The link between strategic CRM systems and revenue in the South African cellphone industry

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ABSTRACT

The increase in globalisation and disruptive technologies has created narrower margins between industries. Organisational agility and innovation have become strategic enablers for survival in highly competitive markets which require constant evolution in products and services to appeal to the target markets. These developments can only be achieved by deeper understanding of these factors while building and maintaining mutually beneficial and sustainable relationships between a business and its customers. With the introduction of CRM (Customer Management Relationship) applications, businesses have become customer-centric, channelling energy and resources to customer loyalty and retention. There is a mutual benefit where meaningful relationships are nurtured and developed with the provision of appropriate products and services for customers which in turn provides a return on investment for business.

Customer Relationship Management has become a major strategic driver that enables business to remain competitive and have a transient advantage. It is essential for business today to have effective CRM systems and tools that use data mining techniques as a foundation. By employing models developed from past research and using the work of various authors as a foundation, a fundamental conceptual model for the South African cell phone industry was developed for the purpose of this study. Application of this model facilitated a critique of existing strategy while clearly outlining areas for development in the case study company. The initial phase was an analysis the organisation's strategy to determine its relevance and alignment to CRM. Data mining classification, segmentation and association functionalities were used to gain insights from customer information regarding service type (voice or data) preferences and frequency of use by geographical area. This process also revealed market share information that could be affected by external factors such as economic conditions. Efforts to grow revenue with notable returns by the company under review are also revealed, and areas of concern are highlighted.

These customer insights allowed for calculation of revenue growth per area based on product use with the assumption value for ARPU (Average Revenue Per User) based on historical industry data. Ranking of the best and worst areas based on revenue, sales and service type was assessed by geographical area. The study's foundation rests on evidence of successful CRM strategy implementation.

The study concludes that this success is attributable to effective CRM systems that are aligned with customer centric business objectives. This needs to be driven by top management down through the business to be successful. With all these factors taken into consideration, this study concludes that strategic CRM application can increase business revenue in the South African cell phone industry.

DECLARATION

I, Nontuthuzelo Mgobo, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Nontuthuzelo Mgobo

Signed at ……N Mgobo……

On the ……20th…… day of …December…… 2017…..

DEDICATION

This study is dedicated to my late parents Nomonde Sizakele Linah Ngema and Babongile Petros Gugushe, the memory of whom has been a source of inspiration and driver of my success. Their strong will, guidance and constant preaching about knowledge being power will linger forever. I pray that this study be a source of inspiration to my daughter Thandolwethu, that she can achieve anything she sets her mind to, academically and otherwise.

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CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

This research seeks to evaluate if Customer Relationship Management systems in the South African cellular industry service environment translates to revenue. An in-depth analysis will be carried out where CRM systems and financial returns will be evaluated to determine causality (if any) in line with business strategy. A specific focus will be on customer experience compared to what the service provider promises and the revenue this combination delivers. The concept of big data will also be explored to determine its impact, if any, to the topic. The results of the study could be used by South African cellular industry companies to evaluate their current CRM strategies against revenue and possibly implement improvements to optimise both profit and customer experience.

1.2 Context of the study

The South African mobile phone industry started in 1994, with Vodacom and MTN being the only two players. These companies have made billions of Rands (ZAR) connecting millions of subscribers over the past 20 years (Deloitte Digital SA, 2013). ICASA, the national regulator, granted further operating licensing to other operators to stimulate competition in the market, which could result in price reduction (Gon, 2016). Cell C, Telkom Mobile (converged services with merger between 8ta and Telkom) and Virgin Mobile have since entered the market, where market share in 2014 was reported as follows: Vodacom 39.3%, MTN 35.1%, Cell C 22.7%, Telkom and Virgin Mobile combined at 2.3% (Bronkhorst, 2015) [Mr Price Mobile, FNB Connect and Me&You Mobile account for the missing 0.6%]. The Deloitte Digital SA, 2013 report highlighted how market competition will continue to be driven by the size of the mobile population and its growing maturity, with the continuation of price competition that started in 2012 where mobile operators now compete for mobile subscribers across segments and product lines. Introduction of Over The Top (OTT) services like Facebook, WhatsApp and Skype have provided customers with cheaper alternative for

making voice calls and text messaging. This resulted in a dispute where MTN, Telkom Mobile and Vodacom presented claims of threats on their revenue streams due to OTT services to Parliament's portfolio committee on telecommunications and postal services. They also argued that billions are spent in capital investment to improve network services for provision of adequate data capacity to their customers. This cost is not shared with the OTT service providers who benefit on revenue from the same customers (Mzekandaba, 2017). This advocates for mobile network providers to develop robust differentiation strategies to defend their revenue and avoiding erosion.

Over the years, the main challenges affecting capital investment growth in the industry are limited spectrum and red tapes in the infrastructure approval process delaying the speed of new technology roll out (Gon, 2016). These have given rise to heightened competitiveness driven by battle for market share on products and services. Edelman and Heller (2015) in their publication *Insights and Publications: McKinsey & Company*, highlighted the value of having marketing operations in an organisation. They defined marketing operations as comprising skilled people, efficient processes, and supportive technology. Correct implementation of this combination is shown to provide 15-25% increase in effective marketing, measured by ROI (Return on Investment) and customer experience. Business requires an integrated system to feed content, get feedback and respond in real time on different platforms, for example social media, media partners, agencies and customer relationship management systems.

In summary, for a business to leverage digital marketing operations the following needs to be in place:

- Suitably qualified marketing technologists who can provide accurate data in the right format for decision makers to act quickly and respond to customer activity in real time;
- The right IT system that is user friendly, can integrate with legacy, current and future technologies with ease and absolute accuracy since business decisions that require investment and performance management will be based on it; and

- Strong and clearly defined governance rules for all stakeholders to ensure efficiency.

This knowledge will be used as part of the assessment of the business strategy and CRM application where service provider products, financials and other academic sources will be reviewed to gather facts. The impact of Big Data to provide customer insight is one that cannot be ignored when analysing CRM systems. Jürgen Fitschen, co-chairman of Deutsche Bank views data as the future's most valuable possession for offering satisfactory products and services to customers. Data-oriented companies such as Microsoft and Google are now considered as Deutsche Bank's main future competitors for example. Telecommunication companies like Verizon have even gone as far as developing visionary ideas, where they have applied for a patent in where a home entertainment system will be able to send therapy advertisements to a couple via television or a mobile device on detecting a couple argument. In summary, to make money, one must predict two things – what is going to happen and what people think is going to happen (Buhl, Röglinger, Moser, & Heidemann, 2013).

1.3 Problem statement

1.3.1 *Main problem*

The study's investigated research problem will concentrate on CRM application using customer insight information as strategic input for product development. Product performance will be evaluated to determine if there is any impact on company revenue and customer experience. Industry pressures that gave rise to this problem are: introduction of OTT services; the reduction of Mobile Terminating Rates (MTRs) putting service provider revenue under pressure; global economic meltdown affecting customer consumption of products/services; and increased industry regulation. Competitive edge is now crucial in gaining strategic advantage and increasing differentiation while improving service delivery. This creates a platform for gap analysis enabling all stakeholders to re-align practice and policy to improve the customer experience while addressing one of the main reasons why business exists; making a profit.

1.3.2 *Sub-problems*

Sub problem 1: Evaluation of alignment of CRM with business strategy

Sub problem 2: Evaluation of correlation between CRM application and revenue

1.4 Significance of the study

Van Zyl in his 2015 Fin24 Tech article discussed current industry challenges. The mobile telecoms industry profits have been negatively impacted after ICASA instituted MTR cuts, exacerbated by the negative impact of load shedding and the economic outlook. The most affected are big players MTN and Vodacom. Increased regulation in the industry has been implemented recently. This has been done to increase competition by driving pricing down and balancing out the playing field. This is seen in product offerings that promote low prices to gain market share – with mixed success. Merger and acquisition activity in the industry is trending, for example the Vodacom\Neotel and MTN\Telkom scenarios, all to gain competitive edge. ICASA is also consistently highlighting network quality complaints from the public. Operators attribute this to high volumes of traffic due lower tariffs to attract and retain customers. Spectrum allocation remains the main obstacle of progress for network growth as it is one of the main inputs required to provide the latest technology (Van Zyl, Gareth, 2015). All these were reiterated in the 2015 MTN investor day presentation (MTN, 2016).

Samsudin Wahab (2010) describes the performance of CRM as one of the business and marketing strategies that integrates people, process, technology, and all business activities to assist in customer attraction and retention. An effective CRM system performance is associated with repeat purchase, word of mouth advertising, retention, cross buying, brand loyalty and customer satisfaction, which is exactly what the industry needs to grow revenue (Wahab, 2010). This results in cost reduction and increased profitability.

Given the rate of growth in technology evolution and the industry challenges outlined above, research on strategic CRM implementation in the South African

market is crucial to increase business process efficiency and generate revenue. A quantitative research method in the form of a case study was adopted. There are valid underlying reasons behind the choice of this method which will be further expanded on in chapter 3 as it deals with the research methodology employed in this study.

This study will examine how organisations in the mobile telephone industry could:

- leverage on their big data to increase revenue;
- Identify gaps in business processes; and
- Improve differentiation strategy

Organisations may benefit from the recommendations provided as a guideline to realign the business strategy with their customer requirements, potentially enhancing making a profit.

1.5 Definition of terms

CRM – Customer Relationship Management

MTR – Mobile Termination Rates are defined as a per minute charge paid by a telecommunications network operator when a customer makes

a call to another mobile or fixed line network operator (Vodafone, 2016)

ICASA – Independent Communication Authority of South Africa. The function of this authority is to regulate the telecommunications and broadcasting industries in the public interest (dtps.gov.za, 2016)

ARPU – Average revenue per user which is a measure commonly used by regulators like ICASA to compare mobile telecommunication industry market performance (McCloughan & Lyons, 2006)

NPS – Net Promoter Score

POPI – Protection of Public Information Act

1.6 Assumptions

The following assumptions have been made regarding the study:

- Adequate data will be collected for conclusive findings
- Data integrity is accurate

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

This section of the study reviews literature outlining the key concepts. This will assist in providing an in-depth analysis of CRM in the mobile telephone industry to better understand the research problem. The age is past when mass marketing and mass production resulted in a flood of generic products and services into the market and still make significant profits. During that era, customers would consume any good or service offered with minimal critique. This in turn reduced the purchasing process to one where both shopkeeper and customer made less one-to-one contact, diminishing the unique relationship that has now become the competitive edge of many successful organisation. Currently there is a race for organisations to rebuild relationships with their customers, advocating for robust CRM strategies in many service and product-based industries.

Health, banking, insurance, and recently mobile telephony are just a few examples of high involvement services which hold a relationship appeal to customers, making them want to be “relationship customers”. Characteristics that define a service as high involvement are personal importance, variability in quality, complexity, and involvement. These characteristics make customers desire continuity with the same service provider, building loyalty and a foundation for retention (Berry, 1995).

The literature review structure is as follows:

- Relationship between CRM and business strategy;
- Defining CRM, it’s building blocks and application;
- Role of big data in providing customer insights; and
- Relationship between CRM and revenue.

2.1 CRM and Business Strategy

2.1.1 *Business Strategy*

McGrath (2013) in the HBR article states that to remain relevant in today's business world, it is imperative to evolve strategy from "Competitive Advantage" to "Transient Advantage". The risk assessment outlined in the article lists a number of factors organisations need to consider, which if true about the organization, form an important gauge:

• Employee consumption of own company's products\services;

• High investment does not translate into profit or ROI;

• Cheaper alternatives are becoming attractive to customers;

• Unexpected competition is emerging;

• Product adoption levels are declining due to less excitement in the market;

• Company no longer employer of choice both internally and externally;

• Attrition rate increasing from best talent; and

• Devaluation of shares.

Company erosion is imminent if four of the above statements are true (McGrath, 2013). Reimann et al. (2009) determined that there were variable findings in recent academic studies regarding the performance effect of CRM. They found a mixture of results where some were showing positive/negative relationships and others identifying insignificant links. These conclusions raised questions on the direct and unconditional performance effect of CRM. However, it was found that CRM does create value by enhancing the business strategies of an organisation therefore driving performance; there is a link between industry commoditisation and CRM differentiation relationship; and with high levels of industry commoditisation, differentiation was beneficial and vice versa (Reimann, Schilke, & Thomas, 2009).

CRM is implemented in an organization to change it from a product-centric to a customer-centric entity. Extracting valid previously unknown comprehensible information from a large database to make profit is one of the CRM processes. It utilizes many technologies and decision science applications such as data mining and data warehousing for effective performance. Non-financial outcomes like customer understanding, channel management and customer satisfaction are as important as profit, net sales and reduced cost in evaluation of effectiveness of CRM activities (Jonghyeok, Euiho, & Hyunseok, 2003).

Figure 1 shows the model developed by Jonghyeok et al. (2003) which assesses CRM effectiveness.

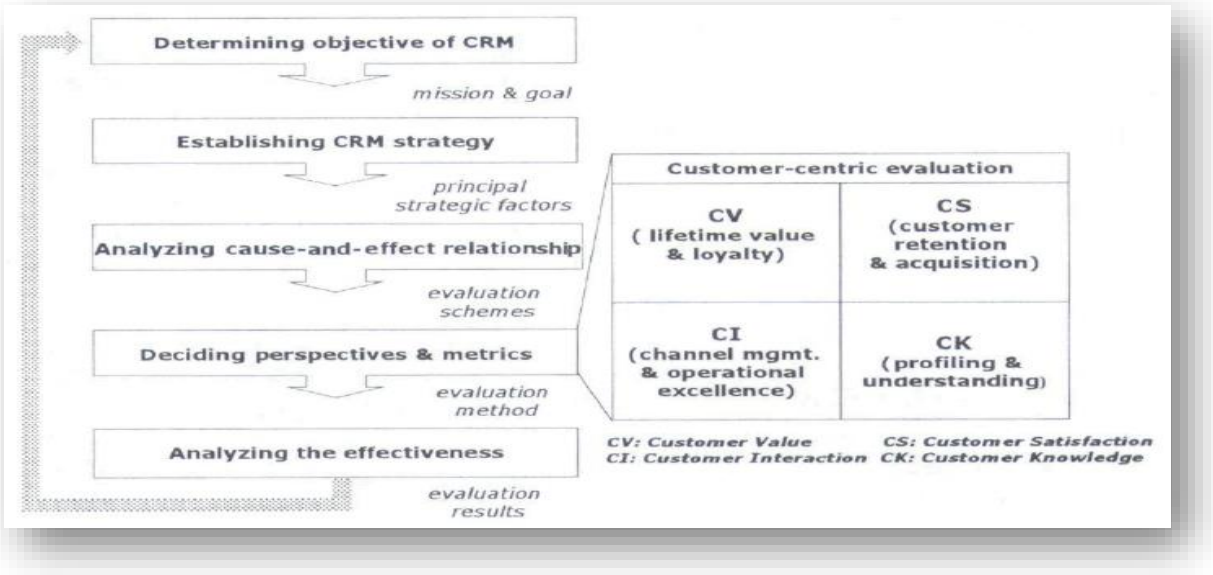


Figure 1: Four pillars that support CRM Source: (Jonghyeok, Euiho, & Hyunseok, 2003)

This model helps to determine principle strategic factors, interrelationships between CRM activities and business goals such as increasing profits. This outcome highlights the effectiveness of the CRM system and insight into which CRM strategy to implement. Figure 2 demonstrates the cause and effect relationship of the CRM process where the company accumulates significant customer insight data, creating a customer profile and discovering valuable hidden customer characteristics. These are stored as customer preferences

allowing for development of new products and customizing of existing ones in innovative ways (Jonghyeok, Euiho, & Hyunseok, 2003)

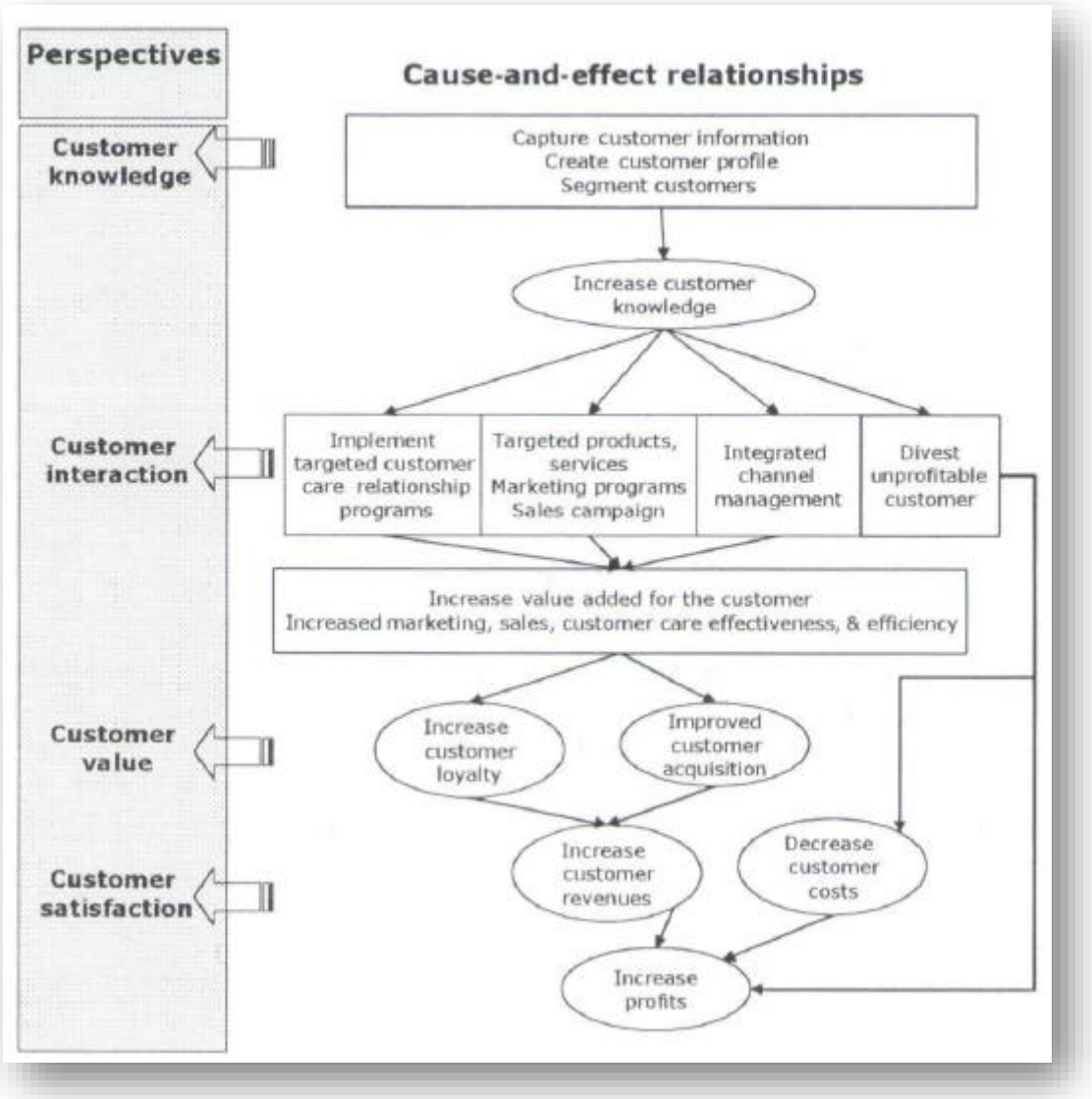


Figure 2: Four pillars that support CRM Source: (Jonghyeok, Euiho, & Hyunseok, 2003)

2.1.2 *Customer Relationship Management*

Chen and Popvich (2003) define Customer Relationship Management (CRM) as "a combination of people, processes and technology that seeks to understand a company's customers. It is an integrated approach to managing relationships by focusing on customer retention and relationship development." (Chen & Popvich,

2003). It is the overall process of building and maintaining profitable customer relationships by delivering superior customer value and satisfaction (Kotler & Armstrong, 2010). Some benefits of CRM are listed by Jonghyeok et al. (2003) as: a) customer retention growth; b) customer profitability growth; c) customer value creation; d) product/service customisation; e) development of high quality products/services through less processing (Jonghyeok, Euiho, & Hyunseok, 2003).

Many organisations are realising the importance of strategic CRM initiatives and these have now become high priority interventions (Li Kam Wa, 2001). Customer relationships were historically less complex to manage. Merchants knew their buyers, and their families, including their purchase patterns. They also knew what their current customer value was and what that value was likely to be in the future. With this knowledge, the sellers could create highly valuable customer relationships. This relationship unfortunately eroded as people became more mobile, towns grew into cities, business became larger and companies could reach more people with their marketing efforts. Nowadays, more businesses are trying to return to how things were when they knew their customer well. This is achieved by capturing of valuable internal and external data, analysis of the data for better understanding of customer needs, preferences, and profitability, and then leveraging that knowledge in every customer contact (Goodhue, Wixom, & Watson, 2002).

2.1.2.1 Customer Satisfaction

Customer satisfaction depends on the product's perceived performance relative to a buyer's expectations. Product performance is directly proportional to customer satisfaction, therefore the higher the performance, the higher the satisfaction and vice versa. Higher levels of performance lead to greater customer loyalty which results in better business performance. This is achieved not only from repeat purchases from satisfied customers but also from those customers becoming "word of mouth marketers", telling others about their positive experiences with the product (Kotler & Armstrong, 2010).

2.1.2.2 Customer Value

Customers nowadays are subjected to a wide variety of choices in products and services. This makes acquisition and retention of customers a very difficult task. The choice of where to spend money goes to a business that the customer perceives to give customer value. This choice arises from evaluation of the difference between all benefits and costs of the market offering relative to competing offers (Kotler & Armstrong, 2010).

2.1.3 *Customer Experience*

Touchpoints are a very important aspect of the customer journey. This is where many critical customers moments occur through interaction with the company, its offerings, ways to purchase, and after sale service. Focusing on this only can give business a distorted picture of customer satisfaction. The crucial consideration is the entire end-to-end customer journey. It is found that what affects customer experience is not the customer being fed up with one phone call or single touchpoint, but a cumulative series of experiences across numerous touchpoints and channels over time. A silo-type functional structure further exacerbates poor customer experience due to the limited view of the customer journey.

The solution comes by embedding the customers' journeys into the company's operational model by following these four steps:

- Identifying the journeys they need to excel in;
- Understanding the performance of each journey;
- Redesigning customers' journeys through building cross-functional processes; and
- Driving cultural changes and constant improvement for sustainability of initiatives in numbers.

Therefore, optimization of a single customer journey is a strategic and transformational process that involves a cultural, business process and mind-set shift into being journey-oriented. These types of conversions are difficult and take

time to perfect but deliver exceptional rewards such as increased customer and employee satisfaction, revenue, and reduced costs. Successful delivery of these journeys results in a transformation that enables cross-functional organizational engagement, general enthusiasm, innovation, and focused uninterrupted improvement. (Rawson, Duncan, & Jones, 2013).

2.1.4 *Net Promoter Score*

The Net Promoter Score (NPS) is defined as a metric derived from survey responses to a recommend likelihood question, where respondents who provide a rating of 9–10 are classified as “promoters”; respondents who provide a rating of 6 or lower are classified as “detractors”. It is calculated by subtracting the proportion of a firm’s detractors from its proportion of promoters, that is, NPS = promoters – detractors) (Keiningham, Cooil, Andreassen, & Aksoy, 2007). The top-ranking question across industries using this metric is:

“How likely is it that you would recommend company x to a friend or colleague?"

The research conducted shows a strong correlation between promoters and a company’s growth rate, regardless of size. It is implied that the willingness of customers to recommend a company indicates strong loyalty. By doing so, customers put their reputation on the line and take the risk for the company brand. The aim should be to increase promoters and reduce detractors (Reichheld, 2003)

2.2 Big Data and Customer Insights

2.2.1 *Big Data: Evolution of data collection and analysis*

Collection of data was a challenge for businesses prior to the Information Age. Customer data used to be collected using forms, resulting in fading scraps of paper which were a challenge to analyse for business decisions. The introduction of digital technology replaced this, allowing every piece of information about anything to be preserved. Computers provide easy data manipulation at high levels of efficiency where large quantities of data from our daily existence are

analysed to investigate background, credit check, and market products and make a wide variety of decisions affecting our lives. All this results in an information network – built from government public record systems, private company databases, and law enforcement agencies – that is stored and analysed.

Marketers use various analytical techniques to build models that enable targeted marketing, consumer consumption and behaviour analysis (Solove, 2004).

2.2.2 *Customer Insights*

George Day (2003) attributes a firm's competitive edge to not just CRM tools and technologies, but also to the following three characteristics:

i) organizational orientation allowing for priority to customer retention;
ii) configuration inclusive of structure and its product/service personalizing process that incentivises relationship building;
iii) using in-depth customer information as the final component of the tool made available from all parts of the company through IT systems. All three of these components must work in harmony to achieve a superior CRM system (Day, 2003).

2.2.3 *Data Mining*

Data mining is defined as the analysis of (often large) observational data sets to find unsuspected relationships and to summarize the data in novel ways that are both understandable and useful to the data owner (Hand, Mannila, & Smyth, 2001). Data mining is said to have the following uses for business:

1) It can answer business questions that have been traditionally too arduous to solve;
2) It allows the transformation of raw data into business knowledge; and
3) It provides business intelligence to create new growth and revenue opportunities.

(Hun, Yen, & Wang, 2006)

Table 1: Functionality, technique and CRM uses of data mining

Data mining functionalities, techniques, and CRM applications

Functionality	Technique	Application
Association	Set theory	Cross sell
	Statistics	
	Bayesian classification	
Estimation	Neural network	Exchange rate estimation
	Statistics	Stock price estimation
	Time series	
Classification	Decision tree	Credit embezzle
	Fuzzy	Market segmentation
	Neural network	
	Genetic algorithm	
Prediction	Regression	Churn prediction
	Neural network	Fraudster prediction
	Decision tree	
Segmentation	Neural network	Market segmentation
	Statistics	
	Genetic algorithm	
	Decision tree	

Table 1 Source: (Hun, Yen, & Wang, 2006)

The initial stage of data mining is data collection and then processing it into mineable form. This involves a step-by-step process of format mismatch in format handling, structuring, semantics, normalization and integration to clean the data. After this stage, algorithms can be applied to develop the desired models. These models can be used by businesses as either a descriptive tool which will be for presentation of current customer behaviour or as a predictive tool for the prediction of future behaviour. On assumption that actions of the past are good future predictors, the descriptive model provides a good starting point for the development of the predictive model.

2.3 CRM application vs Revenue

2.3.1 *CRM Application*

A more sustainable and inimitable strategy by competitors is the idea of creating a relationship with customers based on quality, dialogue, innovation and learning This strategy can create a long-term competitive advantage. Involving and engaging customers in long-term relationships gives business a platform to can learn about their customers' individual needs. This in turn gives the firm knowledge to customise products that suit the individuals' needs on a one-to-one

basis and thus, creating a differential marketing strategy. CRM needs to include other variables in order to better capture the mechanisms behind the establishment of buyer-seller relationships. These are known as CRM activities and offerings. Examples of these include bonus and loyalty programmes, dynamic pricing, service quality programmes, value offers and deals, social media web sites and internet blogging as a way to create buyer-seller interactive relationships. The adoption of new technology and the internet have enabled CRM practices to be successful. The communication directed towards potential buyers can now be customised at an individual level through e-mails, social media, e.g. Facebook pages, YouTube and Twitter and blogs. This interaction can now be effortlessly stored in a firms CRM database system for the benefit of the marketer to track and to customise offerings to suit individual customer needs and desires (Nguyen & Mutum, 2012).

Nguyen and Mutum (2012) concluded by defining CRM as:

> *"The purposive use of customer knowledge and technologies to help firms generate customized offerings on an individual basis based on fairness and trust in order to enhance and maintain quality relationships with all the involved parties"*

(Nguyen & Mutum, 2012).

Is there added value in CRM applications? Pierce and Mahieu (2002) described added value in the following manner:

The biggest question in CRM is, does it add value? The answer is yes if it adds value not just to the company but also to the customer. Value add is defined as:

- saving time or effort;
- recognising past patronage;
- not asking for the same information twice;
- speeding up resolution; and
- providing better information for products and their availability.

Return on investment from CRM systems can be measured in the following areas:

i. reduction in Operating Expenses (OPEX) and increased efficiency (e.g., call-centre talk time reduction); and
ii. Increased customer expenditure and frequency of activity in the customer base therefore increasing loyalty.

Establishment of a measurement based criteria linked to company objectives is key for the CRM platform. These measurements can be anything from customer revenue maximisation, reduction of cost to serve, increasing market penetration, increasing customer loyalty, maximising sales, maximising market effectiveness to increasing employee fulfilment. These measures can be used as management and continuously improvement inputs to strategic CRM performance (Pierce & Mahieu, 2002)

2.4 Conclusion of Literature Review

Figure 1 illustrates the four pillars that will form the bases of the study with respect to customer relationship management.

Figure 3: Four pillars that support CRM (Source: Author)

Fast-paced industries like mobile telecommunications need to evolve from competitive advantage to transient advantage mode. CRM can be used as a tool to add value to business strategies and thus drive performance. This will assist in transforming the organisation from being product-centric to customer-centric. Customer data collection is collected via IT systems. This will be used as inputs to various analytical techniques that build models providing insight about market segments, product consumption and customer behaviour. One of the measures of ROI in CRM application is increase in customer spending, frequency of customer activity and customer loyalty. This literature review has provided a foundation for the bases of the study which will further be revealed in the research and methodology chapter for model development.

2.4.1 *Research Question 1:*

Is there an alignment between CRM and business strategy?

Constant evaluation of business performance via a risk assessment method is important for businesses operating in fast changing environments like the mobile telecommunication industry. McGrath (2013) states that an evolution from competitive advantage to transient business strategy is a remedy for the prevention of company erosion. The risk assessment can be paired with the NPS scoring system for business to get valuable feedback both internally and externally. Reimann et al (2009) found that CRM creates value by enhancing business strategies and increasing industry commoditization. This changes companies from product-centric to customer-centric by means of technology which extracts valuable customer insights and behavioural information. Customer interaction, knowledge, value and satisfaction form the four pillars for evaluation of CRM effectiveness as per Jonghyeok et al (2003) model. The model provides a guide in determining existence of interrelationships, via cause and effect methodology, between CRM activities and business goals like revenue growth.

Rawson et al (2013) suggest embedding customer journeys into the company's operating model to close functional gaps resulting from operational and functional

silos leading to poor customer experience. This is a strategic and transformational process that involves a cultural, business process, and mind-set shift into being journey-oriented. Success in this process brings about transformation that enables cross functional organizational engagement, general enthusiasm, innovation, and focused uninterrupted improvement.

2.4.2 *Research Question 2:*

Is there a correlation between CRM application and revenue?

Data mining is the foundation of the data collection process which provides valuable customer insights. This can be used by business to:

1) Answer questions that have been traditionally too arduous to solve;
2) allow the transformation of raw data into business knowledge; and
3) provide business intelligence to create new growth and revenue opportunities.

Models can be built from the data mining process which can be used by business as either a descriptive tool which will be for presentation of current customer behaviour or as a predictive tool for the prediction of future behaviour. Measurement-based criteria linked to business objectives is a key input to strategic CRM performance. These measurements can range from customer revenue maximisation, reduction of cost to serve, increasing market penetration, increasing customer loyalty, maximising sales, maximising market effectiveness to increasing employee fulfilment. Pierce and Mahieu (2002) conclude that Return on investment from CRM systems can be measured in the reduction in OPEX, increased efficiency, increased customer expenditure and frequency of activity in the customer base, thereby increasing loyalty.

CHAPTER 3. RESEARCH METHODOLOGY

This section will develop a conceptual CRM model designed for service providers in the South African mobile telephone industry. The model will aid in providing guidance on how CRM application can increase sales and revenue. It will use customer insight data as input which adds value to analysis. This chapter entails:

1. Presentation of the model linking it to strategy; and
2. The presentation of analysed data and how it uses customer insight data to increase revenue.

3.1 Research methodology /paradigm

(Newman & Benz, 1998) defined a quantitative approach as used when the researcher begins with a theory or hypothesis and tests for confirmation or repudiation of that hypothesis. A quantitative research approach is deemed suitable for this descriptive research, where data will be collected and presented to test causality and determine relationships. When do we use a case study method?

- When the type of research question answers a “why” or “how”
- When the researcher has little to no control over behavioural events
- When the circumstances of the phenomenon to be studied are in real life context

The procedural characteristics of a case study range from situations where there are many variables of interest; multiple sources of evidence; theoretical propositions to guide the collection and analysis of data. A case study can either be explanatory which examines the data closely both at a surface and deep level to explain phenomena in the data, exploratory is set to explore any phenomenon in the data which serves as a point of interest to the researcher or descriptive which sets to describe the natural phenomena which occur within the data in question and describing it as it occurs. Explanatory cases are also used in causality studies where pattern-matching can be used to investigate certain phenomena in very complex and multivariate cases. There is a choice of using

single or multiple case analysis via either a qualitative or quantitative method (Yin, 2013). By reproducing the case through pattern-matching, a technique linking several pieces of information from the same case to some theoretical proposition can be used to support the previous results. This helps raise the level of confidence in the robustness of the method. Case studies are considered to be beneficial in research as they allow researchers to examine data at the micro level, present data of real-life situations and they provide better insights into the detailed behaviours of the subjects of interest. They are criticized for their inability to generalise results, lack of rigour and allowing of researcher to have a biased interpretation of the data (Zainal , 2007)

The chosen methodology is a combination of an explanatory and descriptive case study on one of the service providers in the SA mobile industry where causality will be tested on alignment of business strategy and CRM as well as CRM and revenue increase. The quantitative data collected over a period will be analysed and linked to literature for pattern-matching.

3.2 Research Design

The study will follow a cross-sectional case study method entailing data collection from more than one case instantaneously in order to analyse for similarities\differences using two or more variables (Bryman, 2012). This theory will be used as a foundation for the design of the strategic CRM conceptual model. Research data on product performance and databases containing customer information will be collected and simultaneously used for the analysis that will address the research questions. Case studies generally are perceived to be subjective due to the close and direct personal relationship between researcher, chosen sample and case site (Riege, 2003).

3.3 Population and sample

3.3.1 *Case Site*

The case site chosen is optimal since it has wide representation that covers the whole of SA and a vast customer base that covers all customer profiles, from age to demographics to LSM.

3.3.2 *Sample and sampling method*

A sample of product usage data was taken per town with careful consideration of sampling error. 63 Towns in Gauteng were chosen due to the province being South Africa's business hub and biggest revenue generator. Gauteng provides the best litmus test for any business to check effectiveness of strategy and revenue generation.

3.4 The research Instrument

Variables are any characteristic of the unit collected and under observation (Sukamolson, 2016). In compliance with the POPI Act, data up to town level was made available for this study rather than customer specific data. Below are the variables for this study:

- Town monthly data consumption in bundle sales = TDC
- Town monthly voice consumption in bundle sales = TVC
- Monthly frequency of product use per town = F
- Price of product offered/purchased at the chosen period = P

Therefore, to calculate revenue, the following formula will be adopted:

Data Revenue = (Month 2 TDC – Month 1 TDC) x F x P

Voice Revenue = (Month 2 TVC – Month 1 TVC) x F x P

The information gathered from these calculations will provide the following insights at town level:

- Statistics of data vs voice consumption
- Statistics of frequency of product use
- Statistics of profit per consumption type

These will provide guidance in answering whether CRM application results in revenue generation or not.

3.5 Procedure for data collection

Data from the service provider was mined for a product performance over the December 2015 to December 2016 period. ARPU will be used as a baseline for revenue calculation including frequency of use.

3.6 Data analysis and interpretation

Inferential statistics will be used to analyse the data. This type of statistic is used to draw conclusions about a wider population. This is done by examination of similarities or differences and relationships between different variables. These statistics make inferences about the wider population and test for hypotheses (Sapsford & Jupp, 2006).

3.7 Limitations of the study

Seasonality is a factor in the data collected where, for example, data collected shows over the December period higher consumption (possibly down to the fact that customers are predisposed to spend more around the Christmas period due to traditional marketing opportunism) than the January data due to customer spend focused on essentials like back to school products. This also reflects the school calendar and area type with respect to residence. This provides a skew view and was overcome by sampling over a longer period to improve accuracy. The study is limited to town level as an indicator for customer behaviour and business performance. This is due to the case company's strong policy on compliance with the POPI Act.

3.8 Validity and reliability

Case study research generally has validity and reliability issues due to its subjective nature. Below are the steps taken to ensure that this problem is addressed.

3.8.1 *External validity*

To address external validity issues, the research was extended to a bigger sample that covers a wide population of 63 Towns. This assists in model adaptability for other mobile telephone service providers and even extends to other product/service-based industries.

3.8.2 *Internal validity*

To improve internal validity, illustrations and diagrams will be used in the data analysis phase in conjunction with a cross check of results against public financial reports of the company investigated. (Riege, 2003).

3.8.3 *Reliability*

A full account of theories and ideas from the literature review was used to test for dependability. A case study database was developed to provide a characteristic method of collected data presentation (Riege, 2003)

3.9 Demographic profile of respondents

The demographic information in this chapter refers to Gauteng metropolitan towns. This was chosen because Gauteng contains 24 per cent of South Africa's 55 million population as per statistics from 2015 (Stats SA, 2017) Most of this population lives in the following metropolitan towns (metros):

- City of Johannesburg (CoJ) with 4.9 million;
- City of Ekurhuleni (CoE) with 3.4 million; and
- City of Tshwane (CoT) with 3.2 million.

Both Sedibeng and West Rand District towns are home to a population of 983 000 and 850 000 respectively. Gauteng is the most attractive to migrants where between 2011 and 2016 a net increase of 543 000 was observed. These numbers reflect the rate of urbanisation in Gauteng where one of its facets is technology as per findings by Henderson et al. 2017 in the World Bank's *Urbanization in Sub Saharan Africa* paper (Henderson, Roberts, & Storeygard, 2017). It is important for any business, to do well in Gauteng since it accounted for approximately 35 per cent of the national economy in 2015.

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

A conceptual model as illustrated in Figure 3 was developed for the Mobile Telecoms industry allowing for a specific business strategy to be defined for the organisation under study. The assessment of the strategy of the case study company's business was done and its alignment towards a customer-centric CRM strategy was examined. Furthermore, product performance information and demographic customer information was undertaken, to establish customer loyalty and which area profile contributed the most to the business of the organisation. Considerable attention is drawn to town performance where ranking for top and worst performance with respect to voice and data bundle sales and revenue was carried out. This is illustrated using graphs and tables. Seasonality was also shown to outline the customer behaviour in residential and business or central business district towns.

4.2 Results pertaining to Research Question 1

The strategy pillars or objectives of the company in summary:

- To ensure clear market share leadership in all markets through segmented product offerings;
- To grow brand leadership;
- To increase NPS points;
- To offer differentiated customer experience and best value; and
- Providing the best network, best value and best service to customers.

The Jonghyeok et al. cause-and-effect relationship model was used to evaluate CRM application.

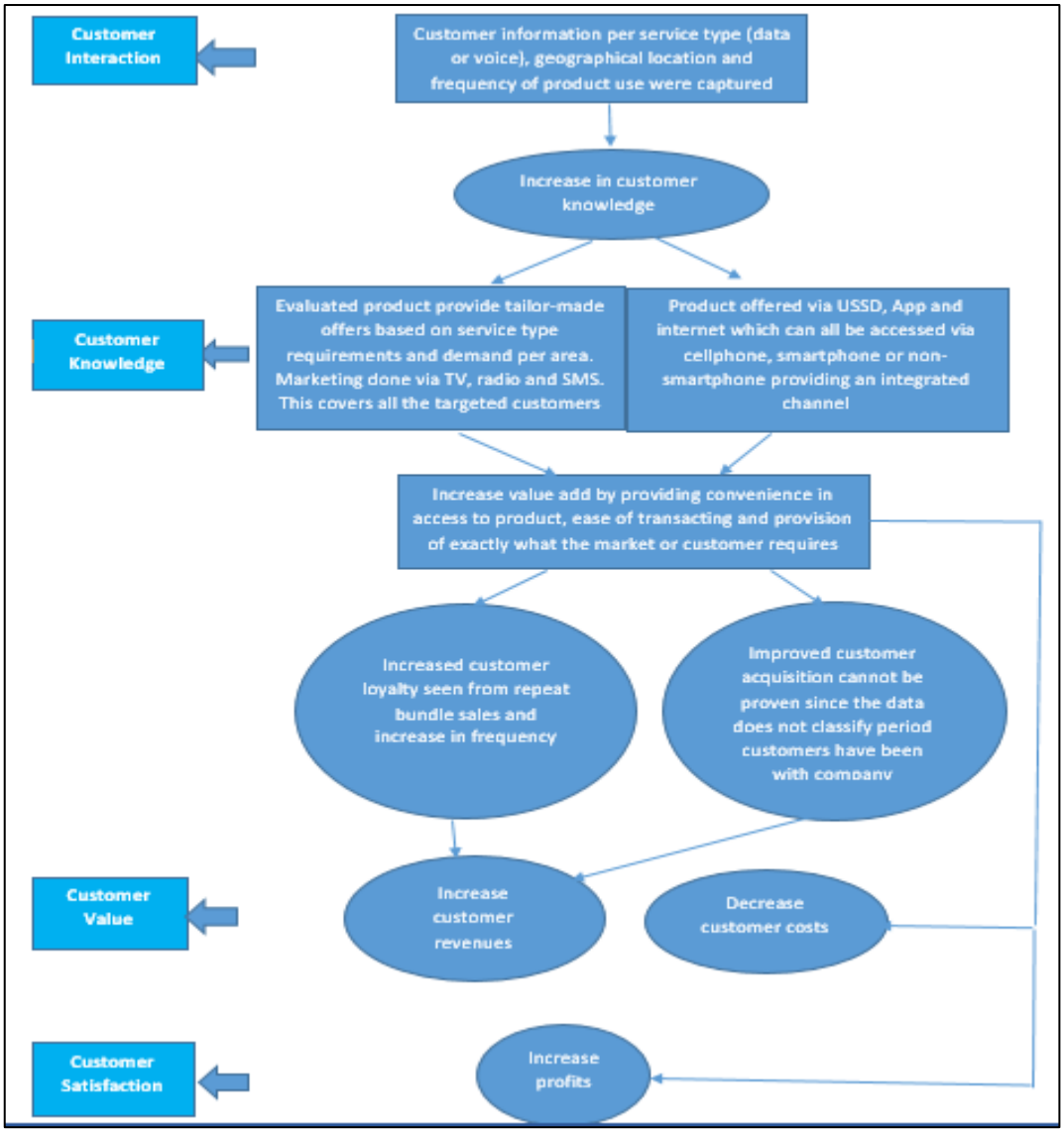


Figure 4: Jonghyeok et al. Model application

The conclusion is that the CRM system applied to develop this product was effective and is indeed linked to company strategy.

4.3 Results pertaining to Research Question 2

The research instrument consists of the calculations using below equations. Month 1 in this research is the period December 2015 and Month 2 is December 2016. This gives an indication of a one year growth period. Since each network service provider uses its own pricing model, for consistency purposes on the calculation, 2015 average of all network provider ARPU will be used as price or P.

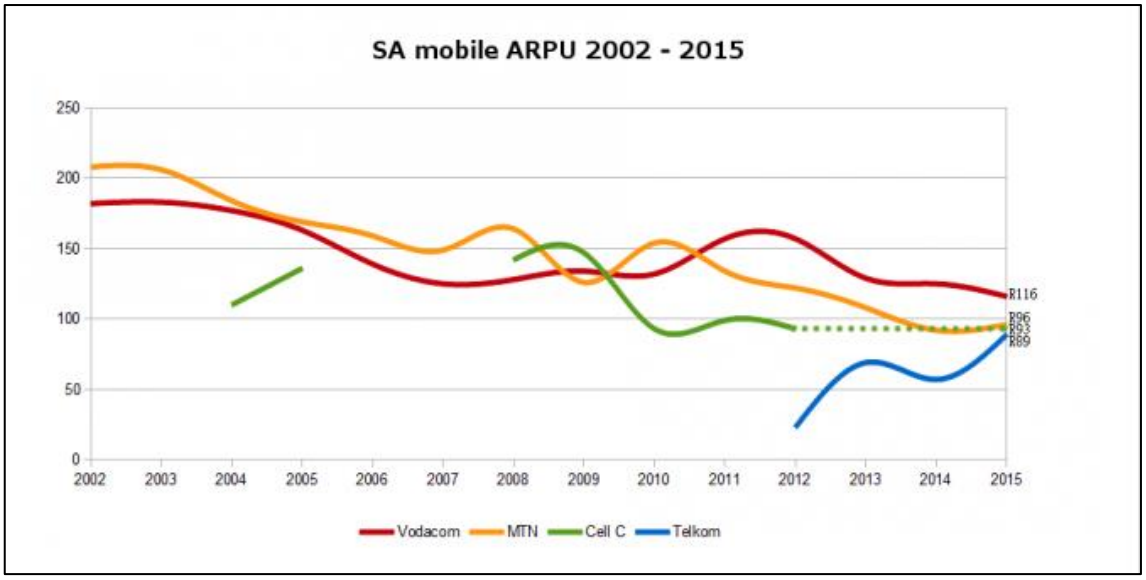


Figure 5: SA mobile ARPU yearly trend graph Source: (Writer, Staff; 2017)

Figure 5 shows ARPU per service provider over a 14-year period in South Africa. The average ARPU for all network providers is R98.50.

The introduction of smartphones has diminished the use of SMS and introduced instant messaging platforms via social media such as WhatsApp and Facebook Messenger.

Data Revenue = (Month 2 TDC – Month 1 TDC) x F x P

Voice Revenue = (Month 2 TVC – Month 1 TVC) x F x P

Table 2: Voice Services Customer Number Growth per Town

Municipality	Dec 15	Mar 16	June 16	Sept 16	Dec 16	Quarterly Growth	% Growth Dec 15 to Dec 16
Eikenhof	49	7,761	8,069	8,822	295		502%
Delmas Rural	149	11,559	10,356	22,169	790		430%
Emfuleni Rural	120	46,420	47,464	52,860	480		300%
Alexandra	8,557	21,510	22,487	29,721	20,677		142%
Centurion	8,678	15,227	15,358	16,986	19,087		120%
Sandton	13,640	9,115	9,761	18,847	28,752		111%
Delmas	98	15,067	15,356	18,292	191		95%
Diepsloot	12,513	679	748	745	23,617		89%
Olifantsfontein	2,891	138	140	174	5,456		89%
Randfontein Rural	359	193	204	646	641		79%
Lawley	1,344	228	241	289	2,359		76%
Sasolburg	1,749	7,531	7,368	8,777	2,994		71%
Mogale City Rural	2,549	3,903	4,112	25,545	4,215		65%
Katlehong	26,733	2,243	2,603	2,879	44,077		65%
Midrand	37,061	179	287	302	60,927		64%
Nigel	3,684	3,135	3,416	3,584	6,050		64%
Germiston	26,635	154	139	446	43,734		64%
Lenasia	2,138	3,976	4,004	4,507	3,468		62%
Tlokwe City Council Rural	21	2,231	2,362	2,461	34		62%
Westonaria	4,786	38,121	40,222	48,411	7,684		61%
Boksburg	16,325	2,175	2,095	2,526	25,946		59%
Pimville	3,299	79,408	77,967	93,879	5,215		58%
Meadowlands East	2,344	17,408	18,138	20,256	3,703		58%
Tembisa	42,773	35,365	36,394	42,370	67,495		58%
Edenvale	1,493	26,883	28,895	34,095	2,303		54%
Vanderbijlpark	5,260	17,623	18,362	20,427	8,092		54%
Oranjeville	75	1,706	1,749	1,882	115		53%
Heidelberg - GP	1,853	2,513	2,618	3,099	2,831		53%
Muldersdrift	162	1,666	1,706	1,804	247		52%
Kempton Park	19,897	551	538	704	30,305		52%
Meyerton	1,074	2,789	3,020	3,376	1,626		51%
Orange Farm	3,738	3,475	3,725	3,601	5,659		51%
Evaton	2,046	2,043	2,106	1,957	3,049		49%
Deneysville	255	1,401	1,435	1,627	380		49%
Ennerdale	3,409	50,063	53,491	63,739	5,054		48%
City of Johannesburg Rural	12,802	1,486	1,478	1,710	18,970		48%
Lenasia South	1,387	2,956	3,493	4,009	2,011		45%
Johannesburg	54,037	178	190	195	78,235		45%
Benoni	36,319	13	9	12	52,483		45%
Soweto	72,792	4,537	4,829	5,493	105,179		44%
Johannesburg South	13,868	4,046	4,805	6,178	19,877		43%
Roodepoort	19,175	4,169	4,379	4,793	27,450		43%
Vereeniging	6,566	76	88	92	9,380		43%
Krugersdorp	13,867	4,540	4,524	5,315	19,594		41%
Vosloorus	14,780	15,931	15,720	19,344	20,774		41%
Diepkloof	6,301	5,732	5,706	6,573	8,820		40%
Springs	15,864	394	394	538	22,067		39%
Lesedi Rural	375	24,018	24,795	28,169	519		38%
De Deur/Walkerville	564	18,729	20,317	32,469	779		38%
Randburg	12,838	2,658	2,421	3,060	17,586		37%
Randfontein	4,586	4,085	3,893	4,298	6,266		37%
Sebokeng	3,873	87,542	90,211	99,600	5,259		36%
Tokoza	9,833	20,301	20,785	22,836	13,296		35%
Meadowlands West	2,806	60,328	62,359	67,922	3,768		34%
Vaal Oewer	21	22	29	30	28		33%
Brakpan	13,474	13,431	13,351	14,886	17,937		33%
Ekurhuleni Rural	2,682	17	27	21	3,451		29%
Midvaal Rural	1,116	8,916	9,006	10,978	1,397		25%
Alberton	6,380	8,518	8,617	9,401	7,902		24%
Metsimaholo Rural	1,840	213	220	182	2,203		20%
Ngwathe Rural	12	18,098	18,423	19,844	14		17%
Vischkuil	180	5,691	5,870	7,000	167		-7%
Westonaria Rural	3	6	4	4	2		-33%

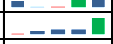
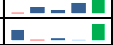
Meadowlands West	2,806	60,328	62,359	67,922	3,768		34%
Vaal Oewer	21	22	29	30	28		33%
Brakpan	13,474	13,431	13,351	14,886	17,937		33%
Ekurhuleni Rural	2,682	17	27	21	3,451		29%
Midvaal Rural	1,116	8,916	9,006	10,978	1,397		25%
Alberton	6,380	8,518	8,617	9,401	7,902		24%
Metsimaholo Rural	1,840	213	220	182	2,203		20%
Ngwathe Rural	12	18,098	18,423	19,844	14		17%
Vischkuil	180	5,691	5,870	7,000	167		-7%
Westonaria Rural	3	6	4	4	2		-33%

Table 3: Voice Services Bundle Sale Growth per Town

Municipality	Dec 15	Mar 16	June 16	Sept 16	Dec 16	Quarterly Growth	% Growth Dec 15 to Dec 16
Eikenhof	238	1,026	1,722	1,999	2,170		812%
Delmas Rural	911	1,097	1,203	4,164	6,331		595%
Emfuleni Rural	566	832	781	2,741	3,440		508%
Alexandra	50,562	71,953	65,451	156,082	170,706		238%
Centurion	50,412	55,950	61,549	134,522	160,509		218%
Sandton	80,990	115,539	127,590	228,526	243,242		200%
Delmas	528	715	911	1,195	1,512		186%
Olifantsfontein	16,862	24,911	30,608	43,831	46,049		173%
Diepsloot	73,813	24,260	25,565	186,284	201,079		172%
Randfontein Rural	1,810	2,279	2,157	3,222	4,684		159%
Sasolburg	9,000	15,521	13,215	19,709	22,369		149%
Mogale City Rural	13,898	17,606	20,965	26,774	33,045		138%
Nigel	18,995	25,868	28,379	35,228	45,129		138%
Lenasia	11,006	13,742	14,444	19,535	26,137		137%
Germiston	159,175	241,967	259,496	356,148	375,478		136%
Katlehong	151,465	211,890	221,413	291,756	356,483		135%
Midrand	211,469	303,239	328,337	445,568	497,671		135%
Lawley	7,313	9,347	9,744	12,080	17,203		135%
Deneysville	1,068	1,043	1,284	1,626	2,450		129%
Edenvale	8,431	14,184	17,019	20,450	19,283		129%
Boksburg	95,576	134,699	142,155	211,402	217,499		128%
Westonaria	26,524	34,004	35,561	47,399	60,277		127%
Pimville	18,457	27,404	27,406	36,002	41,663		126%
Tembisa	253,543	376,919	393,424	487,446	570,238		125%
Meadowlands East	12,837	16,917	18,368	22,906	28,595		123%
Heidelberg - GP	9,363	11,995	11,756	15,584	20,705		121%
Vanderbijlpark	27,834	50,541	51,887	71,660	61,500		121%
City of Johannesburg Rural	68,774	88,016	90,801	121,413	151,253		120%
Lesedi Rural	1,635	3,003	2,918	4,320	3,553		117%
Kempton Park	116,470	165,275	180,005	238,514	251,747		116%
Meyerton	5,413	7,977	8,454	10,231	11,520		113%
Lenasia South	7,099	8,999	9,676	11,218	15,094		113%
Ennerdale	17,681	21,540	22,723	27,899	37,589		113%
Orange Farm	19,631	23,172	24,609	29,523	41,467		111%
Evaton	10,256	11,283	12,426	13,929	21,173		106%
Benoni	204,542	276,237	287,646	368,262	420,833		106%
Johannesburg South	77,995	105,572	112,160	139,685	159,833		105%
Johannesburg	326,315	509,281	506,692	681,675	667,645		105%
Krugersdorp	74,961	103,315	110,294	137,473	153,058		104%
De Deur/Walkerville	2,706	3,589	4,100	4,569	5,498		103%
Soweto	409,666	525,842	545,517	678,722	832,317		103%
Roodepoort	108,291	144,315	152,258	194,504	219,552		103%
Vereeniging	34,856	47,147	49,389	59,755	70,215		101%
Tlokwe City Council Rural	102	129	138	169	205		101%
Diepkloof	35,602	45,327	46,135	61,048	71,020		99%
Vosloorus	84,455	109,955	114,380	137,750	167,591		98%
Springs	89,239	124,208	127,846	159,650	176,152		97%
Tokoza	59,094	87,945	89,484	112,918	113,734		92%
Randburg	73,315	95,950	97,449	133,939	140,858		92%
Muldersdrift	934	939	1,115	1,300	1,785		91%
Sebokeng	19,425	21,478	20,849	25,739	37,068		91%
Randfontein	23,816	32,126	32,505	42,019	45,031		89%
Meadowlands West	16,112	20,320	22,518	24,331	30,070		87%
Oranjeville	403	346	343	491	752		87%
Brakpan	72,555	86,694	88,009	110,332	135,122		86%
Ekurhuleni Rural	14,758	18,025	19,705	23,796	26,887		82%
Midvaal Rural	6,032	8,581	8,655	11,197	10,714		78%
Alberton	36,088	47,057	49,300	60,766	63,576		76%
Metsimaholo Rural	9,636	11,449	11,779	12,063	16,704		73%
Vaal Oewer	105	82	111	174	144		37%
Ngwathe Rural	51	67	77	63	63		24%
Vischkuil	862	1,005	1,183	1,282	1,002		16%
Westonaria Rural	14	21	16	21	3		-79%

Meadowlands West	16,112	20,320	22,518	24,331	30,070		87%
Oranjeville	403	346	343	491	752		87%
Brakpan	72,555	86,694	88,009	110,332	135,122		86%
Ekurhuleni Rural	14,758	18,025	19,705	23,796	26,887		82%
Midvaal Rural	6,032	8,581	8,655	11,197	10,714		78%
Alberton	36,088	47,057	49,300	60,766	63,576		76%
Metsimaholo Rural	9,636	11,449	11,779	12,063	16,704		73%
Vaal Oewer	105	82	111	174	144		37%
Ngwathe Rural	51	67	77	63	63		24%
Vischkuil	862	1,005	1,183	1,282	1,002		16%
Westonaria Rural	14	21	16	21	3		-79%

Table 4: Data Services Customer Number Growth per Town

Municipality	Dec 15	Mar 16	June 16	Sept 16	Dec 16	Quarterly Growth	% Growth Dec 15 to Dec 16
Delmas Rural	255	272	294	583	642		152%
Alexandra	5,370	6,482	5,509	11,461	10,585		97%
Eikenhof	276	341	489	479	519		88%
Ngwathe Rural	48	57	64	69	83		73%
Emfuleni Rural	680	632	569	993	1,129		66%
Tlokwe City Council Rural	121	99	92	119	198		64%
Sandton	26,820	30,182	30,112	49,690	43,570		62%
Randfontein Rural	864	864	792	1,125	1,402		62%
Diepsloot	6,296	3,995	3,909	10,222	9,748		55%
Delmas	272	306	322	321	413		52%
Westonaria	6,230	6,532	6,445	8,179	8,916		43%
Centurion	7,617	7,385	7,510	11,106	10,697		40%
Sasolburg	6,310	7,304	7,712	7,750	8,204		30%
Boksburg	23,651	22,689	20,591	31,038	30,350		28%
Midrand	37,322	43,366	44,097	53,177	46,643		25%
Meyerton	4,667	4,793	4,711	5,088	5,816		25%
Mogale City Rural	3,117	3,090	3,210	3,684	3,820		23%
Germiston	33,126	37,731	36,430	42,635	40,051		21%
Lawley	1,344	1,418	1,436	1,429	1,623		21%
Olifantsfontein	2,828	3,107	3,242	3,599	3,386		20%
Lenasia	4,933	5,218	5,031	5,534	5,878		19%
Vanderbijlpark	16,347	19,612	18,922	20,742	19,423		19%
Nigel	7,772	8,136	7,867	8,249	9,021		16%
De Deur/Walkerville	1,604	1,866	1,745	1,747	1,861		16%
Ennerdale	5,398	5,610	5,554	5,693	6,246		16%
Vaal Oewer	163	156	128	145	188		15%
Evaton	4,489	4,466	4,549	4,621	5,167		15%
Lenasia South	2,431	2,556	2,505	2,524	2,789		15%
Meadowlands East	3,217	3,327	3,186	3,220	3,690		15%
Katlehong	26,637	30,077	28,806	30,341	30,074		13%
Heidelberg - GP	5,352	5,539	5,090	5,682	6,034		13%
Muldersdrift	185	175	177	168	208		12%
Pimville	4,694	5,461	4,989	5,263	5,224		11%
Midvaal Rural	3,560	3,709	3,668	3,835	3,956		11%
Deneysville	889	725	758	729	987		11%
Kempton Park	32,144	34,436	33,826	37,728	35,605		11%
Roodepoort	38,756	38,810	35,606	41,918	42,874		11%
City of Johannesburg Rural	13,854	14,059	13,457	15,297	15,308		10%
Johannesburg South	30,833	33,262	30,922	33,831	34,013		10%
Johannesburg	78,165	98,855	87,354	102,914	85,999		10%
Randburg	35,721	34,393	28,804	39,845	39,149		10%
Soweto	87,710	92,982	89,449	93,369	95,537		9%
Tembisa	27,746	32,594	31,150	31,248	30,028		8%
Benoni	38,440	41,430	38,538	41,308	41,499		8%
Edenvale	4,883	5,392	5,281	5,614	5,258		8%
Vereeniging	18,101	19,504	18,842	19,221	19,345		7%
Meadowlands West	3,093	3,341	3,327	3,148	3,294		6%
Sebokeng	9,913	9,815	8,948	9,141	10,547		6%
Lesedi Rural	683	740	786	890	720		5%
Krugersdorp	23,337	24,476	23,303	24,511	24,540		5%
Randfontein	11,201	11,743	11,315	11,562	11,747		5%
Springs	20,704	21,891	20,423	21,474	21,553		4%
Brakpan	20,457	20,409	18,727	19,777	21,167		3%
Diepkloof	7,222	7,469	6,954	7,515	7,336		2%
Tokoza	7,664	8,794	8,141	8,387	7,763		1%
Alberton	16,787	17,214	15,955	17,179	16,976		1%
Vosloorus	17,828	18,608	17,710	17,110	17,561		-1%
Oranjeville	385	285	273	263	372		-3%
Ekurhuleni Rural	1,867	1,893	1,829	1,918	1,711		-8%
Metsimaholo Rural	3,844	3,913	3,932	3,145	3,438		-11%
Vischkuil	340	311	313	280	302		-11%
Orange Farm	6,342	5,946	6,023	5,424	5,495		-13%
Westonaria Rural	22	18	21	28	19		-14%

Brakpan	20,457	20,409	18,727	19,777	21,167		3%
Diepkloof	7,222	7,469	6,954	7,515	7,336		2%
Tokoza	7,664	8,794	8,141	8,387	7,763		1%
Alberton	16,787	17,214	15,955	17,179	16,976		1%
Vosloorus	17,828	18,608	17,710	17,110	17,561		-1%
Oranjeville	385	285	273	263	372		-3%
Ekurhuleni Rural	1,867	1,893	1,829	1,918	1,711		-8%
Metsimaholo Rural	3,844	3,913	3,932	3,145	3,438		-11%
Vischkuil	340	311	313	280	302		-11%
Orange Farm	6,342	5,946	6,023	5,424	5,495		-13%
Westonaria Rural	22	18	21	28	19		-14%

Table 5: Data Services Bundle Sale % Growth per Town

Municipality	Dec 15	Mar 16	June 16	Sept 16	Dec 16	Quarterly Growth	% Growth Dec 15 to Dec 16
Delmas Rural	752	864	880	1,954	2,146		185%
Ngwathe Rural	161	191	216	246	335		108%
Alexandra	19,085	23,498	19,284	42,645	39,112		105%
Eikenhof	798	1,072	1,477	1,544	1,575		97%
Randfontein Rural	2,517	2,645	2,257	3,534	4,920		95%
Emfuleni Rural	2,039	2,116	1,690	3,363	3,717		82%
Tlokwe City Council Rural	351	359	233	379	620		77%
Sandton	77,775	92,210	88,227	154,774	134,720		73%
Delmas	909	991	995	1,094	1,390		53%
Diepsloot	20,072	15,417	13,401	33,225	30,048		50%
Centurion	25,076	25,349	24,897	38,213	36,281		45%
Westonaria	21,374	22,810	21,661	28,656	30,056		41%
Meyerton	14,013	14,990	13,879	16,279	19,154		37%
Sasolburg	21,326	25,497	23,064	26,420	28,349		33%
Boksburg	75,945	75,363	66,116	101,340	99,339		31%
Midrand	127,265	156,368	149,392	191,098	164,771		29%
Mogale City Rural	9,370	9,466	9,324	11,600	12,011		28%
Vanderbijlpark	53,812	69,664	63,649	73,527	68,282		27%
Lenasia	14,876	15,957	15,047	17,151	18,376		24%
Germiston	108,127	126,351	116,399	142,245	133,422		23%
Vaal Oewer	398	409	321	377	482		21%
City of Johannesburg Rural	43,887	47,350	42,496	51,342	52,692		20%
Lenasia South	8,217	9,051	8,197	8,723	9,835		20%
Lawley	4,288	4,868	4,535	4,668	5,108		19%
Midvaal Rural	10,274	11,182	10,831	12,049	12,223		19%
Nigel	28,724	30,434	28,093	30,553	33,994		18%
Meadowlands East	12,047	12,697	11,848	12,269	14,187		18%
Evaton	15,704	16,313	16,127	16,419	18,459		18%
Olifantsfontein	9,541	10,004	10,037	11,866	11,203		17%
Edenvale	14,148	16,664	15,220	17,308	16,503		17%
De Deur/Walkerville	5,236	6,214	5,471	5,775	6,106		17%
Ennerdale	19,455	20,551	19,405	20,506	22,444		15%
Johannesburg South	108,672	119,870	105,373	122,127	124,619		15%
Pimville	18,041	21,159	18,249	20,711	20,599		14%
Heidelberg - GP	18,489	19,294	16,940	20,330	21,095		14%
Kempton Park	100,515	111,263	103,408	120,930	114,406		14%
Roodepoort	125,837	128,645	113,518	141,972	143,066		14%
Katlehong	97,870	109,809	100,805	110,960	110,686		13%
Randburg	112,219	112,157	88,159	130,137	126,690		13%
Johannesburg	264,300	359,548	295,203	365,106	294,928		12%
Lesedi Rural	2,129	2,497	2,573	2,959	2,347		10%
Vereeniging	63,668	70,278	64,502	68,833	69,637		9%
Benoni	131,636	141,160	127,947	142,348	142,911		9%
Soweto	326,917	350,629	317,676	343,811	353,973		8%
Randfontein	38,607	41,540	37,918	40,583	41,736		8%
Deneysville	2,960	2,341	2,374	2,352	3,197		8%
Krugersdorp	79,688	85,035	78,056	85,425	85,596		7%
Sebokeng	37,950	37,372	33,477	35,196	40,718		7%
Springs	71,071	75,760	68,088	75,137	76,150		7%
Tembisa	97,903	115,361	104,277	109,678	104,362		7%
Brakpan	70,866	70,142	62,088	67,883	75,365		6%
Meadowlands West	11,796	12,974	11,637	11,755	12,317		4%
Alberton	54,245	56,405	50,418	56,497	56,238		4%
Diepkloof	28,774	29,265	26,053	29,794	29,247		2%
Muldersdrift	520	534	517	529	523		1%
Westonaria Rural	51	38	48	91	51		0%
Vosloorus	71,194	74,307	67,187	67,344	70,807		-1%
Tokoza	28,149	32,373	28,062	29,786	27,187		-3%
Orange Farm	20,770	21,795	20,181	19,349	19,842		-4%
Vischkuil	1,085	1,014	1,006	892	1,011		-7%
Metsimaholo Rural	12,999	13,632	11,873	10,810	12,037		-7%
Oranjeville	1,246	853	778	857	1,104		-11%
Ekurhuleni Rural	5,619	5,797	5,321	5,746	4,883		-13%

Meadowlands West	11,796	12,974	11,637	11,755	12,317		4%
Alberton	54,245	56,405	50,418	56,497	56,238		4%
Diepkloof	28,774	29,265	26,053	29,794	29,247		2%
Muldersdrift	520	534	517	529	523		1%
Westonaria Rural	51	38	48	91	51		0%
Vosloorus	71,194	74,307	67,187	67,344	70,807		-1%
Tokoza	28,149	32,373	28,062	29,786	27,187		-3%
Orange Farm	20,770	21,795	20,181	19,349	19,842		-4%
Vischkuil	1,085	1,014	1,006	892	1,011		-7%
Metsimaholo Rural	12,999	13,632	11,873	10,810	12,037		-7%
Oranjeville	1,246	853	778	857	1,104		-11%
Ekurhuleni Rural	5,619	5,797	5,321	5,746	4,883		-13%

Table 6: Revenue Calculation per Town

Municipality	Total Bundle Sales Dec 2015	Total Bundle Sales Dec 2016	Revenue 2015 = Total Bundles * Avg ARPU	Revenue 2016 = Total Bundles * Avg ARPU	Revenue Delta 2015-16	Revenue % Change 2015-16
Delmas Rural	1,663	8,477	163805.5	834984.5	671179	410%
Eikenhof	1,036	3,745	102046	368882.5	266836.5	261%
Alexandra	69,647	209,818	6860229.5	20667073	13806843.5	201%
Emfuleni Rural	2,605	7,157	256592.5	704964.5	448372	175%
Centurion	75,488	196,790	7435568	19383815	11948247	161%
Diepsloot	93,885	231,127	9247672.5	22766009.5	13518337	146%
Sandton	158,765	377,962	15638352.5	37229257	21590904.5	138%
Randfontein Rural	4,327	9,604	426209.5	945994	519784.5	122%
Olifantsfontein	26,403	57,252	2600695.5	5639322	3038626.5	117%
Delmas	1,437	2,902	141544.5	285847	144302.5	102%
Midrand	338,734	662,442	33365299	65250537	31885238	96%
Mogale City Rural	23,268	45,056	2291898	4438016	2146118	94%
Lawley	11,601	22,311	1142698.5	2197633.5	1054935	92%
Tembisa	351,446	674,600	34617431	66448100	31830669	92%
Germiston	267,302	508,900	26329247	50126650	23797403	90%
Westonaria	47,898	90,333	4717953	8897800.5	4179847.5	89%
Ngwathe Rural	212	398	20882	39203	18321	88%
Katlehong	249,335	467,169	24559497.5	46016146.5	21456649	87%
Boksburg	171,521	316,838	16894818.5	31208543	14313724.5	85%
Tlokwe City Council Rural	453	825	44620.5	81262.5	36642	82%
City of Johannesburg Rural	112,661	203,945	11097108.5	20088582.5	8991474	81%
Lenasia	25,882	44,513	2549377	4384530.5	1835153.5	72%
Meadowlands East	24,884	42,782	2451074	4214027	1762953	72%
Pimville	36,498	62,262	3595053	6132807	2537754	71%
Kempton Park	216,985	366,153	21373022.5	36066070.5	14693048	69%
Benoni	336,178	563,744	33113533	55528784	22415251	68%
Sasolburg	30,326	50,718	2987111	4995723	2008612	67%
Nigel	47,719	79,123	4700321.5	7793615.5	3093294	66%
Johannesburg	590,615	962,573	58175577.5	94813440.5	36637863	63%
Lenasia South	15,316	24,929	1508626	2455506.5	946880.5	63%
Ennerdale	37,136	60,033	3657896	5913250.5	2255354.5	62%
Tokoza	87,243	140,921	8593435.5	13880718.5	5287283	62%
Soweto	736,583	1,186,290	72553425.5	116849565	44296139.5	61%
Vanderbijlpark	81,646	129,782	8042131	12783527	4741396	59%
Muldersdrift	1,454	2,308	143219	227338	84119	59%
Edenvale	22,579	35,786	2224031.5	3524921	1300889.5	58%
Meyerton	19,426	30,674	1913461	3021389	1107928	58%
Springs	160,310	252,302	15790535	24851747	9061212	57%
Lesedi Rural	3,764	5,900	370754	581150	210396	57%
Ekurhuleni Rural	20,377	31,770	2007134.5	3129345	1122210.5	56%
Diepkloof	64,376	100,267	6341036	9876299.5	3535263.5	56%
Roodepoort	234,128	362,618	23061608	35717873	12656265	55%
Krugersdorp	154,649	238,654	15232926.5	23507419	8274492.5	54%
Vosloorus	155,649	238,398	15331426.5	23482203	8150776.5	53%
Evaton	25,960	39,632	2557060	3903752	1346692	53%
Johannesburg South	186,667	284,452	18386699.5	28018522	9631822.5	52%
Meadowlands West	27,908	42,387	2748938	4175119.5	1426181.5	52%
Orange Farm	40,401	61,309	3979498.5	6038936.5	2059438	52%
Heidelberg - GP	27,852	41,800	2743422	4117300	1373878	50%
Brakpan	143,421	210,487	14126968.5	20732969.5	6606001	47%

De Deur/Walkerville	7,942	11,604	782287	1142994	360707	46%
Randburg	185,534	267,548	18275099	26353478	8078379	44%
Vereeniging	98,524	139,852	9704614	13775422	4070808	42%
Midvaal Rural	16,306	22,937	1606141	2259294.5	653153.5	41%
Deneysville	4,028	5,647	396758	556229.5	159471.5	40%
Randfontein	62,423	86,767	6148665.5	8546549.5	2397884	39%
Sebokeng	57,375	77,786	5651437.5	7661921	2010483.5	36%
Alberton	90,333	119,814	8897800.5	11801679	2903878.5	33%
Metsimaholo Rural	22,635	28,741	2229547.5	2830988.5	601441	27%
Vaal Oewer	503	626	49545.5	61661	12115.5	24%
Oranjeville	1,649	1,856	162426.5	182816	20389.5	13%
Vischkuil	1,947	2,013	191779.5	198280.5	6501	3%
Westonaria Rural	65	54	6402.5	5319	-1083.5	-17%

Figure 6: Top 5 Revenue Generating Towns

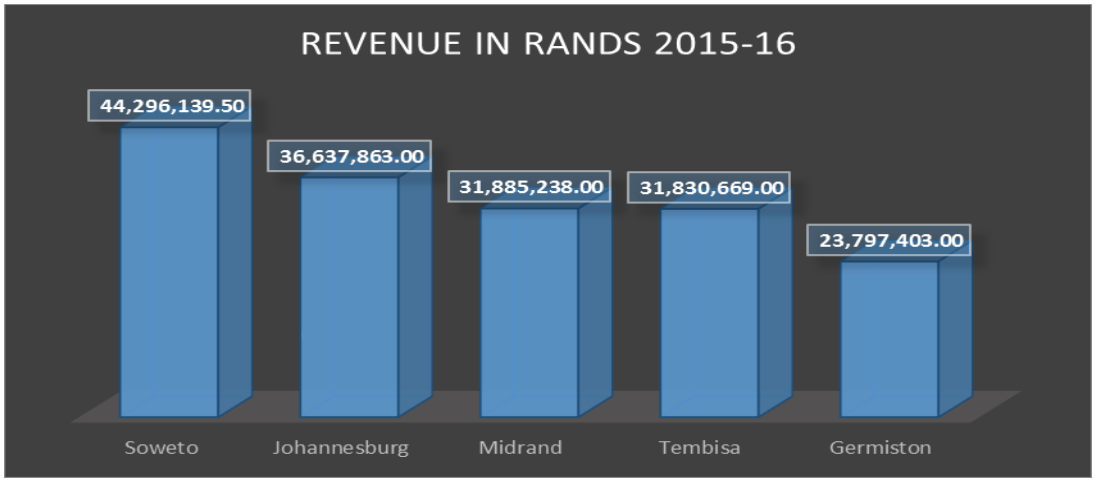


Figure 7: Bottom 5 Revenue Generating Towns

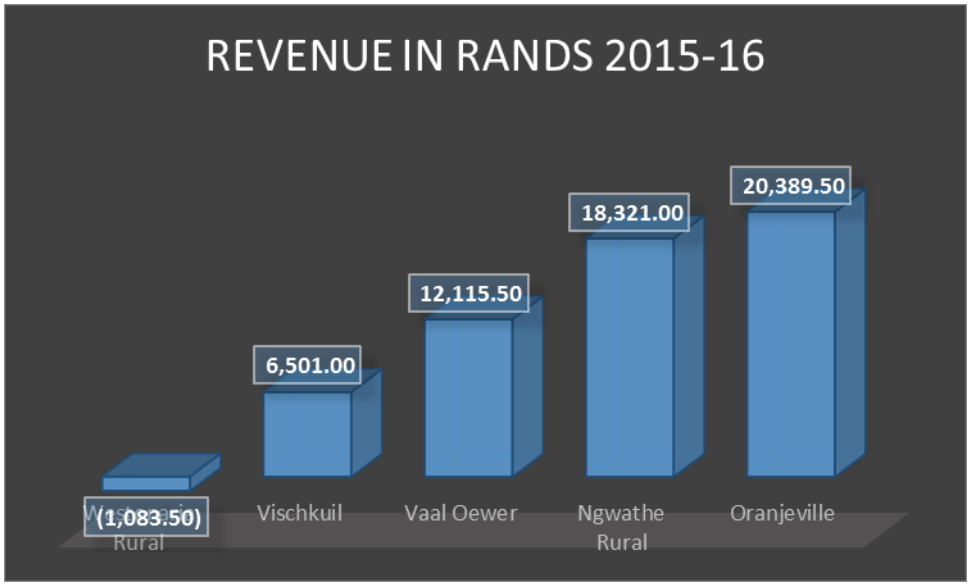
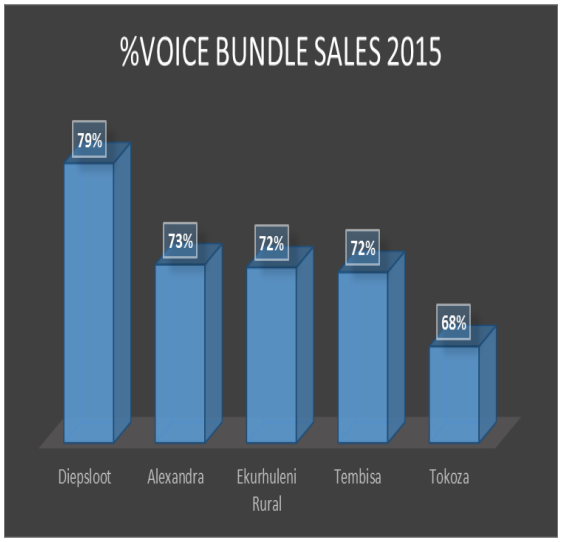
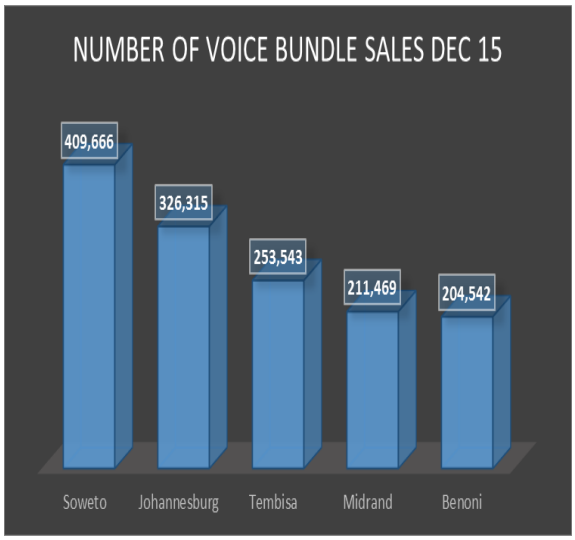
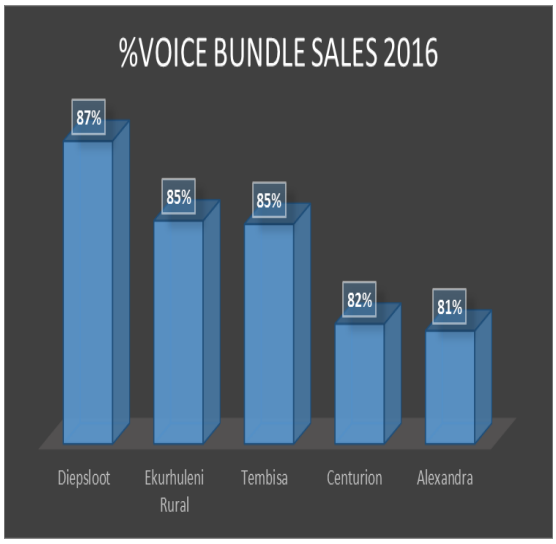


Figure 8: Top 5 Voice Bundle Selling % Growth and Number Towns







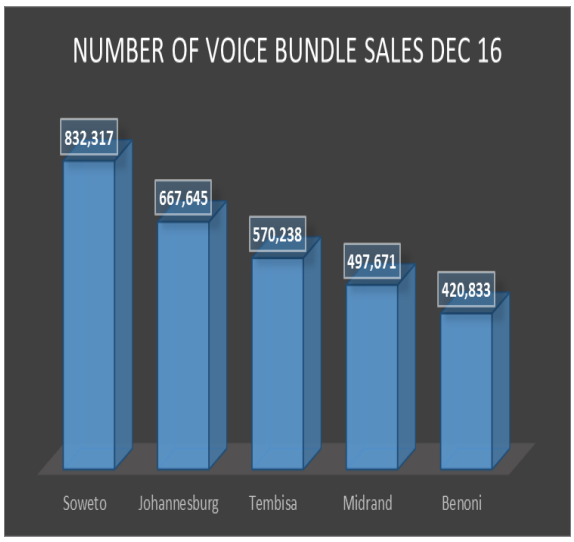
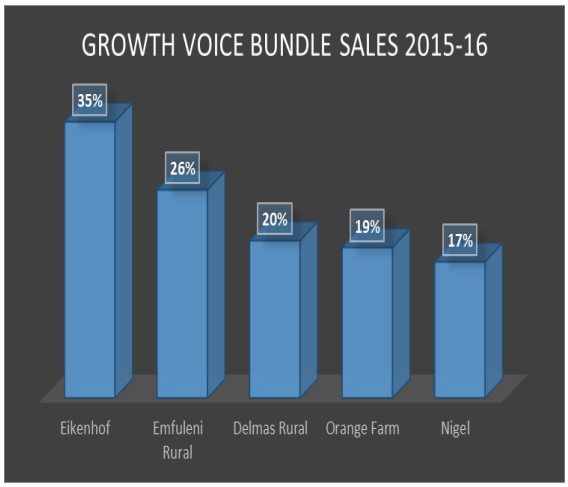


Figure 9: Top 5 Towns - Voice Bundle Sale Growth Dec 2015-2016



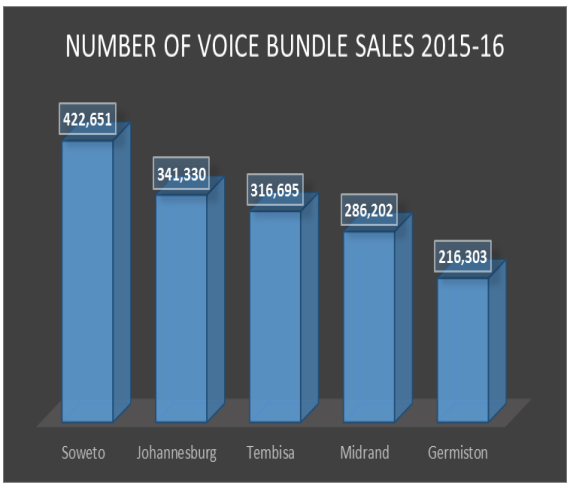
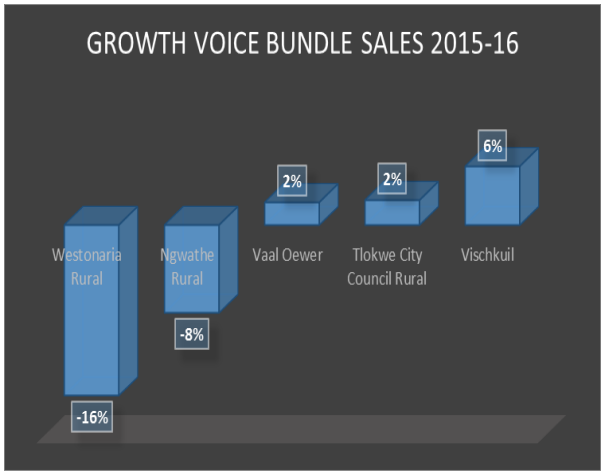


Figure 10: Worst 5 Towns on Voice Bundle Sale Growth Dec 2015-2016



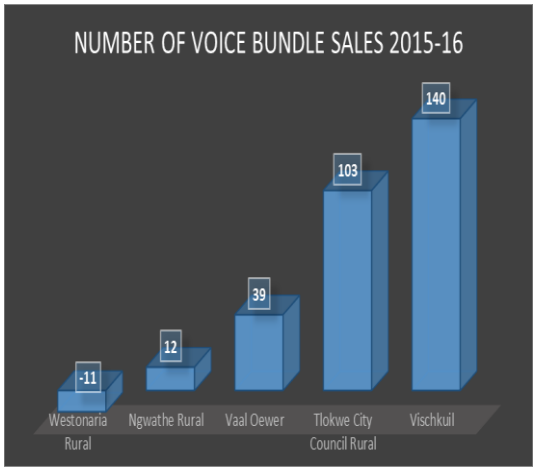
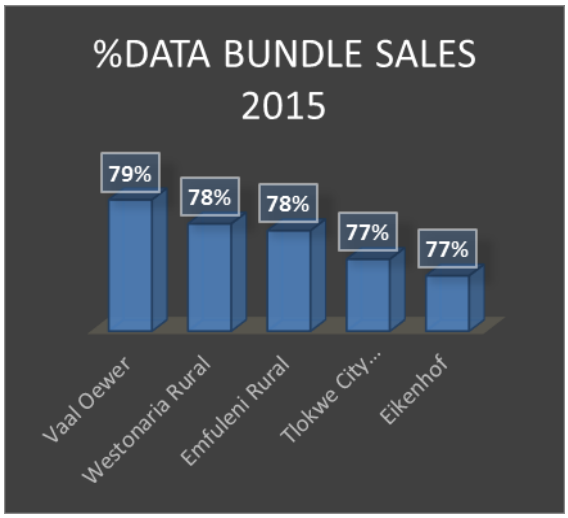
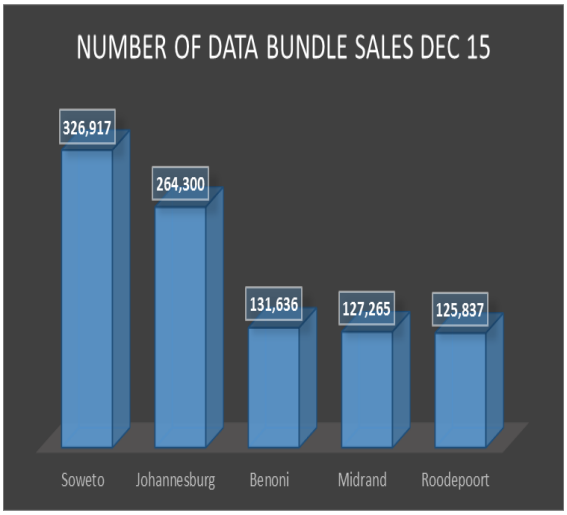
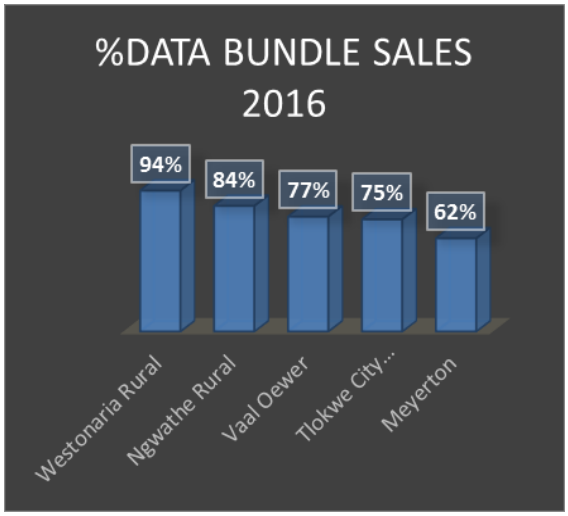


Figure 11: Top 5 Data Bundle Selling Towns







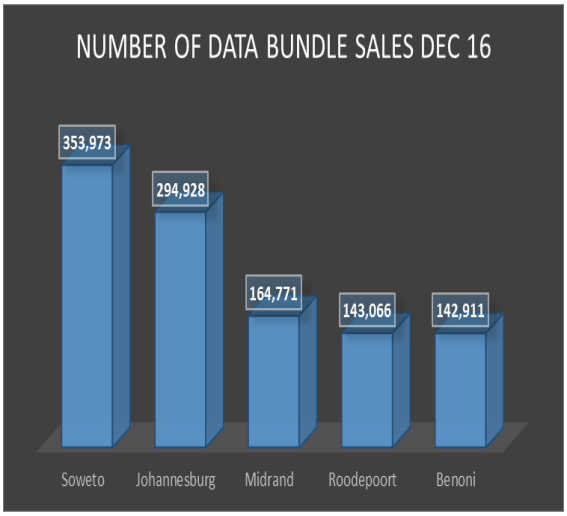


Figure 12: Top 5 highest Data Bundle Sale Growth Towns

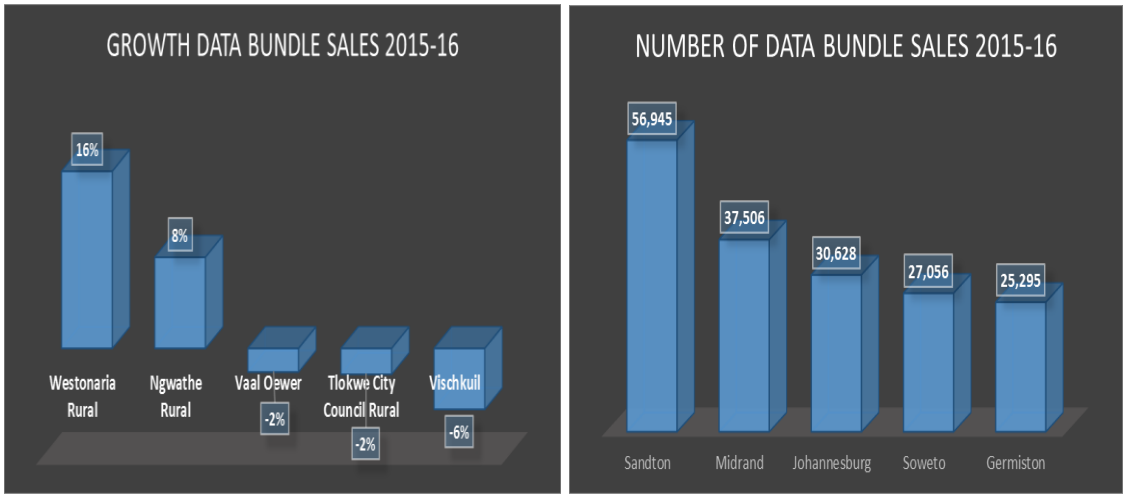
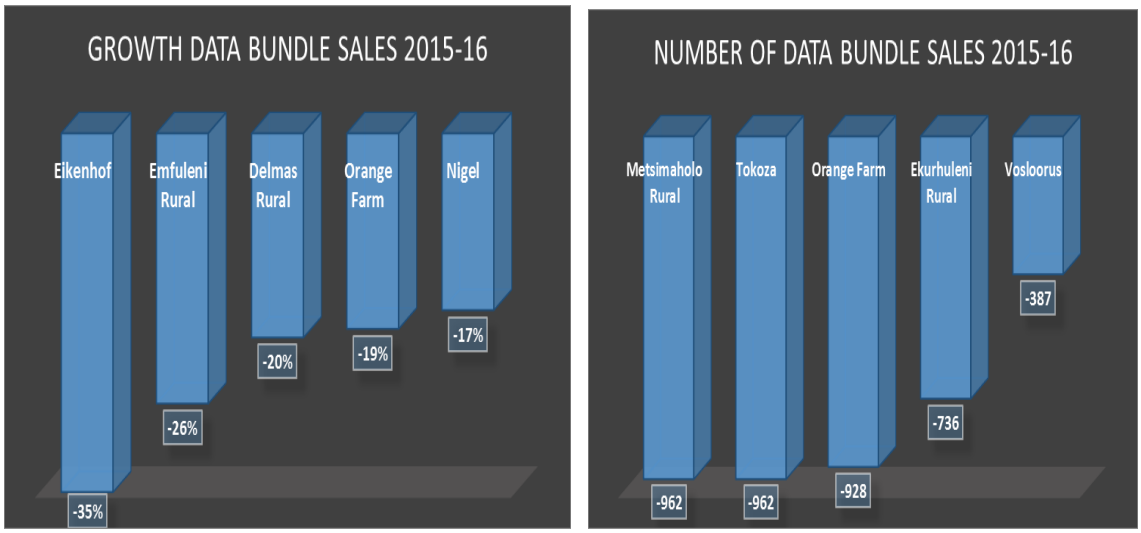


Figure 13: Worst 5 Data Bundle Selling Towns

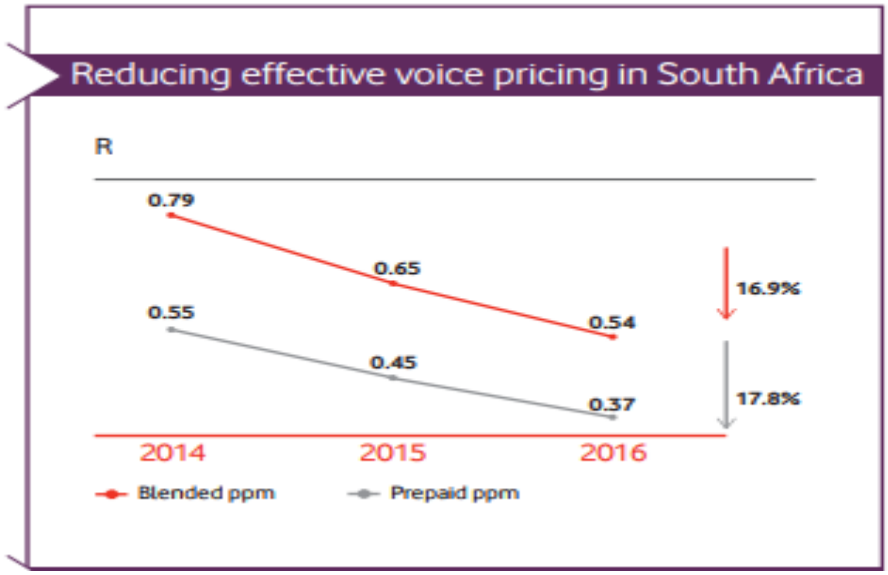


4.4 Results as per financial statements

Below are findings from the case company's financial reports for period 2015 to 2016:

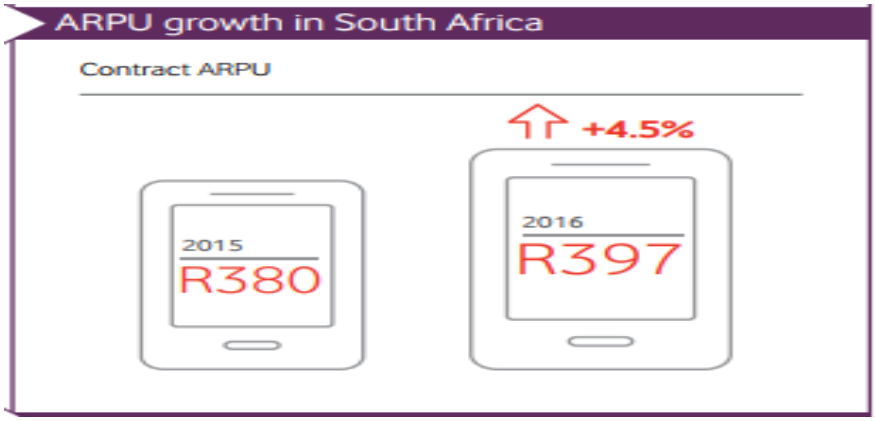
There is a downward trend observed in the voice service pricing where the value of price per minute (ppm) has decreased to 54 cents for blended and 37 cents for prepaid.

Figure 14: Reduction of Voice Pricing



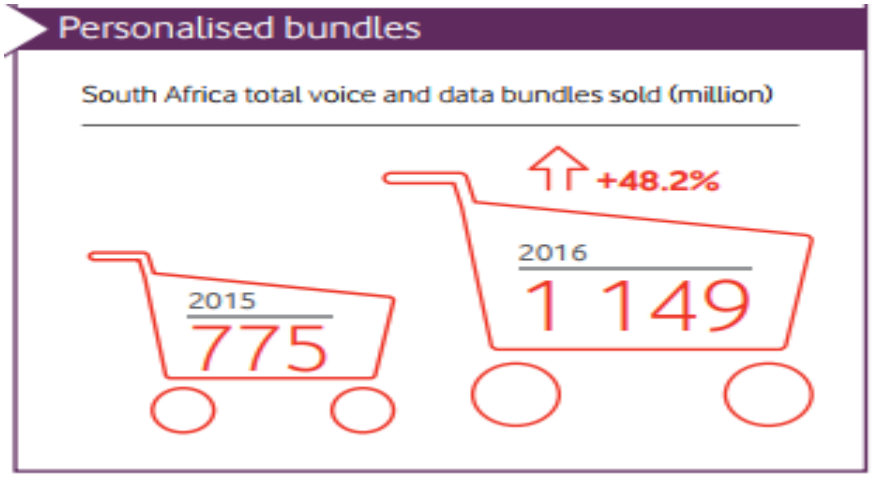
The average revenue per user (ARPU) which is mainly driven by contract customer shows 4.5% growth from R380 to R397.

Figure 15: ARPU growth in South Africa



The highlight is the growth in total bundles sold which almost doubled for period 2015 to 2016.

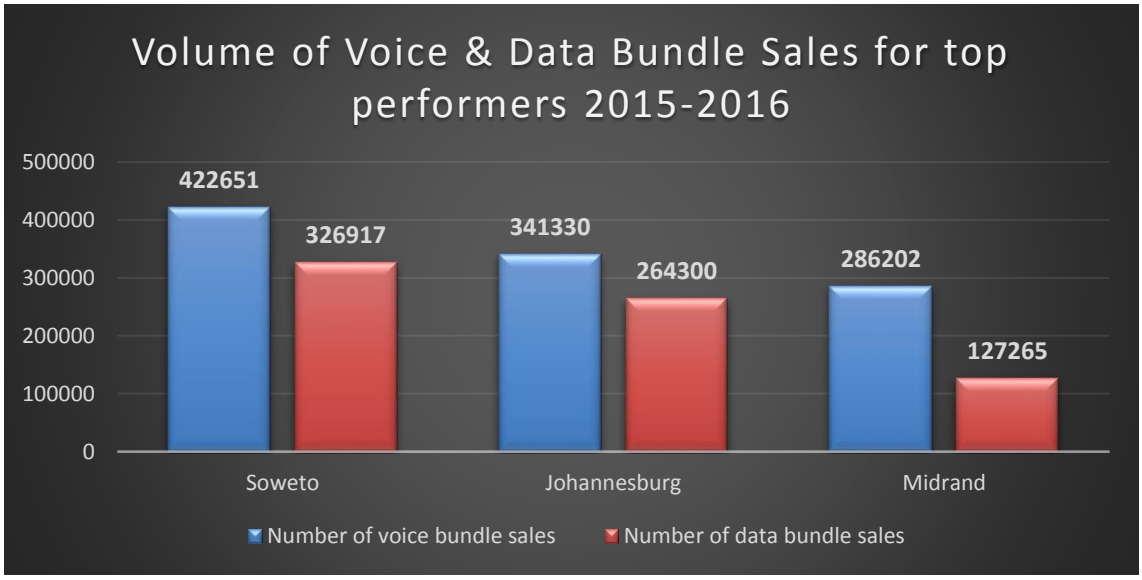
Figure 16: Growth in Personalised Bundles



4.5 Summary of the results

From the presented tables and graphs, there is a clear indication of business activity that is both negative and positive. These visuals give easily accessible information that can be compiled into dashboard format to facilitate business decisions, showing where investment in time and resources can be redirected accordingly. A deep dive shows Soweto as the clear leader in revenue generated from both voice and data services. It is also observed that four out of five of the towns that are top performers in revenue generated are under the CoJ and two of them are townships. Volume is key and this is clearly indicated by the revenue generated from the top performers. Top performers by percentage growth do not necessarily indicate top performance on revenue but this is also an indication of an increase of sales equating to growth in revenue.

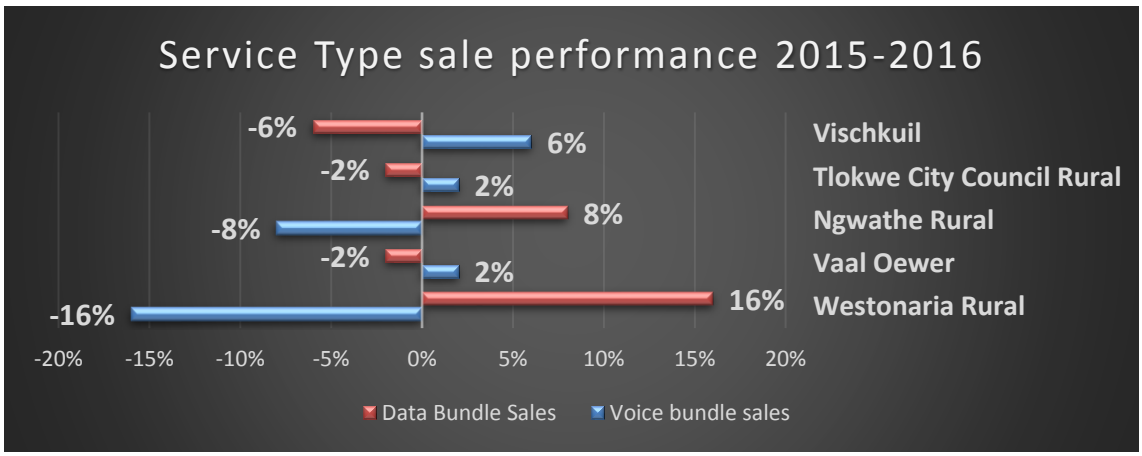
Figure 17: Volume of Voice & Data Bundle Sales for Top Performers



Westonaria Rural is the worst performer out of all the 63 Towns. Observation also indicates that three out of the five worst performers are under Sedibeng Municipality authority. The graph below shows some interesting movement in the bundle sales for all the worst performers.

There was a change in preference of service type resulting in a 100% sale shift to a competing service. Two Sedibeng towns show movement towards voice bundle sales.

Figure 18: Bottom 5 Towns Data and Voice Bundle Sale Performance



The revenue calculation tables revealed interesting trends from the top and bottom 10 Towns. The ticks in green boxes indicate that the Town was part of the top 10 on the data bundle sale, data customer, voice bundle sale and voice

customer. The crosses in the red boxes indicate that the town was not part of the top 10 under the respective table.

Table 7: Top 10 Towns by Revenue per Service Type Bundle Sale and Customer Growth

Number	Municipality	Data Bundle Sale Growth	Data Customer Growth	Voice Bundle Sale Growth	Voice Customer Growth
1	Delmas Rural	√	√	√	√
2	Eikenhof	√	√	√	√
3	Alexandra	√	√	√	√
4	Emfuleni Rural	√	√	√	√
5	Centurion	√	√	√	√
6	Diepsloot	√	√	√	√
7	Sandton	√	√	√	√
8	Randfontein Rural	√	√	√	√
9	Olifantsfontein	x	x	√	√
10	Delmas	√	√	√	√

Table 8: Bottom 10 Towns by Revenue per Service Type Bundle Sale and Customer Growth

Number	Municipality	Data Bundle Sale Growth	Data Customer Growth	Voice Bundle Sale Growth	Voice Customer Growth
1	Westonaria Rural	√	√	√	√
2	Vischkuil	√	√	√	√
3	Oranjeville	√	√	√	x
4	Vaal Oewer	x	x	√	√
5	Metsimaholo Rural	√	√	√	√
6	Alberton	√	√	√	√
7	Sebokeng	x	x	x	x
8	Randfontein	x	x	x	x
9	Deneysville	x	x	x	x
10	Midvaal Rural	x	x	√	√

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

This chapter begins with a municipal demographic analysis where both social and economic aspects are examined. Results will be discussed and compared with findings from previous studies by various authors. Application of models developed in the earlier chapters will give more insights in understanding and answering the study objectives. Summarised results to highlight key findings from data and the public financial reports will be presented and this will be compared to the research questions.

5.2 Demographic profile of respondents

5.2.1 *City of Johannesburg*

This metro has a working age population (15 to 65 years) of 72.7%. 94.4% of the population has a cell phone. The city has 2 261 490 economically active people where 25.0% of these are unemployed. Of the 1 228 666 economically active youth (15–35 years) in the area, 31.5% are unemployed (Stats SA, 2017). Below are the Towns classified under CoJ from the analysed data.

Table 10: Towns Under City of Johannesburg

Name	Municipality as per case company	Municipality as per Statssa
Orange Farm	CoJ	CoJ
Diepkloof	CoJ	CoJ
Meadowlands West	CoJ	CoJ
Lawley	CoJ	CoJ
Lenasia South	CoJ	CoJ
Olifantsfontein	CoJ	CoE
Meadowlands East	CoJ	CoJ
Pimville	CoJ	CoJ
Ennerdale	CoJ	CoJ
Lenasia	CoJ	CoJ

Tembisa	CoJ	CoJ
City of Johannesburg Rural	CoJ	CoJ
Diepsloot	CoJ	CoJ
Centurion	CoJ	City of Tshwane (CoT)
Randburg	CoJ	CoJ
Johannesburg South	CoJ	CoJ
Alexandra	CoJ	CoJ
Soweto	CoJ	CoJ
Johannesburg	CoJ	CoJ
Midrand	CoJ	CoJ
Sandton	CoJ	CoJ

5.2.2 *City of Ekurhuleni*

The City of Ekurhuleni metro has a working age population (15 to 65 years) of 71.7%. 93.3% of the population has a cell phone. The city has approximately 1.6 million economically active people where 28.8% of these are unemployed. Of the 840 000 economically active youth (15–35 years) in the area, 36.9% are unemployed (Stats SA, 2017). Below are the towns classified under CoE from the analysed data.

Table 11: Towns under City of Ekurhuleni

Name	Municipality as per case company	Municipality as per Statssa
Tokoza	CoE	CoE
Ekurhuleni Rural	CoE	CoE
Vosloorus	CoE	CoE
Vischkuil	CoE	CoE
Lesedi Rural	CoE	CoE
Delmas	CoE	Nkangala District Municipality
Delmas Rural	CoE	Nkangala District Municipality
Alberton	CoE	CoE
Edenvale	CoE	CoE
Heidelberg - GP	CoE	CoE
Brakpan	CoE	CoE
Springs	CoE	CoE
Nigel	CoE	CoE
Benoni	CoE	CoE
Katlehong	CoE	CoE
Kempton Park	CoE	CoE
Boksburg	CoE	CoE
Germiston	CoE	CoE

5.2.3 *Sedibeng Municipality*

Sedibeng is made up of Midvaal, Emfuleni and Lesedi. Each has a working age population (15 to 65 years) of 70.5%, 69.5% and 68.6% respectively. 91.2% in Midvaal, 91.6% in Emfuleni and 90% in Lesedi population have cell phones. They have 280 017 economically active people where in Midvaal, 18.8%, Emfuleni 34.7% and Lesedi 25.9% of these are unemployed. (Stats SA, 2017). Below are the Towns classified under Sedibeng from the data analysed.

Table 12: Towns under Sedibeng

Name	Municipality as per case company	Municipality as per Statssa
Metsimaholo Rural	Sedibeng	Sedibeng
Oranjeville	Sedibeng	Sedibeng
Vaal Oewer	Sedibeng	Sedibeng
Ngwathe Rural	Sedibeng	Sedibeng
Deneysville	Sedibeng	Sedibeng
Tlokwe City Council Rural	Sedibeng	Sedibeng
Eikenhof	Sedibeng	Sedibeng
De Deur/Walkerville	Sedibeng	Sedibeng
Emfuleni Rural	Sedibeng	Sedibeng
Midvaal Rural	Sedibeng	Sedibeng
Evaton	Sedibeng	Sedibeng
Sebokeng	Sedibeng	Sedibeng
Meyerton	Sedibeng	Sedibeng
Vereeniging	Sedibeng	Sedibeng
Sasolburg	Sedibeng	Sedibeng
Vanderbijlpark	Sedibeng	Sedibeng

5.3 Discussion pertaining to Research Question 1

The case company had a clearly defined customer and growth strategy outlined. This strategy is delivered through its product and service offerings. As per McGrath, their strategy is still to evolve into full transient advantage since some pillars still reflect usage of competitive advantage as a main driver. The nature of the telecommunications industry in South Africa in recent times requires agility, rapid response, and frequent innovative strategies. Looking at the product being evaluated, one can clearly see innovative characteristics in how it improves

customer loyalty and frequency of use. The cause and effect relationship model applied outlines the following:

- The data mining exercise provided knowledge of customer information giving the company an advantage to interact and get to know its customers more closely;
- The data allowed for segmentation and classification where information on which service type is preferred in which geographic area;
- The company delivered an innovative and cost-efficient way of making the product just a click away from all its customers through existing channels of USSD for people without smartphones, on the app and via the internet;
- The ease of access to the product and the discount incentives that come with repeat sales increased customer loyalty and frequency of use. This is seen in the growth of the number of bundle sales from most towns via this product.
- The company has saved on the service cost by providing the product via integrated channels that do not require additional effort such as travelling to a store by the customer. These channels are available 24 hours a day, 365 days a year, which empowers customers to transact at their convenience.; and
- The frequency of the sales and comparison of quarterly activity per town gives a clear indication of revenue increase due to the value delivered by the product.

The MIT Sloan Management Review article on how to create a superior CRM system attributed success to structuring the business in a manner that allows customer retention to be the priority, customer incentives to increase loyalty and in-depth use of customer information to develop products and services. This further endorses the applied CRM system on the evaluated product.

In response to the research question, does the product deliver on the business objectives below?

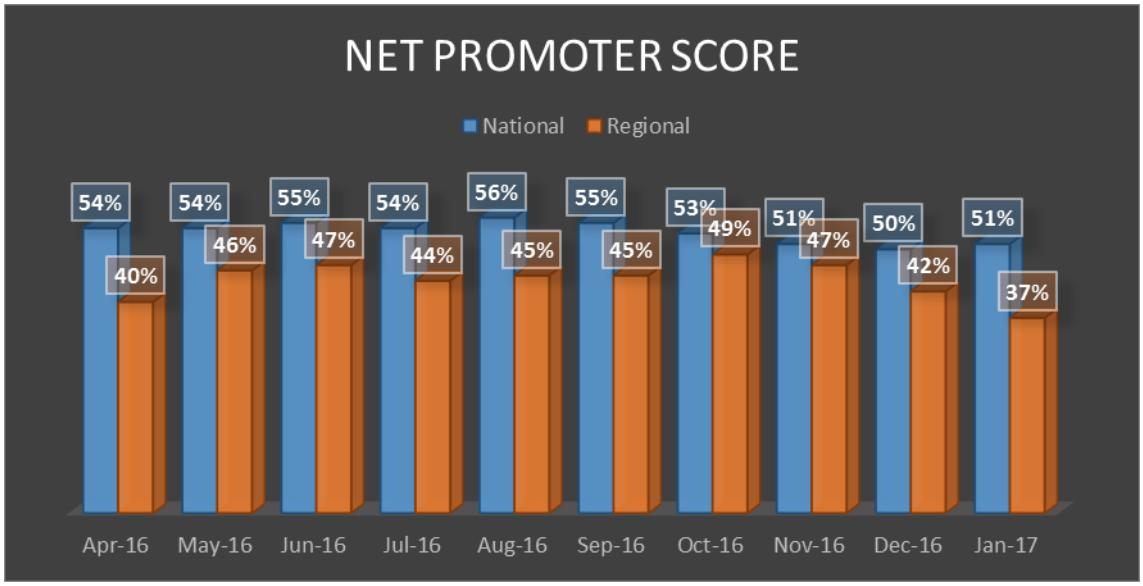
- to ensure clear market share leadership through segmented product offerings;

- to growing brand leadership;
- to increase NPS points;
- to offer differentiated customer experience and best value.

The model proves that a CRM system application in the form of a product is aligned to business strategy.

Even though there is considerable success in the performance of the evaluated product, from a customer experience point of view, there is a decline in both national and regional NPS. This can be attributed to bigger issues like economic conditions affecting customer spending decisions. There is also a high possibility of tightening in competitive behaviour in the industry resulting in churn or preference of cheaper products by consumers.

Figure 19: Net Promoter Score



5.4 Discussion pertaining to Research Question 2

The data mining exercise provided valuable information that can be coupled with demographics to refine CRM strategies. From this exercise, classification and segmentation was easily done providing a foundation for the initial analysis. This model was used as a descriptive tool to assess current customer behaviour. Indicators on customer growth and service type preference provide a quick decision-making platform for appropriate market stimulation.

To assess return on investment, answers to George Day's methodology were adopted as follows:

1. Was there a reduction in operational expenditure and an increase in efficiency?

The product evaluated is offered through the USSD, app and internet channels. This integrated approach provides convenience for customers to consume the product anytime, anywhere using any type of cell phone. This eliminates the distribution network and allows direct contact between business and consumer.

2. Was there an increase in customer expenditure, frequency of activity and loyalty?

Most Towns showed an increase in sales and frequency, which resulted in revenue growth. There are some areas that were poor performers but the CRM system gives the business insights and room for correction, such as in the case of Eikenhof town.

This is a summary of the findings from the data when business activity in December 2015 is compared to December 2016:

Table 13: Summary of Findings by Area

Dec 2015 vs Dec 2016	Municipality
Highest Revenue	Soweto
Lowest Revenue	Westonaria Rural
Highest % Growth Voice Sales	Eikenhof
Highest Volume of Voice Sales	Soweto
Lowest % Voice Sales	Westonaria Rural
Lowest Volume Voice Sales	Westonaria Rural
Highest % Growth Data Sales	Westonaria Rural
Highest Volume of Data Sales	Sandton
Lowest % Data Sales	Eikenhof
Lowest Volume Data Sales	Metsimaholo Rural

The highest revenue was realised from the town that produced the highest number of voice bundle sales, Soweto. This shows the customer behavioural pattern in the township where voice calls are still the preferred means of communication. This best performing town also falls under CoJ with a significant unemployment rate of 25%. The added advantage leveraged is the 94.4% cell

phone ownership from this population providing a significant market for the product. Market penetration strategy by price bundling demonstrates benefit when considering the revenue generated by volumes of bundles consumed. An important fact to note is that all of these numbers represent sales from unique customers. This means that the growth recorded is organic.

The top five revenue-generating towns have the following similarities:

- The highest growth in voice bundle sales is in the last two quarters of the year (June to December);
- Product adoption and business activity is the highest in the December period in most Towns; and
- The biggest revenue percentage change is observed in Towns that had a significant increase in both voice and data bundle sales.

The worst five revenue-generating towns have the following similarities:

- The is a very low customer base in these areas on the case company's network (low market share); and
- There are low bundle sales on both voice and data services.

Three out of the five worst performers fall under the Sedibeng municipality authority which could reflect deeper social or economic factors affecting product performance.

The price transformation strategy applied by the case company has resulted in increased ARPU and decreased churn. More in-bundle spending was observed providing customers with an anxiety-free experience. This shows the increased trust in the relationship between customers and the company. To further strengthen the relationship, programmes were introduced to assist their customers to choose packages that best suited their needs and mix of services. This was all timed to coincide with when a customer was renewing their contract. The new packages provide more value in terms of talk minutes, messaging and megabyte offerings.

Price Bundling is defined as the sale of two or more separate products at a discount without their integration (Stremersch & Tellis, 2002). It is standard practice for a cellphone user to use all services offered by their phone hence the bundling of voice and data services by the case company. The evolution to bundles has seen the product being offered in a full suite of products ranging from time-based micro-bundles for hand-to-mouth consumption such as a R2 bundle which expires within 10 minutes of loading, a R4 bundle which expires within an hour of loading, a R7 bundle for an hour for the day and small 'bite size' bundles of 10MB to larger bundles such as 5GB. The offerings also include integrated bundles that offer a combination of voice and data services and personalised offers based on unique customer consumption.

There were 736 million voice bundles and 343 million data bundles sold for the year, which equates to a 36.5% and 89.5% increase respectively from the previous year. The volume of bundles sold is the enabler that allowed the reduction in both the effective price per minute and price per megabyte (Vodacom, 2017).

5.5 Conclusion

This chapter was focusing on strategic CRM application using the analytical approach. Data mining was the enabler for access to product performance and revenue calculation per geographic location. The ranking exercise provided abundant insights that will determine future strategies per town for mobile network service providers operating in the South African market. This allows for further customisation of product offerings based on the customer preference. Revenue calculation was done where the same periods of December 2015 and 2016 were compared for the same areas. To support the analysis, the monthly Net Promoter Score and municipal demographics were examined to better understand customer behaviour in both the external and internal economic and social environment context.

Chapter 6 will discuss future aspects, recommendations, and conclusions from this study.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

The objective of this study has been the evaluation of the case study company's current strategy and its alignment to Customer Relationship Management systems. A superior CRM system that uses big data to provide customer insights is the foundation for transformation into a customer-centric organization. Successful implementation of CRM provides mutual benefits. Where the customer experience and loyalty improves this provides returns for the company. The models and data presented together with the literature reviewed provides solid evidence that when strategic CRM is applied, revenue growth is realised. This chapter provides a summary of findings, recommendations and conclusions that will allow ease of model application and a platform for broader future research to the current research.

6.2 Conclusions of the study

The impact of disruptive technologies and their consequences is most felt in industries such as telecommunications. The lines between industries have blurred, illustrated by the likes of FNB bank and applications such as WhatsApp eating into the network operators' economy. It has been witnessed in the same industry how Nokia and Blackberry were cannibalised, demonstrating how vulnerable even major companies are in this sector. Organisations that thrive look for blue oceans and deliver waves of innovation, continually outshining others and increasing their bank balances. Serious investment and resource allocation needs to go to CRM IT systems that will deliver rapid data mining functionality at the click of a button. For any business strategy to succeed, top management buy-in plays a crucial role. This is why there was an introduction of a Chief Information Officer (CIO) in recent times to ensure successful delivery and running of information systems like CRM tools. Moving into the age of Machine to Machine (M2M), Internet of Things (IoT) and Artificial Intelligence (AI), high calibre CRM platforms will form a foundation to enabling this evolution. It all

starts with capturing the customer at an early stage, not only by providing them with tailor-made products and services that will enhance their experience but most importantly building a relationship that creates loyalty and retention.

The product analysed meets this criterion since it:

- Provided tailor-made options for the customer who had preference for either data or voice services;
- Delivered on value, since it rewarded the customer for repeat sales by giving discounts; and
- Improved customer experience due to ease of accessibility.

Data mining is a cumbersome exercise and currently takes a long time in the case company. The data is mined per request and integrated reporting is not applied to provide a complete view and knowledge on customer behaviour. The introduction of the POPI act was a big obstacle since it prevented further zooming into specific customer behaviour. The use of Jonghyeok et al.'s conceptual model in Figure 4 provided ease of balance and checks when analysing the applied CRM approach. The data that was mined was good for the initial model but from further analysis, supported by literature and prior research from various sources, more insights were extracted to support the four pillars that were developed in Figure 3 to support CRM.

The case company used Lewis (2005) method of focusing on identifying dynamic customer behaviour that enables a pricing scheme to increase long-term profits (Lewis, 2005). The data analysed shows how a differential marketing strategy allowed the product in question to match the Nguyen and Mutum (2012) CRM definition. This was achieved by the offers to each unique customer were customised based on their purchase history. Trust and fairness was built by means of the bundling strategy which was transparent in that each customer received an sms confirmation of their purchase and if it is time based, the duration and consumption details. Mandina (2014) in his study found that trust is a positive indicator of customer loyalty (Mandina, 2014).

Towns like Soweto showed how much benefit can be derived from the right strategic CRM application as revenue growth and sales improved significantly. The customer choice of voice services is clear and the increase in customers and frequency of use is evidence of market share dominance, customer loyalty and growth. The worst performers, like Westonaria Rural, give a clear indication of a requirement for more focus and investment in resources to increase market share and promote the product successfully. Overall, the case study company had a clear strategy that supported its CRM objectives and this resulted in most towns seeing an increase in revenue. More focus is needed though to support the customer experience pillar. Feedback platforms other than the NPS are encouraged to ensure problems like in Westonaria are resolved, driven by the exact customer needs and requirements. This study further entrenches prior research done on this topic.

6.3 Recommendations

It is recommended that the Jonghyeok et al. model be applied with a strategy that follows the four pillars to support a successful strategic CRM system. A step-by-step approach that begins with customer interaction, knowledge, value and satisfaction should be the applied, linked to business strategy. The structure of the organisation is key since, according to George Day (2003), it affects its agility where customer retention and relationship building is concerned. Organisational introspection is also crucial, which requires a risk assessment to be done on employees. This is a good measuring tool providing a litmus test inside the organisation about brand perception and loyalty, product/service and financial performance. This type of introspection will protect the company from erosion due to constant transient advantage strategy application that will ensure market relevance. It is recommended that network service providers build their growth strategies using their NPS scoring coupled with risk assessment since a strong correlation has been proven by research between promoters and a company's growth rate regardless of their size.

Customer information collection has evolved from hand-filled forms to digital platforms. This evolution requires a new type of marketer who can use various

analytical techniques to build models enabling personalised products and services, consumption and behaviour analysis. The case company implemented a price bundling and transformation strategy as a market penetration tool. This was one of the drivers for the volume of bundle sales achieved where the customers saw value in the product offered. Kotler and Armstrong (2010) state clearly that customer value is achieved when an evaluation of the difference between all benefits and the costs of market offering relative to competing offers is done. The evaluated product clearly met this requirement resulting in repeat sales. Customer knowledge allowed for the determination of the optimal product mix targeted to the right consumer.

Network service providers should invest in high quality data mining tools to provide the foundation for business intelligence that will create new growth and revenue opportunities. There would be great benefit in getting NPS score per town, which will be a quick indicator of problem areas, rather than the regional and national score that is currently used. This would bring the business closer to the consumer and strengthen the relationship. It also provides an opportunity to further customise the product or service based on the social and economic demographics of that area. This model can also be applied to any industry in a quest to align strategy to CRM and revenue.

6.4 Suggestions for further research

Constant change and the evolution of technology are among the reasons that have driven an increasingly aggressive business environment in a battle to win customers. This then advocates for the CRM strategy adoption to forge a long-term relationship with customers (Mendoza, Marius, Perez, & Griman, 2006). Greenberg (2010) adds that even with a history of failures, CRM is still a critical aspect of business. He also notes that CRM began a revolution, now known as “CRM 2.0” or “Social CRM” which requires a strategy that incorporates both customer transactions and interactions to facilitate a bi-directional communication channel between customer and business (Greenberg, 2010).

To address the perception of subjectivity in case studies, follow-up research is recommended incorporating a qualitative longitudinal study of a large size sample. This study could assist in enhancing customer insights where traditional CRM covered by this research mainly provides behavioural and loyalty information. This data collection is mostly done independent of direct customer participation. Customers are now available to communicate openly on digital platforms and this can be used to tap into their knowledge of products\services preferences. This creates an opportunity to gain further insight as to what drives purchase choices allowing for the evolution to Social CRM. A larger population sample and the use of a qualitative study could provide further insights into what Social CRM entails in the South African mobile industry environment as well as a more detailed look at what the benefits and critical success factors are for it in South Africa.

Further research is also needed where consideration that links the technology strategy to base station geographic rollout, introduction of new technologies like IoT, smartphone device penetration and interactive platforms for social consumers is taken. These findings can add a fifth pillar named Technology Strategy as per figure 20, evolving the model from CRM to Social CRM. This will further guide the network operators to invest their capital expenditure based on input from the CRM and Social CRM tools.

Figure 20: Five pillars that support Social CRM (Source: Author)

This study was deliberately narrow, limiting itself only to case company data and excluded other mobile telecommunication industry players. Suggested further research scope could be increased to industry specific depending on data availability from other the network operators. There would also be added benefit in overcoming the POPI act by a study that provides results with repeat sale numbers per customer over a certain period. An opportunity is also available for further research on the application of this model not just to business-to-consumer but also to a business-to-business type of environments in South Africa.

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