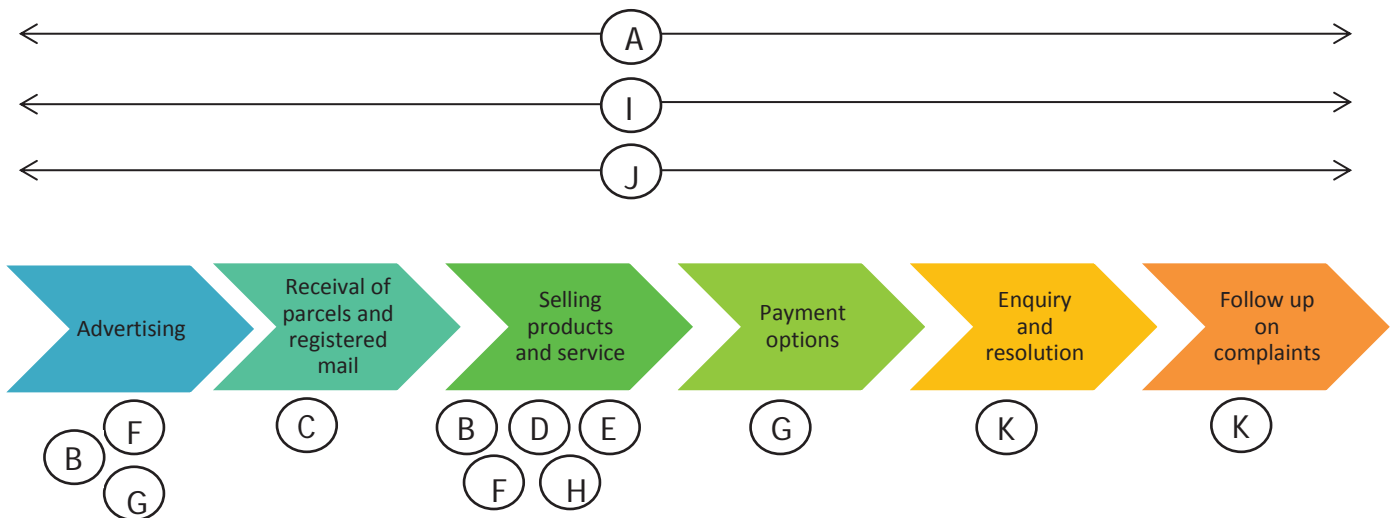
Figure 20: Key business processes with associated activities in the value chain

The main objective of the ECEF is to improve customer service thus it is vital that the identified business processes are analysed in order to determine which of these are currently in conflict with this objective. Botha, Kruger and De Vries substantiate that this can be done by consulting with the relevant stakeholders in the company. The analysis of secondary data regarding customer complaints can also be used to identify problems areas and consequently processes that are lacking from a customer perspective.

According to relevant stakeholders at SAPO the following three processes were identified as those that need immediate attention with regards to customer service:

1. Pay a bill process
2. In-store customer service process
3. Courier service process

These processes will be mapped out whilst documenting the problems associated with each process. During the mapping of the processes, performance of each process was taken into account. The development of a company specific framework is dependent on understanding the process performance from a customer perspective. Process performance from a technical perspective will be taken into account as it can vary substantially from the perspective of the customer. The business processes identified are currently designed according to the technical perspective. The framework aims to link the two perspectives; the goal is to do the technical redesign of the process while accommodating the perspective of the customer. The technical performance of the three business processes is measured by defining Key Performance Indicators (KPIs) for each process. KPIs are defined for each business process based on the overall objective of improving customer satisfaction with regards to a specific customer requirement. The KPIs when measured will indicate if the process is currently satisfying the specific customer requirement. The KPIs aid in conducting a technical evaluation for each process. The assumption made is that improving the specified KPI will result in improved customer satisfaction. This assumption will be tested in stage seven through the use of a simulation model. The process maps, documentation of existing problems and identified KPIs are discussed in the following sections.

3.2.1   The pay a bill process

The pay a bill process was a former highest revenue grossing process. Due to various competitors offering a similar concept the post office has endured substantial revenue losses cause poor customer service. Customers are dissatisfied due to lack of signage indicating the various accounts that can be paid through the post office as well as the speed and accuracy of third parties receiving the payments. Systems are also constantly down resulting in frustrated and unhappy customer.

Problems experience with the pay a bill process includes:

- Customers not being aware of all accounts that can be paid at, at that specific post office branch.
- The waiting time in the queue to pay a bill is too long

- Staff isn't helpful is assisting customers effectively
- The system for completing a pay a bill is constantly down, thus transactions are delayed or not completed

Input from relevant stakeholders resulted in the formulation of the pay a bill process map represented in figure 21.
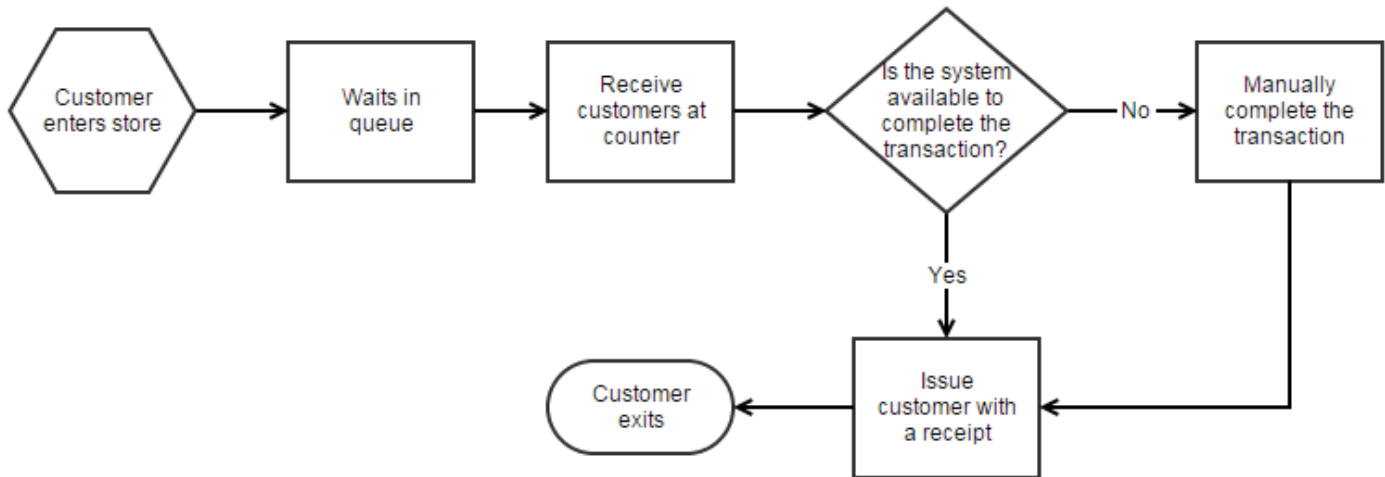
Figure 21: Pay a bill process map

The KPIs specified for the pay a bill process is the total time it takes to complete a transaction and for third parties to receive payment. The following elements have an influence on the identified KPIs:

- Number of customers waiting in the queue
- The speed and accuracy of the teller
- The availability of the system (electricity to access the system, load shedding)

3.2.2 The in-store customer service process

The in-store customer service process is crucial as it has the most significant impact on customer experience. The process comprises of the total time the customer spends in the system, from entry to exit. The above data reflects that most customers are unhappy with the amount of staff present and the long queues. The underlying problem to the top three causes of unsatisfied customers is the long waiting times.

Problems associated with the in-store service process:

- The staff cannot assist customers to solve their queries promptly as they either do not possess the knowledge or skills

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- Customers can be significantly delayed or unassisted after they complete the entire service only to realise the pin pad terminals are faulty
- Customers particularly the elderly may leave the premises as they do not wish to stand in long queues due to a lack of seating space available

The in-store customer service process was mapped out to gain an in-depth understanding of the activities within the process. This is crucial as it aids with the formulation of accurate KPIs. Information for mapping out the process was collected from the relevant stakeholders at SAPO and shown in figure 22.
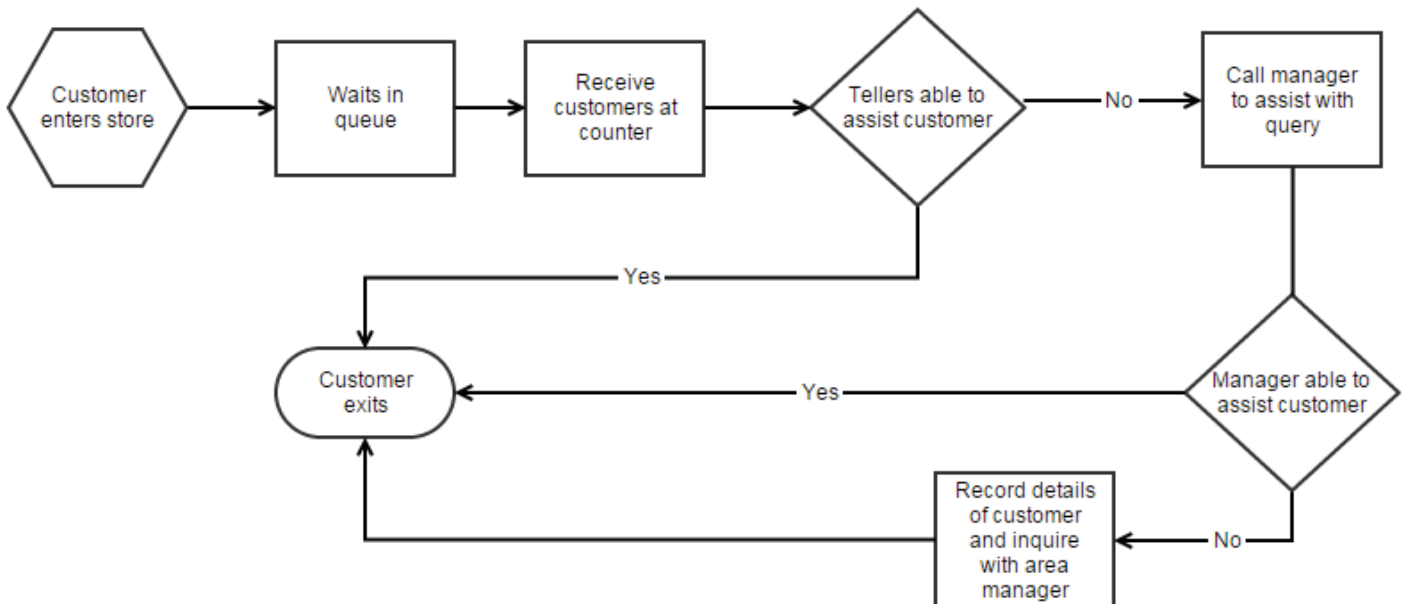
Figure 22: In-store service process map

As mentioned earlier accurate KPIs need to be identified as a technical evaluation for the repair of the process. The KPI recognised for this process is the total time the customer spends waiting in queue as well as the total system. The time the customer waits is affected by the following factors:

- Length of the queue
- Time customer spends in service
- Number of staff at counters
- Number of customers entering the post office

3.2.3 The courier process

The courier process is currently in conflict with the objective of satisfying customers. Customer satisfaction regarding the courier process is low due to parcels not being delivered on time as well as being damaged when they are delivered. The employees can only note the complaint of the customer and take it up further with a supervisor and/or manager; this practice tends to further frustrate the customer.

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The problems associated with the courier process consist of:

- Parcels packages are damaged
- Parcels are not delivered within an acceptable time frame
- The contents within the parcel are damaged and/or broken

The process map of the courier process regarding the sending and receiving of parcels are outlined in figure 23 and 24 respectively. Each process map was constructed based on the input from relevant stakeholders.
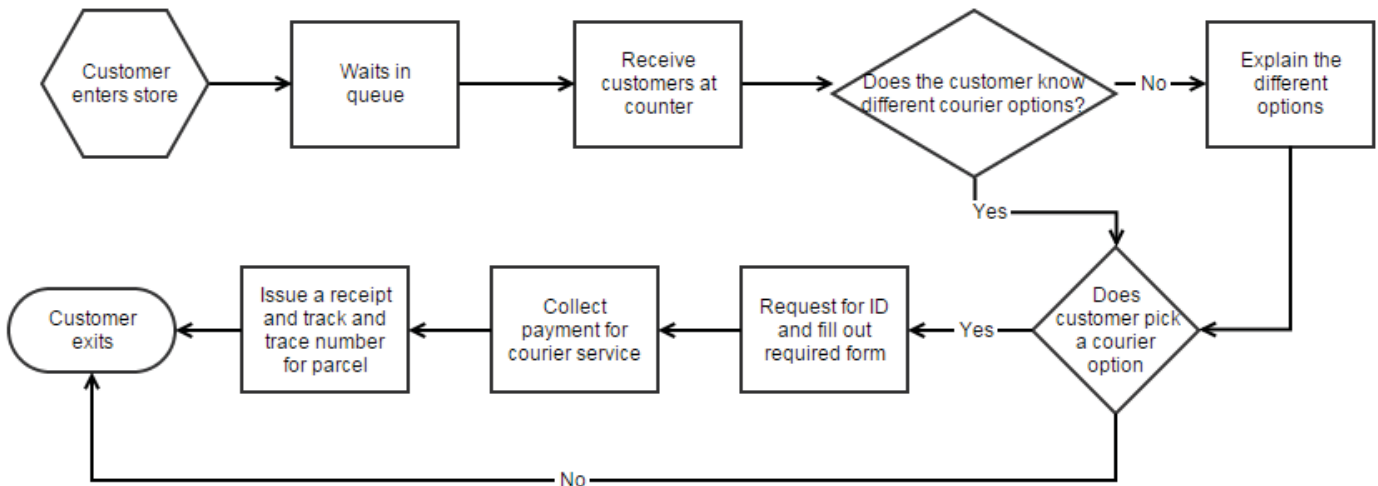
Figure 23: Sending a parcel through courier services process map
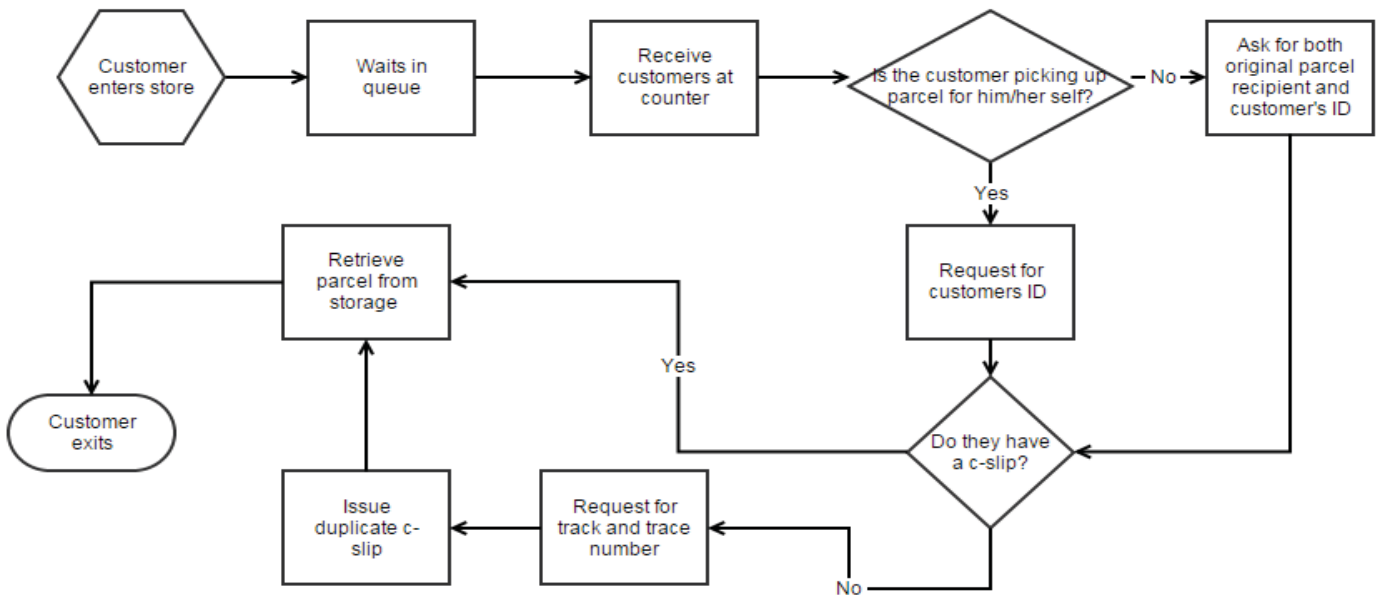
Figure 24: Receiving a parcel through courier services process

The KPI identified for the courier process is number of parcels delivered within an acceptable time frame. The KPI was selected based on the number of customer

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complaints regarding delayed parcel delivery. The factors that affect parcels being delivered on time are:

- Number of parcels backlogged in the system
- The post office's capability to deliver parcels due to staff shortage

3.2.4   Selection of a process

The authors of the ECEF make it evident that only 15 to 20 percent of all identified processes can be improved at any one given time as it is not possible for most companies to reengineer the processes simultaneously due to lack of resources. The availability of time and resources within the company dictate the number of processes that can be selected for reengineering. For the purpose of this project only one process will be analysed and improved. In order to select a process, customer complaint data will be taken into account coupled with the list given by management. The data in figure 25 reflects what customers are most upset about with regards to customer service at the retail branches.
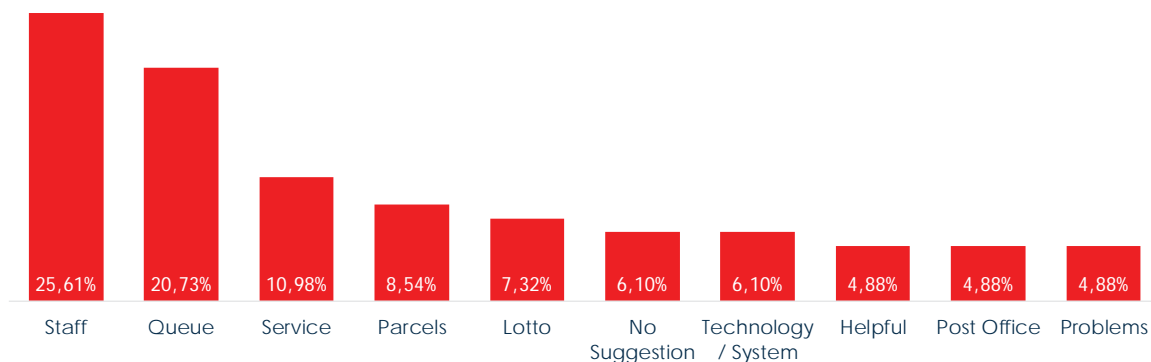
Figure 25: Customer complaints data

The statistics above reveal that the top three reasons for poor customer service are the staff, queues and service received. This forms parts of the in-store customer service process. According to management as well as customers the in-store customer delivery process is the most underperforming process with regards to customer experience thus this is the process that will be further analysed.

Stage two of the framework is complete as the processes have been mapped out and KPIs have been specified. The next stage entails collection of customer data.

3.3 Stage three: Collection of customer data

Stage three deals with the collection of customer data. This data should contain all the customer requirements along with importance ratings of the requirements for the above identified business processes.

Customer data can be collected through eight methods namely online focus groups, one-on-one interviews, intercepts, user testing, customer complaints, telephone survey, and mail survey and in person focus groups. Table 8 outlines the various data collection methods and their suitability.

Table 8: Customer data collection methods (Botha, Kruger and De Vries, 2012)

Method	Description	Time required	Data type	Cost
Mail survey	A standard paper survey is sent to customers through mail	Months	Quantitative	Low
Telephone survey	A questionnaire is developed, sample chosen and interviewers make the phone call and record the data	Approximately two weeks	Quantitative	High
Focus in person groups	A discussion is held between 5-20 randomly selected individual usually for two hours, guided by a moderator	One day	Qualitative	Low-medium
Online focus groups	Recent development in which a large number of people log onto a chat site simultaneously. The discussion is led by a moderator who types in questions and the participants answer creating an open dialogue for all	One day	Qualitative	Low-medium
One-on-one	This is a simple dialogue between	Several days if	Qualitative	Low

interviews	an interviewer and interviewee	needed		
Intercepts	This method entails approaching a person in a public location to attain information	Several days in needed	Quantitative and qualitative	Medium
User testing	This requires asking individuals to test and use a product while being observed	Months	Quantitative and qualitative	Medium
Customer complaints	Obtaining data from customers who complain via email, internet, calls etc.	Months	Qualitative	Low

The table above depicts several approaches in gathering customer data. Botha, Kruger and De Vries (2012) concluded that face-to-face interviews were the most suitable approach to gather customer needs whereas mail/telephone surveys were useful in obtaining customer importance and satisfaction ratings. The authors assert that investigation needs to be carried out regarding the existence of secondary information within the company.

The relevant secondary information should be amassed and analysed to determine whether it is suitable as input for stage four and five of the framework. If relevant data is available it should be utilised instead of conducting new surveys as it will save a substantial amount of money and time. Research revealed that SAPO has a significant amount of existing secondary data from previously conducted surveys.

A customer satisfaction survey mystery shopper and mystery caller reviews were piloted in November 2013. The survey was conducted across 165 retail branches of all classifications with the sample size of 11,297 participants. The overall sample consisted of surveys conducted throughout the business units of SAPO. Of the 11,297 participants 2,849 were questioned regarding customer service. The large number of respondents' positively impacts that accuracy of the results. Figure 26 reflects that the number of participants surpassed the required amount.
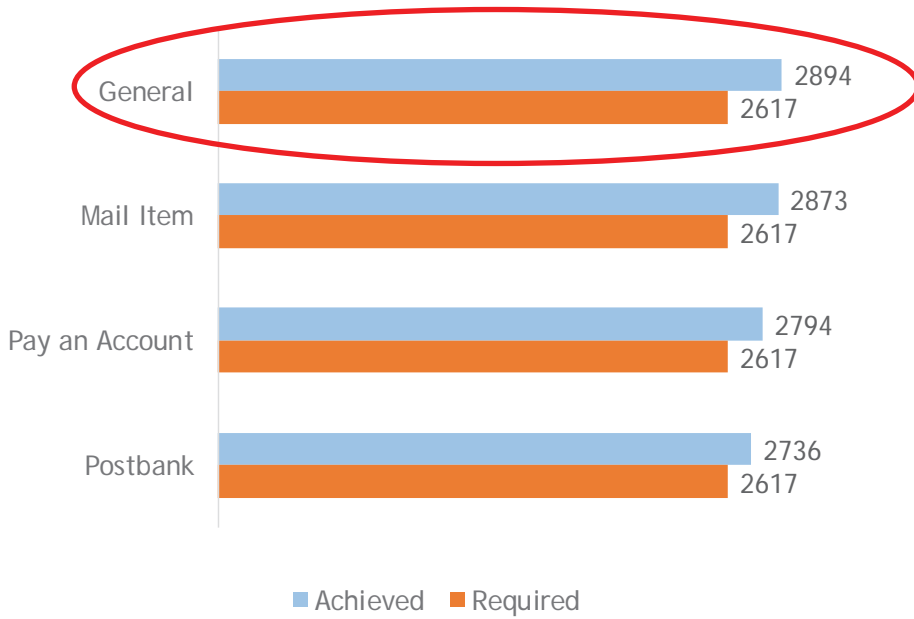
Figure 26: Overall sample achieved in survey

The general sample which focused on the overall customer service provided at the retail branches is further divided as seen in figure 27.
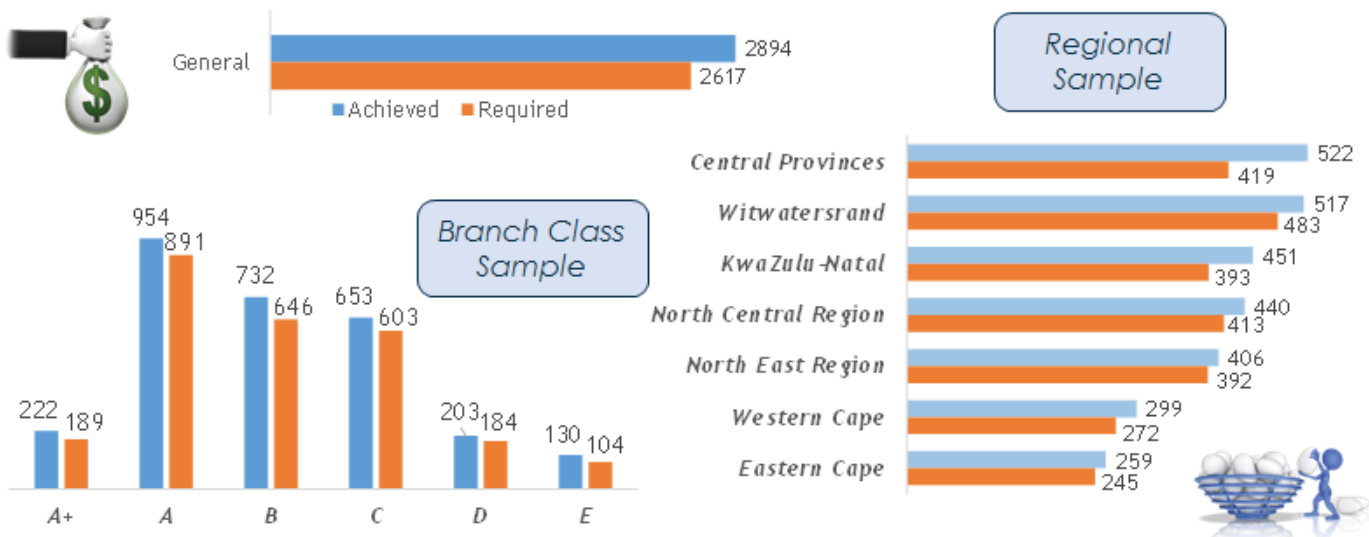
Figure 27: Overview of general sample

The sample demographics, figure 28, reflect that the survey conducted was of a random sampling nature. The amount of males and females are approximately equal, the dominant age group is 26-34 years old and majority of the race is black. The survey was conducted by an independent third party who specialise in customer satisfaction surveys.
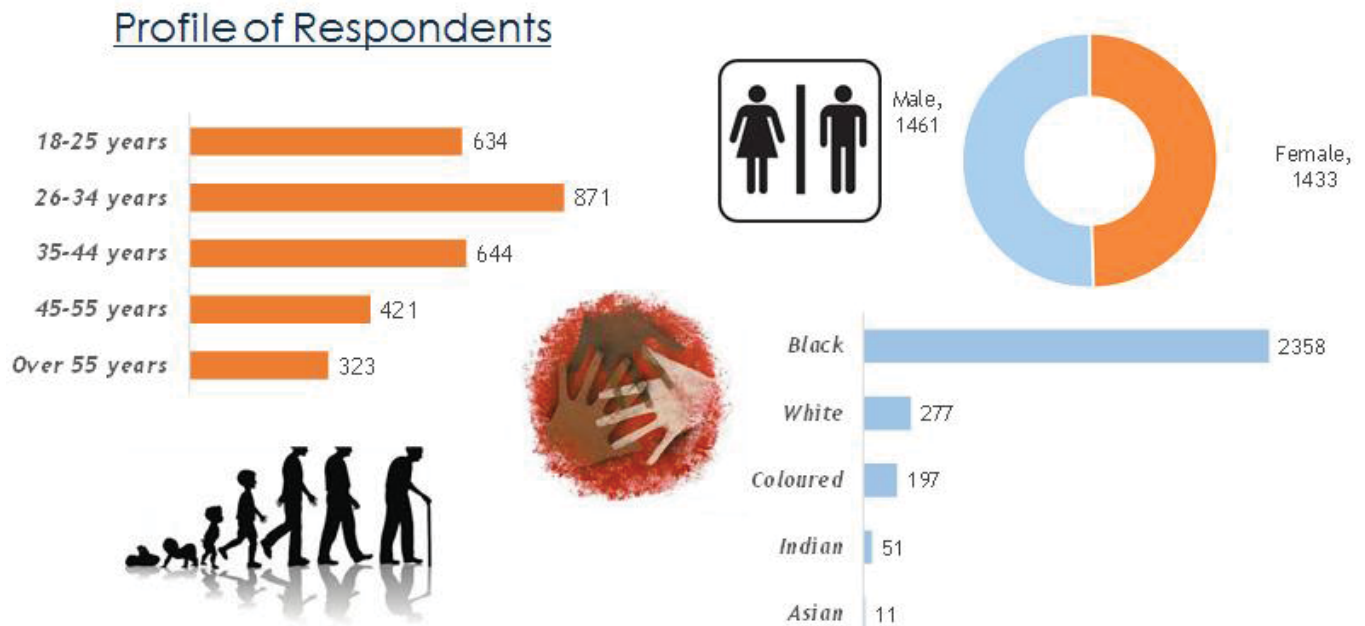
Figure 28: Profile of respondents

In stage three existing customer data should be assessed to determine if the data can be translated into information needed for the QFD. The QFD diagram will be used a tool to guide the reengineering of the process. The data required for the QFD diagram is listed as follows:

- The customer requirements related with the identified key business processes.
- Importance ratings related with each customer requirement.
- Customer satisfaction ratings related with each customer requirement.

The main goal of the survey was to identify the vital influences on customer loyalty and satisfaction. It was done to identify and prioritise areas in which customers felt the greatest dissatisfaction. The survey utilised methods of face-to-face interviews, mail survey, telephone surveys as well as in-store questionnaires to gather data. The survey consisted of factors and characteristics that shape customer service in the country and includes how well the company is able to satisfy each factor.

Thorough analysis of the survey revealed the following information:

- The survey aims to understand customers' expectations and to discover the underlying relationship between the company's product and service offerings, factors and attributes that drive customer loyalty.
- The survey measures the importance of several factors and characteristics for strategic improvement.

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- SAPO's performance in each factor and attribute was measured alongside understanding to what extent the customers' expectations in the personal customer segment are met.

Based on the above it is evident that the data gathered in 2013 through the mystery shopper and caller surveys can be interpreted and utilised for the next stages of the ECEF. The importance and performance determined for each factor in the survey can be translated into importance and satisfaction ratings for each requirement. As SAPO has reliable secondary data, it will be used for the completion of this project.

Based on the information from the survey the customer requirements, importance and satisfaction ratings are acquired and presented in table 9.

Table 9: Business processes linked to customer requirements and ratings

Business Process	Customer Requirement	Importance rating (0-100)	Satisfaction rating (0%-100%)
The Pay A Bill process	The product knowledge of the tellers	80	82.4
	The ease of paying 3rd party accounts at the post office	95	82.2
	The confidence you have in paying third parties through the post office	60	81.7
	Clear signage to indicate that these account payment services are available at this branch	80	81.4
The in-store customer service process	Counter staff understanding your request	80	82.3
	Ease of identifying which counter to go inside the post office	60	79.1
	Provision made for old age/ people with disability	60	75.8
	Acceptable waiting times in queue	80	74.4
	Staff being available (enough tellers in outlet)	50	75.4
	Safety and security inside/outside the post office	60	78.4
The courier process	Parcels being a good condition when picked up	90	83.7
	Parcels being delivered within an acceptable time frame	90	81
	Proof of delivery according to your requirements	95	79.9

Stage three is completed once relevant data has been collected and analysed. The next stage of the framework deals with the relationship mapping of business processes to their associated customer requirements.

3.4 Stage four: Establish the relationship between business processes and customer requirements

Stage four aims to establish the relationship between the identified key business processes in stage two with their associated customer requirements in stage three. Botha, Kruger and De Vries (2012) suggest that the Quality Function Deployment (QFD) diagram as a suitable tool to link processes with the associated requirements. The QFD diagram is superior compared to other techniques as it can relate any set of business processes to any number of customer requirements (Botha, Kruger and De Vries, 2012). The QFD provides detailed insight regarding whether the relationship between a given process and a set of requirements is weak or strong.

This stage is comprised of a QFD diagram that effectively maps the relationships between SAPO's business processes to their associated customer requirements. According to Botha, Kruger and De Vries (2012) the relationship mapping is obtained by evaluating the extent to which a business process could potentially

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impact the customer requirement. They propose that the relationships are defined by the use of 1-, 3- or 9-point scale. One on the scale indicates a weak relationship; three indicates a moderate relationship and nine indicates a strong relationship.

Relevant stake holders within SAPO who had the required knowledge regarding the set of identified business processes at the retail branches were interviewed for the purpose of obtaining the relationship mapping. The importance of each customer requirement was deduced through the survey on a scale of 0 to 100 percent, where 0% represents zero or no importance and 100% represents complete importance. Figure 22 below depicts a portion of the QFD diagram that relates the business process to specific customer requirements.

The row in the figure 22 labelled "Raw Score" (**R**) shows the total score each process acquired. This is a representation of the impact the process has on customer requirements. The calculation of the "Raw Score" is determined as shown below. The following variables are assigned to the elements:

$y_i \triangleq$ Importance rating of requirement i, $\forall\, i \in \{1 \dots n\}$

$x_{ij} \triangleq$ Relationship value between requirement i and process j, $\forall\, i \in \{1 \dots n\}$, $j \in \{1 \dots n\}$

The above variables can then be used to calculate the "Raw Score" based on the following equation:

$R = \sum_{i=1}^{n} y_i\, x_{ij}$ $\qquad \forall\, j \in \{1 \dots. n\}$ $\qquad\qquad$ (1)

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Table 10: QFD relating the key business processes to associated customer requirements for SAPO

Customer Experience Requirements	Importance Ratings	Pay A Bill Process	In-store customer service process	Courier process
		Business Processes		
The product knowledge of the tellers	80	9		
The ease of paying 3rd party accounts at the post office	95	9		
The confidence you have in paying third parties through the post office	60	9		
Clear signage to indicate that account payment services are available	80	3		
Counter staff understanding your request	80		9	
Ease of identifying which counter to go inside the post office	60		9	
Provision made for old age/ people with disability	60		9	
Acceptable waiting times in queue	80		9	
Staff being available (enough tellers in outlet)	50		9	
Safety and security inside/outside the post office	60		3	
Parcels being a good condition when picked up	90			9
Parcels being delivered within an acceptable time frame	90			9
Proof of delivery according to your requirements	95			3
Raw Score		2355	3150	1905
Relative %		32	43	26
Importance Rank		3	5	1

Importance Rating:
0= Low Importance
50= Moderate Importance
100= High Importance

Relationships:
9= Strong
3= Moderate
1= Weak
0 or Blank= No Relationship

3.5 Stage five: Prioritise business processes according to performance and impact

According to Botha, Kruger and De Vries (2012) businesses should prioritise the areas of improvement according to those that are important to the customer and in which, at the same time, the company is poorly performing. During stage five, the identified business processes should be categorised and displayed based on

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their importance and performance through the use of a strategic satisfaction matrix. The matrix was initially utilised by managers to prioritise product and service attributes that require improvement, but may also be valuable in prioritising business processes (Botha, Kruger and De Vries, 2012).

The matrix prioritises business processes by dividing them into four strategic categories based on their impact on customer service as well as their performance. Measuring the impact of a specific process on customer satisfaction is fairly simple. The prioritisation of processes based on their impact on customer service has been completed in stage. The row labelled "Raw Score" shows the total score obtained by each process and represents the impact the process has on the associated customer requirements. In figure 29 the business processes are prioritised according to impact.
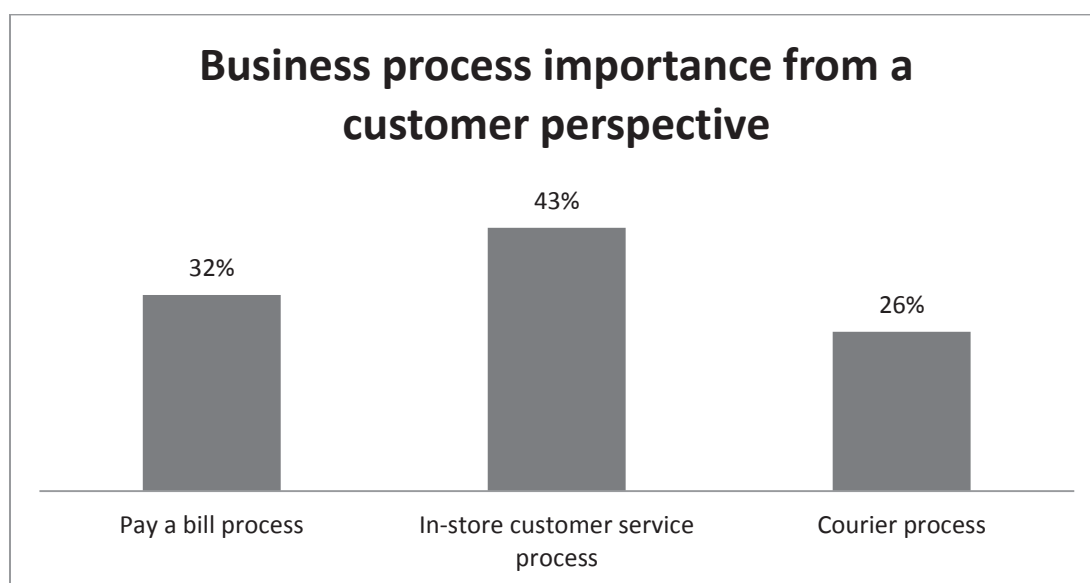
Figure 29: Process importance from a customer perspective

In order to measure the performance of the processes from a customer perspective the satisfaction ratings obtained from the survey must be utilised. Customers rated SAPO with regards to how well they satisfy their needs on a scale from 0-100 percent. Based on the ratings from the survey, the company will be able to identify process performance from a customer perspective. This is achieved by escalating on the traditional concept of the QFD and using this tool to attain a quantitative process performance score. The process performance is determined by calculating the "Current score" and "Target score", thereafter comparing them to obtain the "Process performance". The "Current score" (CS) given by equation (2) is calculated by utilising the current satisfaction ratings given by the customer in the survey. The "Target score" (TS) given by equation (3) must be specified by the company and depends on their perceived highest achievable level of customer

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satisfaction. Thus the "Process performance" (*PP*) is calculated, given by equation (4), as follows:

$$CS = \sum_{i=1}^{n} y_i \, x_{ij} s_i \qquad \forall \, j \in \{1 \dots n\} \qquad (2)$$

$$TS = \sum_{i=1}^{n} y_i \, x_{ij} z_i \qquad \forall \, j \in \{1 \dots n\} \qquad (3)$$

$$PP = \frac{CP}{TS} \qquad (4)$$

Where:

$z_i \triangleq$ Target satisfaction rating of requirement i, $\forall \, i \in \{1 \dots n\}$

$s_i \triangleq$ Satisfaction rating for the producing company of requirement i, $\forall \, i \in \{1 \dots n\}$

The QFD diagram presented in table 11 utilised the above mentioned equations for the relevant calculations. The company must specify the values regarding the "Target score" as target satisfaction ratings. Due to the unavailability of the necessary required data, target satisfaction could not be obtained. Hence a theoretical target rating of a 100 percent will be used. It should be noted that this is solely for demonstration purposes and the output does not apply in practice.

Table 11: Prioritising business processes based on their performance from a customer view from SAPO

Figure 30 depicts the three identified processes based on the calculated process performance calculated in table 11.

Customer Experience Requirements	Importance Ratings	Business Processes Pay A Bill Process	In-store customer service process	Courier process	Satisfaction Ratings % SAPO	Target
The product knowledge of the tellers	80	9			82	100
The ease of paying 3rd party accounts at the post office	95	9			82	100
The confidence you have in paying third parties through the post office	60	9			82	100
Clear signage to indicate that account payment services are available	80	3			81	100
Counter staff understanding your request	80		9		82	100
Ease of identifying which counter to go inside the post office	60		9		79	100
Provision made for old age/ people with disability	60		9		76	100
Acceptable waiting times in queue	80		9		74	100
Staff being available (enough tellers in outlet)	50		9		75	100
Safety and security inside/outside the post office	60		3		78	100
Parcels being a good condition when picked up	90			9	84	100
Parcels being delivered within an acceptable time frame	90			9	81	100
Proof of delivery according to your requirements	95			3	80	100
Raw Score		2355	3150	1905		
Relative %		32	43	26		
Importance Rank		3	5	1		
Current Performance		193263	244512	156179		
Target Performance		235500	315000	190500		
Process Performance %		82	78	82		

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Business process performance from a customer perspective

Figure 30: Performance of business processes from a customer perspective

The processes will be plotted in the strategic satisfaction matrix in order to prioritise the three processes according to their performance and impact from a customer perspective. The matrix aids in determining which process should be focused on first. According to Botha, Kruger and De Vries (2012) the process which has the highest impact and lowest performance should be addressed to immediately as improvement within this category will have a significant impact of customer satisfaction and subsequently profitability. The matrix in figure 31 plots all three processes according to the calculated process impact and performance.
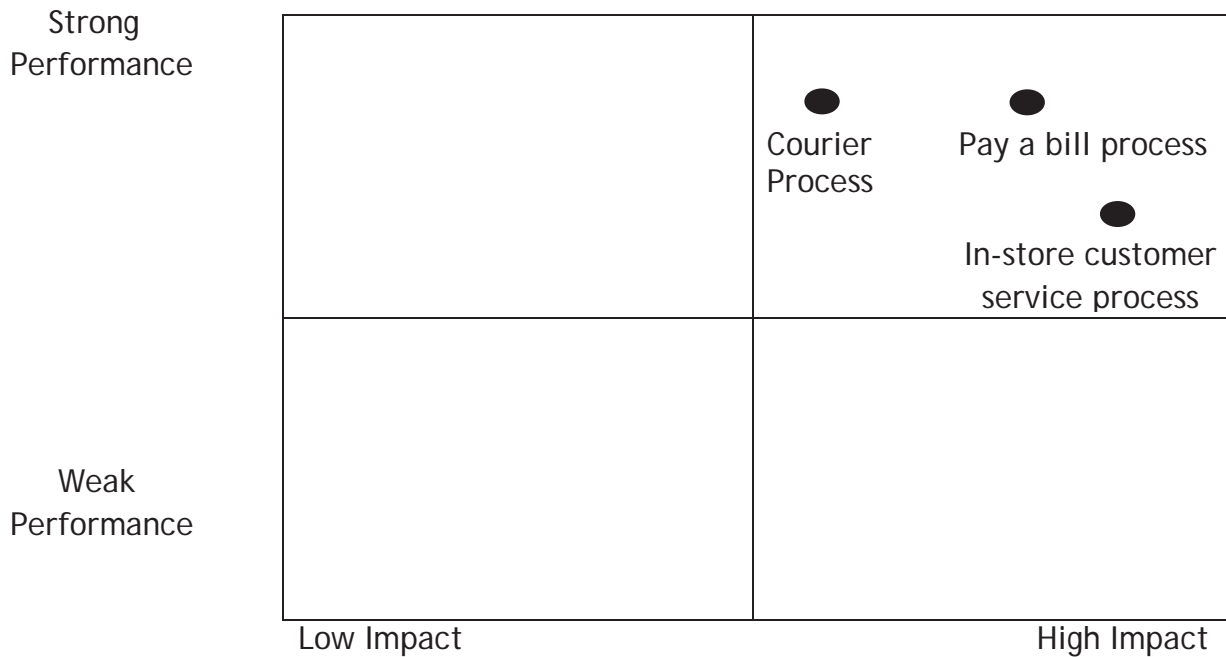
Figure 31: Strategic satisfaction matrix for SAPO

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Analysis of figure 31 depicts that no processes exist in which impact is high and the performance is low. The processes all fall within the upper right quadrant. The in-store customer service process has the highest impact and the weakest performance hence it is highest on the priority list. Evaluation of the matrix suggests that customer satisfaction will increase once the in-store customer service is improved. Process improvements should focus firstly on this process and thereafter the other processes based on their position in the matrix.

Stage five is completed as process performance and impact is calculated and processes are prioritised accordingly. The next stage of the framework estimates the desired performance level of each process based on benchmarks.

3.6. Stage six: The estimation of the desired performance level for the business processes

During stage six the desired performance level for each process must be determined through a customer perspective prior to any process improvements. Botha, Kruger and De Vries (2012) concluded that QFD is the most accurate method to estimate the desired performance level. The desired performance level of each process is estimated by investigating the extent to which the performance of similar services in the marketplace satisfies the needs of the customer. Thus the technique of benchmarking is used to determine the desired performance level.

The first step in this stage is to identify the competitors of the post office that provide customers with similar products and services. SAPO has a vast array of competitors in the marketplace due to the range of different products and services they offer. For the purpose of this project only the direct competitors that provide similar products and service as those of the three identified business processes will be discussed.

The pay a bill concept has gained tremendous popularity in industry. SAPO competes with Pick n Pay, Shoprite, Checkers and the Edcon group. These businesses also provide customers with the service of being to pay a bill from their stores. The presence of these businesses in the pay a bill market has negatively impacted SAPO as customers prefer to pay their bills at Pick n Pay etc. simply cause of convenience.

The courier service industry is a fierce one with ever increasing competition. Companies such as DHL, post net, XPS, FedEx, RAM, fastway, the courier guy amongst several others. Although the South African post office have the largest infrastructure and reach as well as some of the most competitive rates customers

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still opt to deliver products with competing companies as SAPO is known to be unreliable with regards to parcel delivery.

The survey conducted by the external party did not measure the technical benchmarks. An overall comparison of SAPO to its competitors was conducted but the survey did not contain specific benchmarks related to each customer requirements. Due to this it was decided upon to create internal technical benchmarks for each customer requirements. The internal benchmarks were created with the customer care manager and other relevant stakeholders within the retail business unit. It should be noted that the framework does require competitor benchmarks based on customer perspective rather than management perspective but for the purpose this project internal benchmarks will be comprised upon and utilised. The QFD diagram represented in table 12 outlines the internal benchmarks set by management as well as the technical benchmarks associated with each KPI of the process.

Table 12: Deriving the desired performance level for each business process

Customer Experience Requirements	Importance Ratings	Business Processes			Competitive Evaluation — Satisfaction Ratings %			
		Pay A Bill Process	In-store customer service process	Courier process	SAPO	Internal Benchmarks	Target	Lowest perceived
The product knowledge of the tellers	80	9			82	98	100	0
The ease of paying 3rd party accounts at the post office	95	9			82	95	100	0
The confidence you have in paying third parties through the post office	60	9			82	95	100	0
Clear signage to indicate that account payment services are available	80	3			81	100	100	0
Counter staff understanding your request	80		9		82	98	100	0
Ease of identifying which counter to go inside the post office	60		9		79	100	100	0
Provision made for old age/ people with disability	60		9		76	100	100	0
Acceptable waiting times in queue	80		9		74	98	100	0
Staff being available (enough tellers in outlet)	50		9		75	100	100	0
Safety and security inside/outside the post office	60		3		78	95	100	0
Parcels being a good condition when picked up	90			9	84	98	100	0
Parcels being delivered within an acceptable time frame	90			9	81	100	100	0
Proof of delivery according to your requirements	95			3	80	100	100	0
Raw Score		2355	3150	1905				
Relative %		32	43	26				
Importance Rank		3	5	1				
Current Performance		193263	244512	156179				
Target Performance		235500	315000	190500				
Process Performance		82	78	82				
Technical Benchmark — SAPO performance		48	18	72				
Technical Benchmark — Target performance		24	12	81				
Technical Benchmark — Lowest perceived performance		120	60	48				
Key Performance Indicators		Total time taken to complete the transaction (hours)	Total time spent waiting in the queue (minutes)	Parcels delivered within an acceptable time frame (%)				

Table 12 shows that a target performance level as well as the lowest perceived performance level is specified. These performance levels are obtained by interviewing customers. For the purpose of this project the performance levels are set by the author as the survey does not contain sufficient information on the two

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measures and therefore an estimated value is utilised. The target performance level is set at the highest possible customer satisfaction, 100 percent, whereas the lowest perceived performance is set at the lowest possible customer satisfaction rating, 0 percent. The difference between the desired performance level and the target performance level is that the desired performance level is the lowest performance level at which SAPO has to perform in order to remain competitive in the market. The target performance level represents the best possible performance that will ensure the customer is completely satisfied thus at a 100 percent.

Table 13 outlines the desired performance level that SAPO seeks. The desired performance level is estimated based on the customer satisfaction ratings. It is ideally set based on the company with the highest scores. Due to incomplete data the scores are not based on competitor ratings but on internal ratings.

Table 13: Estimated desired performance level for each process

Process Name	Key Performance Indicator	Desired Performance level
Pay a bill process	Total time taken to complete a transaction	<24 hours
In-store customer service process	Total time spent waiting in the queue	<12 minutes
Courier services process	Number of parcels delivered within an acceptable timeframe	>74%

In the next stage of the framework simulation modelling will be completed to test possible improvement initiatives specifically for the in-store customer service process to determine how the processes may be improved to reach the desired performance level.

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3.7. Stage 7: Specify improvement initiatives and test their impact on customer experience with the use of simulation models

In this stage improvement initiative in the form of 'what-if' scenarios are specified for the in-store customer service process. The 'what-if' scenarios are defined with the aim of improving the performance of the process against the identified KPI; this is shown in table 14. The goal of this stage is to depict that improvement of a business process has an impact on the associated customer requirements. The 'what-if' scenario is tested through simulation models to determine the extent to which a process can be improved. Four 'what-if' scenarios are identified and tested to determine the best improvement initiative for the process.

Table 14: What-if scenario specified for the process

Process Name	Key performance Indicator	What-if scenario/improvement initiative
In-store customer service process	Time spent waiting in the queue	1. Increase number of permanent staff
		2. Increase number of temporary staff
	Time customer spends in service	1. Decrease process time by increasing teller knowledge through effective training
		2. Decrease number of faulty and/or broken pin pad terminals

The in-store customer service process is modelled using the program called ARENA. Each 'what-if' scenario is built and tested within ARENA. The information used to build the base model is collected through a one-on-one interview with management and the manager of the Hatfield post office branch. The different scenarios identified are tested in ARENA and presented in this section.

Table 15: Customer arrival breakdown for Hatfield branch

Day of the week	Total sample surveyed	Total customers that visited Hatfield branch	
	n = 1018	n ≈ 1000 a week n ≈ 200 a day	Based on a 9-hour day
	Percentage of customers per day (%)	Customer arrival rate per day	Customer arrival rate per hour
Monday	20.8	208	23
Tuesday	9.3	93	10
Wednesday	22.9	229	25
Thursday	26.4	264	29
Friday	14.2	142	16
Total	94	936	

Table 15 represents the customer arrival schedule that was used to build the simulation model. Saturday and Sunday were not taken into account for the purpose of this project. The assumption was made that a triangular distribution for process times is used for assistance by teller and assistance by manager. The following information was used to build the base model:

- There are currently 3 full time tellers that assist customers
- Each teller takes their lunch break at a different time starting from 10am to 1pm
- The current process times to complete transactions are shown in table 16.

Table 16: Current triangular process times

Time taken	Teller completes transaction (minutes)	Manager needed to complete transaction (minutes)
Minimum	2	2
Average	6	7
Maximum	10	15

- There is one manager on duty who is available throughout the day for assistance
- The pin pad terminal is functional 60% of the time at the Hatfield post office branch
- If the pin pad terminal is not working customers can either pay by cash or are turned away due to circumstances. Customers have cash to complete transaction 75% of the time.

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- The manager is required 30% of the times to complete transaction
- The current approximate salaries of the employees are as follows:
  - Full time tellers earn R7600
  - Part time tellers earn R5700
  - Manager earns R9500

Refer to Appendix A for the base model built in ARENA with above mentioned parameters. The base model was run on once built and the results are presented in table 17.

Table 17: Base model results according to specified parameters

Number of full time tellers	3
Minimum total time in system (min)	0
Average total time in system (min)	153.12
Maximum total time in system (min)	463.2
Minimum time in queue to be received at counter (min)	0
Average time in queue to be received at counter (min)	146.2
Maximum time in queue to be received at counter (min)	442.56
Minimum time in queue to be assisted by manager (min)	0
Average time in queue to be assisted by manager (min)	6.34
Maximum time in queue to be assisted by manager (min)	67.48
Average number in queue to be received at counter	51.16
Maximum number in queue to be received at counter	139
Average number in queue to be received by manager	0.54
Maximum number in queue to be received by manager	3
Number of customers serviced	862
Number of customers turned away	85
Associated labour cost, tellers and manager (R)	0

From table 17 it is evident that times spent by the customer in the system as well as in the queues are relatively high. There is room for improvement through testing various alternatives are that viable at the Hatfield post office branch. These alternatives are discussed, simulated and shown in the section below.

The base model was verified based on the number of customers that frequent the post office on a weekly basis. as seen above the simulation processes a total of 862 customers whilst the actual figure was 936. Thus it is realistic to believe that the results are accurate.

3.7.1 Scenario one: Increase the number of full time tellers

Currently the Hatfield post office has 3 full time tellers that work from Monday to Friday 8am to 5pm. The simulation was run with various scenarios in which the

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number of full time employees was increased. The following results were gained and are represented in table 18.

Table 18: Increase full time tellers scenario results

Number of full time tellers	3	4	5	6
Minimum total time in system (min)	0	0	0	0
Average total time in system (min)	153.12	129.16	105.07	83.95
Maximum total time in system (min)	463.2	361.75	311.95	225.26
Minimum time in queue to be received at counter (min)	0	0	0	0
Average time in queue to be received at counter (min)	146.2	120.09	94.6	72.1
Maximum time in queue to be received at counter (min)	442.56	326.36	281.88	197.12
Minimum time in queue to be assisted by manager (min)	0	0	0	0
Average time in queue to be assisted by manager (min)	6.34	12.61	17.28	22.29
Maximum time in queue to be assisted by manager (min)	67.48	79.87	85.9	91.04
Average number in queue to be received at counter	51.16	41.42	33.9	26.48
Maximum number in queue to be received at counter	139	127	108	85
Average number in queue to be received by manager	0.54	1.15	1.67	2.18
Maximum number in queue to be received by manager	3	4	5	6
Number of customers serviced	862	884	936	978
Number of customers turned away	85	95	94	95
Associated labour cost, tellers and manager (R)	32300	39900	47500	55100

The scenario in which full time tellers are increased shows a significant change in the total time in system spent by the customer. There is a decrease from an average of 153.12 minutes, 2.5 hours, to 83.95 minutes, 1.4 hours, which is quite substantial. The hiring of more full time tellers can have a great impact on the time customers spend in the system which in turn increases customer service. The total number of customers serviced per week has the potential to increase 862 to 978 as more customers can be assisted. Although it is crucial to consider the labour costs involved in hiring more staff members. SAPO is currently underperforming and management might not be keen on employing more staff due to budget related issues.

3.7.2 Scenario two: Include part time tellers to the workforce

The Hatfield branch does not employ any part time tellers. The scenario to include part time tellers was chosen due to labour cost benefits as well as increasing staff number to assist with customers at the branch. The results of the scenario are presented in table 19.

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Table 19: Addition of part time tellers to the workforce results

Number of tellers	3 full time tellers	3 full time, 1 part time	3 full time, 2 part time	3 full time, 3 part time
Minimum total time in system (min)	0	0	0	0
Average total time in system (min)	153.12	88.63	79.1	96.87
Maximum total time in system (min)	463.2	307.84	228.61	258.05
Minimum time in queue to be received at counter (min)	0	0	0	0
Average time in queue to be received at counter (min)	146.2	79.92	68.69	84.68
Maximum time in queue to be received at counter (min)	442.56	296.27	207.97	226.35
Minimum time in queue to be assisted by manager (min)	0	0	0	0
Average time in queue to be assisted by manager (min)	6.34	12.3	16.42	22.91
Maximum time in queue to be assisted by manager (min)	67.48	82.67	84.31	85.2
Average number in queue to be received at counter	51.16	28.6	23.27	29.16
Maximum number in queue to be received at counter	139	97	89	74
Average number in queue to be received by manager	0.54	1.12	1.54	2.24
Maximum number in queue to be received by manager	3	4	5	6
Number of customers serviced	862	887	898	889
Number of customers turned away	85	91	84	82
Associated labour cost, tellers and manager (R)	32300	38000	43700	49400

This scenario focused on hiring part time tellers whilst retaining the 3 full time tellers. It is imperative to note that the optimal scenario is hiring 2 part time tellers whilst retaining the 3 full time tellers. The absolute minimum time a customer spends in the system can be reduced from 153.12 minutes to 79.1 minutes. This is a significant decrease whilst bearing in mind that the labour costs are lower. The waiting time in the queue is reduced from 146.2 minutes to 68.69 minutes. Hiring of part time tellers would assist in servicing customers faster and increasing satisfaction ratings but management should take into consideration that the hiring of par time tellers is a temporary fix and will not be beneficial in the long run. It would not be advisable to send part time tellers for full training courses as this would be an additional expense to a resource who isn't bound to stay with the company.

3.7.3 Scenario 3: Decrease the process time during service

The scenario is built on decreasing the process time during service by increasing employee training. If employees are well trained they will work faster, require less assistance from the manager and have the capability to increase profits by selling more products due to being knowledgeable regarding the current product and

service offerings. The results of a decrease in process time are presented in table 20.

Table 20: Results of the triangular process times being decreased when completing a transaction

Decrease in process time	Min=2, Avg=6, Max=10, Manager needed= 30%	Min=1, Avg=5, Max=9, Manager needed= 25%	Min=1, Avg=4, Max=8, Manager needed= 20%	Min=1, Avg=3, Max=7, Manager needed= 15%
Minimum total time in system (min)	0	0	0	0
Average total time in system (min)	153.12	60.61	31.34	14.21
Maximum total time in system (min)	463.2	186.1	122.02	100.81
Minimum time in queue to be received at counter (min)	0	0	0	0
Average time in queue to be received at counter (min)	146.2	53.95	25.41	9.29
Maximum time in queue to be received at counter (min)	442.56	181.2	105.48	71.76
Minimum time in queue to be assisted by manager (min)	0	0	0	0
Average time in queue to be assisted by manager (min)	6.34	7.03	7.85	7.47
Maximum time in queue to be assisted by manager (min)	67.48	72	68.07	79.26
Average number in queue to be received at counter	51.16	19.32	9.46	3.34
Maximum number in queue to be received at counter	139	79	44	27
Average number in queue to be received by manager	0.54	0.53	0.51	0.37
Maximum number in queue to be received by manager	3	3	3	3
Number of customers serviced	862	966	1003	968
Number of customers turned away	85	86	102	90
Associated labour cost, tellers and manager (R)	32300	32300	32300	32300

There is a substantial decrease in the average time spent in the system by a customer when the triangular process times are decreased. The time is reduced from 153.2 minutes to a mere 14.21 minutes if the process times are decreased in conjunction with the manager being required only 15% of the time for assistance. The average time a customer spends waiting the queue reduces from 146.2 minutes to a spectacular 9.29 minutes. Although it is interesting to note that when the process times are min=1, avg=4, max=7 minutes and manager is needed 20% of the time, the total number of people serviced is 1003 as compared to the last column in which 968 customers are serviced. Proper training should be provided to the tellers in order to boost their productivity levels which can result in large gains for SAPO. Management should also consider analysing employee morale to determine the best approach for increasing productivity. Management should further analyse this improvement initiative as the benefits in time reduction are noteworthy from a customer perspective.

3.7.4 Scenario four: Increase the % functionality of pin pad terminal

This scenario focuses on ensuring that the post of sale systems, pin pad terminals, is functioning properly. At the Hatfield post office branch the pin pad terminal functions approximately 60% of the time. This is very frustrating to customers who either don't have cash or didn't plan to pay with cash. Customers who have cash go ahead and complete the transaction, if they wish to, otherwise they are turned away due to the faulty pin pad terminal. This is unnecessary loss for SAPO which can be eliminated by introducing newer and better technology. The scenario was run in the simulation, table 21 shows the results gathered.

Table 21: Results of increasing the % of times the pin pad terminal is functioning

Increase the % of times the pin pad terminal is functioning	60%	70%	80%	90%
Minimum total time in system (min)	0	0	0	0
Average total time in system (min)	153.12	161.86	140	97.32
Maximum total time in system (min)	463.2	421.86	420.9	261.73
Minimum time in queue to be received at counter (min)	0	0	0	0
Average time in queue to be received at counter (min)	146.2	154.36	133.99	90.96
Maximum time in queue to be received at counter (min)	442.56	382.47	401.34	252.39
Minimum time in queue to be assisted by manager (min)	0	0	0	0
Average time in queue to be assisted by manager (min)	6.34	7.97	7.22	5.89
Maximum time in queue to be assisted by manager (min)	67.48	72.06	66.06	58.16
Average number in queue to be received at counter	51.16	53.32	48.35	33.19
Maximum number in queue to be received at counter	139	140	139	111
Average number in queue to be received by manager	0.54	0.63	0.46	0.18
Maximum number in queue to be received by manager	3	3	3	3
Number of customers serviced	862	856	886	944
Number of customers turned away	85	73	46	19
Associated labour cost, tellers and manager (R)	32300	32300	32300	32300

The most important factor to consider in this scenario was the number of customers that are turned away due to a faulty point of sale system. The reduction in the number of people turned away is remarkable. Currently Hatfield is losing 85 customers a week due to technical issues this can be reduced to only 19 a week given that the pin pad terminal functions 90% of the time. The change can result in more customers being serviced thus greater revenue and customer satisfaction for SAPO.

All the above mentioned improvement initiatives have the potential to increase customer service levels. Time and resources are required for the implementation of the initiatives thus it is not possible for SAPO to implement the above

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mentioned improvement initiatives simultaneously. In order to determine the rank in which the alternatives should be implemented an Analytical Hierarchy Process (AHP) technique is utilised.

3.7.5 Analytical Hierarchy Process

AHP is a suitable tool to use when making decisions based on multiple alternatives and criteria. The tool takes into account a set of criteria alongside a set of alternatives scenarios to evaluate in order to make the most appropriate decision. AHP technique is useful when dealing with complex decisions as it reduces the decision to a simple series of pairwise comparisons making it easier to compare and evaluate (Kruger, 2010).

The pairwise comparison is the process of comparing entities in pairs to determine which of each pair is preferred. Table 22 outlines the scale utilised to compare the relative importance between criteria.

Table 22: AHP scale for criteria comparison

Value	Description
1	Alternative i and j are equally important
3	i is slightly more important than j
5	i is strongly more important than j
7	i is very strongly more important than j
9	i is absolutely more important than j

With the use of AHP, the four scenarios are evaluated to determine the order in which they should be implemented based on the following criteria:

1. Cost
2. Time to implement
3. Total time spent in system
4. Throughput

Refer to appendix B for the related calculation associated with the AHP model. The necessary CI ratio was calculated and assessed to ensure that it was well below 10% making the criteria and their weighting relevant as seen in figure 32.

Priorities

These are the resulting weights for the criteria based on your pairwise comparisons

	Category	Priority	Rank
1	Cost	66.4%	1
2	Implementation time	9.7%	3
3	Time in system	18.1%	2
4	Throughput	5.7%	4

Number of comparisons = 6
Consistency Ratio CR = 3.0%

Figure 32: Priority rankings with relevant CR ratio (Goepel, 2014)

Based on the matrix developed, refer to appendix B, the criteria weights were calculated and the associated scores are presented in a hierarchical representation in figure 33.
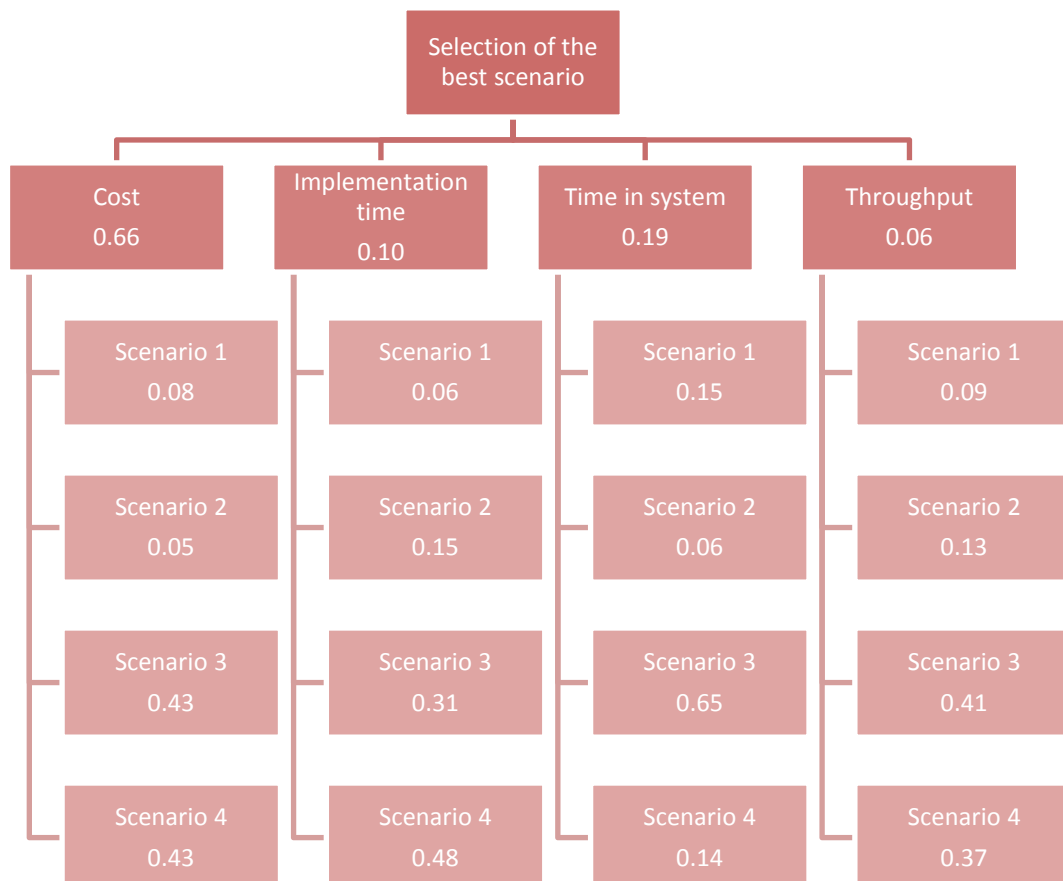
Figure 33: Hierarchical representation of the scenarios with associated criteria scores

The results of each criterion are then used to calculate the overall ratings of the scenarios. This is done to determine which is the most suitable for implementation and to provide prioritised scenarios.

Scenario 1   **0.0822**
Scenario 2   **0.0763**
Scenario 3   **0.4323**
Scenario 4   **0.4092**

The results of the AHP reveal that scenario 3 is the best solution to consider for implementation purposes as it scored the highest at 43.23%. The scenario proved to be the most effective in terms of reducing the total time a customer spends in the system whilst increasing the total of number serviced on a weekly basis. SAPO should further evaluate and analysis this scenario thereafter consider scenario 4, 1 and 2 respectively.

Chapter 4: Project Validation

Project validation is conducted by revisiting the aims, objectives and deliverables of the project thereafter evaluating if they have successfully been addressed.

The main aim of this project is to investigate the internal business processes and align them with customer requirements in order to increase customer service. The following objectives need to be met in order to achieve this aim:

- The compilation of a comprehensive literature review on existing customer service excellence frameworks.
- The application of a selected customer service excellence framework to address the issues being faced in the organisation.
- The overall enhancement of customer service by improving internal business processes and aligning them with customer needs.

Whilst the deliverables of this project include:

- An extensive literature review on existing customer service improvement frameworks.
- Application of suitable customer service improvement framework
- Recommendations of how SAPO can improve customer service using the framework
- A final detailed project report

The project has addressed the aims and deliverables through the following:

- ✓ An extensive literature review was conducted and presented in chapter. The literature review analysed four customer service improvement frameworks to determine which would be suitable for SAPO. Each framework was discussed in details by highlighting its benefits and flaws. Industry applications of each framework were discussed which emphasised the adaptability and flexibility. A framework was selected based on its applicability and relevancy to assist in resolving the problem of poor customer service.
- ✓ The framework was adapted and applied within the postal service industry. Focus areas were emphasised and discussed in detail with one focus area being chosen for further analysis. Improvement initiatives were developed and tested through simulation modelling.
- ✓ The results of the projects depicted that the identified improvement initiatives have the potential to increase customer levels by aligning key internal business processes with customer needs.

Thus all the aims and deliverables of this project were successfully addressed.

Chapter 5: Recommendations and Conclusion

5.1   Recommendations

The data used in the Enhanced Customer Experience Framework (ECEF) was provided from a survey done in 2013. It is highly recommended that a new survey be conducted in the near future to gather accurate results of how customers perceive the postal services in 2015. Due to circumstances such as strikes and the revoking of government subsidy the post office has come into negative light as there is a constant backlog of mail and parcels.

When conducting the next survey the external third party should be advised to conduct benchmarking against relevant competitors based on the same questions and criteria. Benchmarking will provide the South African Post Office (SAPO) with a realistic view of where they stand in the market against various competitors for various products and services.

The four improvement initiatives should be further analysed by management to determine if any of them are viable within the organisation at this current stage. Each improvement initiatives should be thoroughly examined as they have great potential to increase customer service levels. However, it is recommended that SAPO explore all options which can result in increased customer service levels and not only the four initiatives identified in this project.

5.2   Conclusion

The aim of this project was to increase customer service through aligning key internal business processes with customer requirements. The Enhanced Customer Experience Framework (ECEF) was selected and applied to overcome the issue of poor customer service at SAPO.

ECEF highlighted the focus areas that SAPO should consider when improving their customer service levels. The pay a bill process, courier process and in-store customer service process were identified as those which cause customers the greatest amount of dissatisfaction. Quality Function Deployment (QFD) was utilised to determine which of the three processes performed the lowest from a customer perspective. In-store customer service process showed the poorest performance amongst the three.

This process was modelled in ARENA and thereafter four specific improvement initiatives were identified and tested. Each initiatives has certain benefits and drawbacks that were discussed briefly. The four initiatives were ranked using the Analytical Hierarchy Process (AHP) which revealed that the most noteworthy

initiative was to decrease the transaction process times by increasing employee training.

Management is advised to further evaluate the initiatives in order to make an informed decision as poor customer service is an issue that needs dire attention. Further study in this project is required to take into account other cost associated with implementing any of the initiatives. Once all the options have been thoroughly explored management can implement changes within the post office branches to increase customer service, productivity and profits.

Bibliography

Akao, Y. and Mazur, G.H. (2003) 'The leading edge in QFD: past, present and future', *International Journal of Quality & Reliability Management*, vol. 20, no. 1, pp. 20-35.

Antony, J. and Preece, D. (2002) *Understanding, Managing, and Implementing Quality: Frameworks, Techniques, and Cases*, Psychology Press.

Aquilano and Chase (1996) *Productions and Operations Management*.

Arefi, M., Heidari, M., Morkani, G.S. and Zandi, K. (2012) 'Application of Kano Model in Higher Education Quality Improvement: Study Master's Degree Program of Educational Psychology', *World Applied Sciences Journal*, vol. 17, no. 3, pp. 347-353.

Asif, M. and Gouthier, M.H.J. (2014) 'What service excellence can learn business excellence models', *Total Quality Management & Business Excellence*, vol. 25, no. 5/6, pp. 511-531.

Ball, D., McCulloch, W., Geringer, J., Minor, M. and McNett, J. (2005) *International Business. The challenge of global competition*, McGraw-Hill Irwin.

Banks, Carson, Nelson and Nicol (2015) *Discrete-Event System Simulation: Chapter 1 Introduction to Simulation*, [Online], Available: http://ece.ut.ac.ir/Classpages/S86/ECE462/slides/chapter1.pdf [15 May 2015].

Bartl, C., Giese, A. and Gouthier, M. (2012) 'Service excellence models: a critical discussion and comparison', *Managing Service Quality: An International Journal*, vol. 22, no. 5, pp. 447-464.

Barton, P.R. (2010) *The Value Chain*, [Online], Available: http://www.netmba.com/strategy/value-chain/ [15 May 2015].

Benchmarking Process (2006), [Online], Available: http://www.tutorialspoint.com/management_concepts/benchmarking_process.htm [15 May 2015].

Botha, G.J., Kruger, P.S. and De Vries, M. (2012) 'Enhancing customer experience through business process improvement: An application of the enhanced customer experience framework', *SAJIE*, vol. 23, no. 1, May.

Bou-Llusar, J.C., Escrig-Tena, A.B., Roca-Puig, V. and Beltran-Martin, I. (2008) 'An empirical assessment of the EFQM Excellence Model: Evaluation as a TQM framework relative to the MBNQA Model', *Journal of Operations Management* , no. 27, April, pp. 1-22.

Bowen, D.E. and Schneider, B. (1999) 'Understanding customer delight and outrage', *Sloan Management Review*, pp. 35-45.

Calgary, U.o. *Kano Model Analysis*, [Online], Available: http://people.ucalgary.ca/~design/engg251/First%20Year%20Files/kano.pdf [08 May 2015].

Camison, C. (1996) 'Total quality management in hospitality: an application of the EFQM model', *Tourism Management* , vol. 17, no. 3, pp. 191-201.

Carter, P. (2005) *Business Process Reengineering*, [Online], Available: http://www.team-technology.co.uk/business-process-reengineering.html [15 May 2015].

Cartmell, J.W. (2013) *The application of the EFQM Excellence model within the UK further education sector*, March, [Online], Available: http://www.academia.edu/4637733/THE_APPLICATION_OF_THE_EFQM_EXCELLENCE_MODEL_WITHIN_THE_UK_FURTHER_EDUCATION_SECTOR [30 April 2015].

Chan, L.-K. and Wu, M.-L. (2004) 'A systematic approach to quality function deployment with a full illustrative example', *The International Journal of Managment Science*, vol. 33, March, pp. 119-139.

Costa, M.M., Gómez, J.G. and Lorente, Á.R.M. (2011) 'A critical evaluation of the EFQM model', *International Journal of Quality & Reliability Management*, vol. 28, no. 5, pp. 484-502.

EFQM (2015), [Online], Available: http://www.efqm.org/what-we-do/recognition/efqm-excellence-award [10 May 2015].

Gustafsson, A. and Johnson, M.D. (2000) *Improving customer satisfaction, loyalty, and profit: An integrated measurement and management system*, San Francisco: Jossey-Bass Inc.

Hartung, A. (2011) *Why the postal service is going out of business*, [Online], Available: http://www.forbes.com/sites/adamhartung/2011/12/06/why-the-postal-service-is-going-out-of-business/2/ [5 March 2015].

Holst, C. (2012) *UX and the Kano model*, 7 February, [Online], Available: http://baymard.com/blog/kano-model [8 May 2015].

Horwitz, F.M. and Neville, M.A. (1996) 'Organization design for service excellence: a review of the literature', *Human Resource Management*, vol. 35, no. 4, pp. 471-492.

Hunt, R.A. and Xavier, F.B. (2003) 'The leading edge in strategic QFD', *International Journal of Quality & Reliability Management*, vol. 20, no. 1, pp. 56-73.

Johnston, R. (2004) 'Towards a better understanding of service excellence', *Managing Service Quality: An International Journal*, vol. 14, no. 2/3, pp. 129-133.

Khalid, M.S., Mustafa, A. and Haque, I. (2008) 'Application of Kano's Model for Evaluating Information Quality of University Websites', Proceedings of the 2008 International Conference on Semantic Web & Web Services, Las Vegas, Nevada, 277-280.

Klazinga, N., Nabitz, U. and Walburg, J. (2000) 'The EFQM excellence model: European and Dutch experiences with the EFQM approach in health care', *International Journal for Quality in Health Care*, vol. 12, no. 3, pp. 191-201.

Koorts, C.-C. (2000) 'Management Elements of Organisational Re-engineering', April.

Kruger, P. (2010). *AHP*. (Lecture)

Lin, L.-Z., Yeh, H.-R. and Wang, M.-C. (2015) 'Integration of Kano's model into FQFD for Taiwanese Ban-Doh', *Tourism Management*, vol. 46, pp. 245-262.

Llinares, C. and Page, A.F. (2011) 'Kano's model in Kansei Engineering to evaluate subjective real estate', *International Journal of Industrial Ergonomics*, vol. 41, pp. 233-246.

Määttänen, E., Jylhä, T. and Junnila, S. (2014) 'Applying the KANO model to analyse the value of green FM', *Property Management*, vol. 32, no. 4, pp. 312-325.

Manning, B. (2015) *Modeling & Simulation: Simulation Modeling Steps*, [Online], Available: http://acqnotes.com/acqnote/tasks/simulation-modeling-steps [15 May 2015].

Matzler, K., Hinterhuber, H.H., Bailom, F. and Sauerwein, E. (1996) 'How to delight your customers', *Journal of Product & Brand Management*, vol. 5, no. 2, pp. 6-18.

Mehrjerdi, Y.Z. (2010) 'Quality function deployment and its extensions', *International Journal of Quality & Reliability Management*, vol. 27, no. 6, pp. 616-640.

82

Monteiro, A., Sampaio, P. and Saraiva, P. (2012) 'A comparison and usage overview of business excellence models', *The TQM Journal*, vol. 24, no. 2, pp. 181-200.

NPP (2009) *Proving and Improving: A quality & impact toolkit for social enterprise*, [Online], Available: http://www.proveandimprove.org/acknowledgements.php [30 April 2015].

Olson, D. (2004) *Kano Model Prioritization*, [Online], Available: http://www.bawiki.com/wiki/techniques/kano-model-prioritization/ [10 May 2015].

Peppard, J. and Rowland, P. (1995) *The essence of Business Process Re-Engineering*, New York: Prentice Hall.

Philip, L. (2011) *The Kano Model: How to delight your customers*, 2 April, [Online], Available: http://www.slideshare.net/LawrencePhillips/kano-model-rev-1 [10 May 2015].

SAPO (2014) *Annual Report 2014*, [Online], Available: http://www.postoffice.co.za/group/aboutus/annualreport/SAPOAR2014.pdf [8 March 2015].

SAPO (2015) *Vision and Mission, SAPO*, [Online], Available: https://www.postoffice.co.za/group/aboutus/visionmission.html [01 August 2015].

Selesho, R.K. (2009) *Application of Customer Experience and Business Process Reengineering*, [Online], Available: http://repository.up.ac.za/bitstream/handle/2263/12962/Selesho_Application%282009%29.pdf?sequence=1&isAllowed=y [15 May 2015].

Shahin, A., Pourhamidi, M., Antony, J. and Park, S.H. (2013) 'Typology of Kano models: a critical review of literature and proposition of a revised', *International Journal of Quality & Reliability Management*, vol. 30, no. 3, pp. 341 - 358.

Value Chain Analysis: Achieving Excellence in the Things That Really Matter (1996), [Online], Available: http://www.mindtools.com/pages/article/newTMC_10.htm [15 May 2015].

Vecchiatto, P. (2015) *Post Office suffers almost R360m loss in previous financial year*, 27 January, [Online], Available: http://www.bdlive.co.za/national/2015/01/27/post-office-suffers-almost-r360m-loss-in-previous-financial-year [8 March 2015].

Verduyn, D. (2005) *The Kano Model*, [Online], Available: http://www.kanomodel.com/ [2 May 2015].

Wollover, D.R. (1997) *Quality Function Deployment as a tool for implementing cost as an independent variable*, [Online], Available: http://www.slideshare.net/DavidWolloverCISSP/drw-quality-function-deploymentpdf [14 May 2015].

Yu, H. and Ko, H.-T. (2012) 'Integrating Kano model with strategic experiential modules in developing ICT-enabled', *Management Decision,* vol. 50, no. 1, pp. 7-20.

Appendix A: Simulation model
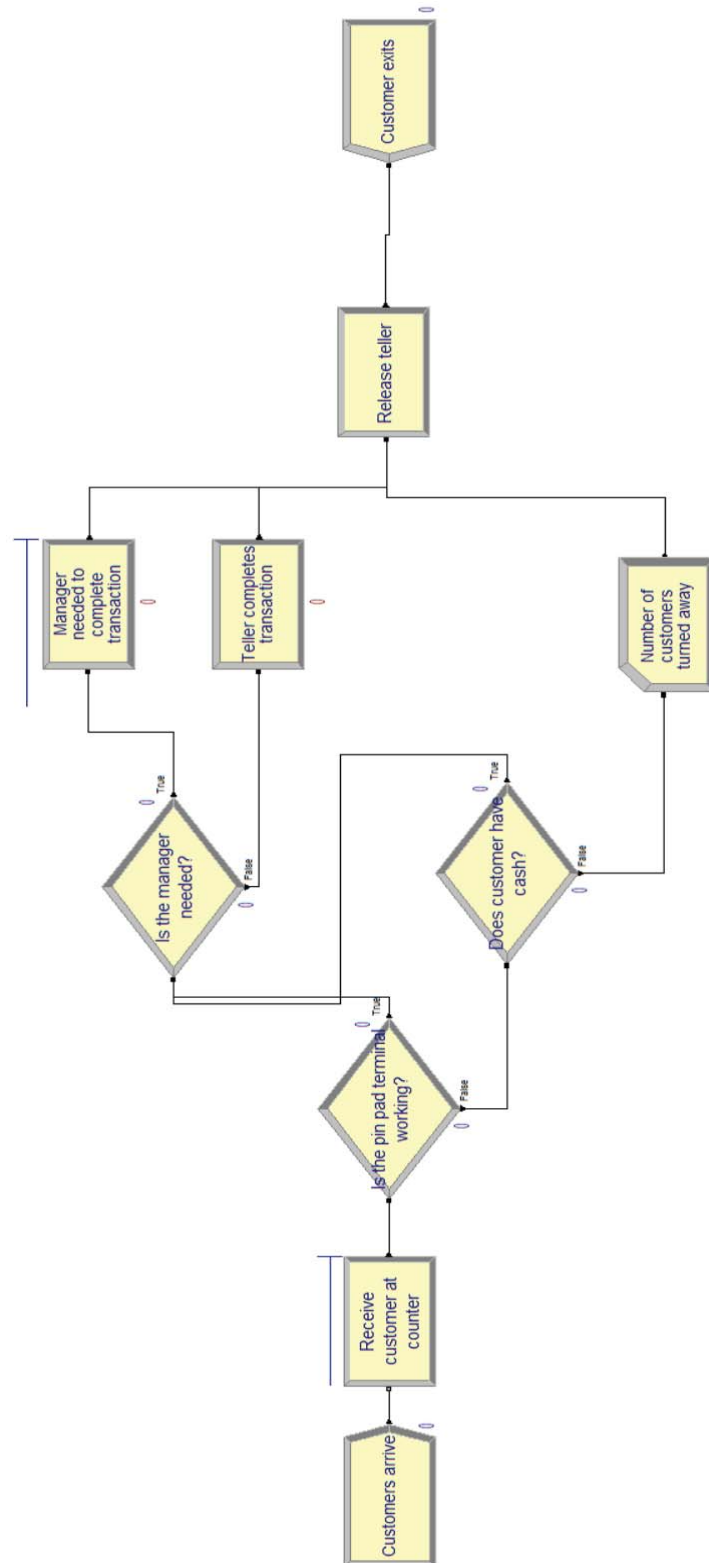
Appendix B: Analytical Hierarchy Process

	Cost	Implementation time	Time in system	Throughput
Cost	1	7	5	8
Implementation time	0.14	1	0.5	2
Time in system	0.20	2	1	4
Throughput	0.12	0.5	0.25	1
Total	**1.46**	**10.5**	**6.8**	**15**

Intermediate Matrix				Criteria	Criteria
0.68	0.67	0.74	0.53	**0.66**	Cost
0.10	0.10	0.07	0.13	**0.10**	Implementation time
0.14	0.19	0.15	0.27	**0.19**	Time in system
0.08	0.05	0.04	0.07	**0.06**	Throughput

Cost	Scenario 1	Scenario 2	Scenario 3	Scenario 4	
Scenario 1	1	2	0.14	0.14	
Scenario 2	0.5	1	0.14	0.14	
Scenario 3	7	7	1	1	
Scenario 4	7	7	1	1	
	Intermediate matrix				
	0.06	0.12	0.06	0.06	**0.08**
	0.03	0.06	0.06	0.06	**0.05**
	0.45	0.41	0.44	0.44	**0.43**
	0.45	0.41	0.44	0.44	**0.43**

Time in system	Scenario 1	Scenario 2	Scenario 3	Scenario 4	
Scenario 1	1	7	0.11	0.33	
Scenario 2	0.14	1	0.14	0.50	
Scenario 3	9	7	1	7	
Scenario 4	3	2	0.14	1	
	Intermediate matrix				
	0.08	0.41	0.08	0.04	**0.15**
	0.01	0.06	0.10	0.06	**0.06**
	0.68	0.41	0.72	0.79	**0.65**
	0.23	0.12	0.10	0.11	**0.14**

Implementation time	Scenario 1	Scenario 2	Scenario 3	Scenario 4	
Scenario 1	1	0.17	0.14	0.25	
Scenario 2	6	1	0.17	0.25	
Scenario 3	7	6	1	0.25	
Scenario 4	4	4	4	1	
	Intermediate matrix				
	0.06	0.01	0.03	0.14	**0.06**
	0.33	0.09	0.03	0.14	**0.15**
	0.39	0.54	0.19	0.14	**0.31**
	0.22	0.36	0.75	0.57	**0.48**
Throughput	Scenario 1	Scenario 2	Scenario 3	Scenario 4	
Scenario 1	1	0.5	0.14	0.5	
Scenario 2	2	1	0.14	0.5	
Scenario 3	7	7	1	0.33	
Scenario 4	2	2	3	1	
	Intermediate matrix				
	0.08	0.05	0.03	0.21	**0.09**
	0.17	0.10	0.03	0.21	**0.13**
	0.58	0.67	0.23	0.14	**0.41**
	0.17	0.19	0.70	0.43	**0.37**

Scenario	Final score
Scenario 1	0.0822
Scenario 2	0.0763
Scenario 3	0.4323
Scenario 4	0.4092