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PROJECT COMPLETION CERTIFICATE

This is to certify that **Mr. V. N V S Manikanta**, student of NIT Warangal, undergoing MBA program, has successfully completed his Summer Internship Program with a project entitled ***"Mobile Value Added Services in Rural & Urban India"*** at **Tata Consultancy Services, Hyderabad (TCSH)** for a period of 8 weeks from 14th May,2010 to 9th July, 2010. His performance on the project during this period was satisfactory.

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A REPORT

ON

MOBILE VALUE ADDED SERVICES
IN
RURAL & URBAN INDIA

By

V.N V S MANIKANTA

TATA Consultancy Services, Hyderabad

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V. N V S MANIKANTA

SOM, NIT Warangal

A report submitted in partial fulfilment of the requirements of MBA Program of NIT Warangal

Submitted to

Project Supervisor: Mr. Tarun Handa

Tata Consultancy Services

Date of submission: 9th July, 2010

NIT WARANGAL

CERTIFICATE

This is to certify that the thesis titled *"**Mobile Value Added Services in Rural & Urban India**."* is a bonafide work done by **Mr. V. N V S MANIKANTA**, **Roll No. 099525**, in partial fulfilment of the requirements for the award of the degree MBA and submitted to NIT Warangal.

This work was not submitted earlier at any other University or Institute for the award of the degree.

Head of the Department

School of Management

NIT Warangal

CONTENTS

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Finally, I would like to thank the entire Telecom VAS team and my NIT colleagues at TCS who provided their valuable inputs throughout the internship, which really helped in successful completion of my project report.

II. DECLARATION

This is to certify that the thesis titled "***Mobile Value Added Services in Rural & Urban India***" is a bonafide work done by Mr. N V S MANIKANTA VUDATHA, Roll No. 099525, in partial fulfillment of the requirements of MBA Program and submitted to NIT Warangal.

I also declare that this project is a result of my own efforts and that it has not been copied from anyone and I have taken only citations from the literary resources which are mentioned in the Bibliography section.

This work was not submitted earlier at any other university or institute for the award of the degree.

(V. N V S Manikanta)

III. ABSTRACT

The Indian mobile telephony market has grown at a rapid pace in the past six to seven years. Declining call tariffs in conjunction with favorable regulatory policies have lead to a tremendous increase in the subscriber base. While the growing subscriber base has positively impacted industry revenues (which have risen consistently over the past few years), operator margins also have shrunk, pulling down "Average Revenue per User" (ARPU). As ARPU declines and voice gets commoditized, the challenge is to retain customers, develop alternative revenue streams, and create a basis for differentiation in high-churn markets.

In the wake of changing industry markets, telecom operators are looking at "Mobile Value Added Services" (MVAS) as the next wave of growth, and a large chunk of revenues is expected to flow from VAS in the near future. Market growth drivers on the supply side include declining ARPU, brand differentiation needs, and growing focus on entertainment-related content; demand-side drivers include the booming Indian economy, increasing user comfort with basic mobility services, personalization of content and devices and cheaper handsets.

The future implementation of MVAS in India will encompass several new and exciting areas such as mobile internet, location-based services, and regional content-based services. Maturity of the MVAS market also will give impetus to the market for M-commerce applications in India. Favorable government policies and advances in technology are encouraging providers across the MVAS value chain to explore innovative ways to address the mobile telephony needs of India's rural population.

This research report explores the Indian MVAS marketplace and seeks to provide a systemic view of the industry. The main objective of the project is to study about the mobile value added services in India, to know the adoption & usage patterns of Mobile VAS in rural & urban India. This research is also used to explore what services are required and what are currently being offered to the users

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VII. COMPANY PROFILE

Tata Consultancy Services Limited is an IT services, business solutions and outsourcing organization that delivers real results to global businesses, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled services delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development.

More than 98% of TCS customers reward the company's reliability, passion, creativity, and unique ability to handle the broadest range of their IT needs by continually extending and deepening their partnerships with TCS.

TCS helps clients from various industries solve complex problems, mitigate risks, and become operationally excellent. Some of the industries it serves include Banking and Financial services, Insurance, Telecom, Media and Information Services, Retail & CPG, Government, etc.

A part of the Tata Group, India's largest industrial conglomerate, TCS has over 160,000 of the world's best trained IT consultants in 42 countries. The company generated consolidated revenues of more than US $6 billion for fiscal year ended 31 March 2010 and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

TCS is headquartered in Mumbai, has more than 142 offices across the world. Mr. Natarajan Chandrasekaran is the Chief Executive Officer (CEO) and Managing Director of the company. TCS is the world's first organization to achieve an enterprise-wide Maturity Level 5 on CMMI® and P-CMM® based on SCAMPISM, the most rigorous assessment methodology.

CHAPTER 1
INTRODUCTION

Mobile phones today have moved beyond their fundamental role of communications and have graduated to become an extension of the persona of the user. We are witnessing an era when users buy mobile phones not just to be in touch, but to express themselves, their attitude, feelings & interests [1].

Customers continuously want more from their phone. They use their cellular phones to play games, read news headlines, surf the Internet, keep a tab on astrology, and listen to music, make others listen to their music, or check their bank balance etc [1].

Thus, 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 choosing 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 [1].

1.1 THE INDIAN MOBILE TELEPHONY MARKET

The Indian mobile telephony market has grown at a rapid pace in the past seven to eight years. Declining call tariffs in conjunction with favorable regulatory policies have lead to a tremendous increase in the subscriber base [2]. The growth of an infrastructure sector such as telecom has a multiplier effect on the entire economy of the nation. Fortunately the telecom sector in India, since its liberalization in 1991, has registered an unprecedented growth and is therefore valued at $100bn today, contributing significantly (13%) to the GDP [3].

Globally in terms of mobile subscriptions, India is the world's second largest wireless market after China. At the end of April 2010, the total wireless subscriber base was 601.22 million [4]. This growth of the sector can be clearly attributed to the favorable and improved regulatory structure, declining handset prices and innovative prepaid tariff structure. India is targeting to reach a wireless subscriber of 770 million by 2013.

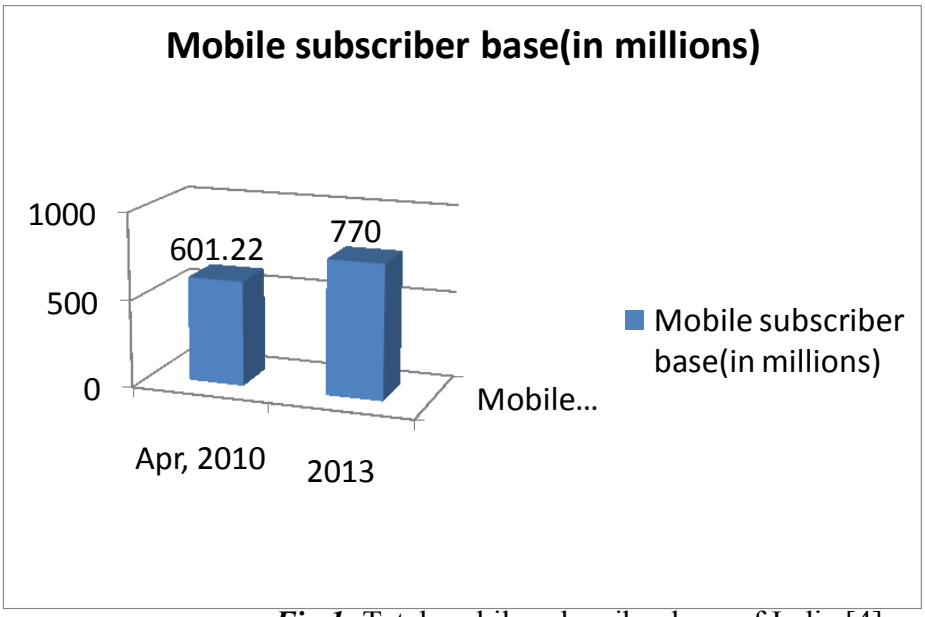


Fig 1: Total mobile subscriber base of India [4]

With increasing competition and the need for increasing the subscriber base in rural markets, the call rates are declining. This has led to decrease in ARPU. As ARPU declines, the challenge for operators is to increase revenues by differentiating their offerings and develop alternative revenue streams by offering more value added services to the existing subscribers [3].

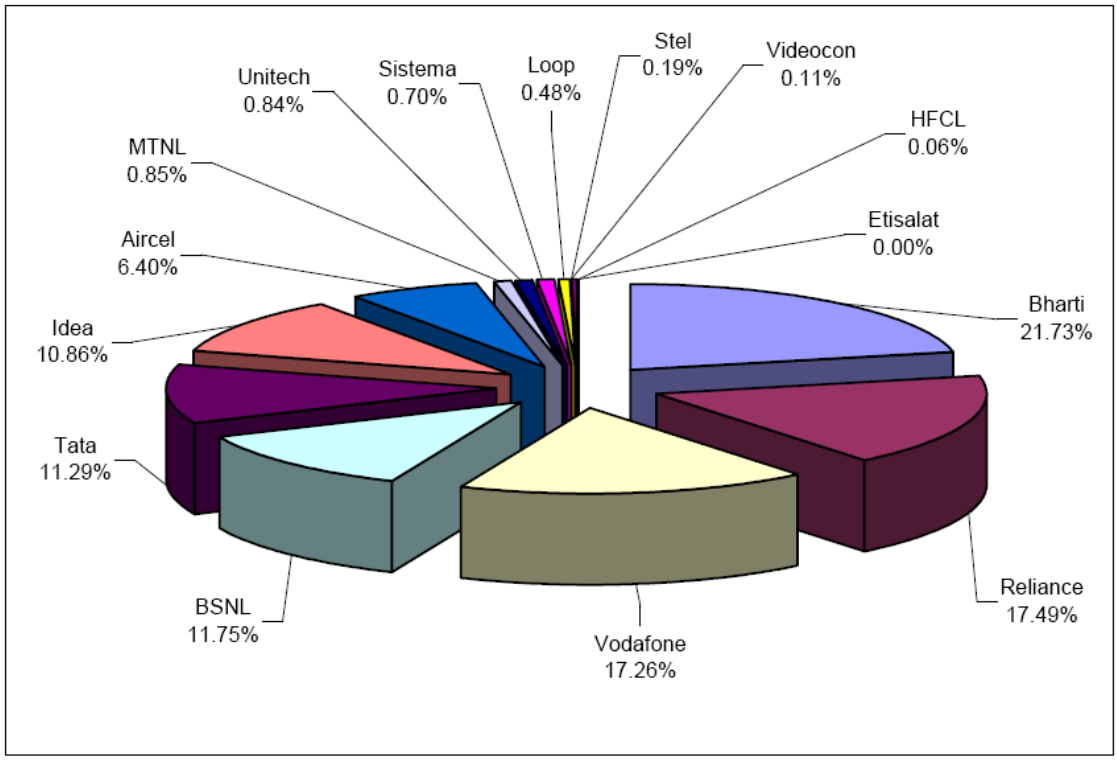


Fig II: Service provider wise market share by the end of Apr, 2010 [4]

70 per cent of India's population lives in rural India and contributes 50 per cent of the country's GDP. With mobile phones becoming cheaper, easier to procure and affordable network charges, an increasing number of rural audience adopted the technology. The decrease in average revenue can also be attributed to the structure of the Indian Mobility Market which is largely prepaid. This means that most of the subscribers added are from the bottom of pyramid with low usage resulting in low ARPU.

1.2 GROWTH IN THE INDIAN TELECOM MARKET

The Indian telecom market has tremendous growth opportunities. As per the cellular industry experts, the nation's mobile subscriber base is also set to exceed 771 million connections by 2013.

The growth in the telecom market is a function of two set of factors.

- The Demand Side Factors - referred to as the Pull factors.
- The Supply Side Factors - referred to as the Push factors [3].

1.2.1 Pull factors

High Disposable Income

India's GDP with a current growth rate of 8% makes it the 2nd fastest growing economies of the world. This growth has resulted in increasing disposable income among the individual population. Therefore the young Indian population is increasingly investing more money in various entertainment and communication services thus fueling growth of the telecom sector [3].

Mobility and Connectivity

The growing need of high mobility and staying connected is the prime driver for the entire category. This is true for people from different age groups and occupation. The youth segment that comprises 30% of the total handsets market requires high mobility and connectivity and the same is true for business and other professionals. This innate need coupled with availability of handsets and connectivity at affordable price points has triggered the growth of telecom in India [3].

1.2.2 Push factors

Investments in Telecom Industry

The telecom industry has seen an estimated $8.5 bn in investment flow during 2006-07 alone, of which $550 million was in the form of foreign direct investment. All major telecom handsets manufacturers – including Nokia, Samsung, Motorola and LG - have their presence in India, along with the leading global service companies and infrastructure majors, such as Vodafone, Singapore Telecom, AT&T,

Ericsson, Alcatel and Siemens. This has triggered the growth of Telecom Sector in India [3].

Acquiring New Subscribers through expansion in Rural India

Acquiring customers have always been a great challenge for companies. Given the current level of saturation in Metros and Urban Market and cut throat competition among operators , increasing subscriber base in urban market would be all the more challenging. Therefore a lot of operators with adequate support from Government are eyeing the rural market for future growth [3].

Big operators like Airtel have claimed that soon mobile connections and recharge vouchers etc will be available at all such places from where people buy match boxes. This certainly explains the future penetration of these services in remotest of villages.

Selling More to Existing Subscribers

This is relatively easier as compared to acquiring new customers. Also since now the new subscriptions will largely happen at the bottom of the pyramid therefore the new subscriptions will further lower the average revenue per user. In such a scenario mobile VAS sector is a potential long term revenue stream as it will be easier to sell more to the existing customers [3].

1.3 DEFINITION OF VAS

1.3.1 Basic Definition

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 [3].

The value added services are characterized as under:

- 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 may demonstrate one or more of these characteristics and not necessarily all of them.

1.3.2 Definition as per TRAI

In the Unified Access Service License (UASL), VAS is defined as follows:

"*Value Added Services are enhanced services which add value to the basic teleservices and bearer services for which separate license are issued".*

The Government of India issues licenses for the following Value Added Services:

1. Public mobile trunking service
2. Voice mail service
3. Closed users group domestic 64 kbps data network via INSAT satellites system
4. Videotex service
5. GMPCS
6. Internet
7. Audiotex
8. Unified messaging service

The above definition supports a free market but can be broadened to incorporate new service categories and players in the supply chain.

1.4 OBJECTIVES OF THE STUDY:

- To study about the Mobile Value Added Services in India
- To know the adoption and usage patterns of Mobile VAS in rural & urban India.
- To explore what is required and what is currently being offered to them.

1.5 LIMITATIONS OF THE STUDY

- Method of data collection was through personal interview and therefore personal bias becomes a major limitation.
- Due to the time constraints only a sample of 60 were interviewed each in rural & urban India, hence the data collected may not be a representative of the entire population
- The respondents have answered the questionnaire with their level of knowledge that may not be indicative of the actual situation.

CHAPTER 2

MOBILE VALUE ADDED SERVICES

2.1 Mobile VAS

Mobile value-added services (VAS) are those services that are not part of the basic voice offer and are availed separately by the end user. They are used as a tool for differentiation and the ability for mobile operators to charge a premium price.

Mobile VAS include

- Non-voice advanced messaging services such as SMS, **MMS**, MIM, and UM
- Wireless data services based on wireless data bearer technologies such as WLAN, GPRS, 1xRTT,
- WAP with VAS applications including mobile gaming.
- Voice-based services such as PTT and WDA.

2.2 MVAS Categories

All the value added services address some need of the end consumer whether it is psychological, monetary or convenience. Based on the need fulfillment of the end user, Mobile VAS is grouped into three broad categories.

CATEGORY	CHARACTERISTIC	EXAMPLE
Entertainment	Designed for mass appeal	Games, Caller Ring Back Tone(CRBT), music download
Info	Characterized by the useful information	SMS, Missed Call Alert(MCA), Stock update, Location Based Services(LBS)
M-Commerce	Services involving monetary transaction using the mobile phone	M-banking, m-Commerce

Table I: MVAS Categories

1. **Entertainment VAS:** The key differentiating factor of Entertainment VAS is the **mass appeal** it generates. These provide entertainment for leisure time usage. These not only generate heavy volume (owing to its mass appeal) but also heavy usage. An example of these kinds of services is Jokes, Bollywood Ring tones, CRBT (Caller Ring Back Tone) and games. These services continue to be popular and have been key revenue generators for the Indian mobile VAS market. This is a high value MVAS and will continue to show growth. Other popular Entertainment VAS driving the market are dating and chatting services. The service was first introduced 2 years back and is now being offered by all the operators. Each circle generates about Rs 30 lakhs per month. This service is not only growing fast but also witnessing less churn as compared to other MVAS. Owing to its sticky nature, it requires comparatively less marketing efforts and cost. Entertainment VAS has the potential to remain a key contributor to Mobile VAS industry. To sustain the MVAS growth, it is the responsibility of the industry to keep discovering/innovating killer applications like CRBT (Caller Ring Back Tone) at regular intervals [3].
2. **Info VAS:** These services are characterized by the useful **information** it provides to the end user. The user interest comes in from the **personal component and relevance** of the content. Apart from mobile, alternate modes are available to access Information VAS like Newspaper, TV, and Internet. E.g. of Info VAS is information on movie tickets, news, banking account etc. They also include user request for information on other product categories like real estate, education, stock updates, etc. Information VAS needs to target the right person at the right time with the right content [3].
3. **mCommerce VAS (Transactional services):** These are the services which involve some transaction using the mobile phone. An example of this kind of service is buying movie tickets using mobile phone or transfer of money from one bank account to the other [3].

   These can broadly be classified into 2 types: Mobile banking and Mobile payments.

Though in a nascent stage, off late many initiative have been taken in mCommerce space. A number of application providers are in the market with different business models. Some are focusing on mpayment, some on incorporating mCommerce into it while others on mbanking aspects. This year has seen the launch of mbanking service by Indian's largest private sector bank which has given mbanking a much needed thrust. Almost all the operators are conducting pilot exercises for mCommerce services using different access modes like GPRS, USSD, STK, etc. A big boost to mCommerce has come from the RBI which recently came out with some guidelines. mCommerce penetration continues to be small

but awareness is increasing. Operators are betting on technologies like USSD to make the service handset agnostic [3].

2.3 MARKET FOR MOBILE VAS

The declining ARPU and increasing competition among operators it's imperative to focus on alternate revenue streams. That's where there is a felt need for capitalizing on the Value Added Services Market.

The reasons for the increasing importance of MVAS can be classified as:

- **Decrease in ARPU despite increase in MOU:** Though the subscriber base is growing at a rapid pace and has positively impacted industry revenues, operator margins also have shrunk owing to competition and lower "Average Revenue per User" (ARPU) as the major growth is coming from the rural India. As ARPU declines and voice gets commoditized, the challenge is to develop alternative revenue streams and retain customers by creating a basis for differentiation in high churn markets [3].

- **Need for differentiation:** There is a greater need among the telecom operators to differentiate themselves from each other.
  - **Number of Licensees:** With increasing number of licensees in the telecom space the average numbers of operators in many circles have increased to 5 to 6 operators offering more choices to the consumer. Thus the competition among the operators has increased tremendously. Therefore it is very important for them to differentiate themselves from the others. Now that voice has got commoditized these operators are using MVAS for their differentiation and marketing these services heavily for creating awareness among the consumers [3].
  - **Decreasing Call Rates:** In order to attract consumers with relatively low purchasing powers primarily from Semi Urban and Rural India the operators have drastically reduced the call rates making it affordable to even the lower segment of society. The tariff in India is one of the lowest at Rs.0.60 per minute.
  - **Saturation in Metro and Urban Market:** The metro/urban areas offer high level of penetration and have significant mobile subscribers. In such a highly saturated market with the entry of MVNO's the competition will get fierce. Therefore capitalizing on value added services will give operators opportunity to increase ARPU by providing premium services [3].

- **3G bidders :** The arrival of new technologies gave rise to greater competition as many non operators are also bidding for the 3G licenses. The Indian government has managed to raise Rs. 67,718.95 crores from the auction, with Rs. 50,968.37 crores from private telecom operators, and Rs. 16,750.58 crores from the state owned telecom operators BSNL and MTNL.

- **Increasing need and demand from consumers:** In addition to the above supply side reasons the 'pull effect' from consumers asking for more than just basic telephony is also a key driver for MVAS services. Today most of the consumers are seeking more from their communication device apart from just mobility and desire to stay connected.

2.4 Drivers and Challenges of M VAS:

In addition to supply-side drivers (such as the declining ARPU, brand differentiation needs and growing focus on entertainment-related content), demand-side drivers (such as the booming Indian Economy, increasing user comfort with basic mobility services, personalization of content and devices, and cheaper handsets) are also driving the growth of the market [5].

- **Demand Side drivers**
  - Increasing consumer demand for VAS
  - Growing Medium for advertising
  - Increase in demand for regional content
  - Growing rural market
- **Supply Side drivers**
  - Declining ARPUs
  - Rising mobile teledensity
  - Introduction of 3G based application

Challenges:

- Biased revenue sharing model
- Lack of copyright protection and authentications standards
- Dominance of prepaid customers
- Lack of awareness among consumers
- Feature Rich Handsets beyond the Buying Power of Users [5].

	Entertainment VAS	Information VAS	mCommerce
Definition	These services provide Entertainment for leisure time. These services usually generate mass appeal	These are the services which provide some useful information to the end user. The user interest comes from personal or relevant component of the content.	These are the services which involve some transaction non mobile
Current status	Entertainment VAS is driving the VAS market both in terms of volume and revenue.	Information VAS is getting popular with different categories depending on the relevance	mCommerce is currently in embryonic stage
Drivers	Industry focus is on Entertainment VAS with new players coming from media and movie houses e.g. STAR, Rajshri	Entities using mobile as another channel to deliver information is driving information VAS. Eg. stock updates, bank account information, travel information, etc.	RBI guidelines is expected to give a big boost to mBanking
Challenges	Currently, music is the biggest component. Challenge is to drive the usage of other content /services like games	Marketing is the biggest challenge since Information need differs across different segments Credibility of the source is another challenge since there are alternate channels available to get Information VAS	Identifying the best access mode to provide mCommerce is a big challenge Handset penetration and usage of the key access mode (GPRS) of mCommerce is low in India Allaying security concerns

	Entertainment VAS	Information VAS	mCommerce
Future status	Entertainment VAS is expected to remain the VAS driver for the next few years	Information VAS is going to be key to address the needs of growing rural market	mCommerce has the potential to emerge as a key VAS component once security concerns are addressed

J ***Table II:*** Drivers & Challenges of MVAS

2.5 Pillars of Mobile VAS:

The growth of MVAS is based on 4 pillars- Access devices, Content, Technology and Infrastructure [3].

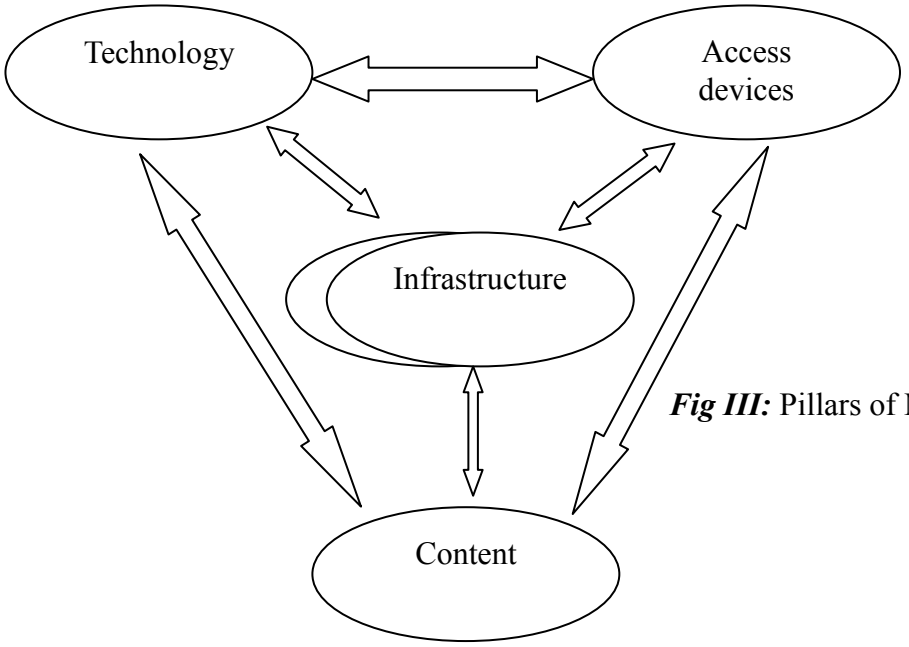


Fig III: Pillars of MVAS

2.5.1 Access devices

Access devices play an important role in the usage of different MVAS categories. The lack of features like GPRS, GPS, Java in handsets make a number of MVAS futile. Therefore the affordable availability of such features is a key factor in determining the size of the target audience to a large extent. A recent example is service operators preference for USSD as an mpayment mode instead of GPRS for the simple reason that USSD is handset agnostic [3].

Another access device which will soon see the light-of-the-day in India is MID (Mobile Internet Devices). Even technology companies like Intel are increasing the power of mobile platforms with a specially designed low cost processor called Atom.

2.5.2 Content

It does not seem content really the king, looking at the percentage revenue share collected by Content aggregators and Content owners of the total MVAS pie. Add to it the pirated content and side loading in the India market; it does not present a rosy picture. The content depends a lot on geography and is not transportable across borders. Both IPR (e.g. music label) and white label content (e.g. cricket) is available in the market [3].

But on the other hand, much of the content being consumed is being generated for other media. But because of the same reason we say a wide variety of content being available especially in the Entertainment category.

For content aggregators/developers/owners to play a significant role in the category, relevant content needs to be generated. They need to play a larger role from merely being a content aggregator and transporter. Investment needs to be made keeping in mind the long term benefit and not the short term ROI. Another factor which impedes the content development is marketing of MVAS. A lot of content and services die prematurely or do not realize their full potential because of lack of sufficient and focused marketing efforts.

Currently, packaging and marketing of content is primarily in the hand of operators. Regional content will give a boost to the MVAS market. It has tasted success in the Indian market but the challenge is to generate relevant content not only catering to regional differences but also in different languages.

2.5.3 Infrastructure

Infrastructure requirement needs to be met to harness the potential of different technologies. Setting up infrastructure especially in the rural areas is going to play a major role in the growth of MVAS.

2.5.4 Technology

There are 2 aspects to technology. One is the technology platform itself and the second is the communication technology. On one hand technology platforms are independent of geography and are transportable across borders unlike content which needs to have a regional flavor for e.g. mobile payment platform, IVR, etc. Though there are challenges in case of platforms like speech recognition given the high number of languages and dialects spoken in India. Communication technology is also independent of geography but depends on regulation issues for e.g. 3G

2.6 VAS Value chain

MVAS resulted in the emergence of an entirely new business eco-system giving rise to supporting industries such as content development and aggregation. There are multiple stakeholders playing across the MVAS value chain many with overlapping roles and functions. A well demarcated value chain of MVAS is yet to evolve [2].

A typical value chain in the MVAS industry includes content creators, aggregators, telecom operators, technology companies, and mobile handset manufacturers

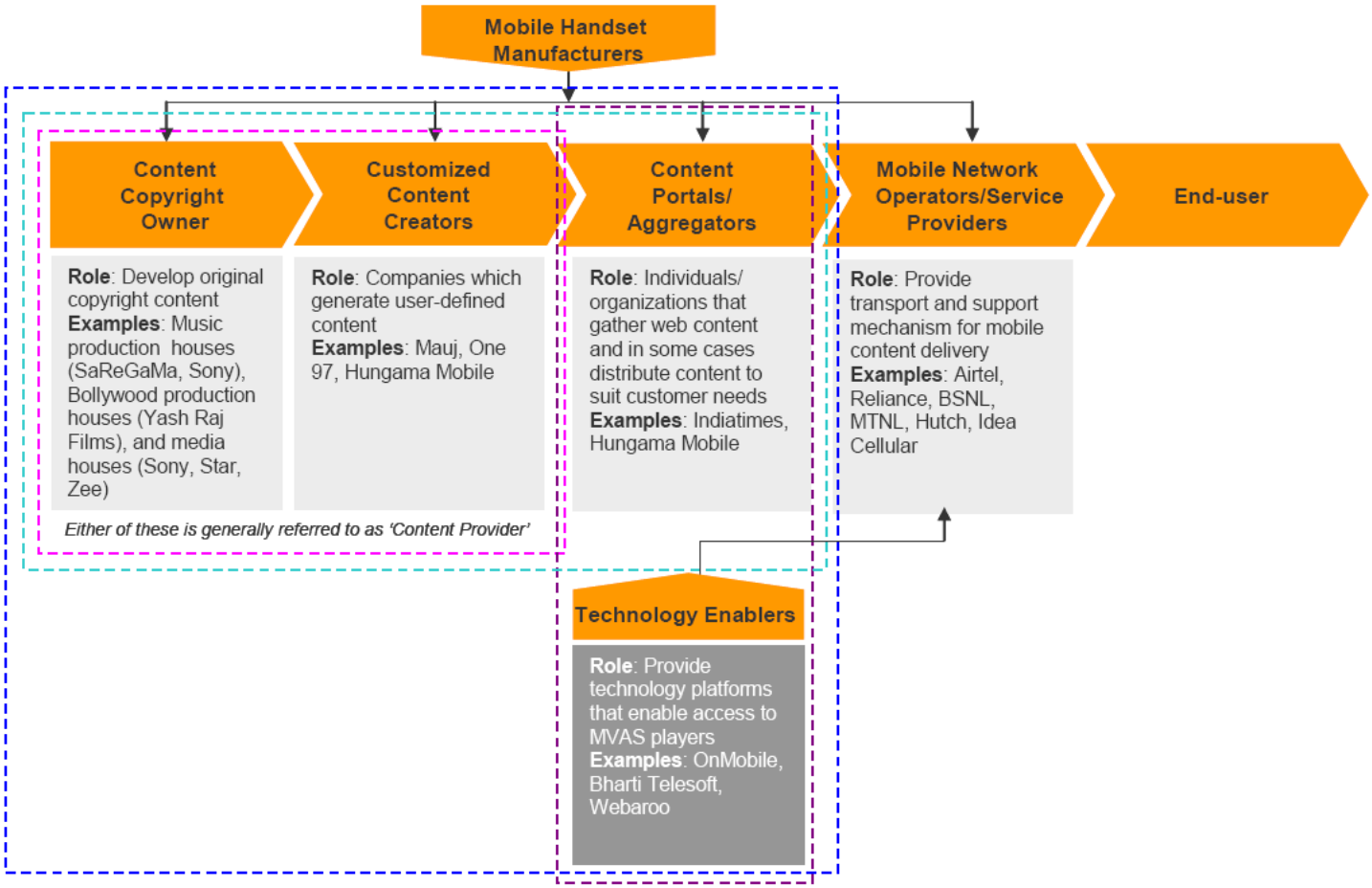


Fig IV: MVAS Value chain

2.6.1 Stakeholders in VAS value chain

The main stakeholders involved in the VAS value chain are:

- **Content copyright owners:** At the first level of the MVAS value chain are the content copyright owners, which develop original copyright content. Examples include music production houses (SaReGaMa, Sony), Bollywood production houses (Yash Raj Films), and media houses (Sony, Star, Zee, etc.)

- **Customized content creators:** Refers to companies that generate customized content for users through their own portals. Examples include Mauj, One 97, and Hungama Mobile.

- **Content portals/aggregators:** These are individuals/organizations that gather web content and in some cases distribute content to suit customer needs. Examples include Indiatimes and Hungama Mobile.

- **Mobile operators:** They provide transport and support mechanisms for delivery of mobile content. Examples include Airtel, Reliance, BSNL, MTNL, Hutch, Idea Cellular, etc.

- **Technology enablers:** On the other end of the value chain are technology enablers. These provide technology platforms that enable access to MVAS. Players include OnMobile, Bharti Telesoft, Webaroo, etc.

- **Handset manufacturers**: Mobile handset manufacturers have also started playing an important role, through their interaction with all other stakeholders across the value chain. Their activities include embedding software links in their handsets, allowing direct access to content portals, creating services customized to the need of certain regions, etc. Key players in the Indian market include Nokia, Motorola, and Samsung [2].

2.6.2 Current Revenue Sharing Arrangements

Operators typically retain the largest chunk of revenues across the value chain. Revenue sharing arrangement for non-enterprise MVAS is typically 60–70% for the operators, 20–25% for the content aggregators. Further, royalties paid out to the copyright owner accounts for 10–15% of the total revenues [6].

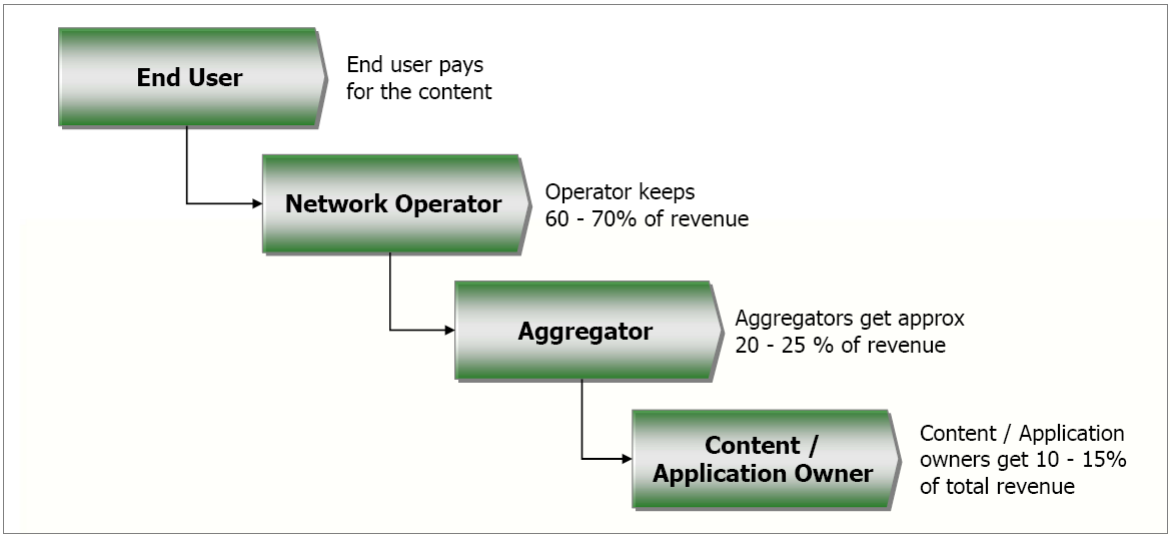


Fig V: Revenue sharing across the value chain [6]

2.7. Revenue Forecasts

2.7.1 Mobile Services Market –Revenue Forecast

With an ever-expanding subscriber base, it is anticipatd that the mobile service market in India, although witnessing declining ARPU and intense price wars, will continue to exhibit moderator strong growth in the forecast period.

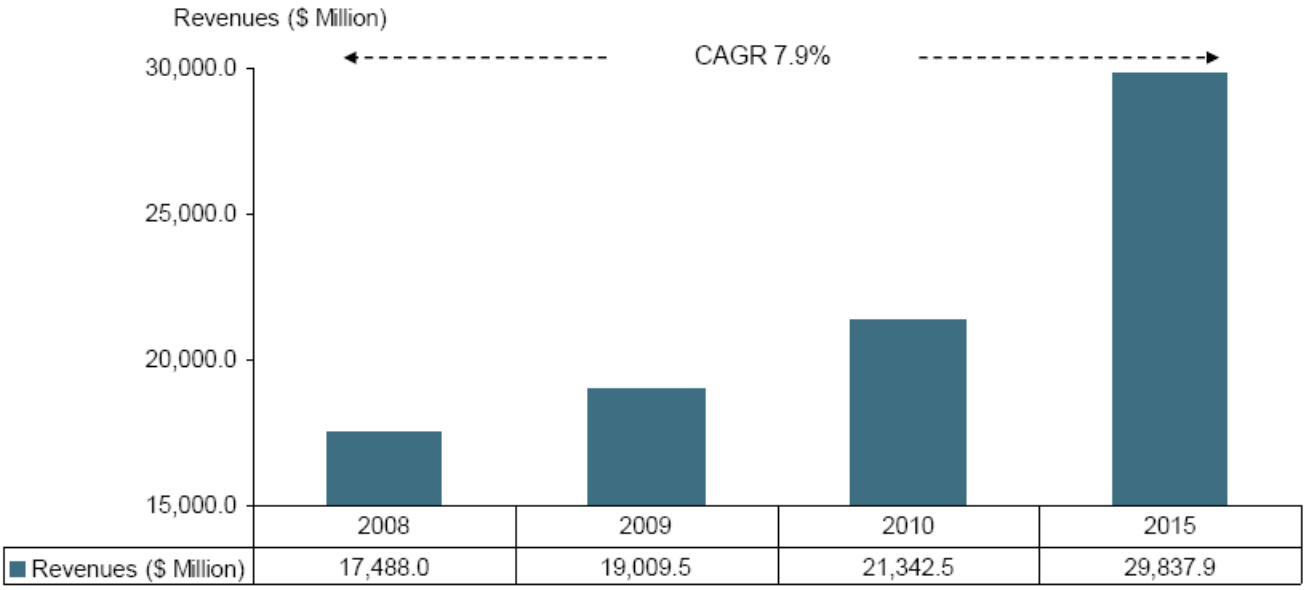


Fig VI: Mobile services market-Revenue forecasts (India), 2008- 2015

Source: FROST & SALLIVAN

2.7.2 Mobile VAS Market –Revenue Forecast

TheMobileVASmarketrevenuesinIndiaconstituted5.4percentofthetotalmobileservicesmarketrevenuesin 2008.Withstrongdrivefrommobileoperatorstowardsmobile VAS,itisanticipatedthatthismarketwillexperie ncestronggrowth,especiallyaftertheproliferationof3Gnetworks.

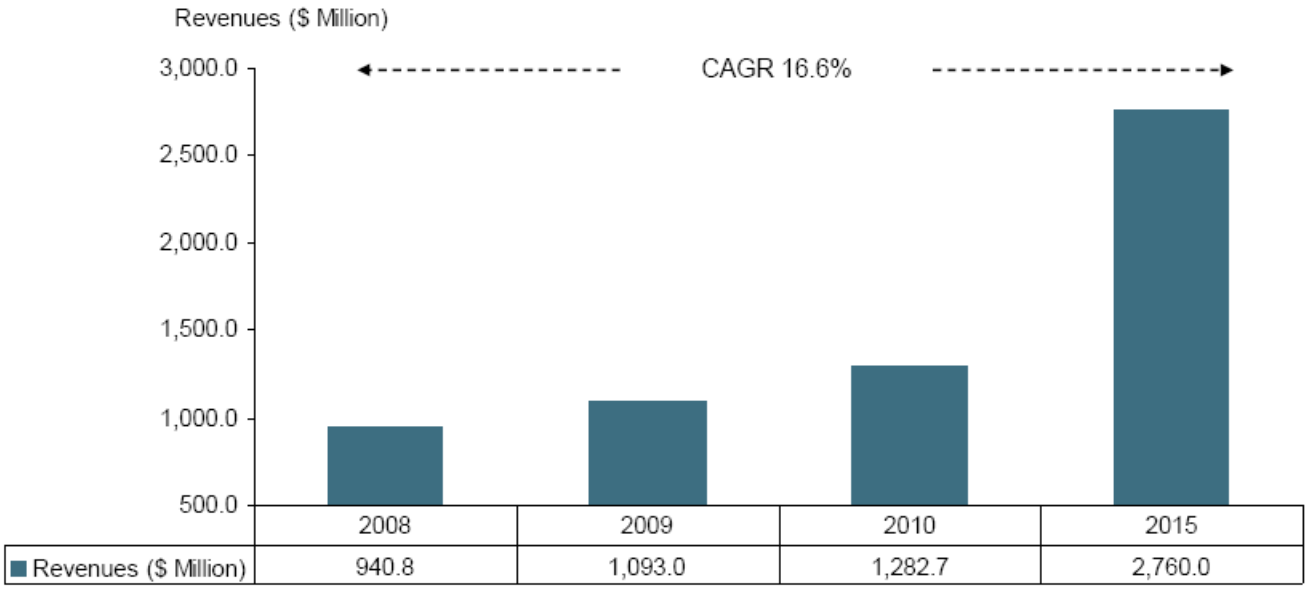


Fig ViI: Mobile VAS market-Revenue forecasts (India), 2008- 2015
Source: FROST & SALLIVAN

2.8 VAS trends in India

- **Entertainment to Infotainment VAS**

  Today Entertainment category of VAS contributes the highest share in any Indian operators VAS portfolio. Interestingly today's mobile devices have shifted the entertainment from a content or network play to a device based play. Mobile devices with integrated music and video player, FM and high memory features have flooded the market accompanied with low cost associated with it. Entertainment content from the web world is being fed into the device memory and is being used. Even games for this case are downloaded from the web and dumped into devices [7].

  In such an unfavorable scenario, the Operators are making a lot of investments in infotainment content and services. The demand for infotainment content and services like news, astrology, location based services, maps etc; have had a significant growth in the recent past and is expected to grow even more in future [7].

- **Focusing on Rural VAS**

  In emerging markets especially in countries like India, majority of the population is rural i.e. the Bottom of the Pyramid (BoP). Rural wireless teledensity in India was at 17.22% as of Apr 2010 compared to urban teledensity of more than 94.98% around the same period.

  With mass revenue potential hanging around in rural India, operators are shifting their focus on VAS for BoP. Initiatives by Airtel, Reliance and Idea Cellular to connect with their rural masses are already visible with their tie ups with livelihood content providers like IFFCO and Reuters Market Light for services related to agriculture, weather and livelihood. The below figure clearly maps out the characteristics of the different mobile population and their mobile content needs [7].

- **SMS based to Voice based VAS**

  Voice based VAS services constitute around 40% of the total VAS market today and most of them are via IVR which is expensive to the operator as well as to the end user. In geography like India where there are more than 1600 regional dialects and 22 constitutionally approved languages, it becomes difficult for operators to deliver text based services in vernacular.

  Moreover Voice based services do not have any learning curve for the end user as compared to an SMS or a GPRS based service where the end user has to learn the process of using or accessing the services. The major barriers identified for access to mobile services in India were high cost of the service followed by awareness on how to use the services and its unavailability in local languages. Today an end user pays Rs 6/min for an IVR based service like listening to songs, setting CRBT, etc. which is way too expensive and is a major barrier for mass usage of VAS [7].

  Thus in order to increase usage of services and to reach wider audiences, operators need to focus on Voice delivery, but they also need to work around innovatively on the high IVR costs associated with current Voice based services.

- **Increasing usage of Mobile Internet**

  With mobile phones becoming the fastest penetrating digital device and perhaps the most popular one, it has also become the easiest way to access any information on the fly. With internet boom in India a decade ago, we were right in believing that the world had shrunk and information on anything in any part of the world is just a click away. Yet the broadband rates, PC penetration, power supply and the last mile connectivity are key issues to be addressed for mass adoption of broadband.

Mobile adoption on the other hand has been phenomenal and with falling handset prices and enhanced features, it has enabled internet access to the masses. Though speeds are a challenge which we are sure 3G and forthcoming technologies will address to, but mobile has made the shrunk world more personalized because though PC stands for personal computer, it's never personal. An average town family that has one PC has more than one mobile. In rural areas, where even mobile is a shared device, this helps in accessing information as the last mile connectivity and cost of devices are not a challenge in contrast to a PC [7].

CHAPTER 3

MOBILE VAS IN RURAL & URBAN INDIA

India poses a unique challenge in terms of diversity in languages spoken. There are 22 constitutionally approved languages spoken in India and over 1600 regional dialects. Even though Hindi is the official language, many people in India do not speak it at all. Almost every state in India has more than one dialect. Most languages have their own script.

This diversity in languages spoken across the length and breadth of India indicates that Indian language content/technology is not synonymous with any one language. There is a need for promoting different languages across regions in order to reach out to the masses.

Understanding of the language diversity is not complete without an understanding of the potential of these languages. Out of the total literate population in India, 37% are English literate in urban areas and 17% in rural. The remaining (i.e. 63% in urban areas and 83% in rural) are not familiar with English. This population is spread across different socioeconomic classes and speaks and read different languages. Their non familiarity with English has alienated them from using technology tools such as Internet and mobiles. This opens an opportunity for vernacular content to increase and tap the non-English knowing literate people.

3.1 Rural India

Most of Rural India skipped the landline telecommunication and internet age and leapt straight to adopt mobile telephony. With mobile phones becoming cheaper, easier to procure and affordable network charges, an increasing number of rural audience adopted the technology. The last two years have seen an accelerated adoption to mobile technology. Now majority of village families own at least one mobile phone [8].

Mobile Phone ownership is largely limited to the earning male or head of the household. The primary reason is that women are unable to produce the proof of identity required to get a connection. Mobile Phone is a device which gives its owner a status, power and freedom to communicate and that too, very easily. The mobile phone seems to have greatly improved quality of living, simply because almost everyone now is contactable and there is no longer an information delay of any sort, be it critical in nature or simply that of enquiring about well-being of loved ones. Knowing the whereabouts of family members and getting in touch with distant relatives is the primary use of mobile phones in rural India [8].

For most rural Indians, mobile phone makes economic sense. A villager is able to save time and money to travel to another village to meet his grandchildren, and is able to catch up with them for less than Rs.1 per minute. Mobile phone is also making business sense to farmers who can now find the best price for their produce by calling the wholesalers and checking with other farmers.

3.1.1 VAS in Rural India

There is a need to offer quality value added service to the rural users, which enhance their quality of life. With coverage expansion by operators reaching rural areas, mobile networks are penetrating geographies where there are few entertainment and information outlets other than television. In such areas mobile can be positioned to function as an all purpose device that provides entertainment, information and communications.

For instance, Qualcomm India, TATA Indicom, Astute and MSSRF have started a joint initiative called Fisher Friend, a mobile application which provides vital real-time information to fishing communities when and where they need it the most, at mid-sea. This includes when and where to sell the fish through access to market prices, weather (e.g. sea wave heights, satellite scan data about fish shoals), government schemes, etc. Access to this data could drastically improve market transparency and thus earning capabilities for smaller fishermen [8].

3.1.2 IVR

Voice based interfaces have been identified for their potential to increase access to information services in a developing country like India where 480 million illiterate people reside. Interactive Voice Response (IVR) is an automated telephony system that interacts with callers, gathers information & routes calls as per option selected by user, who has to follow IVR directions to get to the requisite information or content [8].

IVR will be a quick solution to providing regional content in local languages all across India. In rural areas where the literacy rate is low, IVR will be in great demand because of ease of use and local language support.

Voice as a technology has the ability to account for variations in the local language and this is a huge advantage. Users are comfortable with spoken word compared to written text, Voice services are key in the rural context.

3.2 Urban India

Most of the Metros and big cities have nearly come to a saturation point where the urban wireless teledensity is almost 94.98 as per the TRAI report in Apr, 2010. However, the current phase of growth in Indian Mobile Market is in rural areas that is now accounting for majority of growth in mobile space.

3.2.1 VAS in Urban India

In urban India, SMS is the most used VAS but it is not News and Job alerts that are gaining demand now a days but Jokes that are used by most of the urban mobile users followed by Astrology. Indian Mobiles subscribers participate in Mobile Contests. of course, it is dominated with TV. All reality TVs, song and dance shows choose their winners via some or the other SMS contest and India just loves it.

Mobile subscribers use internet for social networking services on their mobile phones where Orkut is the king in India be it web or Mobile. Indian Urban Mobile subscribers used their mobile phones for searches, with Google. Mobile site used daily is Google followed by Yahoo. Nearly half of Urban India uses Google daily on their mobile phones.

CHAPTER 4
RESEARCH METHODOLOGY

4.1 Research Problem

To make a comprehensive study of Mobile value added services in Rural and Urban India.

4.2 Type of research

Descriptive type research has used to complete the project. This research is based on fact finding enquires and undertaken in many circumstances when the researchers is interested to know the characteristic of certain group such as age, sex, education level, occupation or income.

Questions and deciding the types of data to be collected and the procedure to be used in this purpose. Descriptive studies can be divided into two broad categories: Cross Sectional and Longitudinal Sectional. A cross sectional study is concerned with a sample of elements from a given population. Thus, it may deal with residents, commercial, or other entities. Data on a number of characteristics from sample elements are collected and analyzed. Cross sectional studies are of two types: Field study and Survey. Although the distinction between them is not clear- cut, there are some practical differences, which need different techniques and skills. Field studies are ex-post-factor scientific inquiries that aim at finding the relations and interrelations among variables in a real setting. Such studies are done in live situations like communities, schools, factories, and organizations.

Another type of cross sectional study is survey result, which has been taken by me. A major strength of survey research is its wide scope. Detail information can be obtained from a sample of large population .Besides it is economical as more information can be collected per unit of cost. In addition, it is obvious that a sample survey needs less time than a census inquiry. Descriptive research includes survey and fact finding enquiries of different kinds of the major purpose. Descriptive research is description of the state of affairs, as it exists at present. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. The methods of research utilized in descriptive research are survey methods of all kinds including comparative and co relational methods. The reason for using such needs to be flexible in its approach, but a descriptive study in contrast tends to be rigid and its approach cannot be changed every now and then.

4.3 Data collection

4.3.1. Primary Data

For this project the primary data is collected in two ways:

a) Through observations

b) Through questionnaires

4.3.2. Secondary Data

Secondary Data which is used for research to know the history scope of VAS industry is collected from various sources available within the internet.

4.4 Sampling technique

Random sampling is used for research project. The respondents were interviewed with the help of a well structured questionnaire and were interviewed personally to gather the required information from rural areas whereas the questionnaires are mailed to the people using Google Docs to gather information from urban areas.

4.5 Sample size

The respondents are selected on random basis as sample size for research. The sample size for Rural is 72 and for Urban is 60.

Rural areas surveyed

Data representation technique and tools

Bar chart & Pie chart are used for representation.

Tool used is Microsoft excel.

CHAPTER 5

DATA ANALYSIS & INTERPRETATION

5.1 Rural Survey

Rural areas surveyed

West Godavari District

- Prakkilanka (8)
- Paidimetta (6)
- Vegeswarapuram (7)
- Gutala (6)
- Duddukuru (3)
- Tallapudi (8)
- Gopavaram (8)
- Gajjaram (4)

Hyderabad

- Krishnareddy Peta (6)
- Chintalagunta (4)

Rural people surveyed

- Farmers (8)
- Tailors (5)
- Daily labor (12)
- Electricians (4)
- Pan shopkeepers (6)
- Sales labor (7)
- Kirana shopkeepers (5)
- Workers (9)
- Brickfield labor (4)
-

1. **Total people surveyed →72**

- Number of people having mobile →60 83%
- Mobiles having GPRS →35 58%
- Mobiles having 3G → 4 6%

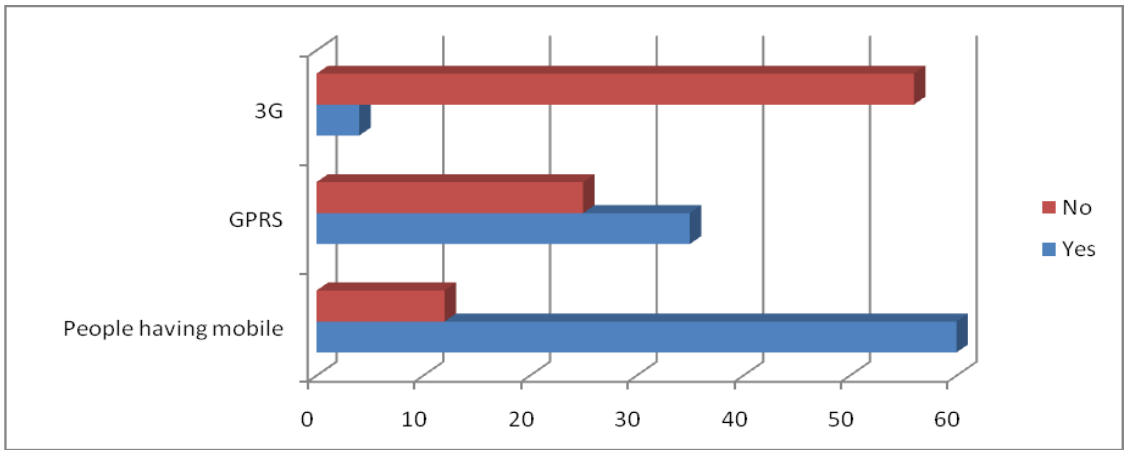


Chart 1

Data interpretation:

From the above graph, we observe that 83% of the people surveyed are having mobiles. And the mobiles having GPRS capability is 58% & the mobiles which are 3G ready is only 6%. Most of the rural people use handsets of Nokia basic models and few use china mobiles and other brands which are cheaper and having high features.

2. Age group of people having mobiles

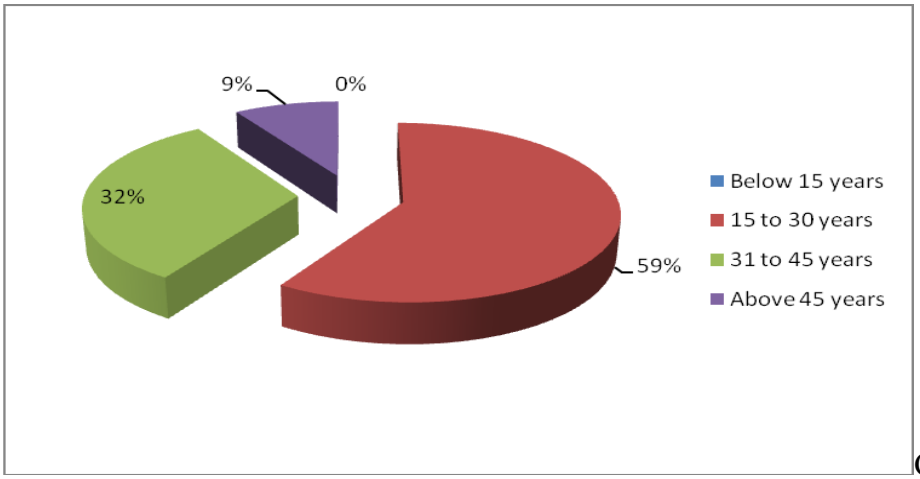


Chart 2

Data interpretation:

From the above pie diagram, we can say that the age group of 15 to 30 years is owning mobiles the most. And then comes the age group 31 to 45 years. The mobiles with the age group below 15 years are almost negligible.

3. Operators share in rural areas surveyed

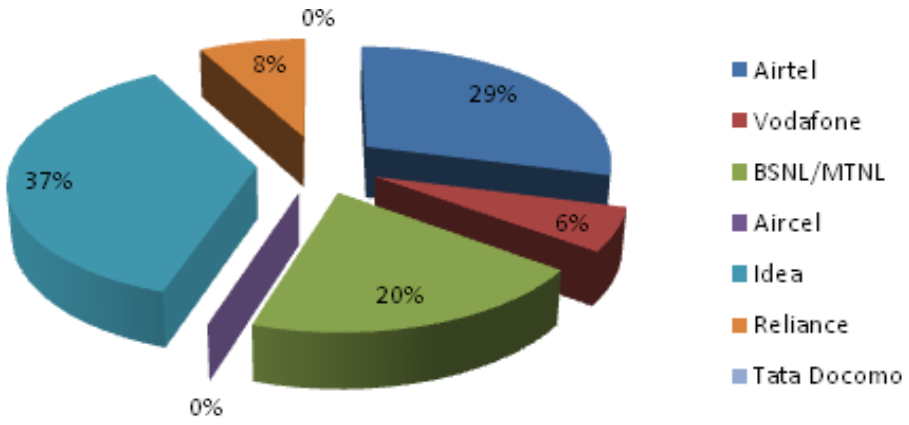


Chart 3

Operator	No. of people	Percentage
Airtel	17	29%
Vodafone	4	6%
BSNL/MTNL	12	20%
Aircel	---	---
Idea	**22**	**37%**
Reliance	5	8%

Data interpretation:

From the above pie diagram, we can observe that IDEA is the leading operator in the rural ares surveyed having the market share with 37%. Then comes the AIRTEL with 29% market share. Also found that AIRTEL is the best service provider among all and IDEA users are not at all satisfied with their operator but they are sticking with it only because they wanted to retain their number.

4. Average monthly spending

Average monthly recharge	Percentage of people
Rs.50	**42%**
Rs.100	23%
Rs.200	27%
Rs.300	5%
Above 500	3%

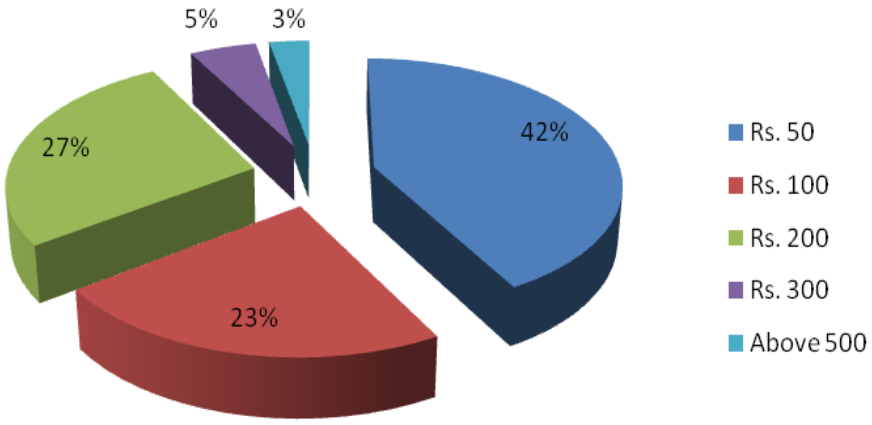


Chart 4

Data Interpretation

From the above pie diagram, we observe that most of the people from rural india are spending an amount less than Rs. 75 on mobile per month. Also they spend mostly on voice calls. Only few use SMS.

5. Awareness & Usage of VAS

Percentage of people aware of VAS →73%

Percentage of people using VAS →9%

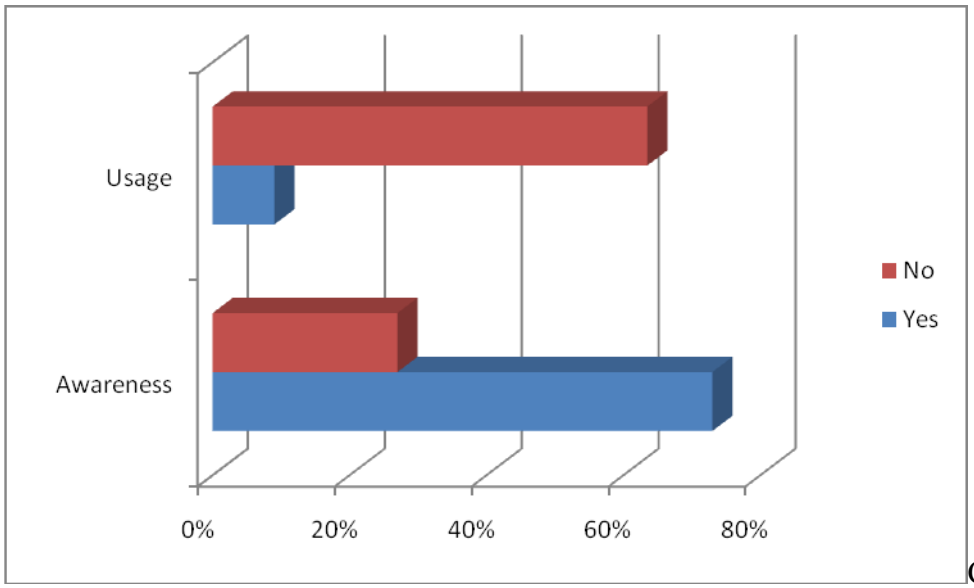


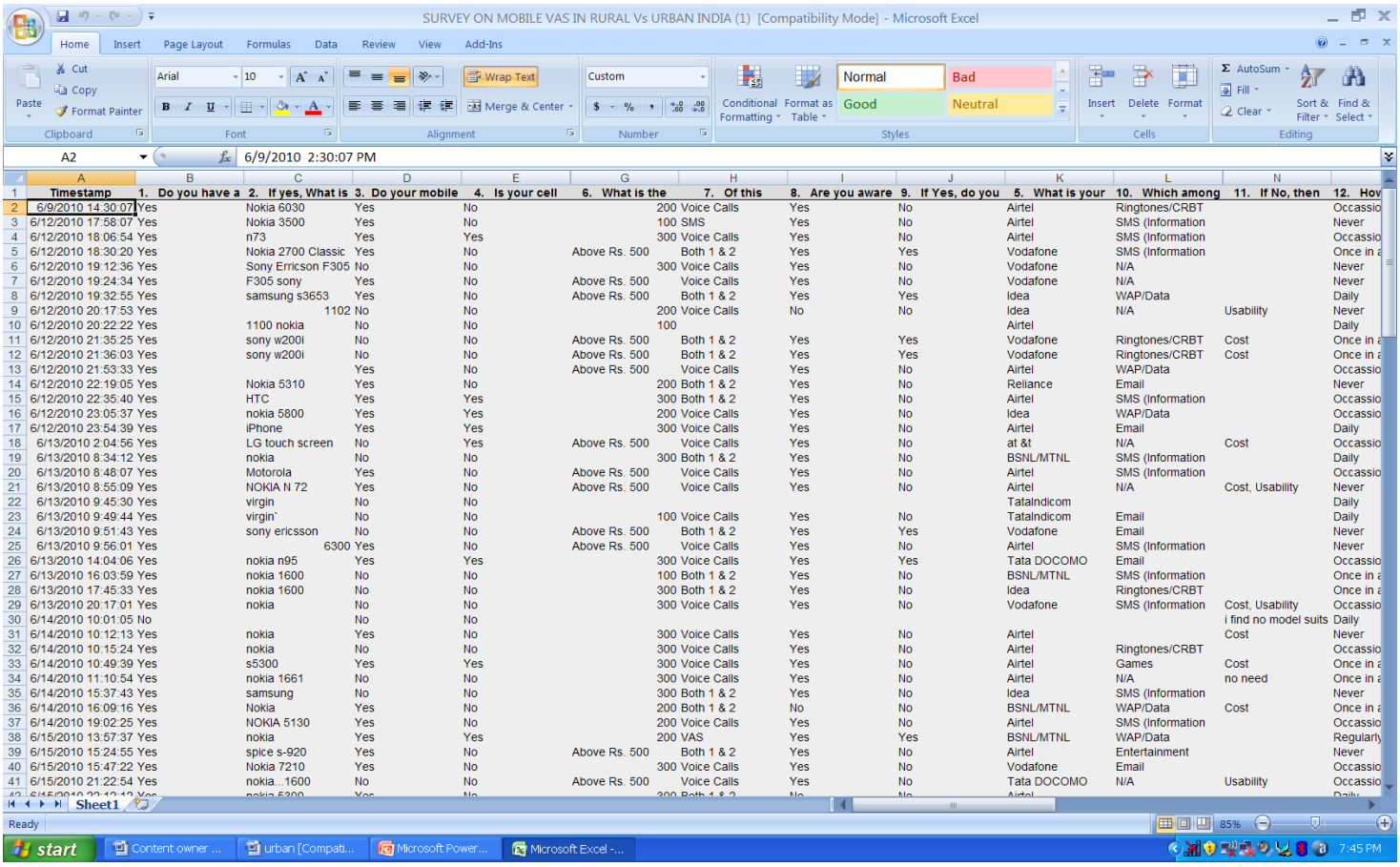
Chart 5

Data Interpretation:

From the above graph, we can say that most of the people are aware of Value added services but only few use the services. They are not using VAS due to many reasons like lack of awareness, cost, illiteracy etc. Some don't have time to use and some don't know how to use.

5.2 **Urban Survey**

Survey is done through mailing the questionnaire using Google Docs and uploading the responses into the Google spread sheet as shown below.



Timestamp	1. Do you have a	2. If yes, What is	3. Do your mobile	4. Is your cell	6. What is the	7. Of this	8. Are you aware	9. If Yes, do you	5. What is your	10. Which among	11. If No, then	12. Hov
6/9/2010 14:30:07	Yes	Nokia 6030	Yes	No	200	Voice Calls	Yes	No	Airtel	Ringtones/CRBT		Occassio
6/12/2010 17:58:07	Yes	Nokia 3500	Yes	No	100	SMS	Yes	No	Airtel	SMS (Information		Never
6/12/2010 18:06:54	Yes	n73	Yes	Yes	300	Voice Calls	Yes	No	Airtel	SMS (Information		Occassio
6/12/2010 18:30:20	Yes	Nokia 2700 Classic	Yes	No	Above Rs. 500	Both 1 & 2	Yes	Yes	Vodafone	SMS (Information		Once in a
6/12/2010 19:12:36	Yes	Sony Erricson F305	No	No	300	Voice Calls	Yes	No	Vodafone	N/A		Never
6/12/2010 19:24:34	Yes	F305 sony	Yes	No	Above Rs. 500	Voice Calls	Yes	No	Vodafone	N/A		Never
6/12/2010 19:32:55	Yes	samsung s3653	Yes	No	Above Rs. 500	Both 1 & 2	Yes	Yes	Idea	WAP/Data		Daily
6/12/2010 20:17:53	Yes	1102	No	No	200	Voice Calls	No	No	Idea	N/A	Usability	Never
6/12/2010 20:22:22	Yes	1100 nokia	No	No	100				Airtel			Daily
6/12/2010 21:35:25	Yes	sony w200i	No	No	Above Rs. 500	Both 1 & 2	Yes	Yes	Vodafone	Ringtones/CRBT	Cost	Once in a
6/12/2010 21:36:03	Yes	sony w200i	No	No	Above Rs. 500	Both 1 & 2	Yes	Yes	Vodafone	Ringtones/CRBT	Cost	Once in a
6/12/2010 21:53:33	Yes		Yes	No	Above Rs. 500	Voice Calls	Yes	No	Airtel	WAP/Data		Occassio
6/12/2010 22:19:05	Yes	Nokia 5310	Yes	No	200	Both 1 & 2	Yes	No	Reliance	Email		Never
6/12/2010 22:35:40	Yes	HTC	Yes	Yes	300	Both 1 & 2	Yes	No	Airtel	SMS (Information		Occassio
6/12/2010 23:05:37	Yes	nokia 5800	Yes	Yes	200	Voice Calls	Yes	No	Idea	WAP/Data		Occassio
6/12/2010 23:54:39	Yes	iPhone	Yes	Yes	300	Voice Calls	Yes	No	Airtel	Email		Daily
6/13/2010 2:04:56	Yes	LG touch screen	No	Yes	Above Rs. 500	Voice Calls	Yes	No	at &t	N/A	Cost	Occassio
6/13/2010 8:34:12	Yes	nokia	No	No	300	Both 1 & 2	Yes	No	BSNL/MTNL	SMS (Information		Daily
6/13/2010 8:48:07	Yes	Motorola	Yes	No	Above Rs. 500	Voice Calls	Yes	No	Airtel	SMS (Information		Occassio
6/13/2010 8:55:09	Yes	NOKIA N 72	Yes	No	Above Rs. 500	Voice Calls	Yes	No	Airtel	N/A	Cost, Usability	Never
6/13/2010 9:45:30	Yes	virgin	No	No					TataIndicom			Daily
6/13/2010 9:49:44	Yes	virgin`	No	No	100	Voice Calls	Yes	No	TataIndicom	Email		Daily
6/13/2010 9:51:43	Yes	sony ericsson	No	No	Above Rs. 500	Both 1 & 2	Yes	Yes	Vodafone	Email		Never
6/13/2010 9:56:01	Yes	6300	Yes	No	Above Rs. 500	Voice Calls	Yes	No	Airtel	SMS (Information		Never
6/13/2010 14:04:06	Yes	nokia n95	Yes	Yes	300	Voice Calls	Yes	Yes	Tata DOCOMO	Email		Occassio
6/13/2010 16:03:59	Yes	nokia 1600	No	No	100	Both 1 & 2	Yes	No	BSNL/MTNL	SMS (Information		Once in a
6/13/2010 17:45:33	Yes	nokia 1600	No	No	300	Both 1 & 2	Yes	No	Idea	Ringtones/CRBT		Once in a
6/13/2010 20:17:01	Yes	nokia	No	No	300	Voice Calls	Yes	No	Vodafone	SMS (Information	Cost, Usability	Occassio
6/14/2010 10:01:05	No		No	No							i find no model suits	Daily
6/14/2010 10:12:13	Yes	nokia	Yes	No	300	Voice Calls	Yes	No	Airtel		Cost	Never
6/14/2010 10:15:24	Yes	nokia	No	No	300	Voice Calls	Yes	No	Airtel	Ringtones/CRBT		Occassio
6/14/2010 10:49:39	Yes	s5300	Yes	Yes	300	Voice Calls	Yes	No	Airtel	Games	Cost	Once in a
6/14/2010 11:10:54	Yes	nokia 1661	No	No	300	Voice Calls	Yes	No	Airtel	N/A	no need	Once in a
6/14/2010 15:37:43	Yes	samsung	No	No	300	Both 1 & 2	Yes	No	Idea	SMS (Information		Never
6/14/2010 16:09:16	Yes	Nokia	Yes	No	200	Both 1 & 2	No	No	BSNL/MTNL	WAP/Data	Cost	Once in a
6/14/2010 19:02:25	Yes	NOKIA 5130	Yes	No	200	Voice Calls	Yes	No	Airtel	SMS (Information		Occassio
6/15/2010 13:57:37	Yes	nokia	Yes	Yes	200	VAS	Yes	Yes	BSNL/MTNL	WAP/Data		Regularly
6/15/2010 15:24:55	Yes	spice s-920	Yes	No	Above Rs. 500	Both 1 & 2	Yes	No	Airtel	Entertainment		Never
6/15/2010 15:47:22	Yes	Nokia 7210	Yes	No	300	Voice Calls	Yes	No	Vodafone	Email		Occassio
6/15/2010 21:22:54	Yes	nokia...1600	No	No	Above Rs. 500	Voice Calls	Yes	No	Tata DOCOMO	N/A	Usability	Occassio

Table III Google spread sheet of urban survey

1. **Total people surveyed →60**

- Number of people having mobile →59 98%
- Mobiles having GPRS →40 67%
- Mobiles having 3G →20 33%

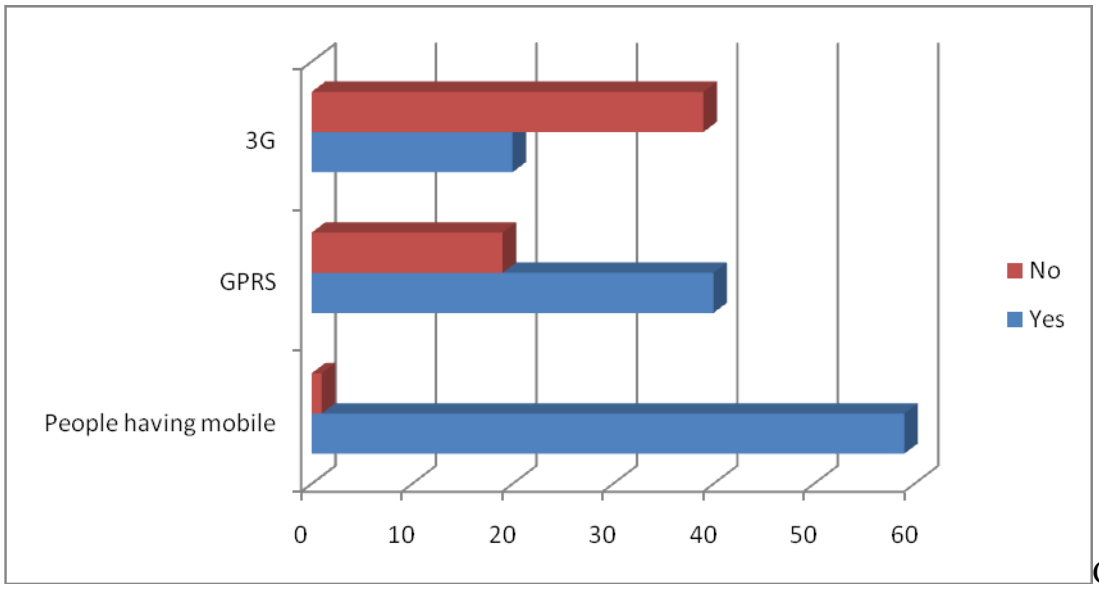


Chart 6

Data Interpretation:

From the above chart, we can observe that almost all the people surveyed are having mobile i.e 98%. And the mobiles having GPRS capability are 67% whereas the mobiles which are 3G ready is 33%.

Here the urban people use mostly Nokia and Sony Ericson handsets and few use Samsung & LG models.

2. Operators share in urban areas surveyed

Operator	No. of people	Percentage
Airtel	**26**	**44%**
Vodafone	12	20%
BSNL	6	10%
Idea	5	8%
Tata Docomo	5	8%
Tata indicom	2	3%
Reliance	1	2%
Others	2	3%

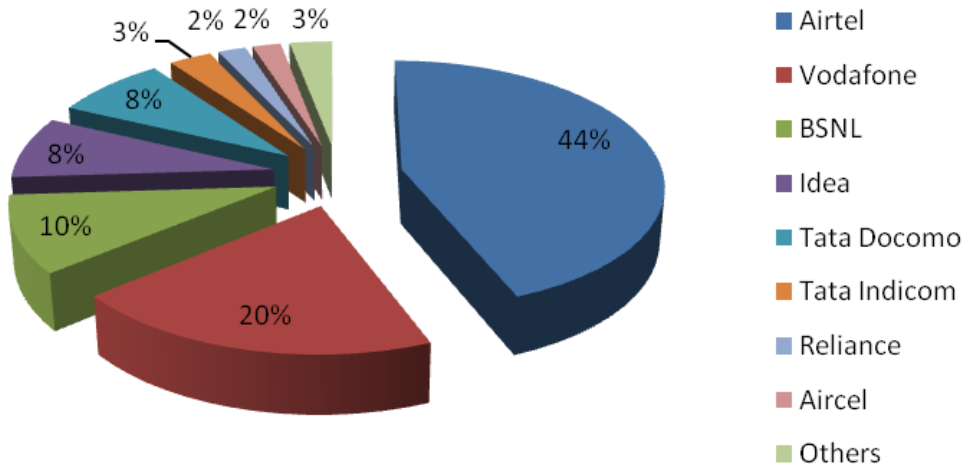


Chart 7

Data Interpretation:

From the above pie diagram, we can observe that AIRTEL is the leading operator with a market share of 44% and then comes Vodafone with a market share of 20%.

3. Awareness & usage of VAS

Percentage of people aware of VAS →95%

Percentage of people using VAS →20%

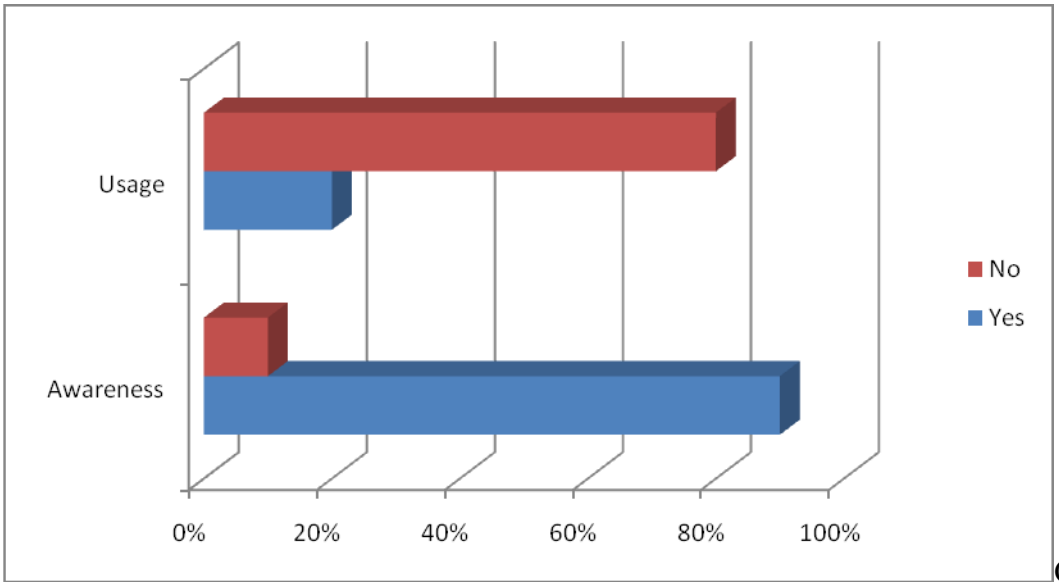


Chart 8

Data Interpretation

From the above graph, we can say that almost all the urban users are aware of value added services but the usage is only 20%. They are not using it only due to the cost.

4. Average monthly spending

Average monthly recharge	Percentage of people
Rs.50	0%
Rs.100	8%
Rs.200	20%
Rs.300	**40%**
Above 500	30%

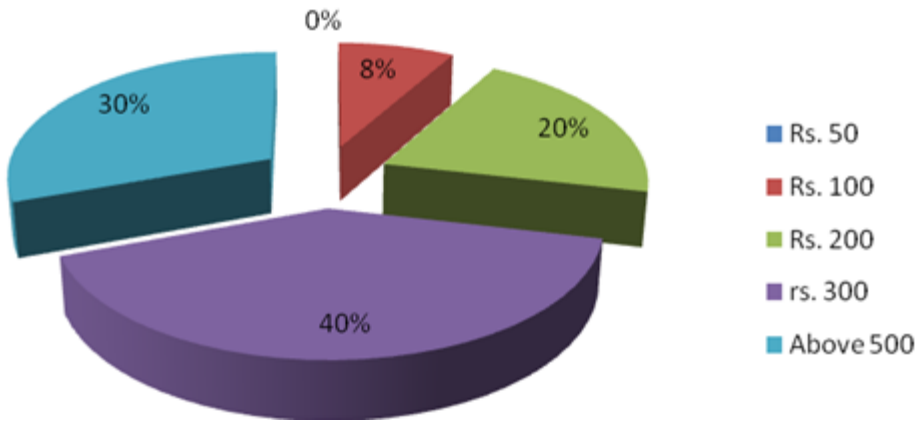


Chart 9

Data Interpretation:

From the above pie diagram, we can say that an urban user is spending an average amount of Rs. 300 on mobile a month.

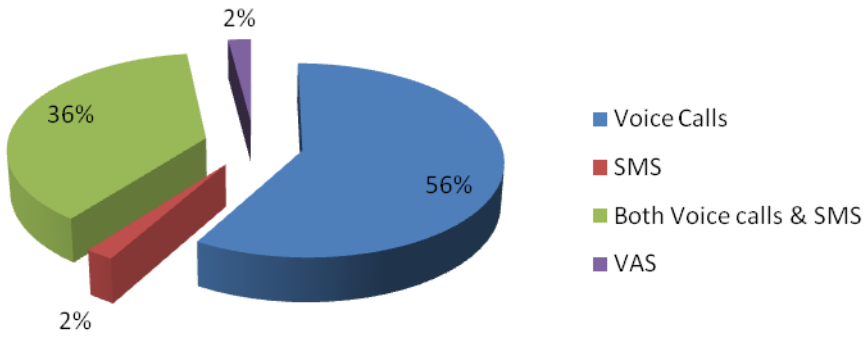


Chart 10

Data Interpretation:

From the above pie diagram, we can observe that 56% of the people spend mostly on Voice calls and 36% of the people spend both on voice and SMS. People who spend the most only on SMS is only 2% and the people who spend most on VAS is also 2%.

5. VAS usage

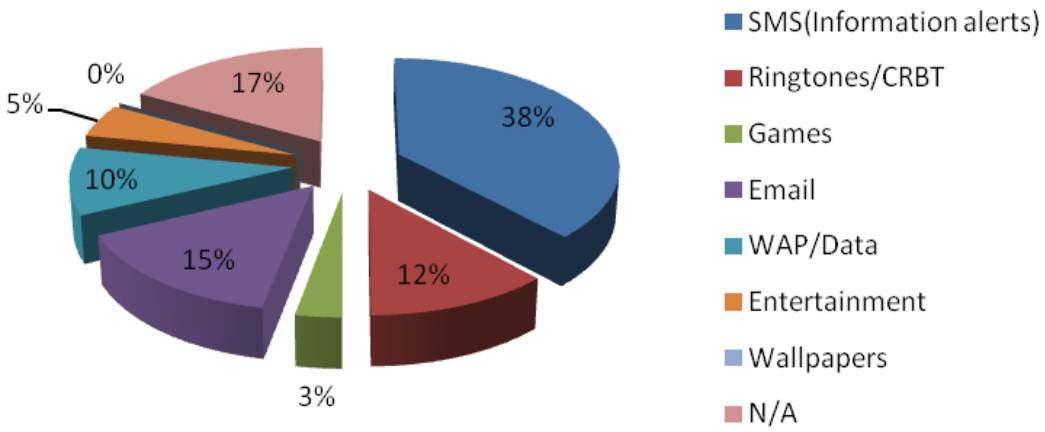


Chart 11

Data Interpretation:

From the above pie diagram, we can observe that among the value added services available, urban people use SMS(Information alerts) the most i.e. it is having the maximum share of 38%. Then they spend most on checking their Emails and comes the CRBT/Ringtones.

CHAPTER 6
FINDINGS & SUGGESTIONS

6.1 Rural survey

Findings

- Today's youth are showing more interest towards night balances, unlimited SMS etc.
- And also they use the CRBT VAS the most compared to the rest in rural areas.
- Few who visited their portals say it is waste of money.
- Farmers who are uneducated don't even know about SMS and they never open their inbox.
- Some people showed up blank faces when asked them about GPRS.
- ***Lack of Awareness and Illiteracy are the major challenges faced to promote VAS in rural areas.***
- None of them are aware of mobile banking and mobile transactions but they are willing to use it when it is implemented in their areas.
- They are also showing interest to use location based services.
- Many are not willing to receive mobile advertisements.
- Few people would like to receive advertisements but only on latest recharge offers & talk time.

Suggestions

- Browsing must be given for free and must be charged only when we download something.
- Operators need to create trust among their users.
  - Before a file getting downloaded in the providers portal, the users must be notified about the amount it is going to charge and must ask for confirmation before download.
  - Creating awareness and educating them about the available services is the major key to the success of VAS.
- IVR is the major medium to reach them as it is in their local language and also convenient to use.

6.2 Urban Survey

Findings

- Only 30% of the people are willing to receive mobile advertisements
- They would like to receive ads or information alerts
    - which are useful for their career building
    - Update about new offers available
    - Job alerts
    - Flash News and sports
    - Workshops & courses offered
    - Education & Business related etc
- The VAS which the urban people wish to be introduced in the future are;
    - Fast internet services
    - Railway reservation, ticket booking
    - Easy connectivity to help lines like 108
    - Real time alerts of mobile TV
    - Video calls and online cricket videos at cheaper rates
    - Mobile tracking and Location based services
    - Urban users wish ISD calling rates to be reduced.

Suggestions:

- There is going to be a very good demand for video calling and location based services in urban areas.
- Operators need to provide faster internet services for cheaper rates to gain maximum users from urban India.
- As people finding no time to travel being busy with their work, they are showing more interest towards mobile payments and so it is the best time to enable payment services for higher value content.
- VAS based on personalized interests must be provided.

CHAPTER 7
CONCLUSION

Mobile is going to be the major medium or channel for advertising in the future. Locations based services are going to have lot of market and demand in the upcoming future and they must be promoted. Mobile broadband & 3G applications have greater opportunity to increase the operators revenue. Though network operators became more customer centric, Value added services are instigating only few people because all these services are secondary.

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QUESTIONNAIRE FOR THE SURVEY ON MOBILE VAS IN RURAL AND URBAN INDIA

Note: This particular survey is only meant for project purpose and it doesn't hold any commercial value so please feel free to put across your opinions.

I. Do you have a mobile phone? Yes/No

A. If No, then Why?

1. Are you planning to buy one? Yes/No

2. If No, what is the reason?

   a) Cost b)Budget c)Usefulness Others, Specify _____

B. If Yes,

1. What is your Handset model? Specify _____

2. Do your mobile has GPRS connection? Yes/No

3. Is your cell phone 3G enabled? Yes/No

4. What is your mobile operator?

   a)Airtel b) Vodafone c) BSNL/MTNL d) Aircel

   e) Idea f) Reliance g) Tata Indicom

   Others, Specify_____

5. What is the average monthly recharge amount on your mobile?

   a) Rs. 50 b) Rs.100 c) Rs.200 d) Rs.300

   e) Above 500

6. Of this amount, on what do you spend the most on?
   a)Voice calls b)SMS c)VAS

7. Are you aware of Value Added Services like News, Railway, Astrology, Cricket, Ringtones etc?
   a)Yes b) No

8. If Yes, do you use it? Yes/No

9. Which among the following mobile VAS do you use the most or planning to use?
   a)SMS (Information +Alerts) b) Ringtones/CRBT c) Games
   d)Email e) WAP/Data f) Entertainment
   g) Wallpapers h) Others (Specify) _____ i) N/A

10. If No, then Why?
    a) Cost b) Usability Complicatedness c)Awareness d) Others, Specify_____

11. How often do you connect to your provider's portal?
    a) Daily b) Once in a week c) Once in a month
    d)Occasionally e) Regularly f) Never

12. How often do you use the VAS Services like download Wallpapers, Ringtones or games to your mobile?
    a)Daily b) Once in a week c) Once in a month
    d)Occasionally e) Regularly f) Never

13. Would you like to receive advertisements on your mobile? Yes/No
    If yes, what sort of? Specify _____

14. Are you aware of mobile banking and mobile transactions? Yes? No
    If Yes, do you use it? Yes/No

15. Are you satisfied with the services provided from your mobile operator?

a)Highly satisfied b) Satisfied c) Neither satisfied nor dissatisfied

d)Dissatisfied e) Highly dissatisfied

16. What kind of mobile VAS do you wish to be introduced in the future?

a)No idea b) If yes, Specify _____

II.

Name:

Age group:

a) Below 15 years
b) 15-30 years
c) 31-45 years
d) Above 45 years

Occupation:

Sex: Male/Female

Your monthly income:

a) Below 5000
b) Between 5000 and 10,000
c) Between 10,000 and 15,000
d) Between 15,000 and 30,000
e) Above 30,000

THANK YOU FOR SPARING YOUR VALUABLE TIME