

The effect of commoditisation on value management strategies in the South African telecommunications sector

Research report submitted by

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ABSTRACT

The South African mobile telecommunications industry has been going through rapid transformation since its inception in 1994, which has been characterised by year-on-year decreases in voice revenues, increased penetration of smartphones and the adoption of over-the-top applications. This development, amongst other factors, has made it increasingly challenging for operators to continue to differentiate their products. In addition over-the-top providers are now able to offer most of the applications previously offered by the existing South African telecommunications mobile operators as value added services, which, according to industry leader opinions in the South African telecommunications industry, these over-the-top providers are better suited and positioned to develop solutions to meet customer needs. As a result of this, the main question is whether the operators still have the ability to innovate in this new reality or if they are simply going to be reduced to what some refer to as just a “dumb pipe,” a utility or commodity, like water and electricity.

The goal of this research paper is to assess the effects of commoditisation on value management strategies given the current regulatory requirements and technological disruptions in the form of over-the-top (“OTT”) providers.

In doing this, the researcher identified and recommended strategies for the South African mobile telecommunications operators to assist them with thriving in an industry moving towards commoditisation. The research explored the levels of commoditisation, the types of value management strategies, as well as the key buying factors for customers during their purchase decision journey when in search of mobile services, the impact of OTTs on the industry and finally, the impact of the South African regulators on the telecommunications sector.

The researcher conducted twelve in-depth interviews with various senior industry opinion leaders who had at least five years’ experience in the South African telecommunications industry in a senior management role either in marketing, networks, product development, or strategy and transformation. The interview data content was analysed to identify themes used in drawing recommendations on the

types of responses the South African mobile telecommunications operators should employ.

The key findings resulting from the research are that operators should focus on taking care of the hygiene factors which include network and service quality which are top of the customer's list when choosing between the different South African mobile telecommunications operators. Another key finding is that the mobile telecommunications operators should seek to partner with the over-the-top providers and monetise these partnerships through some form of revenue sharing agreements, using the power of analytics and big data to better segment customers and develop products and offers that speak to each one of their segments. Lastly but not least, the South African mobile telecommunications operators will need to start diversifying their product offering and product strategies and this can be done by leveraging the customer relationships that the South African mobile telecommunications operators are known to have.

DECLARATION

I, Lanyard Azael Myakayaka, declare that this research report is my work, except as indicated in the references and acknowledgements. The research report is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the University of the Witwatersrand, Johannesburg. This exact work has not been submitted before for any degree or examination in this or any other university to my knowledge.

.....

Lanyard Azael Myakayaka

Signed at

On the Day of2017

DEDICATION

I dedicate this to my wife, Mahashane Myakayaka, who has supported me in the past two years, thank you for filling in for me when our son was born, and for spending quality time with him when I could not, and to my son, Angulo Myakayaka, born during my completion of the Masters in Business Administration, thank you for being a true inspiration and drive for me to work hard. I am eternally grateful to both of you and thank you for all the sacrifices and on-going support that has led to me to complete my studies.

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Contents

CHAPTER 1. INTRODUCTION.....	1
1.1 Purpose of the study	1
1.2 Context of the study	1
1.3 Problem statement	3
1.3.1 Main problem.....	3
Sub-problems	4
1.4 Significance of the study	4
1.5 Delimitations of the Study	5
1.6 Definition of terms	5
1.7 Assumptions.....	6
CHAPTER 2. Literature review.....	7
2.1 Introduction	7
2.2 Commoditisation of telecommunications.....	7
2.3 Over-the-top providers	15
2.4 Regulation.....	19
2.5 Customer value management (CVM).....	25
2.6 Conclusion	28
CHAPTER 3. Research Methodology	30
3.1 Research Methodology	30
3.2 Research Design.....	31
3.3 Population and sample.....	31
3.3.1 Population.....	31
3.3.2 Sample and sampling method	31
3.4 Research Instrument.....	32
3.5 Procedure for data collection.....	32

3.6	Data analysis and interpretation.....	33
3.7	Limitations of the study	34
3.8	Validity and reliability.....	34
3.8.1	External Validity	35
3.8.2	Internal Validity	35
3.8.3	Reliability	36
CHAPTER 4.	Presentation of Results	37
4.1	Introduction	37
4.2	Profile of respondents	37
4.2.1	Background of Respondents	39
4.3	The Interview Process.....	44
4.3.1	Overview of Transcripts	44
4.4	Keywords	45
4.5	Coding.....	45
4.5.1	Initial Codes.....	45
4.5.2	Code Groupings	46
4.5.3	Themes of the study	47
4.6	Results about Proposition 1:	49
4.7	Results about Proposition 2	50
4.8	Results about Proposition 3:	55
4.9	Results about Proposition 4:	58
4.10	Summary of Chapter.....	61
4.10.1	Differentiation	62
4.10.2	Infrastructure provision.....	62
4.10.3	OTT	63
4.10.4	Partnering with OTTs,	64

4.10.5	Lack of strategy from the regulator	64
CHAPTER 5.	Discussion of Results.....	66
5.1	Profile of Respondents.....	66
5.2	Understanding of the level of commoditisation.....	67
5.3	The impact of over the top providers.....	69
5.4	The role of the regulator	71
5.5	Value management strategies.....	73
5.5.1	Innovative product differentiation and embracing OTTs	74
5.5.2	Creating layers of value around the commodity.....	76
CHAPTER 6.	Conclusion and Recommendations.....	78
6.1	Conclusion of the Study	78
6.2	Recommendations of the Study	80
6.3	Areas for further research	81
	References	82
	Appendix 1: Interview Guide	85

List of Figures

Figure 1: Strategic options for the business. Note: Width of arrow represents difference between offered and generic product the increased value to user	12
Figure 2: Factors leading to adoption of OTT	17
Figure 3: Distribution of Keywords.....	45
Figure 4: Network Map	48

List of Tables

Table 1: Regulatory Imbalances between Network Operators and Application Providers Baldry, Baldry, Steingröver, & Hessler, (2014).....	22
Table 2: Profile of respondents	39
Table 3 Overview of Transcripts.....	44
Table 4: Initial Codes.....	45
Table 5: Code Groupings	46
Table 6: Response to value management strategies .. Error! Bookmark not defined.	
Table 7: Responses on commoditisation.....	49
Table 8: Responses on over the top providers (OTTs).....	51
Table 9: Responses to regulation.....	56

List of Acronyms

CVM	Customer Value Management
CLV	Customer Lifetime Value
OTT	Over-the-Top Provider
IOT	Internet of Things
ARPU	Average Revenue Per User
UAE	United Arab Emirates
ICASA	Independent Communication Authority of South Africa
ICT	Information and Communication Technology
LTE	Long Term Evolution
2G	Second Generation network
3G	Third Generation network
QoS	Quality of Service
IP	Internet Protocol
VOIP	Voice Over Internet Protocol
ISP	Internet Service Provider
MNO	Mobile Network Operator
VAS	Value Added Services

CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

The goal of this research paper is to assess the effects of commoditisation on value management strategies given the current regulatory requirements and technological disruptions in the form of over-the-top ("OTT") providers.

In addition, the research has provided recommendations on some of the appropriate customer value management strategies to either combat commoditisation or successfully operate in a commoditised industry where brand alone can no longer differentiate between the different mobile telecommunications operators and the services they provide.

The assessment of commoditisation in telecommunications is as a result of two phenomena; firstly, the Department of Telecommunications and Postal Services' ("DTPS") mandate to create a vibrant Information and Communications Technology ("ICT") industry to ensure that South Africans get access to affordable and easily accessible ICT services. Secondly, in recent times, there has been an introduction of several disruptive technologies in the form of OTT providers such as WhatsApp, SKYPE, WeChat and many more.

1.2 Context of the study

According to a study conducted in 2013, which assessed internet access and use in 11 African countries, South Africa was rated to have the highest percentage of people older than 15 years, 87.0% increasing from 62.1% 2007, who owned a mobile phone or an active sim card (Gillwald, Stork, Calandro, & Gillwald, 2013). In South Africa, there have also been a number of mergers in the telecommunications industry between 2007 and 2014, which have been approved by the Competition Commission. There are however some mergers that are still under consideration; these include the acquisition of Neotel by Liquid telecommunications, as well as the roaming agreement between MTN and Telkom. According to the 2015 CCRED quarterly review, these types of transactions seem to be consistent with global trends towards consolidation

in the Telecoms industry. The consolidation is a result of a shift from voice to data, which has reduced revenues for mobile network operators (Kaziboni & Robb, 2015). These trends, among others, make South Africa one of the most exciting, dynamic and mature mobile telecommunications markets on the African continent.

Since 1994, the South African telecommunications market has grown into a multi-billion rand industry, and it has provided jobs to thousands of South Africans and brought connectivity to millions of people (Deloitte Digital SA | Strategy, 2013). The telecommunications landscape of South Africa has four dominant mobile telecommunications operators, namely:

- MTN,
- Vodacom,
- Cell C,
- Telkom Mobile

moreover, two fixed-line operators, Neotel and Telkom.

In the past 15 years, the telecommunications industry has been going through a rapid transformation, increased competition and regulations which have all resulted in downward pressure on the prices of the broadband and mobile voice services.

Tusa, Milind and Can state in one of their recent publications, that commoditisation is one of the most ignored challenges facing the global mobile communications industry (Tusa, Milind, & Can, 2014). Many operators are failing to work against the forces of commoditisation to elevate themselves above the competition (Tusa et al., 2014).

Olson and Sharma state that in today's environment, eroding profits and rapid commoditisation of products and services, as well as competitive pressures, are the norm (Olson & Sharma, 2008).

The study by Tusa, Milind and Can further suggests that commoditisation establishes itself differently in different industries. However, the common thread is that when commoditisation exists, branding aside, the consumer cannot fundamentally differentiate between products from different operators (Tusa et al., 2014).

Olson and Sharma provide a framework to assess the position of a company's product portfolio mix, evaluating the appropriateness of marketing and sales activities.

The study by Olson and Sharma supports the conclusions from Tusa et al. that, with commoditisation, the inability to differentiate between products is a standard issue for commodities dating back to traditional commodities, such as coal or barrels of crude oil. When commoditisation occurs and where product differentiation is important, such as in the telecommunications industry, challenges start to arise. Companies scramble and struggle to create value and competitive responses, usually cutting prices, which can reduce operating margins and value from the market (Tusa et al., 2014).

Prices of telecommunications services in South Africa have been decreasing rapidly in the past few years towards a more or less even level, forcing operators to retrench thousands of employees to remain competitive in this market; social media trends such as #Datamustfall aim to make it even more challenging for operators to create value. The competition has also led to the phenomenon of price wars which has been known to result in the commoditisation of telecommunications services in other markets. According to d'Aveni (2010), everything commoditises over time, and this phenomenon of commoditisation is brutal and rife in the 21st century. d'Aveni equates commoditisation to the black plague and further states that firms are suffering from commoditisation in one way, or another.

The United Arab Emirates ("UAE") tells the story of a five-year journey to commoditisation. In 2007, the incumbent, Etisalat, enjoyed a commanding market share lead against its sole challenger, "du", although with broadly similar prices. Since then, "du" has successfully eroded this advantage. Today, the two operators have equal market share still at similar rates (Tusa, 2014, p. 9).

For the purpose of this study, the South African mobile telecommunications industry informs this research paper.

1.3 Problem statement

1.3.1 Main problem

The main goal of this research paper is to identify appropriate value management strategies in the telecommunications sector in response to the forces of

commoditisation, to assess the level of commoditisation and how regulation and disruptive technologies influence it.

Sub-problems

The first sub-problem is to analyse and evaluate the level of commoditisation in the South African telecommunications market.

The second sub-problem is to assess the role of OTT providers in driving down mobile revenues and reducing the level of differentiation.

The third sub-problem is to investigate how operators can resist commoditisation through innovative product differentiation and Customer Value Management (“CVM”) strategies.

1.4 Significance of the study

Telecommunications operators across the world are facing a challenging future whereby they face disintermediation of their customer relationships. The disintermediation is caused by the customers becoming increasingly aware of where the best prices are from all different operators as well as commoditisation of their voice and data services. Despite these challenges, telecommunications operators are still required to invest heavily in new network technologies to meet the ever-increasing bandwidth demands as well as maintaining the quality of the services that they offer to consumers. Simultaneously, they face market dynamics and a wider range of new competitors such as competition from OTT providers (Ackerman, 2012), due to the introduction of OTT providers and the increasing pressure to drive down prices. This new paradigm provides challenges for telecommunications operators to change their current operating models and to resist becoming commoditised. Research indicates that more than half of mobile telecommunications markets worldwide are either commoditised or in imminent danger of becoming so (Tusa et al., 2014).

While the concept of commoditisation of telecommunications services seems considerably relevant within the telecommunications industry in South Africa, many

academic publications evaluate commoditisation within different markets and provide frameworks on how industry leaders can assess commoditisation, however, very few focus on the telecommunications sector. The commoditisation of the telecommunications sector however, deserves a more focused treatment. Therefore, the current situation in the commoditisation of telecommunications industry motivated this research with the hope of filling the gap.

This study hopes to guide telecommunications providers on how to resist the pull of commoditisation using CVM strategies and innovative product differentiation. It will also provide a guideline on how they can use OTT providers to drive customer value.

1.5 Delimitations of the Study

The study analysed the South African telecommunications industry focusing on mobile telecommunications operators. The research approach was qualitative.

The qualitative approach meant conducting interviews with senior industry experts. A technique of triangulation was then used to analyse the different interview responses to ensure validity and reliability of the information gathered from the interviewees.

1.6 Definition of terms

- **Commoditisation:** Reimann, Schilke, and Thomas (2010) define commoditisation as a process that occurs when competitors in comparatively stable industries offer increasingly similar products to price-sensitive consumers who incur relatively small costs in changing suppliers.
- **Over-The-Top (OTT):** Bertin, Crespi, and L'Hostis (2011) and Ross and Erasmus (2013) define OTT providers as any service provider who can offer telecommunications services, but neither owns, operates nor leases a telecommunications network. These service providers rely on the global internet, and fast network access speeds to access the user, hence going “over-the-top” of the standard service provider offering.

- **Customer Value Management (CVM):** In this study, CVM refers to a process that refines and leverages the benefits of customer relationship management. It encompasses customer identification, contact management, campaign management, advanced data modelling and customer scoring (Verhoef, Van Doorn, & Dorotic, 2007).

1.7 Assumptions

- Participants answered the interview questions in an honest and candid manner.
- Participants had a genuine interest in taking part in the research and did not have any other motives.
- An interview of between one hour to a one hour and a half was sufficient to generate valid responses.
- The researcher's experience in the telecommunications industry did not result in any bias towards an outcome.

CHAPTER 2. Literature review

2.1 Introduction

This research explores specific literature relevant to commoditisation of telecommunications services and in particular the role of CVM strategies, and OTT providers in markets moving towards commoditisation. The literature review addresses the main problem as well as the sub-problems of the research that have been raised in the opening chapter and steers the analysis in the correct direction.

Academic research on CVM is readily available, however research on the commoditisation of telecommunications and the impact of over-the-top providers particularly relating to South Africa is very limited, and often found in the area of 'Grey Literature' Grey literature refers to information sources which do not form part of academic research; this includes news articles, company reports, policy reports, government papers and working papers (McAuley, Tugwell, & Moher, 2000).

This literature review forms the groundwork for this research and attempts to fill a gap in the literature on CVM strategies for an increasingly commoditised telecommunications market.

2.2 Commoditisation of telecommunications

Commoditisation is often seen as a characteristic of mature marketplaces when the product offered is undifferentiated in the minds of consumers (Turner, 2009). Commoditisation usually refers to products; however evidence from the airline industry shows that services can also be commoditised (Rothkopf & Wald, 2011). This description of commoditisation from Rothkopf and Wald (2011) and Turner (2009) is further supported by d'Aveni (2010), who further states that even differentiation is not enough as eventually all organisations in an industry or sector, such as

telecommunications, will ultimately offer exactly the same product. d'Aveni (2010) introduces the concept of commodity traps and that firms need to be in constant lookout for these traps in order to remain differentiated.

Kushida (2015), on the other hand, brings in the element of product pricing and competition and maintains that commoditisation is driven by competition in the form of price wars, where prices are lowered and start eroding the profitability of the products offered. Also, commoditisation does not necessarily mean an immediate drop in revenues or financial performance; for example, demand for services provided at the same rate could increase as a result of more customers being able to afford these services, or regulations could limit the competition in certain markets even though the product or service is undifferentiated.

Brun, Riot, Chamaret, and Rigaud (2013) agree with d'Aveni (2010) in that commoditisation can affect all types of industries including luxury goods industries, industries where differentiation is key as customers are asked to pay a premium for the brand. Brun, Riot, Chamaret, and Rigaud (2013) believe that artists and designers in the luxury fashion market are facing a commodity trap, however they can survive the trap by continuously transforming these commodities via a unique experience using an integrated strategy throughout the value chain. The idea of commoditisation happening in the luxury goods industry differs from the views of Kushida (2015) in that luxury goods by their nature will not compete on price where prices can be lowered to a more or less even level, as these goods, by their nature, can command a premium in price for them to be classified as luxury goods.

Reimann et al. (2010) developed a multidimensional scale; the dimensions include product homogeneity, price sensitivity, switching costs and industry stability, all as elements in the scale for assessing industry commoditisation. The multidimensional scale developed by Reimann et al. (2010) factors in all the different views from earlier literature outlined above. Product homogeneity would be similar to product differentiation in that particular industry, Price sensitivity will incorporate Kushida (2015)'s assumption that in an increasingly commoditised industry there will be price wars to win customers, but this may not necessarily hold for luxury goods, switching costs will determine how easy it is for customers to switch between different

competitors and finally, the industry stability assesses the maturity of the industry which ties in with Turner (2009) and d'Aveni (2010)'s claim that as industries mature they eventually become commoditised.

Le Goff and Rojas consider commoditisation in the telecommunications industry as a phenomenon when a product reaches its maturity and is no longer used as the main feature by the operator, resulting in operators starting to offer unlimited consumption of the product at a flat rate (Le Goff & Rojas, 2014). These products remain present in the operator's product catalogues, however it can no longer be differentiated from the products produced by other players.

The Le Goff and Rojas research document titled *“Is the French case illustrating that operators and regulatory strategies force telecom service providers to become a commodity”* concludes by stating the following:

- Both fixed and mobile commoditisation seems to be the result of operators' commercial plans (Le Goff & Rojas, 2014).
- Mobile voice commoditisation is due to plans by new entrants to gain clients in an already mature market (Le Goff & Rojas, 2014).
- Consumers have been the primary winners in the French telecommunications market as a result of commoditisation, as they are now paying lower or equal prices for a continuously improving service (Le Goff & Rojas, 2014).

Le Goff & Rojas, (2014)'s research looks at commoditisation with a particular focus on the telecommunications industry, it factors in some of the dimensions or variables already identified by earlier researchers in other industries such as price, differentiation, and maturity of products in the industry. Other researchers believe that there is a missing dimension which is the dimension of industry regulation, stating that commoditisation in matured markets is the end product of the evolution or emergence of regulation, technology, and applications in the telecommunications industry (Esseloar, Gillwald, & Stork, 2006).

If we narrow down the telecommunications industry with a particular focus on the South African telecommunications industry we then realise that according to Esseloar, Gillwald, and Stork, (2006) it has long been protected by regulation, however in the

past decade, there has been some trends towards increased liberalisation associated with declining government involvement in the telecom sector (Esseloar, Gillwald, & Stork, 2006).

According to Fransman, transportation of units of information ("Bit") whether voice, data, images or videos is becoming an undifferentiated business (Fransman, 1997). The service offered by one operator to transport one bit will essentially be similar to the service provided by another operator to carry another bit.

The main result or consequence of this commoditisation will be a reduction of profit margins on bit transportation (Fransman, 1997). With the absence of differentiation on bit transport reliability, security and error rates of the different service providers will continue to be the differentiator from which competition amongst operators will revolve (Fransman, 1997).

The growing pressure on operators' profit margins brought about by the commoditisation poses several possible responses by telecommunications providers. In addressing the issue of commoditisation, Fransman made several points:

The first point is that, to the extent that the demand for their services is price elastic, falling prices. As a result, increasing competition will lead to an increase in total revenue as a result of the growing subscriber base of the operator as more customers will be able to afford the services (Fransman, 1997).

The second point, there will be new demand for bit transportation. Notably, the demand emanating from the Internet and increasing content available from the Internet will further increase operator revenues (Fransman, 1997).

The third point is that in reaction to the commoditisation of bit transport the major operators, such as AT&T and BT, have developed two closely related strategic responses (Fransman, 1997).

The two strategic responses can be summarised as aiming to increase or diversify the services offered by the operators to the customer in the effort to be seen as a one stop shop for all customer communication requirements (Fransman, 1997).

The idea of operators differentiating themselves through value-added services was a great strategy before what Kushida refers to as the smartphone revolution. The introduction of the smartphone, mainly driven by Apple and Google, reduced the offering of mobile telecommunications operators to just providing voice or data, reducing the levels of differentiation and hence increasing the levels of commoditisation (Kushida, 2015).

The mobile telecommunications operators value added services lost value as customers were faced with a wealth of apps from smartphones that provide better functionality, regardless of the carrier, and consequently, the majority of players stopped providing value added services (Kushida, 2015).

The study done by Tusa et al. aiming to quantify and better understand the levels of commoditisation within a mobile industry, developed a score to understand the levels of commoditisation by country and by regions. To produce the score, they compared two independent variables at the national level; this was market share and average revenue per user (ARPU) (Tusa et al., 2014). Some of their findings from the study include the following:

- A substantial difference of at least 25% of market share between the biggest and smallest operators is an indication of low levels of commoditisation Tusa et al., (2014)
- A significant difference between the ARPUs of at least 25% between the biggest and smallest operator also indicated low levels of commoditisation Tusa et al., (2014).

The study classified mobile markets into four categories: “Commoditised”, “On the Edge”, “Differentiated” and “Comfortable”. The study, done across 122 countries, concluded that over 52% of the countries were either commoditised or on the edge of becoming commoditised. Some of the key findings of the study by Tusa were:

- In countries where the telecommunications industry has commoditised, the difference in market share between the highest and lowest players is less than 25% and less than 25% difference in ARPU (Tusa et al., 2014).

- Countries on the edge have more than 50% differences in market share and ARPU between the higher and the lowest operators; they have some levels of differentiation. However, they are feeling the pull of commoditisation (Tusa et al., 2014).
- Countries with a differentiated mobile market have large spreads in the ARPU. However the market shares are less than 25%, and these operators are free from commoditisation (Tusa et al., 2014).
- Comfortable mobile markets have market shares and ARPU spreads greater than 50%; they are safe from commoditisation unless there is a new entrant in the market or a competitor comes with a highly aggressive pricing strategy (Tusa et al., 2014).

South Africa was one of the countries that were scored as comfortable, according to the study (Tusa et al., 2014).

Turner uses a basic 2x2 matrix which is built on two critical contingencies to assess the levels of commoditisation in a market: firstly, the relative sensitivity of customers to quality/price and lastly, the capability/desire of the operator to differentiate the offered product through by customising the product.

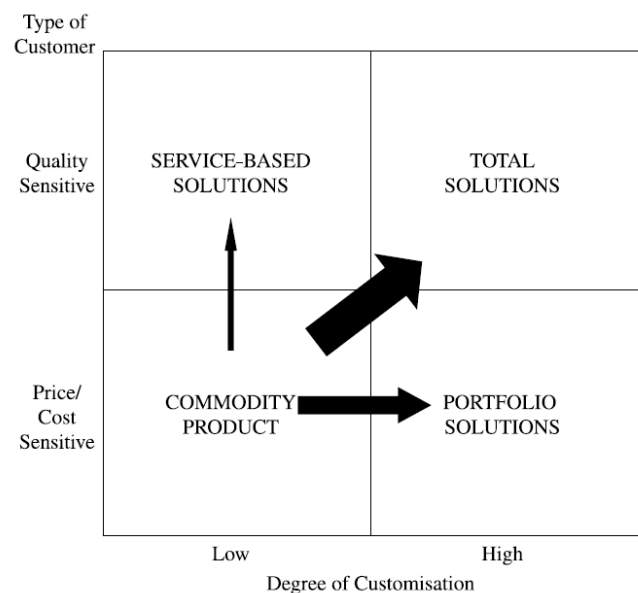


Figure 1: Strategic options for the business. Note: Width of arrow represents difference between offered and generic product the increased value to user

The strategic framework from Turner used a multi-case study research method; which is a qualitative approach. Turner justifies the use of this technique in that “given the market structure, and an absence of measurable criteria, statistical analysis based on extensive survey work would be unfeasible” (Turner, 2009, p. 2).

Rothkopf and Wald, (2011) in their study to assess innovation in commoditised services focusing on the passenger airline industry used a qualitative approach to the study; they selected a sample of 30 airlines using a theoretical sampling method. They studied each of the airlines by collecting data from publicly available material such as annual reports, industry publications, newspaper articles, analyst reports, as well as from a detailed review of respective airline websites. Using this approach, they were able to do a thorough within-case analysis, followed by cross-case analysis to detect any differences and patterns.

Rothkopf and Wolf provide the following five characteristics of a commoditised service, based on their analysis of the airline industry:

1. “Established providers and brands lose market shares as new entrants repeatedly compete in price and gain market shares. As a consequence margins, tumble and profits decline” (Rothkopf & Wald, 2011, p. 3).
2. “Wide availability of a service driven by high demand and the ease of market entry” (Rothkopf & Wald, 2011, p. 3)
3. “Cut-throat competition and a high price-elasticity” (Rothkopf & Wald, 2011, p. 3)
4. “Undifferentiated and interchangeable offers. Customers frequently focus on core service specifications and are not willing to pay for additional service attributes” (Rothkopf & Wald, 2011, p. 3)
5. “Reduced pricing power of service firms through increased transparency” (Rothkopf & Wald, 2011, p. 3)

d’Aveni, (2010) studied companies in over thirty industries and, through this process, was able to create a framework for identifying what she calls a commodity trap framework. The main purpose of her commodity trap framework is to assist

organisations in understanding the competitive processes that lead markets to commoditise over time. The commodity traps were categorised into the following three categories:

- Deterioration Trap; mainly characterised by decreasing prices and the benefits to the customer occurs when there is a dominant low-end competitor, the low end firm is able to offer a value proposition that is so superior in the eyes of customers that others are left behind (d'Aveni, 2010).
- Proliferation trap, mainly characterised by prices going up or down for the customers, this is mainly driven by multiple threats such substitutes, imitators, new product innovations and market fragmentation (d'Aveni, 2010).
- Escalation Trap, a situation where the product features and quality are constantly being improved while the prices are going down. Mostly evident in consumer electronic markets and customers are the biggest beneficiaries of this trap (d'Aveni, 2010).

When looking at the research of commoditisation of services or products, one of the common threads across the multiple industries is the role of deregulation and industry liberalisation in speeding up the rate of commoditisation, according to an article by Thierer, (2006).

The literature on commoditisation starts by defining its common characteristics which include the low levels or lack of differentiation in commoditised industries. Rothkopf and Wald, (2011) and Turner (2009) mention how price and industry maturity can play a role in commoditisation of industries; there are sharp contrasts when commoditisation occurs in industries such as those of luxury goods where price is not necessarily a factor, contradicting the views of Kushida (2015). When one looks at commoditisation across industries, we can conclude that it manifests itself differently from one industry to the next.

The telecommunications industry is also not immune to commoditisation ,according to Fransman (1997), Esseloar, Gillwald, and Stork (2006), Le Goff and Rojas (2014), Tusa et al. (2014); all these authors agree that commoditisation does happen in telecommunications markets, often characterised by technological advancements, Industry regulation or in this case, deregulation, increased competition and how differentiation can be used to avoid these commodity traps.

The South African telecommunications industry is one of the most matured telecommunications industries on the African continent, characterised by high market penetration, price wars, industry deregulation and a push to reduce the digital divide by connecting the majority of the population. These are characteristics of an industry that is being commoditised, according other researchers cited in this research and the researcher can deduce the following proposition from analysing the literature on commoditisation.

Proposition 1: South African telecommunications market is becoming commoditised.

2.3 Over-the-top providers

More than 20 years ago, Isenberg had already written an article stating that the mobile telecommunications model was already disrupted or broken by the internet by passing control to the end user. The disruption is one of the early indications that the technological innovations can drive telecommunications industries towards being commoditised. Isenberg indicated that the mobile communications model takes the underlying network details out of the picture completely for end users and this phenomenon would be driven by intelligent end-user devices (Isenberg, 1997).

There are varying definitions on OTT providers. Some define it as a buzz expression for any services provided over the network, without any carrier or service provider involved in planning, selling, provisioning, and without the operator receiving revenue directly from the OTT provider. These OTT providers are seen to provide significant value to the customers (Green, Lancaster, and Sladek, 2006). This broad definition also includes:

- Any downloaded application using point-to-point services and the user's computer to deliver IP services;
- Any RSS feeds; and
- Hosted applications, meant to keep users inside a portal environment.

Green, Lancaster and Sladek further state that it is becoming evident that the network operator will not own the customer, shortly OTT providers will spark the fall of the

primary service provider business models. Soon these players will be asking themselves If the client is not ours, why spend so much ensuring customer satisfaction? Why deploy call centres? If operators cannot bill for the service, why should operators care about how a service performs? Moreover, what will we do with this massively expensive revenue assurance platform? (Green et al., 2006).

Le Goff and Rojas (2014) explain the phenomenon from how in the early 2000s, GSM customers purchased the ability to talk and send messages (“SMS”), how 3G customers gained access to data content such as email and WAP, and how current 3G+ and LTE customers are provided with access to OTTs and how each wave of new features gives rise to the disappearance of older features.

It is said that OTT firms offer services of value to the customer and their services are provided without any direct involvement from the network operator. Further, that OTT services are usually provided by unaffiliated third parties using the network operator’s facilities to access customers. Finally, that OTT services reduce the network operators’ connectivity services to a mere commodity (Jayakar & Park,2014).

Operators around the world have challenged the provision of OTT services, for example, in China there were rumours in the online community that China Mobile and other two telecommunications service providers were meeting with the Ministry of Industry and Information Technology to work out a way to charge for Tencent’s WeChat services (Wu & Wan, 2014). An article by Sujata et al. (2015) lists the following factors as presented by Figure 2 as the main factors influencing the adoption of OTTs.

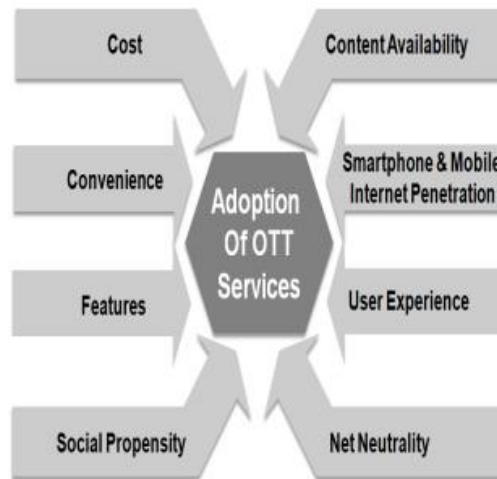


Figure 2: Factors leading to adoption of OTT

In South Korea, the increase in usage of mobile voice over internet protocol (“mVoIP”) raised serious concerns for mobile telecommunications operators about the sustainability of the industry in which they operate since there was limited regulation. There were unceasing disputes over the blocking of mVoIP services after the launch of Voice Talk of Kakao (Jayakar & Park, 2014). The Korean telecommunications regulator, the Korea Communication Commission, announced “*Net Neutrality and Internet Traffic management guidelines*” with the purpose of fostering good internet usage as well as creating a sustainable ICT ecosystem. The instructions included:

- The need for transparency in the telecommunications industry and the need for network operators responsible for disclosing traffic management objectives;
- A requirement prohibiting network operators from blocking any lawful content, applications or services, including OTT services provided on the network;
- No unreasonable discrimination, prohibiting discrimination between any legitimate content; and
- Reasonable traffic management, allowing operators to adopt traffic management practices for security and stability

(Jayakar & Park, 2014).

In South Africa, the big mobile telecommunications operators felt threatened by the unregulated OTT service providers and saw OTT services as a threat to their traditional voice and SMS revenue streams. According to a news article published in

January 2016, MTN and Vodacom took to parliament to discuss possible regulation of OTT services such as WhatsApp and Skype (Zyl, 2016).

According to a report by Accenture on the future of communications service providers published in 2015, one of the broader threats for mobile telecommunications operators is the disintermediation of the entire relationship between the operator and the customer (Berjee, Loozen, Fanno, & Sakena, 2015). The possibility of embedded or soft Sims giving the end user the ability to move between the different operators can pose serious threats to the network operator.

Sujata et al. (2015) propose some recommendations to assist the network operators on how they deal with these OTTs;

- Blocking OTTs as a short-term strategy; this will be heavily dependent on the operators' country of operations stance on net neutrality.
- Bundling with OTT; the bundling of service is one of the strategies that can be followed by operators which can maximise their revenues while at the same time reducing the threat from OTTs
- Partnering with OTTs; many operators are already partnering with OTTs as a strategy for the operators to benefit from the traffic that these services create on their network. These strategies have proven to enable operators to keep the traffic and increase their share of the revenues.
- Developing their own OTTs; operators can develop their own OTTs as one of their long-term strategies which can allow them to gain full control of the OTT services. This will allow the operator to continue owning the consumer relationship. The challenge with this approach is the high amount of investment which will be required by the operator and the challenge that they will still need to compete with other OTT providers for which creating OTT application is the core of their business.

Sawe (2016), who analysed the impact of OTTs amongst Kenyan operators, agrees, also suggesting similar recommendations as those proposed by Sujata et al. The one additional recommendation for operators' revenue sustenance is the introduction of new business models which can see a lot of Kenyan operators

moving from a product based business to more of a platform based business; the telecommunication companies are in a good position to provide platforms due to their extensive network distribution.

Proposition 2: Over-the-top service providers are reducing the levels of differentiation between mobile service providers

2.4 Regulation

To research further into the evolution of mobile telecommunications services industry in developing countries such as South Africa, one needs to pay close attention to the role of regulations and how it has helped and continues to shape the global telecommunications industry.

Regulation started around the 20th century as a political institution to address new, systematic economic and social problems; it is the symbol of the modern interventionist state. It forms part and parcel of national development by private enterprises and is guided by the state (Horwitz, 1991).

Empirical studies show that telecommunications companies were organised in very similar structures across countries with highly regulated monopolies. These monopolies were providing essential services through quite similar structures in markets where there was a significant drive for deregulation to drive down costs through competition. This phenomenon benefited consumers in other markets such as the UK through price reductions and has negatively impacted small players and employees in Germany and America respectively (Batt & Darbshire, 1997).

South Africa led telecommunications reform in the African continent in the mid-1990s by introducing competition from mobile players to the fixed line incumbent Telkom. This was followed by further liberalisation of the fixed line market which led to Neotel

entering the market (Gillwald, Moyo, & Stork, 2012). One of the South African telecommunication policy key objectives is to provide cost-competitiveness and universal access, and this goal has led to the following principal activities, as a result of regulatory reform in the industry (Hodge, Lipschitz, Sheik, & Aproskie, 2008):

- “Government initiated the move toward privatisation by selling a 30% state in Telkom. Critically, management control also passed to the new shareholders” (Hodge et al., 2008, p. 41).
- Telkom was given a 5-year period of exclusivity. Value Added Network Service was permitted to offer data services, but they could not offer or self-provide infrastructure, provide voice services or resell space capacity (Hodge et al., 2008, p. 41).
- After the minister/regulator elected to grant one new mobile licence, Cell C was launched as a new mobile telecommunications operators in November 2001 (Hodge et al., 2008)
- Local loop unbundling, removing the need for entrants to roll out at the local loop level, which significantly decreases the investment burdens for operators (Hodge et al., 2008)
- The continued reduction of mobile termination rates.
- ICASA’s recent ruling against MTN and Vodacom favouring over the top providers.

The South African Government believes that affordability and access are driven by increasing competition and price regulation. Further, that affordable communication for all, citizens and businesses alike, throughout South Africa is at the core of its vision and the goal of its policy (Hodge et al., 2008). Horwitz states in a book titled *“The Irony of Regulation Reform”* that the changes in the America's telecommunications industry have emerged as much from the changes in their regulatory treatment, as they have from technological innovations. He further states that technological innovation is not an independent force, but is driven by entrepreneurial opportunities, political discourse and regulatory constraints (Horwitz, 1991).

The ICT white paper on the South African telecommunications services published by the Department of Telecommunications and Postal Services, mentions how regulatory intervention should, wherever possible, be based on open access principles in order to ensure maximised and efficient use of the infrastructure and services, by encouraging sharing of infrastructure, spectrum re-farming and efficient, fair interconnection while maintaining a right balance in the returns on investments (Cwele, 2016).

The ICT white paper also introduced net neutrality, which prevents Internet intermediaries, in this case, being the mobile telecommunications operators from discriminating against any legal and lawful traffic regardless of the sender or the receiver, content, device, service or application (Cwele, 2016). This includes content and over-the-top applications transmitted through the network.

According to Nguyen (2016), there is currently a regulatory imbalance between OTTs and mobile telecommunications operators with regulators regulating the mobile telecommunications operators more than they do OTTs, even though they are starting to provide more or less similar services over the network. Some of these imbalances are described in Table 1.

Table 1: Regulatory Imbalances between Network Operators and Application Providers Baldry, Baldry, Steingröver, & Hessler, (2014, p. 7)

Areas of Regulation	Mobile Telecommunications Operators	OTTs
Licencing	Yes, individual licences – sometimes still technology-specific, but often subject to reform. As operators are generally defined as having significant market power (SMP), The need for licensing is expected to persist.	No
Interconnection	Yes, due to general definition of operators as having SMP Requirement to interconnect produces costs	No
Provision of legal intercept	Required as a licence condition.	Required in some cases. Legislation introduced or being developed in nearly all countries.
Access to emergency services	Required as a licence condition for basic service offers (PATs).	Required in some cases. Peer-to-Peer providers generally exempted.
Quality of Service (QoS)	Yes. Licences include requirements for SLA's	No. The internet technology makes contractually determined QoS difficult. QoS (specifically speed) problems generally blamed on the network operator, not service provider

Net Neutrality	Assumes “best effort” transport of data without discrimination, independent of source or nature of data. Concept not applied in the Middle East and North Africa and being reviewed at present in other regions (e.g. EU)	No Obligations. Their control over the content and freedom of choice concerning customers releases them from restrictions
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According to Baldry et al. (2014), in certain markets such as France and Spain regulators have blocked OTT providers offering voice services connecting to PSTN, because these OTTs are now behaving like a mobile network operator, and as a result, they should be subjected to the same regulations as the telecommunications operators; an example would be offering emergency services, licencing and provision of legal intercepts.

In South Africa, the regulatory environment has significant power in driving the industry into just becoming a mere utility or commodity; this will be in line with its goal for providing universal access. Hodge, Lipschitz, Sheik, and Aproskie (2008) and Gillwald, Moyo, and Stork (2012) agree that the South African telecommunications industry is becoming less regulated, all in an effort to increase competition and make telecommunication services more accessible to its citizens.

Other authors, such as Nguyen (2016), believe that the OTT market needs to be regulated while on the other hand, Cwele (2016) believes that we should not regulate internet traffic, introducing the concept of net neutrality on the last ICT white paper published in 2016.

All these developments in the telecommunications environment of embracing OTTs, open access or network sharing, and universal access make it possible for the industry to be transformed into just a utility, similar to electricity and water, while on the other hand, the regulator still enforces service level agreement on quality of service from the mobile operators. This literature on the regulation then leads us to our third proposition that government regulation is also driving commoditisation in the telecommunications Industry

Proposition 3: Government regulation is driving commoditisation in its effort to provide universal access to telecommunication services.

2.5 Customer value management (CVM)

Sections 2.2 to 2.4 of the literature review looked at commoditisation, how it can be influenced by technological innovations such as OTTs and how the OTTs can lead to disintermediation of the customer relationship, and then we touched on the role of the regulator in the commoditisation of the telecommunications industry.

This section of the literature explores how this commoditisation affects CVM strategies by first looking at the broad definition of CVM and how it is affected by commoditisation.

In the past few decades, organisations have paid increasing attention to CVM. This trend is driven by the increasing availability of individual customer data stored in big customer databases.

According to Verhoef et al., customer value management entails the optimisation of the value of a company's customer base, and it means focusing on analysing individual data on prospects and clients (Verhoef et al., 2007). The resulting information is used to optimise customer acquisitions and retentions, as well as driving customer behaviour by developing appropriate marketing strategies in such a way that the value of current and future customers is optimised (Verhoef et al., 2007). This view of looking at CVM is inward focused in its definition of value and is mainly premised on the concept of Customer Lifetime Value ("CLV") which is the driving metric to this approach. CLV is the discounted value of all expected future customer profits in a given period (Verhoef et al., 2007). This view of CVM aims to maximise value for the organisation. It looks at the concept of CVM from the perspective of the organisation and focuses on the most valuable or profitable customer for the organisation.

Some define CVM as the net present value, mainly premised on the idea of customer lifetime value; this is according to Stirling (2000). To understand the concept, it is thus important to first understand the concept of CLV which is a key metric in this definition of CVM. To find the CLV or economic worth of a client, one needs to project the net cash flows that the firm expects from the customer over time, and then calculate the net present value of these cash flows (Berger & Nasr, 1998). This approach to CVM mostly stems from the belief by many organisations that a company does not have to

pursue and satisfy every customer, but should rather focus resources and efforts on clients who yield the highest lifetime value.

Stirling defines CVM as an integrated approach to managing the customer relationship by demonstrating the value provided by that customer, by embracing a multidimensional approach to decision making (Stirling, 2000). This multifaceted approach is achieved by selecting an actual risk and reward balance with a real measure of the expected value of the applicant.

Stirling (2000) and Verhoef et al. (2007)'s views on CVM are similar, mainly because of the fact that they are both inward looking and define value as the value that a customer brings to the organisation.

Daniels (2000)'s concept of value differs from that of Stirling,(2000) and Verhoef et al.,(2007). According to Daniels (2000), CVM is a combination of all the actions taken by the organisation to maximise the value or the perceived value for the customers. Daniels further states that CVM is an enhanced customer satisfaction measurement, improved by including price and value factors (Daniels, 2000). Daniels also indicates that the next enhancement to CVM measures not just the value perceptions of the customers, but those of the competitor's customers as well, in order to have a comparative value assessment across the market. This approach to looking at CVM helps organisations answer three important questions:

- “What are the key buying factors that customers value when they choose between our toughest competitors and us?” (Daniels, 2000, p. 68)
- “How do customers rate our performance against competitors on each of the key buying factors?” (Daniels, 2000, p. 68).
- “What is the relative importance of each of these components of customer value?” (Daniels, 2000, p. 68).

These fundamental questions can assist an organisation with staying competitive by helping them to focus their attention on activities that enhance or maximise individual customer value. Organisation need to have answers to these questions in order to remain differentiated and avoid their products and services from being commoditised.

To understand the concept of customer value, Woodruff (1997) believes that it is important first to understand what the concept of value means for organisations wishing to make customer value strategies work. Woodruff (1997) felt that, despite the many definitions that exist to define what customer value is, some definitions provide an unclear sense of what customer value means. After looking at several definitions, Woodruff (1997) then analysed some commonalities of each of the definitions of customer value for instance. These are:

"Customer value is inherent in (or linked to) the use of some product. This characteristic distinguishes customer value from personal or organisational values, those centrally held and enduring beliefs about right and wrong, good and bad that cut across situations and products or service." (Wang, Po Lo, Chi, & Yang, 2004, p. 172).

Also, customer value is something perceived by customers rather than objectively determined by a seller; these perceptions typically involve a trade-off between what customers receive (e.g. quality, benefits, worth, utilities) and what customers give up to acquire and use a product (e.g. price, sacrifices) (Wang et al., 2004).

These definitions of customer value see it from the perspective of the customer as the value that the customer gains while using or consuming the products or services from the organisation, it differs from the initial view of Stirling (2000) and Verhoef et al. (2007) and supports the views of Daniels (2000). on customer value

Matthyssens (2008) believes that with increasing competitive pressures service, differentiation will be the main differentiator in commoditised product markets, in these types of markets, companies move from basic products to more service based products. Basic products in the context of this research would be products such as voice and data while on the other hand service based products will be the service on top of the basic products with a higher perceived value by the consumer.

Matthyssens (2008) also proposes three main propositions that lead to product differentiation; these are

- Product leadership; This form of differentiation is based on superior product qualities and product innovation, organisations need to keep innovating their product offering in order to continue providing value to customers (Matthyssens, 2008).

- Customer linking; this is differentiation based on offering superior service to customers, service innovation and creating a better customer experience compared to competitors (Matthyssens, 2008).
- Cost leadership; operational excellence and transferring the value gained from operational excellence to consumers by offering the best pricing for products and services compared to the competitors (Matthyssens, 2008).

Peres (2010) concludes his research supporting two of the three value management strategies suggested by Matthyssens (2008), stating that operational excellence and product leadership are key levers to pull for companies' performance in a commoditised industry or environment.

Peres (2010) also states that commoditised markets mature, and customer preferences are clear; this can ultimately make customer linking or customer intimacy one of the most important drivers to combating commoditisation for companies that understand and meet the needs of the customers.

Proposition 4: Customer value management strategies can have a positive impact in countering the effects of commoditisation.

2.6 Conclusion

It is becoming clear that the mobile network operator will find it increasingly difficult to increase the value of the customer using traditional campaign management techniques and methodologies. The operator will soon not own the client and will be perceived as just an access provider (Green et al., 2006).

It is, therefore, important to gain more insights into factors that impact customer value management strategies in the telecommunications industry, and whether the current techniques are still useful in an environment that is increasingly becoming difficult to differentiate between mobile service providers. The following propositions are investigated.

Proposition 1: South African telecommunications market is becoming commoditised.

Proposition 2: Over-the-top service providers are reducing the levels of differentiation between mobile service providers.

Proposition 3: Government regulation is driving the levels of commoditisation in its effort to provide universal access to telecommunication services.

Proposition 4: Customer value management strategies can have a positive impact in countering the effects of commoditisation.

CHAPTER 3. Research Methodology

The chapter starts by describing the literature on qualitative research methodology, followed by a review of the research design and research instruments used in carrying out the research. It also provides issues around data collection and analysis about the study, followed by a discussion on how validity and reliability of the research were assessed.

3.1 Research Methodology

The research methodology does not only talk about the research methods but also considers the logic of the methods used in the context of the research study and explains why the research adopts a particular method or technique. Further, it explores why research does not use other methods so that the investigation results are capable of being evaluated either by the researcher himself or by others (Kothari, 2004).

The primary method to be used for the research is qualitative research. Qualitative research means any type of research that produces findings not arrived at by statistical procedures or other means of quantification (Strauss & Corbin, 1990). Qualitative research is best suited to investigating substantive areas about which little is known (Strauss & Corbin, 1990). Quantitative research is sometimes criticised for lack of depth and insight and the comprehensiveness that is associated with qualitative studies. That is why the qualitative approach was used to capture the non-verbal communications and misunderstandings which are often overlooked by quantitative research.

The literature review gave evidence and guidance based on much research conducted on commoditisation of a service industry, which has followed a qualitative methodology, this included Rothkopf and Wald (2011), Turner (2009) and Le Goff and Rojas (2014).

Qualitative research has been criticised in the past for being unfocussed and limited in scope. It does, however, give a good grounding for understanding factors influencing commoditisation in a particular country or region and how operators can

use innovative value management strategies in the context of an increasingly commoditised mobile telecommunications industry. Qualitative research was ideal for carrying out this research.

3.2 Research Design

According to Merriam (2009), research design is the overall strategy used in conducting the study; it provides a logical plan for getting from here to there, where here might be the research questions or propositions with some sets of conclusions.

One-on-one interviews with industry experts and senior industry representatives in the South African telecommunications market were conducted as part of the research. One of the advantages of this approach is the use of multiple data sources, a method which also enhances the credibility of the data.

3.3 Population and sample

3.3.1 *Population*

All items under consideration in any field of inquiry constitute a 'universe' or 'population'. This type of enquiry requires lots of time, money and energy, making it impractical for academic research purposes (Kothari, 2004). The population of this study comprised all senior managers, executives and industry experts working for or providing advice to all mobile telecommunications operators in South Africa, most precisely Telkom, Vodacom, MTN and Cell C.

3.3.2 *Sample and sampling method*

Due to the impracticality of using an entire population for the purpose of research, often researchers will select a few items from the populations for the purpose of the study; the collection items selected constitute what is called a sample (Kothari, 2004). This approach also applied in this case.

For the purpose of the interviews, a sample of twelve senior representatives of the mobile telecommunications industry was interviewed to get insights into their views on the phenomenon.

The sampling methodology used for this study is a convenience sample; this is based on available contacts in the industry or referrals who have spent at least five years in a senior management role in the South African telecommunications industry.

A sample of twelve respondents is satisfactory for the research however, additional respondents would have given additional insights.

3.4 Research Instrument

Qualitative or semi-structured interviews were used in this study; this is to get rich and detailed answers whereby participants were encouraged to sometimes go off on a tangent while highlighting areas they deem to be important to them with regards to a topic. These interviews provided the study with insights given by industry experts.

The interview questions, as reflected in Appendix A, were guided by the findings from the literature and aim to provide more insights in addressing the four research propositions.

The information from the interviews was coded to highlight key themes as well as areas of consensus amongst the participants.

3.5 Procedure for data collection

Potential participants were initially contacted by either email or telephone, informing them of the purpose of the study and inviting them for the interviews. Each respondent was also told that their responses would be kept anonymous during the analysis and presentation of results. The interviews were conducted at a place convenient to the respondents; this was mostly at their place of work. The interviews were then recorded and analysed.

These types of interviews are similar to what Gillham considers as 'elite' interviews; these are conversations with people at a certain level of authority, and these forms of interviews are usually semi-structured, according to Gillham (2000).

The advantage of these types of interviews is that the respondents will know more about the topic and context than the researcher. They may even advise on the types of questions to ask (Gillham, 2000).

The interviews were recorded, then transcribed and plotted on an analysis grid for content analysis; this assisted in triangulating the results of the study with other content.

3.6 Data analysis and interpretation

The data from the interviews was analysed using content analysis, according to Bryman (2016) what needs to be counted in content depends mainly on the research questions or propositions the research is trying to address.

According to Leedy and Ormrod (2014), content analysis is a systematic examination of material for the purpose of identifying themes, biases or patterns. Content Analysis is typically performed on forms of human communication; this includes books, newspapers, personal journals or transcriptions of interviews. According to Merriam (2009), content analysis is used in all qualitative data analysis, it is the substance of the interviews, field notes and documents that are being analysed. Merriam (2009) also states that the process for content analysis involves the simultaneous coding of raw data and creating categories, capturing the relevant elements of the content being analysed.

The analysis captured such details of the content being analysed, such as the respondent's experience in the industry. Words were also counted during the analysis, counting of words can be very useful as it can reveal the particular liking for sensationalising (Bryman, 2016). The words and sentences were used to analyse certainty, activity, optimism, realism and commonality.

Subjects and themes, then words were then grouped under certain topics and themes; this process of categorisation is what is referred to as coding in the analysis; this assisted in categorising the phenomenon of interest and also identified the dispositions of the respondents.

3.7 Limitations of the study

Herewith are a couple of limitations currently clear on the study, methodology and instruments to be used in carrying out the research:

- The study was limited to the South African mobile telecommunication industry.
- Qualitative research has been criticised in the past for being impressionistic and limited in scope.
- People interviewed can contradict the evidence from the other respondents, and if this happens, then the underlying theory needs to explain the contradiction (Gillham, 2000).
- Due to the semi-structured nature of qualitative research, record keeping becomes one of the most critical elements of a successful qualitative research.
- Getting access to archived records may present a challenge; permission and approval for access and use may be required.
- Due to the authority of the individuals interviewed, they might expect to have some control over what the researcher does. The researcher had to get approval to interview some of the respondents from some of the mobile operators in South Africa.
- Despite the twelve respondents being sufficient for the research, additional respondents may have presented additional insights to the research.

3.8 Validity and reliability

Reliability and validity are conceived as trustworthiness, rigour and quality in a qualitative paradigm (Golafshani, 2003).

Krieffing (1991), on the other hand, states that reliability and validity are less commonly used in qualitative research to measure the worth of the study. This is mainly because qualitative research is more of a naturalistic inquiry whereby personal meanings and perceptions of the respondent become critical, and the researcher should aim to access these.

Golafshani (2003) also agrees that reliability and validity are now being reconsidered in the qualitative research paradigm. This is because, according to Golafshani

“reliability and validity are important in qualitative research as they eliminate bias while increasing the researcher’s truthfulness of a proposition about the social phenomenon being discussed” (Golafshani, 2003, p. 604).

Triangulation is often used in qualitative research as a strategy to improve the validity and reliability of research or evaluation findings (Golafshani, 2003). Internal validity, external validity and reliability are regarded as key criteria to assess the rigour or trustworthiness of the research in a rationalistic paradigm (Morse, Barrett, Mayan, Olson, & Spiers, 2002).

3.8.1 External Validity

External validity in qualitative research is referred to as transferability sometimes; the ability to generalise is not relevant in many qualitative research studies Krieffing, (1991). According to Krieffing, what is more important in qualitative research is the transferability whereby the findings of the investigation can be transferred into contexts outside the framework of the study. To allow for comparability with different settings, sufficient descriptive data was provided in the study.

Due to the small sample size of 12 respondents the results can not be generalisable as more respondents could have given additional insights.

3.8.2 Internal Validity

For a study to have internal validity, it must have logical coherence in the interpretation of the data or cases and the findings must be consistent and credible. By addressing threats to internal validity in quantitative research, the researcher can be confident of the truth of the findings Krieffing, (1991). However, Krieffing further states that in qualitative research, the researcher often has to deal with the truth value of the research and the fact that there could be multiple realities and that truth value is achieved by discovering the experiences as they are lived and perceived by the respondents.

Multiple realities from the different respondents were adequately revealed in this research study; these realities were then tested with responses from other interviewees. This triangulation of the data assisted in ensuring the truth value and hence the internal validity of the research.

3.8.3 *Reliability*

Reliability refers to the rate at which results are consistent and yield the same results on repeated trials. Due to the nature of qualitative research, whereby the raw data is collected in a relatively semi-structured way, the researcher needs to keep meticulous records of interviews and observations and by documenting the process of analysis, including the interpretative techniques (Mays & Pope, 1995). As already indicated, this approach was followed in this study. According to a more recent article by Mays and Pope (2000), they state that due to the differences between qualitative and quantitative research it is not possible to assess or judge qualitative research through the same lense or conventional criteria of reliability, validity and generalisability; this is mainly due to the fact that in research there could be multiple perspective of the world from the respondents and some of these are created through the reseach process.

To further improve the reliability of the research, a research log was maintained throughout the research; the research log was used to put down evidence of one kind and to record the interviews with senior experts in the mobile telecommunication industry. The research log also captured personal notes of questions that arose and needed to be reflected upon, insights, hunches or even ideas heard during the interviews (Gillham, 2000).

CHAPTER 4. Presentation of Results

4.1 Introduction

The interviews provided a deep dive into the trends currently shaping the South African mobile telecommunications industry, through an array of factual observations and insights which revealed the consistency of thoughts regarding certain areas and divergence in other areas. The divergence makes for an interesting mix of views around the future of the South African telecommunications industry.

The results to each research proposition are presented in a clear, tabular format, in which the main findings are tackled in more detail. The focus is placed on those findings that are shared amongst the interview respondents. These are listed first and described in more detail, in certain cases where there are minority views from one or two respondents which the researcher deems to be relevant to the broader context of the research, these are singled out and given a detailed description.

All the primary data was collected using in-depth, semi-structured interviews with identified experts. At the beginning of each interview, the researcher introduced himself and explained briefly the research topic. The researcher also outlined the objective of the study and the structure of the questions as well as the right to withdraw at any time and the respondents' right to confidentiality.

4.2 Profile of respondents

Due to the research topic, it was decided that all the respondents would have at least five years' experience in the South African telecommunications industry either as a senior manager, executive or senior industry advisor or expert. The researcher interviewed representatives within the telecommunication industry, mainly senior managers, executives and partners in strategic telecommunications advisory or consulting firms, although in certain specific cases, the individuals were not available to participate in the research. The researcher believes that the responses from the twelve respondents interviewed in this study are enough to draw theory and identify themes which address the research propositions from the literature review.

The minimum experience of the respondents was five years in the industry with broad strategy, marketing, product management and sales. The respondents have witnessed the evolution of the mobile telecommunications industry in South Africa. From the time when voice mail was a “killer app,” the ability to leave a message created additional terminating revenue for operators and provided the value for the end user that they could go to a message when they could not reach whomever they were calling.

They witnessed the times of “Please Call Me,” a free message that stimulates voice traffic for network operators and the value of sending free messages for end users. All these were part of operators’ modus operandi for differentiating themselves from the competition through value added services on their network space which is increasingly being dominated by OTT providers which is threatening many mobile telecommunications operators to being just a dumb pipe.

Fortunately, the researcher was able to gain access to sufficient senior individuals within the industry to conduct this research. The sample included five executives, four senior management consultants, three senior managers

.

4.2.1 Background of Respondents

Table 2: Profile of respondents

Respondent	Role	Experience in Mobile Telecommunications
D1	Managing Executive: Customer Value Management <i>BCom, Accounting CA(SA)</i> <i>Telecommunications</i>	Started his career in the consulting industry then joined the technology industry and joined Vodacom two years after it was started. Previously was responsible for insights and data warehousing areas before switching to more of the commercial role. He was one of the key players who established the CVM Department at Vodacom.
D2	Executive: Product Development <i>MBA</i> <i>Telecommunications</i>	Started with the mobile telecommunication started from the bank in 1994, through selling handsets back then when there was still low penetration of mobile devices. Then joined Altech which was a service provider in South Africa. He then joined MTN. For about five years working on a mobile banking app, which was not successful in South Africa mainly due to our mature banking infrastructure. From there he joined Vodacom, working on their data product portfolio introduced products such 3G and LTE. He then joined Telkom and has been with Telkom for the past five years.
D3	Senior Manager: Sales and Marketing	Been in the telecommunications industry for about nine years with MTN fulfilled the role of channel manager, channel development role then took a brief role

	BCOM, Marketing, MBA <i>Telecommunications</i>	to Nigeria pretty much doing a bit of consulting work, back into South Africa Telkom go to market in the consumer space and then later moved to enterprise
D4	Executive: Mobile Networks <i>BEng, PDBA, MBA</i> <i>Telecommunications</i>	Telecommunications consultant for a couple of years with Delta partners and Accenture focused on more of the strategy component. Dealing with the big questions, did a satellite project for telecom trying to rationalise the ancient technology.
D5	Senior Manager: Product Development (LTE) <i>Telecommunications</i>	I started in telecommunications industry 16 years in an entry level position for a global company called wireless data service, as a technical support engineer into a data support contact. I have worked on a consultancy basis for Vodacom, Etisalat Dubai, orange Israel, most of MTN's Africa Opcos. Moreover, currently in the product development area for Telkom.
D6	Digital transformation Lead: <i>BSc. Eng, MBA</i> <i>Management Consulting</i>	18 years in the telecommunications industry overall, started with Siemens in 1998 software development moved into a technical sales kind of role did an MBA a couple of years ago then moved into strategy consulting kind of role. Was responsible for the launch of some of the early VAS technology launches. I have watched the evolution of data networks, and it has been nice to see that unfold.

		Then looked after a global portfolio for application platform with Nokia Siemens, and at the time, Nokia was going through difficulties surviving the iPhone in around 2010. Currently looking after a digital portfolio of products, interactive and analytics.
D7	Executive: Strategy and Transformation MBA Telecommunications	I have been working in the ICT sector for the past 15 years. I started off in the technical space I am supposedly one of the most qualified submarines cable specialist in Africa. Did much work for the cable consortiums I still give advice to the consortiums now and then. I came up to Pretoria where I was responsible for product management, channel development and product development then I moved over to sales, while keeping my portfolio but for the international portfolio where I was responsible for all services that do not terminate within the borders of South Africa. I also gave input to all international services that came out of south Africa. We were able to triple the portfolio in just 3 years. Then I moved to wholesale where I did the strategy, variance reporting looking after a 6.2 Billion rand portfolio. Then I moved to the group where I moved into transformation and

		strategy and also look after the post-merger integration currently doing various other programmes for the Telkom Group.
D8	Management Consultant: Communications and Media <i>BSc (Physics), MBA</i> <i>Telecommunications</i>	I got into telecommunications by accident I had a bursary from the CSIR, studied physics and was involved in meteorology the measurement of the meter and temperature scales for South Africa then I went on a tour of the optical fibre manufacturing plant in Brits as part of a course I was doing on measuring optical parameters and they said they were looking for a process engineer I applied and then ended up in the plant manufacturing optical fibre. So I got into Telkom through manufacturing optical fibre.
D9	Senior Management Consultant: Technology Media and Telecommunication <i>BCOM, MBA</i> <i>Management consulting</i>	I have been in the industry for about eight years; I started out working for MTN in the SA Opco in the chief marketing officer organisation, focusing on data I then went to join Telkom as part of the team that started 8ta developing the products and services for consumer and enterprise. Moreover, then after joined Deloitte as a strategic consultant in the telco space, I have done work for Telkom, Altech, MTN and Vodacom. Right now I focus on outsourcing opportunities in the telco space.
D10	Senior Manager: Product development (Mobile) <i>Telecommunications</i>	I have been in telecommunications for the past 21 years. Started my career as a bursary student for Telkom completed a diploma in electronic engineering. Then moved to private sector started getting involved more in the carrier services at that stage I worked for Ericson, then moved to Neotel where I was

		a portfolio manager for the consumer before rejoining Telkom in 2010 where I filled various roles within Telkom, and currently I am a senior manager in the product development area in Telkom.
D11	General Manager: Marketing <i>BCOM, Marketing and Information Systems</i> <i>Telecommunications</i>	Started my career as technical consultant and developer on projects involving data warehousing and BI Reports. Then worked at FNB as an information analyst then strategy analyst before joining MTN as an information analyst then moved to senior manager business planning and performance, acted as a senior manager for marketing intelligence and currently the general manager for pricing, research and intelligence.
D12	Telecommunications Consultant BSc Honours Mathematics <i>Telecommunications</i>	I have been in the telecommunications industry for just over 12 years, my career started as a consultant for a small consulting firm which focuses on analytics and customer value management. After spending some time at vodacom on a project I was contacted by vodacom to join their customer value management space as an Executive head of department. Currently working independently as a telecommunications consultant.

4.3 The Interview Process

The researcher made contact with a list of twenty potential interviewees, some could not be interviewed because of other commitments or potential respondents delay in responding to the invite to participate in the study; an explanation was provided for each of the research interviews in a participant information sheet which also clearly explaining the intent of the study. The sampling methodology used for this study was a convenience sample; this is based on available contacts in the industry or referrals who have spent at least five years in a senior management role in the South African telecommunications industry.

The participants were expected to provide responses to interview questions that would be posed to them. The study involved semi-structured interviews, and the questions asked were solely related to commoditisation and customer value management strategies. The interview session took forty five minutes to an hour.

The responses of the interviewees were captured on recording devices and the text transcribed to capture the main themes from the discussions. Due to the semi-structured nature of the interviews, the respondents were given the opportunity to even go off at a tangent while still telling stories of their particular experiences in the industry.

4.3.1 Overview of Transcripts

Table 3 Overview of Transcripts

Overview of Transcripts	
Description	Quantity
Interviews	12
Total duration of the interviews	444
Average duration	37 Minutes
Shortest Duration	33 Minutes

Longest Duration	50 Minutes
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4.4 Keywords

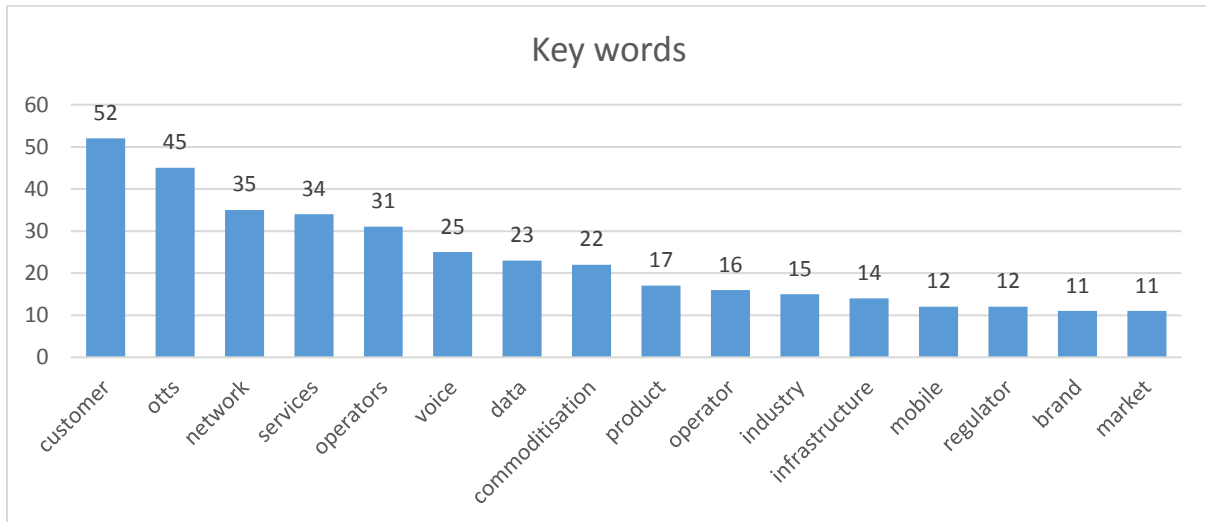


Figure 3: Distribution of Keywords

There were 16 keywords which were related to the study and found to have been mentioned a minimum of 10 times. The most mentioned word was 'customer', which was mentioned 52 times, and constituted about 14% of these keywords; this was followed by the OTTs with a 12% mention, followed by the network operator, network service provider and network.

4.5 Coding

4.5.1 Initial Codes

Table 4: Initial Codes

Code Number	Codes	Code Number	Codes
1	Differentiation	8	Partner
2	Digital	9	Price

3	Embrace	10	Regulation
4	Infrastructure	11	technological disruption
5	Network	12	Value
6	Operator	13	Voice
7	OTT	14	Voice Revenues

4.5.2 Code Groupings

Table 5: Code Groupings

Grouping	Codes
Differentiation	Brand
	Customer
	Data
	Differentiation
	Network
	Pre-paid
	Price
Infrastructure Providers	Infrastructure
	Operator
OTT	OTT
Partnering with OTTs	Embrace
	Partner
Regulation	Regulation
Technological disruption	Digital
	Technological disruption

	Value
	Voice

4.5.3 Themes of the study

After all the data was coded and combined, resulting in about 19 codes, the following diagram known as a network of codes Figure 4: Network Map was created using the relationships between the codes identified through the data. This stage was used to formulate the themes, instead of codes. Some initial codes were grouped to form main themes whereas other may have been used as sub-themes. A total of six themes were extracted from the coding. These were differentiation, infrastructure provision, OTT, Partnering with OTTs, Regulation and Technological disruptions

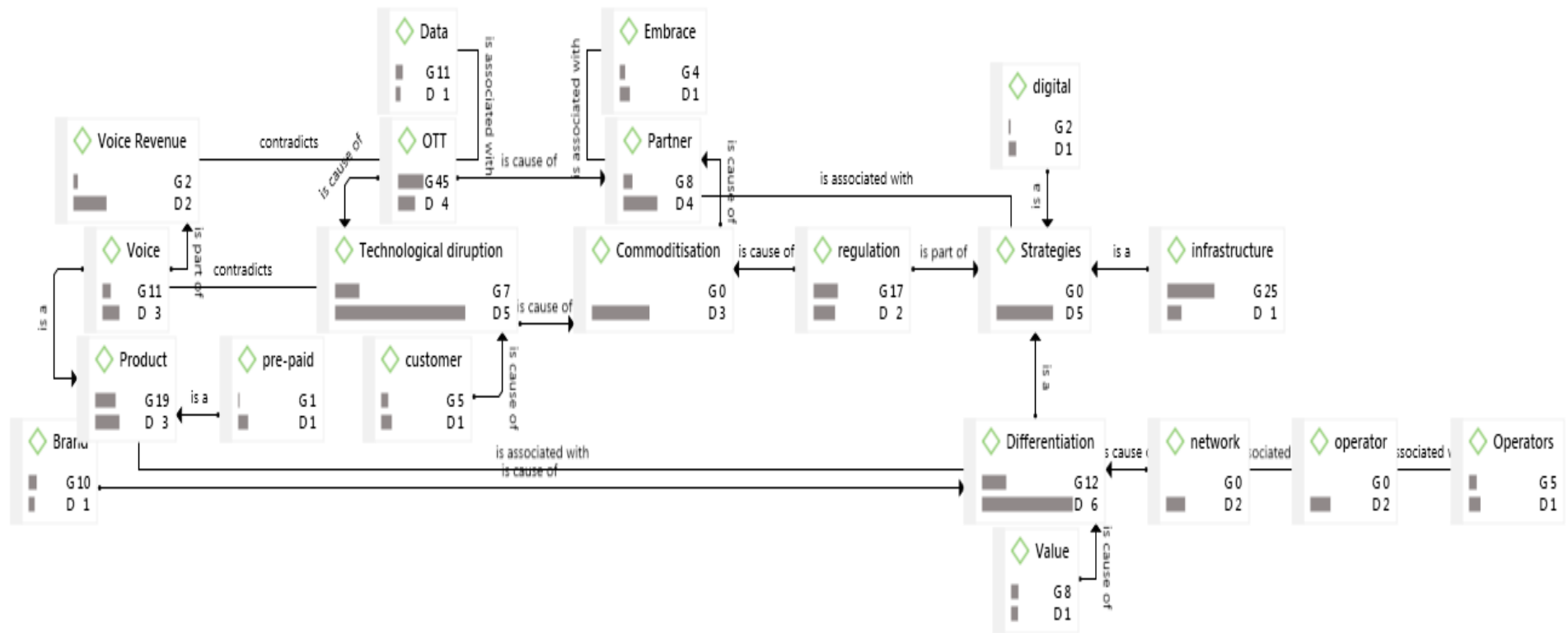


Figure 4: Network Map

4.6 Results about Proposition 1:

South African telecommunications market is going through a stage of commoditisation

Table 6: Responses on commoditisation

Respondent	Commoditisation
D1	“In most industries, you see price increases every year, but in South Africa we have been seeing a price decrease and believed that this is also as a result of commoditisation.” “The biggest guys have the biggest chance to win the war if they survive the price wars the small guy will lose and potentially disappear.” The war on voice is still going to come but most operators need the revenue from voice to invest on their data network. Voip will kill traditional voice revenue but it will also make operators
D2	More and more voice and data is becoming a commodity there is no differentiation from one operator to another If you only think of Telco are just selling airtime this is what Telco's are traditional known for. You can differentiate by what services you add on top of that package. We are actually at that point now we are not different from loaf of bread. As we progress there will be no differentiate between the telco operators. An example with the fibre race in the telco at the moment if you look at the prices they are the same.
D4	“Creating the infrastructure, there is a need for consolidating the infrastructure to create that highway which will lead to

	telecommunication service being seen as just a utility, which in essence that is what commoditisation is about.” “Once Telco’s become a utility does not stop them from becoming a viable business look at Eskom which is a utility but at the same time is still a viable business.
D9	The product features start featuring less to the decision on whether I should bank with Standard Bank, Absa or FNB it always a consideration of other factors because the product features are the same, so the banks have become commoditised.
D10	My understanding of commoditisation, is that the product becomes freely available that is not unique in nature and everyone has access to it. Telecommunications service are not that different, when we started in the south telecommunications space all operators started with the same base product, followed new product innovations such as SMS, EDGE and at no point in time was an operator having a product which other operator had a product that other operators had. This is driven by the technology trend and this drive commoditisation as operators will never have something that is unique to them.
D11	I think number one is that can product design be copied as telecommunications evolve over time and the speed at which it takes to copy the product. However I believe that in the South African environment differentiation is still important and can be used as a differentiator

4.7 Results about Proposition 2

Proposition: Over the top service providers are reducing the levels of differentiation between mobile service providers.

Table 7: Responses on over the top providers (OTTs)

Respondent	Over the top service providers
D1	“The adoption of OTT will happen regardless”
D2	“MTN Vodacom tried getting the OTTs to co-invest with them.” What types of partnership do you embrace over the top What type packaging do you make which embraces the adoption of over the top The regulator spoke about the extent to which they want to make communication more affordable through plans such as infrastructure sharing For now it is still about market share and OTT require connectivity but there would still be a customer ownership Embedded and generic sim cards can lead to disintermediation of a customer, allowing customers to switch between sims without removing the sim
D3	“There is a risk that the operator could be just a dumb pipe but the mitigation factor will depend on how well operators are willing to embrace the OTTs” “Which will fast track the commoditisation and the winners will be operators that will quickly embrace the OTTs by providing product bundle sets that include these OTTs” “Example there is going to be a lot of OTTs which will be very niche focused and the operators who can capture them from inception will partner with operators to gain scale”
D4	“When I was still at Delta partners the question was topical, what is WhatsApp going to do to the South African telecommunication providers, what I think of OTTs, I think OTTs are a difficult things to tackle and our regulators as one thing are so far behind and as

	operators we run to the regulators as the regulators have protected us for such a long time and I think that protection will soon end” “With cost it becomes a race to the bottom but I think is about providing and diversifying the services you offer to the customer enabled by the commodity which is voice or data service providers need to stop just thinking of themselves as just a telco” “But then the good thing about this business is that you still have the end user facing business which should be the business tackling the OTTs because in essence they themselves are OTTs” “But then the good thing about this business is that you still have the end user facing business which should be the business tackling the OTTs because in essence they themselves are OTTs”
D5	“One trend of thought is that OTTs drive mobile phone adoption, operators need to monetise OTTs companies like Telkom has embraced it with FreeMe” “And I guess you can add OTT apps of your own such as WhatsApp but the one thing would be to partner with them as an example an iPhone deal bundled with Skype minutes”
D6	“Customers though have other relationships with other providers such as WhatsApp, Facebook, Netflix and other kinds of service providers who have my username, have my number but they have no network infrastructure”

	“Every application today can be delivered via IP, so you do not need that huge infrastructure for circuit switch voice to packet switched data”
D7	“Firstly if the OTTs want to own the customer end to end they going to have to fundamentally change their business model If big OTT providers can start providing network infrastructure through other technologies such as Satellite” “Because the OTTs are using the network of other entities to provide a service which is required by the end user which many of the operators have not figured out how to monetise” “The story of OTT, legislation on net neutrality is quite key, so net neutrality a lot of people believe that the internet should be treated equally, I fundamentally disagree with that” Something similar to IP transit can work in the relationship between OTT providers and mobile telecommunications operators
D8	“So the network operators have two choices when it comes to differentiation either they start developing their applications which can be quite a difficult thing to do or make sure the current and new OTT application run really well” “I think it is OTTs are massively disruptive and there is no doubt that they seriously put a massive dent in traditional voice revenue. Having said that it is a bit of pricing question But voice still has some big advantages where it leverages the international network of being able to make calls anywhere in the world, WhatsApp calling depends on the person on the other side using WhatsApp” “I think it is a partnership approach with the over the top providers, what you don’t want them to do is similar to what happened to what

	happened in the mobile industry where fixed line operators saw mobile telecommunications operators as a threat and did not want to make base stations available to the mobile telecommunications operator and the unintended consequence is that the mobile telecommunications operators have now rolled out their own backhaul. You don't want a fight with OTTs and encourage them to build networks, you want to see them as customers rather than seeing them as competitors"
D9	"Without that commoditisation is imminent even more so when we still see some of the attitudes towards OTTs cause those are the people who come with innovative solutions and products and unless we see operators starting to embrace these OTTs" "OTT have both a positive and a negative impact depending on which part of the fence you are on, on the positive side they encourage usage they encourage your data usage and you must bear in mind that most of the messaging application end in voice calls" "And operators need to find a way to work with OTTs because I think there is a lot that operators can benefit from working with OTTs instead of seeing them as adversaries"
D10	From a fourth mobile entrant perspective, in a market that is reaching high levels of saturation (SIM per Capita @ 2.83), OTT providers have become a considerably more easy way for subscribers to communicate. This is due to the fact that an OTT service offering extends beyond the boundary of the limits of an on-network offering or service, and is generally considered to be "free" as no direct charges are levied for a majority of the standard features offered.

	OTT providers can inspire competition, as operators see the value in partnering with OTT providers vs. building high-cost-high-risk platforms in the hope of high rates of adoption OTT providers can also, viewed with other services such as carrier billing, enable new revenue streams for an operator, which was previously not possible
D11	I think it will take a long time for OTTs to start eating in to a big chunk of the telecommunications' current revenue pie, case in point would be whatsapp but I believe that they are not eating fast enough of the SMS revenues as yet
D12	At many levels in the industry, including the Analyst level, the inevitability of OTT impact on the market, not only on Mobile segments but also on the Fixed line space. The decision by an Operator or Regulator to oppose OTT would most probably be heavily informed by either statutes which already exist in the country or region, or by strategies that envisage that the Operator will provide services similar or better than the OTT offerings to their customers

4.8 Results about Proposition 3:

Government regulation is driving the levels of commoditisation in its effort to provide universal access to telecommunication services.

Table 8: Responses to regulation

Respondent	Regulation
D2	“The interconnect regime has played a role on bringing about more competition through asymmetric pricing” “The freeing up of the sub Giga hertz spectrum But I must say that overall a lot more can be done from the regulator’s perspective to ensure that the consumer is better off”
D3	“I am confused if the regulators even understand, as the industry has changed too fast to understand how to best regulate the market. The regulator would probably be the catalyst for OTTs to grow quickly which can compound the market disruption that we spoke about today. Which will fast track the commoditisation and the winners will be operators that will quickly embrace the OTTs by providing product bundle sets that include these OTTs”
D4	“I think, my gripe with the regulator is more about keeping up and this is the global phenomenon where law makers are not keeping up with the rapid changes in technology. How do you compensate the guys who have invested in the infrastructure I understand what the MTN and Vodacom are saying about the OTTs, this is a tough question. But there needs to be a balance to be struck by having more infrastructure players who are purely open they can make the industry more competitive”
D6	“The regulator, the most precious and scarce community right now is spectrum, we still have a huge spectrum range locked up in servicing analog technologies and this can be released back to operator. The delay in releasing spectrum is keeping the cost of data very high. Releasing the spectrum can lead to more people being connected and the regulator is delaying economic growth in South Africa by not releasing the spectrum especially with smart

	phone and the eminent influx on spectrum and IP allocations. The regulator needs to remove the politics in order to release this”
D7	“The story of OTT, legislation on net neutrality is quite key, so net neutrality a lot of people believe that the internet should be treated equal I fundamentally disagree with that. The reason for that being myself as the network provider if I am the one still using to provide services someone else is using my network without my consent I will give to the customer the way I want to give it to him”
D8	“The telco environment in South Africa from a policy point of view is close to disastrous especially with relation to the time it took to free up that traditional analog TV spectrum. I think ICASA is also been very poor in regulating the rollout of fibre. I think we have been incredibly inefficient in laying out the fibre to a point where any fibre you lay on the ground should be open access”
D9	“Regulator, my view is that I don’t think the regulator is playing the strategic role that it should be playing from both developing the industry and looking out for the man on the street. In terms of spectrum there have been draft regulations for a while in terms of freeing spectrum we still have government regulations that are hoarding the spectrum they need to make sure that smaller operators need to be able to buy the spectrum that favouring smaller operators”
D10	Regulatory regimes which support a competitive environment, that does not discriminate against OTT, and creates a hostile environment between Operators and OTT providers. OTT providers should also not be prevented to create platforms that, should Operators opt too, create a competitive advantage through partnerships between Operators with OTT providers Having said the above, the Regulators should consider and prescribe the necessary policies that would prevent OTT services

	of becoming the preferred service for unlawful activities. OTT providers have as significant a role to play in being responsible corporate citizens. With this ref-erence is made to the need to support, amongst others, but not limited to, elements such as Lawful Intercept, Activity tracking etc
D11	From Regulators perspective the issues raised around OTTs was more about levelling the playing field, for an operator to provide a sim and the sim must be RICA'd there was a bit of a regulatory bias favouring the OTTs but they did not have to comply to these regulatory requirements even though the regulators were starting to provide similar types of services Spectrum is what the telecommunications service providers actually need in order to provide better services such as LTE, currently operators need to refarm 2G spectrum in order to offer LTE

4.9 Results about Proposition 4:

Customer value management strategies can have a positive impact on the commoditisation of a service.

Table 9: Response to value management strategies

Respondent	Value Management Strategies
D1	“The acquiring of the customer is very limited, that is where the challenge of differentiation comes because you will now have to steal from the other operators as everyone now has mobile services.” - Brand (are you a trusted and loved brand) - Value for money, lowest price lowest quality - Network experience - Perceived customer service

	- Might be different for different segments e.g. ability to buy airtime for prepaid customers, on-net calling might not be a major differentiator going forward
D2	The only way one can differentiate is because of • The brand • Service differentiation • What other application you can run over that Key buying factors for customers • The Brand • Insights based proposition given the needs of the consumer • Customer Experience • PDJ – is it a reputable brand, do they deliver on their customer promise, how much am I going to pay • Network Quality
D3	“Driving the perception of value, the packaging of the CVP becomes a differentiator, being first in line in the queue, operators need to be the first mind for the customer.” “Disruptive products such as freeME which embrace over the top providers which have adapted to trends of decreasing voice and increasing data.” “The tendency of the operator has been that they have been offering products which are too clever to the customers.”
D4	“If you thinking we are going to sell voice or data no, the infrastructure provider will sell voice or data and mobile telecommunications operators need to sell everything that the

	customer wants; that's why mobile telecommunications operators need to sell whatever the customer wants - a case in point would be the insurance products that are sold by operators, and they must start thinking wider than that"
D5	"You have to find that competitive edge and break your customer into verticals, and tailor products to their needs such as the at home mum, the network gamer, another vertical for kids would be something like we are a safe network by providing these verticals we can still continue to differentiate." "We would need an over the top team to be falling within the product teams."
D6	"T-mobile started the un-carrier about three years ago, pulling away from 24 months contract, sensationalising network release and simplifying their product offering down to just three products." "So it is important to people where they live and work will they get the product experience that they wish and will it still be affordable." "Products will be driven by what users want."
D7	"So I think product type is one element, how you price the product and how you configure the product." "I think a mistake; I have an issue with some of the product sets we have in the consumer space some of this product sets are extremely complex."
D8	"The question is how you define and understand the value that your commodity creates for the end users which in this case is the customer." "FreeME is also quite a game changing product at the moment which is almost like a gym membership model give me so much money, and I can give you whatever you want."

D9	“If they need a product they require it with as few hassles as possible without giving information that you already have and not having to go queue at a store.”
D11	As telecommunications operators matures the differentiator will be the types of services one can offer over and above their core services, these include video on demand service. MTN has also launched some over the top services such as view and which is a video on demand services, we have also tried things such as banking service, when banks come into our space we will go in to their space when OTTs start coming into our space we will start creating our own OTT services Coverage, Price and value, price for the lower end of the market refers to who is going to give you the lowest cost but value refers to who can give me the best network experience and lastly is the services - the after sales service and support.

4.10 Summary of Chapter

In this chapter, the results of the data from the interview respondents were presented. The reaction to each question was analysed and interpreted in the context of the research. The researcher identified common themes through which findings were made. These themes were created by looking at word repetitions, also looking at word association using a network map which then created groupings and these groupings resulted in the six themes.

A total of six themes were extracted from the coding. These were

4.10.1 Differentiation

Respondents were asked the question on what the key buying factors were when choosing products from one operator or another; a question which was closely linked to differentiation.

Differentiation was closely linked to characteristics such as brand, customer in the sense that the operator needs to meet the customer needs, mobile data or product differentiation, network quality, pre-paid services, and prices respondent's these elements are what can create differentiation between the different mobile brands.

Following are some quotes from the respondents when asked the question on what the key buying factors are;

"Brand (are you a trusted and loved brand)"^{D1}

"The only way one can differentiate on is because of The brand, Service differentiation, What other application you can run over that"^{D2}

"So it is important to people where they live and work will they get the product experience that they wish and will it still be affordable."^{D6}

"Coverage, Price and value, price for the lower end of the market refers to who is going to give you the lowest cost but value refers to who can give me the best network experience and lastly is the services the after sales service and support."^{D11}

It was clear from the respondents that differentiation not only still exists in the current mobile telecommunications environment, it is also one of the strategies that telecommunications can adopt in order to remain competitive in an industry that is increasingly becoming commoditised.

4.10.2 Infrastructure provision

The element of infrastructure provision was expressed in relation to it becoming one of the elements that could level the playing field. Infrastructure provisions remove the

advantages of network quality, price differentiation, making the mobile operators become similar to OTTs by not owning the network. Some of the respondents even went further to state that;

“Creating the infrastructure, there is a need for consolidating the infrastructure to create that highway which will lead to telecommunication service being seen as just a utility, which in essence that is what commoditisation is about.”^{D4}

“Every application today can be delivered via IP, so you do not need that huge infrastructure for circuit switch voice to packet switched data”^{D6}

“The regulator spoke about the extent to which they want to make communication more affordable through plans such as infrastructure sharing”^{D2}

“The freeing up of the sub Giga hertz spectrum But I must say that overall a lot more can be done from the regulator’s perspective to ensure that the consumer is better off”^{D2}

The respondents highlighted the importance of infrastructure, and the need for an infrastructure provider and the need for open access providers, the difference in the infrastructure managed by each operator was giving the operators a further competitive advantage against each other at the time when the research was conducted.

4.10.3 OTT

One key observation when conducting the interviews, is that it was clear that there was a bit of a hype about OTTs during the time when the research was conducted. Some respondents were introducing the topic even before the researcher posed the questions related to OTTs. This may as well be an indication of the relevance of the topic of OTTs during the study. Some supporting quotations include:

“Voip will kill traditional voice revenue”^{D1}

“Firstly if the OTTs want to own the customer end to end they going to have to fundamentally change their business model If big OTT providers can start providing network infrastructure through other technologies such as Satellite”^{D7}

4.10.4 Partnering with OTTs,

There are mixed views around OTTs; certain respondents believe that it will not completely disrupt the current voice offering from mobile operators, others believe in embracing, partnering or monetising the relationship that operators currently have with these OTT players. Some supporting quotations from the respondents include;

“I think it will take a long time for OTTs to start eating in to a big chunk of the telecommunications’ current revenue pie, case in point would be whatsapp but I believe that they are not eating fast enough of the SMS revenues as yet”^{D11}

“And operators need to find a way to work with OTTs because I think there is a lot that operators can benefit from working with OTTs instead of seeing them as adversaries”^{D9}

“You don’t want a fight with OTTs and encourage them to build networks, you want to see them as customers rather than seeing them as competitors”^{D8}

“The story of OTT, legislation on net neutrality is quite key, so net neutrality a lot of people believe that the internet should be treated equally, I fundamentally disagree with that”^{D7}

There are mixed views around partnerships with the OTTs, however the majority of the views were for partnerships to occur. There is more that can be lost from competing directly with these OTTs and it is often better to work with them as they bring new traffic demand to the mobile operators.

4.10.5 Lack of strategy from the regulator

The majority of the respondents do not seem convinced that the regulator is playing the strategic role that it should be playing of developing the industry; some supporting quotations include;

“I am confused if the regulators even understand, as the industry has changed too fast to understand how to best regulate the market”^{D3}

“I think, my gripe with the regulator is more about keeping up and this is the global phenomenon where law makers are not keeping up with the rapid changes in technology”^{D4}

“The delay in releasing spectrum is keeping the cost of data very high. Releasing the spectrum can lead to more people being connected and the regulator is delaying economic growth in South Africa”^{D6}

“The telco environment in South Africa from a policy point of view is close to disastrous especially with relation to the time it took to free up that traditional analogue TV spectrum”^{D8}

“the issues raised around OTTs was more about levelling the playing field, for an operator to provide a sim and the sim must be RICA'd there was a bit of a regulatory bias favouring the OTTs. OTTS did not have to comply to these regulatory requirements even though the OTTs were starting to provide similar types of services”^{D11}

A lot more could be achieved should the regulator play its part in addressing the issues that are holding back the telecommunications industry, such as sub giga-hertz spectrum, regulating OTTs which are providing similar services to mobile operators, poor regulations on the roll out of fibre infrastructure. Respondents had strong views against the regulator during the interviews.

CHAPTER 5. Discussion of Results

The purpose of this chapter is to examine and analyse and to test the results against the broader research propositions. The four propositions mention herein above in chapter 2, are validated against the findings from Chapter 4, as well as the literature reviewed in Chapter 2.

The primary purpose of this research paper is to identify appropriate customer value management strategies in the mobile telecommunications industry in response to the forces of commoditisation, to assess the level of commoditisation and how regulation and OTT providers or disruptive technologies influence it.

5.1 Profile of Respondents

From the initial target of twenty respondents, only twelve were available for interviews. All twelve respondents had deep knowledge of the mobile telecommunications industry, four out of the twelve respondents had been involved in the mobile telecommunications industry ever since its inception. The four respondents told stories of how the phenomenon of commoditisation has always been present in the underlying utility that operators have been trading and the battle has always been about how to package value over this utility. An executive for mobile product development even passionately stated that

“If you only think of it, Telco’s are just selling airtime this is what Telco’s are traditional known are for.”^{D2}

The four respondents had progressed to sit in the executive committees of South Africa’s big four operators and they were well versed and had a great understanding of the South African telecommunications sector.

The four senior management consultants specialise in strategy for telecommunications, media and technology companies and they spoke of innovative ideas that operators can employ and how OTT providers bring opportunities to the sector and should not be viewed as threats for the mobile telecommunications operators. The four senior management consultants mostly play a role of strategic

advisors to mobile telecommunications operators and have global experience in the industry, in addition they all had MBAs.

The other four respondents were senior managers involved with the current challenges in the mobile telecommunications sector and are pioneering product development initiatives in the industry as well as 'go to market' strategies.

Overall, the researcher was confident that the interview respondents would provide insights into the topic of this research report and would be able to adequately assess the effect that commoditisation has on value management strategies in the South African mobile telecommunications sector.

5.2 Understanding of the level of commoditisation

The proposition from the literature review was that;

Proposition1: South African telecommunications market is becoming commoditised.

Using the literature review in chapter 2 and research findings from chapter 4, the researcher found that there is a common understanding as to what commoditisation is in the mobile telecommunications services. These views were congruent to the underlying service, be it voice or data being seen as just a utility.

From the literature reviewed, Kushida (2015) states that commoditisation does not necessarily mean an immediate drop in revenue or the financial performance of the mobile telecommunications operators. Even with the decline in prices, Kushida (2015) concluded that this may just increase the demand for the operator's products and services.

From the interviews conducted, the researcher found that most respondents agreed that prices of mobile telecommunications services compared to other services have been dropping over time and operators are still boasting about revenue increases year on year. Interviews found that in the South African market, despite the increasing adoption of smartphones for the high end of the market, the decreasing prices have also made it more affordable for the lower end of the market to get an entry level device to use voice services on the 2G network, this supports findings from Kushida (2015).

Respondents also mentioned that the increase in the roll out of LTE networks has resulted in the majority of the operators re-farming their 2G spectrum and replacing the spectrum; this could be a potential threat to lower end of the market voice revenues.

From the Interviews, it was clear that there are still opportunities to be differentiated in the context of commoditisation, that Brand still had a role to play in differentiating how customers perceive the different operators with some operators positioning themselves as a superior network, this being Vodacom, and some operators positioning themselves as having wider distribution networks everywhere a customer goes; network quality being the key differentiator.

The findings from the responses are aligned to the characteristics of a commoditised market as described by Le Goff and Rojas (2014) in the literature review, where offers are said to be undifferentiated and interchangeable, with customers only focusing on the core service which in the South African environment would be the network quality and the ability to seamlessly facilitate transmission of voice and most importantly, any content over the network.

According to the literature, infrastructure sharing can improve competitiveness in the South African mobile telecommunications industry, by reducing the costs of investing in new network technologies and focusing on pricing and bundling services on the network (Kaziboni & Robb, 2015). From the literature review, Fransman (1997) states that the phenomenon of commoditisation will lead to new demand for bit transportation. This new demand for bit transportation will also increase the demand in content as it becomes more available over the internet. literature makes it clear that commoditisation in most markets manifests itself as a result of deregulation Esselaar, Gillwald, & Stork, (2006) and freeing up the industry through initiatives, such as open access.

From the interviews, the researcher observed that there were shared views about how the regulators are holding back the South African telecommunications industry and how it has protected mobile telecommunications operators for such a long time. The issue of the sub-Giga Hertz spectrum was highlighted several times, that this could be the key to having an even more affordable mobile telecommunications service.

In conclusion, the understanding of the mobile telecommunication industry from the research mirrors that of the literature review. However, the majority of people interviewed believe that we are not completely there yet, there are still huge opportunities for operators to continuously differentiate themselves and Brand is still a buying factor when it comes to choosing between the different network operators, particular brand perceptions on network quality and reliability of the customer experience. Operators need to start evolving their business models in efforts to be seen as a one-stop shop for customer's communication needs and more.

5.3 The impact of over the top providers

From the interviews, it is clear that the respondents do not agree with proposition two that;

Proposition2: Over-the-top service providers are reducing the levels of differentiation between mobile service providers.

The majority of the respondents seem to have a different view to the propositions mentioned above; they believe that embracing OTTs can lead to differentiation. Respondents believe that operators have a role in facilitating seamless delivery of content on top of their networks.

Some respondents even go further to state that the current network operators have to eventually start seeing themselves as over the top providers because in the future, operators may not need to own the network in order to provide their services and companies such as Telkom's Openserve will be well positioned to be the infrastructure or access provider to all mobile telecommunications operators.

The findings from the literature review saw OTT providers as a threat to traditional mobile telecommunications operators operating models. Green et al. (2006) referred to OTT providers leading to the disintermediation of the customer as a result of these OTT players and the challenge for operators to continuously invest in network technologies while they no longer own the customer relationships. Jayakar and Park (2014) state that in certain markets, mVOIP raised serious concerns about the sustainability of Korean mobile telecommunications operators.

Some of the respondents even went further to state that:

“There is a risk that the operator could be just a dumb pipe but the mitigation factor will depend on how well operators are willing to embrace the OTTs.”^{D3}

“Do we become an OTT? The role of an operator in the OTT world is not to become an OTT, but it is to become an enabler for the OTT. We may never be a WhatsApp, but we can do something to enable them and to run their service. If you acquire them you will kill them anyway” ^{D4}

“And I guess you can add OTT apps of your own such as WhatsApp but the one thing would be to partner with them as an example an iPhone deal bundled with Skype minutes” ^{D5}

“I think it is a partnership approach with the over the top providers, what you don’t want them to do is similar to what happened in the mobile industry where fixed line operators saw mobile telecommunications operators as a threat and did not want to make base stations available to the mobile telecommunications operator, and the unintended consequence is that the mobile telecommunications operators have now rolled out their backhaul. You do not want a fight with OTTs and encourage them to build networks; you want to see them as customers rather than seeing them as competitors.”^{D8}

Embracing OTTs is one of the key themes identified through analysing all respondents’ responses; respondents do not see OTTs as a major threat for the operators, especially if the operators can create a symbiotic relationship with the OTT providers. A few respondents believe that revenue sharing agreements will need to happen between the OTTs and the network operators. Moreover, that operators will have to find a way to monetise these OTT players. The respondents’ suggestions on embracing OTTs are in line with the recommendations from Sawe (2016) and Sujata et al. (2015) from the literature review on partnering with OTTs as a strategy for operators to benefit from the additional traffic brought about by OTTs on their networks.

One of the respondents believe that the symbiotic relationship can assist OTTs to gain scale, especially the smaller ones, while creating a revenue share with the operator

“Example there is going to be a lot of OTTs which will be very niche focused and the operators who can capture them and from inception will partner with operators to gain scale.”^{D3}

Some respondents mentioned how disruptive these OTTs are, however the majority believed that there should be net neutrality. They highlighted that the OTTs could also just push the traditional operator to be just a dumb pipe, a utility to facilitate access for all the over-the-top applications unless the operators establish some strategic partnerships with OTTs. Some respondents went further to mention that, with the increasing numbers of the less than a thousand rand smartphone, we could see a shift in the telecommunications landscape and traditional voice will be the biggest casualty of this phenomenon because any application whether voice, data and other content can be delivered over an IP network.

In conclusion, earlier literature sees OTTs as more of a threat to operators’ business models, mostly driven by the fact that the OTTs have an advantage of having the ability to provide similar services as traditional mobile telecommunications operators without the infrastructure investment and the stringent conditions from the regulators. The more recent research such as findings from Sawe, (2016) and Sujata et al., (2015) see OTTs as a potential opportunity which is in line with the views of most respondents who believe that in future, we will observe more innovative partnerships with OTTs as strategies for innovative product differentiation. The respondents who are against the unregulated OTTs believe that they should be subjected to the same regulations as those with which mobile network operators need to comply, however, with open access, mobile telecommunications operators will also be seen as providing services over the top of the infrastructure provider. OTTs in essence, will act as a potential differentiator, prolonging the process of commoditising the operator’s products and services.

5.4 The role of the regulator

Proposition 3: Government regulation is driving the levels of commoditisation in its efforts to provide universal access to telecommunication services.

There was a consistent dissatisfaction about the regulator amongst the respondents, with most of the interviewees alluding to the fact that the regulator is currently holding back the rate of development in the South African economy, mainly because it is taking too long to free up the analogue spectrum currently allocated to TV, these delays are working against its mandate to bridge the digital divide. Most respondents agree that the asymmetric pricing model for mobile termination rates is a good model and favours the smaller and entry level players. The main thing is the spectrum which, if released, can bring high-speed telecommunications to millions more South Africans. The researcher also realised during the interviews that the issue of the spectrum was quite topical at the time the research was conducted with respondents stating recent white papers released by the regulator on how this spectrum can be allocated.

The main question linked to this proposition was that, given the recent ruling on Over-the-Top providers (OTTs) and Net Neutrality as well as creating an environment to through issuing of new spectral licences, how is the regulator shaping the telecommunications industry from an industry commoditisation perspective. Respondents seem to disagree with this proposition with some stating that they do not believe that the regulator knows what it is doing or what to do with the OTTs.

One of the respondents stated the following

“The story of OTT, legislation on net neutrality is quite key, so net neutrality many people believe that the internet should be treated equally I fundamentally disagree with that. The reason for that being myself as the network provider if I am the one still using to provide services someone else is using my network without my consent I will give to the customer the way I want to give it to him.”^{D7}

The challenges that respondents have with OTTs are more about how the regulator seem to have less regulatory requirements towards OTTs compared to the stringent requirements that mobile operators have to comply with from the regulators, some of the requirements were aligned to those highlighted in chapter 2 of the literature review. This supports Nguyen (2016)’s conclusion that there is currently a regulatory imbalance between OTTs and mobile network operators.

Some respondents on the other hand, believe that the net should be kept neutral and that we cannot regulate what the customer wants, supporting the ICT white paper highlighted in the literature review introducing net neutrality, preventing internet intermediaries from discriminating traffic (Cwele, 2016). There are mixed views amongst respondents, on how the regulator should handle OTTs however there is a consistent view that because of the delay in regulator's releasing the sub-Giga hertz spectrum the regulator still accounts for the high levels of differentiation between the network quality of the different operators and high prices in the South African mobile telecommunication environment.

The literature mentions how in some markets, commoditisation occurs as a result of less regulation or deregulation of the telecommunications industry. The South African mobile telecommunications industry is still fairly regulated and it could be these regulations which are currently preventing an industry transformation into providing undifferentiated products and services. The regulator however, seems to be moving towards a less regulated industry with open access regulations perceived as a major game changer that could potentially lead to a complete separation of operator's network and service operations which could bring about more innovation and fewer barriers to entry in the industry; removing these barriers is a key ingredient to commoditising an industry as it would result in more competition and decrease in prices as reflected in the literature (Hodge et al., 2008; Tusa et al., (2014).

5.5 Value management strategies

It was evident from the interviews that the respondents shared different views about the types of strategies to employ in an increasingly commoditised industry. However, it was quite clear that the majority thought these value management strategies, seeking to provide value to the operator or the customer, could have a positive impact on commoditisation. The following proposition held true amongst all respondents interviewed.

Proposition 4: Customer value management strategies can have a positive impact on the commoditisation of a service

Respondents identified strategies along the following key themes which are innovative product differentiation, embracing or partnering with OTTs and creating layers of value around the commodity which is, in this case, voice and data services.

5.5.1 *Innovative product differentiation and embracing OTTs*

From the interviews, the majority of the respondents believed that there is still much room for operators to innovate and differentiate products which can offer value to both the end user and the operator. They further state that this will be easier for the smaller operators as they are quite nimble and have an opportunity to completely disrupt the market as they have less to lose compared to bigger operators.

From the literature, customer value management is a combination of actions taken by the organisation which influence the perceived value for the customers Daniels (2000), these include actions that affect the price and value factors of a product or service.

Respondents from different operators and industry mentioned FreeMe which is a product launched by Telkom as one of the new product setups which are fundamentally different from traditional voice packages. This package has data as its base plan and offers the voice as an on-net benefit, bundled with free WhatsApp, Skype and Viber which are OTT players.

Two of the interviewees mentioned that:

“Disruptive products such as FreeMe which embrace over the top providers which have adapted to trends of decreasing voice and increasing data.”^{D3}

“FreeME is also quite a game changing product at the moment which is almost like a gym membership model give me so much money, and you whatever you can use whatever you want.”^{D8}

The increased popularity of mobile packages which are bundled with OTT applications is further proof in line with the literature review that value is something that is perceived by the customer rather than by the operator. There is a general trade-off between what customers receive which, according to the research findings, includes

- Network Quality,
- The service experience.

Moreover, what customers give up, which from the responses, this is mainly price for budget-constrained customers and convenience of acquiring the service for customers who are mainly time constrained.

Other respondents still believe that through a better understanding of a customer, the operators can create products and services which meet the needs of the customer, further differentiating themselves from the competitors and positioning themselves in the mind of the client. They further state that operators will need to start using a design thinking approach to creating products and services by starting with the customer in mind before creating the product. Most respondents agree that it is all about what the customer wants and operators cannot stop the customer from what they want as this will start to become a gap in the market for someone else to fill and in so doing, capture the customer.

One of the key findings in the literature regarding customer value management was that with increased storage of customer transactions it provides an opportunity for organisations, through analytics and careful campaign management, to better understand the customer, which can increase his tenure and revenue, which increase the overall lifetime value.

One of the respondents mentioned that;

““You have to find that competitive edge and break your customer into segments and tailor products to their needs such as the at home mum, the network gamer, another segment for kids would be something like we are a safe network by providing these segments we can still continue to differentiate.”^{D5}

The researcher recalls the passion in the digital transformation lead for one of South Africa’s big consulting houses during the interview as he stated that;

“Products will be driven by what users want.”^{D6}

Other respondents see the operators as becoming more of a lifestyle service provider, moving completely away from their traditional line of business to meet customers needs. They believe that once an operator owns the customer, then they can become a one-stop shop for the customer, capturing more and more of his wallet.

The literature review also found some of the bigger operators, such as AT&T and BT as one of their response to commoditisation, they are increasing or diversifying the services offered by the operator in the effort to be seen as a one-stop shop.

One respondent went further to mention that;

“If you thinking you are going to sell voice or data then you are wrong, the infrastructure provider will sell voice and data, mobile telecommunications operatorss need to sell everything that the customer wants that’s why mobile telecommunications operatorss need to sell whatever the customer wants a case in point would be the insurance products sold by operators, and they must start thinking wider than that”^{D4}

5.5.2 *Creating layers of value around the commodity*

All respondents seem to share the same view that operators can compete through creating layers of value around their commodity which, in this case, is the voice and data services. Product bundling now becomes a key differentiator as well as network quality and pricing. These layers of value can be tailored to a specific group of customers. All respondents agreed that price is still a key buying factor for certain segments, the simplicity of the product setup, other segments seek convenience, by convenience we either mean time or location of distribution outlets and brand. It was quite surprising that most of the respondents still believed that brand has a role to play in the customer's purchase decision journey.

Some of the verbatim from the respondents include;

“Driving the perception of value, the packaging of the CVP becomes a differentiator, being first in line in the queue, operators need to be the first in mind for the customer.”^{D3}

“The question is how you define and understand the value that your commodity creates for the end users which in this case is the customer.” ^{D8}

“If they need a product they require it with as few hassles as possible without giving information that you already have and not having to go queue at a store.”^{D9}

It was evident from the interviews that the ability of the operator to effectively communicate the value that their product or brand brings to the customer can be a key differentiator and a strategy, however, this does not seem to happen in isolation as most of the respondents who shared this view also believed that innovative product differentiation is still an important feature.

CHAPTER 6. Conclusion and Recommendations

In chapter 4, the results of the primary research in the form of face-to-face interviews were presented. These were later analysed and discussed in chapter 5; the results were analysed and compared to the literature reviewed in chapter 2; this chapter summarises the research findings and conclusions. The chapter also outlines some recommendations from the analyses done, and the focuses on the key strategic recommendations given an increasingly commoditised market, the increased adoption of OTT providers and regulation in the South African mobile telecommunications industry. The chapter concludes with suggested areas for further academic research.

The conclusion and recommendations of the study are summarised in the same order as the results presented in chapter 4.

6.1 Conclusion of the Study

In order to address the research propositions, semi-structured interviews were conducted with the 12 participants within the south African mobile telecommunications industry. It may be concluded that the underlying service, be it voice or data, is already a commodity, however the industry is not fully commoditised, but shows strong characteristics of an industry that is becoming commoditised and this supports the first proposition that the South African telecommunications market is becoming commoditised.

It was not conclusive from the research that the over-the-top service providers are reducing the levels of differentiation between mobile service providers in support of the second proposition. The majority of the industry experts believed that there was a strong need for operators to partner with the OTTs, establish methods to monetise the relationships they currently have with the OTTs, leverage OTT partnerships to create differentiation. It is true that the most impacted segment will be the traditional voice segment which is the traditional revenue stream for most mobile telecommunications operators. All content can now be transmitted through the internet; the respondents believed that this paradigm brings with it new opportunities for the telecommunications industry.

The third proposition that government regulation is driving the levels of commoditisation in its effort to provide universal access to telecommunication services was partially rejected as the majority of the industry experts believe that government is actually holding back the industry from being truly competitive. The issue of the Analogue spectrum is very key to providing universal access to telecommunications services, the issue of regulatory imbalance between the OTTs and the mobile operators and the issue of infrastructure sharing were among some of the challenges that the regulator needs to address in order to transform the telecommunications industry for it to be truly competitive.

The research fully supports the fourth proposition that customer value management strategies can have a positive impact on the commoditisation, the industry experts believed.

The respondents believed that by understanding what the key buying factors are that customers value when they choose between our toughest competitors and the operators, Operators can increase the perceived value of their products and services. Some of these key buying factors include

- Network quality, though it may seem to be a hygiene factor, network quality is still perceived to be one of the key buying factors when customers choose between the different operators. The network quality justifies why other operators can charge higher prices for voice and data products.
- Brand, though it may seem contradictory that in a highly commoditised industry, brand is still an important factor that customers consider when choosing between the four operators. Brand positioning to the customer - some network brands are known for superior network quality and their ability to consistently communicate the value they provide to the customers.
- Striking a balance between price and convenience of the buying process, some customers preferring affordability of the service while others consider the ease of getting the service, whether through better distribution networks or using alternative distribution channels, such as online.

Forming strategic partnerships with OTT providers will assist the mobile telecommunications operators by creating layers of value on their network and creating what others call a smart network. Smart networks are known to be geared at

facilitating the transmission of content from OTT providers. Mobile telecommunications providers should strive to be known as the network on which OTT applications run very well; and collaborating with OTT providers through providing alternative payment options for applications, such as video on demand, which will be in the form of airtime. The mobile telecommunications operators will then have the customer and can facilitate transactions with OTT providers.

By becoming a lifestyle provider, owning the customer relationship, for now, provides the mobile telecommunications operators with a wealth of opportunities for providing any services to the customers for which payment can be facilitated via airtime purchase.

6.2 Recommendations of the Study

From the literature and the findings from the interviews conducted, the researcher's recommendations is to suggest some strategies that can assist the mobile telecommunications operators to thrive in an increasingly commoditised industry and to assist them to see opportunities where others see threats.

Further, the recommendations are for mobile telecommunications operators to continuously seek to create value for the end user in order to keep themselves differentiated from their competitors.

Mobile operators should take care of the hygiene factors such as network and service quality in order to increase the customer satisfaction while using their networks.

Operators should be on constant look-out for commodity traps by using analytics, machine learning, and big data. Mobile telecommunications operators who can develop strong capabilities in these areas will be well positioned to develop products and offers that have a high perceived value to the customers as they will have a better understanding of the customers' needs.

Operators should strive to be known as the operator where certain OTT applications run very well and are bundled within the package design of the service offered by the operator.

Operators will need to start diversifying their product offering and product strategies and this can be done by leveraging the customer relationships by facilitating other transaction through airtime.

6.3 Areas for further research

This chapter summarised the scope of the research to understand the recommendations made. The recommendations were based on the research findings from the literature review and the interviews.

The quantitative study with a much larger sample size will shed more light on the actual level of commoditisation in the South African mobile telecommunications industry, to also assess whether the OTT providers are leading to the disintermediation of the customers from the OTT providers to the network operators.

The qualitative study was focused on how operators can form mutually beneficial strategic partnerships with OTT providers to create the layers of value as suggested in the research findings.

Other areas of investigation would include how network operators can transform themselves to becoming lifestyle service providers, such as financial services and entertainment services which can be facilitated through their network and how airtime can be seen as more than access to voice minutes to more of a currency which enables end users to make purchases with other value-added services offered by the network operators or other service providers, such as OTT providers.

Other possible areas of research would be on how the South African mobile telecommunications operator can be separated into network or infrastructure providers, and network operators as we know them now just becoming service providers. The research could mainly focus on whether this development would truly benefit the end users and how it could affect or accelerate economic growth in South Africa.

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Appendix 1: Interview Guide

Interview guide

Topic	Interview Questions
Industry commoditisation	1. What is your understanding of commoditisation in telecommunications and how will this manifest itself in the South African environment? 2. How do you see the role of the network operator evolving in the foreseeable future? 2020, 2030
<i>Strategies</i>	3. What are the key buying factors that customers value when they choose between the four operators? 4. how can operators respond to survive in a market that is increasingly becoming commoditised <i>which strategic responses are likely to succeed and which are likely to fail</i>
<i>Over the top providers</i>	5. What do you think will be the impact of over the top providers on mobile telecommunications as smartphone adoption increases amongst users.
<i>Regulator</i>	6. Given the recent ruling on Over the Top providers (OTTs) and Net Neutrality as well as creating an environment to through issuing of new spectral licenses, how is the regulator shaping the Telecommunications industry from an industry commoditisation perspective