Factors influencing customer churn rate and retention in the mobile market.

By

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Abstract

The aim of the study was to identify causes of churning, to find ways of managing it and to diagnose customers' communication needs. Furthermore the research tested the impact of messaging services on customer retention and whether these services could compensate for the declining revenue or become new cash cows for service providers.

The units of analyses were young people of ages ranging from 15 to 24. This group was chosen because it was found, during the study, that they used new services more often than any other age group. The initial plan, however, was to interview the entire population of cellphone users. Stratified random sampling was used to randomly select the units of analysis. Interviews were conducted at the homes of respondents, in the streets and at a shopping centre.

Causes of customer churning were found to be billing by service providers that confused customers and 'better phone deals offered by the competitors' resulting in some of the respondents switching providers. Other aspects about which respondents complained and which therefore could cause churning are 'poor network quality', 'confusing pricing structure' and 'long waiting on customer care line'. The respondents indicated that their communication needs could be satisfied by services that are easy to use, a helpful customer care agent and being able to retain a number when switching a service provider. Therefore churning could be managed by removing or reducing the causes of it and attracting the customers by meeting their communications needs, which are, improving customer care service and designing services that are easy to use.

The research was inconclusive on the messaging services. Of the three new messaging services that were studied, only one was extremely popular, while the other two were hardly used. Instant messaging was the second most used service to voice and SMS and it was also ranked second, in order of importance. The other two messaging services, mobile email and MMS, received low rankings from the respondents. In addition more than a quarter (27%) of the respondents had never used mobile email.

The implications of these findings are that service providers should improve their customer care service and design services that are easy to use.

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CHAPTER ONE

Introduction

1.1 Introduction

The wireless industry which incorporates the cellular phone market is entering a new phase in many markets. This can be characterised as a phase of maturity, with a sluggish subscriber growth and declining revenue due to the erosion of voice tariffs, that is, less charges per call (Hooper, 2002:6). However, Pyramid Research (Issaeva, 2005:1) predicts that emerging markets would still realise double digit growth while, on the other hand, developed markets would experience plummeting voice prices due to an increased number of contenders for the mobile voice revenue (Issaeva, 2005:1). This prediction is not far off the mark. South Africa, as expected for an emerging market, is experiencing a double digit growth, as shown by the interim financial results of the country's two major Network Operators, MTN and Vodacom. For the year to December 2006, revenue for MTN's South African business rose 25 percent to R25 billion, while Vodacom's revenue reported a 24.1 percent jump in revenues to R31.1 billion for the year to March 2006 (Mochiko, 2007b:1).

It is also true that, in both developed and developing economies, regulatory, technological and competitive pressures are complicating the issues and are creating a market where voice services alone are no longer enough to sustain profitability of the cellular companies. Most importantly, these pressures have given power to the subscribers; for example a regulatory requirement such as Mobile Number Portability (MNP) has made it easier for subscribers to churn, that is, switch service providers. In the meantime technologies, such as Voice over Internet Protocol (VoIP), have removed the entrance barrier to the telecommunications market. VoIP enables an Information Technology (IT) infrastructure to be converted into a voice carrier at minimal cost, thus complicating matters even further for the incumbents. This convergence of IT and telecommunications technologies means that all IT companies are potential competitors to telecom's service providers.

Regulatory requirements like MNP, VoIP and technology convergence are but some of the obstacles faced by the industry. Other critical challenges faced by service providers, besides maturing markets, are lowered entry barrier, power to the buyers and increased competition. These challenges are examined in greater detail and lead to the research question and its delineation, the rationale for the study and the structure of the dissertation.

1.2 Regulations and Technology advancement

1.2.1 Number Portability (NP)

MNP is a basic enabler of competition, because it gives mobile telephone customers an option to keep their numbers, including the prefix such as 082, 083 or 084, when switching mobile telecom's service providers. In the pre-MNP period, switching network operators meant that the customers had to give up their telephone numbers. Buehler and Haucap (2004:2) argue that in the absence of MNP, there are switching costs, associated with changing a service provider, to both consumers and business. These costs include informing people about the new number/s, printing new business cards, missing valuable calls from people that do not have the new number/s and so forth. It is held by Buehler and Haucap (2004) that regulators have imposed mandatory MNP so as to reduce customers' switching costs and make mobile telecommunications more competitive.

In a report by Syniverse Technologies (2004:2), NP is classified into the following categories: MNP, Local Number Portability (LNP) and Wireless Local Number Portability (WLNP). However the focus of this report is MNP since most countries, including South Africa, that introduced number porting, elected to implement this model. The South African regulator, Independent Communications Authority of South Africa (ICASA), mandated MNP with effect 10 November 2006 (Naidoo and Mabanga, 2006:1). In South Africa, as in most countries where MNP is introduced, it was mandated by the government. For example, since 2003, all European Union (EU) countries have been required to introduce it under the EU's Universal Service Directive (Heath et al., 2006:13).

1.2.2 Technology Convergence

Traditionally telecommunications and broadcasting co-evolved with the emerging Internet, but technological developments are making this current industrial distinction unsustainable (Skouby, 2007:9). The Internet was, in the beginning, used for data services, the most important of those services being email and World Wide Web (www). Currently the list of services offered on the Internet has expanded to include audio/video services such as Internet radio and television (TV), computer games, telecommunication services and so forth (Skouby, 2007:9).

In South Africa, for example, Telkom Media, a company owned by Telkom SA, is planning to offer Internet Protocol Television (IPTV) to the public. This service would be offered via an internet infrastructure instead of the telecom network and

R7 billion has been budgeted for this project (McLachlan, 2007). Technology convergence has made it possible for Telkom to offer a TV channel on a different platform and compete with the SABC. In the past it would not have been possible to use any other technology except the broadcast network, which would have cost much more than the Internet option.

1.2.3 Churning

The changes brought about by the new regulations, such as MNP and convergence in technology on the telecoms market, give end users more choices and remove factors which were inhibiting customers from switching service providers or churning.

With technology convergence it is easy for companies, such as IT companies, to enter the telecommunications market at a low cost, because most of their existing infrastructure could be reused for that purpose. Considering the fact that the regulations have been relaxed and it is now easy to obtain a telecoms license, there could be a lot of new entrants in the market, increasing choices for customers.

In addition MNP, which is mandated by the regulator, removes the biggest barrier of the service providers owning the cell/telephone numbers. Previously this meant that it was not possible for end users or businesses to churn from service providers and retain the same numbers. MNP allows this to happen, making the cost of churning much cheaper, especially for businesses.

Churning is the measurement of the proportion of customers who leave an operator over a given period. Often the rate is measured over a monthly or yearly period (Mujtaba, n.d).

There are two types of churn:

- Voluntary – the customer voluntarily stops using the service due to one or other reason, such as pricing, poor network quality or inadequate customer service to name a few.
- Involuntary – the service provider bars the customer from utilising the service for non-payment or another reason (Mujtaba, n.d)

As the penetration of mobile phones reaches saturation in many developed markets, it is becoming increasingly important for operators to reduce churn (Heath et al., 2006:16). Managing churn is more important than ever before because operators can no longer depend on a supply of new customers to the mobile service to increase customer numbers and revenue. In order to grow their businesses, operators depend on being able to retain existing customers and attract additional churning customers from

competitors (Heath et al., 2006:16). The South African market, which grew by 19 percent in 2006, is also showing signs of saturation. There are 36.7 million customers, which is the highest penetration in the continent, at 83 percent (Middle East and Africa Wireless Analyst, 2007:4). High penetration implies that the growth rate will slow down, and therefore the South African service providers should be investigating alternatives such as data services which operators in the developed world are offering.

The introduction or improvements in MNP schemes could also increase churning. By allowing users to keep their existing mobile number when switching service providers, MNP removes an artificial barrier (Heath et al., 2006:17). However MNP is used very little in countries where it is available because it has some shortcomings, such as long delays during the transfers and a high cost to the end user (Heath et al., 2006:17). In South Africa it is easier for prepaid customers to port a number, as compared to contract customers who are locked in by a contract.

Finally, competition from new entrants in the market, in the form of VoIP service providers and VANS license holders such as municipalities, will increase the options available to mobile customers and, as a result, aggravate churning for the incumbent mobile network operators (Heath et al., 2006, p. 17). In addition, some of the new entrants, for example Virgin mobile, have strong brands and an existing customer base (Heath et al., 2006:17).

1.3 Problem statement

Established telecommunication players, fixed and mobile, are faced with stagnation in customer growth, which would have an impact on their core revenue, voice. New technologies like Internet Protocol (IP) systems provide service providers with an opportunity to expand their service offerings and maintain the growth. However IP also enables non-traditional (telecommunications) players, such as Internet Service Providers, to enter the voice market that was exclusively controlled by incumbents. Few communications protocol achieved the impact that IP based services like VoIP had in such a short space of time.

These technological advances are leading towards a trend whereby service and infrastructure functions are decoupled. Combined with favourable regulations, this trend has resulted in lower entry barriers in the telecommunications market. In terms of the telecoms landscape, the effect of these technological changes is that the established players, like Vodacom and MTN, view the expanding reach of Internet networks as an opportunity to extend their position in the value chain. For example, telecoms

companies are offering services such as music download and mobile TV. On the other hand, non-traditional telecoms suppliers or service providers, such as ISP's, MWeb, Google, Yahoo, etc., also see convergence as an opportunity to establish themselves in the lucrative voice market which was, pre-VoIP, controlled by incumbents.

1.4 Main research objective

The primary purpose of this research is to establish the nature of convergence of telecommunications, information technology (IT) and media in terms of new services (features) in the mobile market and to identify and analyse the factors that influence the churning rate and customer retention in general - in terms of person-to-person (P2P) communication services, such as mobile email, instant messaging (IM) and MMS - in order to establish how to maintain and sustain customer satisfaction and retain them for longer periods or permanently and to disseminate the research findings through conference papers and workshops.

1.4.1 Underlying objectives

A secondary purpose is to characterise P2P services (also referred to as messaging services) so as to establish the nature and type of service offered to customers by:

- Investigating the causes of subscriber churning in the wireless industry.
- Exploring ways of controlling the high subscriber churning rate in the mobile market.
- Examining the customers' mobile communication needs.
- Analysing the impact of messaging services on customer retention and churning.
- Analysing the impact of convergence of telecommunications, information technology (IT) and media on the telecom industry's value chain and service delivery.

1.5 Delineating the Research Problem

1.5.1 Scope

There are many types of data services (sometimes referred to as value added services) available in the market, the most common being Messaging Services (mobile email, short messaging services (SMS), Multimedia services (MMS) and mobile instant messaging (MIM); Location based services (LBS), for example child or goods tracking; Mobile Internet; voice service; Infotainment and Mobile Internet (Residential and Business).

This study tests the impact of messaging services on customer satisfaction and retention. Seeing that competition for voice

service, the main generator of income for the service providers, has increased, the operators need to find alternative sources of revenue to compensate for the decline in voice income. Since it would not be possible or practical for service providers to offer all of the possible services, they need to concentrate on a few, such as messaging services like mobile email; SMS – which is a success already; and MIM, to maintain the growth rate and retain customers.

1.5.2 Limitations

The sample population will be limited to Gauteng province, because the subjects of the research are easily accessible, and therefore do not require a lot of resources to reach them.

1.6 Rationale and Design

The nature of the mobile industry in South Africa has been changing dramatically in the last few years. As is seen with developed markets, the South African market is reaching the upper limits of mobile penetration (above 90 percent penetration). Developments in technology such as VoIP have enabled new services and competition from the new market entrants, thus putting pressure on the voice services revenue. These changes demand that the mobile operators take a fresh look at their value chains and define their future success. To succeed in the new environment, the mobile operators need to maintain the voice revenue by retaining existing customers; reducing the high churn rate because the numbers of new customers are diminishing and increasing voice revenue by attracting the few remaining customers and getting others from their competitors. This is made easy by new regulations like MNP.

In addition, mobile operators should increase take-up in usage of new and existing non-voice services such as messaging, drive adoption of new non-voice services like mobile television and expand voice usage with innovations like video calling. The new IP technologies are at a stage where they can allow service providers to create unique services tailored to the needs of individual users. For example, bundling voice with multimedia services, such as video and picture messaging, could win customer loyalty for the mobile network operators.

The study type was quantitative and data was collected by interviewing the respondents at their homes, in the streets, at the shops and other public places such as sports grounds. This data was analysed with the aid of SPSS and Microsoft Excel was utilised for drawing charts.

1.7 Structure of the research

The research chapters are as follow:

Chapter 1 – Introduction: examined the impact of technology and liberalisation on the telecommunication, broadcasting and information technology (IT) industries. These changes have resulted in the introduction of new players in the market, with the result that the customers have more choices than before. This means that service providers have to come up with new strategies to retain these customers.

Chapter 2 – Literature review: elaborated further on the impact of technology and deregulation on the mobile industry. In addition, factors that service providers need to take into consideration when designing new services, such as making services simple and easy for users, were explored. The list of available services is endless but this chapter included the most popular services across the globe.

Chapter 3 – Future industry structure: covered the impact of convergence telecommunication, Information Technology (IT) and broadcasting technologies on the telecommunication industry structure.

Chapter 4 – Research design: the questionnaire in chapter three tested the hypothesis: P2P data services like SMS, MMS, email and MIM are going to be the revenue generators. Additional questions tested customer churning and customers' communications needs and examined the impact of messaging services on customer retention and revenue generation.

Chapter 5 – Field and findings: the subjects of the study were interviewed at their homes and in public places such as shopping centres and at sporting events. The main subjects of analysis were the younger generation because most of the services being researched are at an early stage of adoption and have not yet reached the mass market. The youth are early adopters of technology - a service like SMS, for example, was made popular by them and today everybody, including the older generation and business, is communicating via SMS.

Chapter 6 – Analyses and Interpretation: this concluded the study by interpreting the data collected through interviews, the findings arrived at with the aid of SPSS and the information gathered from the literature reviews.

Chapter 7 – Conclusion: Summarised the study, made recommendations and suggested further research.

1.8 Conclusion

The research objective is to identify and analyse factors that influence churning in the mobile industry. Once causes of churning are known, further analysis could be done to find solutions to the churning problem, so that it can be turned into customer retention. Customer loyalty (or retention) can be achieved when service providers offer services, solution or products that meet the customers' communications needs such as messaging services.

The changes in the regulations are intended to empower the end user and increase competition in the telecommunications market. In addition, advancements in technology have resulted in a convergence of broadcasting, information technology (IT) and the telecommunications industry. Both these changes have lowered the barrier of entrance in the telecommunications market. IT companies can now compete in the telecommunication industry by just making a few changes to their existing systems. A technology such as voice over IP makes such transitions easy.

More players such as VANS are now entering this market, thus increasing competition. This, combined with the regulation such as MNP, which has empowered the end user to own his/her number, could increase churning (or switching) of service providers by the end user. However, telecommunication companies can retain their customers if they understand their needs and offer them services that will satisfy these needs, such as messaging services like instant messaging and mobile email.

The impact of the technology convergence and regulation on the telecommunications market, as well as causes of churning, controlling of churning and users communications needs, are further covered in the next chapter. Finally a strategy to drive adoption of messaging and non-messaging services is covered.

CHAPTER TWO

Literature review

2.1 Introduction

In the previous chapter the impact of regulatory and technological changes on revenue were examined. This chapter elaborates on regulations and technology convergence. In addition causes of churning, how to manage churning and customer communication needs are covered. It ends with the most common messaging services and non-messaging services and a strategy to drive users to accept these data services.

2.2 Causes of churning

As penetration of the mobile phone reaches saturation in many developed markets, reducing churn is becoming very important. With mobile phone penetration in South Africa (SA) at more than 80 and close to 90 percent, the network operators in SA are faced with the same challenges as those of first world markets. To survive they must retain existing (or reduce churn) customers and expand their product offering to include other services, such as messaging services, in addition to the well-liked voice service and SMS. A high penetration level implies that it is going to be more difficult for mobile operators to replace customers who leave with new ones in the near future.

While reducing churn is important for success, mobile operators must not focus on this benchmark in isolation but, instead, must consider its interrelationship with other factors (Heath et al., 2006:16). For example, simplifying the price plans, also known as packages, could reduce churning. An article in Business Day online by McGovern and Moon (2007:1) argues that a typical operator offers several dozen pricing options, ranging from low priced options with limited minutes to high priced plans with thousands of minutes. Each price plan comes with its own restrictions and allowances. The article further states that customers are penalised if they use too much or too little time. The penalty for the former is that out of price plan minutes are more expensive while for the latter, any minutes remaining unused after the allocated time are lost. While having different packages seems to be customer centric, the challenge that customers face with the mobile packages is that the customer must know his/her consumption patterns upfront because failure to do so could result in penalties in either direction (McGovern and Moon, 2007:1). What compounds the problem even further is the fact that these customers are locked in by contracts because the cost of leaving before the end of the contract is even higher.

In South Africa, there are numerous available packages for the consumers, both contract and prepaid, across all the mobile networks (Esselaar et al., 2006:23). The pricing of these packages is so complex that it is not possible for an ordinary consumer to determine which package is most cost effective. This results in consumers choosing packages that lead to financial losses (Esselaar et al., 2006:23). These tactics are profitable for mobile operators but they fuel discontent among their customer base (McGovern and Moon, 2007). In response, consumers give the companies bad publicity by posting their bad experiences on hate web sites like www.hellkom.co.za. The top three complaints on www.hellopeter.com, the South African customer service web site, are telecommunications (Telkom and mobile network operators), banks and the motor industry (Bhengu, 2007:1). In addition, customers' dissatisfactions are manifested in a high churn rate in the industry - annually almost a quarter of the customers churn.

2.3 Controlling (or managing) churning

Managing churn is now more important than ever for mobile network operators. As they are no longer able to rely on the supply of customers new to the mobile services to increase customer numbers and revenue, operators depend on the growth of their business to retain customers and attract additional churning customers from competitors (Heath et al., 2006:17). South African mobile penetration, which is measured by the number of SIM cards in the market, is high. Currently there are more than 30 million mobile phones in the country, and the penetration rate is above 80 percent (Esselaar et al., 2006:34). Most of the growth now comes from the lower end of the market which is not profitable. With further reduced growth in the mobile market it is inevitable that some operators will experience a decline in subscriber numbers.

Several other features of the global market are likely to increase churn, such as changes in technology and regulatory requirements. Traditionally, the telecoms markets are structured around vertically integrated incumbents, who are often exclusive providers of facilities. Value was added to the fundamental transmission functions of the infrastructure through the layer of network services that made it possible for the routing of voice calls and management of traffic (Esselaar et al., 2006:5). With the technological revolution of the 1980s, a value added-layer was added to the value chain. This enabled access or management of data and information services in addition to basic voice. This layer is known as value-added network services (VANS).

Most recently, uniform Internet Protocol (IP) standards have been introduced. This allows convergence of data, television and telecommunications' services (Esselaar et al., 2006:6). It is through these new IP based networks that seamless communication across networks, like broadcasting, IT and telecoms, is realised. In addition, the convergence of technology allows for lower cost IP based services, such as Voice over IP (VoIP) and IP Television (IPTV), to be offered or transmitted over the same platform (Esselaar et al., 2006:6). As an example, Telkom was awarded a television (broadcasting) license by the South African communication regulator in 2007 and is planning to offer the service on an IPTV platform (McLachlan, 2007:1).

A major trend arising from convergence of technology is the enabling of the separation of service and infrastructure functions. In market terms the former can be described as retailer and the latter wholesaler (Southwood, 2007:10). The market is making a transition from the one dominated by large scale vertically integrated operators, like telecom incumbent and mobile operator, to one in which, along with the large scale operators, there are many smaller niche players especially on the services side (Southwood, 2007:11). The implication of these trends to the telecom industry is that the network business model will increasingly be based on services supplied (Esselaar et al., 2006:6). In conjunction with the changing dynamics of the telecommunications industry, the role of regulations has extended from concentrating on consumer disputes, universal services issues and price setting to a much broader role of regulating the sector to enable competition (Esselaar et al., 2006:6).

2.4 Customers' mobile communication needs

2.4.1 Policy and regulation

The intention of policies and regulations is to protect the consumer and open up the market. The cumulative effect of both is that they empower the consumer. By allowing the consumer to own a telephone number, MNP is protecting the user because it simplifies switching or churning. Deregulation of the industry has removed barriers of entrance, meaning more players are entering the industry, thus providing consumers who want to churn with more choices. As the number of new players entering the market increases, prices go down and benefit customers even further. Therefore it could be argued that the policies and regulations are benefiting consumers and more importantly, in the long term, will give more people access to the market.

The last decade has been characterised by numerous policy interventions to reform the telecoms market in South Africa in an attempt to meet the needs of a modern economy and transforming

society. These interventions have not always had the intended results (Esselaar et al., 2006:13). With the Telecommunication Act of 1996, the intention was to promote affordable access to communications through privatisation of and extension of the Telkom monopoly. However, this objective was only realised with the introduction of prepaid mobile services. This is in spite of the fact that mobile (cellular) phones were intended for the higher end of the market (Esselaar et al., 2006:13). The 1996 Act was amended in 2001. The objective of the amendment was to liberalise telecommunications. Liberalisation was boosted by ministerial determinations announced by the communications minister in 2004, which allowed Internet Service providers (ISP) as well as VANS to provide telecom services. These determinations also legalised VoIP.

Since liberalisation on 1 February 2005, there are well over three hundred VANS that have set up shops in South Africa (Southwood, 2007:11). These VANS include metropolitan councils like Knysna, Johannesburg, eThekwini (Durban) and Tshwane (Pretoria) (McLeod, 2007). They are building both fixed and wireless networks. The former will compete with the fixed line operators and the latter with mobile network operators, such as Vodacom and MTN. ISP's such as MWeb, Internet Solutions and Storm have also been granted licenses by the Independent Communication Authority of South Africa (ICASA) to provide VoIP telephony on their existing IP networks. They were previously only permitted to carry data and not voice (McLeod, 2007:1). What is required for most ISP's to become carriers of voice, is an upgrade of their existing systems and interconnection agreements with each other and the incumbents, Telkom, Vodacom, MTN and CellC. This will enable customers to communicate not only with users from the same service provider but other service providers too.

The Electronic Communications Act (ECA), ratified in July 2006 by the state president, has replaced the 1996 Telecommunications Act (and its 2001 Amendment Act) and it seeks to create a regulatory environment and licensing regime better suited for the convergence of telecommunications and the broadcasting infrastructure (Esselaar et al., 2006:15). However, its implementation, as with the previous Acts, depends on the capacity of ICASA, the regulator, to prescribe and oversee more than 200 regulations required in the next few years to make the legislative and regulatory framework operational (Esselaar, Gillwald and Stork, 2006:16). The capacity of ICASA poses the biggest risk in the successful implementation of the Act, as conceded by the chairman of ICASA, Paris. He holds that their organisation is serving as a training ground for experts and

skilled professionals, who then find more attractive positions in the private sector (Czernowalow and Senne, 2007:1).

As indicated above, the major feature of the new Act is the creation of a horizontal licensing structure (Esselaar et al., 2006:16). The old licences that reflected the vertically integrated market structures that existed previously, have been done away with completely and there are now just four basic categories of licenses, each of which can be licensed in three ways (Table 2.1).

Table 2-1 The likely license categories for existing players

License	Individual	Class	Exempt
Electronic Communications Network Services (ECNS) licences	Cell C MTN Sentech Telkom Vodacom		
Electronic Communications Services (ECS) Licences		VANS	
Broadcasting licences	SABC eTV	Community broadcasting	
Radio Frequency Spectrum (RFS) licence	Cell C MTN Sentech Telkom Vodacom	Wireless local loop	Very low power, less than 10 kw.

Source: Esselaar et al., (2006:16)

Under ECA, ICASA has to prescribe the conditions for the category of licenses and allocate existing license holders to these categories (Esselaar et al., 2006:16). In terms of the Act, the conversion process must be completed by January 2009 (Vecchiatto, 2007:1). However, there is scepticism in the industry that ICASA will be able to meet the target, with its reported organisational problems. The head of the license conversion process resigned in May 2007. This is the councillor whose prime function has been to head up the telecommunications licence conversion process in order to meet the requirements of the Electronic Communications ECA (Vecchiatto, 2007).

A successful court bid by Altec, could have a positive effect in speeding up the deregulation process (Anderson, 2008:1). On Friday, 29th Aug 2008, the Pretoria high court ruled that Altec, a VANS license holder, automatically qualifies for the Electronic Communications Service (ECS) license under the ECA. This licence entitles its holders, Altec and other VANS (there are more 300 VANS), to roll out their own networks, instead of having to

rely on the incumbents (Telkom and Neotel) and use those facilities to provide services (Anderson, 2008:1). This ruling makes South Africa one of the most open telecommunications' markets. What is interesting is that ICASA had indicated that it would challenge the findings but would rather start issuing the licenses as mandated by the court (Stone, 2008: 1). However this is contradicted by the Department of Communications (DOC), another government department, which has indicated that it would appeal against the judgement (Vecchiatto, 2008b:1).

Other changes brought about by ECA are that Vodacom and MTN, in anticipation of receiving their own ECS licenses, have started rolling out their own fixed line optic fibre infrastructure (Muller, 2008: 1). This move will enable them to provide corporate customers with a fixed line broadband, implying that both companies are expanding from consumer focussed businesses to include the corporate market as well (Vecchiatto, 2008:1). In addition, this move puts them in direct competition with Telkom and VANS (after the ruling) (Vecchiatto, 2008:1). In another development, Telkom has received a wireless license from ICASA and is planning to build a fixed wireless network (voice and data) and a mobile data network because the shareholder agreement with Vodacom prohibits it from building a mobile voice network (Anderson, 2008:1).

2.4.2 Protecting consumers with regulation

Regulation is primarily driven by tariffs, customer service, consumer choice and curbing monopoly (Esselaar et al., 2006:4). Mobile Number Portability (MNP) has been mandated by the regulators in many markets including SA (Nov 2006), with the aim of addressing some of these issues. Many network operators resist the introduction of MNP fearing that it would lead to increased churn and falling prices (Heath et al., 2006:1). In South Africa, for example, ICASA, on the request of the network operators, moved the launch date of the service a few times. This was because, in spite of the fact that they were given enough time to prepare, their systems were not ready (Mochiko, 2006a:1). Initially the planned launch date was June 2006. This date was changed to 18 September 2006 and finally the service was launched on 10 November 2006, after a huge outcry from the public (Mochiko, 2006a:1).

Consumers, dissatisfied with current services or finding services offered by the competitor appealing, may want to switch service providers. Reasons for this may include inadequate coverage, desire for a new subsidised handset, strong brand or marketing of a competitor's network, unique content or service on a competitor's network or the desire for a change (Mochiko, 2006a:1). Without MNP, consumers may need to devote

significant time, effort and expense to informing family, friends and colleagues of their new number. They may also miss calls from people who are unaware that their number has changed (Mochiko, 2006a:1). MNP empowers the consumer to choose between retaining the existing number and getting a new number, when switching service providers.

For business customers, changing a mobile phone number can have significant financial repercussions, such as the cost of reprinting stationery, repainting signs and vehicles, and advertising the change. In many cases, the inconvenience and expense of changing a mobile number may deter users from changing network, even if they are highly dissatisfied with their current service or there are strong economic benefits from switching providers (Heath et al., 2006:2).

While the principle of MNP is simple, its success depends heavily on effective implementation; therefore the role of the regulator is important in this regard. Customers are likely to avoid using it if there are impediments to them doing so, such as the following (Heath et al., 2006:3):

Significant cost – Locally Markinor (2007) found that there are several reasons for the SA subscribers' reluctance to switch service provider. These include factors such as time, effort and cost (Markinor, cited in Doyle, 2007:1).

Long delays – In the absence of MNP, a new mobile service can generally be activated in a short space of time, perhaps a few hours. Mobile users may be deterred if it takes a few days to switch (or port), especially if the transition involves a period of no service.

Inconvenience – Filling in extra forms or waiting on the end of the phone for long periods could discourage customers from switching.

Lack of awareness – It is unlikely that the mobile operators will promote MNP in case it encourages churning. Markinor research found that some respondents gave fear of losing a number as a reason for not wanting to switch service providers. Such a reason can only be given by someone who is unaware of MNP (Markinor, cited in Doyle, 2007:1).

Many existing MNP schemes exhibit some of these obstacles, and in most countries only a small proportion of churning customers have chosen to move with their numbers (Brydon et al, 2006:3). After being active for almost a year in South Africa, very few customers, more than 110 00, have utilised the service. This is a

small percentage of the 30 million mobile users in the country (cellular news.com, 2007:1).

2.4.3 Simple price plans – attract customers

Caring about your customers and making it easy for them to do business with you are of paramount importance to getting their loyalty. When Virgin mobile entered the US market in 2002, the industry was already crowded, penetration was high, revenue growth was slowing and Virgin enjoyed little US brand recognition, aside from its reputation as a quirky airline (McGovern and Moon, 2007). The advantage that the company had was its simple offer, a prepaid (pay-as-go) pricing plan with no hidden fees, no time-of-day restrictions, no contracts, and straightforward, reasonable rates. With an annual advertising budget of only US $500 million (less than one-tenth the budget of some incumbents), the company acquired 1-million subscribers in just over a year thus matching the industry record for reaching that mark (McGovern and Moon, 2007). Currently Virgin Mobile US has 5 million customers and the lowest prepaid churn rate, even though customers are free to leave without any penalty. What is even more exciting is the fact that its customers are acting as goodwill ambassadors because more than two thirds of them reported recommending the service to others.

A survey conducted by Sunrise, a Swiss operator, found that making price plans easier for customers to understand, helps improve loyalty (Jay, 2007:19). Since the survey, the operator has reduced its price plans to four, in a strategy aimed at improving transparency to its customers. The move is in stark contrast to the situation in larger European markets, especially the UK market, where operators offer a huge range of tariffs to cater for all market segments (Jay, 2007:19). Sunrise implemented these price plans on the 4 October 2007, bringing it in line with other Swiss market operators such as Swisscom Mobile and Tele2 (Jay, 2007:19). The trend towards an easy to understand price plan will continue to grow as long as consumers support service providers who offer transparent prices.

Virgin Mobile SA is employing the same tactics as Virgin US. They entered the SA market in 2006 with a no lock-in concept. In reaction to this, Vodacom introduced a month-to-month contract “with contract call rates”. Moving between packages is free, but a months notice is required (Monteiro, 2006). Until Virgin Mobile’s debut into SA, the contract subscribers were locked-in to a 24-month contract, having to buy their way out or pay out for 24 months (Monteiro, 2006).

Virgin Mobile SA tariff plans apply to both contact and prepaid subscribers. Each day, it charges R2.35 for the first five minutes,

which then falls to R1.55 (Monteiro, 2006). Currently they offer three packages and have just added another one called “Killer Deal”, with a monthly rate of R149.00. The deal offers subscribers (either SAMSUNG U700 or LG Shine KE970) R150.00 worth of airtime, which can be used any time and to any network, as well as unlimited free SMS’s to any network (MyADSL, 2007a). The impact of these new price plans is not huge on the South African market because Vodacom and MTN are still dominating the market.

2.5 Impact of messaging services

As the voice revenue declines, operators are looking at services and applications to save the situation. From the ten year old SMS alerts that continue their popularity today, to the very latest in mobile TV and user generated videos, mobile content encompasses a large array of services, which service providers believe would rescue their revenue (Hibberd, 2007:42). The services are a budding sector in the telecommunications (mobile and fixed networks) industry, which was voice centric for many years. Currently voice contributes 86.5 percent of the global mobile revenue service, with data representing just 13.5 percent (Hibberd, 2007:42). The data revenue is predicted to reach 25 percent of the mobile service revenue by 2011 (Hibberd, 2007:42). In South Africa the situation is almost the same. Currently data accounts for about 10 percent of the mobile operators’ revenue, with the remainder coming from voice.

Worldwide revenue from mobile content and services are forecast to generate 150.2 US dollars in 2011, up from 89.3 US dollars at the end of 2006. The two most significant application categories for mobile content and services revenue are person-to-person (P2P) messaging and entertainment, which respectively contributed 67 percent and 21 percent of the global revenues (SA shows the same trend) (Hibberd, 2007:42). Given the relative youth of most of these services, which are still in the early adoption stage of the technology development process, it is difficult for the operators to pick up the long term winners, popularly referred to as killer applications in industry jargon. As a result, operators tend to launch as many services as possible in a bid to see the one that will prove most popular, given the limitations of technology and resources (Hibberd, 2007:42). The danger of this approach is that if too many services are pushed into the market, it might have a negative impact on consumers. For instance, customers could experience usability problems, if these functions were packed into a single device.

2.6 Most common P2P messaging services

2.6.1 Short Messaging Service (SMS)

Messaging services have by far the highest user rate, with text messaging (SMS) dominating across the world – including the US where it was slower due to interoperability issues (Hibberd, 2007:46). The world average in 2007 was 2.6 SMS text messages sent per day per subscriber (Ahonen, 2008:1). The three world leaders - Korea, Singapore and the Philippines - send an average of 10, 12 and 15 SMS text messages respectively per day per subscriber (Ahonen, 2008:1). SMS's position as a cash cow seems to be unshakeable, which in turn is driving the development of the service (Mobile Messaging Analyst, 2007:1). Some of the features to be developed for SMS in 2008 and beyond are likely to be SMS auto-reply, archiving and add funded SMS, currently being trialled by some operators including the local service providers (Mobile Messaging Analyst, 2007b:1).

2.6.2 MMS and Imaging

Handset penetration has a clear impact on photo service usage. Users who own phones that have cameras of high resolution are twice as likely to send pictures as users with phones that have lower resolution (Hibberd, 2007:48). As high end cameras filter down into the handset ranges, photo capture has become extremely popular in places like the US. The number of users who have sent at least one image to another handset (also known as person-to-person MMS) is also encouraging (Hibberd, 2007:48). The US mobile operators rank among the leading operators in the world of MMS traffic. For example 17.7 percent of U.S. mobile users send photos with their mobile phones and just 5.6 percent send videos (Mobile Messaging Analyst, 2007b:3). In Europe (as well as in South Africa) MMS traffic is also growing - especially the sending of pictures.

The early stages of mobile blogging, where users upload or submit their own images and videos onto a website (also known as person to application A2P) is also expected to bolster the usage of imaging content being sent across networks and therefore generating income for the service provider (Hibberd, 2007:48). This service is mostly used by the youth (under 24) segment of the market and is growing rapidly (Hibberd, 2007:48). Mxit, the South African mobile instant messaging provider, which charges one or two cents per message, is experiencing a boom. It has 6 million registered users at the moment and a growth rate of 10 000 to 11 000 new subscribers every day (ITweb, 2008). The success of Mxit led the two service providers, Vodacom and MTN, to launch similar services towards the end of 2007.

2.6.3 MIM

Mobile Instant Messaging (MIM), also known as mobile chat, is very popular among the youth and as the number of MIM capable mobile devices increase, so will the volume of usage (Mobile Messaging Analyst, 2008:2). MIM is likely to do well in markets where Internet penetration is low, such as in Africa. It also occurs in the populous nations of Russia, China and India (Mobile Messaging Analyst, 2007:2). In South Africa, the mobile phone penetration is above 90%, while internet penetration is lagging behind at around 10% (Van der Merwe, 2008: 1). The most popular instant messaging service, locally, is Mxit.

2.6.4 Mobile email

Mobile email is mostly sold as a business application by the service providers. The most popular business solutions are Blackberry by Research in Motion (RIM) followed by Intellisync, Good and Microsoft offered by Nokia, Motorola and Microsoft respectively (Mobile Messaging Analyst, 2007b:2). Mobile operators and mobile email providers are increasingly turning their attention to providing consumer email products (Mobile Messaging Analyst, 2007b:2). Japan is an exception because it has the highest usage of consumer email, with figures close to Korea's SMS usage of 10 messages per user. This is due to the fact that Japan does not have SMS. They have short emails - somewhat similar to SMS and normal Blackberry email on their phones (Ahonen, 2008:1).

2.7 Most common non-messaging services

2.7.1 Personalisation

Personalisation enables consumers to create their own ringtones, wallpapers and screen savers on their mobiles devices. There has been an increase in popularity of these services. Although demand for these services is high, service providers are seeing a concurrent decline in sales of these contents (Hibberd, 2007:44). Half of the new phones in circulation play the mp3 file, which allows the consumers to install their own ring tones without purchasing them through an operator or service provider (Hibberd, 2007:44).

2.7.2 Games

The downside to service providers with respect to games is that a lot of users are playing native or embedded games, which is mobile content preinstalled on the handset at the point of purchase, as opposed to playing downloadable games or playing games through a browser (Hibberd, 2007:44).

2.7.3 News and information

Markets vary on how they consume news and information. The Italians prefer to access the news via text messaging despite a high penetration of smart phones, while in the UK the use of the mobile browser is preferred (Hibberd, 2007:50). Mobile search is also growing healthily as consumers gain confidence to navigate both within the mobile operators' portal (web site) and beyond (Hibberd, 2007:50). There are early indications that Google will dominate this market, just as it did in the fixed line environment.

2.8 Strategy to drive service acceptance

2.8.1 Early adoption of a service

When a new service is launched or introduced, the entire population does not rush out to buy the service (or product) immediately, even if it is "perfect". The service is first adopted by a particular type of individual, the early adopter (Webb, 2007:49). Early adopters include the youth, who were key to the evolution of successful data services, both in terms of product development and marketing (mobileYouth 2008:13).

Depending on the early adopters' reaction, it may become adopted more widely, as shown graphically in figure 2.1 below. The early majority will adopt only if the experience of the early adopters is good. They rely on word of mouth, reviews and widespread promotion, including marketing, to convince them that the technology is worthwhile and mature (Webb, 2007:50). The young consumers have influenced how data services including SMS, Facebook, MP3s, MySpace and ring tones are used (mobileYouth 2008:13).

It is felt that if the early adopters do not like the product, if the price is not set correctly, if the distribution chains do not champion it, if business intelligence analysis is not done, etcetera, then the product will fail (Webb, 2007:50). The early adoption stage is the most important in the technology adoption process. It takes anything from one year to more than ten years and the length depends on the operators' strategy. The majority of the consumers adopt a product when they feel enough time has passed for the product to become proven and the price has stabilised. Only then is it deemed acceptable for them to own (Webb, 2007:50).

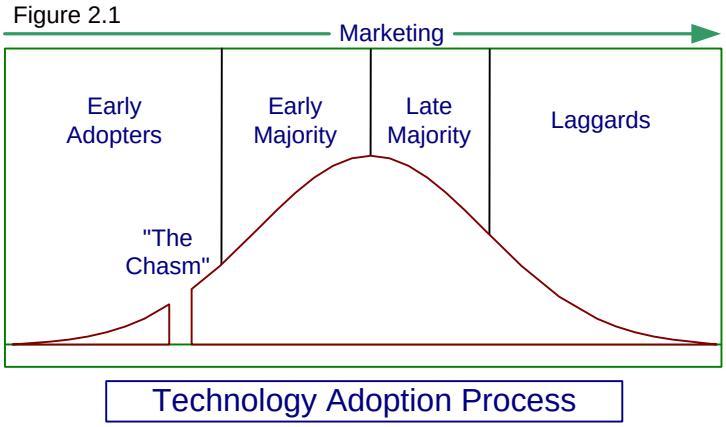


Figure 2-1 Consumer Technology Adoption Process.
Source: Smethers and France (2007:13)

Looking at the Japanese and European example, it took Japanese operators less than a year (9 months) to move consumers from early adoption to the early majority stages, because they treated the service as a new concept (Smethers and France, 2007:27). In four years, over a quarter of the Japanese population were users of the mobile Internet service. In Europe, however, the mobile Internet had a different cycle because the mobile network operators bought into the myth that consumers in their market would behave the same as the Japanese market. In addition, the mobile Internet was seen as an extension of another successful market, the Internet PC (Smethers and France, 2007:27).

Comparing surfing the Internet with a PC and a mobile phone was unrealistic and unobtainable because: "How does one surf the Internet on a phone with a small screen and no keyboard?" In addition, users did not understand why they needed mobile Internet because, unlike the PC, it offered a mediocre user experience. The early adoption stage was drawn out in Europe, where wrong marketing and poor user experience resulted in stalled adoption (chasm) of the service by the market (Smethers and France, 2007:28). It wasn't until 2003, almost six years after the introduction of the service, when Vodafone introduced *Vodafone live!,* that the mobile Internet started taking off in Europe (Smethers and France, 2007:28).

2.8.2 Early majority

As illustrated above by the European and Japanese markets, consumers do not fall in love with new products instantly. Instead, they transition from a disinterested user to loyal user by passing through several levels of acceptance (Smethers and France, 2007:28). A new service or product might take anything from one to ten years (or more) to take off, even if the service is perfect in every respect and there is a strong user demand for it (Webb 2007, p.51). For example, phase 1 mobile phones (old

cellular phones) took ten years to reach early majority (that is 1 million phones sold) and the first commercial phone, DynaTAC, was introduced by Motorola in 1983 (Smethers and France, 2007:28).

The mobile phones became a large scale success after the introduction of the second generation technology. The mobile phone maker and operators have discovered barriers that prevented success of first generation mobile phones and turned those barriers into success factors that could be optimised (Smethers and France, 2007:18). It took ten years but eventually the success factors were identified as coverage, reception quality, and size, weight and battery life of the mobile phone. These changes paved the way for the mobile phone to find a massive consumer success. Currently 220 million mobile phones are shipped every quarter (unlike 1 million first generation models sold in 10 years) (Smethers and France, 2007:18).

Services that are simple and focus on what the customer wants, reach the mass market quicker. In other words, the time from early adoption to early majority is short. For example, the Kenyan operator, Safaricom (owned by Vodafone) has commercially launched a successful mobile banking product, known as M-PESA (PESA is the Swahili word for money), which reached early majority in less than a year (Vaughan, 2007:8). Within the first 3 months (March 2007 to June 2007), 110 000 users registered for the service and the registration rate, in June 2007, was at 12 000 users per week (Vaughan, 2007:8). The service is easy to use. A customer selects from a short menu on the mobile phone screen, including "send money" and "withdraw cash." The person receiving the transfer on his or her phone can visit an M-PESA agent or participating gas station or store to pick up the money.

In Kenya formal banking is underdeveloped with only 450 bank branches for the whole country (Vaughan, 2007:6). Only 27 percent of the adult population participates in the formal banking system and the journey to the nearest bank branch could take a few hours (Vaughan, 2007:6). As a result of the banking challenges in the country, the most popular means of transferring money are via a family member or a friend or via a bus company. Internationally money transfers are predominantly through formal channels (Vaughan, 2007:7). With M-PESA, a customer’s mobile number serves as a bank account number and therefore transferring money is as easy and as quick as sending an SMS to another mobile number. It is also less risky compared to sending money via a family member, and it saves time.

Simplicity and designing of a service that meets the needs of the target market, is what made M-PESA very successful. The benefits to the company of doing that are (Ashton, 2007:1):

New revenue stream – Safaricom/Vodafone take 5 percent commission from the money being transferred. For example, in October 2007 alone, R102,96 million was transferred mostly in small sums of about R130.00 and the operator made R5,15 million from these transactions.

Service Subscription Growth – Currently there are 1 million (after 8 months of inception of the service, March to November 2007) customers who have registered to the service out of the total subscriber base of about 7 million.

New markets developed – Encouraged by Kenya's success, Vodafone has exported the service to Afghanistan and Tanzania, and are planning to launch the product in India.

Customer Retention – This is perhaps the most important achievement. Since the introduction of the service, churn rate is falling in a market where only a few users are locked into contract subscriptions.

Extension to other sectors – The service was initially intended to be a person-to-person money transfer system. However, due to its success, Safaricom has begun a trial with two companies to pay staff wages via a text message.

There are many examples of mobile payment systems that have fizzled out due to poor uptake by consumers. However M-PESA is succeeding because the service providers have kept things simple. Focussing on what the customer needs and getting early visibility and adoption were critical (Vaughan, 2007:9). The service is popular with city dwellers sending money home to rural communities (Ashton, 2007). If a similar system were to be introduced in South Africa, it would be just as successful as in Kenya because of the huge migrant work force residing in cities with their families living in the rural areas of the country.

2.8.3 Marketing

As illustrated above, users do not fall in love with a technology product instantly. Instead, they move from being disinterested potential into loyal users by passing through several levels of acceptance. Each level introduces a gate or barrier that each user must pass through successfully in order to reach the next level (Smethers and France, 2007:30). The first gate is marketing, where the goal is to get as many users as possible to try the product or service (Smethers and France, 2007:31). Thus the more

noise that is made, the more users will be attracted. The marketing gate represents all outbound activities that are used to entice users to try the product. These include the following (Smethers and France, 2007:31):

Public Relations – Using the press and industry to gain support for the product is the best way to attract consumers, since consumer opinion is highest after reading a good review on a product or service from an independent source such as MyADSL.co.za.

Advertising – This is the most obvious way to entice users to try a product or service, but it is also the most expensive (Smethers and France, 2007:32). South African mobile operators are the biggest spenders in advertising. In the year ending May 2007, Vodacom spent R 463 million (second to Unilever), MTN was third with R 416 million and CellC was sixth at R 273 million (Shevel, 2007). As was seen above, Virgin Mobile in the US is doing well in that market in spite of the fact that their advertising spending is a tenth of the incumbents' advertising budgets. This proves that while very important, advertising on it own does not guarantee success.

Branding – Branding is paramount in driving customer loyalty, followed by customer focus. Quality of the product also plays a major role in customer relationships. The Sunday Times' (2007) Top Brand Survey ranks telecommunication companies in the following order: Vodacom, MTN, CellC and Telkom (Gordon, 2007:1).

Pricing – Lowering prices can attract users, as this lowers the barrier for users to try the product. Sometimes running a free pilot for a few months will also encourage the users to try a product. M-PESA went through the pilot phase in 2006 before the commercial launch in 2007. Lowering the price too much can be a barrier since cheap is perceived as poor quality and therefore useless by the consumer (Smethers and France, 2007:32).

2.8.4 Initial use

The next gate, once the users are attracted to the product, is to try and get the product to work for them. Most technology products such as televisions, personal computers (PC) and so on need to be set up before a user can get to the value of the product. The new mobile data services or products now offered on the mobile phones, as with PC services, do not come preinstalled on the device but require a user to install or configure the device before the service can work on the mobile phone. The fact that this initial use reduces the number of users is often a surprise to most companies. The reality is that many more users fail to get

the product or service to work than companies are willing to accept (Smethers and France, 2007:33).

Other common barriers that users encounter in their first experimental use of a product or services are:

Registration – For most of the new mobile services offered, it is common for the system to ask for registration before access is granted to the service. Most users are not willing to disclose their personal information just to see what the service does and so this information should be requested after the user had been allowed to try the service or product (Smethers and France, 2007:35). In certain instances, where the information already exists, such as contract subscribers, this step should be reduced to a bare minimum or eliminated altogether.

Installation – Installation is a necessity for software application on a PC or a smart phone. In most cases users do not understand installation processes. In fact, they just choose the defaults offered by the installation program (Smethers and France, 2007:35) where possibly a one-step installation is critical.

Set up – Many products ask consumers to set up preferences before using the product. This step should be avoided or eliminated. Usability testing before launching the product could help in this regard.

The consumers perceive every extra setup step as complexity and the last thing that users want when exploring a new product is a complex experience (Smethers and France, 2007:38). Research done by WDSGlobal, a company that sells automated set-up (configuration) solutions for the mobile phone, conducted across seven European call centres, found that up to 47 percent of all technical support calls taken by the mobile operators relate solely to handset configuration or initial use queries (cellular-news.com, 2007:1). This implies that there are a lot of consumers out there who are unable to use mobile data services such as, mobile email, Internet and Multimedia Service (MMS) because of initial use barrier.

The top 5 technical support enquiries, indentified by WDS Global are given in Table 2.2.

Table 2-2 Technical support queries

Enquiries	**Percentage**
Handset / Service configuration (email, MMS etc.)	47%
PC to Mobile modem connectivity	25%
Personal Instant Messaging (PIM) synchronization	12%
Application usability issues	8%
Personal Digital Assistant (PDA)	8%

Source: cellular-news.com (2007:1)

It should be noted that four of the queries relate to initial use; only number four in the list is usability related.

The solution to resolving some of the initial use barrier is to optimise every possible decision or step that delays users from finding the product's most valuable features (Smethers and France, 2007:38). This could be done with a solution or a tool that would automatically send the setting to a phone or enable a call centre agent to remotely configure a phone for the user, instead of explaining to a user how to do that telephonically.

Alternatively, usability testing before a product launch could identify initial use barriers. Real consumers should be asked to test the product unaided and be observed. Challenges that they encounter while trying to set up the phones should be noted and the necessary improvements made before launching the product commercially.

Business intelligence tools could also assist in identifying initial use bottlenecks. These tools would be of great value if the product or service is put on a trial first, before the commercial launch. This would especially apply to a new service and not an enhancement to an existing service (information should be existing for this one). Business intelligence is the analysis of data about consumer usage, such as web logs or user purchase transactions (Smethers and France, 2007:38). This really enables the business to see what is happening in terms of how the consumers are using the service and to optimise based on consumer behaviour patterns (Smethers and France, 2007:38). Steps where consumers give up with the setup could be identified using this method and corrective measures put in place.

2.8.5 Usability

After a successful setup, the service or product is ready for use. Usability is the next barrier that consumers have to overcome. The fact that the users have figured out how to get the product to work, does not mean that they would want to use the product over a long time (Smethers and France, 2007:38). For products such as cellular phones and PCs, which are information-based (they use software), designers are faced with the unique challenge of finding a balance between the number of features (capabilities) to be added onto a device and its usability. The cost of adding a new feature is decreasing and even approaching zero on these products, but each extra feature means a consumer has one more thing to learn, one more thing possibly to misunderstand, and one more thing to search through when looking for the things they want (Rust, Thompson and Hamilton, 2006:100).

Usable Product Company, a research and design firm, found that it took twice as long to download a ring-tone from Nokia 6620 as from Samsung SPH-A680 - 12 minutes and 6 minutes respectively. This is a serious short fall for a public that loves ring-tones (Rust et al., 2006:100). This has everything to do with Nokia's inclusion of ringer profiles, picture messaging, MP4 play-back and Real-player - all features absent from Samsung. This research is one of the many research articles that are proving that an overload of features, also known as "featuritis" in the software business, detracts from a product's usability (Rust et al., 2006:100). To the designers of these products it makes sense to add one more feature because it is cheaper to do so and they can serve a diverse market with one product.

A research study, funded by the Marketing Science Institute, on the trade-off that companies have to make between increasing the number of useful functions/features onto a device and making them more usable was carried out (Rust et al, 2006:100). It was found that as the number of features grew, perceived capability by the user was increased and perceived usability was decreased. Overwhelmingly, participants (both novices and experienced users) thought that the high-featured model offered the highest overall utility. In turn they chose products that had more features added on them (Rust et al., 2006:103).

However after using the products for some time, participants were again asked to rate capability and usability and the findings were that before use capability mattered more to the participants than usability. However, after use usability drove the satisfaction rating (Rust et al., 2006:103). Put simply, what looks attractive during purchase does not necessarily look good in practice. Consumers often become frustrated and dissatisfied with the wide range of features they originally desired and chose (Rust et al., 2006:104). The interesting thing is that even the experts, that is, the people who are highly product literate, did not escape the effects of feature fatigue. The study further found that, the shift in preference before and after usage occurred just as strongly for experts as for novices (Rust et al., 2006:104). The subjects or the sample population of the study were college students who represent the segment that tends to be more open to new technologies and new features than other market segments.

The research findings present the product mangers and designers with a dilemma: adding improves the initial attractiveness of a product but ultimately decreases the customers' satisfaction with it (Rust et al., 2006:104). The effects that feature fatigue has on a business are:

- Many of them will return the product.

- They will take their business elsewhere in the future (fail to retain them).

- They will spread word of their dissatisfaction, through mediums such as, blogging.

Other usability problems are:

Performance – If a consumer tries to use a product a number of times, it should work each time. In addition to this, it should also produce valuable results in a few seconds. Very few people will accept a device, mobile phone, TV or PC that takes 5 minutes to start up.

Confusing labels or manuals – A service provider needs to know how consumers interpret the main screens and messages. A usability test with real consumers could assist companies to see how well the users follow the directions or instructions (Smethers and France, 2007:40). Most issues arise because the companies assume that consumers have the same level of understanding of its technology as they do (Smethers and France, 2007:40).

Too many decision steps – How many clicks do users have to make before they get to the value of the service or product? Consumers do not want to make decisions but want the product to work (Smethers and France, 2007:43). Even a minor decision provides an opportunity for the user to defect. Users are likely to abandon a transaction if they cannot reach the value after four clicks. When the Japanese operators realised that mobile email was popular, all the new phones came with an email button, meaning only one click was need to reach the service.

Confusing navigation – If the users cannot readily find a feature due to a complex navigation, they are likely to stop using the product (Smethers and France, 2007:43). Unlike most electronic devices such as PCs, the phone form factor complicates usability even more. The size of the screen is so small that it limits the number of services or features that can be displayed on one screen. To add more features means that more screens would be required to fit them all in one device. More screens imply more clicks to find value. In addition to this, the phone key board is difficult to work with.

Users would only continue to use a service, or pay for it, if their experience accords with their expectations. For a service to be successful it must both appeal to users before they buy it and provide them with benefits after they have started using it (Webb, 2007:49). The best way to build customer equity is to design products or services with just enough features to make the first sale and still be highly usable (Rust et al., 2006:104). Too often, eagerness to layer additional functionality results in designers

and developers losing sight of the product's basic functionality, the one thing it must do extremely well. There are many examples of products that have captured the owners' hearts by performing their central task well, like iPod, the personal music player (Rust et al., 2006:104). Most of the usability issues discussed above would be resolved by a phone with fewer features.

2.8.6 Value

The last gate that prevents consumers from a product or service is the amount of value it offers. Fundamentally, every new consumer technology product or service begins with a great idea, which usually represents a solution to a consumer's problem (Smethers and France, 2007:48).Users will only subscribe to a service or try a new product if they believe that they will benefit from it. The only way to truly measure value is to compare it against cost, as consumers do. Cost is the amount of effort or money it takes a user to solve a problem or get to the value (Smethers and France, 2007:48). Successful services are those that provide the users with benefits in excess of the cost after they have started using it. Consumers will not use a product if the costs are greater that the value (Webb, 2007:49).

The users are always evaluating the differences between cost and value. If the value is greater than the cost, then many users will use the product. However, if the cost is greater than the value, few users will be willing to use it (Smethers and France, 2007:49). It should be noted that the actual financials of the product is not the only cost to trying, or using, a new product or service. As discussed earlier in this section, other costs, such as initial use and/or usability costs, have a greater influence on a product's success than its monetary cost. A research study commissioned by Consumer Electronics Association, a US trade association, found that 9 percent of consumers had returned home networking products, such as modems, purchased within the previous year. Only 15 percent of these returns were due to faulty or defective products; the remainder of the returns were simply because users could not get the equipment to work (Rust et al., 2006:104).

In addition to cost, users value products or services that have direct personal value the most, followed by entertainment and those valued least are offerings that provide generic information (Smethers and France, 2007:49). For example, a user ranks a phone call from a spouse or next of kin first because it is of a personal value. The best products are the products that solve direct personal problems. Products that provide strong personal value with low costs, in terms of usability and the users' initial experience, are more sticky; that is to say, consumers keep returning to them (Smethers and France, 2007:49). SMS is a good

example of such a service. Other services which are of personal value and have low financial cost, but are constrained in certain cases, by high initial use and usability costs, are services such as mobile email, MMS and instant messaging (IM). Removing these costs would make such services grow like the SMS. In Japan, email became even more popular after phones came standard with an email button.

Entertainment is of high value to users who have free time. Often the younger the users, the more free time they have and the more value they get from entertainment (Smethers and France, 2007:54). Generic information, such as news, has low value and is therefore hardest to sell because users have other alternatives of getting the same information, for example, news and music downloads. Unsolicited email (and recently SMS as well) has a negative value because it can cause users to stop using a product. Service providers should be careful on how they use solicitations within their products or services (Smethers and France 2007:54).

The service providers should ensure that as many users as possible pass through each gate and, where possible, some of the gates should be eliminated. It should be noted that all that the gates are doing is taking the users though the first stage of the technology adoption process (see figure 2.1), the early adoption stage. If a user reaches the value of the product with or without minimal difficulties, it is highly likely that he or she will become a future ambassador of the product and will assist in marketing and moving the product to the next phase of the product life cycle, the early majority. Once the early stage of the product cycle is passed, what would be required in the remaining stages, that is, the early majority, late majority and laggards, is marketing. Often companies make the mistake that when a service fails to make it through the first stage, marketing is blamed, when, in reality, the problem could be caused by the costs, financial and non-financial, associated with using the product.

2.9 Conclusion

The changes in regulations and technology have not only resulted in more players entering the telecom market, but have enabled the incumbents to extend beyond their traditional markets with MTN and Vodacom entering the corporate market with fixed-line broadband and Telkom offering wireless data services. In addition to this, most data services, such as mobile internet, email and instant message (popularly known as chatting in a fixed line internet environment), have enabled the incumbent to enter the IT companies' space.

To succeed in the new data service market, however, the service provider should design services and/or products that fulfil the

customers' needs. This can be achieved in a number of ways. The end-user initial experience of services should be made pleasant by, for example, simplifying the registration process and setup menus. Following on that, the usability of the service should be made pleasant by simplifying navigation menus, reducing decision steps to reach services and creating understandable menu labels. The service should be offered at a reasonable price and, most importantly, the product should be marketed to the target group.

In order to ensure that a good service is launched, it should first be tested with selected real customers, prior to the launch. Once in the market, tools such as business intelligence should be used to monitor utilisation and the consumers' behaviour. In short, they need to follow a strategy or process like the technology adoption process in order to do well.

The next chapter covers the impact of technology convergence on the structure of the mobile industry and service creation.

CHAPTER THREE

Future industry structure

3.1 Introduction

The previous chapter covered how liberalisation of the telecoms market and technology convergence affected churning and lowered the barriers of entrance into the industry, as well as causes of churning, how to manage churning, customer communications needs, most common messaging and non-messaging services and a strategy to drive users' to accept these data services. Technological convergence and the introduction of new services, that is non-voice service, had created a new industry structure. This structure includes the introduction of new role players and infrastructures. In this chapter the role of the new players and strategies to migrate from the current voice to the future data centric infrastructures are covered. In addition the section includes the following: evolution of services, reasons for more players entering the market, and old and new market structures.

3.2 Evolution of service

The telecoms, IT, Internet and media are converging to create a new industry, largely due to consumer demand. At the core of these industries are services, which are created by combining components from a range of sources (Cottam and Dicks, 2007:1). These services use telecom resources and are delivered over a diversity of networks and IT infrastructure. To survive in this new environment, service providers must be able to cope with the ongoing changes to their business models and service delivery infrastructure (Cottam and Dicks, 2007:1).

The nature of service delivery has changed due to increasing competition in many markets. In the past, telecoms services were provided by network operators which sold services to the end users and to other network operators (Cottam and Dicks, 2007:4). Added to this, the network operator owned and controlled the resources and services supplied (Cottam and Dicks, 2007:5). In South Africa, for example, Telkom owned both the fixed line and the first generation mobile (cellular) network. Prior to Vodacom and MTN getting the second generation mobile network licenses, this first generation network was inherited by Vodacom and later switched-off by it. Most importantly, because the business was highly regulated they owned the customers too.

The entry of new players such as ISP's, VoIP and IT service providers has separated service provision from network ownership. This has resulted in the network operators, mobile and

fixed, providing wholesale services, retail services or a combination of both to the service providers and customers (Cottam and Dicks, 2007:4). Companies that do not own resources use the network operators' infrastructure to provide services to their customers (Cottam and Dicks, 2007:4). Mxit, for example, uses the incumbents' infrastructure to provide mobile instant messaging to its 5 million registered customers.

Customer ownership is not an issue on one level - the mobile operators retain the billing relationship; they therefore own the customer (Jackson, 2008:54). However, there is more to customer ownership than being responsible for billing (Jackson, 2008:54). In a saturated market, where network coverage is no longer an issue, brand loyalty is more difficult for the operator to cultivate (Jackson, 2008:54). Consumers are more likely to have a stronger allegiance to a handset manufacturer or even a Web site (Jackson, 2008:54).

Apple, the US based computer company, is leveraging its brand power with the iPhone mobile device; it does not distribute it to all operators but enters into exclusive deals with the service providers who agree to its terms. One of the conditions is that operators should share the revenue generated by the phone, including voice revenue. The company sold 1 million phones in the first three (3) days and its target is 10 million devices by the end of 2008 (Global Mobile, 2008:8). It has partnered with the following operators: AT&T in the US, Telefonica O2 in the UK, Orange in France and T-Mobile in Germany (Global Mobile, 2008:8). This arrangement by Apple is contrary to what has been happening in the industry, up until now, where phone manufacturers would queue at the operators' doors asking them to sell their devices. In turn, operators would dictate the phone specifications to manufactures before they could consider their requests; that is changing.

Another big brand that has entered the mobile industry is Microsoft, which claims to have 23 percent of the Smart phone operating system (OS) market and has added to its portfolio a mobile music service offering, with the acquisition of Musiwave (Jackson, 2008:55). Musiwave is one of Vodacom's music offerings. Meanwhile, Internet search giants Yahoo and Google have expressed their mobile ambitions, with the latter having already launched handset software and the former having announced a series of developments to its mobile Web site (Jackson, 2008:55). Intel president, Paul Ottelini, is betting that the ultra mobile internet devices would be "the next big thing in computing" and that the company would be making a big push in the mobile space in 2008 (Jackson, 2008:55).

3.2.1 Reasons for more players entering the market

Telecommunications service providers have come to view services as a key competitive differentiator, as well as a means of compensating for the declining voice revenue and thereby achieving a return on heavy investment that many of them have made in the new technologies (Cottam and Dicks, 2007:4). However, the operators have not been able to make a success of mobile data services due to, among other things, a lack of interoperability of different networks and a lack of awareness among end users that the operators' brand stands for services as much as it does for basic telephony (Jackson, 2008:55). Operators have realised that, in order to succeed, they need to open up to brands that the customers trust and introduce fixed rate tariffs that customers are familiar with from the fixed line environment (Jackson, 2008:55).

According to AT&T and O2, which carry the iPhone exclusivity in the US and the United Kingdom respectively, the average revenue per user for iPhone users was nearly double the average user's consumption, because iPhone users took large data packages on top of their voice calls (Palmer and Taylor, 2008:1). In addition to this, since mobile operators allowed mobile users to surf the internet beyond their own web sites two years ago, users are visiting familiar web sites such as Google and generating even more data revenue for operators. The head of Google mobile operations, Vic Gundotra, predicts that the mobile searches will overtake the fixed internet searches "within the next several years" (Palmer and Taylor, 2008:1). He further stated that the mobile business is growing above their expectations, in terms of both usage and revenue (Palmer and Taylor, 2008:1).

The mobile operators are realising that the route to success is partnering with other role players such as ISP and IT companies. Operators have certain strengths and these companies have complimentary strengths which, when combined, will be the key to unlocking services such as the mobile internet and mobile email (Jackson, 2008:55). Instead of each one trying to do bits that they are not good at, they should work together to achieve synergy because, operators are good at constructing and optimising networks, while IT companies specialise in creating services that run on those networks (Jackson, 2008:55). In Japan, the internet search giant, Google, has signed deals with the country's two biggest wireless operators, NTT DoCoMo and KDDI (Hall, 2008:1). Now, the first thing DoCoMo mobile subscribers see when they go online from their handsets is the carrier's site featuring a search box and the phrase "enhanced by Google" (Hall, 2008:1). In Europe, Vodafone and Telefonica have

partnered with Nokia on the development of Ovi, a mobile internet web site developed by Nokia (Jackson, 2008:56).

3.3 The old market structure is changing

The industry has seen changes in the form of new vendors, previously providing services to the IT market, being introduced into the telecoms market. The network equipment providers are no longer the sole vendors. Enterprise IT vendors are also applying their expertise to what they perceive to be a growing and strategic market (Cottam and Dicks, 2007:4). Before the changes in technology, which resulted in voice being transmitted in the same service as email or any other data service, network equipment providers like Siemens, Ericsson and Lucent were the only vendors supplying services to the incumbents, as illustrated by Figure 4.1.

Figure 3-1 Old structure
Source: Cottam and Dicks (2007:5)

With the above business model, services were relatively infrequent, had long lifespans and were fairly simple because the business and technical environment were simple (Cottam and Dicks 2007, p.4). With the old telecoms' model, only the non-technical staff were responsible for the creation and launching of services. The underlying premise of all the legacy telecoms service delivery infrastructure was that a product be designed by telecom staff or a selected group of partners (Cottam and Dicks, 2007:9). In South Africa, for example, all three incumbents have selected partners - Siemens has partnered with both Vodacom and CellC and Ericsson with MTN. The benefit of the legacy system to both the operators and their partners was that the risks and usage were predictable in the mass-market model (Cottam and Dicks, 2007:9).

Business in the new service creation environment requires collaboration based on the principles of openness, peering, sharing and acting globally (Cottam and Dicks, 2007:10). However, for this model to function, the operators should be willing to expose their services for third party consumption (Cottam and Dicks, 2007:10). It is not possible for one party, for example an incumbent, in the new telecom environment to provide all the niche services that the market demands. These products range from user generated content on YouTube, to

mobile email, mobile television or location based services - the list is endless (Cottam and Dicks, 2007:10).

Partnering is necessary to produce quality services for which users would be willing to pay, To produce a good mobile television content, mobile operators would have to partner with TV companies, such as SABC and/or Multi Choice. In that way viewers would be able to watch familiar programmes/content when away from home. All that the network operators would have to do is to adapt the content for a small mobile device screen. NTT DoCoMo, a leading Japanese mobile operator, has designed its service creation platform in such a way that it would generate revenue from unofficial services and official mass market services (Cottam and Dicks, 2007:9). The resulting mix has been a few thousand sites selling official, premium content and services, and tens of thousands of sites created by individuals and small businesses. The rich content drove an increase in service usage, which helped to increase the operator's revenue (Cottam and Dicks, 2007:9). Today, Japan is leading the world with 12.13 billion US dollars in data revenue. What is even more impressive is the fact that 70 percent of this comes from non-SMS data services; in South Africa, almost 90 percent of data revenue comes from SMS (Chetan Sharma Consulting, 2007:1).

3.4 The vendors are diverse and changing

The new service delivery environment has four main types of companies providing services (Figure 4.2): network equipment vendors, enterprise IT vendors, system integrators (SI) and consultancy firms and application vendors (Cottam and Dicks, 2007:22). For the new entrants like Google, expanding into the mobile market is seen as a natural strategic move, since the number of mobile devices accessing the internet is growing rapidly. According to an article in the ITWeb (2008), it is expected that there will be over a billion mobile Internet subscribers globally in 2012 (Jones, 2008:1).

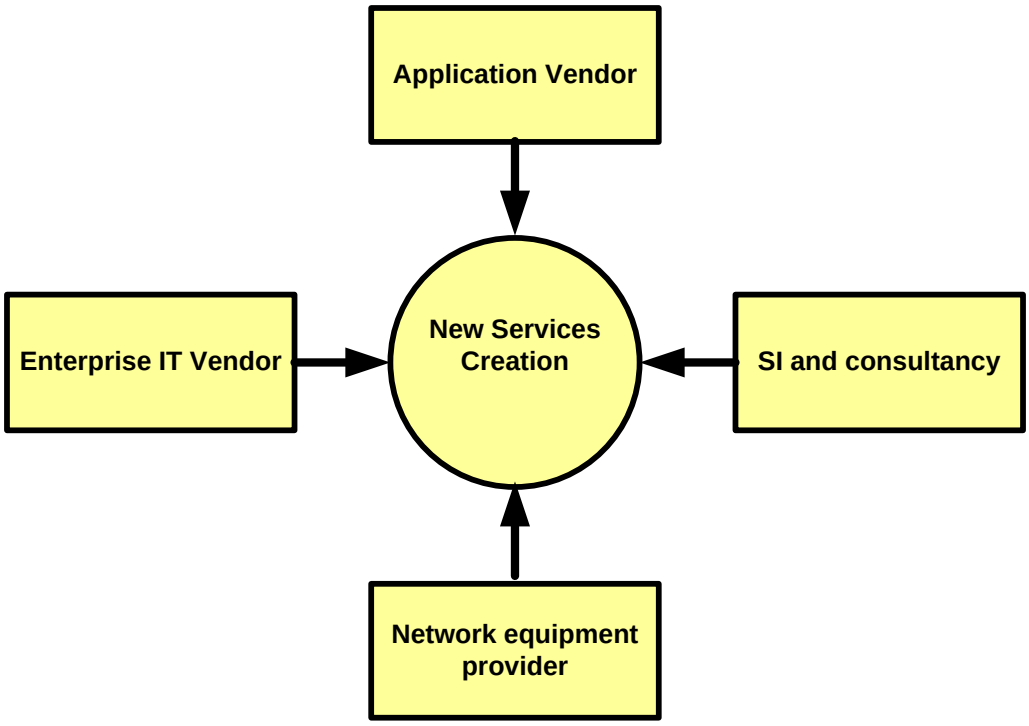


Figure 3-2 Service Creation
Source: Cottam and Dicks (2007:22)

The companies have adopted different approaches to the market, based on their product set and core competencies. SIs, network equipment providers and enterprise IT vendors, such as, Accenture, Ericsson, Hewlett-Packard, IBM and Nokia-Siemens are providing turnkey (end-to-end) solutions, which comprise their own and third party products (Cottam and Dicks, 2007:23), while application vendors are forming partnerships with framework vendors, or with each other, to deliver part of the solution (Cottam and Dicks, 2007:23).

Some companies occupy more than one sector. For example IBM is an enterprise IT vendor with considerable strength in middleware. It offers consultancy and integration services, and it also possesses relevant applications such as security and service assurance applications (Cottam and Dicks, 2007:23). In addition, the market is consolidating rapidly, and some of the larger players are filling gaps in their product portfolios by acquiring other vendors. "Service providers should plot and compare vendors' footprints as part of their system selection process to identify overlaps and complementary offerings" (Cottam and Dicks, 2007:1).

3.4.1 Network equipment providers

Network equipment (Figure 4-1 above) vendors like Nokia-Siemens and Ericsson have considerable expertise in network technologies, a large number of staff, who are telecom

specialists, and, because previously they were predominantly sole suppliers to the service providers, they have a strong relationship with the operators (Cottam and Dicks, 2007:23). Their knowledge of the requirements of the telecom environment and of the real-time functionality is a real strength. As a result, some operators want to extend the relationship with their network equipment vendor, while other operators are concerned by the fact that most of the solutions provided by these vendors are vendor specific and locks them in (Cottam and Dicks, 2007:23). The network equipment market is very strong. However the challenge faced by the network equipment vendors is their relative lack of IT skills and applications. These gaps are rapidly being filled through acquisitions and partnerships.

The network equipment providers' approach in the new service delivery environment is to build up from their existing network expertise, and to add value as their traditional market is getting more competitive (Cottam and Dicks, 2007:23). They know they have to move up the value chain if they are to succeed in the long term. They are predominantly developing partnerships and acquiring IT vendors, as well as application (services) vendors to expand their capabilities (Cottam and Dicks, 2007:23). Ericsson is one of the network equipment vendors that led the first wave of installing the service development platforms. In June 2007, it acquired LHS Telkom and Drutt. LHS Telekom provide Ericsson with a range of service development management functions, including a billing solution which complements their existing billing solution, while Drutt added a mobile service creation capability to the network equipment provider's portfolio (Cottam and Dicks, 2007:25).

3.4.2 Enterprise IT vendors

Enterprise IT entered the telecom service delivery market because they believe it is a strategic element of the networked economy and view it as a high growth market (Cottam and Dicks, 2007:25). Each vendor's approach and strengths are different; however, their common strengths include experience in implementing middleware platforms and enterprise resource planning (ERP) solutions (Cottam and Dicks, 2007:27). According to Wikipedia, the online encyclopaedia, middleware gained popularity in the 1980's as a solution to the challenge of linking newer applications to older legacy systems. It also facilitated distributed processing, the connection of multiple applications to create a larger application, usually over the network. In addition, the middleware enables the application or service to locate transparently over the network, thus providing interaction with other services or applications, to be independent from network services and to be reliable and always available. On the other

hand, ERP systems attempt to integrate several data sources and processes of an organization into a unified system.

The service creation environment is, by definition, an IT solution; as a result, IT vendors have a very strong position (Cottam and Dicks, 2007:27). Their position is further strengthened by their knowledge of IT standards and protocols. However, their knowledge of telecoms varies, with some vendors being relative novices, while others having competed in the telecom IT market for some time (Cottam and Dicks, 2007:27). All are recruiting and acquiring telecom expertise to fill in the gaps and expand their telecoms knowledge base; some have chosen the approach of partnering with telecom's specialists (Cottam and Dicks, 2007:27).

3.4.2.1 Hewlett-Packard

Hewlett-Packard emphasises its ability to provide a bridge between the network and IT worlds. The company's service creation platform offering includes application and software from HP as well as its partners, which are combined with HP hardware and service support (Cottam and Dicks, 2007:27). In addition to this, the vendor adopts a consultative, modular and standards-based approach, which is believed to be accelerating the deployment of services (Cottam and Dicks, 2007:27).

3.4.2.2 IBM

IBM has designed its SDP strategy around services and the company's strong middleware capabilities. IBM has made several strategic acquisitions to add relevant capabilities to its portfolio, such as the acquisition of Micromuse and Vallent to enhance the service assurance capability (Cottam and Dicks, 2007:29). However it places more importance on partnership with the application provider, which includes more than 1 500 independent software vendors (ISV), as well as its commitment to standards. Currently IBM is involved in more than 30 telecom standard organisations (Cottam and Dicks, 2007:29).

3.4.2.3 Microsoft

The Microsoft approach is to provide user friendly interfaces, which allows partners to use each others technology and infrastructure assets to develop blended services that include a combination of Microsoft and third party applications (Cottam and Dicks, 2007:30). To improve on its telecom's expertise, Microsoft announced a partnership with LogicaCMG in October 2007 to launch an initiative called the "Service Factory". This focuses on service creation and delivery on the Microsoft service delivery platform. The alliance with LogicaCMG gives Microsoft

access to telecom skills and operator relationships (Cottam and Dicks, 2007:30). Microsoft is concentrating on service creation and execution.

3.4.2.4 Oracle

Oracle's strategy differs from that of other enterprise IT vendors, in that it has taken an end-to-end approach to service delivery by combining its database with middleware and business applications (Cottam and Dicks, 2007:31). The company has made many acquisitions since 2006 in the business support systems (BSS), operations support system (OSS) and customer relationship management markets. In addition to that, it is expanding rapidly into the telecoms sector (Cottam and Dicks, 2007:31). In February 2007, it launched a single vendor end-to-end BSS/OSS, as well as a service creation platform called the Oracle Mobility Server, after consolidating technology from an acquired Swedish vendor, HotSip and its own technology (Cottam and Dicks 2007:31).

3.4.3 Application vendors

Consolidation of the BSS/OSS markets has resulted in the emergence of a small number of large application vendors such as Oracle, offering solutions that are pre-integrated into the overarching framework (Cottam and Dicks, 2007:32). There are also a large number of start-ups that either offer novel solutions in established markets or are serving new functional or commercial niches (Cottam and Dicks, 2007:32). Further consolidation is inevitable in this market. Large vendors are purchasing key technologies to extend their product set and ISV companies are merging to broaden their offerings and achieve economies of scale (Cottam and Dicks, 2007:32).

South African companies are featuring strongly in the ISV market – companies that specialise in making software for the niche market. Three SA companies have produced technologies that were purchased by large companies; two of these resulted in a purchase and partnership with foreign companies, while the other sold shares to a local big company.

3.4.3.1 Thawte

Thawte, a Cape Town based company owned by Mark Shuttleworth, is the most famous one of the three afore-mentioned companies. It was the first company to produce a full-security e-commerce web server that was commercially available outside of the United States. This brought Thawte to the world of public key infrastructure, which is the basis for all encrypted and authenticated Internet transactions. By the time it was acquired

by VeriSign in the USA, Thawte had become the fastest-growing Internet Certificate Authority, and was the leading Certificate Authority outside of the US (First African in Space, n.d).

3.4.3.2 Yeigo Communications

In 2007, Yeigo Communications, another Cape Town based company, launched a technology that offers voice over IP on mobiles. The benefits of the technology to the end user is that it saves the user money by directing voice calls through Wi-Fi hot spots or the operators' data networks, rather than over the voice network. The only cost incurred by the user is that of connecting to the internet (Mochiko, 2008d:1). Quality One Wireless, a US based company, has purchase a stake in Yeigo, thus giving them access to the US technology market (Mochiko, 2008d:1).

3.4.3.3 Mxit

Mxit, a South African instant messaging company with five to six million registered users, allows users to download software on a mobile device to send and receive messages from people who are also connected to MXit, either via a mobile phone or computer (Mochiko, 2007c:1). The users can message each other at a cost of about 2 cents a message which is much cheaper than the 35 to 80 cents charged per SMS (Mochiko, 2007c:1). The success of Mxit could have contributed to MTN and Vodacom launching the same products known as noknok and Meep, respectively (Tarrant, 2008:1). Naspers, a Johannesburg Media group, has purchased 30 percent of Mxit.

3.4.4 Consultancies and System Integrators

The role of consultancies and system integrators in the service creation environment is to integrate best-of-breed solutions, building service creation platforms. Unlike enterprise IT and application vendors, consultancies and system integrators have considerable telecoms expertise and are often thought to be leaders in key areas (Cottam and Dicks, 2007:39). However, they have to respond to the challenge in the service market, which is to move away from custom built solutions towards a more standardised approach (Cottam and Dicks, 2007:39).

3.4.4.1 Accenture

In 2002, Accenture started to build components of service development platforms (SDP) and has delivered these platforms for all types of operators, but predominantly mobile operators (Cottam and Dicks, 2007:39). Accenture believes that a service development platform should support common capabilities across multiple type services. These include an integrated environment

for developing and managing services; the integration of third-party service providers; a common view of subscribers; convergent charging; access control and content filtering (Cottam and Dicks, 2007:40). Accenture believes that about 70 percent of SDP functionality is common to all service providers, but that the remaining 30 percent is specific to the individual service provider's needs (Cottam and Dicks, 2007:40).

3.5 Service Providers' Challenges

There is no universally correct service delivery platform infrastructure and this is compounded by the fact that the service providers do not know which of the many available and possible products or service would become a mass product/s, like voice and SMS (Cottam and Dicks, 2007:41). Service providers do not necessarily agree at a detailed level on the service delivery infrastructure. However, they agree on the common challenges facing the industry such as, inflexible billing systems which inhibit the ability to respond quickly to changes; integration issues, which create inefficiencies and increase operating expenditure; inefficient processes, which increase the time to market, and slow provisioning and uncertainty about future business models/services, which increase the need for agility (Cottam and Dicks, 2007:41).

These challenges influence the characteristics that the service providers want their service delivery platforms to have. Common features include low cost, high flexibility and agility, high level of automation, a customer centric focus and alignment with business requirements (Cottam and Dicks, 2007:41). In addition, the service provider views standardisations as one the solutions to some of the challenges they have. Several large organisations such as ATT&T, British Telecom (BT), Telecom Italia, France Telecom, Telefónica, Telkom SA, TeliaSonera, NTT DoCoMo and Vodafone have formed the TeleManagement Forum (TM Forum), aimed at encouraging vendors to adopt standards for end-to-end management of converged services (Cottam and Dicks, 2007:42).

3.5.1 Service Delivery Transformation

The scale and the urgency of the challenges facing the service providers mean that an all-encompassing strategic overhaul is an uncommon strategy (Cottam and Dicks, 2007:42). Few providers are willing to assume the risk or cost associated with such an approach, despite its potential for significant benefits, if successful. Instead, service providers are choosing an evolutionary approach to reduce the risk and maximise the gain on legacy system investments (Cottam and Dicks, 2007:42). The disadvantage to this approach is that, in the short to medium term, the resulting solutions may be far less optimal and

operational expenditure could be higher than normal. In practice, for larger organisations, there would be multiple triggers for service delivery transformation (Cottam and Dicks, 2007:42).

Service providers are more likely to adopt a more evolutionary approach to service delivery and there are at least two types of evolutionary strategies, the technology-led and service-led evolutions (Cottam and Dicks, 2007:42).

3.5.1.1 Technology-led evolution

The service provider decides to renew a particular system or a set of systems. This might involve increased levels of automation. Legacy and new systems combine into a fully automated process. This is a tactical approach driven by operational expenditure requirements to consolidate and renew an ageing infrastructure (Cottam and Dicks, 2007:43).

3.5.1.2 Service-led approach

Investment is stimulated by the needs of a new service or a set of new services. Legacy infrastructure could be used, in combination with new systems, or a new approach may be taken (Cottam and Dicks, 2007:43). As with the technology-led approach, this approach is also tactical which, interestingly, is followed by a lot of organisations, including Vodacom and MTN. A more strategic approach would be to use the new service to drive the change and move all the other services and customers from the existing legacy systems to the new architecture at a later stage (Cottam and Dicks, 2007:43).

3.6 Conclusion

The new services environment is so wide and diverse that it would not be practical for the service product to provide all the services alone, as in the old environment. Therefore, they have to form partnerships with vendors and other service providers, in order to offer a product that would be appealing to the end user. In addition to this, a partnership could leverage its partner's brand name. For example, a user who is used to searching the internet with Google, would be confident using the same familiar brand on the phone, if available. The other change the service providers would have to make is to employ multi-vendors, instead of having one vendor, because, as the technology evolves and liberalisation continues, some of the vendors today could be competitors tomorrow. Already a product like Microsoft MSN, which was an internet chat system, has added mobile chat (also known as mobile instant messaging) to the product. One can also make a voice over IP call from the same platform. Nowadays,

Voice is a commodity and the trend is for most instant messaging service providers to include it in their package.

The research design is the next chapter and it covers the pilot study, the research population, the sample framework, the questionnaire, data collection and data analysis, and research limitations. It includes the effects of telecom, IT and media convergence on the mobile industry value chain and service creation.

CHAPTER FOUR

Research design

4.1 Introduction

In the previous chapter evolution of services, the reasons for more players entering the market, the old market structure, the new market and the role of vendors in the new market structure were covered. It concludes with the challenges faced by service providers in the converged environment and service delivery transformation. This chapter is divided into three parts: the first part describes the in depth secondary research to identify the development in the mobile industry; the second part describes the pilot study, the population, the sample framework, data collection and analysis and research limitations; and the third part covers the questions. These questions measure churning, common services and their ranking, and users' perceptions of services. Open-ended questions are included to examine the likes and dislikes of the respondents with regard to the service providers.

4.2 Development in the mobile industry

The convergence of technology and deregulations has not only resulted in more companies entering the telecoms market, it has, also created a new industry, driven by consumer demands. The nature of some of the services that consumers demand is such that telecom operators (fixed or mobile) alone cannot meet them but they have to work with IT and media companies in order to meet them. An in depth analysis of current literature has been made in the previous chapter covering a broad spectrum of publications but specifically, the publication of Cottam and Dicks (2007) on the "Best Practices in Telecom Service Delivery" published and owned by Analysys Research. Analysys Consulting is a leading international Telecoms and digital media consultancy group, with over 20 years extensive work on telecom policy, regulation and finance.

4.3 Pilot study

An unstructured pilot study was conducted to test the assertion that people from the older generation, over 30 years of age, are not early adopters of technology as is found with the youth. The same questionnaire that was given to the younger respondents, 15 to 24 year olds, was also given to the pilot study respondents. Fifteen respondents were interviewed and all the interviews took place at the respondents' houses. The object was to test their knowledge of services and how they use them.

4.3.1 Pilot study guidelines

The pilot study motivated exclusion of the older generation from the research population. The questionnaire was also modified, to best suit the targeted group for this research. It was found, during the pilot study, that the older generation took a longer time to complete the questionnaire than the younger generation. They were unaware of the features that their phones supported and the services available from service providers. Most of them predominantly use voice and occasionally SMS and showed very little understanding of other services.

The results of the pilot confirmed that the younger generation, who are also early adopters of new technology, would better give an indication of future mobile market trends.

4.4 Population

The population consists of the young cell-phone users with ages ranging from 15 to 24 years. This group was chosen because they are known to be early adopters of technology and would give a better indication of which service or services are likely to make it to the mass market. Services such as SMS, Facebook and downloads, owe their success to this segment of the population. In addition, they are more technologically literate than the older generations and will therefore find other ways of using the technology than anyone else (mobileYouth, 2008:3).

4.4.1 The sampling framework

The research focussed on Clayville, an area in Gauteng, with approximately five hundred houses, according to the residents' organisation. If one assumes that each house has on average 1.5 teenagers, then the target population would be approximately 750. This area was chosen because it was accessible to the researcher and therefore economically viable.

An interview with the residents' association chairman, Makhubela, in 2008, revealed that there are 834 houses in the area at present. He further estimated that each house has on average five people living in it. This figure would include people who are renting. Therefore, the total population would be five multiplied by the number of houses, which is 4 170 people. The people of ages 15 to 24 constitute 20.7 percent of our population, according to the 2001 census results. So that if one assumes Clayville's population composition to be the same as the national figures, it could then be argued that 20.7 percent of 4 170 (total population), which is 863, is the study population.

4.4.2 Sample

The units of analysis consisted of young cell-phone users living in Clayville. Initially the intention was to get the sample of the entire mobile phone population in the area. However, the population was reduced to a subpopulation or stratum of the users of ages ranging between 15 to 24 years. This was done after discovering, during a pilot study, that this group used new services more than any other group and would therefore give a good indication of which services would become mass market products (mobileYouth, 2008:3). In total, 45 respondents were interviewed with 64% of them being males and 36% females.

4.5 Data Collection

The respondents were interviewed at the shopping centre in the target area, as well as in the streets and in their homes. Each interview was preceded by an explanation of the purpose of the research to the respondent, before a questionnaire was handed out. Respondents were then allowed to complete it, while the field worker was waiting and if clarity was needed on any question, it was answered by the field worker.

In addition to the individual interviews, opportunities arose, on two occasions, where the subjects of analysis were found in groups of fewer than 6 people. In such cases the questionnaire was given to the group and what was interesting about these particular occurrences was that more information was elicited compared to the information obtained during the individual interviews.

4.5.1 Data Analysis

The analysis included both descriptive and inferential analyses. Frequencies, averages and percentages were calculated and relevant graphs and tables were used to represent the findings. T-tests were used to compare male/female responses and also to identify significant agreement/disagreement of the respondents in various areas of the study. The chi-square test of independence was applied in order to investigate relationships between variables.

4.6 Limitations

The research was limited to cellphone users only and excluded other communication devices such as fixed line phones and the internet, which are capable of offering the same services covered herein.

4.7 Questions (Q)

4.7.1 Gender (Q1)

The respondents were young cellphone users, both male and female. The gender division was included to see whether there are any differences in how each group consumes these services.

4.7.2 Switching of service provider (Q2 & 3)

Question 2 asks whether a respondent has changed a service in the last two years or not and those who answered yes are further asked to give their reasons for churning. Some of the known causes of dissatisfaction among users are listed in question 3. These include, amongst others, network quality and billing Respondents either had to choose from the list or give their own reason (if not covered by the list). These questions were designed to identify those services that are causing the most unhappiness among users. Question 2 can be interpreted as measuring customer retention or loyalty. For a customer to remain more than two years with the same service provider could either mean that the service provider has a good retention strategy or that the customer is simply loyal.

4.7.3 Common services and their ranking (Q 4 & 5)

One of the objectives of this research is to identify services which have a potential to compensate for the declining voice and produce new growth for the service providers. Question 4 is designed to identify the most popular services within the youth population and question 5 measures how often these services are consumed by the respondents. Common services offered by the service providers are: voice, SMS, MMS (Picture messaging), instant messaging, email, internet and tracking.

4.7.4 Users perception of service (Q6.1 – 6.12)

Various topics covered in chapters 1 and 2 of this research, are covered by the statements of question 6. These are detailed and examined in this question.

MNP (Q6.1) – this question examines the importance to the respondent of retaining a mobile number when switching service providers.

Feature fatigue (Q6.2/3/7)– examines the value of the mobile phone features to the respondents. Generally usability is compromised if a device has many features.

Prices measurement (Q6.4/5/6) – the prices in South Africa are believed to be among the highest in the world. If users agree strongly with these statements, then it would confirm that they are not satisfied with the prices charged by the service providers.

Billing and Packages (Q6.8) – confusing packages and billing information are some of the issues that are causing high customer churning rates.

Wide handset choices test (Q 6.9) – ascertains whether a user prefers a wide choice of handset. A user who prefers a wider range of phones to choose from is likely to churn if the opposition offers choices.

Usability test (Q6.10/11) – For the respondents, usability might not be a big issue since most of them have enough time to play and experiment with new gadgets.

Customer Care (Q6.12) – Poor customer service (see Section 2.1) is resulting in negative publicity for the operators and a high churn rate. This question examines how the customers feel about the customer care received from the service providers. A new challenge brought about by the new services is that, unlike in the past when there were very few services available, nowadays there are hundreds, if not thousands of new services and call agents need to know about them. This means that, to keep pace with the changes, call centre agents would need to be on continuous training.

4.7.5 Open Questions (Q7 & 8)

Question 7 and 8 – allow the respondent the opportunity to comment on anything regarding the services offered by the service providers. They are qualitative questions intended to encourage the customer to bring more and hopefully vital information to light which the preceding quantitative questions could have missed.

4.8 Conclusion

Initially the plan was to conduct the survey across the entire population of cellphone users in the targeted area. However, after the findings of a pilot study of the older (above 30 years) generation, it was decided to conduct it only among the younger generation since they are early adopters of technology and would have a better idea of which services are likely to reach a mass market.

All questions are quantitative except for two which ask the targeted group to state what they like and dislike the most about

their service providers. The findings of the questions covered in this chapter were analysed statistically and presented using relevant graphical representations in order to highlight the salient features, in chapters 5 and 7.

CHAPTER FIVE

Field work

5.1 Introduction

In the previous chapter, the research and questions, that were designed to quantify or measure feedback received from the respondents, were covered. In this chapter, the findings are made with the aid of a statistical software package for the social sciences, on the questions set out in the research design chapter. These questions include the following subjects: switching and reasons for switching, features supported by phones, price of services, ease of use of services, customer care service, open questions and group interviews. The outcomes of these findings are presented in tables and charts.

5.2 Field findings

5.2.1 Gender

Question 1 – Required the gender of the respondents. It was found that males were dominant (64%).

The responses of the two groups are compared in the subsequent questions and the differences commented on.

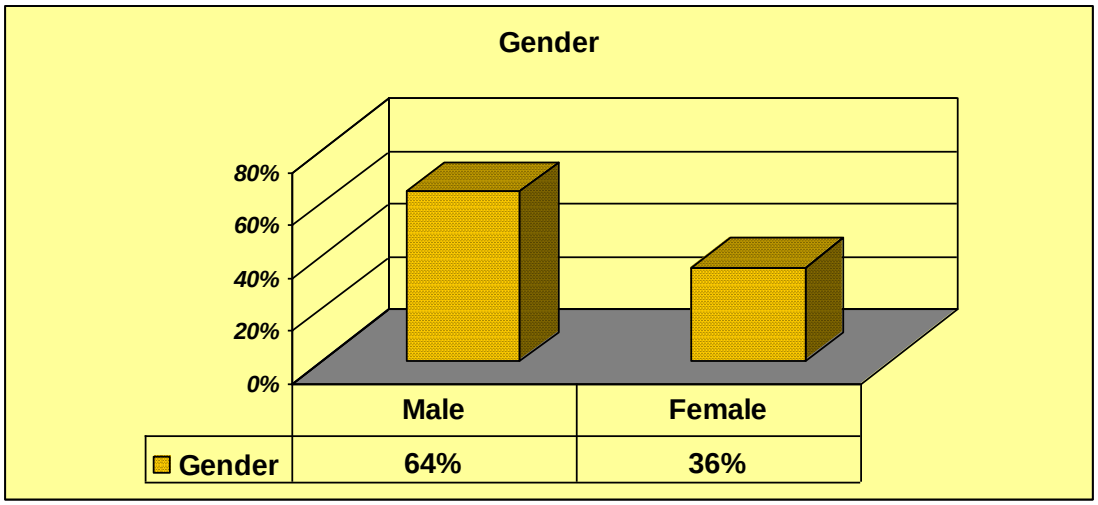


Figure 5-1 Gender

5.2.2 Switching response

Question 2 – Change of service provider in the last 24 months.

Only a few (11%) of the respondents did change their service providers in the last 24 months.

This switching rate (11%) of the target population is less than the mobile industry's rate of almost a quarter (25%) of cell phone users.

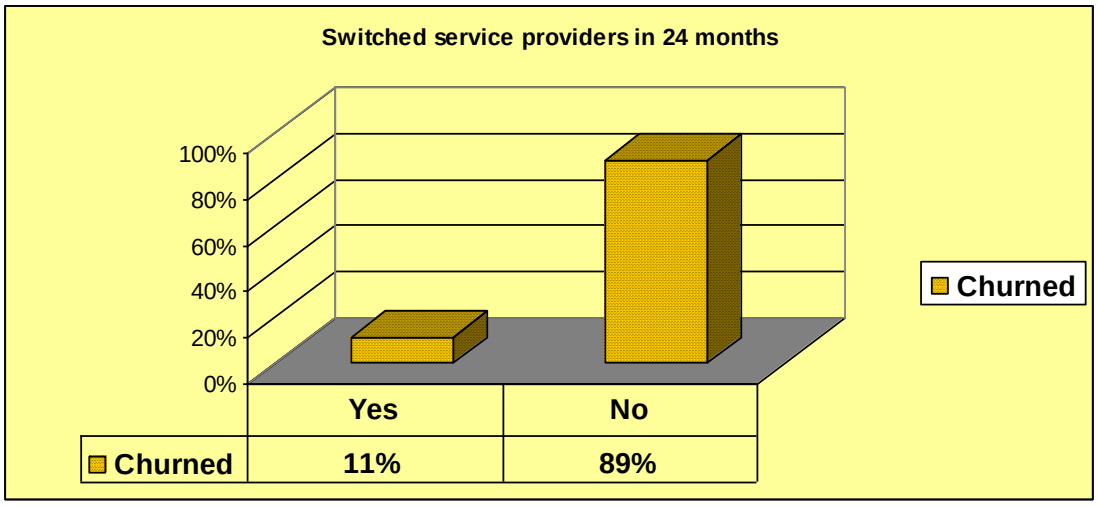


Figure 5-2 Switched service providers

5.2.3 Reasons for churning

Question 3 – Reason for churning.

Of the respondents who had changed their service providers, a large number (40%) switched providers because the competitor offered better phones, that is, devices with more features. A similar number (40%) were unhappy with billing statements and the rest gave 'other reasons', for example losing a phone, as the reason for switching (Figure 5.3).

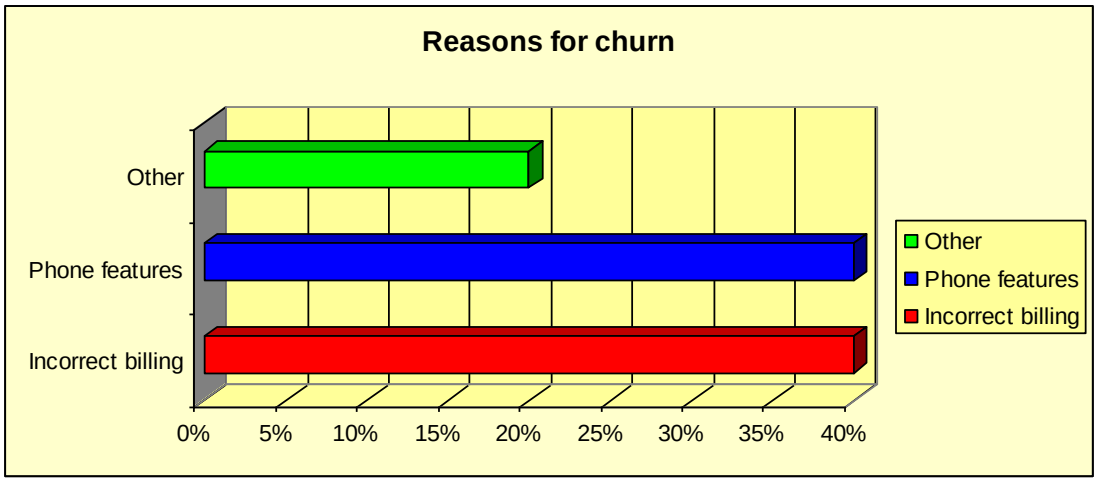


Figure 5-3 Reasons for churn

5.2.4 Service ranking – in importance (Q4.1 to Q4.7)

Question 4 – From a list of the common services offered by service providers, the Respondents are asked to rank them in order of their importance, with ranking order one (1) being the most important service and seven (7) the least important service. The seven services, together with the resulting importance rankings, are shown in Table 5.1.

Table 5-1 Services and ultimate ranking of importance

Service	Ultimate Rank Order in Importance
4.1 Voice and SMS	1
4.2 Picture messaging	4
4.3 Instant messaging (e.g. Mxit)	2
4.4 Download (e.g. ring-tones and music)	3
4.5 Accessing Internet from a cell-phone	5
4.6 Accessing email from a phone	6
4.7 Tracking services (child tracking)	7

For each service the average rank was calculated. These averages were then ordered from smallest to biggest, indicating the service that was most preferred to the service least preferred. The results of these averages by gender are shown below, under the relevant question, with the totals presented in tables.

5.2.4.1 Voice and SMS (Q4.1)

The findings indicate that Voice and SMS are the most preferred service for both males and females and is rated 1.

Table 5-2 Voice SMS ranking

Service	Male average	Ranking	Female average	Ranking	Total sample Average	Ranking
Voice and SMS	1.97	1	2.19	1	2.04	1

5.2.4.2 MMS (Picture messaging) (Q4.2)

With an average of 4.13, this is ranked 4th by all the respondents. Male respondents, with an average ranking of 4.07, rank this service 3rd while female respondents, with an average of 3.75, rank it 4th.

Table 5-3 MMS (Picture messaging)

Service	Male average	Ranking	Female average	Ranking	Total sample Average	Ranking
MMS	4.07	3	3.75	4	4.13	4

5.2.4.3 Instant message (Q4.3)

Instant messaging is the second ranked service for both males and females. The averages for male and female respondents and for the total sample are very similar.

Table 5-4 Instant messaging

Service	Male average	Ranking	Female average	Ranking	Total sample Average	Ranking
Instant Message	3.21	2	3.19	2	3.20	2

5.2.4.4 Downloads (Q4.4)

Download is third in ranked order when taken over the whole sample; however, male respondents ranked it 4th, with an average of 4.41, after picture messaging which is ranked third. Female respondents ranked Downloads 3rd with an average of 3.63. Downloads includes personalisation services such as ring tones, wallpapers and games.

Table 5-5 Downloads

Service	Male average	Ranking	Female average	Ranking	Total sample Average	Ranking
Downloads	4.41	4	3.63	3	3.96	3

5.2.4.5 Accessing internet (Q4.5)

For all respondents taken together, the average is 4.73 for accessing the internet from cell phones, making it the firth ranked service overall; an average of 5.0 ranks it 7th for male respondents and the female average is 4.25, which makes it fifth in rank for the female respondents.

Table 5-6 Accessing Internet

Service	Male average	Ranking	Female average	Ranking	Total sample Average	Ranking
Accessing Internet	5.00	7	4.25	5	4.73	5

5.2.4.6 Accessing email (Q4.6)

The average for all the respondents for accessing emails from cell phones is 4.67 giving it a 6th place ranking. The male and female respondents' averages are 4.55 and 4.88 respectively, with corresponding rankings of 5 and 6.

Table 5-7 Accessing email

Service	Male average	Ranking	Female average	Ranking	Total sample Average	Ranking
Accessing email	4.55	5	4.88	6	4.67	6

5.2.4.7 Tracking

Tracking has an average for all the respondents of 5.24; the male and female respondents split averages are 4.97 and 5.75 respectively. Whilst all the respondents taken as a whole and the female respondents rank this service last, the male respondents rank it second last before the service 'Accessing internet'.

Table 5-8 Tracking

Service	Male average	Ranking	Female average	Ranking	Total sample Average	Ranking
Tracking	4.97	6	5.75	7	5.24	7

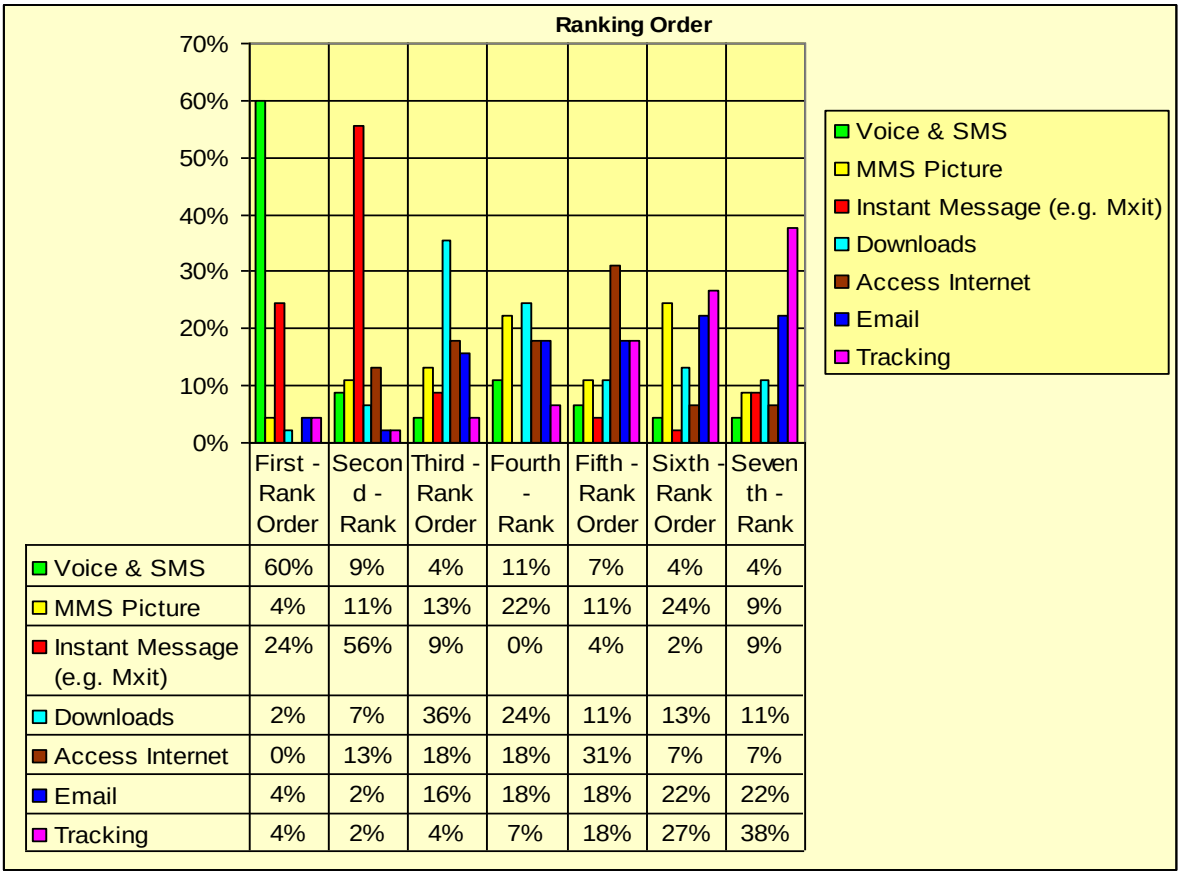
5.2.5 Consolidated Ranking

The respondents' male and female split, the total sample averages and rankings are consolidated. Picture messaging (Q4.2) was ranked as fourth and comes after Downloads (Q4.4) which is ranked third. The split ranking for male and female respondents agree for the first two rankings, Voice and SMS (Q4.1) and Instant Messaging (Q4.3), but differs for all the other services. The female respondents rank Downloading (Q4.4) and Accessing internet (Q4.5) more important than their male counterparts who in turn rank Tracking services (Q4.7) and Accessing email from cell phones higher than do the female respondents. (Figure 5.9).

Table 5-9 Consolidated ranking of importance

	Service	Male average	Males ranking	Female average	Female ranking	Group average	Group ranking
Q4.1	Voice and SMS	1.97	1	2.19	1	2.04	1
Q4. 3	Instant messaging (e.g. Mxit)	3.21	2	3.19	2	3.20	2
Q4.4	Download (e.g. ring tones and music)	4.41	4	3.63	3	3.96	3
Q4.2	Picture messaging	4.07	3	3.75	4	4.13	4
Q4.5	Accessing internet from a cell phone	5.00	7	4.25	5	4.73	5
Q4.6	Accessing email from a cell phone	4.55	5	4.88	6	4.67	6
Q4.7	Tracking services	4.97	6	5.75	7	5.24	7

In order to bring the difference in ranking into perspective the respondents' ranking of importance of the services are compared graphically in a bar chart with a supporting table of the relevant percentages. (Table 5-4).



	First - Rank Order	Second - Rank	Third - Rank Order	Fourth - Rank	Fifth - Rank Order	Sixth - Rank Order	Seventh - Rank
Voice & SMS	60%	9%	4%	11%	7%	4%	4%
MMS Picture	4%	11%	13%	22%	11%	24%	9%
Instant Message (e.g. Mxit)	24%	56%	9%	0%	4%	2%	9%
Downloads	2%	7%	36%	24%	11%	13%	11%
Access Internet	0%	13%	18%	18%	31%	7%	7%
Email	4%	2%	16%	18%	18%	22%	22%
Tracking	4%	2%	4%	7%	18%	27%	38%

Figure 5-4 Actual ranking of importance

5.2.5 Service Usage

Question 5 – Frequency of usage of services.

5.2.5.1 Normal Voice call

Normal Voice Call has the highest usage for the whole sample and for the male respondents. However, it is ranked second behind SMS for the female respondents.

Table 5-10 Voice

Service	Male average	Usage Ranking	Female average	Usage Ranking	Total sample average	Usage Ranking
Voice call	1.10	1	1.50	2	1.24	1

5.2.5.2 SMS

SMS closely follows voice in frequency of use by all the respondents. Female respondents use it more than the male respondents, with calculated usage averages of 1.31.and 1.38 respectively. In addition female respondents rank it 1st, which is higher than the male respondents' 2nd place ranking.

Table 5-11 SMS

Service	Male average	Usage Ranking	Female average	Usage Ranking	Total sample average	Usage Ranking
SMS	1.38	2	1.31	1	1.36	2

5.2.5.3 Instant messaging

Instant messaging is ranked 3rd by all groupings of the respondents. However male respondents use it more often than female respondents, with calculated average usage of 1.55 and 2.50 respectively.

Table 5-12 Instant messaging

Service	Male average	Usage Ranking	Female average	Usage Ranking	Total sample Average	Usage Ranking
Instant message	1.55	3	2.50	3	1.89	3

5.2.5.4 Downloads

With an overall usage of 3.04 by all the respondents, downloads are the 4th most used service. The male and female respondents rank it five (5) and four (4) respective, implying that female respondents rank downloads higher in terms of usage. However, male and female respondents' average usage is nearly the same, with calculated averages of 3.00 and 3.13 respectively.

Table 5-13 Downloads

Service	Male average	Usage Ranking	Female average	Usage Ranking	Total sample average	Usage Ranking
Downloads	3.00	5	3.13	4	3.04	4

5.2.5.5 Accessing internet

This service ranks fifth (5th) overall for service usage, fourth for males and sixth for females. At 2.72, male respondents use the mobile to access the internet more often than the female respondents whose average usage is 3.81. However, female respondents rank this service higher in terms of service usage than male respondents, with rankings of four (4) and five (5) respectively.

Table 5-14 Accessing Internet

Service	Male average	Usage Ranking	Female average	Usage Ranking	Total sample average	Usage Ranking
Access Internet	2.72	4	3.81	6	3.11	5

5.2.5.6 Accessing email

The average usage for the sample taken as a whole is 3.93, and the male and female respondents' usage averages are 4.07 and 3.69 respectively. Accessing email is sixth in the usage ranking order both overall and for males. However, females rank it fifth amongst services in terms of usage.

Table 5-15 Accessing email

Service	Male average	Usage Ranking	Female average	Usage Ranking	Total sample average	Usage Ranking
Access email	4.07	6	3.69	5	3.93	6

5.2.5.7 Tracking

The least used service is the tracking service, ranked last by both groups. In addition, the average usage score is low for both male and female respondents, at 4.24 and 4.13, respectively.

Table 5-16 Tracking

Service	Male average	Usage Ranking	Female average	Usage Ranking	Total sample average	Usage Ranking
Tracking	4.24	7	4.13	7	4.20	7

5.2.6 Consolidated Service Usage

The average usage for each service is calculated and then the usage scores of the different services were compared to find the usage ranking. The usage ranking (most often to least often) is given for all the respondents as well as for males and females separately. A calculated average of between one and two means that the service is used daily to weekly, while, at the other extreme, an average of between four and five means yearly to no usage. (Table 5.17)

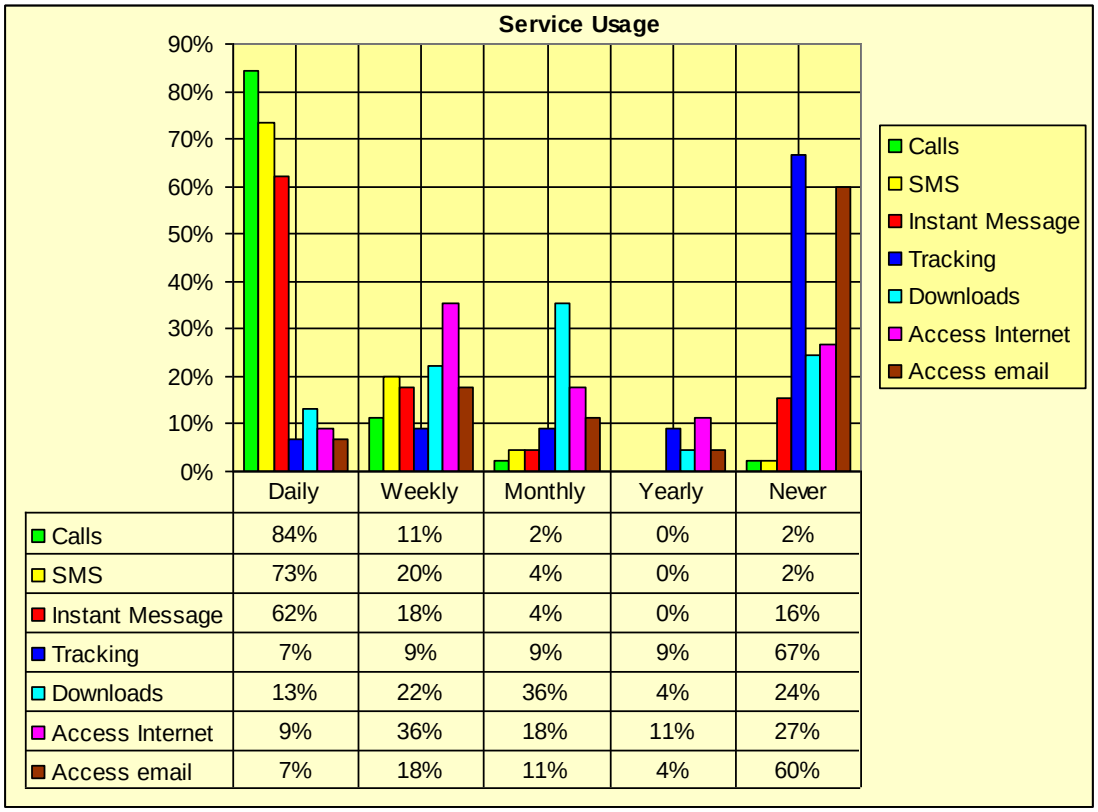
Table 5-17 Consolidated usage

Service	Male Ave	Male ranking	Female ave	Female ranking	Group Ave	Group Ranking
Voice call	1.10	1	1.50	2	1.24	1
SMS	1.38	2	1.31	1	1.36	2
Instant Message	1.55	3	1.55	3	1.89	3
Downloads	3.00	5	3.13	4	3.04	4
Accessing internet	2.72	4	3.81	6	3.11	5
Accessing email	3.81	6	4.07	6	3.93	6
Tracking	4.24	7	4.13	7	4.20	7

Inferential analysis findings – A test was carried out on each of the services, to ascertain whether any usage category was selected more often than the others. The results for the whole sample (male and female respondent together), show that the category that was selected significantly more often for each of voice, SMS and instant messaging is 'daily', which makes these the most frequently used services by respondents. This is followed by accessing the internet, where 'weekly' was selected significantly more often, and then downloads with 'monthly' being the usage category that was selected more often. Finally, the least used services are accessing email and tracking for which 'never' was the usage frequency selected by a significant number of respondents.

An analyses was also carried out on this question to ascertain whether the average usage 'time' for males was equal to the average usage 'time' for females for the different services. It was found that the only service where the usage by males and females was significantly different was 'Accessing the Internet', where males used the service significantly more often that did females.

Actual Usage – Figure 5.5 shows the actual service usage by the entire sample population.



	Daily	Weekly	Monthly	Yearly	Never
Calls	84%	11%	2%	0%	2%
SMS	73%	20%	4%	0%	2%
Instant Message	62%	18%	4%	0%	16%
Tracking	7%	9%	9%	9%	67%
Downloads	13%	22%	36%	4%	24%
Access Internet	9%	36%	18%	11%	27%
Access email	7%	18%	11%	4%	60%

Figure 5-5 Service Usage

5.3 Users' views of service (Q6)

Users' views consist of a number of statements for which the respondents are required to indicate the extent of their agreement. The questions are grouped into the following categories: Keep number (Q6.1); Features supported (Q6.2), (Q6.7) and (Q6.9); Pricing (Q6.3), (Q6.4), (Q6.5) and (Q6.6); Ease of use (Q6.10) and (Q6.11); and customer care (Q6.12).

5.3.1 Keep number (MNP)

Switching (Q6.1) – This question measures the respondents' preference for ownership of a cell number.

Feedback is as follows: Most respondents (82%) strongly agree, with only a few (18%) disagreeing, thus implying that owning a number is very important to the majority of respondents. (Figure 5-6).

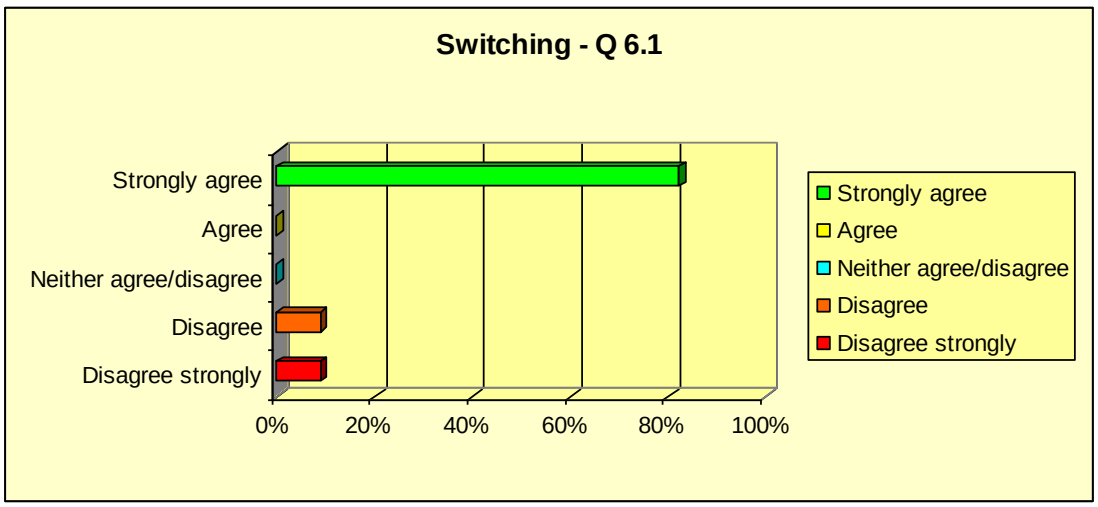


Figure 5-6 Keep number

5.3.2 Features supported

Simple device (Q6.2) – This question measures the respondents' preference for a simple cell phone that does not have many features or functions, but is cheap.

Feedback is as follows: One fifth of the respondents agree/strongly agree (20%) and almost two thirds (62%) disagree/strongly disagree while the rest *(18%)* are undecided. With the large number *(*62%) disagreeing, it could be argued that a simple device is unpopular. (Figure 5-7).

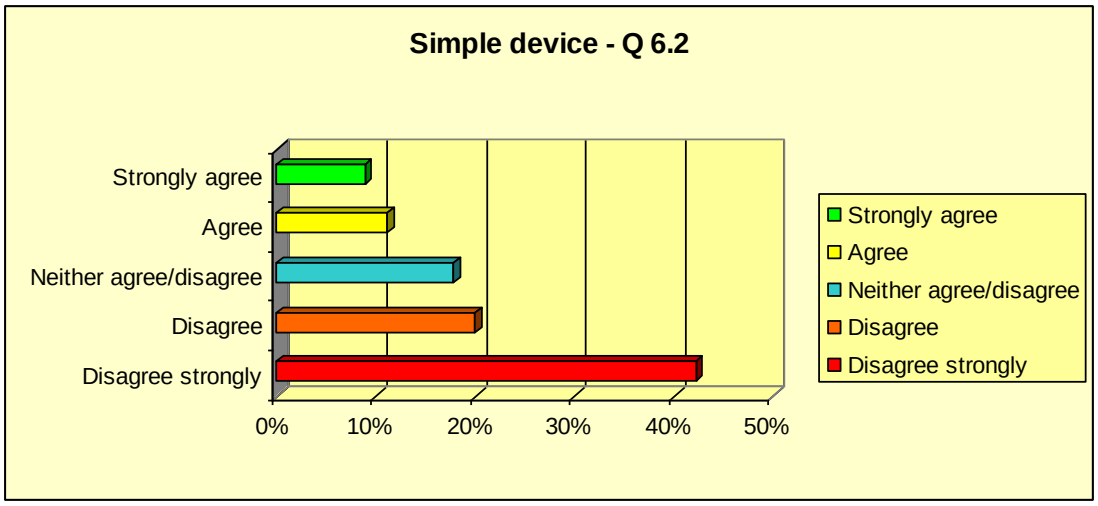


Figure 5-7 Simple device

Service range (Q6.7) – Whether the choice of a service provider is based on the range of services it offers, is measured by this question.

Feedback to this statement is: More than half of the respondents (55%) agree/strongly agree, with only a small number (9%) not in agreement leaving a large number (36%) undecided. (Figure 5-8)

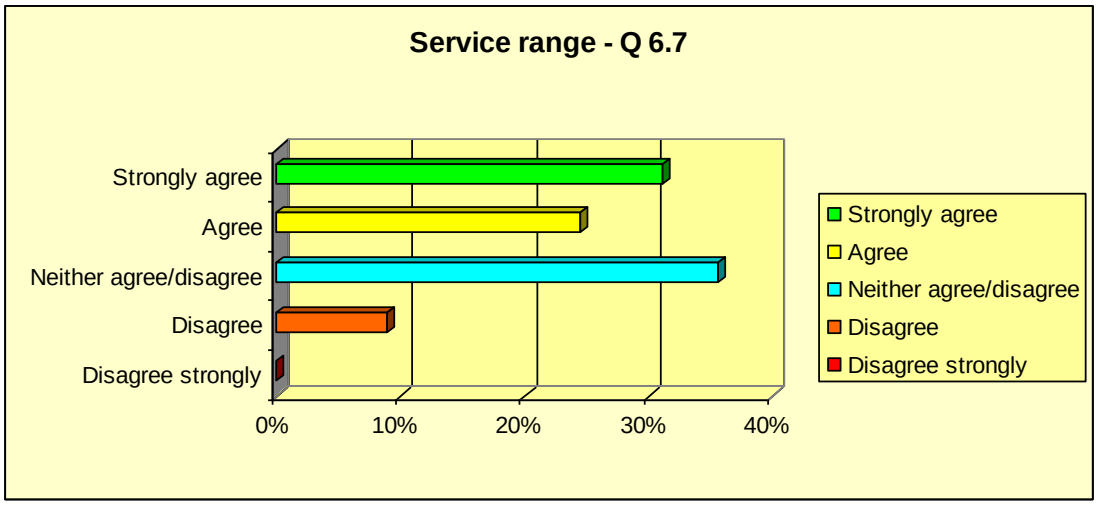


Figure 5-8 Service range

Handset range (Q6.9) – Choice of a service provider is based on the wide variety of handsets.

Feedback to this statement is as follows: More than half (51%) agree/strongly agree, with only a quarter (25%) of the respondents in disagreement and the rest (24%) remaining neutral. (Figure 5-9)

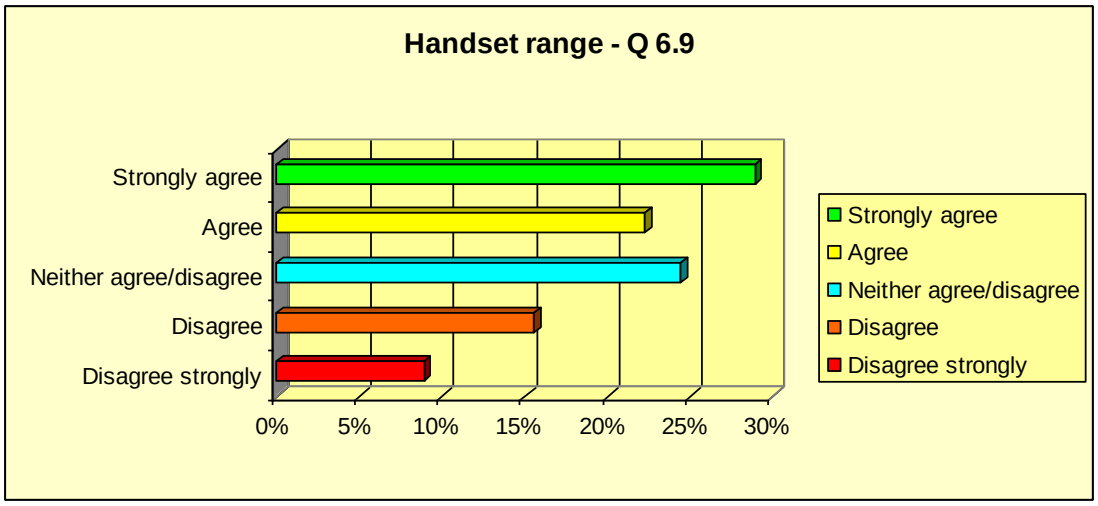


Figure 5-9 Wider handset range

5.3.3 Pricing

Cheaper rates (Q6.3) – This measures respondents' preferences for a device which has more cheap features.

Feedback to this question is as follows: Over half (58%) of the respondents agree/strongly agree, with only a few (18%) in disagreement leaving almost a quarter (24%) undecided. (Figure 5-10)

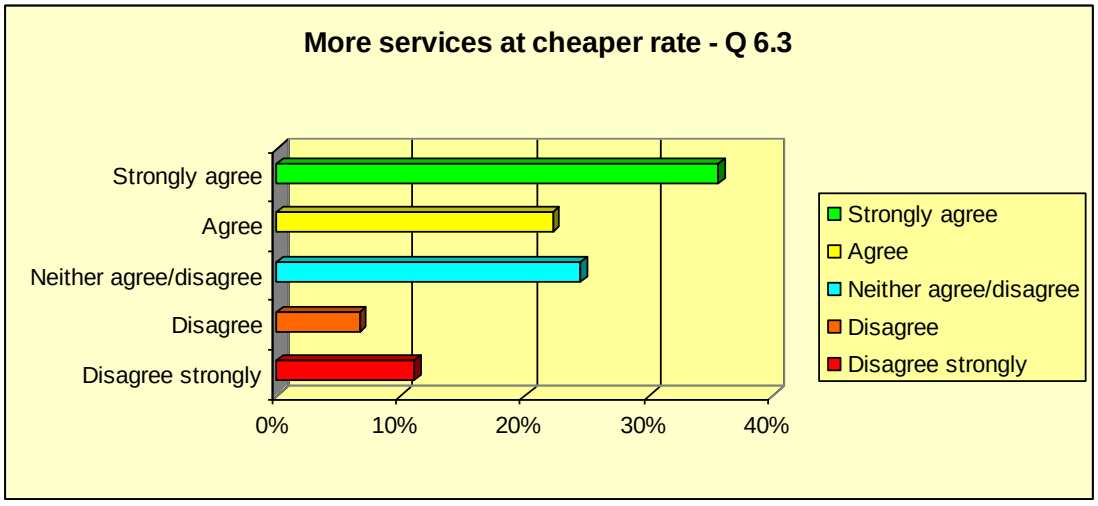


Figure 5-10 Cheaper rates

Discounts (Q6.4) – Respondents' preference for regular discounts or promotions is measured by this statement.

Response is as follows: A large number of the respondents (75%) agree/strongly agree, with only a small number in disagreement (14%) leaving the rest (11%) undecided, and thus it can be concluded that a discount is important to the respondents. (Figure 5-11)

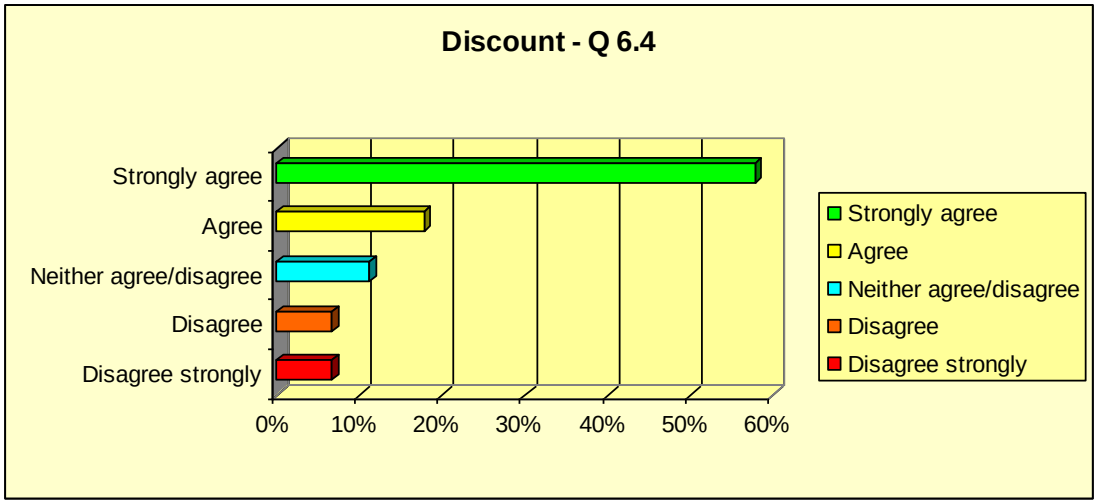


Figure 5-11 Discounts

Cheaper rates usage (Q6.5) – I use my phone mostly during off peak times (when call rates are less).

Feedback is as follow: Most of the respondents (65%) agree/strongly agree, while a few (18%) disagree to some extent and the remainder (18%) are undecided. Pricing was raised quite often when respondents were asked to say what they disliked the most about their service provider; it could therefore be argued that the respondents would prefer cheaper rates. (Figure 5-12).

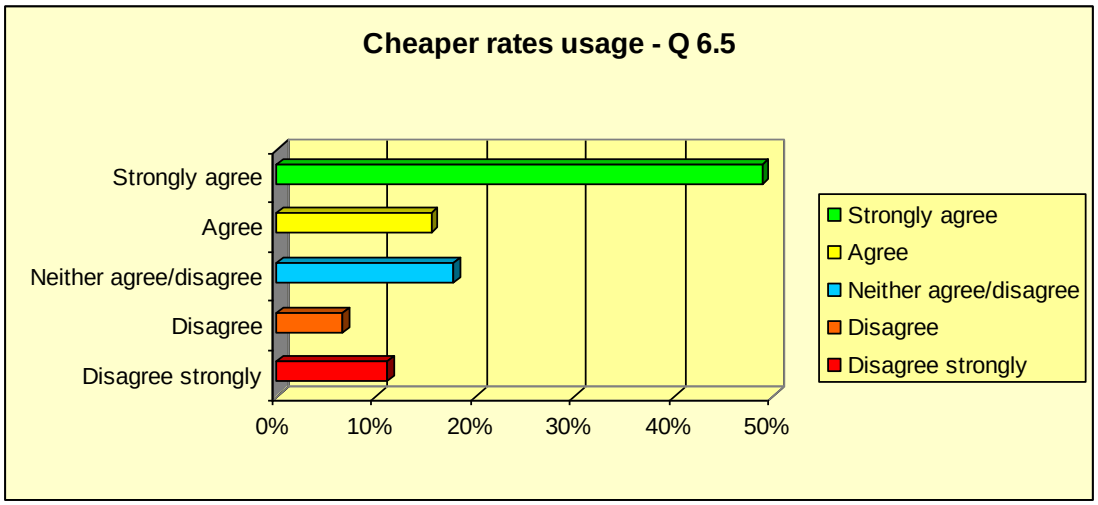


Figure 5-12 Cheaper usage rates

Globally competitive pricing (Q6.6) – Service providers should offer globally competitive pricing.

Feedback is as follow: The majority of the respondents (64%) agree to some extent, with almost a quarter (24%) undecided and the remaining few (11%) disagreeing. This shows that the

respondents will likely support services that are globally competitive. (Figure 5-13)

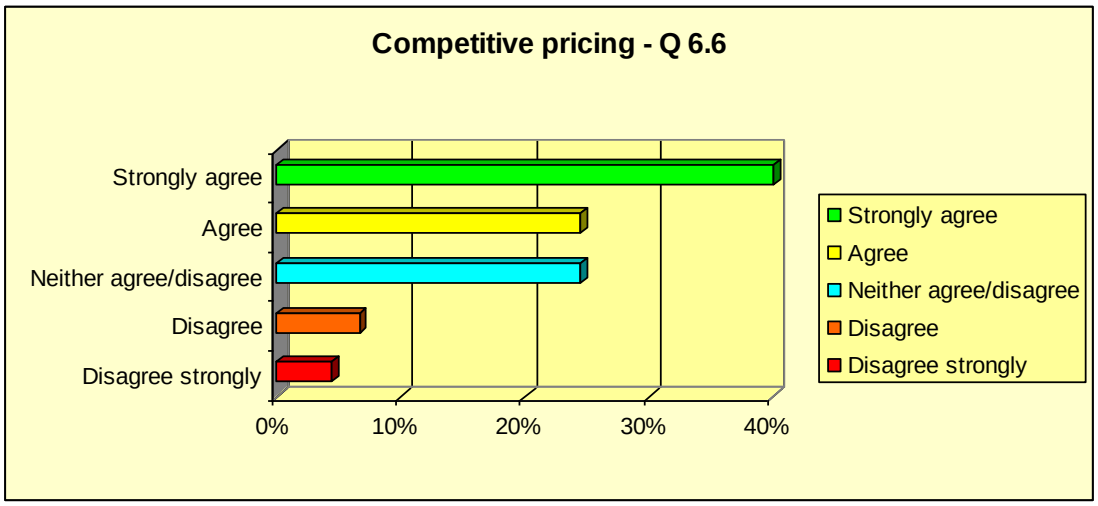


Figure 5-13 Globally competitive pricing

Understandable billing (Q6.8) – Clear and understandable billing statement need.

Most of the respondents (51%) agree, a few (27%) are undecided and the remainder (22%) disagree with the need to receive a clear and understandable billing statement from the service providers. This implies that a good billing statement is important to the majority of the respondents. (Figure 5-14)

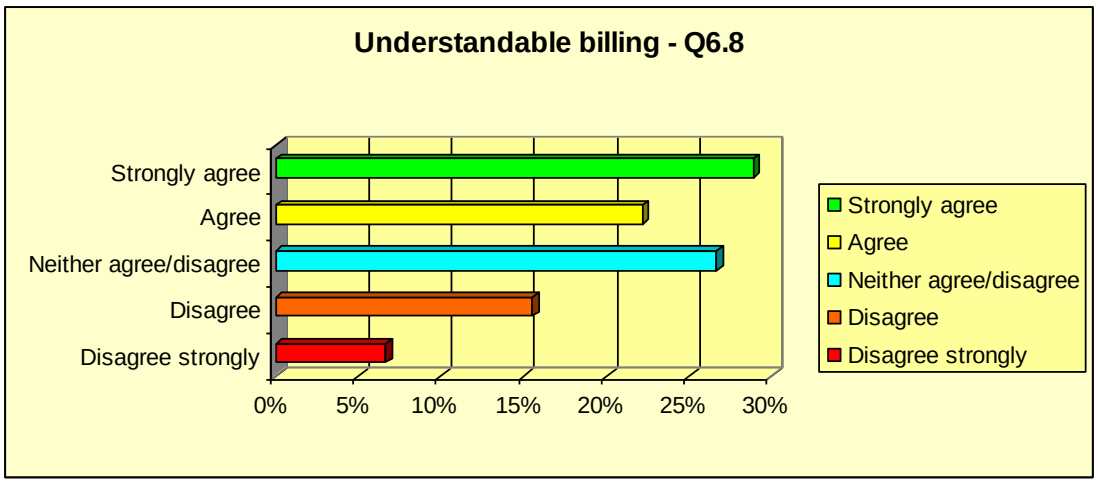


Figure 5-14 Understandable billing

5.3.4 Ease of use

Ease of use (Q6.10) – I prefer services that save time and are quick and easy to use.

Response to Q6.10 is that an overwhelming majority (87%) agree, while very few (7%) are undecided and the remaining few (6%)

disagree. These findings prove that ease of use is very important to the respondents. (Figure 5.15)

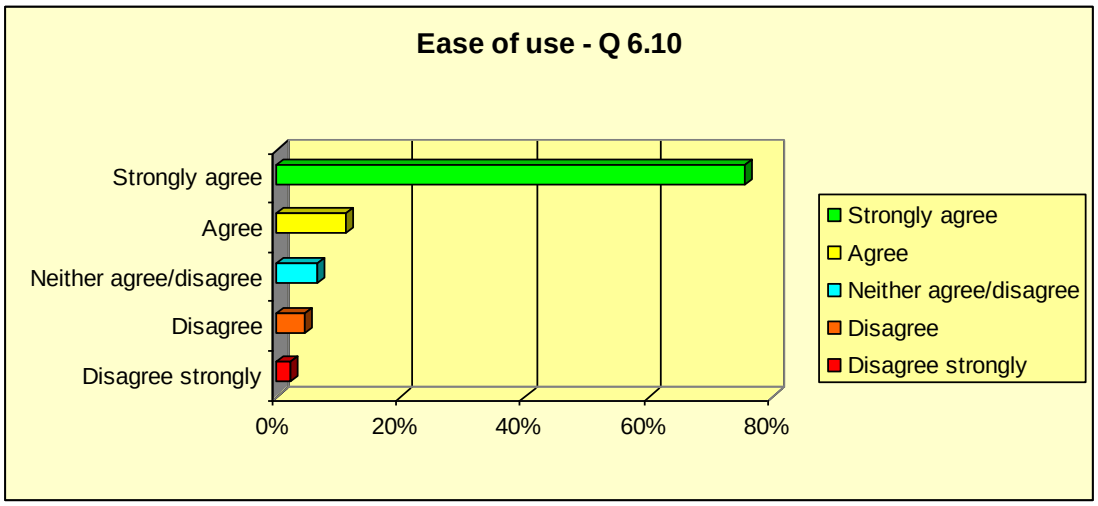


Figure 5-15 Ease of use

Choice based on ease of use (Q6.11) – Ease of use is important when choosing a mobile service.

Responses to Q6.11 are as follows: The great majority of respondents (80%) agree, a few (4%) disagree and the remaining (16%) are undecided. Clearly ease of use is extremely important to the users. (Figure 5-16)

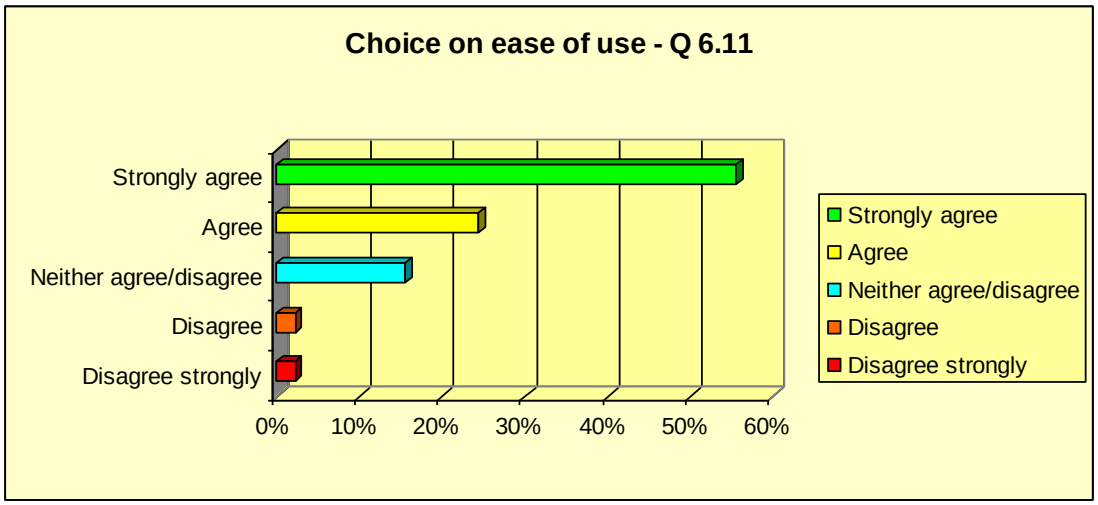


Figure 5-16 Choice on ease of use

5.3.5 Customer Care

Helpful customer care (Q6.12) - A helpful customer care agent is very important.

Response to Q6.12 is: The vast majority (91%) agree, a few (4%) disagree and the remainder (4%) are undecided. Of all the

services covered in this study, a helpful customer care is the single most important service identified by the respondents. (Figure 5-17)

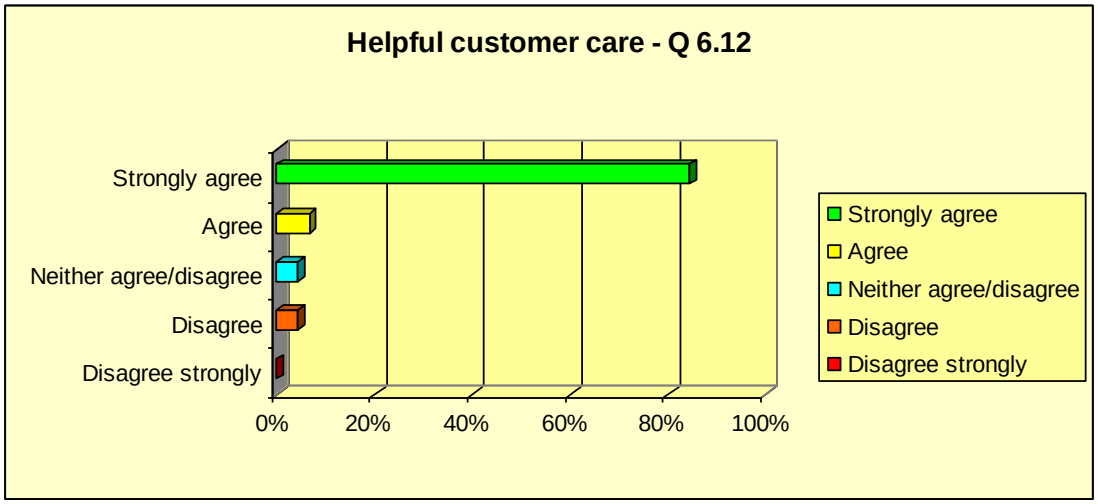


Figure 5-17 A helpful customer care

5.4 Open ended questions

Likes (Q 7) – What do you like the most about your service provider?

The responses can be grouped into three areas - price, customer care and network:

- Price – those who said 'price', also mentioned the lower denomination vouchers, such as the R5.00 voucher, and the free weekend calls offer (available only to CellC customers). In addition to this, the cheaper call rates offered over weekends and after hours by other service providers were highlighted by the respondents.
- Customer care – a few of the respondents were satisfied with the service offered by the call centres. Specific mention was made of the quick response time of the call centre agent.
- Network – a small number of the respondents indicated that they were happy with the network performance.

Dislikes (Q8) – What do you dislike the most about your service provider?

Respondents' dislikes can be grouped into the following areas:

- Network – Overwhelmingly, almost (60%) of the respondents cited network performance as something they were most dissatisfied with.

- Prices – some of the respondents (20%) felt that the prices of services were too high and confusing.

- Customer care – In this case, the respondents' (20%) complaints included 'waiting time before a call is answered is too long' and 'satisfactory answers to queries are not provided by the customer agents'.

5.5 Group Findings

In addition to the individual interviews, group interviews were also carried out. Two group interviews took place. The first group consisted of six respondents, while second was a group of five respondents. The questionnaire was given to each group member to answer as with the individual interviews. After completing the questionnaire, group members voluntarily started giving their opinions about instant messaging services as found in questions 4 and 5. This service excited the respondents the most. Group feedback on instant messaging could be classified as follows:

Price – Cheap rates are probably the main driver of the service; some respondents felt that airtime never run out when communicating on Mxit.

Ease of use - It is believed to be more user friendly, compared to similar products on the market, like MIG33 and Facebook.

Security – Some respondents feel safe using Mxit, because unlike the competing brands such as Facebook, the people they chat to are known to the respondents.

Addiction to the service - Some respondents acknowledged being addicted to it and thinking about it all the time. Most respondents said that they had installed Mxit clients on their parents' phones without their knowledge and that it serves as a backup in case something happens to their phones. Chatting even takes place in the middle of a class.

Impact on school work – A new "short hand" language/method of writing had developed as a result of phone's form factor, that is, a small key board and screen. School notes, including homework are done in this language (short hand), with the result that some respondents agree that their spelling is suffering as result of this method. Also, instant messaging is sometimes used to cheat during exams. In this case a small group create a "multi-mix" and share answers real-time in the middle of an exam.

5.6 Conclusion

The findings show that the most important services to the respondents are: customer care, ease of use and instant messaging. In fact, instant messaging received a lot of

unsolicited response from the respondents. In addition, ownership of a number and current prices charged by the service providers are also important. Cheaper prepaid vouchers and cheap or free weekend calling was also mentioned, when asked to indicate what they liked the most about their service. They are dissatisfied with the poor network quality and customer care and prices came up strongly again when customers were asked what they disliked the most about their service provider. Furthermore, it was found that there is very little difference between male and female respondents in how they answered the questionnaire.

Interpretations of the findings are covered in the next chapter.

CHAPTER SIX

Analyses and Interpretation

6.1 Introduction

In the previous chapter, data collected from the field was analysed with SPSS and presented in Microsoft Excel charts. Findings were made on the following: switching and reasons for switching, ranking services in order of importance, service usage and users' perception of the service. Users' perceptions include, the value of owning a cell number, features, pricing, ease of use and customer care. Findings were further made on open-ended or qualitative data and group interviews. This chapter will analyse and interpret those areas where findings were made.

6.2 Interpretations

6.2.1 Switching and its causes (Q 2 and Q3)

The respondents who had churned in the last two years totalled 11%; this figure is less than the industry average rate of over 25%. This finding implies that the respondents of this research study switch operators less often than the broader cellphone population.

Of the respondents who switched service providers, 80% sited incorrect billing and better deals offered by the competitors as the main reasons. In South Africa, for example, there over 108 (Esselaar et al., 2006:23) price plans (also known as packages) for prepaid and contract customers across all the service providers. These packages are complex and create distrust among the end users. One respondent referred to them as "sneaky".

6.2.2 Ranking and usage (Q 4 and Q 5)

Service rankings and usage are analysed together because it was found, in the previous chapter, that there is a relationship between the two, namely that the highest ranked services are used the most and the least ranked services are used the least. It would seem that respondents are not aware of the existence of the least ranked services because most of them have not used such services.

The most important services to the respondents, in ranking order and usage are basic voice service, SMS and instant messaging. Already voice and SMS had reached the mass market, while instant messaging is still in the early adoption stages of development, used mainly by the youth, but with the potential to reach the mass market too.

The least ranked services in order of importance are, download, MMS, mobile internet, mobile email and tracking. It was also found that a substantial percentage, 24%, 27%, 60% and 67% of the respondents had never downloaded content, accessed mobile internet, accessed mobile email and used tracking respectively. This could be due to the fact that respondents are unaware of the availability of such services. It could therefore be argued that the least ranked services are not only least used, but were also least known to the respondents.

6.2.2.1 Voice and SMS

The most important services in ranking order of importance, on calculated averages, are voice and SMS - their calculated average usage frequency is daily to weekly. Males and female agree on these rankings according to the statistical analysis.

The respondents who rank Voice and SMS higher also use the cell phone for making calls and accessing the email more often. (Appendix 3)

6.2.2.2 Instant messaging

Instant messaging follows voice and SMS, in order of importance and like voice and SMS it is used on average daily by the respondents. During group interviews, this service received more unsolicited feedback than any other listed service in the ranking order. Some of the respondents admitted that they are addicted to it. Instant messaging is an emerging service which holds a lot of promise, considering that it is an online service (or internet based). Therefore, a possibility exists for it to share in the online advertising revenue.

There is no correlation between the ranking of instant messaging and the frequency of usage. (Appendix 3)

6.2.2.3 Downloads

Next in ranking order of importance is download, with a calculated average usage score of 3.4 indicating a monthly to yearly average usage rate.

No correlation exists between ranking of downloads and frequency of usage. (Appendix 3)

6.2.2.4 MMS (Picture messaging)

MMS is fourth in importance ranking order. This service allows users to send pictures and videos in addition to the text messages. Its growth was constrained by complexities involved in setting up

the phone before using the service, the penetration of phones that support this feature and high prices.

Correlation does not exist between the importance ranking of MMS and its usage. (Appendix 3)

6.2.2.5 Accessing internet

Accessing the internet is placed fifth (5^{th}) in the importance ranking order. With a calculated average usage of yearly to never, some of the respondents (27%) had never used the service. Male and female respondents had ranked it seventh and fifth respectively and the entire sample ranking is fifth. This is the only service where statistical analyses show a difference between males and females. Clearly this service is more important to females than males.

The respondents who rank accessing the internet high, make less use of voice calls. (Appendix 3)

6.2.2.6 Accessing email

This service is ranked sixth in importance, with a calculate usage of yearly to never and most (60%) of the respondents have never used the service. It is just possible that the respondents who had never used the service were also not aware of its existence.

The reason for such a low ranking could be explained by the popularity of SMS and instant messaging among the respondents. In addition, the improvements or addition of more features on the SMS would diminish the need for mobile email among respondents.

The respondents who ranked accessing email high also use SMS more frequently. (Appendix 3)

6.2.2.7 Tracking

The least ranked service overall in terms of order of importance and usage is tracking. There are probably more business applications for this service, for example tracking a vehicle or goods in transit, than for person to person communication. Child tracking could be one application of this service but whether respondents would like to be tracked or not is a difficult question.

There is no correction between the importance ranking of tracking services and its frequency of usage. (Appendix 3)

6.3 Users' perceptions (Q 6)

6.3.1 Retaining a number (Q6.1)

Owning a cellular number is very important to the respondents - 82 percent would prefer to keep their number when switching providers. It could be argued, based on this response, that MNP is important to the respondents. However, MNP could have been measured more accurately by asking those respondents who switched, whether they retained their number with the new service provider.

6.3.2 Features (Q6.7 and Q6.9)

The respondents who prefer a wide range of services from a service provider (Q6.7), want these services to be simple to use (Q6.10). (Appendix 4)

6.3.3 Pricing (Q6.3, Q6.4, Q6.6 and Q6.8)

Pricing was perhaps the item on most respondents' minds because, when asked to list the things they liked the most (Q 7), pricing was mentioned as one of them (see Section 4.4). It was also listed as one of the things respondents disliked the most about the service providers (Q 5). Pricing also came up during the group discussions where good pricing was among the reasons given for choosing Mxit.

Respondents who prefer regular discounts (Q6.4), also prefer clear and understandable billing statements (Q6.8). Increased preference for more features at a cheaper rate (Q6.3), results in increased preference for ease of use (Q6.10 and 6.11). The respondents who like regular discounts (Q6.6), also like the services to have more features (Q6.7) that are easy to use (6.10 and Q6.11). Finally, respondents who want clear understandable billing, prefer a phone that has more features (Q6.9) and, in addition, they must be easy to use (6.10). (Appendix 4)

6.3.4 Ease of use (Q6.10 and Q6.11)

As confirmed by the survey results, respondents prefer services that are easy and quick to use.

The respondents who prefer quick and easy to use services (Q6.11), base their choice of service provider on whether it sells products/services that are also easy to use. Lastly, respondents who prefer easy and quick to use services (Q6.10), prefer a helpful customer care service (Q6.12). (Appendix 4)

6.3.5 Customer Care (Q6.12)

Of all the services listed in this study, customer care is the most important service to the respondents, with a great majority of respondents (91%) agreeing that a useful customer care is important. This was the highest score recorded in this quantitative research. This is not surprising because, as more features/functions are added to a device, so the complexity of the setup and use increases. This results in additional enquiries to the customer care service.

As suggested by the respondents during the interviews, this area is important and will become even more so as more new services are introduced onto the market.

6.4 Network quality (Q8)

Poor network quality came up strongly in the open ended question and was listed the most often as one of the causes of unhappiness by the respondents. The solution would be for operators to invest more on improving the network quality. This would be money well spent because it would make customers happy.

6.5 Conclusion

Customer care was the most important service to the respondents, with an overwhelming number of users saying a helpful customer care agent is the most important service to them. If service providers want to retain or, even better, have loyal customers, then they should improve this service. Second to customer care in importance is ease of use. This implies that, when companies design services, one of the things they need to take into account is usability. In addition, simplified pricing, having more features on devices, ownership of cellular numbers and having a stable network are important. Furthermore, instant messaging is the service that has a potential to generate a lot of revenue, as is the case with voice and SMS, in the future. It could even compensate for the declining voice revenue and since it is an internet based service, further revenue could be realised from online adverting.

Incorrect billing and better offers had contributed the most to switching. Incorrect billing could be corrected by introducing fewer and understandable packages in the market. It is possible that those respondents who left as a result of incorrect billing, were actually billed correctly, but did not understand the price plan they chose. The respondents who prefer better or cheaper offers can be retained by providing competitive pricing and improving services, such as customer care and easy-to-use services.

CHAPTER SEVEN

Conclusion

7.1 Introduction

In this chapter, the objectives of the research and the literature review will be reviewed against the background of findings and interpretations of the research. The achievements of each phase of the research process will be described and recommendations for further research will be made.

7.2 Research process revisited

The research objective was to identify the factor which causes churning in the mobile market, explore ways of managing them thus creating customer satisfaction or loyalty and, in turn, improving customer retention or even attracting customers from the competitors. In addition, the impact of person to person messaging services, such as, MMS (Picture messaging), instant messaging and mobile email on customer retentions was analysed. The underlying objectives are: to explore the customers' communication needs; investigate causes of high churn rate; and explore ways of controlling the churn rate.

The research sample consisted of young people of ages ranging from 15 to 24 years, living in Clayville, Gauteng. The initial plan was to target the entire population of cell phone users living in the same area. However, only a stratum of the population was chosen, the 15 to 24 year olds, after it was discovered that the youth adapt to technology earlier and would provide a good indication of the future trends. To ascertain this fact an unstructured pilot study was conducted to analyse the older generations' technology usage and knowledge. It was found that this generation uses mostly voice and SMS and their knowledge of other services was limited.

The questionnaire was structured except for the last two questions which were qualitative in nature. These inquired as to what the respondents liked the most and liked the least about their service providers, The structured questions covered a broad range of issues prevailing in the market including the ranking of services in order of importance, usage patterns of various services, sensitivity to pricing, the importance of usability, the value of features and the importance of customer care. The findings of the survey were statistically analysed and the results presented in charts and tables. Statistical analysis included, inferential statistics, calculating ranking order, comparing male

and female preferences and measuring the strength of relationships.

7.3 Conclusion on the problem statement

The premise of this research was that person-to-person messaging services such as email, MMS and instant messaging would compensate for the decline in revenue and retain customers. For instance a person having a mobile email address of a service provider would not want to switch service providers for fear of losing the address; or a person registered as an instant messaging user, would be discouraged to switch if that meant losing contact with the online friends. One of the reasons cited by the respondents for preferring Mxit over other brands, is that they know who they are chatting to on Mxit.

It can be concluded, based on the findings and analyses, that the results, with regard person-to-person messaging, were inconclusive. This is due to the fact that, of the budding P2P messaging services studied in this research, MMS, email and instant messaging were the only services that were very popular with the respondents, in both ranking order of importance and usage. Instant messaging is the most liked P2P messaging service, which could reach the mass market. However, the popular messaging service with respondents, Mxit, was preferred over the others because of its ease of use and pricing.

7.4 Recommendations based on findings

Based on the findings the following recommendations are made:

7.4.1 Ranking order and Usage

The highest ranked services, in terms of importance, are also the most used by the respondents and the lowest ranked are the least used. The concern with lowest ranked services is that, the majority of respondents had never used most of them before. It is possible that the significant percentage of respondents, who had never used services such as accessing the internet, accessing email and tracking, are not aware of their existence. The service provider should market these services more and promote them, in order to create awareness and increase usage. This solution could increase the usage of a useful service like accessing the internet from a cell phone, if end users are aware of it.

7.4.2 Pricing

As shown by the findings, pricing is important to the respondents. In addition, confusing pricing plans (or packages) was raised quite often, in the open ended questioning, as a source of unhappiness and had created distrust among the respondents.

To make customers more positive, service providers should simplify billing. This can be done by reducing the number of packages. Added to this, the current practice, where only new customers are given better deals with superior phones while existing customers are given inferior phones when they upgrade, is making customers unhappy. This practice resulted in respondents moving to competitors, and becoming new customers, so that they could qualify for good deals. To retain customers, existing customers should be given same deals as new customers.

7.4.3 Customer Care

Calls to the customer care call centres are likely to increase, as more new services are added to the existing ones. To minimise enquiries about new services, service providers should design products that are easy to use. As shown in the previous chapter, respondents who prefer services that are quick and easy to use, also prefer useful customer care. This means that respondents will call a call centre if they encounter difficulties with either setting up or using a service.

In addition, good training of customer care agents would assist in reducing the number of calls because a respondent would only need to call once, for the query to be resolved, and would not need to be transferred between different call centre agents. Knowledgeable customer care agents will also reduce waiting queues on the customer care line. The more resources that are allocated to customer care the better it would be for customer retention.

7.4.4 Ease of use

Ease of use is positively correlated with ‘pricing’ and ‘more features’. Respondents who prefer regular discounts, globally competitive prices and accurate billing, also want services that are easy to use. Furthermore, respondents who want a wide range of services and more features at a cheaper rate, would like those services to be easy to use as well. These positive correlations indicate the importance of ‘ease of use’ to the respondent because adding new features or offering a service at a cheap rate is only useful to respondents if it is easy for them to use. The starting point in designing easy to use services is reducing the number of clicks before a customer reaches value (a service) to three.

7.4.5 Instant Messaging

Instant messaging is still at the early stages of adaption and shows signs of becoming a mass market service. However, as indicated by the respondents in the group interviews, the most popular instant messaging was chosen among other reasons, for

ease of use. Therefore, ease of use is important for the success of any budding service, including instant messaging.

Service providers should get as many users as possible to register for their instant messaging service, in order to retain them. Besides retaining customers, having more registered customers would attract some of the online advertising revenue, since this service is an online service.

7.5 Recommendation for future research

7.5.1 Mobile Internet

Twenty percent of the respondents said they had never used mobile internet before and it ranked fifth in importance. This finding is a concern considering that the respondents are young people (15 to 24 years old) of school going age. Class assignments require the use of the internet. Put differently, visiting a library could be reduced considerably (or eliminated) if one had access to the internet. The twenty seven percent either still visit libraries or use internet cafés for school assignments, something not necessary considering that the quality of information on normal internet and the mobile internet is nearly the same.

Another factor regarding the internet is that South Africa has a very low fixed line internet penetration compared to mobile internet which is available on most mobile phones, thus making its penetration much higher. The youth are generally leading where trying new services is concerned and if twenty seven percent of them are unaware of such a valuable service then the situation would be worse for other age groups. More research and money should be invested in growing this good service.

7.5.2 Instant messaging (mobile blogging)

Instant messaging (also known as social networking) was the most fashionable service with the respondents. It is a new trend that could replace SMS (another P2P messaging service) among the respondents. Already there are behavioural changes that have come about as a result of this service. These include school work being done in the new instant messaging language, a deterioration of spelling in certain instances and chatting during lessons.

Instant messaging is going to become a mass market product, as is the case with voice and SMS. Of all the services that were included in this study, instant messaging received the most unsolicited responses from the respondents. More resources should therefore be invested in researching it further and making it more usable. On the surface it may seem that it would cannibalise SMS, but that may not be the case as the two services

work differently and could satisfy different needs. The one is real-time, more like “chatting” to another person; SMS, on the other hand, stores a message for the recipient to read when s/he is free. Research would assist the service providers to understand the impact of instant messaging on other services and its potential to generate advertising revenue.

7.6 Summary of the research

The study was inconclusive with regards the problem statement. However, after analysing information gathered throughout the research it could be concluded that customer care, easy to use services and network performance are extremely important to the respondents. In addition to this, instant messaging could grow, like SMS, to become another successful data service.

Unless their current needs, such as excellent customer care service, designing simple services and building stable networks are met, it would be difficult to sell them new products or services. An added benefit of satisfying the existing customers’ needs is that it would create trust in the company and its products and make future sales easier.

Future research is recommended for instant messaging and mobile internet services. The former service is very popular among the respondents, who are also early adopters of technology. It has a potential to become a mass market product, but more research could uncover ways of moving this service quickly to the mass market. For mobile internet, further research could identify reasons for such a low usage and awareness, in a country where penetration of fixed line internet is so low.

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Appendix 1

Questionnaire

For each question please mark the appropriate box with an X

(1) What is your gender?

1.1 Male	
1.2 Female	

(2) Have you changed a service provider in the last 24 months?

2.1) Yes	
2.2) No	
2.3 If yes, how many months were you with the previous service provider, before switching?	

(3) If yes to "(2.2)", what was the reason?

3.1 Competitor offered better prices on basic services (voice and SMS)	
3.2 Incorrect billing or confusing charging for services	
3.3 Poor customer service	
3.4 Competitor offered better price for handsets	
3.5 Better network coverage by competitor	
3.6 Competitor offered a phone with more features	
3.7 Other (Please provide details)	

(4) A list of common services offered by service providers are given below. Please rank them in order of their importance to you, with 1 being very important and 7 the least important service. For example, if you feel "Accessing Internet from a cell-phone" is the most important service put 1 in the column next to "Accessing Internet from a cell-phone". However if 1 is chosen for a service, then, no other service can be assigned the same ranking or number.

Service	**Rank Order**
4.1 Voice and SMS	
4.2 Picture messaging	
4.3 Instant messaging (e.g. Mxit)	
4.4 Download (e.g. ring-tones and music)	
4.5 Accessing Internet from a cell-phone	
4.6 Accessing email from a phone	
4.7 Tracking services (child tracking)	
4.8 Other (Please provide details)	

(5) Please indicate how often you use the services given below?

1. Daily
2. Weekly

3. Monthly
4. Yearly
5. Never

	1	2	3	4	5
5.1 Normal phone call (voice)					
5.2 SMS					
5.3 Tracking (friends)					
5.4 Downloads (e.g. ring-tones, music, screensavers, etc.)					
5.5 Accessing internet with cell-phone (mobile internet)					
5.6 Accessing email with cell-phone (mobile email)					
5.7 Others (Please provide detail)					

(6) Please read the statement below and indicate how much you agree or disagree with it?

1. Disagree strongly
2. Disagree slightly
3. Neither agree nor disagree
4. Agree slightly
5. Agree strongly

	1	2	3	4	5
6.1 I prefer to keep my cell number even when changing or switching service providers					
6.2 I prefer a simple cell phone, that does not have many features or functions but is cheap					
6.3 A good service provider offer more features at a cheaper rate or at a rate equal to competitors					
6.4 I prefer a service provider who offers discounts on a regular basis					
6.5 I use my phone mostly during off peak times (when call rates are less)					
6.6 Service providers should offer globally competitive pricing					
6.7 I chose my service provider because he offers a wider range of services					
6.8 The service providers billing statement is clear and understandable					
6.9 I chose my service provider because it offered a wide choice of handsets					
6.10 I prefer services that saves time and are quick and easy to use					

6.11 Ease of use is important when choosing a mobile service						
6.12 A helpful customer care agent is very important						

(7) What do you like the most about your service provider?

(8) What do you dislike the most about your service provider?

Appendix 2
Independent Sample Test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Normal phone call (voice)	Equal variances assumed	13.215	.001	-1.836	43	.073	-.40	.216	-.832	.039
	Equal variances not assumed			-1.417	16.337	.175	-.40	.280	-.989	.196
SMS	Equal variances assumed	.013	.911	.313	43	.756	.07	.214	-.364	.498
	Equal variances not assumed			.291	25.337	.773	.07	.229	-.405	.539
Instant Messaging	Equal variances assumed	10.097	.003	-2.189	43	.034	-.95	.433	-1.822	-.075
	Equal variances not assumed			-1.922	21.657	.068	-.95	.493	-1.972	.076
Tracking	Equal variances assumed	.834	.366	.283	43	.779	.12	.411	-.713	.946
	Equal variances not assumed			.266	25.994	.792	.12	.438	-.783	1.016
Downloads	Equal variances assumed	5.256	.027	-.295	43	.770	-.13	.424	-.980	.730
	Equal variances not assumed			-.266	23.255	.793	-.13	.470	-1.096	.846
Accessing internet	Equal variances assumed	.040	.842	-2.696	43	.010	-1.09	.404	-1.902	-.274
	Equal variances not assumed			-2.766	33.427	.009	-1.09	.393	-1.888	-.288
Accessing email	Equal variances assumed	4.158	.048	.850	43	.400	.38	.449	-.524	1.287
	Equal variances not assumed			.793	25.404	.435	.38	.481	-.609	1.372

Appendix 3
Correlation of Order of Importance and Usage

		Voice and SMS	Normal phone call (voice)	SMS	Instant Messaging	Tracking	Downloads	Accessing internet	Accessing email
Voice and SMS	Pearson Correlation	1	.313(*)	-.184	.121	.128	.287	.330(*)	.262
	Sig. (2-tailed)	.	.036	.225	.428	.404	.056	.027	.083
	N	45	45	45	45	45	45	45	45
Picture messaging	Pearson Correlation	.020	-.084	.160	-.107	-.005	-.064	-.067	1
	Sig. (2-tailed)	.896	.583	.293	.486	.972	.674	.661	.
	N	45	45	45	45	45	45	45	45
Instant messaging (e.g. Mxit)	Pearson Correlation	-.137	-.203	-.066	.125	.210	-.237	-.164	1
	Sig. (2-tailed)	.368	.180	.666	.413	.165	.117	.281	.
	N	45	45	45	45	45	45	45	45
Download (e.g. ring tones and music)	Pearson Correlation	.197	-.059	-.230	-.043	-.190	.028	.144	1
	Sig. (2-tailed)	.194	.699	.129	.779	.212	.853	.347	.
	N	45	45	45	45	45	45	45	45
Accessing internet from a cell phone	Pearson Correlation	-.338(*)	-.032	-.255	.168	-.032	-.216	-.235	1
	Sig. (2-tailed)	.023	.834	.091	.270	.832	.155	.120	.
	N	45	45	45	45	45	45	45	45
Accessing email from a cell phone	Pearson Correlation	-.187	.340(*)	.129	-.157	-.051	.068	-.045	1
	Sig. (2-tailed)	.218	.022	.397	.302	.740	.659	.768	.
	N	45	45	45	45	45	45	45	45
Tracking services	Pearson Correlation	-.127	.019	.091	-.011	-.083	-.095	.080	1
	Sig. (2-tailed)	.406	.902	.552	.944	.589	.534	.603	.
	N	45	45	45	45	45	45	45	45

Appendix 4

Correlation of (Q6) and (Q6)

		Q6.1	Q6.2	Q6.3	Q6.4	Q6.5	Q6.6	Q6.7	Q6.8	Q6.9	Q6.10	Q6.11	Q6.12
Q6.1 Prefer to keep cell number when changing service provider	Pearson Correlation	1	-.103	.189	.448(**)	-.072	.081	.266	-.075	-.010	.399(**)	-.187	.161
	Sig. (2-tailed)	.	.500	.213	.002	.640	.596	.077	.626	.948	.007	.219	.290
	N	45	45	45	45	45	45	45	45	45	45	45	45
Q6.2 Prefer a simple cell phone - not many features or functions but is cheap	Pearson Correlation		1	-.077	-.114	-.136	-.289	-.043	.059	-.169	-.032	-.107	.048
	Sig. (2-tailed)		.	.616	.458	.373	.054	.779	.702	.267	.832	.483	.752
	N		45	45	45	45	45	45	45	45	45	45	45
Q6.3 A good service provider offers more features at a cheaper/competitive rate	Pearson Correlation			1	.219	-.018	.136	.178	.097	-.033	.344(*)	.345(*)	.188
	Sig. (2-tailed)			.	.148	.906	.372	.241	.524	.830	.021	.020	.215
	N			45	45	45	45	45	45	45	45	45	45
Q6.4 Prefer a service provider who offers regular discounts	Pearson Correlation				1	.181	.168	.297(*)	.302(*)	.294	.727(**)	.417(**)	.137
	Sig. (2-tailed)				.	.235	.271	.048	.043	.050	.000	.004	.369
	N				45	45	45	45	45	45	45	45	45
Q6.5 I Use my cell phone mostly during off peak times	Pearson Correlation					1	.045	-.058	.435(**)	.066	.264	.202	.150
	Sig. (2-tailed)					.	.767	.705	.003	.669	.079	.183	.326
	N					45	45	45	45	45	45	45	45
Q6.6 Service providers should offer globally competitive pricing	Pearson Correlation						1	-.022	.056	.035	-.068	.396(**)	.093
	Sig. (2-tailed)						.	.886	.715	.818	.657	.007	.545
	N						45	45	45	45	45	45	45
Q6.7 I chose my service provider because of the wide range of services	Pearson Correlation							1	.202	.221	.314(*)	.209	.124
	Sig. (2-tailed)							.	.184	.145	.036	.168	.418

	N							45	45	45	45	45	45
Q6.8 The service providers billing statement is clear and understandable	Pearson Correlation								1	.309(*)	.313(*)	.175	-.032
	Sig. (2-tailed)								.	.039	.036	.250	.833
	N								45	45	45	45	45
Q6.9 I chose my service provider because of the wide choice of handsets	Pearson Correlation									1	.176	.142	-.205
	Sig. (2-tailed)									.	.247	.351	.177
	N									45	45	45	45
Q6.10 I prefer services that save time and are quick and easy to use	Pearson Correlation										1	.244	.308(*)
	Sig. (2-tailed)										.	.106	.040
	N										45	45	45
Q6.11 Ease of use is important when choosing a mobile service	Pearson Correlation											1	.178
	Sig. (2-tailed)											.	.241
	N											45	45
Q6.12 A helpful customer care agent is very important	Pearson Correlation												1
	Sig. (2-tailed)												.
	N												45