

## Understanding Dynamics in an Evolving Industry: Case of Mobile VAS in India

**Ram Kumar Kakani** ([ram.kakani@spjain.org](mailto:ram.kakani@spjain.org))

*S P Jain Center of Management, Singapore*

**Jackson Fernandez** ([jackson.fernandez@gmail.com](mailto:jackson.fernandez@gmail.com))


*Accenture Consulting Services*

***Abstract.** In this paper, we attempt at understanding the strategic dynamics of the evolving environment within which the Indian players are operating, the challenges and structure of the same. Mobile Value Added Services (VAS) is a rising star in the fast growing wireless business, which has attracted a wide category of entities right from wireless operators to handset manufacturers to content developers. We also attempt to gain insights from relatively more mature VAS markets in other countries. Our literature and industry review indicates that, while the value chain of industry is complicated, one can still observe the bipolar nature of bargaining powers between mobile network operators and content aggregators. Though our study is restricted to the telecom sector in India, the learning is applicable to other similar evolving environments. Our probe into the fast changing technology makes us believe 'The wired entertainment is dead; long live the wires, Welcome mobile entertainment'.*

**Keywords:** *Business Model, Industry Dynamics, India, Mobile VAS, Scenario Prediction, and Telecom Sector*

It's amazing how an attempt at creating something small or incremental can spiral into a revolutionary and 'future defining' product. In 1876, a Scottish scientist, namely, Alexander Graham Bell, in an effort to create an instrument





with which he could communicate with his deaf wife and deaf mother, invented the telephone. Since then the telecom industry has never looked back and has transformed into forms that could amaze even the inventors. Auditing the stages of its growth unfortunately is beyond the scope of our work. Rather, what we aspire for in this piece of research is to analyze and depict a critical story as it unfolds in the telecom horizon, especially in the context of India.

In many ways, electronic communication is regarded as a chief factor leading to the development and integration of the globe. At this juncture, telecommunication is taking on a form infinitely more powerful than all that we have ever seen; it is poised to bring together people like never before and is challenging the very concept of distance. Similarly, the global media and entertainment sector has performed very well and is projected to reach a phenomenal US\$ 1.8 trillion by 2015 wherein India's share is estimated at 12% [see, 'Media & Entertainment' magazine]. For most part, these two sectors have had an independent development, but that would just be history. We are witnessing one of the most powerful unions – the integration of Media and Telecommunication.

'Convergence' is the new buzzword and is changing the very basics of how we access Media and communicate. Technology improvements are catalyzing the process. As the possibility for delivering Voice, Video, and Data in a more meaningful content becomes an increasing reality, a whole new substructure is forming in terms of content and delivery. It's the challenge of understanding this nascent eco-system (at least in the context of India) that has inspired us to study and research this field, which abounds with uncertainties and randomness.


Our study is on the Mobile Value Added Services (VAS) market in India. We look at the way the business is evolving; study the Industry, the degree of competition & co-operations among players, the existing business models in literature, and what the future could hold in store. In section 2, we introduce the Indian VAS market. Section 3 takes us through the relevant literature including a few predicted business scenarios. Section 4 gives the details of the study methodology. In Section 5, we look at the findings, and analyze and discuss the implications. We end our paper with conclusions in Section 6. While, we do use a few empirical inputs yet our study primarily builds on existing literature and looks at the practical implications.

## VAS in India

As per Voice & Data Magazine (2006), Voice is increasingly becoming a commodity and Average Revenue Per Subscriber (ARPS) continues to drop with competition and government norms driving call rates on a negative slope. On the other hand, more than 130 million people armed with mobiles wanted to be entertained indicating the size of the potential VAS market. Exhibit 1 lists the existing India media market structure, the providers of this entertainment and information.

**Exhibit 1: India Media Market Structure**

Field	Sub-Field	Major Players
Text	Dailies	Times of India, Hindustan Times, The Hindu, Indian Express, Asian Age, Deccan Herald, Dainik Jagran, Malayala Manorama, Mid-Day, Business Standard
	Magazines	India Today, Outlook, The Week, Business World, Frontline, Newsweek, Femina, Cosmopolitan, Filmfare, Gladrags, Sarita, Vanita
Sound	Radio	All India Radio, AIR FM, Rainbow FM, Radio City, Radio Mirchi, Radio Wave, Red FM, Vivid Bharti
	Records	Universal, T-Series, Times Music, Archies, Music Today, Tips, HMV, BMG Crescendo, Zee Music
Pictures	TV	TV 18, Star TV, Sony, Doordarshan, Sun TV, Eenadu TV, Aaj Tak, NDTV, Star Sports, ESPN, MTV India, V-India, Zee TV, Aastha, Zoom TV
	Film & Formats	ATN, Adlab Films, Balaji Telefilms, Vishesh Films, Zee Films, UTV, Gemini, Universal, Columbia Tristar, Twentieth Century Fox, Mukta Arts, Pritish Nandy Communications
New Media	Portals	Indiatimes, NDTV, Zee Network, Sify, Indiainfo, Moneycontrol, Indya.com, Zeenews, V India, Yahoo India, Webdundia
	Access	Sify, Mantra, Touchtel, VSNL, Tata Indicom, Reliance Infocomm, Data Access



At an average price of 14 cents per minute, VAS services make much more money than the average 2-4 cents per minute that voice does. Consequently, while voice still generates above 90 percent of revenue; VAS revenues are helping to compensate for the receding ARPS. At US \$12, the ARPS have fallen by 55 percent over the past four years. On the other hand, data ARPS has grown by 45 percent over the same period. Industry analysts, Pyramid Research, expect data ARPS to grow an additional 145 percent by 2010. Hence, there is an increased transformation of business models with an aggressive focus on VAS. Thus, VAS is increasingly a growth area helping Mobile Network Operators (MNOs) to maximize their revenue and grow ARPS as well.

The typical Indian primarily looks towards religion, local film industry, the nation's cricket team, and regional news channels for daily guidance and entertainment. In order to create service differentiation and satisfy the diverse Indian customers, MNOs are bringing in a vast array of VAS. The prospect of high growth in this new industry has attracted wide range of players with varying roles. Based on the broad roles, Exhibit 2 classifies the various players in the mobile VAS industry and gives examples of the same major players.

Recognising the opportunity, MNOs are partnering with content providers to deliver information services on the go and downloadable services like ring tones, wallpapers, and graphics. Several web-based cricket websites and television news channels are teaming up with MNOs in India to develop SMS-based applications that provide the user a range of services including news updates and on-demand cricket replays of the latest matches in progress. Similarly, movie production houses and recording studios have also teamed up with mobile carriers to provide movie memorabilia in the form of graphics, wallpapers, ring tones and caller ring-back tones related to popular movies. Exhibit 3 provides current split of revenues and near term application specific revenue projections for the mobile VAS market.

**Exhibit 2: Classifying India Mobile VAS players based on their Roles**

<b>Key Actor</b>	<b>Objective</b>	<b>Some Major Players</b>
Content providers (or Content owners)	Sell entertainment and news content to service providers at a profit	All India Radio, Doordarshan, Ten Sports, NDTV, TV Today, PTI, Bombay Stock Exchange, Sharekhan, Motilal Oswal, Microsoft, BPB Multimedia, Yahoo
Application providers (includes Software Service providers; Game Content Creators and Players; and Content Developers)	Create applications, games, software, and other technological changes required for delivering mobile entertainment and news. They create new market to device manufacturers and mobile network operators	Mauj, Raptor, Indiagames, VCL, Paradox Studios, CDAC, Jadoo Works, Dhruva, Milestone Inter., Lumen Phon., Octoplus
Handset manufacturers	Market mobile devices that will enhance user experience	Nokia, Samsung, Sony Ericsson, Motorola, Haier
Content Aggregators	Aggregate all content and often also offer the platform upon which all content will be delivered	Indiatimes, NDTV, Yahoo India, MSN India, Google India, DD India, Zee Network, Indiainfo, Sify, Mantra, Aaj Tak
Mobile network operators	Offer their subscribers mobile VAS services	Bharti Airtel, Hutch, BSNL, Tata Telecom, Reliance Communications, Idea, Spice, BPL
End-User	Experience entertainment and news content anywhere and anytime	Individual Customers



**Exhibit 3: India Mobile VAS Revenue Split: Current Figures and Growth Projections**







India Wireless Consumer Applications Revenue, 2004-2009 (US\$M)

	2004	2005	2006	2007	2008	2009	2005-2009 CAGR (%)
Games	2.53	10.51	22.37	41.47	72.15	106.67	59.0
Growth (%)		316.2%	112.8%	85.4%	74.0%	47.9%	
Information Services/ Contests	28.83	42.19	54.61	66.92	77.03	86.66	15.5
Growth (%)		46.4%	29.4%	22.5%	15.1%	12.5%	
Music	1.79	2.97	4.50	5.50	6.49	7.19	19.3
Growth (%)		66.6%	51.3%	22.2%	18.1%	10.7%	
Ringtones/ Graphics/ Wallpapers	10.82	36.57	60.02	84.24	101.52	119.24	26.7
Growth (%)		237.9%	64.1%	40.3%	20.5%	17.5%	
Video/TV	0.41	1.89	4.61	9.93	16.92	27.33	70.7
Growth (%)		365.0%	144.6%	115.3%	70.4%	61.5%	
<b>Grand Total</b>	<b>44.37</b>	<b>94.13</b>	<b>146.11</b>	<b>208.05</b>	<b>274.12</b>	<b>347.10</b>	<b>29.8</b>
Growth (%)		112.2%	55.2%	42.4%	31.8%	26.6%	

Source : IDC, August 2005







In 2005, the market size in India of basic VAS Services like ring tones and wall papers was around US \$155 million while that of basic services and voice portals for the MNOs was around US \$900 million. Exhibits 4, 5, and 6 provides a few names and profiles of entertainment content players, software service providers, and content developers respectively. Please note that a few mobile VAS players are active in more than one role.

### Exhibit 4: Brief Profile of Some Mobile VAS Content Players in India

 <p><b>Maui.com</b></p> <p><b>Maui Telecom is the #1 VAS Company in India</b></p> <ul style="list-style-type: none"> <li>• its wap portal wap. maui.com is the leader in the mobile gaming, mobile music, mobile video space in India</li> <li>• Employs approximately 160 people in its offices in Mumbai, Delhi, Chennai, Dubai, London, and New York</li> <li>• Maui investors include Intel, Sequoia and Westbridge capital</li> </ul>	 <p><b>Hungama Mobile</b></p> <p><b>Hungama Mobile is South Asia's leading Mobile Entertainment Company</b></p> <ul style="list-style-type: none"> <li>• it is the largest aggregator, publisher and developer of Bollywood mobile entertainment and gaming content.</li> <li>• it has developed over 350 Mobile Marketing Campaigns for as many as 125 Fortune 1000 Brands.</li> </ul>	 <p><b>IMImobile</b></p> <p><b>India's leading mobile VAS enabler and content aggregator</b></p> <ul style="list-style-type: none"> <li>• IMImobile is providing its content and technology services to over 40million subscribers through its agreements with operators</li> <li>• It has developed its own Messaging Centers, Gateways, Content Management Systems, Service delivery platforms, client and server side applications and voice Portals</li> </ul>
 <p><b>Mobile-2-win</b></p> <p><b>It is into wireless content - sourcing, creating &amp; distributing!</b></p> <ul style="list-style-type: none"> <li>• Mobile2win creates innovative mobile marketing solutions for brands seeking to tap into the Indian consumer markets.</li> <li>• Based in Mumbai, India, Mobile2win provides unparalleled reach to over 26 million consumers through its gateway(SMS)</li> </ul>	 <p><b>OnMobile</b></p> <p><b>Wireless Infrastructure Software Provider</b></p> <ul style="list-style-type: none"> <li>• They provide technology, aggregated content, and complete end-to-end ,managed services to telecom operators, media houses, enterprise clients</li> <li>• OnMobile was incubated by Infosys Technologies</li> </ul>	 <p><b>Indiagames</b></p> <p><b>It is a global mobile Content publisher mainly focused on Gaming</b></p> <ul style="list-style-type: none"> <li>• Indiagames Key investors includes TOM Online Inc. which is a leading wireless Internet company in China, Macromedia, Inc., and Cisco Systems, Inc.</li> </ul>

Source: Telecom Regulatory Authority of India, Websites, Wireless forum

### Exhibit 5: Brief Profile of Some Mobile VAS Service Providers in India

 <p><b>Smarttrust</b></p> <p><b>Swedish Company is into Mobile terminal management, value added services, Mobile business solutions</b></p> <ul style="list-style-type: none"> <li>• The company has implemented its thin client software for Indian telecom operators such as Bharti, BSNL and Escotel</li> </ul>	 <p><b>ACL Wireless</b></p> <p><b>It is the leading provider of wireless instant messaging application to mobile operators</b></p> <ul style="list-style-type: none"> <li>• Founded in early 2000, ACL has its wireless R&amp;D center in India</li> <li>• The company presently employs over 60 people</li> <li>• ACL has successfully marketed its ACL Wireless Instant Messenger to 11 leading mobile operators in Asia</li> </ul>	 <p><b>Bharti Telesoft</b></p> <p><b>Bharti Telesoft is the software venture of India's leading telecommunication group Bharti Enterprises:</b></p> <ul style="list-style-type: none"> <li>• Architect and deploy operator's VAS service delivery platform and collaborate with key players in the VAS value chain to operate and manage the service</li> </ul>
 <p><b>Jatayu Software</b></p> <p><b>The company produces telecom products like Gateways/Servers (WAP, SMS, SyncML, VoiceXML, WTA), Browsers (WML, XHTML), clients (SMS, e-Mail, Chat, SyncML), and Stacks (wap2.0 and TCP/IP).</b></p> <ul style="list-style-type: none"> <li>• It employs over 200 specialists in mobile technology</li> <li>• Jatayu Software is a subsidiary of Ingra Micro Systems</li> </ul>	 <p><b>Air2web.com</b></p> <p><b>Wireless ASP and enterprise development</b></p> <ul style="list-style-type: none"> <li>• The company offers networking and server software for delivering Web pages, e-mail, and other data to wireless devices</li> <li>• Mobile Media Websites use Air2Web Content Gateway to Offer Custom Designed Ring Tones, Games and Graphics</li> </ul>	 <p><b>Activemedia</b></p> <p><b>Activemedia Technology is a wireless marketing and technology solutions provider.</b></p> <ul style="list-style-type: none"> <li>• One of the leading providers of mobile content, applications and marketing solutions to operators, brands and media in India</li> <li>• Mobile operators like Hutch are its customers in India</li> </ul>

Source: Telecom Regulatory Authority of India, Websites, Wireless forum

## Exhibit 6: Leading Content Developers in India

TEKES			
Leading Content Developers			
Company	Development Platforms	Products	Alliances
<b>Mauj</b>	J2ME, BREW, Smartphone, Symbian, SS7	Games, logos, wallpapers, ringtones	Content management for HUTCH GPRS users on MSN portal
<b>Octopus</b>	J2ME, BREW, Smartphone, Pocket PC, Palm, SMS and WAP	Games, ringtones, logos	Not Known
<b>Phoneytunes</b>	WAP, SMS, Symbian	Ringtones, logos, flash SMS, ASCII SMS	Content creation for numerous operators and portals in India and outside
<b>Indiagames</b>	Symbian, BREW, Smartphone and Java, I-Mode	Games for consoles, PC and Mobile. Also Advergimes.	Content creation for operator portals, GPRS networks, advisory to Nokia (one of the eight companies worldwide)
<b>Paradox Studios</b>	J2ME, J2EE, BREW, Java	Exclusive games for Reliance CDMA Subscribers	Content development for Major CDMA operators worldwide.

India Study for Tekes NETS and FENIX Programs/ Vipul Chauhan/ © TEKES // 109

If MNOs are able to simplify the downloading process, the customizability and instant gratification offered by a visual medium is likely to be embraced by the Indian Customer also. Hence, paralleling the trends in other countries, the next wave of applications in India is probably centered on delivering content via video clips.

### Literature Review

In this section, we review the existing literature on the characteristics of an evolving industry and the challenges thereof and draw inferences. Muehrcke (1998) stated that the key challenges faced in an emerging business would include (a) lack of easy money; (b) customer service; and (c) technology. Hence, he suggested that firms in emerging sectors would need to have better planning, budgeting, and relationship building skills. In addition, they also need to consistently search for new tools, find technology partners, set up technology goals and groups.

### *Degree of Competition and Collusion in an Evolving Industry*

There is a considerable body of commentary supporting the conclusion that the organizational structure is becoming less predictable due to increased environmental turbulence (Ansoff, 1991). Among the contributing factors are: the effects of increased competition due to the internationalization of business,



changes in consumer attitudes and behavior, accelerating rates of technological innovation, structural changes in economies and markets, and changes in the firm's relations to government and society. This increase in environmental turbulence led to Clemons et al. (1996) stating that new entrants in many industries will be able to challenge historically dominant firms. The entrants' strategies would rely on lower overhead costs, new technologies, alternative distribution channels, and the active targeting of profitable customers.

Michael Porter (1987) suggested that for an industry to survive during its emerging stage, both competitive and collaborative practices are critical. While Porter calls this a 'dilemma' for firms in the emerging industry, Van de Van and Garud (1987) view it as a normal state of affairs in all industries. They argue that firms have relationship between each other and that determines both cooperative and competitive elements and claim that too much competition may actually distort the marketplace and may threaten sustainable competitive advantage of firms.

Classical strategic management theory stresses that competitive strategies are primarily designed to gain and maintain market dominance (e.g. Porter, 1980). But Easton et al. (1993) suggested that 'competition' is a much more complex concept ranging from conflict to collusion. The various kinds of relationship that the players can enter would depend on the desired end result and the attitude of players towards each other. Barnett and Hansen (1996) reasoned for an evolutionary view of competition where rivalry 'creates' good competitors, if it is the 'correct' kind of rivalry. Too much rivalry from new competitors or too little rivalry from old competitors does not constitute 'good' competition. And, if the desired result is industry survival then the players may have an attitude tending towards high inter-dependence (see, Easton et al., 1993).


The above discussion leads us to hypothesize as follows:

H1: The degree of collusion will depend on the level of uncertainties in the industry.

### ***Business Scenarios in an Evolving Stage***

Little literature exists about the mobile entertainment industry, primarily due to the nascent stage of the industry and the unwillingness of the players to reveal data and strategies. Vlachos et al. (2003) is one of the primary works that analyzes this sector, and it focuses on the European context. There are a few





other research works that deal with business models in this area, and though these are good starting points, we agree with Vlachos et al.'s (2006) assessment that they are impractical as they provide a strict linear sequence of steps that the organization should follow when approaching business model change.

The typical business model in a mobile entertainment industry is a MNO getting content from a content retailer (or even content creator) and the content platform from an application service provider and then paying commission fees to the content and service providers. Due to its emergent nature, there is a high degree of uncertainty prevalent and the strategies of the companies are typically directed towards mitigating this. There are two ways in which the companies could attack the high degree of uncertainty: one is by changing their business models as the environment changes (which could turn out to be a high risk strategy), and the other involves adapting.

Vlachos et al. (2006) identify the following roles in this emerging business: a) development and maintenance of the content storage and delivery platform; b) music content syndication, management and delivery; c) handset manufacturing and customization; and d) mobile network operation and maintenance for music delivery. They propose three different business models that could emerge in this sector: a) the traditional model; b) the MNO dominated model; and c) the hybrid model.

In the traditional retailer mobile music model, the MNO takes a less dominant role while the music retailers would dominate. The mobile music retailers will exploit the music content and the mobile music platform offered from a service provider which will probably act as a content aggregator having deals with several content providers. The revenue flow for the MNO will come from the level of usage and a set of commission based fees from the retailer. In the second model, the MNO takes the lead and acts as the retailer. The MNO will be responsible for crafting the marketing strategy and the marketing mix of the offered mobile music service. With regards to the revenue flow model, the service provider pays a fee to the content providers for music content licenses, and the MNO in turn pays fees to service providers for content aggregation services and for the music platform. In the hybrid model, the service provider will provide content to both the branded music retailer and the MNO. The end user can subscribe to either of them.

Using game theory, one can argue that individual organizations act as players in a multi-player game. Given the fact that games are played by players

to win, we believe the players with higher bargaining powers would be the one who would be the key nodes in the structure and these types of players would also decide on the emerging business scenarios. Based on the above argument, we plan to test the following hypothesis in the mobile-VAS sector:

H2: The business model that will emerge will have the player with the highest bargaining power (most valuable resource) as the key node in the structure.

### **Study Methodology**


We examined the mobile VAS sector through a combination of primary and secondary research including a detailed questionnaire, focus group discussions and publicly available secondary sources.

We assumed a primary tool such as a questionnaire would be useful to gauge the various aspects and perceptions of multiple players, especially to help understand the key challenges emerging in this evolving industry. It was administered to CEOs of many of the leading players in the VAS value chain including MNOs, content creators, content aggregators, and software service providers.

Initially the questionnaire and a brief of our research were sent to industry leaders (CEOs or COOs) of the above mentioned companies by post. This was followed up with telephone confirmation of the delivery and feedback from each of the participants. Many of the top managers we contacted confirmed their participation in the process. To increase the response rate and make it easier to respond, we sent reminders and computer versions of the questionnaire via email. Although many of the people we contact agreed orally to participate, only two of them actually ended up responding. The poor response rate and the quality of the response confirmed our suspicion that the industry players were extremely reluctant to discuss their views and concerns publicly. This finding reinforces similar conclusions by other researchers (for example, see, Vlachos et al., 2006). It also indicates that the industry structure and the rules of the game are so fluid and non standard that the leading players don't want to provide any information that may accidentally help their competitors. Thus, the low response rate confirmed our belief that the industry was in a state of rapid change.

We then started processing our secondary information. Since the amount of published academic information on this sector is low, we reviewed newspaper articles, industry reports, web-based information, and magazine





reports on this industry. We also studied public information on all possible alliances and partnerships of the firms in this industry. This provided us with insights into the kinds of alliances and relationships that were emerging. To increase our understanding of the set of factors influencing India's emerging VAS market, we also studied the more developed VAS market in China.

## **Findings and Discussion**

### ***Mobile VAS in China: Lesson's from India's Eastern Neighbor***

Unlike India, VAS is a relatively mature market in the USA, Europe and China. Thus, there are some lessons that can be learnt from emerging VAS sector patterns in relatively mature economies. We decided that the best market to study would be China. While its VAS market is definitely bigger and more stable than the Indian market, it is still in its growth stage and hence gives us ample scope for analyzing the various forces and their interplay.

The Growth in the Chinese VAS market has been more or less geometric: in 1998, it had less than 10 million subscribers and in 2004, it was over 300 million subscribers (Holtkamp, 2006). Some examples of mobile VAS offered in China include: Java downloading services (games), Internet browsing (entertainment, emails, sport news, etc), multimedia messaging service (MMS), location-based services (LBS and GPS), streaming media, M2M (Machine to Machine), and Mobile Virus Killing. The process of getting new VAS technologies to market is complex. It involves regulations, standards, tests, technical forums, tariffs, and application developers (see Finpro report). Each new VAS technology enables the creation of new categories of applications and services. By combining existing and new VAS, the opportunities for new players to enter the market and existing firms dramatically increase.

The market for mobile VAS in China rose from 2 billion RMB in 2001 to 70 billion RMB in 2006. Part of the increase in mobile revenues reflects China's economic prosperity and the increase in living standards (Holtkamp, 2006). Chinese media indicates that apart from mobile browsing and emailing, sending images to friends and relatives are among the most popular service among the high end users (Luo, 2006). According to Holtkamp (2006), the other important factors driving this growth are: (a) the political environment of VAS; (b) the supervision and regulation of telecommunications; (c) the effects of policies on VAS; and (d) the technical environment of VAS (e.g., the use of Soft Switch and 3G technologies allowing the greater use of VAS).

The Chinese government has made many efforts to standardize VAS and the VAS market and make it attractive (Luo, 2006; Yan, 2003). Hence the number of VAS players is rising, increasing market competition. Without proper regulations, the competition would have been unpredictable, destructive and price based. With political regulation and stable supervision, the service providers concentrate more on user requirements rather than cut throat competition. In addition, foreign technology further stimulates the development of the Chinese VAS market. Hence, the customers benefit as advanced technologies are provided to the Chinese service providers through cooperation. This has helped the development of VAS and VAS market.

**Exhibit 7: Mobile VAS Value Chain Groups and Relations in China**

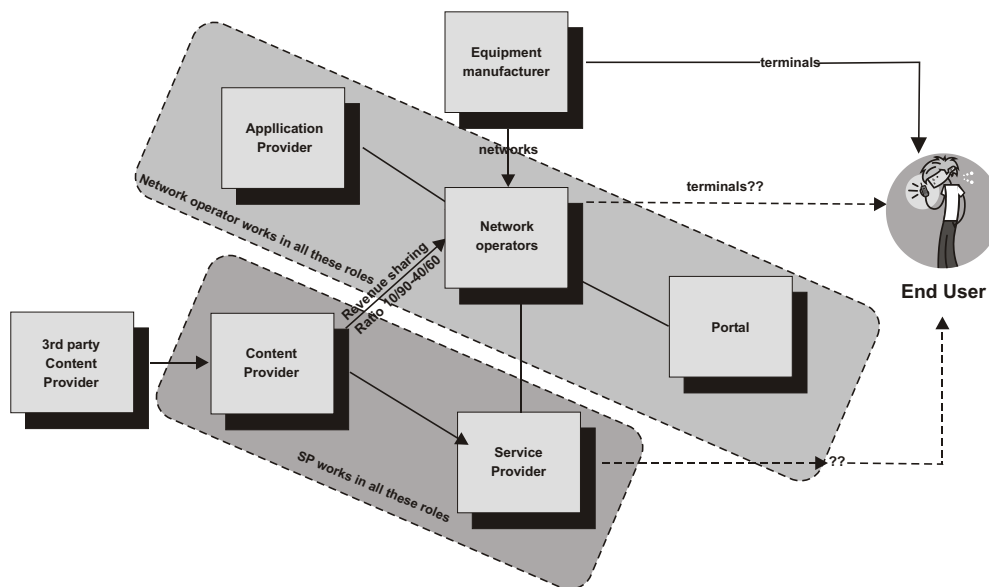



Figure 4 VAS value chain members and relationships

The value chain for Chinese VAS consists of multiple points and interactions among the various players including Content Providers (CPs), Service Providers (SPs), Device Manufacturers, MNOs, Infrastructure Providers, End Users, and most importantly, the Ministry of Information Industry (MII). The MII plays a very important role in the whole information industry and influences each entity in the VAS value chain through stipulating regulations and laws. MII chooses standards and technologies used in networks (for example, 3G) or it may develop new standards when it believes that it is good for the economy (Mani, 2005). MII determines which firms receive a mobile VAS License. They also control the domestic VAS economy through



these fixed-term licenses. MII even controls content and services providers. For example, government rules and the MII prevent the distribution of 'harmful' and 'politically incorrect' information. MII also plays an important role in initiating trials and inviting Service Providers to join in providing new services. The revenue sharing model is about 80% for the SP and 20% for the MNOs.

In China, the MNOs play key roles in the value chain. While initially the MNOs encouraged the SP to grow, lately they have realized the value potential in the market and are looking to gain a greater share of the revenue pie. They are not satisfied with the current profit sharing mode anymore. Therefore MNOs have begun to act as Service Providers; as a result, this has altered the relationship between MNOs and Service Providers from pure cooperation to a mix of cooperation and competition. Yet, at the same time, the cooperation between MNOs and equipment manufacturers and terminal manufacturers has become stronger (Mani, 2005). Revenue sharing models may also change in the future as MNOs also provide marketing on behalf of Service Providers. They might also try to diminish the role of Service Providers by locking content into their own service mechanisms.

Although the Service Providers / Content Providers in India are relatively small with very few of them listed on the stock market, their Chinese counterparts are often very large. For example, SINA is listed on NASDAQ and had revenue of US \$200 million in 2004 with over a hundred million registered users. Equipment manufacturers and terminal manufacturers play a basic role in the value chain. In order to meet the demand of VAS development, equipment manufacturers in tandem with the MNOs set up a perfect network environment resulting in economies of scale and scope. As of now, this type of association is not present in India.

### ***Degree of Collusion and Level of Uncertainty***

In India, VAS players are predominantly small and medium enterprises (SMEs) with the major players being Mauj Telecom, On-Mobile, Mobile2win, Cellebrum, IndiaGames, IMIMobile and Roam-ware. As the Tele-Management forum in India indicates, there are two key challenges facing the industry:

1. Heightened Competition: Bigger firms such as BSNL are also trying to enter this segment. Companies previously unrelated to the telecom domain are entering this segment (e.g., Disney, Yahoo, and Google) and they are threatening to combine selling their content with offering telecommunication services.


2. Technology Improvement: The dizzying pace of technology improvement both in the mobile handset technology and in service levels poses another serious challenge to the players. Every new technology faces uncertainty about its life given the threats from parallel competing technologies. Consequently, firms are often unwilling to commit too many resources into any particular technology.

Digitization of existing media content and technology enhancements capable of delivering this content on mobile platforms have rapidly enhanced the possible applications of mobile telephony. Companies are coming up with innovative offerings: services such as news, and astrology have become passé, while products such as 'Mobile Yoga' and 'Wireless Recipes' are becoming increasingly popular. For example, Mauj telecom has created a number of tools including the 'Heresy Composer' which helps create one's own mobile greeting cards, the 'PhotoArtPhotoArt' with which one can paint a picture, and the 'Ringtone Studio' which allows one to compose music and create own ring tones. 'Yellow-Book' phone directory and restaurant guides are being provided by established brands such as Yellow pages and Zagat. Other emergent features are multimedia video on a cellular handset, network-based gaming applications, including mobile multiplayer gaming, push picture and triple-play services.

Since the segment is characterized by rapid change in technologies and high degrees of uncertainty in terms of competition, technology standards and consumer demand, companies must find a way out to cope with it. Our analysis reveals a complex web of relationships emerging in this sector. Players at every stage of the value chain seem to have struck some kind of relationship with other players in the industry. These relationships range from supplier-client deals to partnerships to revenue sharing to technology sharing. This complex web of relationships appears to be a response to the high degree of uncertainty in the sector. Thus we have content creators like IMImobile colluding with MNOs, technology providers, content aggregators, and media companies; and Companies like Zee Television have partnered with IBM to convert their existing media content (to the tune of over 55,000 hrs) to digital form. This complex web also acts as a medium of rapid information exchange and keeps the players on pace with industry developments.

This supports the first hypothesis that the degree of collusion will depend on the level of uncertainties in the industry. Companies will strike relationships with other stakeholders and environment players under such evolving conditions (Muehrcke, 1999). Collaboration provides them access to new tools





and technologies in this ever-changing scenario. It also helps them create visibility and increase customer service. Collusion becomes more critical in a country like India where the sector regulations are weaker as compared to China (Mani, 2005), and hence for their survival, companies have to carve out relationships and partnerships.

We observe an increasing role of media companies in delivering value to telecom customers. Mobile VAS providers and MNOs employing new technologies have rapidly moved forward in the market and established stronger positions in line with Porter's (1998) work. Technology in this sector seems to be evolving along several paths that in some ways support each other. Thus far, a dominant technology has not yet emerged, yet each of these technology paths is catalyzing the convergence of media and telecom.

### ***Who Has the Bargaining Power?***

The potential power shifts in the industry creates enormous uncertainties as the companies who are creating value might not be the same companies appropriating the value. As a result, the need for strategy is critical in such a dynamic situation: the key to creating sustainable competitive advantage lies in creating differentiation, understanding customer demand and forecasting technology development. Our analysis of the industry does not indicate a clear winner appearing in this emergent segment; that is, no particular player is poised to grab a major section of the pie. We have identified five broad players in this industry: MNOs, content aggregators, content software creators (processors), original content creators (media companies), and technology support companies, and all five may profit in this segment.

While MNOs and content aggregators currently dominate the market, content creators and technology support companies have played crucial roles in facilitating the emergence of the market. Our study indicates the formation of a bipolar power structure with MNOs like Bharti and gateway companies such as content aggregator Indiatimes8888 serving as value chain leaders. This bipolar structure gives stability to the industry and delivers the maximum value to the customer. The MNOs have advantages in delivery and customer proximity advantage while their greatest weaknesses are the lack of relevant content and the high degree of competition among the MNOs which limits their bargaining power when dealing with the gateway companies. In contrast, the gateway companies have strong assets in their content base and their relationships with multiple MNOs, while their primary weakness is lack of direct control over the telecom customer.



Since the large numbers of content providers have more or less undifferentiated products, they do not command a great bargaining power with buyers. If we take cues from the relatively mature Chinese market, we see that initially the MNOs were the ones who were promoting the service providers and taking a commission on the content delivered through their network. But slowly, we see the relations between the two changing, with the MNOs vying for a larger share in the lucrative VAS pie. In the Indian context, the products of the MNOs and the content aggregators are undifferentiated; suggesting that in the short run, no one has a distinct advantage. However, in terms of size, the story is different: the MNOs are significantly larger and have deeper pockets than the content providers, aggregators and service providers, and this size advantage tilts the balance of the equation in their favor. This supports our second hypothesis that the business model that will emerge will have the player with the highest bargaining power as the key node of the structure.

The dark horses in this race could be the large media companies (such as Star TV, Times of India Group, and TV Today) which are the original owners of the content and which till now have kept a very low profile in this industry. Once the platforms of delivery mature and more meaningful content delivery is possible, it wouldn't be surprising if we see the larger media companies taking up dominant positions by moving vertically along the value chain. This may even result in large mergers and acquisitions.

### ***Predicting the Emerging Business Model***

As the wireless electronic technology moves towards 3G and higher technologies, there will be a greater need for on demand video/ data, network gaming application and a whole new family of value rich features. It is also clear that India's demography demands greater customer choice and customization. In fact, regional content is considered to be the catalyst for the growth of the market. And this is precisely the reason we have a bipolar model developing in the Indian scenario. Thus, business models will be influenced by contemporary technology and will be aimed towards increasing customer choice.

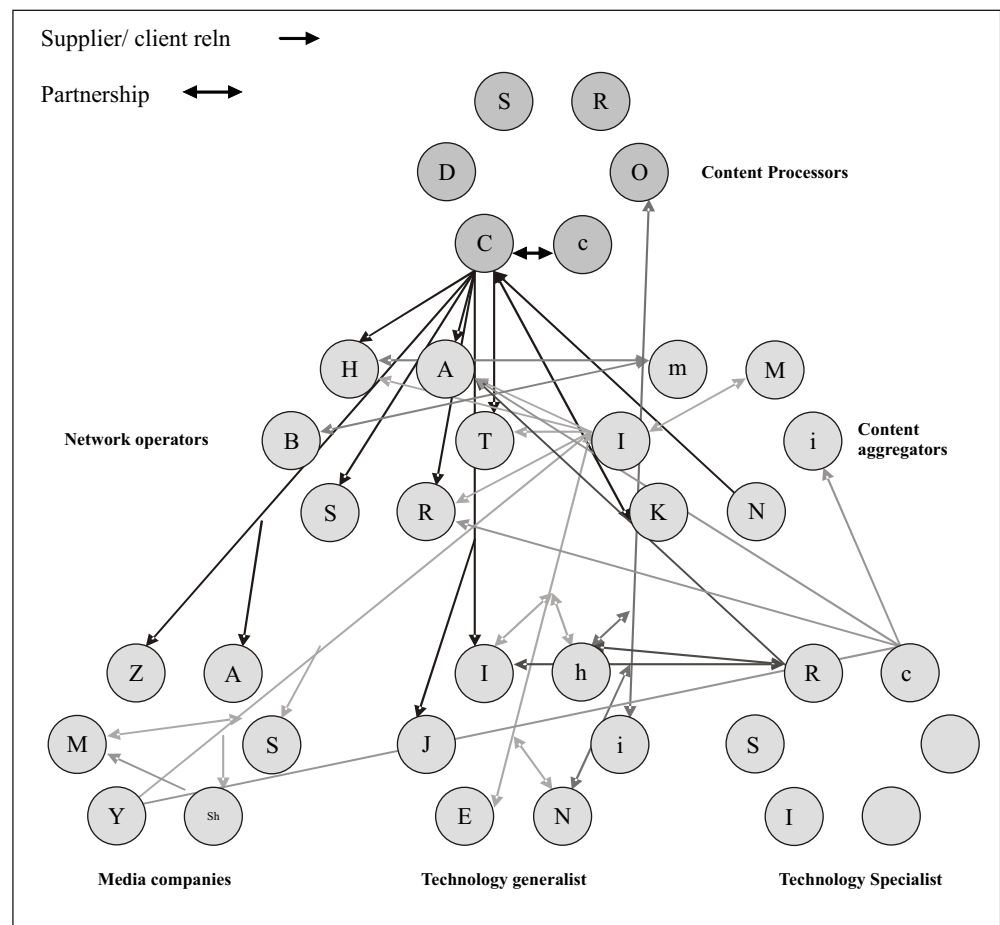
The model that seems most descriptive of the Indian mobile VAS context is a hybrid with both MNOs and Content Aggregators taking strong positions. Given the state of flux in the industry, it is normal to have multiple dominant centers (see Exhibit 8). Thus, we have the content aggregators like Indiatimes, Mauj, and Mobile2Win who provide a wide range of VAS through multiple MNOs. Similarly, some of the MNOs have their own VAS which they acquire from the content creators like IMImobile, Cellebrum, and Dhruva, and compete



directly with the content aggregators. Hence, it is a typical example of collusion going hand in hand with competition: on the one hand the two major poles have a revenue sharing arrangement, while on the other hand they pitch their products directly opposite each other.

If we go by lessons of the Chinese markets, we should not be surprised if the MNOs slowly gain dominance. But this is subject to a number of variables including government regulations and interventions, technology developments and the kind of relationships that players in the market develop. We feel the dark horses in the whole setup are the media companies who are the real owners of the content and who could take dominant positions when technology advancements allow them to deliver media more effectively. However, as long as the product differentiation is low, these two competing structures will co-exist

**Exhibit 8: Suggested Emerging Mobile VAS Scenario in India**



It is likely that one of the players in the value chain will begin to expand, spreading vertically up or down the value chain. But a lot of that depends on how the technology evolves. For example, content delivery points might not be restricted to MNOs. The internet could be a good source of content, with content manufacturers sidestepping the value chain and delivering directly to the customers. Once internet access in mobile platforms becomes reliable and ubiquitous, this will reduce the importance of the MNO since content could be directly downloaded from the web. Hence, there is a wide range of possibilities that could emerge in the industry depending on the direction of technology development, government regulations, the need for content protection, relevance and the ease of use.

### ***Managerial Implications***

The study has important implications for stakeholders. The government needs to realize that we need to have a regulator who has the powers to deal with the convergence of technologies between both media and telecom.

A relevant issue would be the kind of managerial talent and abilities that will be required in this emerging industry. The foremost managerial quality we foresee is the ability to work under uncertain conditions, since the evolving business scenario doesn't provide the kind of security and stability that we typically see in relatively mature industries such as banking. Internally managers would have an equally daunting task of making critical decisions regarding which technology paths and projects to pursue. This would involve cancelling at times projects and technologies midway, which could lead to a loss of employee morale and high attrition rate. So, stemming the outflow of employees while helping to retrain existing employees would also be significant.

Externally, this would involve the ability to manage different kinds of clients and partners: as their needs change rapidly, these relationship definitions would change dynamically. Hence managers have to assume different roles for different partners/ clients. At the top level, the ability to sense changes in the marketplace both in terms of technology and business relationships becomes very critical. Stakeholder management also becomes important, as no clear winner has yet been identified in the value chain. Finally, lobbying for favorable regulations from government and regulatory bodies will also become a required business skill.





## **Limitations of the Study**

The primary limitation of this study is the lack of quantitative data. Since most of the VAS players are small & medium enterprises, it was very difficult to gather performance indicators of these companies. Further complicating our analysis was the high level of secrecy in the industry, with firms being very reluctant to share data. Ideally, we would have liked to analyze financial and product-market performance of some of the players and cross check how the performance has improved after particular partnership/ technology decisions had been taken, and then verify the correlation between performance and partnership decisions. Dissecting the revenue sharing arrangements and mapping it over a period would also be an area of research that could give us leading indicators of who would be the most valuable player in the value chain in the future.

## **Conclusion**

There is a constant stream of articles highlighting the new technologies, new challenges, and the new players in the wireless electronics market. Yet, we rarely stop to think about what potential these new devices have and how they could change the world in which we live. Our study was an attempt to tread along the uncharted realms of this emerging horizon in the Indian telecommunication and media sphere.

Our literature review focused on understanding the dynamics and challenges of the emerging sector. One key fact that emerged as critical in scenario planning was the need to reduce the fuzziness involved in the growth (especially given the key of technological change). We reviewed how companies mitigate this risk through partnerships, associations, and investment sharing. The development of business models is a complex process with factors like government regulations, technology clout, partnering, and customer choice playing major roles. Through our study we observe why collusion is imminent in industries with high uncertainties. Since survival is the key in such markets, we see the emergence of strange kinds of partnerships. We see the numerous ways in which companies mitigate this risk through multiple partnerships, associations, and even investment sharing.

Technology seems to be defining and redefining business, creating and destroying value very rapidly. Business models in such markets would also be a very interesting phenomenon and would be directed at increasing the customer value and also centered on the most powerful player in the value chain. The fact

that the power centre itself is highly dynamic allows for very creative business models to emerge. If we were asked to put our foot down and take stakes in the sector, we would definitely put our money in the media companies; these are the companies who are the owners of the content. With technology reducing the differentiation at the rendering point, the only factor that would differentiate one service from the other would be the content, and this is why media companies will be so critical in the value chain. With better technology adaptation both in wireless communications and handsets manufacturing, reliable (quality and price) internet service in mobiles won't be a distant dream. Once internet access in mobile platforms becomes ubiquitous, then the MNO would reduce in dominance when it comes to content delivery, since then the content could be directly downloaded from the web.

If Graham Bell's 'telephone' attempted and achieved the easing of communication between distant places, the revolution happening in contemporary electronics domain will succeed in bringing the media and entertainment world into your palms. Hence, we sum up our paper with the following lines 'The wired electronics entertainment is dead; long live the wires, Welcome mobile entertainment'.

### References

- Anonymous (2006) 'Telecom - VAS riding high on IT, Telecom sector', *The Economic Times*, 30 August.
- Ansoff, H.I. (1991), 'Strategic management in a historical perspective', in D. E. Hussey (ed.), *International Review of Strategic Management*, 2(1), Chichester, UK: Wiley.
- Auster, E. R. (1992) 'The relationship of industry evolution to patterns of technological linkages', *Management Science* 38(6): 778-792.
- Barnett, W. P. and Hansen, M. T. (1996) 'The red queen in organizational evolution', *Strategic Management Journal* 17: 139-157.
- Chauhan, V. (2004) 'India and S.E. Asian ICT Markets', Paper Presentation at Asian ICT Goldmine Seminars, Helsinki: 26 November 2004.
- Clemons, E. K., Croson, D C., & Weber, B W. (1996) 'Market Dominance as a Precursor of a Firm's Failure: Emerging Technologies and the Competitive Advantage of New Entrants', *Journal of Management Information Systems* 13(2): 59-75.



- 
- D'Monte, L. (2006) 'Phone extras are upwardly mobile', *The BusinessStandard*, 12 June.
- Easton, G., Burrell, R., Rothschild, R., & Shearman, C. (1993) *Managers and Competition*, Oxford: Blackwell Business.
- Finpro China ICT Team (2006), Reports, <http://www.finpro.fi/en-US/Finpro/>, accessed 09 January 2007
- Forge, S. (2004) 'Is Fourth Generation Mobile Nirvana or ... Nothing', *Info* 6(1): 12-23.
- Holtkamp, B. (2006) (Ed.) '*VAS CHINA Project: Mobile Value-Added Services in China*', Project Report, Germany: Fraunhofer ISST, <http://www.vas-china-project.org> accessed 17 December 2006
- iResearch (2006) 'China's Mobile Value-added Service User State & Forecast', <http://iresearch.com.cn> accessed 19 October 2006
- Luo, P. (2006) 'The Business Potential of Mobile Entertainment in China Market', Helsinki Mobility Roundtable Conference, Helsinki School of Economics, 1-2 June 2006
- Mani, S. (2005) 'The dragon vs. the elephant: comparative analysis of innovation capability in the telecom industry of China and India', *Economic and Political Weekly* 40(39): 4271-83
- Muehrcke, Jill (1999) 'The 10 media trends that will drive your future and how to get ready now', *Non-Profit World*: March/April.
- Porter, M. E. (1980) *Competitive Strategy: Techniques for Analysing Industries and Competitors*, New York: Free Press.
- Porter, Michael (1987) 'From competitive advantage to corporate strategy', *Harvard Business Review* 65: May/June 43-59.
- Porter, M. (1998) 'Clusters and the new economics of competition', *Harvard Business Review* 76: November/December.
- Pyramid Research (2006) Reports, [http://www.pyr.com/browse\\_reports.htm](http://www.pyr.com/browse_reports.htm), accessed 09 January 2007
- Schroeder, D. M. (1998) 'A dynamic perspective on the impact of process innovation upon competitive strategies', *Strategic Management Journal* 11: 25-41.

- Schumpeter, J. A. (1950) *Capitalism, Socialism and Democracy*, 3rd edn, New York: Harper & Row.
- Shashidhar, A. (2006) 'Its All Converging', *The Hindu Business Line*, 6 July.
- Shinde, S. (2006) 'Mobile content providers: having a ball', *Express Computers Magazine*, 20 March.
- Sina Corporation (2006), [http://corp.sina.com.cn/eng/sina\\_intr\\_eng.htm](http://corp.sina.com.cn/eng/sina_intr_eng.htm), accessed 25 December 2006
- Sudhir, V., & Turakhia, S. N. (2006) 'Media & Entertainment Sizzle! A pitch report on frames', *Media & Entertainment*.
- Tekes(2006)<http://www.tekes.fi/english/programmes/digicontent/digicontent.html>, Technology reports, accessed 23 October 2006.
- Tele Management Forum Community (2006) <http://www.tmforum.org>, accessed 25 December 2006
- Telenity (2006), <http://www.telenity.com>, accessed 21 December 2006
- Toby, H. (1999) 'Competition and cooperation in an emerging industry', *Strategic Change*: June/July.
- Turakhia, S. N. (2006) '*The convergence conundrum*', [www.exchange4media.com](http://www.exchange4media.com); accessed 24 March 2006.
- Van de Ven, H., and Garud R. (1987) 'A framework for understanding the emergence of new industries', *Research on Technological Innovation, Management and Policy*.
- Vlachos, P., Vrechopoulos, A., and Doukidis, G. (2003) 'Exploring consumer attitudes towards mobile music services', *International Journal on Media Management*.
- Vlachos, P., Vrechopoulos, A., & Pateli, A. (2006) 'Drawing emerging business models for the mobile music industry', *Electronic Markets* 16(2).
- Yan, Xu (2003) 'Mobile communications in China', TRP Papers, *Telecommunication Research Project*, Hong Kong University of Science and Technology, Hong Kong.

