Network Value Analysis

Analysis of the Mobile Value Added Services in the UAE Telecoms Sector

By
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Executive Summary

“Mobile Value Added Services are services which do not form of core or basic service but adds value in total service offering.”

Understanding how value is created in new economy organisations is an interesting proposition. For analysing new economy organisations such as the telecom industry and Telco’s, adopting a value chain concept is not enough due to the complexities involved. The preferred approach for analysing industries such as Mobile Value Added Services will be the Value Network approach which is the ideal concept as the value is created by a group of actors.

In this dissertation, I am using Network Value Analysis as the theoretical model to analyse the Mobile value added services in the UAE. UAE is rapidly moving towards becoming an evolved mobility market with no distinction between market incumbents and challengers. To develop alternative revenue streams as voice has become commoditized, it is important to focus on the Mobile VAS for the Telco’s. VAS could be the key differentiator in future when competition forces the Telco’s to find alternate sources of revenue to increase the ARPU.

For primary research, qualitative analysis (interviews) has been done with the industry experts from the Telcos and Vendors in UAE to verify the theoretical aspects of value network. The primary research will not be complete without having the consumer perception as the value will be created ultimately for the consumers. To get more insights, quantitative analysis has been done on the consumer segments in UAE on a smaller scale to get the consumer perspective.

UAE is a country which has a population consisting of nationals and expatriates from various nationalities. For secondary research, literature has been collected from various sources and reviewed in the literature review area. Value network analysis is currently being studied in the developed markets and so literature review has been done on the approaches specifically on the telecom/mobile value chain.

The dissertation structure is explained in detail in the Introduction.

Suggestions on how this study can be done on a larger scale and possible approaches/recommendations are also included in this study.

Conclusions are in line with the Research findings and could be a guideline for future research.
CHAPTER 1: Introduction

1.1 Dissertation objectives

The objective of the dissertation is to introduce and analyse network value analysis as an approach to analyse the Mobile Value Added services in UAE. Telecom industry is undergoing rapid changes and today the customer retention is as important as attracting new subscribers due to the market saturation. Markets such as UAE with high penetration, as the Telco’s have to focus on non-voice revenues such as the value added services to increase or sustain the current ARPU. Telco’s need to innovate and services is the key to generate the revenue and to compensate the losses from the voice calls. For analysing Industries such as Telecom, Value Chain is not appropriate as products and services have become decentralised and value is created by a combination of players. So we have used the concept Value Network as the basis for the study.

So in this study I have looked into the Mobile Value Added services scenario in the UAE from a value network perspective.

What is the definition for Mobile Value Added Services?

Mobile value-added services (VAS) are those services that are not part of the basic voice offer and are availed off separately by the end user. They are used as a tool for differentiation and allow the mobile operators to develop another stream of revenue.

In the recent years, the telecom Value chain is getting deconstructed in the developed countries in Europe and Asia. New actors are entering the industry and the value network is becoming more mature. The Telco will not be able to control the value chain to the extent which it has been doing before and the end user experience will be the key to attract subscriber for the new services. In the UAE the Mobile VAS has been provided by Etisalat – the monopoly till 2007. Only when services such as RBT was introduced in UAE, the role of the content aggregators and content providers came into the limelight. Once the second operator du launched services in UAE, there has been more focused approach in the Value network of Mobile VAS.

The primary research for this project has been done with qualitative and quantitative research (small scale), which includes interviews with the industry specialists and survey done among the consumer segments in UAE. The current value network with the Telco’s Etisalat and du have been studied as part of the project and also some of the developments in the evolving value network chain where new actors are entering has also been looked at.

The research approach will be based on combination of interviews and the survey with consumer segments to test and verify the theoretical concepts of Network Value Analysis.

From the interviews and the survey I intend to gather information and analyse the following points:
1. Current status of the Value network in UAE for Mobile VAS
2. Business Models & strategy
3. Identify the roles and value dimensions
4. Network dynamics and implications in future
5. Challenges
6. Consumer perception

Details on the value added services in UAE, the Telco’s and other actors involved in the value network will be analysed. Service innovations, business models, actors such as Vendors, content providers, aggregators, regulators will also be addressed in the study. Includes the plan to capture the perceived value of the actors in the value network.

Quantitative research based on the survey questionnaire which will be circulated among the consumer segments in UAE. This research will give the outline on the consumer perception, adoption rates, etc.

1.2 Expectation

The key conclusion to be gained after analysing the Mobile VAS based on the network value analysis theory is to understand the deconstruction of the Value chain, the complexity and diversity of the business models and the fast evolving value network.

1.3 Background to the study

Currently I am associated with the Mobile Value Added Services in my career and so have helped to understand the dynamics of the project. Secondly value network analysis for the Telecom in general and for mobile value added services has not been explored much and it is an area of interest to me. Some of the articles published on the Media and internet also increased my interest in this area.

1.4 Research objective

The initiatives behind the interviews were to understand the Mobile VAS perspective from the Telco’s and vendors. It was important to collect the details on the plan for the new services, innovation, competition, value network evolution and challenges from the Telco key decision makers and Senior Personnel from the Telecom Vendors. A smaller scale quantitative research with the various communities in UAE has also been done. The objective of the quantitative research has been to understand the perception of the consumers on the Mobile Value Added Services.

1.5 Structure of dissertation

The research questions will be answered in stages during the course of various chapters following a methodical approach.

Chapter 2
Various articles, reference books, articles on telecom, HBR and web resources have been reviewed and looked at with a critical approach. Through the review I could identify the evolution of the Value network, which has also helped in forming the basis for the research and the direction to reach the findings and conclusion.

Chapter 3
Research methodology will be explained in detail in this chapter. This will cover the qualitative research (interviews) and the quantitative research (survey questionnaire). Also the reasons for this methodology will be highlighted.
Chapter 4
All the research findings will be presented in this chapter based on the various arguments which was identified by the literature review.

Chapter 5
Conclusions – Gives the summary of the approach and also gives some recommendations which could be adopted. This will include the limitations of the study and reflections.

Chapter 6
All the references used for this dissertation is listed here.

Appendix A - includes the survey questionnaire used for the research

Appendix B – includes the interviewees list

Appendix C – includes the abbreviations used
Chapter 2: Literature Review

This chapter will refer to some of the studies which have been done on the fragmentation of the Value chain and specifically on the telecom/mobile industry. This also includes the studies on the evolution of the value network from the value chain, specific studies done on the Mobile Value Added Services and some of the related industry information.

2.1 Deconstruction of the telecommunications industry

Feng Li and Jason Whalley (2002) did a detailed analysis of the deconstruction of the telecommunication. According to them, since the millennium and after introduction of the 3G network; the telecommunications industry has been undergoing a radical transformation, creating exciting new opportunities and new challenges for infrastructure and service providers. The established value chain is increasingly being deconstructed, with the entry of powerful new players, radical restructuring of the industry, rapid technological developments and increasing market turbulences. Many tested business models, as well as related frameworks, tools and techniques, have become obsolete.

The value chains are rapidly evolving into value networks, with multiple entry and exit points, creating enormous complexity for all the players involved. Further research is needed to map out the telecommunications value chains and value networks to identify the different players and the possible strategies and business models that they can adopt; develop new conceptual frameworks for understanding the current changes in the telecommunications and related industries; and create new tools and techniques for identifying opportunities and threats and for making new strategies.

When we consider the Mobile industry, in the developed Markets such as Western Europe, Japan and Far East the ARPU from the voice calls are on the decline and the Telco’s have to look for alternatives to compensate for the reducing ARPU. In countries such as UAE, where the Telco’s are handling Mobile/Fixed operations, the operator’s strategy to promote the interesting service to the relevant segment is important and will hold the key for the future adoption and maturity.

2.2 Mobile Value Added Services

2.2.1 Definition of VAS

According to IAMAI – Indian Mobile Association:-

Value Added Service (VAS) in telecommunication industry refers to non-core services, the core or basic services being standard voice calls and fax transmission including bearer services. The value added services are characterized as below:-

- Not a form of core or basic service but adds value in total service offering.
- Stands alone in terms of profitability and also stimulates incremental demand for core or basic services.
- Can sometimes be provided as stand alone.
- Do not cannibalize core or basic service.
- Can be add-on to core or basic service and as such can be sold at premium price.
- May provide operational synergy with core or basic services.
- A value added service will have one or more features among the above but necessarily all.
2.2.2 Matured and emerging VAS

The most common Mobile Value added services are:
- Short Messaging – SMS (P2P – person to person, A2P – application to person)
- MMS – Multimedia messaging
- Ring Back tone, Ring tone, logo, Full track music
- Missed Call Notification
- Blackberry business applications
- Push mail, email to SMS
- Mobile Payment
- 3G VAS – (Instant Messaging,
  - Mobile TV,
  - Mobile broadband)
- POC – Push to talk over cellular
- Mobile Advertising

Next generation VAS – IMS Services

Fixed mobile Convergence (FMC)
- IP Centrex,
- VCC-Voice call continuity,
- Video sharing,
- Multimedia conference etc.

Figure D 1.1: Example of the Mobile Value Added Services
2.3 Trends in the Mobile Industry
The rise in sophistication of customer preferences coupled with commoditization in traditional voice services poses a unique set of challenges to mobile operators who will need to provide novel, competitive offerings while addressing the attendant downward pressures on Average Revenue per User (ARPU) and Average Margin per User (AMPU). To understand more on the traditional Mobile Operator revenues, it is a practice to study one of the developed markets in the World, which is Western Europe.

The below statistics figure D1.2 from matured markets shows that the revenues from voice is reducing. MOU – minutes of usage is on the decline and so the voice ARPU is going down in the developed world. The same applies to other developed Markets such as Japan. Flexibility, speed-to market and cost containment are more important than ever before. The focus is shifting from customer acquisition to retention in matured western markets (e.g., Germany, UK, US). As mobile penetration approaches saturation in some markets, the situation changes to churning other Telco’s customers, as opposed to acquiring new customers. To succeed in this environment, mobile operators have segmented their customer base and are offering segmented offerings for each (e.g., no-frills vs. global roaming+value-added services such as MMS, internet, etc.)

![Annual Change in W European Voice Metrics](image)

**Figure D1.2 : Voice Metrics in Europe**

According to BT-teleconsult, Telco operators around the globe are facing similar challenges to BT which they need to address in order to survive, deliver healthy returns for their shareholders and meet their customer’s expectations:

• Managing financial and operational performance to deliver continuous growth and value to shareholders.
• Addressing changing regulatory conditions and their impact on strategy, organizational structure and investment decisions.
• Fighting-off competition and new market entrants with disruptive business models.
• Rationalising and modernizing the organisation, infrastructure, systems, processes and portfolios to drive cost optimisation and revenue generation.
It is evident that the telecom operators need infrastructure and process that simplify connectivity and allow more innovation.

**2.4 UAE Mobile VAS Scenario**

What is the significance of VAS? Value added services is the add on to the mobile voice revenue. These days voice revenues are on the decline due to VOIP, call back etc. So in order to reduce churn and increase adoption, stickiness and to attract new customers it is important to introduce value added services. To ensure survival in a highly competitive global market place, the Telco’s are forced to look at innovative ways to reduce cost and add value into cost effective solutions and able to generate revenue.

In UAE the Telco’s are looking at VAS to generate revenues up to 20% by 2015. Currently VAS accounts for only 4% of the revenue and should be capable of generating 5-10% of revenue in the near future says 2012-2015.

<table>
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<th></th>
<th>Egypt</th>
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<tr>
<td>FL Penetration Rate</td>
<td>14.5%</td>
<td>31.7%</td>
<td>15.9%</td>
</tr>
</tbody>
</table>

**Figure D 1.4 : Telecom KPIs by Country**

Source: Regulators, Operators and EFG-Hermes estimates
The above figure shows the statistics from three countries in the Middle East for the Q3 2008. The number of mobile additions is much higher than the fixed line. The reason for the lower number of additions is due to the high penetration in UAE and the market is reaching saturation.

Figure D 1.5: UAE Mobile Operator subscriber statistics
Source: du, Etisalat, TRA, Media

The current subscriber information from UAE is as above. There is more than 160% penetration in UAE, but taking into account the number of active subscribers; we can assume that the actual penetration rate is around 154%. The above figure depicts the subscriber ratio for the dominating Telco Etisalat and the new Operator du. The statistics for 2007 (per 100 subscribers) from TRA is pasted below.

Figure D 1.6 Mobile Penetration in UAE till 2007
Source: www.tra.ae (UAE Regulator)
2.5 Creating value in Value networks

According to Basole and Bourse, the shift towards a network approach to the services ecosystem also changes the concept of value creation. While early research focused on value created at the relational level, value for consumers is now created at the network level, in which each actor contributes incremental value to the overall offering.

This view of value creation emphasizes the focus on core competence and competence complementarities. Instead of providing the maximum value to customers on their own and running the risk of being unprofitable in the long run, actors contribute to the value creation process by focusing on their core competence and cooperating with other network actors, such as suppliers, partners, allies, and customers, through various value constellations. Product and service delivery is thus a complex value creation process enabled by multiple actors. The telecom value network could be defined as per the diagram below.

![Telecom Value network by Basole & Bourse](image)

2.6 Evolution of the Value Network

2.6.1 Reconstruction

According to Feng Li and Jason Whalley (2002), Deconstruction is a generic phenomenon, occurring wherever vertically integrated business models can be disaggregated into their constituent elements through the application of new technology. It is important to explore how new business models and strategies are emerging and how value chains are being reconstructed with the emergence of the datacom space. Hagel and Singer (1999) further developed the deconstructed scenario and prescribed the way firms should be deconstructed and then reconsolidated by focusing on one of the three activities namely,

- Customer relationship businesses
- Product innovation and commercialization businesses
- Infrastructure management businesses

Price reductions and increased innovative activity will occur as the unbundled companies take advantage of the scale economies that are now possible, and increased opportunity to be innovative that results from being a specialist niche player in the market (Birch & Burnett-Kant, 2001). As the telecommunications industry has become more complex, through
liberalization and the lowering of technological barriers to entry, the diversity of players, their strategies and business models have increased. The monopolistic industry structure that Fransman (2001) described in terms of a three-layered model has given way to an increasingly complex industry where a multitude of companies compete with one another.

2.6.2 Business Models
Amit and Zott (2000) argued that some analysts misapprehend the term business model as the revenue model, which is the specific way in which a business model enables revenue generation. They describe a business model as the way in which a company enables transactions that create value for all participants, including partners, suppliers and customers. A business model is then defined as the architectural configuration of the components of transactions designed to exploit business opportunities.

![Diagram of the Telecommunications Value Chain](image)

**Figure D 1.8: Deconstruction of the Telecommunications Value Chain: Li and Whalley (2002)**

The above models are meant to indicate the radical changes that are happening in the telecommunications industry.

In the Fig. D1.8 three routes that connect infrastructure companies with the end customer are identified. Each of these routes equates to an emerging strategy and business model. In A1 and A2 software and financial companies respectively act as intermediaries to bridge the gap between the infrastructure provider and the end customer. The business model in route B corresponds to that of an aggregator. These companies have chosen to integrate services provided by others, and have therefore based their success on their ability to identify, and then obtain, the services sought by customers. Resellers also bridge the gap between infrastructure companies and the final customer (route C in Fig. D1.8), but in a manner that is quite different from the integrating intermediaries. Although resellers purchase capacity from infrastructure companies, their focus is towards the end customer. The value network can be seen as a series of inter-twined value chains where some nodes are simultaneously involved in more than one value chain. A particular strategy or business model formulated within the context of one
value chain may at the same time be inappropriate, or even harmful, in the context of the other value chains of which these nodes are part.

### 2.6.3 Value chains to Value network in telecom

The traditional telecommunications value chain is increasingly being deconstructed, which is leading to the development of a complex and rapidly evolving value network, and which can be conceptualized as in Fig. D 1.9 below.

**Figure D 1.9: The interwoven value network and value chain - Li and Whalley (2002)**

Within the value network a multitude of market entry points exist, where a diverse range of companies can conceivably enter the market through different routes. Hence, many powerful new players from other industries are drawn into the previously neatly defined telecommunications market. Similarly, the exit point, the point where the company interacts with its chosen end customers will differ significantly depending on the business model adopted by the different players.

The transformation from value chains to value networks has profound implications for all of the players involved especially for their market positions, strategies and business models and revenue generation as increasingly players in the telecommunications market will simultaneously be involved in several intertwined value chains where the economics and value propositions may differ significantly.

### 2.6.4 Mobile Portals

Mobile operators have been very active in the this area with a substantial share of their market value being based on their ability to provide value-added services, and mobile portals have been positioned to play a key role in capturing a part of this market. In particular, mobile operators have committed huge amounts of capital to purchase UMTS (3G) licenses and to develop these networks with the result that they need a major share of the traffic and the value-added services that 3G makes possible in order to justify these investments. With deregulation and the increased availability of Wholesale capacity, many new competitors have ventured into the core markets of mobile operators. For many operators, mobile portals offer
an escape from the role of pure capacity provider to the more profitable role of service provider. The main advantage of these players rests with their ownership of the network infrastructure both mobile and fixed that can ensure ease of access to the contents available on the portals (Deprez, Rosengren, & Soman, 2002). The development of any set of propositions around new business models in the evolving network economy must be based on underlying theoretical perspectives.

### 2.7 Value creation in the Knowledge economy

Verna Allee (2002) who has been one of the key advocates of value network highlights that mastering value creation in the knowledge economy requires appreciating the pivotal role of intangibles in the business model and a thorough understanding of network dynamics. In the knowledge economy, technology networks such as the Internet that behave more like living systems are enabling the natural pattern of networks to emerge. In describing a business model, we must consider two orders of economic exchange: tangible and intangible. A value network is any web of relationships that generates tangible and intangible value through complex dynamic exchanges between two or more individuals, groups, or organizations. Any organization or group of organizations engaged in both tangible and intangible exchanges can be viewed as a value network, whether private industry, government or public sector. In this method there are the three simple mapping elements. They are participants (roles), transactions and deliverables. Organisations are viewed as a network of tangible and intangible exchanges and based on this theory the value network of a pharmaceutical company has been developed and will be as per the figure D 1.10 shown below.

![PharmCo Value Network - Combined view](image)

**Figure D 1.10: PharmCo Value Network - Combined view**

### 2.8 Telecommunications Value chain – perspectives

Mark de Reuver (2006) in the compilation report has references to the status of the Telecom value chain. In the past, the telecommunications value chain was simple and linearly organized (Maitland et al 2002). But in the future as new technologies such as 4G (LTE) is arriving, services could be offered over multiple integrated networks (Bohlin & Andersson 2004). This could comprise multimedia functionality, personalization (Hui & Yeung 2003) context awareness and more types of actors from diverse industries; seamless technical
integration; dynamic service offerings; billing issues. Finally the governance will become even more complex to be managed. Governance refers to organizing collective action - (Von Tunzelmann, 2003, p. 366)

Three aspects of governance are:

- Structure, i.e. the form through which decisions are made;
- Control, i.e. the power to make those decisions via such structures;
- Process, i.e. the implementation of structure and control.

2.9 Interactive strategy – Value chain to Value network

According to Norman and Ramirez (1993 pp. 65-66), the focus of strategic analysis is not the company or even the industry but the value-creating system itself, within which different economic actors – suppliers, business partners, allies, customers work together to co-produce value. These network members have relationships with each other and they perform different transactions with each other to achieve their own goals or those of the network. The resource-based view sees the value network as a collection of complementary and substitutive resources possessed by different firms (Kothandaraman and Wilson, 2001). From the perspective of transaction cost economics the value network is a set of transactions between firms that are ruled by make-or-buy decisions (Barney, 1999).

In the modern business world there are numerous different organizational structures, which contain a varying number of business relationships and all the firms are somehow part of a value network. This is because producing value to customers with fast changing needs requires flexibility and a fast response that business networks can provide (Hameri and Paatela, 2005). Bovet and Martha (2000) state that value networks are customer-aligned and collaborative. Customer choice is the key force that activates the forming of the value network. A firm can also improve its capability to create knowledge by collaborating with other firms (Blomqvist et al., 2002). Value networks bring positive feedback and learning effects for their members and are therefore a good source of new knowledge (Hamel, 2002).

According to Kothandaraman and Wilson (2001), there are different roles for firms in value networks as some firms are the shapers of the network and some are shaped by the network. The power relationships gained from competitive advantage are an important issue in the network dynamics.

One conclusion that arises from our discussion is that the telecommunications value chain is increasingly being deconstructed, and is giving way to a complex value network with multiple entry and exit points. This change is particularly obvious in some stages of the traditional value chain, especially in the area between the infrastructure companies and the end users where free entry is encouraged. In other parts of the telecommunications industry entry is still limited by licenses. However, even for companies in the limited entry areas, the traditional linear value chain is being deconstructed as companies increasingly outsource as well as collaborate with companies from other industries. These companies have increasingly become nodes on a series of inter-twined value chains, essentially becoming part of a complex and rapidly evolving value network. To survive and thrive in this new environment, every company needs to understand their positions in each of the value chains within the value network, and to re-evaluate their strategies and business models, especially their revenue models.
2.10 Innovation and Value Network

The value network system is formed of actors and their relationships. At the conceptual level, the value network can be described with business models that are connected to other business models and customers. The value network is formed to create value for customers and for the participating firms. The business models are in different positions in capturing the value from customers depending on their position and power in the network.

Mikko Pynnönen (2008) in his thesis compiles on the fact that Open (collaborative) innovation is grounded on the idea that innovations form when information is shared between organizations. In open innovation, the internal and external ideas are combined into new innovations to reach new markets and they are implemented with completely new business models (Chesbrough, 2003). The main idea in open innovation is that customer value is created not only inside a single firm but also between several firms (Chesbrough, 2003; Fjeldstad and Haanaes, 2001; Shapiro and Varian, 1999). Furthermore, innovation can reach the market from inside or outside the firm. Generally, collaboration in a business network that produces value generates better innovations and more value to customers (Bovet and Martha, 2000; Cartwright and Oliver, 2000; Fjeldstad and Haanaes, 2001; Tapscott et al., 2000).

Cooperation between business actors occurs in business networks that change dynamically over time and usually lack a given centre, although, in some cases one actor is the centre of the business network. The value of a network increases in proportion to the square of the number of nodes on the network, which means that the more subscribers the network has the more valuable it is.

For complex value systems, the generation and delivery of value to the users becomes a mutual interest. Based on their internal resources and capabilities, they adjust their functional contribution in the development of customer value. Their operation in this framework is based on the exchange of information, products, services and financial assets. Hence, organizations become dependent on each other strategically, functionally and financially. Continuous and repetitive interactions lead to the emergence of relationships between firms, which might become institutionalised through legal agreements and contracts. The interrelationships between the actors can exist at various levels, e.g. communications, information flows and revenue flows (Maitland, Van de Kar, When de Montalvo, & Bouwman, 2003). A dynamic network of collaborating actors that intends to generate customer value and network value by means of a specific service offering, and in which tangible and intangible value exchanges between actors take place.

2.11 Industry and Trends in Mobile VAS

There exists a vast world beyond voice that needs to be explored and tapped and the entire cellular industry is heading towards it to provide innovative options to their customers. Spoilt by choice, the mobile phone subscribers are beginning to choose their operators on the basis of the Value Added Services they offer. The increased importance of VAS has also made content developers burn the midnight oil to come up with better and newer concepts and services.

The adoption of mobile telephony remains unparallel in scope, as users from diverse segments increasingly choose to exercise the option of personal mobility, trends in the cellular industry, current market status, value chain, competition, market dynamics & expected roadblocks.
2.11.1 Actors – roles in the VAS Value Network

- **Content Generators** - These are the companies that own the copyrights of the content. Examples include the music labels, movie production houses, media houses/TV channels.

- **Content Developers** - These are the companies that create customized content as required by the subscriber preferences. Examples include the companies running their own mobile portal on voice, SMS, WAP or USSD.

- **Content Aggregators** - These are the companies that aggregate content and make it available to network operators. Examples would include companies that are focused on the content business. They differ from the content developers in the manner that their mainstay is the rights of content and not the mechanism in which it is delivered.

- **VASP** – Value Added Service Providers - These are the companies that provide Value Added applications to the network operators. They may also act like a content aggregator for the convenience of operator and to create a niche for themselves but focused on providing innovative applications to operators.

- **Technology Enablers** - These are the players that provide the services oriented towards providing VAS to subscribers but may or may not be dependent on the content. Huawei, Ericsson, Acision etc are examples of Technology Enablers.

- **Mobile Network Operator** – Etisalat and du are the Mobile Operators in UAE. They provide the transport and support mechanism to provide content and other services to subscribers. In UAE, they own the customer and bill them for providing services.

- **Handset Manufacturers** - Mobile handset manufacturers have also started playing an important role. They have their way by activities like embedding links for direct access to portals in their handsets, etc. Things like On-device Portal are where they play an important role in the value chain.

Advanced telecommunications infrastructure is a prerequisite of mobile services. While some operators, based on short-term financial goals, prefer waiting with building a 3G network, service providers of a country can only be internationally competitive if the operators keep their telecommunications infrastructure up-to-date and embrace 3G technology at least at an equal pace with neighboring countries.

- While many mobile services are hyped to great heights and then failed to deliver, the successful ones have been those that have taken one step at a time and managed to find a few niches, where the new technology can add the most value. Knowing this helps to develop more successful mobile services.

- Lack of capital is not always an obstacle, but it can sometimes be innovated around by relying on existing infrastructure that is already built for other purposes and keeping the number of features in a service down. In addition to low cost, services designed in such a way have also an extremely short development time.
While easiness of usage is sometimes a reverse-function of security, it is sometimes worth sacrificing some security features to attract the largest possible user-base. Usage can also be increased, if the service is open and works in the same way for the clients of all mobile operators.

2.12 Comparison of Value Chain, Value Shop and Value Network

As per Stabell and Fjelstad, Value networks, a short form for ‘firms that can be modelled as value networks’ - rely on a mediating technology (Thompson, 1967) to link clients or customers who are or wish to be interdependent. The mediating technology facilitates exchange relationships among customers distributed in space and time.

Primary activities of a value network are network promotion, contract management, service provisioning and network infrastructure operations. The value network is associated with Intermediation and so it is different from the traditional Value chain and the Value shop.

The three generic value creation technologies with their associated distinctive value configuration models provide the foundation for a theory and a framework for the analysis of firm-level competitive advantage. Value is derived from service, service capacity, and service opportunity. The customer may receive value from the value network without ever actually invoking the mediation services. Scale is a potential driver of both cost and value in the value network. Value network services are characterized by demand-side economies of, in value networks, the other customers are the key part of the product. The services of a value network mainly deliver the customers opportunities to exercise those dependencies. Size and composition of the customer base is therefore the critical driver of value in the value network.

The business value system relationships between industry actors is not as suppliers and customers in an industry value chain, but as simultaneously co performing levels of mediation service. For example, network operators deliver the infrastructure for service providers in telecommunication, who in turn serve as the communication infrastructure for payment services. Exchange relationships offered by a mediation service can also extend beyond its immediate customers to customers of other mediation service providers. This gives rise to a structure of interconnected mediation networks. the business value system in a mediation industry is potentially a set of coproducing, layered and interconnected networks that enhance the range and reach of the services provided.

Differences in value creation logic reflect different economics. These relate to three important and distinct traditions in the study of the economics of the firm: the cost economics of scale literature for the value chain, the positive network value externalities literature for the value network, and the value-signalling literature for the value shop. the logics differ in terms of a cost or value focus. While the chain has a cost orientation, the shop is oriented towards value. The value network—where synchronization of simultaneous, parallel primary activities is the foundation of value creation—needs to balance cost and value as scale and capacity utilization is drivers of both. Thus there are distinct scale logics. Scale is a cost driver in the chain. In the shop scale primarily affects value to the extent that it signals success.

The below figure D1.11 gives the comparison matrix and also highlights the unique features of the value network.
### 2.13 Value creation and Network Value Analysis

By understanding a firm’s relationships with other network members, strategists can better understand the following: Joe Peppard and Anna Rylander (2006) states that it is important to identify the following:

- Where value lies in the network and how value is created?
- How the firm’s activities will affect the network?
- How other members are likely to respond?

With Network Value Analysis, the aim is to generate a comprehensive description of where value lies in a network and how value is created. The main steps in this process will be defining the network, identify the entities, perceived value from being a network member, network influences, analysis and shape. The roles or the actors can have overlaps and also the benefits could also vary depending on the promotion the actor receives and the upgradation to a higher level, which is possible during the evolution.

After doing some study on the developed Market in China, it is evident that the leading Telco CMCC (China Mobile) is trying to prevent the growth of the actors, but at the same time trying to improve the position in the value network by taking up various roles other than the Mobile Operator.

---

<table>
<thead>
<tr>
<th>Chain</th>
<th>Shop</th>
<th>Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value creation logic</td>
<td>Transformation of inputs into products</td>
<td>(Re)solving customer problems</td>
</tr>
<tr>
<td>Primary technology</td>
<td>Long-linked</td>
<td>Intensive</td>
</tr>
<tr>
<td>Primary activity categories</td>
<td>Inbound logistics, Operations, Outbound logistics, Marketing, Service</td>
<td>Problem-finding and acquisition, Problem-solving, Choice, Execution, Control/evaluation</td>
</tr>
<tr>
<td></td>
<td>Mediating</td>
<td></td>
</tr>
<tr>
<td>Main interactivity</td>
<td>Sequential</td>
<td>Cyclical, spiralling</td>
</tr>
<tr>
<td>relationship logic</td>
<td></td>
<td>Simultaneous, parallel</td>
</tr>
<tr>
<td>Primary activity</td>
<td>Pooled</td>
<td>Pooled</td>
</tr>
<tr>
<td>interdependence</td>
<td>Sequential</td>
<td>Sequential, Reciprocal</td>
</tr>
<tr>
<td>Key cost drivers</td>
<td>Scale</td>
<td>Scale</td>
</tr>
<tr>
<td></td>
<td>Capacity utilization</td>
<td>Capacity utilization</td>
</tr>
<tr>
<td>Key value drivers</td>
<td>Reputation</td>
<td>Scale</td>
</tr>
<tr>
<td>Business value system</td>
<td>Interlinked chains</td>
<td>Scale</td>
</tr>
<tr>
<td>structure</td>
<td>Referred shops</td>
<td>Capacity utilization</td>
</tr>
<tr>
<td></td>
<td>Layered and interconnected networks</td>
<td></td>
</tr>
</tbody>
</table>

**Figure D 1.11: Comparing Value Network, Value Shop and Value Chain**
Based on the studies done by Bernhard Holtkamp (2006) on Mobile VAS in China, the value chain consists of various actors and fastly evolving into the value network with different business models for content, terminals etc.

![VAS Value Chain members and Relationships](image)

**Figure D 1.12 VAS Value Chain members and Relationships**

### 2.14 Future Challenges in Mobile VAS

Jeff Popoff (2005) from the VAS Vendor’s perspective considers, bundling and segmentation for the success of innovations such as IMS. Innovative new service bundles that can be used to serve new market segments in both a pre-IMS and IMS context include:

- Fixed Mobile Convergence (3G, Local, Long Distance, Data)
- Personalized service bundles (Multimedia Call Services, Messaging services, Data, VPN, Content Delivery and handset-based applications)
- Context-aware services that shift services to optimal device based on subscribers presence, location, and profile
- Seamless billing across all network domains (i.e. Circuit Switched Domain, Internet, WLAN)
- Personally selectable and configurable rate plans (individual, family, or group-based)
- Corporate or Departmental level rate plans with controllable acceptable usage policies
- Access independent service transparency (3G, WLAN, WiMAX, UMA, Bluetooth, OFDM)

According to the above study, segmentation has not been very efficiently implemented in many markets which results in the failure of the VAS. South Korea is one of the successful countries in Asia where different consumer segments are targeted with innovative services. Replication of this model may not be easy in other markets, but still it is the way forward.
Adoption of Mobile data is one of the Key VAS challenge in UAE today. As per the figure below from the Analysis by Chetan Sharma (2008), the trend worldwide is increase in the Mobile Data Revenues. Here it is evident that the Telco’s in Asia have high adoption of Mobile Data. When the voice revenues come down, Mobile Data services could be the key driver for revenue and increasing the ARPU.

![Graph: Data Revenues for top 10 carriers (Jan-Sept 08)]

**Source:** Chetan Sharma Consulting

**Figure D 1.13: Data Revenues for Mobile Telco’s in 2008**

The final challenge for the Telco’s is to ensure that its role in the value chain is not bypassed. Here typically we are considering the scenario of the Mobile Advertising which can be considered as a next generation VAS. The key issues could be:

1. Subscriber database
2. Regulatory issues
3. unified Mobile Portal
4. Multiplatform and Location-based data
5. Reporting and effect evaluation

The Mobile Operators are still the core in the value chain. Equipment manufacturers and integrators are the upriver participants in the value chain. They provide the network environment together with the operators and the flow will be ---SP----Operator ----End User for the value fulfilment process. Network operators, Service Provider’s and terminal manufacturers are facing end users directly. Customization of the terminals is an emerging tendency and link exists between terminal providers, network operators and end users.

Network Value analysis gives a refreshing picture with insights into the different aspects of the Mobile VAS value chain. The Telco’s have accepted the value network and the walled garden approach is slowly giving way to the open environment for the VAS domain in UAE. Consolidation or adapting to the new business models is the key to sustain and achieve success in the turbulent telecom world and applies to all the actors in the value network.
Chapter 3: Methodology

The key task is to analyze how the primary research relates to the literature study, and various data collected from all the available sources. It is important to assess whether the research findings are in-line with the Network Value Analysis theoretical model. Two pronged approach has been taken which included the Qualitative and Quantitative research. The methodologies adopted for the Primary and secondary research is summarized in the diagram below:

Figure D 1.14: Research Methodology

Alan Bryman (2003) states that triangulation refers to the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings. Triangulation involves the use of multiple sources to enhance the rigour of the research (Robson, 2002:174). This research uses both data triangulation, the use of more than one method of data collection, and methodological triangulation, combining qualitative and quantitative approaches.

As per the British educational research organization, variety of strategies is needed to fully understand and explain a problem: the challenge is to find the right combination of strategies
and then bring together the findings, weighing up their cumulative evidence. Triangulation has come to assume a variety of meanings although the association with the combined use of two or more research methods within a strategy of convergent validity is the most common.

According to Lisa A Guion (2002), validity in qualitative research relates to whether the finding of your study is true and certain. True refers to the real situation and certain in the sense that the findings should be backed by evidence. The mutli-method approach was adopted to improve the accuracy of the findings.

Kris Mihalic (2008) states that that when you need to understand consumer perceptions, the key lies in the combination of qualitative and quantitative approaches. Methods used in Mobile user experience research, such as usability testing, field observations, are supplemented by market research methods like online surveys or questionnaires – and vice versa. Such an approach provides a holistic view that is necessary for innovative mobile services.

As I work closely with the Mobile VAS Industry utmost care has been taken to ensure that the research produces valid findings and bias, chance and confounding is avoided to the maximum extent.

3.1 Qualitative Research
For qualitative research the plan was to conduct semi structured interviews with the Senior Executives working in the Mobile VAS Industry. They included the executives from the Telco’s in UAE and the leading Telecommunication Vendors. Designations of the interviewee’s are attached in the Appendix B.

3.1.1 Sample selection
It was not an easy task to identify the right person from the Telco who has been involved with the VAS projects and who deal frequently with the actors in the value network. After careful evaluation and based on availability, the interviewees for the Mobile VAS qualitative research was selected from the Telco’s/Vendors (European and Asian Mobile Network – Market leaders) who are experienced industry professionals and also decision makers in their respective organizations. Otherwise it would have been impossible to get the information related to the business models/strategy etc on a high-level. In comparison to the vendors, the Telco’s had their reservations on the confidentiality of the information as UAE is a medium sized market and there are only two Telco’s providing services. Utmost care and assurance on confidentiality had to be provided to the industry experts on this point.

In UAE there among the two mobile operators, Etisalat the dominant Telco has been the monopoly till 2007 and du is an upcoming operator.Du focuses on the low ARPU segment and Etisalat focuses the whole population. Etisalat is a big conglomerate having operations in 17 countries, latest being India and Iran. As the mobile/wireless chain is evolving day by day and new business models are being introduced in the market, it was important to find out how the Telco’s are handling this scenario where they have to be more open.

The Telco Senior Executive who has been interviewed has been involved in content provider partnerships and also has multivendor/multicountry (subsidiary) experience. For the research it was important that we did not give the upper hand to any actor such as the Telco. So to receive the balance in information, interviewees were done with the Technical and marketing professionals from the leading telecom vendors who operate in the UAE. The executives from the Telco’s were not favouring recording the interview and so notes were collected and on the
same day the interview was transcribed. From the vendor’s side, leading executives from European and Asian telecom vendor’s were interviewed and all the points were covered in detail.

3.1.2 Pilot Interview

The scope of the interview was wide and it was important to get a good understanding of the questions. From the Project Proposal, there was the tutor comment that the research objective needs to be broken down into a number of valid questions. The key was to understand the research objective in detail and revamping the questions. For this to be effective, it was important to do the pilot interview with at least one of the interviewees. With the pilot interview, the relevance to the theory, expectations, validity was verified and received the hints to modify/rephrase the questions. The updated questions with relevant research objectives were finally used for the actual interviews.

3.1.3 Detailed Interview

Specific appointments were made with all the interviewees in advance. This was to ensure that sufficient amount of time (1 hour to 1.5 hours) was allocated for me to conduct the interview. Background was provided over the phone and e-mail was circulated to the six interviewees on the interview questions. Telco executives had reservations on the voice recording of the interview and it was initially agreed that the notes will be collected. Confidentiality assurance was again provided verbally during the meeting and also the copy of the Dissertation was agreed to be provided as a token of appreciation for the support. All the questions were asked with minimum reference to the favoured Telco/vendor presepective. Valuable information was collected during the course of the interviews and as the interviewees came from different parts of the world, they also shared some of their earlier experiences with VAS in other parts of the world which has been helpful during the analysis. Voice recording was done on the allowed interviews and was transcribed the next day.

3.1.4 Analysis

Alan Bryman (2003) - Triangulation is sometimes used to refer to all instances in which two or more research methods are employed. Thus, it might be used to refer to multimethod research in which a quantitative and a qualitative research method are combined to provide a more complete set of findings, than could be arrived at through the administration of one of the methods alone. The two available methods for Qualitative research are:

- **Analytic induction:** Analytic induction (AI) is a research logic used to collect data, develop analysis, and organize the presentation of research findings. Its formal objective is causal explanation, a specification of the individually necessary and jointly sufficient conditions for the emergence of some part of social life. As new cases are examined and initial hypotheses are contradicted, the explanation is reworked in one or both of two ways.

- **GT** is a systematic generation of theory from data that contains both inductive and deductive thinking. One goal of a GT is to formulate hypotheses based on conceptual ideas. Grounded theory (GT) is a systematic qualitative research methodology in the social sciences emphasizing generation of theory from data in the process of conducting research. Rather than beginning by researching & developing a hypothesis, a variety of data collection methods are the first step. From the data collected from this first step, the key points are marked with a series of codes, which are extracted from the text.
For the analysis, I will be using the grounded theory approach, as the data collected from the interviews will be split into smaller sections and will be compared to the collected information.

### 3.2 Quantitative Analysis

The objective is to understand and analyze the consumer perception, adoption and consumption patterns for VAS. When the continuous evolution of the value network is taking place and new actors are evolving, the value has to be created for the consumer. Without value, there is limited possibility to increase adoption. As UAE is very different from other developed markets with very high penetration, it is mandatory to collect feedback from the population segment consisting of various nationalities including locals/expatriates.

#### 3.2.1 Reference to the focus groups in the Project Proposal

For the quantitative research in the Project proposal there was reference to the focus groups. This caused ambiguity and rightly the comment from the examiner on this point in the evaluation form. I would like to clarify this point with the explanation below:

The term focus group is specifically the focus group for the qualitative research. I had used in context with the qualitative research wrongly to refer to the various expatriate communities in UAE which consists of Asians/Arabs/Westerners etc. So to make it clear, here the reference is only to the particular group of expatriate communities in the UAE. For eg Asian Expatriates. It is not referring to the focus groups in Qualitative research.

#### 3.2.2 Samples

Initially the plan as per the proposal was to segment into various communities such as locals, Arab communities, Asian (subcontinent), Asians (Far east/china), Westerners. The plan was to circulate the questionnaire to the youth, teenagers and the older communities. Due to the job related relocation to Egypt for few months, I had to change the plans. So the survey had to be postponed to October – 1st month of Q3 (Quarter 3). Global recession started and from September 2008, UAE started to feel the pinch. The communities had to work extra and many people were not prepared to attend the surveys and fill in questionnaires as many of the communities are involved in this survey. Also as VAS is quite new to few people, detailed briefing had to be done from the respondents in each emirate either in person or through phone/e-mail.

To find enough number of samples for each community was a challenge and so based on experience with surveys done in UAE on Value Added Services, it was decided to classify into locals(UAE nationals), Arabs (expatriate arabs), Asians (includes subcontinent, Far East /china), and Westerners (Europeans/Australia/New Zealand/USA).

As I am based in Abu Dhabi and many respondents were from Dubai, Sharjah and Northern Emirates, the questionnaire was briefed over the phone and then the respondents sent the filled in survey form by e-mail. The number of respondents was as below:
3.2.3 Pilot Questionnaire

The initial questionnaire contained only fewer numbers of questions and based on discussions and review, the questionnaire was modified to understand more on the following points:

- Consumer perception on the existing services
- 3G services
- Business models
- Pricing
- Drivers, Adoption patterns & behaviour
- Expectations from the actors in the value network mainly the Telco.

3.2.4 Questionnaire

The questionnaire was designed, reviewed and finalized keeping in mind the significance of Value Network and the consumer perception. VAS concepts were briefed in person to the respondents in Abu Dhabi/Dubai and via telephone and e-mail to the respondents in Sharjah and other emirates. The respondents were quite prompt in sending the responses or giving the filled-in survey forms except for a few samples from the emirates Fujairah. To illustrate the findings, Microsoft excel was used and the graphs/histograms were plotted based on the response from the survey.

3.2.5 Analysis

The findings from the survey have been quite satisfying and have led to the conclusion among the evolving scenarios of the value network. It will provide insights to all the actors, including the Telco’s. Consumers are eager to see increase in competition and they slowly start to realize the power in this Mobile VAS value network. The consumer perception is that the Mobile Value Added services is increasing and also they are looking for content related services, but the common feeling was that pricing of the service was high in UAE compared to all other developed and emerging markets in the region and around the world. Affordable pricing and terminals is a key driver for the maturity and adoption of Mobile VAS.

### Table T 1.1: Quantitative Survey List

<table>
<thead>
<tr>
<th>Survey respondents</th>
<th>Age Group</th>
<th>Number of respondents</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group1: Asians</td>
<td>15 - 60</td>
<td>45 (15 teenagers, 30 adults)</td>
<td>Asians (Subcontinent, Far East/Philippines)</td>
</tr>
<tr>
<td>Group2: UAE Nationals</td>
<td>15-50</td>
<td>(25 adults and 10 teenagers)</td>
<td>UAE Nationals</td>
</tr>
<tr>
<td>Group3: Arab Nationals</td>
<td>10-25</td>
<td>(19 adults and 6 teenagers)</td>
<td>Arab Nationals</td>
</tr>
<tr>
<td>Group4: Westerners</td>
<td>25-50</td>
<td>26 (all adults)</td>
<td>Westerners (Europe/Aus/NZ, USA)</td>
</tr>
</tbody>
</table>
Chapter 4: Research Findings and Data Analysis

From the theoretical models followed, the aim of Network Value Analysis is to identify and describe where the value lies in a network and how value is created. The first part of the research involved an attempt to look deeply into the current state of the Mobile VAS Value chain and the evolution of the value network in the UAE Telecom Market. The background of the Telco’s and the current actors in the value network was studied based on the interactions which I had with the actor’s vendors as part of my job. Also various available literature and Media was analyzed in detail to get an updated picture of the Value Network.

From the research questions the key conclusions to be derived were as follows:

- Identify the roles of the different actors in the Value network for Mobile VAS in UAE.
- Analysis of the value dimensions of the consumers.
- Analysis of the network dynamics that is existing and the future evolution including business models.
- Challenges for the Telco’s and all other actors.
- Current updated Value Network and evolution plans in pipeline based on launch of new services.

4.1 UAE Telco Background

In UAE the Telco Etisalat has always been the Monopoly for 30 years controlling Mobile, Fixed, Internet and Cable TV operations. Du started operations in UAE as the second Mobile Operator in 2007. At this point Etisalat controls more than 75% of the subscriber base as shown below:

As du has started out to be a price killer and focussing on the low ARPU Market, Etisalat is slowing feeling the pressure that the Voice Call Revenues (National and International) is on the decline in UAE. This has forced Etisalat to start focus on the VAS. Du has mentioned to the media that they will not be focusing on the Value Added Services at this point.

UAE is considered to be the Telecom pioneer in the Middle East as all the new technologies have been launched first in the UAE. This includes 3G, HSPA, GPON, NGN etc. So the Telco’s would like to retain the UAE’s position as the technology leader in the region.
Etisalat:
Many Value Added Services for the GSM and 3G subscribers have been launched in the UAE. Still SMS remains the cash cow as other services are yet to take off in a really big way. Lot of new services is in the launch phase but lacks clarity on the adoption/promotion plan.

Du
Since launch in 2007, the focus has been on low ARPU subscribers and increasing the subscriber base for the voice calls is the priority. Though du has indicated that currently they are not focused on VAS, they have launched Blackberry business services (2008) and the Music on demand (2009).

4.2 Feedback and Conclusions from the Qualitative research
Conclusions were gathered based on the interviews with the Telco and Telecom Vendor Decision Makers. For gaining insight, the points which were focused in the interviews are as below:

1. What is the current status of the Mobile VAS value network and what is your roadmap? What is the strategy for innovations and consolidation of the existing VAS offerings?

2. From a vendor/operator perspectives, being an important actor will new business models be a part of the value network? How do you look at the role regulator – TRA actor?

3. How do you look at the deconstruction of the telecom value chain? Do you face any structural barriers for Mobile VAS?

4. What are the different business logics for the various actors in the Value network? How about the resources, key cost, value drivers and activities?

5. What are the challenges you are facing in the value network? How do you look at the evolution of the Mobile VAS Value network for the new telecom world?

4.2.1 Current status of the Value Network

- Revamp existing services and launch new services – innovations, segmentation
From the Telco perspective it was evident that the plan is to launch the new services soon and also to revamp the existing services and relaunch it. The need to consolidate and focus on newer propositions has been identified by the Telco. Introduction of the Mobile Payment mechanisms will be a priority for differentiation and to enter the remittance domain, as UAE includes lot of expatriates. Focus will be on revamping and include innovations. As a first step to attract the segments, specialised packages will be available for ladies, youth and people with special needs.

The interviewees from the vendor side also strongly commended that the new services should be launched. But they were sceptical about the success, as UAE is not a mobile data frenzy country unlike Japan. The view was that Telco’s should make the attempt for the development of VAS and they also highlighted that that innovations in the area such as Mobile
Advertisement, Full track music, Instant Messaging etc needs to be available to the consumers of UAE.

- **Voice still the Key revenue driver and VAS only in the growing stage.**
  Voice is still the key revenue driver for Mobile Telco’s and they do not foresee that VAS that could drive the technologies at this point. In UAE there is a change as voice revenues are reducing, but has not reached a point where voice is still not a cash cow. The presence of only vertical platforms and no killer applications is a concern. The newer 3G and FTTH applications such as IM, MTV, and IPTV have yet to be proven to be cash cows. Invoking the demand for Mobile Data Services is the key. Innovations drive business but currently 80% still dominated by voice (2G/3G/voice) and the urge for new services such as VOD on the mobile possibly could change the perspective.

On comparison with developed Telco’s such as NTT docomo in Japan, they felt that in Japan it is a different success story specifically for the 3G VAS with data services. Differences in Culture/approach are also an issue as the Asian/Japanese/Korean/Chinese (fancy/innovative) culture is different and VAS in general is a success story in Asia.

- **Move to open approach from Walled garden approach**
  Telco’s need to move from the Walled garden approach to a value network approach and this could help the content providers/service providers to integrate with the Telco platform and offer new services. Service Delivery platform (SDP) could be an option to realize this. Third party vendor platforms which could connect over open interfaces should be introduced in UAE.

New offerings based on Value Added Services and bundles should create interest among the consumers. The current price levels are high due to duopoly. In future some of the technology enablers/VAS companies/Content providers could offer services in UAE similar to the other countries in the region such as Bahrain as the MVNO concept is gaining popularity in the Middle East.

### 4.2.2. Emerging Business Models

- **Revenue sharing and new business models.**
  The actors in the value network should build the competence to run the new business models. Revenue Sharing as a new business model could be tried for new services. For the Telco, this could be done by forming a new company to handle the content related services for UAE and also for it’s subsidiaries in the region. As the value network is getting more complex with many more actors, this could help to source content (Ad content/ Music labels /aggregation etc).TRA, Regulatory Authority, is not allowing the combination of Mobile and Fixed Services at this point. Reduction in prices should be done with sufficient justification as Price control is monitored by TRA.TRA currently allow bundling of mobile or fixed services. When new technologies such as FMC (fixed Mobile convergence) are available in the market we could see a change in regulations.

- **Invasion of content providers like Google into the Telco space**
  Google is slowly invading the Telco domain. The current network operations model of the Telco’s in UAE is not the ideal one and Managed Services Model should be tried. Current model causes labour intensive operations and it is ideal to outsource to the vendor for the economies of scale. Operator can focus on various charging and billing needs for new services. From the vendor perspective, Managed services provides value add to the Telco’s by
outsourcing and profitability. In case of MS daily business will be taken care by vendor and Telco could focus on marketing.

- **Regulatory issues for launching new services**
  UAE has a diversified expatriate population. As per the Demography, 75% of the population is expatriates and the Cash cow is the IDD calls to Asian countries such as India. Telco’s have to protect their cash cow, so VOIP even if allowed by regulator will not be launched. Consumers are also resorting to means such as call back, yahoo voice, skype etc to reduce costs.

- **Telco’s cannot remain as a fat pipe**
  New business models needs to be tried. Telco’s will have to go up in the value chain and cannot remain as a fat pipe for ever. The UAE TRA is very dormant and inactive. Very less number of announcements in each year when compared to the emerging and developed markets. It shows there is low initiative or no regulatory issues. For Mobile data, unlimited bundles should be offered for 3G services (MTV/Push e-mail.GPS/LBS for Mobile advertisement could be another option.

- **Third Mobile license and formation of MVNO**
  Also if the 3rd license which is going to be a foreign company comes to UAE, and du who is the second operator grows strong, then there will be more service launches from the Telcos. MVNO operations will be started in UAE later this year and will have to cooperate with the major Telco Etisalat.ROI will depend on the success of the operation.

### 4.2.3. Deconstruction and structural barriers

- **Structural barriers**
  Telco’s view is that they are not facing any structural barriers currently but this is in contrast to the feedback from the Vendors. They have the feeling that the vertical networks/SILOS are running in the Telco network and causes restricted barriers. Content Provider’s needs to be more closely associated with the value network, and then the need arises for the IP based horizontal network. This could be also a chance for the Mobile Operators to introduce FMC and could be used to reduce the cost. At this point no barriers are evident due to limited services and it seems that on the fixed line for convergence, the Telco’s are moving towards IMS.

It is evident that the Telco’s cannot remain power hungry as multiple players such as Skype, Yahoo Google are all entering the various roles in the value network. The value network is getting modified day by day. In the near future we could see Operators acting similar to ISP’s as the power equation is changing. Multiple players will be collobrating, and the latest example is the Taiwanese handset vendor HTC collaborating with Google to launch the handset on the Google Android platform and launched by T-Mobile – the German Telco.

- **Lack of active content providers**
  Lack of CP’s and Acquisitions seems to be the barrier for Mobile VAS. Also for newer services cooperation with the other players /actors in the value chain is vital. The ideal way for the Telco’s will be to acquire Content providers for moving up in the value chain. Also if VOIP and MNP are introduced in UAE then we can see better growth and competition between the Telco’s.
4.2.4. Business logics and various actors

• Actors need to be more active in the Value network
  Content providers, technology enablers, Handset vendors all have to be more involved in creating value. If Telco leads this initiative then they need to accommodate the space and also be ready to involve all these parties. They should try to collaborate each other to develop and market services which will be of interest to the consumer. To reduce cost they should bundle the handsets/terminals with the service. In the new era to attract subscribers, prices should be reasonable and bundles should be given.

  Telco’s view is that it is difficult to justify the price reduction due to TRA restrictions. Segmentation will be introduced by new package for youth/ladies and people with special needs. Also business segment roaming services will be introduced and prices will be reduced for some existing services.

  The Telco’s in UAE do not focus a lot on marketing as they never felt the need for it. Segmentation has not been adopted as the older generation is interested more in the voice services, the youth and the teenagers are to be focused on the flashy VAS such as the RBT, MTV, and Music etc. Segmentation is a matter of time once the coverage of the second operator improves.

  Adapting new segmentation models will depend on through investigation based on the impact of new services with the Low Capex/Revenue ratio. Traditional models will not change until the Telco’s are forced to and bundling should be done for adoption of new services. Currently new services such as Mobile TV with a tariff of AED39 sometimes give a wrong impression as there are extra charges associated with the WAP download. Transparent tariffs with bundling will help the services to growth. Services catering to different segments should be introduced.

4.2.5. Challenges and Evolution

More ISP’s will be introduced in 2009-2010. VOIP will be introduced as the TRA has given the license to both the Telco’s. New company will be formed to take care of the business to source content and also have partnership with labels to move up in the value chain. As the new services requires content and CP’s the value chain will have to be modified as the Telco’s need to add more roles and value will be created by different parties. The lose in control will also open the avenue for new business. Managed Services should be employed by the Telco’s and Telco’s should focus on marketing, segmentation, branding etc. M&A (mergers and acquisitions) could be one way. Even if any new technology is introduced without adequate services they will not be able to justify the investment (ROI).

• Challenges
  Managing the Value network with various actors.
  Power hungry Telco may not be ready to share the benefits
  FMC, Google Skype, VOIP
  Content sourcing
  Marketing strategy

From the above research it is evident that the Value Network for the Mobile VAS is evolving quickly in the UAE. Few services which are already launched in UAE or in launch phase are the following:

  • Full Track Music – du has partnership with the leading Arabic Music Content owner Rotana.
  • Etisalat – Partnership with content aggregator for RBT services.
4.2.6 Reconstructed Value network for Mobile VAS in UAE

Based on few of the research findings the network layout of the Value Network for UAE has been developed and is as shown below: The currently active content providers and some of the recent developments have been taken into account. The value chain has been deconstructed to form the Value Network.

The key feature of this value network is that some of the roles of the value network will be overlapped. Some of the CP’s might be content aggregators also and few of the technology enablers will be handset manufacturers. For the Telco’s the business model will be an important point of the Value Network. For services such as RBT, Music, Mobile Ads etc the revenue sharing agreement will have to be followed where the revenue will have to be shared between the Telco’s and Content Providers.

The different business models which are possible are:
1. The agreement between the Telco and the Content Aggregator to share revenue where the content is sourced by the Content Aggregator and support Telco in the daily operation of the service. For the licensed content, copy protection and royalties needs to be managed. This could also be extended to the agreement between the technology enabler and the Telco where the technology enabler will manage the entire operation including sourcing/managing content, Advertisers, etc. Also social networking, UGC, etc have entered the Mobile domain and so the picture becomes more interesting and in future they will be also part of the network. Launch of the MMS to face book service in UAE is an example.
4.3 Findings from the Quantitative Analysis

It was important to know the consumer perception as consumer is the deciding factor for the success of the Value Added Services. The questionnaire is attached in Appendix A.

The questionnaire was circulated among the respondents in different emirates of the UAE and from the theoretical models of value network it is evident that the consumers trigger all the activities in the service value network and so it is important to analyze the perception. Adoption and diffusion are the key factors to assess the empirical evidence. The values were used to generate graphs which give an indication into applying the value network theory in the Mobile VAS for UAE.

4.3.1 Graphs

- Each of the four segments are mapped with different colours: Westerners, Asians, Expatriate Arabs and locals.
- The legends were plotted with 1, 2, 3 and 4 as the base values.
- Each of the graphs explains the relevant value.
- Microsoft excel has been used for the tabulation and generation of graphs

Obtained results from the quantitative survey are tabulated as below:-
1. What is your impression about the Mobile VAS in UAE and what are your expectations?

![Graph G 1.1]

**Graph G 1.1**
The two key points that could be noted in this part are pricing for the Mobile VAS is still very high in the UAE. It is one of the key deciding factors to increase adoption and traction. Etisalat definitely enjoys an edge for the network coverage, but in due-course it will not be a key differentiator as Du will improve it’s coverage. The Telco’s need to work on QOS, Customer service, availability etc to improve the branding, image and there by improve consumption.

2. Do you prefer to buy the latest electronic gadgets in the market to test various services such as Mobile TV, RBT and other music offerings?

![Graph G 1.2]

**Graph G 1.2**
Westerners and UAE nationals prefer to buy the various electronic gadgets to test the Mobile VAS. 3G terminals and high end phones are not of big interest to the Arab Expat and Asian Community. Definitely the gadgets are sold at a high price in UAE. It will be ideal if Telco’s can bundle low cost handsets with features such as 3G support can help the growth of Mobile VAS.
3. How often you prefer to change your mobile handset

**Graph G 1.3**

Affordable terminals with features such as 3G, camera etc are important to enhance the VAS consumption. It seems that except the UAE national population and the higher income group Asians, others do not change the terminals quite often.

4. To subscribe to additional VAS which could be the key factor for decision making - Value proposition, bundle, price, or network quality? Rate from 1 to 4, the most relevant one with 1 and least relevant one as 4

**Graph G 1.4**

Price and bundling are important for adoption of VAS. There was strong feedback from the expatriates that the price for the Value Added Services is very high in UAE when compared to Europe and Asia. For mobile savvy Europeans and UAE Nationals, the bundling of services will be an attractive proposition to use Mobile Data Services.
5. What is your opinion on the current tariffs for the Mobile (SMS/MMS...) and 3G VAS (mobile TV, Mobile broadband)?

![Graph G 1.5](image)

All the respondents raised the point that the tariffs are high and if the Telco’s mainly Etisalat needs to increase subscribers and consumption lower tariffs are mandatory. Broadband will be attractive and can cannibalize fixed broadband if pricing is attractive.

6. Will you be interested in innovation in data services / content such as digital music, mobile advertising, and IM (instant messaging) etc if these services are launched in UAE?

![Graph G 1.6](image)

The respondents were not in favour of innovations at this point. Still many of them strongly felt that in future when there are choicer and lower prices they could subscribe and use these innovations.
7. Are you an internet savvy person, do you subscribe to fixed/mobile broadband and how much time do you spend daily on browsing the internet?

![Graph G 1.7](image_url)

Majority of the respondents are internet savvy but do not subscribe to fixed/mobile broadband. Majority of them uses the connections at work to have a quick browse, but those who have broadband internet do browse at home on some days.

8. What is the average amount you spend in a month on internet?

![Graph G 1.8](image_url)

Most of them are Internet Savvy and they do access internet and they are ready to spend between AED 100-300. The westerners had a strong comment that it is high time that the Telco’s reduce the tariffs for broadband as they are very high.
9. Would you expect that competition between Etisalat and du will improve the quality of service and also improve the pricing factor for the Mobile VAS?

![Graph G 1.9](image)

The participants wished that competition would improve Quality of Service, but in general was not sure about the price reduction. Also they had poor impression about the service from du and also felt that Etisalat charges high for their brand.

10. Are you interested in business applications and do you use services such as blackberry to access e-mail?

![Graph G 1.10](image)

Consumers have interest in the business applications but majority of the sections see it as a future trend. Mobile as a PDA or as a mini laptop still stays only with the high-end business consumers in UAE.
11. What are the terminals/devices/handsets which you would prefer to use to access e-mail/ (It will be ideal if you can give the name of the terminal vendor and the brand: for e.g. blackberry bold/Nokia N95 in the last column)

<table>
<thead>
<tr>
<th>Terminal preference</th>
<th>Westerners</th>
<th>Asians</th>
<th>Expat Arabs</th>
<th>Locals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-No preferred vendor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-Can't say</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Graph G 1.11

90% of the respondents did have the choice of the terminal. The choice was Nokia for majority of the respondents. Blackberry was the preferred model for business applications.

9. Do you use the terminals for mobile broadband/mobile data/3G services such as broadband router, USB Modem/3G data card?

<table>
<thead>
<tr>
<th>Terminals for Mobile Broad band-3G services</th>
<th>Westerners</th>
<th>Asians</th>
<th>Expat Arabs</th>
<th>Locals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Future</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-Never</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Graph G 1.12

Usage of terminals for 3G Access was future proposition for most of the respondents. Some of the Asians did not expect that they would be able to afford these terminals in UAE.
4.3.2 Summary of the consumer findings

- **Consumer’s Requirements**
  Mobile Value Added services including broadband with affordable prices. Terminals that support MMS, 3G, Email etc with affordable prices.

- **Consumer preferences and behavioural patterns**
  UAE Nationals which accounts to 20% is high ARPU subscribers who are ready to spend on value added services, innovations and terminals. The Asian and other expatriate population have some similarities. This segment is price conscious group, but at the same time the professional community has interest in VAS and terminals. So this segment is one of which the Telco’s can focus. For the low ARPU Asian and Arab Community except SMS and RBT, no other VAS is a necessity. Westerners will adopt more of Mobile broadband and internet with lower prices. They have a strong feeling that it is high time that the Telco’s specifically Etisalat reduce the Mobile call and VAS charges following the trend in developed and emerging markets such as Europe.

- **Current usage trends**
  The usage trends were examined for some of the Value Added services for Etisalat:
  - RBT – 1.5 Million
  - MMS – has over 1 million subscribers but the usage is low.
  - MTV – has only 80,000 subscribers.

We can conclude the point that for many of the Value Added Services the trend is similar to what Joe Peppard and Lysander (2006) observed in their study of the European Market. In UAE also for the leading Telco Etisalat, the majority of the revenue is from Voice and SMS. Other value added services other than RBT and MMS is not significant on the revenue point. Figures were not available for the other Telco du and hence could not make the analysis.

![Figure D 1.18 Mobile VAS Subscriber pattern - Joe Peppard and Lysander](image-url)
Niche for VAS

Bundling of services has to be offered to attract the consumers. It is important for mapping the customer’s desires in terms of their needs and aspirations from VAS offerings. Motivators and barriers behind the VAS usage – (needs attitudes and behavioural traits) need to be identified with the help of data mining and business intelligence solutions. Then precise Marketing needs to be done to target the right service to the masses. Identify the gaps – not tapped or exploited by competitors from the Telco and other actors in the Value network.

4.3.3 Strategy and Challenges

Mobile Advertising is one of the services which are in the launch phase in UAE. The value network is very complex for this service as it contains the following actors.

- Telco
- Regulator
- Device/Terminal Vendor
- Mobile Ad/Technology Enablers
- Media Buyer
- Content Provider
- Ad agencies
- Advertisers

The cycle is complex with steps such as creation, buying, distribution and post buy. The content management and the service cycle is quite complex in UAE as the Telco’s do not own the content or have limited expertise in this domain. So they are forced to partner with the technology enabler who has expertise in running the service with their technology platform but also should be able to manage the Advertisement part. Telco’s cannot dictate terms in these kinds of services where revenue sharing is also quite complicated. The handset manufacturers might bypass Telco and embed the ad in the handset. Technology enabler with partnerships might be able to run this service just using the Telco’s pipe. Advertisers and corporations are acquiring companies to enter the Mobile Advertising space.

So it is evident that even for a developed Telco it will agree to the fact that evolution of the value network is critical and only by cooperation, the actors can provide value to the customer and there by grow them.

- Strategies adopted by the Telco’s.
  The Telco’s have partnered with the labels such as Rotana for sourcing Arabic content. They are also forming independent stake holder companies to take care of the content (music, advertising, broadcast TV, IPTV,) etc for UAE and also for the subsidiaries in the case of Etisalat. Until now for the consumers there has been minimum effort to really attract the subscribers of Value Added Services. Content Providers and the aggregators are starting to be more active in the Market. Bollywood and Arabic content which will be of interest to the community should be available in the UAE.

- Challenges to the respective growth

1. Level of satisfaction and imagery about the existing Mobile VAS.
Consumers only consider the Telco Etisalat as the VAS provider. Du is yet to focus on services. Lack of competition/ choice between Telco’s leads to the slow launch of new services.
2. TRA: The TRA in UAE is a very silent entity. Compared to even some of the developing markets, there are few announcements. No proper updating of the subscriber information etc. slow in strategies related to Mobile TV, FMC etc.

3. High tariffs for VAS: Customer expects lower tariffs, offers, bundling with more customer friendly offerings and this is the key Drivers to the growth. Time to Market – TTM have to be shortened.

4. Branding & Awareness: Etisalat enjoys a good brand name but the awareness or education provided to the consumer’s is minimum in terms of Mobile Value added services. The Telco’s are both Mobile and Fixed line licensees. So for example, the Telco tries to promote the Fixed broadband more than mobile broadband. Asians, the largest community in UAE, Arabs, and Westerners have the perception that pricing is very high and comparing to other markets in the GCC and Middle East which is a fact.

4.3.4 Drivers for Mobile VAS

- Bundling of Value Added Services
- More organized value network with specific focus on Arabic, Indian and Western content.
- Increasing awareness on VAS for the consumers.
- Telco’s should focus more on the Middle income expatriates for VAS
- TRA should play an active role in promoting VAS
- Telco’s should cooperate more with the other actors in the Value Network including technology enablers to launch and run more services.
- In times of global recession new services such as Mobile Advertising could be an interesting proposition as there is massive reduction in the advertising budgets.
- Business Models should be introduced such as revenue sharing, ASP,
- Consumer perceptions and interests should be analyzed in detail to launch new services.
Chapter 5: Conclusion

The dissertation has focused on the Value network of the Mobile Value Added Services in UAE. Considering the current status of the VAS in UAE and in comparison with what is happening in the Mobile industry around the world. The aim has been to introduce and analyse network value analysis as a concept to analyse the Mobile Value Added services in UAE. The conclusions are as below:

Today in UAE the competition is slowly growing and the prices for the voice and SMS is coming down. The dominant Telco Etisalat is facing the fact that du is increasing the Market share on the voice segment. Also the key revenue for the Telco’s which are the international calls to Asia is on the decline. Both the Telco’s – Etisalat and du are under pressure to increase or sustain the ARPU (average revenue per user) by driving higher 3G data usage after having invested billions in spectrum acquisitions and network rollouts.

In UAE Mobile VAS market is highly fragmented and dynamic, with a multitude of players having different impact at any given point in time – Telco’s, technology enablers, device manufacturers, developers, content and service providers all have their share. This has an impact on the end user and the way how mobile devices and services are being used. Consumers in UAE need simple and seamless value added services. It is important to understand the basic user needs and develop services accordingly with support for cost effective terminals. End user experience is the key and more attention should be paid in particular to usability and pricing of the service, and thereby attracting more subscribers.

At this point, the insights from this research can be summarized as below:

5.1 Insights

1. Value network is evolving and it is becoming more complex for the Mobile VAS in the UAE. The roles in the value network are overlapped or at times the Telco’s or the CP’s are trying to improve their position. This could be by the following ways:

   • Telco forming a direct partnership with a leading content owner
   • Technology enabler / forming partnerships with content owners, labels, advertising companies, etc and runs the service in a revenue sharing agreement with the actors involved in the value network
   • Content provider forming partnerships with content owner and then becoming a content aggregator.
   • Technologies are available for the value network in UAE but limited use of the pipe.

2. Telco’s have understood that without due importance for the actors in the Value network it will be difficult for growth in the Mobile VAS domain.

3. Technology enablers, CP’s, aggregators, handset vendors are all changing their business models, value propositions to survive and grow in this domain.

4. For this year in particular, the global recession is causing the Telco’s to reduce capex and for partnerships, joint ventures with content Providers, technology enablers to consolidate and grow. This will result in service launches using models such as Revenue Sharing, ASP etc.
5. As UAE is a country with multinational population, at this point the consumers do not have
great confidence in the Telco’s on the VAS. They consider the high pricing, lack of bundles,
improper awareness etc as the cause.

6. TRA is a very dormant entity in the UAE. There is intervention from TRA in terms of
fixed/Mobile bundling, some announcements on Mobile TV/DVB- etc. Compared to some
of the developed and emerging markets there are few announcements and updated
information from TRA on what is happening in the UAE Telecom Market.

7. At this point many services have been launched in UAE which include 3G VAS such as
MTV, PTT; Pushmail etc. The subscriber base is still not very high for these services. It is
evident that the Telco’s did not make focused efforts to promote the services to the right
segments. Identifying the niche market and proper launch strategy understanding the
behaviour patterns of the UAE segments is the key for reaping success in VAS.

5.2 Limitations

This study has taken into account only the Mobile Value Added services. Fixed line
services have not been studied in this research.

Some of the details on the industry (Telco/vendor) related to the primary research have to be
omitted due to the sensitive nature of the information. This includes the details on the business
models such as Revenue sharing between the actors in the Value Network.

Comparison on the strategies of the Telco’s is based on the available and collected
information.

5.3 Recommendations

1. For the Mobile VAS industry in UAE to grow the value network needs to evolve and the
actors need to have a better linkage to offer better services.

2. The Telco’s in UAE should understand the grievances of the consumers and try to
offer bundled services with reduced prices.

3. The Telco’s and the other actors in the value chains should provide maximum services and
also should work together on areas where each of them has competence. In some instances,
Telco’s lack knowledge on some domains and will need assistance on areas such as go to
market strategy and shorten Time to Market. If there is concentrated efforts from the actors
to work together on various areas including increasing adoption and consumption it will be
beneficial for the consumers as well.

4. Taking the case of some applications, in the case of Location Based Services, as an example
Femtocells could help to do precise marketing for Mobile Advertising. This is helpful to
reduce churn and increase ARPU. If indoor coverage is improved the 3G applications can
be more successful.
5. The Telco’s are advertising on lot of VAS but there is no clarity on the value proposition and seems to be an obstacle for the growth of Value Added Services. In order to gain momentum the stakeholders need to act in a unified manner.

6. Rationality in revenue sharing between Content owners/providers etc will have to be addressed carefully. Also for new services such as Music, there is always the issue of piracy, and copyright protection, DRM will have to be managed carefully. The quality of content also has to be addressed. Content will have to be available in multiple languages.

7. Awareness of Value Added Services: Specific campaigns should be targeted at the right communities in UAE such as the Asian community.

8. Segmentation: - Segmentation and packages aimed at the youth, ladies, etc could help in invoking more interest in content and thus help the traction in Value Added Services. We are starting to see some segmentation and packages focused on the communities but still a long way to go.

9. At this point UAE is not a high churn market as there are only two mobile Operators. Maybe in 2012 we will have another operator which would not be a company with UAE Govt/Investor stake. Then we could see better competition and by that time, we will have MNP (Mobile Number portability) implemented and we will see higher competition in terms of VAS.

10. VAS is a smaller domain in terms of contract values for the vendor. There are numerous companies in VAS domain more than the other telecom domains such as Core network, wireless (radio) and Fixed/Access. So for bigger /smaller companies to survive in the Value Network, there should be some differentiation. They should able to prove their in front of the other actors and the customer to the Telco’s at this point could focus on segmentation and try to launch new services such as Mobile Advertising which could revolutionize the concept of low cost advertising.

11. VAS should be effectively utilized by all the actors in the Value network as the platform for providing the differentiation edge over competition.

The industry and analysts believe that there is a strong possibility for the mobile VAS space to grow rapidly; all the owners need to cooperate together and create a self-sustaining ecosystem which will ensure that the growth is sustained. Today the end user experience is the key and most of the applications are content related, so all the actors will need to understand the role, re-evaluate their business models, strategies etc to be successful in this domain.
CHAPTER 6: Reflections

The dissertation objectives were clearly defined and that was put in the timelines as per the Gantt chart submitted in the Project Proposal. But due to certain work related issues, I had to be stationed outside the country in Egypt and so the primary research had to be postponed. This caused the delay in the dissertation submission from October to February.

There were not many text books available on Value Network. All the books focussed on Value Chain and related topics. So I had to depend on the detailed studies which have been done on Value network and also various journals such as HBS.

During the course of the project there were certain difficulties which I encountered. For the qualitative interviews, as the appointments were made in advance the risk were less. But one of the key Telco interviewee raised his reservations on voice recording and so notes were taken and transcribed.

For the qualitative interviews, as many of the respondents are based in different emirates of the UAE such as Dubai, Sharjah, Fujairah etc, the questionnaire was sent to them over e-mail and had to follow-up to get the responses. Also for the local population I had to depend on the available respondents in Abu Dhabi.

As I was based in Abu Dhabi, it was not easy to access the university library through the student centre in UAE.

Global recession which is happening is also a constraint as currently the extra working hours had to be spent at the office including weekends, which delayed the progress of the project.

Finally as I come from the Telecom industry and has been working with leading Telecom vendors handling VAS projects for Telco’s the chance for bias is quite high. At most care was taken to ensure that the Value network theory is the framework and not the industry perspective.

On the whole I am still happy to say that this has been a very rewarding experience. It has really made me improve on time management, market research, motivation and following an organized approach.
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Appendix A: Survey Questionnaire

Consumer Survey on Mobile Value Added Services in UAE

Please answer the questionnaire by inserting X in the relevant text box. For question 11, please type in your choice.

1. What is your impression about the Mobile VAS in UAE and what are your expectations?

   Quality of Service    : Excellent ☐  Good ☐  Satisfactory ☐  Poor ☐
   Customer Service     : Excellent ☐  Good ☐  Satisfactory ☐  Poor ☐
   3.5G/new technologies : Excellent ☐  Good ☐  Satisfactory ☐  Poor ☐
   Pricing for services : Excellent ☐  Good ☐  Satisfactory ☐  Poor ☐
   Availability         : Excellent ☐  Good ☐  Satisfactory ☐  Poor ☐
   Etisalat (Impression rating) : Excellent ☐  Good ☐  Satisfactory ☐  Poor ☐
   Du (Impression/rating) : Excellent ☐  Good ☐  Satisfactory ☐  Poor ☐

2. How often you prefer to change your mobile handset?

<table>
<thead>
<tr>
<th>Mobile /gadgets for testing new services</th>
<th>Yes</th>
<th>No</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

3. How often you prefer to change your mobile handset?

<table>
<thead>
<tr>
<th>Change of Mobile phones</th>
<th>Every 3 months</th>
<th>Every 6 months</th>
<th>Every year</th>
<th>Current terminal is unusable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

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4. To subscribe to additional VAS which could be the key factor for decision making - Value proposition, bundle, price, or network quality? Rate from 1 to 4, the most relevant one with 1 and least relevant one as 4

<table>
<thead>
<tr>
<th>Subscription to additional VAS</th>
<th>Value proposition (value for money)</th>
<th>Bundle (subscribe to once service and get one service free)</th>
<th>Price (monthly subscription or could be download charges)</th>
<th>Network quality (such as mobile coverage, broadband connection always up and running etc)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

5. What is your opinion on the current tariffs for the Mobile (SMS/MMS...) and 3G VAS (mobile TV, Mobile broadband)?

<table>
<thead>
<tr>
<th>Opinion on the current tariffs for Mobile and 3G Value Added Services</th>
<th>Too Expensive</th>
<th>Expensive</th>
<th>Reasonable</th>
<th>Cheap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

6. Will you be interested in innovation in data services / content such as digital music, mobile advertising, and IM (instant messaging) etc if these services are launched in UAE?

<table>
<thead>
<tr>
<th>Interest in the mobile Data innovations</th>
<th>Yes</th>
<th>No</th>
<th>In future</th>
<th>Can’t say</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Are you an internet savvy person, do you subscribe to fixed/mobile broadband) and how much time do you spend daily on browsing the internet?

<table>
<thead>
<tr>
<th>Internet Savvy person? (spend time daily in browsing)</th>
<th>Yes</th>
<th>Do browse but not daily</th>
<th>No</th>
<th>Can’t say</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

8. What is the average amount you spend in a month on mobile VAS?

<table>
<thead>
<tr>
<th>Average amount in AED you spend in a month for Internet? (Mobile/Fixed broadband, dial-up, Internet café, Internet through office network)</th>
<th>Higher than 300 AED</th>
<th>Between 100 to 300 AED</th>
<th>Less than 100 AED</th>
<th>Does not spend any money on Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
9. Would you expect that competition between Etisalat and du will improve the quality of service and also improve the pricing factor for the Mobile VAS?

<table>
<thead>
<tr>
<th>Improvement in the quality of service and prices</th>
<th>Yes</th>
<th>Not sure</th>
<th>Can’t say</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. Are you interested in business applications and do you use services such as blackberry to access e-mail?

<table>
<thead>
<tr>
<th>Interested in usage of mobile for Business / E-mail</th>
<th>Yes</th>
<th>Sometimes/ future</th>
<th>No</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. What are the terminals/devices/handsets which you would prefer to use to access e-mail? / (It will be ideal if you can give the name of the terminal vendor and the brand: for e.g. blackberry bold/Nokia N95 in the last column)

<table>
<thead>
<tr>
<th>Preferred terminal is blackberry/similar device**</th>
<th>Yes</th>
<th>No Preferred vendor /make</th>
<th>Can’t say</th>
<th>Preferred phone vendor and brand (PDA/Blackberry/Sony Ericsson/Nokia/Iphone/HTC/ imate/ Motorola/Benq/HP/Palm/ Samsung/)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Do you use the terminals for mobile broadband/mobile data/3G services such as broadband router, USB Modem/3G data card?

<table>
<thead>
<tr>
<th>Usage of Mobile data/3G terminals</th>
<th>Yes</th>
<th>Sometimes/ future</th>
<th>No</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Interviewee list

List of the Senior Telco and Telecom Vendor Executives who were interviewed as Part of the Qualitative research.

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Designation</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant 1</td>
<td>Senior Manager – Support Group</td>
<td>Company A Dubai</td>
</tr>
<tr>
<td>Participant 2</td>
<td>Solution Manager – Carrier Solutions</td>
<td>Company B Dubai</td>
</tr>
<tr>
<td>Participant 3</td>
<td>Operations Manager - VAS</td>
<td>Company C Dubai</td>
</tr>
<tr>
<td>Participant 4</td>
<td>Senior Marketing Manager - VAS</td>
<td>Company D Abu Dhabi</td>
</tr>
<tr>
<td>Participant 5</td>
<td>Director - Marketing (VAS Product Development)</td>
<td>Company D Abu Dhabi</td>
</tr>
<tr>
<td>Participant 6</td>
<td>Deputy Director</td>
<td>Company E Abu Dhabi</td>
</tr>
</tbody>
</table>

Table T1.2: Interviewee list
## Appendix C: Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2G</td>
<td>2nd Generation</td>
</tr>
<tr>
<td>3G</td>
<td>3rd Generation</td>
</tr>
<tr>
<td>4G</td>
<td>4th Generation</td>
</tr>
<tr>
<td>A2P</td>
<td>Application to Person</td>
</tr>
<tr>
<td>AMPU</td>
<td>Average Margin Per User</td>
</tr>
<tr>
<td>APRU</td>
<td>Average Revenue Per User</td>
</tr>
<tr>
<td>CP</td>
<td>Content Provider</td>
</tr>
<tr>
<td>DVB-H</td>
<td>Digital Video Broadcast Handheld</td>
</tr>
<tr>
<td>FMC</td>
<td>Fixed Mobile Convergence</td>
</tr>
<tr>
<td>FTTH</td>
<td>Fiber to the Home</td>
</tr>
<tr>
<td>GPOFN</td>
<td>Gigabit Packet Optical Network</td>
</tr>
<tr>
<td>HSPA</td>
<td>High Speed Packet Access</td>
</tr>
<tr>
<td>IDD</td>
<td>International Direct Dialing</td>
</tr>
<tr>
<td>IM</td>
<td>Instant Messaging</td>
</tr>
<tr>
<td>IMS</td>
<td>IP Multimedia Subsystem</td>
</tr>
<tr>
<td>IPTV</td>
<td>Internet Protocol Television</td>
</tr>
<tr>
<td>LBS</td>
<td>Location Based Services</td>
</tr>
<tr>
<td>LTE</td>
<td>Long Term Evolution</td>
</tr>
<tr>
<td>M&amp;A</td>
<td>Merger &amp; Acquisition</td>
</tr>
<tr>
<td>MMS</td>
<td>Multimedia Messaging Services</td>
</tr>
<tr>
<td>MOU</td>
<td>Minutes of Usage</td>
</tr>
<tr>
<td>MTV</td>
<td>Mobile Television</td>
</tr>
<tr>
<td>MVNO</td>
<td>Mobile Virtual Network Operator</td>
</tr>
<tr>
<td>NGN</td>
<td>Next Generation Network</td>
</tr>
<tr>
<td>P2P</td>
<td>Person to Person</td>
</tr>
<tr>
<td>POC</td>
<td>Push to talk over cellular</td>
</tr>
<tr>
<td>QOS</td>
<td>Quality of Service</td>
</tr>
<tr>
<td>RBT</td>
<td>Ring Back Tone</td>
</tr>
<tr>
<td>ROI</td>
<td>Return On Investment</td>
</tr>
<tr>
<td>SDP</td>
<td>Service Delivery Platform</td>
</tr>
<tr>
<td>SMS</td>
<td>Short Message Services</td>
</tr>
<tr>
<td>SP</td>
<td>Service Provider, CP – Content Provider</td>
</tr>
<tr>
<td>TRA</td>
<td>Telecom Regulatory Authority</td>
</tr>
<tr>
<td>UGC</td>
<td>User Generated Content</td>
</tr>
<tr>
<td>UMTS</td>
<td>Universal Mobile Telecommunication System</td>
</tr>
<tr>
<td>USB</td>
<td>Universal Serial Bus</td>
</tr>
<tr>
<td>USSD</td>
<td>Unstructured Supplementary Services Data</td>
</tr>
<tr>
<td>VAS</td>
<td>Value Added Services</td>
</tr>
<tr>
<td>VCC</td>
<td>Voice Call Continuity</td>
</tr>
<tr>
<td>VOIP</td>
<td>Voice Over IP</td>
</tr>
<tr>
<td>VPN</td>
<td>Virtual Private Network</td>
</tr>
<tr>
<td>WAP</td>
<td>Wireless Application Protocol</td>
</tr>
<tr>
<td>WiMax</td>
<td>Wireless Interoperability for Microwave Access</td>
</tr>
<tr>
<td>WLAN</td>
<td>Wireless Local Area Network</td>
</tr>
</tbody>
</table>

Table T 1.3 Abbreviations