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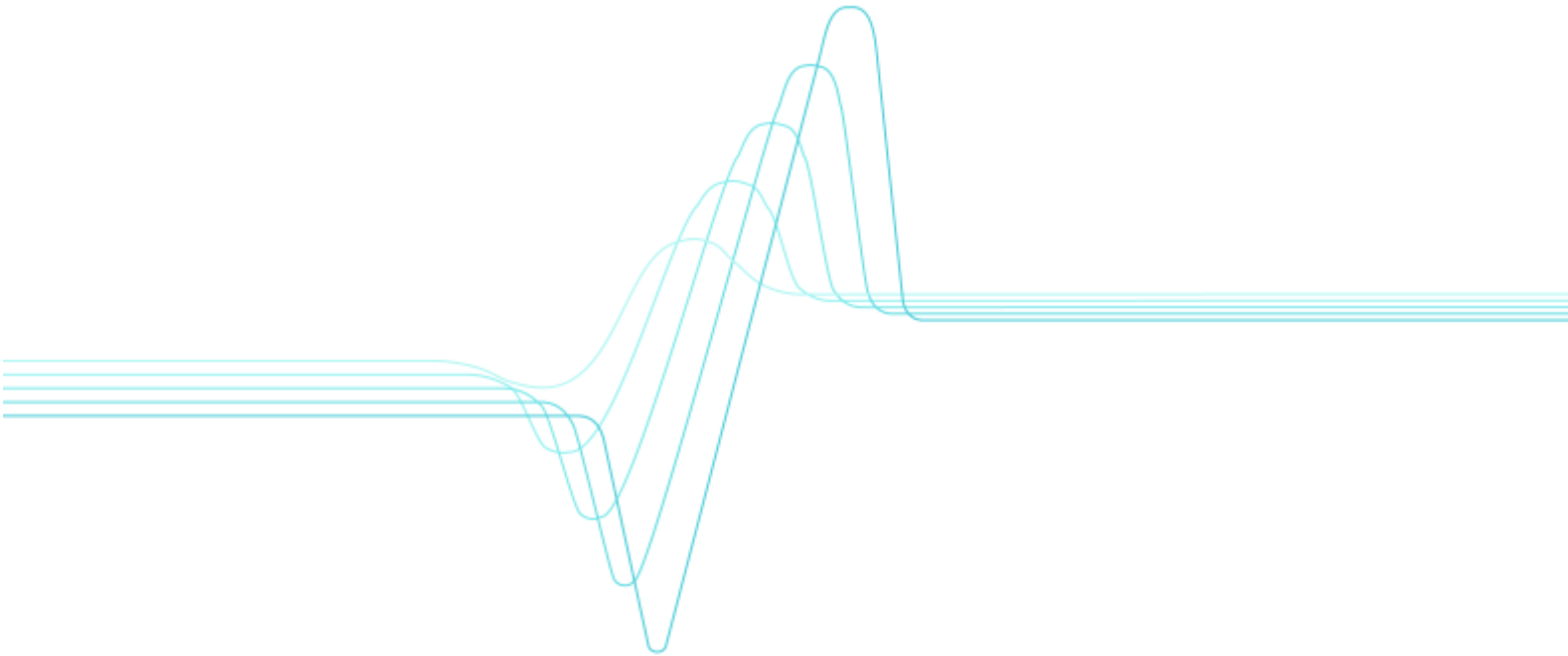

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Abstract

India has come a long way since the troubled days in 1991, when the new government opted for the liberalisation of the economy. This publication provides an analysis of the current development trends and industry practices in two particularly successful sectors of the Indian economy: IT services and telecoms. In IT services the focus has been placed on the export of services from India, and in telecoms on the domestic wireless market. In addition, the publication provides a brief introduction to India as a business environment. The publication aims to help foreign companies and organisations explore possible benefits, risks and forms of engaging in business in India and/or with Indian companies within the selected industrial domains. The study was carried out between 2004 and 2007 as a joint effort of VTT Technical Research Centre of Finland and Indian Institute of Management Bangalore.

Executive summary

IT services

IT-related exports from India have grown from USD 12.9 billion in the financial year 2003–2004 to USD 17.7 billion in 2004–2005 and USD 23.6 billion in 2005–2006. It has been predicted that Indian IT export revenues will exceed USD 30 billion in financial year 2006–2007 and that the USD 100 billion mark will be passed by 2010–2011. The major Indian IT service and business process outsourcing (BPO) companies have a strong export focus and are capable of providing a wide array of services for their customers around the world. The major export market is the USA, which accounts for around 70% of all export revenues, followed by Europe (around 20%) and Asia (around 10%). The service often comes with an affordable price tag, at least in comparison with companies operating out of more expensive destinations, e.g. Northern America, Western Europe or Japan. One of the important aspects of the Indian success story has been the offshore model of resource deployment, based on the 'good-old' principles of distributed manufacturing as well as India's lower labour costs. The model entails a large part of the development and maintenance work being carried out in India, while such parts of the service that cannot be transferred abroad, e.g. requirements specification, are carried out locally.

The situation means different things for different actors. On the one hand, it translates into new opportunities for many private companies and public organisations in need of capable partners in IT and IT-enabled services. The increased supply of services adds to the availability of sourcing options, and tends to increase competition and to reduce prices in local markets. The major Indian service providers have also managed to build a substantial body of expertise in several industrial domains, which may make them capable partners for various business process development undertakings. It has been estimated that more than 50% of the Fortune 500 companies are already outsourcing to India. Leading product and professional services companies, such as IBM, Microsoft, General Electric and American Express, have also established their own development and service centres in the country. At the same time, many Western technology and service firms will have to cope with mounting cost pressures and efficiency requirements. Many of their employees have lost their jobs and even more will lose them in the future. According to some estimates, US companies have been shipping in the order of 200,000 service and engineering jobs abroad every year since the beginning of this century, of which around 70% have gone to India.

Organisations that consider sourcing IT or BPO services from India need to understand that purchasing and implementing a service that involves complex interactions is always a demanding task, and that sourcing it from a foreign player certainly adds to its complexity. In consequence, securing suitably qualified and experienced management

oversight of the process is a fundamental success factor. The planning process preceding the purchase decision should be comprehensive, covering such issues as the underlying objective of the project, the strategic importance and complexity of the activities and processes to be outsourced, the required service level, as well as the major risks involved. From the operational point of view, especially the specification of the service, the selection of the service provider, knowledge transfer and transition of operational responsibilities, the ability to disengage from the contract and to restore operations in case of possible failure, and clear contracts and management procedures in general are important topics to be managed. It is also recommended to seek advice from other organisations with practical experience in outsourcing and to proceed with caution.

The basis for the competitive advantage of those small and medium-sized technology and service companies that compete with the major Indian IT and BPO service providers on their own turf with a heavier cost structure and limited financial muscle rests on two key factors: customer intimacy and strong IPR. Customer intimacy may involve in-depth understanding of the customer's business requirements and expectations and an ability to fulfil these requirements and expectations in a reliable manner. If this is the case, the threshold for abandoning a reliable partner, even in exchange for a theoretically more value-adding offering, is very high for the customer. In addition, well-known trademarks and patents to widely-used or to new enabling technologies tend to retain their value quite well irrespective of the evolution of industry structures or value chains. Renewal, however, is paramount for all companies, because new disruptive technologies or alternative solutions developed by the competitors may suddenly render the dominant IPRs of today obsolete.

The alternative route of taking advantage of the India phenomenon in the field of IT services can involve partnerships with the leading Indian companies. For example, if customers want to expand internationally, are running several lines of business and/or are looking for comprehensive enterprise solutions with 24/7 user support and strict service level agreements, the requirements may be difficult for a small or medium-sized service provider to cope with. In general, international market development calls for a sustainable financial position, which only a few of the smaller companies can claim to possess. This is where large, globally operating Indian IT firms can come in. For example, a smaller European technology company may provide the product, while the bigger Indian partner may provide the channel for marketing the product throughout the world. Many of the Indian IT majors are keen to improve their product and service portfolios due to the fact that their foray into product development has not been particularly successful. For the same reason, they have also been keen to acquire (foreign) product companies with an existing clientele. Although the deal sizes have been small in comparison with the largest acquisitions in the manufacturing and metals

sectors, so far in the range of USD 20 to 150 million, it is very possible that the sums may go up to hundreds of millions of dollars and euros in the near future.

Telecoms and online media

India's telecom sector has witnessed a phenomenal growth since the turn of the century. The Indian market is unique in the sense that the growth has almost entirely been created by new mobile (wireless) subscriptions, whereas the number of fixed line subscriptions has remained almost constant. During the last five years, the growth has been exponential and the number of mobile subscriptions has soared from 6.5 million in March 2002 to 149.62 million in December 2006. During the 4th quarter of 2006 alone more than 20 million new subscribers were added. These figures correspond to an average annual growth rate of 93%. At the same time, the revenues and profits of telecom operators have been steadily increasing. The combined revenues of the top six Indian telecom firms have more than doubled during the last two years from EUR 7.2 billion in 2004–2005 to EUR 15.9 billion in 2006–2007, while their net profits rose from EUR 1.8 to 3.2 billion during the same period of time.

Deregulation has played a key role in the development of the telecom market. The New National Telecom Policy in 1999 and the opening of the market for private players in 2001–2002 brought about a shift from the fixed licence fee regime to the current revenue-sharing model, which enabled much lower usage rates and boosted growth in subscriber numbers. The gradual reduction in call charges from more than 20 Indian rupees to around one rupee (less than 2 euro cents) per minute has had an avalanche effect, and millions have joined the Indian 'telecom revolution'. Indian telephone call and SMS rates are now among the lowest in the whole world. Also the lowering of prices of mobile handsets has contributed to the growth of the wireless segment. The availability of feasible handsets in the price range of Rs. 5000–8000 (EUR 88–140) has been essential to growth. However, the demand for much more affordable handsets with basic features has become apparent, since it is rural India and the lower income sections of the population that are currently driving growth. One Indian operator has already announced the launch of a sub Rs. 1000 (around EUR 17) phone in March 2007.

Sheer numbers have made a lot of money for the telecom operators, despite the fact that average revenues per user (ARPU) have been constantly decreasing. Since the turn of the century, the monthly ARPU has fallen from Rs. 1319 (around EUR 23) to Rs. 278 (less than EUR 5), while average usage has doubled from 200 to around 400 minutes per month per subscriber. However, usage patterns and operator ARPUs vary according to the type of subscription and the geographical location. The dominant technology is GSM with a 70% market share, while CDMA holds the remaining 30%. The dominant subscription type is pre-paid and its share is approaching 90%. However, an average

post-paid subscriber generates 2.5–3 times more money for the operator than an average pre-paid subscriber in both technology spaces.

Voice is clearly the most important service category in the Indian telecom market. However, as ARPUs decrease as a result of tightening competition and decreasing call rates, operators are getting increasingly interested in other potential sources of revenue. Various value-added services (VAS) currently account for around 5–10% of the operators' revenues. At the end of 2006, the size of the Indian mobile VAS segment was estimated to be EUR 500 million, including SMS. The market is estimated to grow at 60% to touch EUR 800 million at the end of 2007. Person-to-person SMS is the largest source of revenue in the mobile VAS segment, followed by ringtones and SMS-based services (mostly competitions built around popular TV series). The demand for data-based mobile services is still low in India. The sales of data-capable phones and the use of data-based services, such as MMS for example, are gradually gaining ground in the big cities, but since the countryside is currently driving the growth in India, the relative share of data as a source of operator revenues is likely to remain small in the short to mid-term. Nevertheless, 2–4% of the Indian subscribers constitute a very affluent consumer segment. These people live cosmopolitan lives, are eager to invest in new gadgets and services, and can spend considerable amounts of money.

The dominant value-capture model in the Indian telecom and online media markets is revenue sharing. The model can work extremely well when there is clear ownership of the intellectual properties involved, including all content, applications and underlying technologies. For the time being, the bargaining power has remained with the customer-facing aggregators, especially telecom operators and large media houses running popular Internet portals. With the exception of very strong branded products and services, these aggregators can claim a major share of the revenue stream, while the share of the content producer may remain less than 25%. However, there are some signs of change in the air as some game developers have managed to build new distribution channels for their products and to secure a greater share of revenues for upstream developers and copyright owners.

For a foreign content provider wishing to establish a presence in the market, one of the most critical tasks is the identification and selection of one or more local partners who can market and distribute the product within the targeted customer segments in India and who can also render accounts in the preferred currency. It is worth noting that a partnership with a good media house (i.e. a mediating producer or aggregator) may provide much easier access to a number of distribution channels, especially to major telecom operators, but that will happen in exchange for reduced margins. On the other hand, partnering directly with the operators may call for substantial marketing efforts and greater technical capabilities, but will also yield better margins in the event of a

successful deal. Whatever the case, establishing well-functioning partnerships with strong local players is the key to large volumes, which is essential in India due to low unit prices. This kind of market access model may be critical for smaller firms who cannot scale up their own operations quickly. The model also allows these firms to gauge the response over a period of time, and then scale up accordingly, e.g. through the establishment of a subsidiary.

Preface

When we started our quest for a better understanding of the Indian IT service and telecom sectors in the latter half of 2004, the number of wireless subscriptions in India had just passed that of wireline subscriptions and was approaching 44 million. Two and a half years later, when this study had finally reached its home stretch, that number had grown to a mind-boggling 175 million. During the same period of time, IT-related exports from India doubled. If there were any question marks concerning the significance of the chosen topic at the outset of the study, the sheer numbers have now proved it worth the inquiry. We can only hope that this publication does justice to the various aspects of this 'India phenomenon' and that it also proves useful for those individuals and organisations whose interests include keeping track of market trends and industry practices in the Indian IT service and telecom sectors.

This study was conducted as part of the Innovation Models and Management Tools research project (Inno-Mode 2004–2007). The overall objective of the Inno-Mode project was to promote innovation management within Finnish industry and between Finnish companies and their partners world-wide. The project was funded by the Technology Industries of Finland Centennial Foundation and VTT Technical Research Centre of Finland. This study was carried out by VTT and the Indian Institute of Management Bangalore (IIMB). The authors want to extend their sincere thanks to Technology Industries of Finland for invaluable financial support as well as to all the interviewees in India who were ready to devote their time, often at short notice, to this endeavour. We sincerely hope that we have managed to integrate their views and knowledge into this publication without, however, revealing any business-critical information that should not have been disclosed! Finally, special thanks are due to Prof. Janat Shah of IIMB for his encouraging support for this study.

Espoo, 16 June 2007

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1. Introduction

Over the last few years, India has made a strong case for being considered as a key destination for world business. For most international businessmen, however, it still remains an enigmatic market with its own set of contradictions. This is what makes both China and India strikingly similar as well as so unique in their own respects. Although many economists disagree on the determining factors and influence mechanisms behind the ongoing economic resurgence of China and India, they agree in principle that the both economies are geared up to take up leading positions in the world economy in the not so distant future.

India has come a long way since the troubled days in 1991, when the newly formed central government assumed the unenviable position of inheriting a close-to-bankrupt state. The government decided to embark on a path of liberalisation, and since then, the country has grown in stature. India is currently ranked 10th in the world in terms of GDP (nominal) and 3rd in terms of GDP adjusted for Purchasing Power Parity (PPP). In the coming years, the BRIC countries (Brazil, Russia, India and China) are expected to become increasingly important players in world business. In 2005, India's GDP grew 9.2%, a figure that was not far behind China's 10.4% (IMF). India's domestic stock (equities) index, the SENSEX, has risen by almost 100% in two years (from close to 7,000 in October 2004 to 14,000 in December 2006).

The phenomenal rise of India in the last decade is largely attributed to the growth of its information technology (IT) service sector, although over the last five years it has been supported quite strongly by the booming manufacturing sector. Manufacturing of both consumer as well as industrial goods has reached an all-time high, and the last two years have witnessed aggressive acquisitions by Indian multinationals all over the world, most notably the acquisition of Arcelor Steel by L. M. Mittal Group and Corus Steel by the Tata Group of companies. In February 2007, two other significant cross-border acquisitions took place: the acquisition of Novelis, a large US-based aluminium manufacturer, by the A.V. Birla Group for USD 6 billion, and the acquisition of Hutch Essar by UK-based Vodafone at a staggering price of £5.5 billion (USD 10.9 billion).

India's foray into the information and communication technology (ICT) domain has been impressive, especially in the area of IT services. They include e.g. software development, packaged software, system maintenance and administration, and technology consulting. The other important area is information technology-enabled services (ITES), also referred to as business process outsourcing (BPO) services. These services cover a number of activities, e.g. call centres, back office operations support, and business analytics. Although a strict classification of services between these two domains is not possible, there has been a conscious effort to segregate service offerings

under these two broad headings. The development of the Indian IT services sector dates back to early 1980s, while a more focused entry into the BPO space took place fairly recently, at the turn of the century in 1999–2001.

Contrary to many experts' expectations that the Indian IT service and ITES/BPO export revenues would gradually slow down, during the financial year[1] 2005–2006 the largest companies registered very strong growth. The revenues of large IT service companies grew 30–40%. Although pricing pressures remained an area of concern, the growth in net profits was also steady – around 30% for most IT majors. The biggest players are very dependent on the US export market, which accounts for around 70% of their revenues, while the current share of Europe is about 20% and Asia (including India) and the rest of the world around 10%. The present top Indian companies in the IT services area are Tata Consultancy Services (TCS), Infosys Technologies and Wipro Technologies. In 2005–2006 TCS was the market leader with annual revenues of Rs. 11,236 Crore (or about EUR 1.971 billion) and net profits (profit after tax, PAT) of Rs. 2,716 Crore (or about EUR 476 million)[2]. The corresponding figures for Infosys were Rs. 9,039 and 2,421 Crore and for Wipro Rs. 9,771 and 2,067 Crore.

India's growth in the telecom market has not been any less spectacular when compared to the ICT sector. The telecom sector has witnessed a phenomenal growth. The Indian market is unique in the sense that the growth has almost entirely been created by new mobile (wireless) subscriptions, whereas the number of fixed line subscriptions has remained almost constant. The number of mobile phone subscriptions has increased from 6.5 million in March 2002 to 150 million in December 2006 and can be estimated to have reached 173 million in March 2007. This corresponds to a compound annual growth rate (CAGR) of around 93%. As a result, the revenues and profits of telecom operators, content aggregators and technology vendors have been steadily increasing, despite the fact that the average revenue per user (ARPU) has been decreasing and that Indian telephone call and SMS rates are now among the lowest in the whole world. The combined revenues of the top six Indian telecom players have more than doubled during the last two years to Rs. 90,700 Crore (EUR 15.9 billion) in 2006–2007 from Rs. 41,000 Crore (EUR 7.2 billion) in 2004–2005, while their net profits rose to Rs. 18,130 Crore (EUR 3.2 billion) from Rs. 10,300 Crore (EUR 1.8 billion) during the same period of time (Business Standard, 10 May 2007). The biggest Indian mobile telecom operators are Bharti Airtel (21% of subscribers), followed by Reliance Communications (20%) and the government-owned Bharat Sanchar Nigam Limited (BSNL) (18%). In the fixed line segment, the incumbent BNSL is the supreme market leader, having a 83% share of all wireline subscriptions and a 44% share of all Internet subscriptions in India.

[1] In India the financial year begins on April 1 and ends on March 31.

[2] In the Indian numbering system 1 Lakh = 100,000 and 1 Crore = 10 million. Therefore 100 Lakhs = 1 Crore = 10 million, 100 Crore = 1 billion, and 11,236 Crore = 11,236 * 10,000,000 = 112.36 billion. Indian currency is rupee (abbreviation Rs. or INR). EUR 1 ≈ Rs. 57 and USD 1 ≈ Rs. 41 in April 2007.

1.1 Electronic India: Impact on foreign industries and societies

But why should we be interested in India, and especially in the IT service and telecom sectors? There are at least two major reasons for this. On the one hand, Indian IT service and ITES/BPO firms are aggressively marketing and exporting their services world-wide. This translates into new opportunities for many companies and public organisations in Western countries. Increased supply of services adds to the selection of sourcing options and also tends to increase competition and reduce prices. At the same time, many software and service firms, as well as the rank and file of the administrative and development staff of many large organisations, will have to cope with mounting cost pressures and efficiency requirements. Many have lost their jobs and even more will lose them in the future. For example, more than 50% of the Fortune 500 companies are already outsourcing to India. Leading product companies, such as IBM, Microsoft and Oracle, have established their own dedicated development centres in the country. According to some estimates US companies have been shipping in the order of 200,000 service and engineering jobs abroad every year since the beginning of this century, of which around 70% have gone to India (e.g. CIO, 6 January 2003; Business Week, 8 December 2003; Wired, February 2004). Also many Finnish technology and service firms are already purchasing services from India or are in the process of reviewing their options for future co-operation. However, in parallel with the ongoing outsourcing boom, newspapers and business periodicals publish stories on high management and supervision costs, data security and privacy concerns, and partial insourcing of already outsourced processes. All this means that the consequences of the 'Indian expansion' to Western countries are real and significant – in terms of new opportunities as well as new threats and development needs. Business leaders should therefore devote time and energy to assessing the possible implications of this development trend for their own business.

The other reason is the ongoing boom in the domestic telecom market. Growth means opportunities – not only for the established local players but also for foreign technology vendors and service providers. For example, some leading telecom operators have contracted out the development and management of most of their technical infrastructure, including telecom networks, information systems, voice mail systems, and so forth, to foreign companies. So far the bulk of mobile and broadband content and related services are produced locally by local vendors, but Indian operators are nevertheless actively looking for foreign partners also in these areas. In addition, local content providers (e.g. game developers) are licensing software technology (e.g. engines) and copyrights (e.g. usage rights to famous movie figures) from abroad, too. This trend is likely to strengthen in the future because of an expected increase in demand for online media – despite relatively low demand at present. The predominant revenue model for contractors is revenue sharing. This means that as long as the market

expands, having access to the 'right' customer segment through the 'right' partner can really make the difference for many companies.

1.2 The objective and scope of the publication

This publication provides an analysis of the current development trends and industry practices in the Indian IT service, telecom and online media sectors. In addition, the publication provides a brief introduction to India as a business environment. The main objective is to help foreign companies and organisations in general explore the possible benefits, risks and forms of engaging in business in India and/or with Indian companies within the selected industrial domains.

This publication consists of four main sections. Chapter 2 provides a concise overview of the Indian business environment, including the key characteristics of the infrastructure, legal framework, ongoing tax reforms, and demographics. Chapter 3 analyses the Indian IT service and ITES/BPO sectors with respect to the key players, the main services and products offered, research and development practices, operations models and competitive advantages, as well as the main challenges and development needs. The chapter focuses on the development and provisioning of services for the export markets but also addresses the domestic market for IT services. Chapter 4 analyses the Indian telecom and online media sectors. Special attention is paid to the evolution of the telecom market, dominant technologies and subscription types, the development of usage patterns and average revenues per user, the most popular mobile and Internet content, value chains and predominant revenue models, and government regulation. The emerging gaming industry serves as an example through which the recent development trends and challenges in the online media market are explored. Most emphasis is placed on the wireless market, but the key issues pertaining to the Indian Internet and broadband infrastructure and services are also covered. Finally, Chapter 5 presents the conclusions and recommendations of this study.

Although the publication has been written emphasising the needs and interests of foreign and especially European industry, the authors believe that it can be also useful for many Indian companies, industry associations and government agencies. The publication can, for example, convey information on issues that are felt particularly important, interesting or worrying from the point of view of an external observer. This in turn may provide useful input for people who need to make India more attractive for foreign investors and prospective business partners around the world.

1.3 Methods

The main data acquisition methods were interviews, seminars and document analyses. Semi-structured interviews were carried out with top and mid-level executives in seven companies. In order to substantiate the insights gained from the company interviews, several interviews were also conducted with academics possessing applicable areas of expertise. A total of 27 interviews were conducted as part of the study. Most of the interviews took place in August 2005 in Bangalore, while the representatives of Indiagames Ltd. were interviewed in November 2006 in Mumbai. All interviews were carried out, recorded, transcribed and summarised by the authors of this publication. A summary of the interviews is provided in Table 1 below (see Chapter 6 for more detailed information on the interviewed persons).

Table 1. Summary of interviews conducted as part of this study.

Organisation	Segment / Type of organisation	Interviews
Infosys Technologies Ltd.	IT services / Service provider	4
Wipro Technologies Ltd.	IT services / Service provider	5
Tata Consultancy Services Ltd. (TCS)	IT services / Service provider	4
IBM Global Services India Ltd.	IT services / Service provider	1
Bharti Airtel Ltd.	Telecoms / Operator	3
Times Internet Ltd. (Indiatimes)	Online Media / Content aggregator	1
Indiagames Ltd.	Online Media / Game developer	3
Indian Institute of Management Bangalore	University	6
Total		**27**

Various seminars played an important role in the data acquisition process. The India Mobile Seminar, which was organised by Finpro in August 2004 in Helsinki, and BangaloreIT.com 2004, which was organised by Cyber Media in November 2004 in Bangalore, provided a good starting point for this study – even before the research project was officially launched. The Directions 2007 seminar, organised by IDC India in July 2006 in Bangalore and New Delhi, made it possible to contrast our findings and conclusions on the development of the Indian ICT sector with those of leading Indian industrialists and researchers in the area.

The study also made significant use of various secondary sources of information, including Indian government agencies (incl. The Department of Telecommunications [DOT], The Telecom Regulatory Authority of India [TRAI], and The Reserve Bank of India [RBI]), Indian industry associations (incl. The National Association of Software and Service Companies [NASSCOM], and The Manufacturers' Association for Information Technology [MAIT]), international research and development organisations (incl. The World Bank, The International Monetary Fund [IMF], and The Asian

Development Bank), commercial research organisations and consultancies (incl. The Economic Times Intelligence Group, The Centre for Monitoring Indian Economy [CMIE], and McKinsey), Indian banks and credit-rating agencies (incl. ICICI Bank and Crisil), and the media (mainly business periodicals and online newspapers, such as The Economist, Business Week, The Hindu Business Line, and The Far Eastern Economic Review). The role of the document analyses was twofold: First, to collect the existing knowledge and views of the subject matter and to help identify the most relevant topics to be addressed, and second, to help assess, interpret and supplement the information collected through the company interviews and websites. Various industry analysis reports from financial research agencies and consultancies proved invaluable in evaluating the growth opportunities for specific companies as well as industry segments in general.

1.4 Definitions

Outsourcing and offshoring. In this publication, the terms outsourcing and offshoring have been used interchangeably. It is well understood that offshoring and outsourcing are not entirely the same thing. Outsourcing takes place when a company assigns some of its activities to an external entity, which can be located in the same or in another country. Offshoring refers to a situation, in which that external entity is based at a foreign location. A subset of offshoring is 'near-shoring', which means that the external entity is located in a near-by country. However, since outsourcing to India from the USA or Europe would mean offshoring, no major discrimination has been made in terms of usage.

Online media. In this publication, the term online media is used to refer to content and services provided over the fixed (Internet) and wireless (telecom) networks to private and corporate users. The traditional forms of electronic media, i.e. radio and television, have not been addressed in this publication.

2. The business environment

2.1 Economic trends and policies: Mostly good news

Since 1991 there has been a sense of growing stability that has pervaded most sectors of the India economy. However, the sheer scale of India's visible socio-economic problems has made it difficult for many observers, and especially for foreigners, to perceive and acknowledge genuine progress. For example, when the country's economy was growing at the rate of 5–6% during the period 1998–2002, many economists ruled out the possibility that India had entered a period of fast and sustainable growth. They attributed that growth to the larger cyclical movements (IMF). However, since 2003 the accelerated GDP growth figures (7.3% in 2003, 7.8% in 2004 and 9.2% in 2005) have compelled many to acknowledge that extended – rather than mere cyclical – growth could be reality in India, too.

The stock market indices have also shown tremendous growth, which indicates confidence in market valuations. Another related aspect that has received less attention is the reform of capital account convertibility rules. Through easing foreign exchange controls, the central government has made the repatriation of profits much easier, which in turn has provided a good incentive for foreign investors.

Most attribute the present dream run of the Indian economy to the growth in the information technology and ITES/BPO sectors. However, in true terms, the present contribution of the IT sector to the Indian GDP is only 5.7% – despite the fact that the export and domestic markets for IT services and equipment have grown consistently at 20–30% for many years in a row (see Chapter 3). In consequence, the growth of the IT service and ITES sectors does not fully explain current growth rates. Since liberalisation, reforms have moved in a positive direction, although often at an agonisingly slow pace. Factors that can explain the emergence of India as an attractive investment destination for foreign capital include, for example, reforms in the applied foreign direct investment (FDI) regulations, a strong banking sector, and a steady supply of well-educated, English-speaking college graduates.

FDI regulations have been gradually eased, which has invited substantial investments in a number of sectors. Initially, during the 1990s, many sectors were opened up only to a limited extent, typically up to 49% foreign equity participation. Over the past decade the limit has risen to 74% (and even to 100% in select sectors). Significant foreign investments have been made in e.g. car components, BFSI (Banking, Financial Services and Insurance), mining, hospitality and food processing, which have been high-growth segments in the recent past. However, in sectors like manufacturing, ICT and ITES/BPO there have not been large FDI inflows. Actually, in the case of

manufacturing the FDI outflow has exceeded inflow, owing to the recent high-value acquisitions that Indian companies have made abroad. The telecom industry has appreciated the recent increase of the FDI limit to 74%, as this will ease the funding of new communication infrastructure projects. It is estimated that the country needs some Rs. 160,000 Crore (or around EUR 28 billion) of new investment to increase the number of wireless and fixed line subscriptions to 250 million. The recent acquisition of Hutch Essar by Vodafone UK is one indication of the high-value FDI expected to come into the sector in the coming years.

India's banking sector is also relatively strong. India managed through the South-East Asian crisis in the late 1990s quite well, thanks to a largely insulated banking sector. However, in spite of this, the government has tightened measures to ensure that banking norms are followed by the book. Currently, most banks have been instructed to build systems around the BASEL II norms within a strong enforcement schedule. These measures have instilled confidence in foreign investors about the long-term safety of their assets in India.

However, there are problems looming over the sustainability of ongoing growth. Rising inflation in the country remains a concern. One factor contributing to the inflationary pressures was the rising price of crude oil in 2005–2006. Around that time, the inflation figures hovered around 4–5%. The central bank (Reserve Bank of India, RBI) reacted by increasing interest rates and managed to keep the situation under control. Nevertheless, the latter half of 2006 and the beginning of 2007 have indicated that India is facing additional inflationary pressures and the prices of many basic commodities have been on the rise. One reason for the rising inflation has been the booming real-estate market. There are fears that speculative investments in this sector are fuelling the process. Inflation reached a peak of 6.5% in February 2007, which in turn led to a further increase in interest rates. The impact of this interest rate hike still remains to be seen. (MOF / Economic surveys 2005–2006, 2006–2007.)

India has also suffered from a long-term budget deficit, which has severely limited the operational preconditions of India's central governments with respect to large-scale infrastructure and development projects. The situation, however, is gradually improving. The fiscal deficit as a proportion of GDP has come down from 6.2% in 2001–2002 to 3.8 per cent in 2006–2007. The budget of the fiscal year 2007–2008 targets a central government deficit of 3.4% of GDP. The expected reduction in the deficit is in line with the government objective to reduce the budget deficit to 3.0% by 2009, as specified in the Fiscal Responsibility and Budget Management Act 2003 (FRBM). Continuing adherence to the fiscal targets set out in the FRBM remains a cornerstone in maintaining the country's creditworthiness. (MOF / Union Budget 2007–2008.)

2.2 Infrastructure: More investments are needed

India ranks poorly when it comes to investments in infrastructure. The sectors that need immediate attention include energy, roads and airports. In addition, investments are badly needed in the education and health sectors. Most major cities in the country are facing an acute shortage of electricity and suffer from mundane power outages, owing to the ever-widening gap between supply and demand. Due to the lack of adequate reforms in the power sector, only a few private investors have evinced interest in entering the market. The generating units, which are mostly publicly owned, are inefficient. The distribution losses are large, which leads to the maintenance of an inefficient and expensive system that fails to cater to the rising demand for power.

The Indian roads and airports infrastructure is bursting at its seams. Major cities, and especially such fast-developing IT hubs as Bangalore, Hyderabad and Pune, are experiencing extended traffic and airport congestion because of capacity constraints. In some of the larger cities and local state governments have entered into public-private partnerships with leading companies to develop infrastructure. But there still remains a lot to be done. As an encouraging measure, the central government launched the "Viability-Gap Funding" initiative to attract private companies to the infrastructure sector and invest in building urban infrastructure. According to this plan, the central government is prepared to invest large amounts of money in infrastructure projects that receive significant funding (at least 40%) from private sources.

Another important aspect of infrastructure as far as IT and ITES/BPO sectors are concerned is the availability of high-speed communication services. Although the telecom market has boomed in the country, broadband services have not received the same kind of attention. High-speed Internet access is still a problem, and although some of the urban markets are well served by the ISPs, the vast majority of the semi-urban and rural households do not have access to broadband Internet – or Internet at all. Most ISPs blame the lack of penetration of broadband services on the incumbent BSNL's indifferent attitude to local loop unbundling (BSNL has not been willing to share its copper wire network with the competing service providers in exchange for reasonable compensation). The Telecom Regulatory Authority of India (TRAI) has taken up the matter, hoping to resolve the stalemate. However, India's backhaul telecom networks are estimated to be in a good shape and to provide the necessary bandwidth for a range of services. For example, the big Indian IT service companies have not reported on any major problems relative to the provisioning of online system administration services for their overseas customers from their hubs in Bangalore.

2.3 The legal and judicial framework: A mixed message

Entry formalities and FDI regulation

Under the Indian Companies Act the two main routes for a foreign company to enter India are (1) an Incorporated Entity, or (2) an Unincorporated Entity. An Incorporated Entity can take the form of (1.1) a Joint Venture or (1.2) a Wholly Owned Subsidiary, while an Unincorporated Entity can exist as (2.1) a Liaison or Representative Office, (2.2) a Project Office, or (2.3) a Branch Office. (RBI / Foreign investments in India – FAQ.)

A Liaison Office can carry on only liaison activities, i.e. it can act as a channel of communication between the Head Office abroad and parties in India. It is not allowed to undertake any business activity in India and cannot earn any income in India. Expenses of such offices are to be met entirely through inward remittances of foreign exchange from the Head Office abroad. The role of such offices is therefore limited to collecting information about possible market opportunities and providing information about the company and its products to the prospective Indian customers. Foreign companies can open Project Offices in India provided that there is a contract to execute a project in India and that the project is funded directly by inward remittance from abroad; or the project is funded by a bilateral or multilateral international financing agency; or the project has been cleared by an appropriate Indian authority; or the company or entity in India awarding the contract has been granted a Term Loan by a public financial institution or a bank in India for the project.

India has the dubious distinction of being one of the most bureaucratic countries to do business in. A large number of foreign businesses have been frustrated by lengthy and cumbersome procedures. In particular, the entry and exit barriers to doing business in India are huge. Most consultants to the Ministry of Finance have suggested that the undue delays in getting clearances for entering the Indian market need to be addressed. Although the Foreign Investment Promotion Board of India (FIPB) claims a processing time of 2–3 weeks, in practice the actual time required for getting all necessary clearances is much longer. Some official estimates indicate that a period of around three months is needed to set up shop in India, but in some cases it can take about 2–3 years to found a company, up to six months to get the license for duty free exports, and almost ten years to exit a business (Table 2). The Boston Consulting Group as well McKinsey have reckoned that India has lost a large part of international FDI funds due to its lengthy and entangled bureaucratic controls, especially in relation to the application, bidding and approval of FDI projects. Multiple approvals and the long lead times lead to "loss of investors' confidence despite promises of a considerable market size" (Foreign Investment, 2002).

Table 2. India's attractiveness for Foreign Direct Investment (source: IMF, 2005).

	China	India	Korea	Malaysia	Thailand	Average
Macroeconomic environment						
GDP per capita (constant 1995 US$, 2003)	1,023.6	525.2	15,290.8	4,964.8	3,182.0	4,997.3
GDP growth (2003)	9.1	8.0	3.1	5.2	6.7	6.4
Gross capital formation (current US$, 2003)	594.4	143.1	177.9	22.5	33.1	194.2
Inflation	1.2	3.8	3.6	1.1	1.8	2.3
Openness (trade in goods as a percent of GDP, 2002)	49.0	20.8	66.0	182.4	105.6	84.8
Governance indicators (2002) 1/						
Voice and accountability	-1.4	0.4	0.6	-0.3	0.2	-0.1
Political stability	0.2	-0.8	0.5	0.5	0.5	0.2
Government effectiveness	0.2	-0.1	0.8	0.9	0.3	0.4
Regulatory quality	-0.4	-0.3	0.9	0.6	0.3	0.2
Rule of law	-0.2	0.1	0.9	0.6	0.3	0.3
Control of corruption	-0.4	-0.3	0.3	0.4	-0.2	0.0
Infrastructure						
Overall Infrastructure Quality (rank out of 102 countries)	55.0	70.0	21.0	12.0	29.0	37.4
Electric power consumption (kwh per capita, 2001)	893.4	364.7	5,288.4	2,731.0	1,508.4	2,157.2
Internet users (per 1,000 people, 2003)	46.0	15.9	551.9	319.7	77.6	202.2
Roads, paved (percent of total roads, 1999)	91.0	45.7	74.5	75.8	97.5	76.9
Telephone mainlines (per 1,000 people, 2002)	166.9	39.8	488.6	190.4	105.0	198.1
Bureaucratic red tape and corporate taxation						
Number of start-up procedures to register a business (2004)	12.0	11.0	12.0	9.0	8.0	10.4
Time to start a business (days, 2004)	41.0	89.0	22.0	30.0	33.0	43.0
Time to enforce a contract (days)	241.0	425.0	75.0	300.0	390.0	286.2
Time to exit a business (years, 2004)	2.4	10.0	1.5	2.3	2.6	3.8
Protection against dismissal 2/	0.4	0.9	0.3	--	0.3	0.5
Difficulty in firing index (2004)	40.0	90.0	30.0	10.0	20.0	38.0
Efficiency of legal framework (rank out of 102) 3/ 4/	50.0	35.0	41.0	19.0	32.0	35.4
Burden of regulation (rank out of 102) 3/	21.0	67.0	23.0	16.0	25.0	30.4
Transparency of government policymaking (rank out of 102) 3/ 5/	33.0	41.0	25.0	14.0	31.0	28.8
Efficiency of the tax system (rank out of 102) 3/	29.0	59.0	37.0	5.0	27.0	31.4
Highest marginal tax rate, corporate rate (percent, 2003)	30.0	36.8	27.0	28.0	30.0	30.4

Sources: *World Development Indicators, World Bank Governance Database, Global Competitiveness Report 2004. World Bank Doing Business Database 2004.*

1/ Higher values correspond to better outcomes.
2/ Methodology: Protection against dismissal is measured by the taking into account whether an employer has to notify a third party before firing one worker, whether the employer needs the approval of the third party, if the employer must provide retraining before dismissal among other factors.
3/ A higher rank implies a better outcome.
4/ Defined as the legal framework for private businesses to settle disputes and challenge the legality of government actions and/or regulations.
5/ Defined as to what extent firms are usually informed clearly and transparently by the govvernment on changes in policies and regulations.

According to the World Bank and the Asian Development Bank, India is considered an "under-performer" as far as attracting FDI is concerned. The current annual inflow of FDI is around USD 6 billion with the FDI stock being USD 45.3 billion (UNCTAD / World Investment Report, 2006). This is just about 1/12th of the annual FDI in China (USD 72.4 billion). However, when the two countries are compared with respect to the FDI share of GDP, the numbers look a bit better for India – FDI amounted to 3.5% of India's GDP and about 9.2% of China's in 2005.

However, during recent years significant reforms and confidence building measures have been undertaken to facilitate the flow of further FDI into the country. As noted before, the previous limitations set for foreign ownership in Indian companies have been revised upwards. Currently, the cap for the telecom sector stands between 49% and

100%, depending on the nature of the investment (see below), while there are no restrictions for business services, including IT and ITES/BPO (where 100% foreign ownership is allowed).

India's FDI policy for the telecom sector and Internet services

In the areas of cellular mobile, paging, value-added service and global mobile personal communications by satellite FDI is limited to 49%, subject to the grant of a licence from The Department of Telecommunications and adherence by the companies who are investing and the companies in which investment is being made to the licence conditions. FDI up to 49% is also permitted in an investment company set up for making investments in the telecom companies licensed to operate telecom services. Such investments are treated as part of domestic equity and are not set off against the foreign equity cap.

FDI up to 74% is permitted in Internet services (with gateways), infrastructure providers (Investment Policy Category 2), and radio paging services. FDI up to 100% is permitted in manufacturing of telecom equipment, ISPs not providing gateways (both for satellite and submarine cables), infrastructure providers providing dark fibre (Investment Policy Category 1), and voice mail. Proposals for FDI beyond 49% are considered by the FIPB on a case-by-case basis. FDI up to 100% is allowed provided that such companies divest 26% of their equity in favour of the Indian public in 5 years, if these companies are listed in other parts of the world[3]. (MEA, 2007.)

Contracts and the resolution of disputes

Contracts are extremely important in the Indian context as they safeguard the rights of the client as well as the vendor e.g. in case of the escalation or delay of the project or its deliverables. In some cultures, contracts are not encouraged, but in India there are no problems regarding the formulation of the contract as most Indian companies are well-aligned with the US way of doing business, which is essentially carried out with explicit contracts.

The Indian legal and judicial system is widely perceived to be fair. However, the judicial system is not efficient. It often takes an inordinate amount of time to settle a

[3] Upset with poor quality Internet services despite a liberal regime, India's telecom regulator TRAI has recently proposed drastic steps to bring more "serious players" to the market, including reduction in the FDI cap and imposition of a licence fee on Internet Service Providers (ISPs). TRAI recommended lowering the FDI limit from the existing 100% to 74% and proposed imposing an annual licence fee of 6% of the adjusted gross revenue. The Internet Service Providers Association of India estimates that this will affect end consumers and may bog down the development of broadband in the country as the cost of broadband services will increase by 6–24 per cent (The Hindu, 10 May 2007). Chapter 3 provides a more detailed account of the development of Internet and broadband in India.

case and to pass a verdict. In view of this, it might be worthwhile to investigate the option of third-party arbitration, which would ease the settlement process in the case of a dispute. Indian companies are not necessarily averse to such an arrangement, given their own lack of faith in the efficiency of the system. It may be noted that for a relatively new foreign player, an arbitration clause is highly recommended when entering into a contract with an Indian company.

Legal experts advise that contracts need to be comprehensive with well-laid out specifications of deliverables and schedules. In many cases, and especially if the companies are doing business for the first time, there is lack of clarity and common understanding with respect to the deliverables. Therefore the parties should apply appropriate and jointly accepted metrics and standards for measuring the quality of the service. The large Indian IT service companies, at least, are used to such practices and are prepared to conclude extensive service level agreements with their clients.

Labour laws

Although archaic labour laws that make hiring and firing very difficult still plague the manufacturing sector, the situation in the IT service and ITES/BPO sectors is different. Generally, larger manufacturing companies are subject to the Factory Act, while the service sectors come under the Shops and Establishment Act, which was originally designed for retailing and is therefore extremely flexible. Moreover, the so-called white-collar employees (i.e. people working in the field of IT services) are not allowed to form trade unions. The International Labour Organisation (ILO) has recently suggested that Indian IT and ITES workers should be able to form unions to represent their case and to co-ordinate their activities with national unions. This ruling was probably issued as a response to the recent labour controversies in the state of West Bengal. However, since the IT services industry has been consistently on the upswing and the demand for new employees has been steadily increasing, it is relatively easy to get alternative employment in the sector e.g. in the case of bankruptcy or entrenchment. The previous limitations concerning women working on night shifts have been removed to allow women to work for BPO organisations (that often provide service on a 24/7 basis).

2.4 The tax regime: Still heavy and cumbersome

India has the negative reputation of being a country of heavy taxation and very complicated tax regulations, which deters many companies from operating out of India (Table 3). The Corporate Income Tax rate for Indian companies is currently 30% (effectively 30.9–33.99%) and for foreign companies 40% (effectively 41.2–42.23%), in some cases (e.g. in case of royalties from agreements concluded in 1961–1976) even

50%. However, tax holidays are granted in some of priority sectors, especially in the areas of research and development, energy and telecommunications.

Table 3. Some effective tax rates in India, including applicable surcharges and the Education Cess (sources: KPMG India / Budget 2007 Tax Card, IMF 2005, MOF / Income Tax Department)[4].

Categories	Corporate taxation	Individual taxation
Net earnings/income	Domestic: 30.9–33.99% Foreign: 41.2–42.23%	0–33.99%
Short term capital gains	As corporate income tax	As individual income tax
Long term capital gains	With indexation: 20.6–22.66% Without indexation: 10.3–11.33%	As corporate long term capital gains
Dividends	16.995%	0%

Currently, companies entering the telecom and ISP sectors enjoy a tax holiday of five years. In the energy sector the offered tax holiday is ten years. However, this has not generated too much enthusiasm. Since IT services have been earmarked as a key development area, tax laws have been simplified to some extent and certain import duties – which were as high as 114% – have been revoked. According to a suggestion proposed by the Planning Commission, the different corporate tax rates for foreign and domestic firms should be abolished (Foreign Investment, 2002). However, in the latest Union Budget of 2007–2008 the difference is 10% in favour of domestic companies.

The central government has started to promote selected Special Economic Zones (SEZs). The SEZ Act (2005) is a move towards the creation of special economic regions with tax holidays to promote exports. Some of these regions were earlier called Export Promotion Zones (EPZs). Currently, the following areas have been converted into Special Economic Zones: Kandla and Surat in the state of Gujarat, Cochin (Kerala), Santa Cruz (Maharashtra), Falta (West Bengal), Chennai (formerly Madras, in Tamil Nadu), Visakhapatnam (Andhra Pradesh) and Noida (Uttar Pradesh). In addition, three new SEZs have been approved to be established in Indore (Madhya Pradesh), Manikanchan–Salt Lake (West Bengal) and Jaipur (Rajasthan), and the development work has already commenced in these areas. In most cases, the respective state (local) governments have assumed a leading role in developing (through acquiring land) and promoting of the SEZs. The actual number of approved sites for SEZs is, however, much larger: 42. Owing to the various protests of and ideological differences between different stakeholder groups and between the public and state governments, the process of land acquisition has often encountered roadblocks, thus further delaying the introduction of new SEZs.

[4] Appendix A provides a more detailed description of corporate and individual taxation in India.

The main problems of the Indian tax regime have been the complicated tax system and a relatively small tax base both in the areas of corporate and personal tax. There has been a consistent demand from various agencies to broaden the tax base along with the simplification of the tax procedures. Many have felt that a unified Value Added Tax system (or CENVAT) – rather than a regional or state-specific VAT – would be ideal for India, by enabling the central and local governments to expand the current tax base and by bringing in transparency in the trading of goods and services. Since the financial year 2004–2005 the central government has been introducing the VAT in the country, and barring a few states in India, a vast majority of federal entities have adopted this new form of tax. Most industries have welcomed the introduction of the VAT, as it simplifies their tax procedures to a large extent. The greatest resistance to the VAT has come from unorganised sectors that until now, due to various tax exemptions or sheer tax evasion, have not paid any taxes at all. However, the unified VAT model was not strictly implemented in all product categories and a new Service Tax of 12% (effectively 12.24% with the previous Education Cess of 2%) was introduced in 2005. Most IT services, telecom services and media products came under the purview of the Service Tax. Although tax rates are still high, the continuous effort of the central government to rationalise taxation procedures and to promote a single-point tax payment has eased matters for companies.

The most recent Union Budget of 2007–2008, announced on 28 February 2007, has brought IT service companies under the Minimum Alternate Tax (MAT) regime and has reduced some of the tax sops these companies have enjoyed so far. In addition, the Education Cess was increased from 2% to 3%. This has an immediate impact on the effective rates of all corporate and individual taxes on which it is levied, including income, capital gains and service taxes. Also the Dividend Distribution Tax was raised from 12.5 to 15% (effectively 16.995% with a surcharge of 10% and the Education Cess of 3%). However, technology business incubators are now exempt from the Service Tax. The new tax rates came into effect on 1 April 2007.

2.5 Population, education and research

India has been traditionally a small spender on education and health. These sectors are largely suffering because of (past?) government apathy. Several leading economists and social scientists have expressed their concerns over the increasing gap between India's 'haves' and 'have-nots'. Significant efforts still need to be undertaken by the central and local governments to improve the overall standard of living of the common people and to reduce the level of discord arising because of the social gap.

Nevertheless, the demographic factor is acting in India's favour. While 27% of the population in the BRIC economies belong to the age group of 15–29 years, the corresponding figure in the developed countries is only 18%. In India, the demographics are further skewed towards the youth with close to 37% of the population belonging to the age group of 15–35 years (compared to 25% in China) (Bhat 2001, MHRD Educational Statistics). India's vast talent pool combined with relatively low labour costs have created a shift towards export and overseas job markets, thus contributing to the current outsourcing boom. The young population also constitutes a growing and increasingly savvy market for a range of products and services.

There has been a lot of talk about the size, growth, preferences and purchasing power of the Indian middle class. The conventional wisdom is that this middle class is some 200–300 million strong and that together with a very rich upper class (which India has always had) these affluent Indians would form a very attractive consumer base for multinational product companies. However, the Indian middle class is – at least for the time being – still different from its European or American counterpart in terms of its ability and willingness to spend on expensive branded products. In India, one can qualify as a member of this revered class by earning more than EUR 5000 annually. Most of these middle class people are very price conscious. The marketers of foreign consumer goods have learned that most of the customers of expensive branded products, including imported alcohol, apparel and especially cars, originate from within the one million households (or around six million people) of the very rich. Of course, hundreds of millions of Indian buy manufactured goods, but mostly basic commodities and cheaper Indian-made products. (The Hindu, 22 May 2005.)

In India there is a large appetite for formal education. This stems from the strong belief that social and economic uplift is possible only through education, which is one reason why India churns out around 350,000 engineers every year. However, although the Indian tertiary (i.e. postgraduate and PhD) education system is impressive in terms of numbers, it also needs to be developed. One of the reasons that have adversely affected India's innovation capabilities is the limited amount of universities and educational institutes with world-class Master's and PhD programmes. Some Indians are of the opinion that the only world-class institute in the technology and engineering area that is situated in India is the prestigious Indian Institute of Science (IISc) in Bangalore. Others maintain that despite the relatively good reputation of Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIMs) in India and abroad, a great deal of the research and development work that is carried out in those institutes is grossly inadequate in the Indian context. In particular, a greater emphasis on applied R&D has been demanded (Far Eastern Economic Review, Jan/Feb 2007).

The IIT and IIM graduates, however, certainly represent the elite among all Indian university graduates. For example, each year around 125,000 to 150,000 candidates apply for admission to the IIMs, out of which 10,000 candidates are shortlisted on the basis of the Common Admission Test that is jointly-administered by all IIMs. Finally, after another round of interviews and discussions, about 1,200 candidates get to enrol at the IIMs. This means that on average less than one per cent of the applicants will be selected. Moreover, around 30% of the fresh graduates are recruited by foreign management consultancies and other professional services firms directly from the institute, while the rest land 'good jobs' in India[5]. The real question, however, is the following: are they and their peers sufficiently well-equipped and motivated to take up the challenge of developing Indian society and economy as a whole – or are the fruits of India's relatively few high-calibre tertiary institutions picked up and consumed by foreign multinationals to serve the good of the Institutional Investor? Answering this question is unfortunately beyond the scope of this study!

[5] Ref.: Personal communication with the professors and PhD candidates of IIMB.

3. IT services

3.1 Introduction

The figures for the financial year 2005–2006 indicate that the Indian ICT sector seems to have got its act together. The ICT sector, including applications, hardware, IT services and ITES/BPO, put up an impressive show with USD 40 billion in revenues and growth of around 30% from the previous year. The share of exports was USD 23 billion (NASSCOM, 2006). Another great piece of news for the Indian ICT sector was that the domestic segment, which until now has remained a sort of poor cousin to the lucrative export market, seems to have come of age, too. The domestic market registered strong growth and is now contributing almost 45% of the combined revenues, although the biggest players are still very export-oriented.

Indeed, it seems that Indian IT services and ITES/BPO have really come a long way. The country's first foray into the IT arena took place only in 1984, mainly through some lower-end software development and hardware maintenance activities. After economic liberalisation, India started to build its case for cheaper services in software development around the latter half of the 1990s. However, the key break for the industry came in the form of the Y2K crisis, which in a way opened the world for India. Since then the global demand for IT and outsourcing services has been strong, which has enabled the Indian ICT sector to grow at a CAGR of 27–30% over the last 5–6 years. The growing contribution of the ICT sector to Indian GDP is another indicator of its increasing significance. Its share of GDP has risen from a mere 1.2% in 1999–2000 to 5.4% in 2006–2007, and it is estimated to touch the figure of 7% during financial year 2008–2009.

IT-related exports from India have grown from USD 12.9 billion in 2003–2004 to USD 17.7 billion in 2004–2005 and to USD 23.6 billion in 2005–2006 (Figure 1). Industry experts predict that export revenues will exceed USD 30 billion during financial year 2006–2007, which would imply a growth rate of 29–30% from the previous year. It has been estimated that India's IT-related exports could reach USD 100 billion by financial year 2010–2011 (NASSCOM & McKinsey, 2005). That would call for a CAGR of 33.7% over the five-year-period from 2005–2006 to 2010–2011 – a figure that may prove too optimistic even during the present boom. Nevertheless, of total exports in 2005–2006, software and IT services grew by 32% to USD 17.3 billion, while the ITES/BPO segment grew by 37% to USD 6.3 billion. For financial year 2006–2007 NASSCOM has estimated that exports of software and IT services will increase to USD 21–22 billion (by 21.4–27.2%) and BPO services to USD 8–8.5 billion (by 27–34.9%).

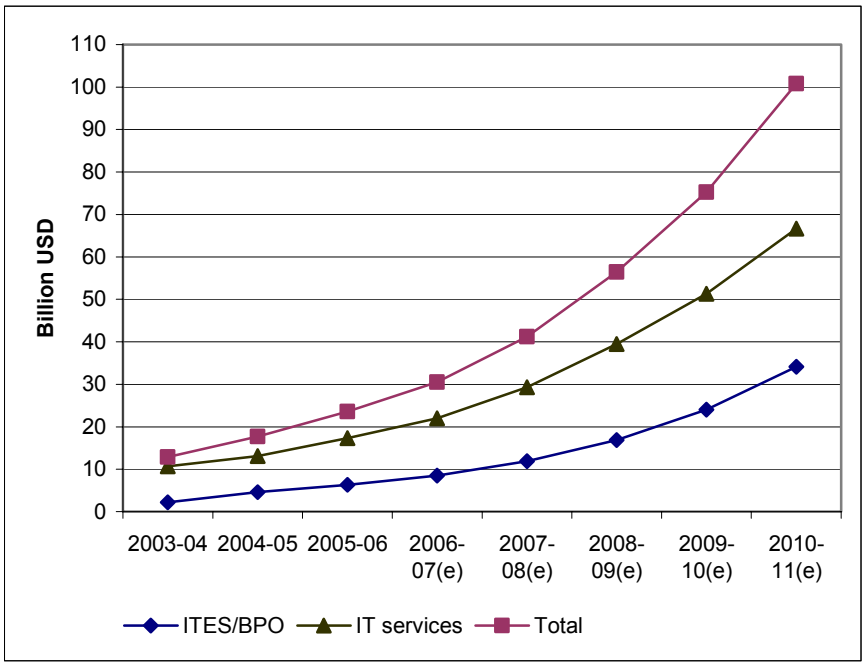

Figure 1. The realised and estimated (e) future growth of IT-related exports from India between 2003 and 2011 (source: NASSCOM, 2005, 2006).

For the coming years, most analysts feel that the growth of the BPO segment will be higher in comparison with software and IT services. While BPO is a smaller business segment, many BPO companies are already serving major Fortune 500 companies. Outsourcing firms are also starting to penetrate into higher-end services, and some Indian IT infrastructure managers are already handling the global networks of major international corporations. Following the globalisation of the industry, companies like Aptech and NIIT, which mainly operate in the field of IT training, have also already entered the Chinese, UK and US markets through acquisitions.

3.2 The major Indian players

Tata Consultancy Services (TCS) is the largest Indian IT service provider, followed by Infosys and Wipro (Table 4). These three players entered the ICT market well before others in the 1980s. While TCS and Infosys focused on software from the very beginning, Wipro's entry into the market was through hardware maintenance. These three companies offer a range of services across the different stages of the software development and maintenance lifecycle.

Table 4. India's top 10 in IT services in 2005 (sources: NASSCOM, company reports)[6].

Rank	Company	Revenues (Rs. bn)
1	Tata Consultancy Services (TCS)	97.27
2	Infosys Technologies	71.30
3	WIPRO Technologies (without BPO)	60.75
4	Satyam Computer Services	35.21
5	HCL Tech	31.80
6	IBM India	22.97
7	Patni Computer	14.13
8	I-Flex Solutions	11.39
9	Mahindra British Telecom	0.91
10	Polaris Software	0.79

Initially, in order to capture the benefits of their relative cost advantage, these companies sold labour-intensive system development and maintenance services mainly in relation to Y2K and migration projects (from old legacy systems to new ones). However, owing to the growing competition from peers as well as from other countries, the major players have started offering "end-to-end" services that can also include – in addition to application development and maintenance – also technology and architecture consulting, infrastructure management, and user support (i.e. help desks). Currently, most of the biggest players are focused on the export market: 90–98% of their business is conducted with foreign clients. A large majority of projects and revenues are made in the USA (around 70%), while the share of the UK and Continental Europe is about 20% and Asia-Pacific (including India) about 10%. It is ironical that in spite of the presence of so many large Indian companies, the domestic IT services market is dominated by foreign multinationals, IBM India being one of the largest players in this market.

Some of the larger IT service companies have diversified into BPO operations. Earlier, there was a conscious effort to build separate brands for different service lines. However, the parent companies and their BPO arms are currently gravitating towards single entities. Infosys has increased its stake in its BPO arm Progeon. Similarly, Wipro is discontinuing the Spectramind brand and integrating its operations under Wipro BPO. In effect, these firms are moving towards the model applied by players like Accenture, TCS, i-Gate, Xansa and Cognizant, which have always offered IT and BPO services under a single brand. The market trend is thus providing the client with a one-stop-shopping opportunity, rather than having the client deal with multiple entities for varied service requirements.

[6] Note that since HP and Accenture do not reveal the revenues of their India operations, they were omitted from the list. In practice, however, they are most likely among the top 10 IT companies.

The current status of the biggest Indian IT service firms can be summarised as follows (a more detailed analysis of applied product development and service provisioning models and practices will be provided later in this chapter):

- A broad range of services. All major IT service companies provide comprehensive turnkey solutions and are moving up in the value chain. For example, Wipro and Infosys are planning to invest more in the development of their domain consulting practices.
- Strong export focus. The US market alone accounts for around 70% of all revenues. Asia is currently a relatively small market, but is expected to grow much faster. European clients are largely concentrated in Western Europe and especially in the UK and Ireland. So far the domestic market has been 'left' mostly for foreign multinationals, such as IBM, HP and Accenture, and for smaller local players.
- Focus on the marketing of services rather than the development of products or IPR. However, some companies, e.g. TCS, Infosys and I-Flex Solutions, have developed their own banking and transaction processing products and have a large client base in the domestic market as well as some customers in the Middle-East and Africa.
- Some of the IT majors, e.g. Infosys, Wipro and HCL Tech, have expanded into BPO operations. Earlier these operations were separated from the mainstream IT services. Recently there has been a conscious move towards greater integration of these services along with the parent company.

Tables 5, 6 and 7 below provide a brief introduction of the top three Indian IT service companies.

Table 5. Fact sheet on TATA Consultancy Services (TCS) Limited.

Website: http://www.tcs.com/
General information: Founded in 1968. Listed on the Bombay Stock Exchange. Tata Sons Ltd. holds a majority stake of the company (over 83%), while institutional investors own about 11% and the Indian public about 5%. The company is headquartered in Mumbai, India.
Management: Chairman: Mr. Ratan Tata; CEO & MD: Mr. S. Ramadorai.
Financial performance (FY 2005–2006): Revenue Rs. 112.36 billion (EUR 1.9071 billion); PBDIT[7] Rs. 34.22 billion (EUR 600 million); PAT Rs. 27.17 billion (EUR 477 million).
Employees (March 2006): 62,832.
Main services, products and customers: Services include consulting, IT services, IT infrastructure, business process outsourcing, engineering and industrial services, and product-based solutions. The company's product offerings cater to various industries and practices, including banking, transaction management, supply chain management, and hospitals. Customers mainly represent the BFSI (banking, financial services and insurance) segment, telecom, manufacturing, media and entertainment, retail, transportation, life sciences and healthcare, local and central governments, and energy and utilities.
Major competitors: With regard to export markets, the other major Indian IT service providers, Infosys and Wipro. In some projects, bigger multinationals like IBM and Accenture are also competitors. Also in the domestic market TCS competes mainly with the subsidiaries of these large multinationals.
Future visions: The corporate vision for the next decade is to place the company among the global top-10 consulting firms in terms of profitability, technology leadership, revenues and the number of employees. There are some concerns about profitability because of increased competition from other companies. TCS intends to add the weight of higher-end and end-to-end services (e.g. business consulting) in its portfolio to boost profitability.
Presence in Europe: The company has delivery centres in Budapest, Hungary, and Guildford, UK, and sales offices in many European countries, including the capital cities all five Nordic countries: Copenhagen, Helsinki, Oslo, Reykjavik, and Stockholm.

[7] PBDIT = Profit before depreciation, interest and tax.

Table 6. Fact sheet on Infosys Technologies Limited.

Website: http://www.infosys.com/
General information: Founded in 1981 by Mr. Narayana Murthy and six other partners as a private limited company. Became a public limited company in 1992. Listed on the Bombay Stock Exchange and NASDAQ (INFY). The company is headquartered in Bangalore, India.
Management: Chairman & Chief Mentor: Mr. Narayana Murthy; Co-Chairman: Mr. Nandan Nilekani (CEO until spring 2007); CEO & MD: Mr. Kris Gopalakrishnan.
Financial performance (FY 2005–2006): Revenue Rs. 90.39 billion (EUR 1.59 billion); PBDIT Rs. 31.90 billion (EUR 560 million); PAT Rs. 24.21 billion (EUR 425 million).
Employees (March 2006): 44,658.
Main services, products and customers: Services include application design and development, corporate performance management, enterprise quality services, infrastructure services, packaged application services, product engineering and systems integration. The company also provides a range of BPO and consulting services. The BPO services arm was earlier known as Progeon, while the consulting arm is called Infosys Consulting. Customers represent a number of different industries, including aerospace and defence, automotive, the BFSI segment, packaged goods, discrete manufacturing, communication services, healthcare and hospitality, media and entertainment, energy and utilities, and transportation. Infosys' presence in the domestic market is minimal. It has, however, sold its banking solutions product to some of the leading banks in the country.
Major competitors: With regard to export markets, the other major Indian IT service providers, especially TCS and Wipro. In some projects, bigger multinationals like IBM and Accenture are also regarded as competitors.
Future visions: This rapid growth in revenues is expected to continue in the future. The USD 2 billion milestone is expected to be surpassed in 2007. The current focus is on maintaining fast growth and controlling costs. Infosys is also exploring new geographical markets and is also open to inorganic growth through mergers and acquisitions. The company is expanding the range of services offered to the client with a view to providing higher-value services, such as business consulting.
Presence in Europe: The company has development centres at London, UK, and Brno, Czech Republic, and sales offices in many European countries, including the capital cities of four Nordic countries: Copenhagen, Helsinki, Oslo, and Stockholm.

Table 7. Fact sheet on Wipro Technologies Limited.

Website: http://www.wipro.com/
General information: Founded in 1945. Originally incorporated as an oil factory (which is still visible in the company logo!). Listed on the Bombay Stock Exchange and NYSE (WIT). The company is headquartered in Bangalore, India.
Management: Chairman and CEO: Mr. Azim Premji.
Financial performance (FY 2005–2006): Revenue Rs. 97.708 billion (EUR 1.714 billion); PBDIT Rs. 21.313 billion (EUR 374 million); PAT Rs. 20.674 billion (EUR 363 million). Note: Revenue and PBDIT have been extracted from the consolidated profit and loss statement of Wipro Limited and include, in addition to Wipro Technologies, also Wipro Infotech (India and Asia operations), BPO services, and acquisitions. PAT also includes consumer care and lighting, and others.
Employees (December 2006): Over 61,000.
Main services, products and customers: Wipro Technologies has classified its offerings under IT services, product engineering solutions, technology infrastructure services, business process outsourcing services and consulting services. IT services include e.g. application development and maintenance, application performance management and support, e-procurement, ERP systems and packaged software, industrial automation, business intelligence, systems integration, and testing services. Wipro's clients represent a range of industries, including the BFSI segment, aerospace and defence, automotive, consumer electronics, consumer packaged goods, retail, energy and utilities, government, health sciences, manufacturing, media and entertainment, mobile devices, storage technologies, telecom, and travel and transport.
Major competitors: With regard to export markets, the other major Indian IT service providers, especially TCS and Infosys.
Future visions: Wipro is expecting a steady growth in its business. However, Wipro aims to improve its portfolio e.g. with regard to infrastructure and consulting services. According to the chairman, Wipro has to pursue leadership positions in the main service segments, i.e. IT services, R&D and BPO. While the company has presence in all major regions, it plans to explore European markets further.
Presence in Europe: The European headquarters is located in London, UK. Wipro has development facilities in Reading, UK, Kiel, Germany, and Tampere, Finland, and sales offices in many European countries. The Scandinavian sales offices are located in Espoo, Finland, and Stockholm, Sweden.

3.3 Research and development practices

The big Indian IT service companies spend around 4–8% of their revenues on research and development. Most of these companies apply formal product development practices. Although applied processes differ across companies, the main stages remain broadly the same. In most cases each new idea undergoes an initial screening based on a set of predefined criteria. The screening can be carried out by the initiator him/herself or by a nominated team. After having passed the initial screening process, the idea is then submitted to circulation for comment. During this phase the idea should win support at least from one major unit within the organisation (e.g. industry vertical, technology practice or corporate planning). The feasibility of the idea is finally evaluated by a high-level decision-making body that also allocates the resources and determines the expected deliverables and deadlines for approved development projects. If the development project produces tangible results, an initiative is taken up to promote the product or service to a specific client or set of clients. The applied procedures can also vary depending on the source and nature of the new idea (e.g. technology v. solution).

New inventions made as part of ongoing customer projects typically relate to process improvements, while the development of new tools, products and services tends to take place in the form of centrally funded and co-ordinated projects. In some cases, however, a 'point solution' developed for an existing customer can constitute the starting-point for a new product development process (aiming at a more generic product). Both corporate and business unit funding are used to support the development work. In general, the applied evaluation and product development practices appeared to be quite formal. Identified (existing) market needs and financial calculations seemed to play an important role in the evaluation process. Accordingly, the companies' marketing and corporate planning departments, as well as people working in the customer interface, invested a great deal of time and resources in the acquisition and analysis of market and competitive intelligence. In few cases an interesting idea with business potential had been hived off into a separate entity when it could not taken further inside the company.

As large organisations employing dozens of thousands of people, TCS, Infosys and Wipro all have their technology-oriented units and functions. Their main task is to build and maintain (technological) competences needed in the development and deployment of customer solutions and services. In this study we did not try to define the level and scope of the applied R&D work carried out in those units. Therefore the relative significance of 'science or technology push' as a steering mechanism in the case companies' innovation processes remained unclear. A common belief is that instead of developing and patenting new technology, most Indian IT service providers, including the three biggest ones, prefer to licence the necessary technologies from large technology and product companies and to build their solutions on commonly-used technology platforms. There are only few well-known Indian trademarks in the field of

ICT, which implies greater reliance on the quality of service than brand value as a basis of future growth and revenues.

3.4 Service deployment and key competitive advantages

One of the important aspects of the Indian success story as far as IT services are concerned is the strong offshore model of resource deployment, based on the principles of distributed manufacturing. In short, the idea is to carry out a large part of the development and production of services outside the client's premises whenever possible. That takes place mostly in India due to the cost advantage. Such parts of the process that cannot be transferred abroad, e.g. requirements specification and co-ordination with the client's own staff, are carried out locally (Figure 2).

During the initial phase of the project, a series of meetings is organised with the client and key user groups to understand the problem and to chart possible solutions. In particular, the representatives of the service provider try to get acquainted with the customer's systems, processes and expectations. This understanding is of utmost importance, as it provides the base for the specification and development of the service offering. Following the formal signing of the contract, knowledge acquisition and transfer proceeds with the deployment of a task force to the client's site. The service provider sets up client support teams that start working under the client's management and with the client's corresponding teams. At the same time, an offshore client servicing team is assembled in India on the basis of required skills (service line, industry expertise, technology platforms used, etc.). At this stage the transfer of knowledge and the role of domain experts are paramount.

The bulk of the related development work, which may cover e.g. systems integration, packaged software configuration and/or new application development, takes place in India and is conducted by the offshore servicing team in close association with the local client support teams. Depending on the case, some parts of the development work can also be assigned to the service provider's 'nearshore' development facilities (located in the same or a nearby country). The service provider's project management team looks after the integration of the work packages.

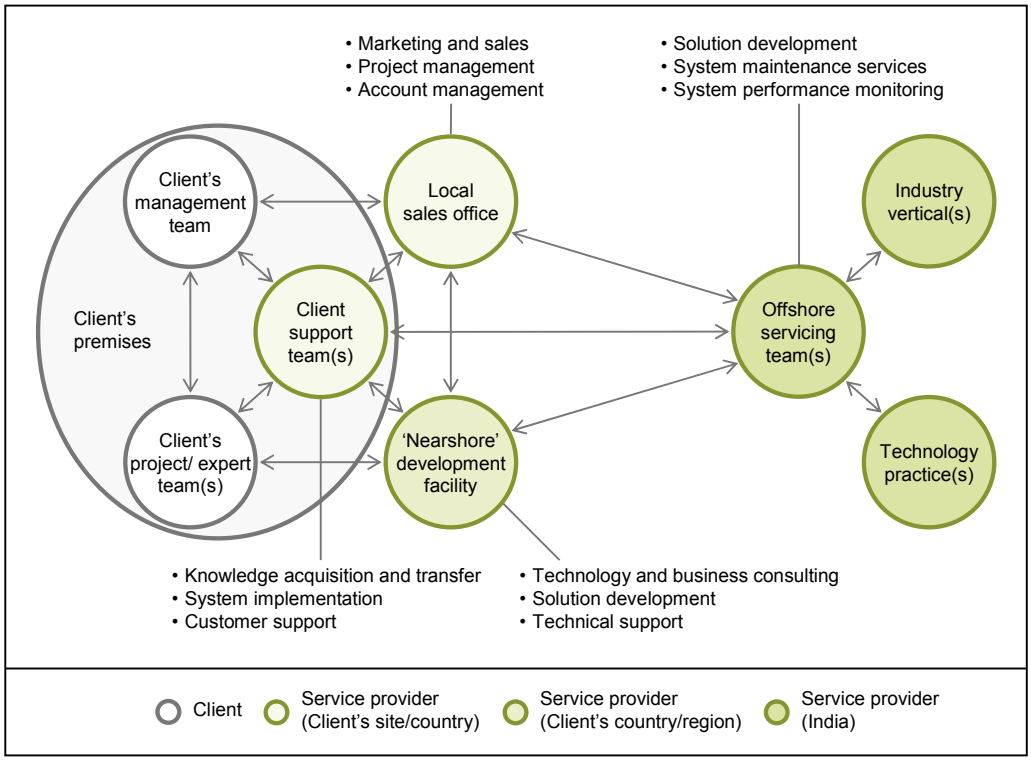

Figure 2. The service deployment model applied by the globally-operating Indian IT service providers: key actors and examples of related tasks[8].

Following the completion of the development work, the knowledge transfer process is reversed: the client support teams introduce the solution to the customer and provide hands-on support during the implementation process. Depending on the level of complexity and the nature of the agreement between the client and the service provider, a dedicated team may stay stationed at the client's premises for a designated period of time. However, if the question is about a long-term outsourcing deal, the service provider will gradually assume full responsibility for running the service or practice concerned. This is usually the case with system administration services. In such a case the contract will include a clear description of the expected service level and related metrics, as well as performance-related compensation and penalty clauses.

One important prerequisite for the success of this model has been the availability of large numbers of qualified engineers at low cost. That means that resource deployment has been relatively easy for many of the leading IT service companies. Indian universities produce close to a million graduates every year, and about 350,000 out of

[8] Note that companies have built their practices on different organisational arrangements and also use different terminology. The model presented in Figure 2 tries to characterise some generic elements of the applied practices and is by no means comprehensive.

them are engineers across various disciplines. This ability of being able to ramp up 'production capacity' fast during projects is one of the key factors in India's success.

Many of the larger IT service companies have gathered experience in various industries. Initially, a large part of poorly-paid development and maintenance work was taken up by the fledgling companies. They needed to generate volume to sustain the low-cost model, which gradually resulted in the accumulation of a large experience base across various industries. The previous mundane work of managing legacy systems and implementing subsequent migrations to other platforms, as well as the development and customisation of smaller modules for large software products, has increased their understanding of a wide range of industry requirements. This learning has enabled these companies in turn to offer their services across a wide spectrum of industries, which is fuelling the second phase of growth in IT exports. Developing sufficient domain expertise has nevertheless proved a challenging task (cf. Chapter 3.9).

A large part of the business that the IT majors undertake comes from repeat customers. To the credit of the Indian IT service companies, they have usually delivered according to their promises. That is why customers have felt confident in their capabilities, and have been willing to offer them more work in related areas. For most projects, cross-selling of other services and solutions has also been key to sustained growth. IT majors like Infosys, Wipro and TCS are currently offering end-to-end services for their clients, from software development to technology consulting and from BPO to business consulting, which opens up scope for greater cross-selling opportunities for services for a given client.

Most of the IT service majors have also focused on another dimension since the very beginning. To address the perception among many potential Western clients that Indian companies may lack the necessary discipline or process focus when implementing demanding software projects, most of the companies in the field, including all major players, have invested in acquiring various certifications. Statistics show that over 70% of all CMM[9] certified companies are from India. Apart from this, a large number of companies have adopted PCMM (People CMM), CMMI (CMM Integration), ISO as well as Six Sigma certifications. Although there are different views on the practical impact of such certificates, Indians themselves seem to value them and are clearly proud of their achievements.

[9] The Capability Maturity Model, proposed by the Software Engineering Institute at Carnegie Mellon University, USA.

3.5 The ITES/BPO segment

The typical domains in which business process outsourcing services are offered include sales and marketing, customer care, business administration and supply chain management. The Indian BPO industry came into being in the 1990s, mainly as a result of the entry of American Express and General Electric (GE) into India. Their captive units focused on low-end data entry and processing work, and the main objective was the introduction of cost savings. The later part of the decade witnessed BPO taking up a larger share of the business services domain. Although a large part of the current BPO work involves customer contact and support operations, opportunities are opening up in higher end (i.e. more lucrative) segments, for example in end-to-end transaction processing and analytics.

The ITES/BPO segment had a value of USD 9.4 billion in 2005–2006 (exports USD 6.3 billion) and is expected to grow to USD 12.6 billion in 2006–2007 (exports USD 8–8.5 billion), an increase of 34% over one year (NASSCOM, NeoIT). The segment has registered impressive growth over the last five years, with an average annual growth rate of 36%. The BPO industry now employs close to 400,000 people in India and is expected to add another 600,000 during the next two years. The cost advantage of operating out of India has been the main growth driver. According to IDC India an Indian call centre agent costs around USD 7,500 per annum, including all employer costs (Directions 2007).

As in the case of IT services, the largest Indian ITES/BPO service companies are heavily dependent on export markets, of which the USA is the most important. Although the share of exports of all revenues is 67% for the whole sector, the top 15 BPO firms receive around 66% of their revenues from the USA alone and around 20% from Europe. The remaining 14% includes both India and the rest of Asia-Pacific. In general, many of the BPO firms are currently targeting more business in the Asia-Pacific region.

The major ITES/BPO firms in India are GENPACT (part of the GE Group), Wipro BPO (earlier Wipro Spectramind), WNS Global Services, IBM-Daksh (earlier Daksh e-Services), HCL BPO Services, ICICI OneSource (renamed as Firstsource in 2006) and others. According to estimates from industry sources, there are close to 450 ITES/BPO firms operating in India today. Since most of these companies are not listed, or are part of bigger enterprises, revenue figures are not usually available. It is nevertheless reckoned that about seven of these firms have revenues in excess of USD 100 million (the revenues of GENPACT, for example, were Rs. 22.2 billion or USD 542 million in 2005–2006). Around 65% of the BPO business in India is carried out by the captive

units of large multinationals like GE, while the rest is shared by many stand-alone firms and the BPO arms of major IT service companies.

In terms of the different areas of services offered, the most important is customer care and support services, which constitute about 34% of the combined earnings of the BPO sector. Finance (22%), content development (19%) and administration (13%) are the other major contributors. The customer industries that contribute most to revenues are the BFSI sector, telecoms, healthcare, and hospitality. There has recently been a surge in the number of ITES/BPO firms entering specialised niches in the market. Some BPO firms have decided to focus on specific industry verticals for which they offer high-end analysis services (often referred to as knowledge process outsourcing or KPO). They may include, for example, market research, data mining or bioinformatics. Traditionally, this kind of specialisation has been typical of multinationals with captive BPO centres in India. However, in the recent past, smaller Indian firms have also entered the fray.

Due to growing costs and the overburdened infrastructure, BPO companies are gradually shifting towards the so-called Tier II cities. Until now the major centres of this sector have been the National Capital Region (New Delhi and surroundings), Bangalore, Pune, Hyderabad, Chennai and Mumbai. However, due to increasing wage and real-estate costs many service providers are now heading towards smaller cities and towns. Tier II cities – like Jaipur, Ahmedabad, Indore, Nagpur, Kochi and Kolkata (formerly Calcutta) – can offer much cheaper access to manpower and real estate. Although some of these cities lack world-class support infrastructure, big companies can often make the necessary investments in the local transportation and communications infrastructure in association with the local government.

3.6 Continental Europe: Language and other issues

Currently, the share of revenues generated in Europe is relatively low for both Indian IT service and ITES/BPO companies. Most major players admit that the European market has huge potential, e.g. in terms of infrastructure management, and that it should not be any different from catering to the US and North American markets. The commonly-cited issue concerning the European ITES/BPO sector is the range of languages. While India has a large number of professionals with high proficiency in English, such numbers are not available in other European languages like French, German, Spanish, Italian or the Scandinavian languages. Many industry experts, however, are of the opinion that major players would be forced to move towards the (Continental) European markets as soon as the ‘low hanging’ US and UK outsourcing jobs have been taken, and before prospective clients start migrating towards cheaper outsourcing destinations,

such as Mexico, the Philippines and China. Others feel that offshoring opportunities are also related to national cultures and their openness to the idea of offshoring work. Some countries like France have been considered difficult in this respect for many socio-political reasons, while most Scandinavian countries appear to be more flexible about the issue.

Most voice-based BPO services and some packaged applications need local language support. These segments are currently serviced from near-shore operations centres from East European locations (e.g. Hungary and Czech Republic) and Ireland. Some of the IT majors have also set up operations from Mauritius with a view to catering to French-speaking clients. There is a growing urgency among the larger IT service and ITS/BPO companies to look at the European markets for language-independent services (that are mostly IT services, sometimes also back-office operations of large multinationals with English as an official language) that can be provided in the short-term and without excessive investments in building language capabilities. However, many Indian players are actively upgrading their capabilities also in this sector. Some are facilitating knowledge transfer by relocating expatriates to their locations in India. This indicates that there is a growing willingness among European companies to explore the possible cost-saving opportunities via the outsourcing route.

3.7 The Indian domestic IT and ITES/BPO market

The domestic IT market has been growing fast during recent years. The market recorded significant growth of nearly 22% during 2005–2006, touching Rs. 492.54 billion (slightly over USD 12 billion) in revenues (NASSCOM). Growth is expected to continue, although the average annual growth rate is expected to decrease to around 15% by the end of the decade. Analysts predict, however, that the domestic IT market will reach Rs. 1071.22 billion (around USD 26 billion) during financial year 2010–2011 (Table 8). The growth in the domestic market can be attributed to high GDP growth, which is expected to continue in the coming years, and to a greater sense of acceptance of IT among Indian businesses.

Table 8 indicates that the largest segment, BFSI, is still expected to grow steadily towards the end of the decade – albeit slower than others due to the already high levels of ICT usage – and is likely to be the second most important segment in the market in 2010. The ‘Others’ segment, which is currently extremely fragmented because of definitional inaccuracies, is expected to grow much faster and to become the largest segment by 2010. This segment mainly comprises small and medium-sized businesses (SMEs) who are at the stage of adopting smaller enterprise solutions. However, the challenges are many, as these SMEs represent a wide range of industries with varied

requirements. Most of the larger enterprise solution providers are not interested in catering for this market, as margins are significantly lower. There will also be strong growth in the government and education segments as well as in retail, which is currently undergoing a steady evolution.

Table 8. The Indian domestic market for IT and related services. Important customer segments and estimated (e) future growth (Sources: IDC, NASSCOM 2006).

Customer segment	2005–2006		2006–2007 (e)		2010–2011 (e)		CAGR (2006–2010)
	(Rs. Cr)	Share	(Rs. Cr)	Share	(Rs. Cr)	Share	
BFSI	11,209.3	23%	14,000.2	23%	21,959.9	20%	12%
Govt. & Education	6,836.0	14%	8,590.0	14%	16,389.6	15%	18%
IT services & BPO	6,520.4	13%	8,566.7	14%	16,603.9	16%	18%
Communications	6,017.4	12%	7,465.6	12%	11,997.6	11%	13%
Manufacturing	8,048.5	16%	9,442.8	16%	15,746.9	15%	14%
Others	10,621.9	22%	12,724.2	21%	24,423.7	23%	18%
Total	**49,253.5**	**100%**	**60,789.5**	**100%**	**107,121.6**	**100%**	**15%**

One of the peculiarities of the domestic IT market is that it is dominated by foreign multinationals (MNCs) like IBM India, Accenture and HP. This seems quite ironical given the presence of so many large Indian IT service companies that have made their mark in the international market. Apart from TCS and NIIT – which receive significant revenues from their domestic operations – other Indian IT majors are almost entirely dependent on export revenues. Although many foreign players have partnership agreements with Indian IT service providers, the extent of participation by the leaders like TCS, Infosys, and Wipro has been limited. According to experts, Indian companies have low levels of confidence in Indian IT majors for providing higher end services, and prefer to have MNCs employed for an end-to-end service agreement. Most of the MNCs who have their own branded products, for example Oracle and SAP, prefer to supply the product and carry out the necessary implementation through smaller IT service partners. Since the margins in services are lower, many of the leading companies are usually not too keen to enter this market. The export opportunities are simply much more lucrative.

The main reason for low domestic market penetration is therefore the focus on global markets for better profitability. Most of the IT service majors feel that the Indian market is extremely price-sensitive and that domestic clients do not value high-end services. However, TCS has taken up a large number of e-governance projects initiated by state governments and is working closely with other semi-governmental institutions. TCS is the closest competitor to MNCs and has tried to leverage domain expertise by working closely with other large companies of the Tata Group, such as Tata Motors (automobiles), Tata Steel (steel and manufacturing), Titan (manufacturing), etc.

Furthermore, most of the MNCs have focused strategies for specific geographies, which means that their business development efforts in India are directed towards Indian clients. Therefore, the 'indifference' of Indian IT majors, coupled with the strong market development focus of the MNCs, has resulted in a much larger market share for the MNCs.

Secondly, the domestic IT services market is still in its nascent stage. Most Indian companies do not appear to have any particular IT strategy and the use of information technology is still relatively rare. Many Indian companies are not simply aware of what possible benefits IT could provide. This is in sharp contrast with the developed markets in North America, Europe and in many smaller Asian countries, especially Taiwan, Singapore, South Korea and of course Japan. Most Indian IT service companies have focused on application development and maintenance for mature clients. Only recently they have developed capabilities for providing a wide range of services and have assumed the role of an end-to-end or turnkey service provider. In consequence, many Indian companies have been more comfortable handing over IT overhaul projects to MNCs and their like with long experience of turnkey solutions.

3.8 Ongoing and expected future development trends

The most notable ongoing development trends in the Indian IT and BPO service sectors are the move towards 'total solutions', intensified marketing of BPO services in Continental Europe, investments in better transition and process management, continuing growth and restructuring in the domestic ITES/BPO market, and the development of more localised content and software for the domestic market.

Move towards total solutions

Key trends in the market indicate a steady movement towards comprehensive service offerings. Many companies in India and abroad are looking forward to having more tangible and measurable benefits from their IT-spends. In addition, rather than purchasing piecemeal solutions from various IT vendors, an increasing number of companies prefer to purchase complete solutions from capable service providers. As a result, all major Indian IT service providers have been expanding and developing their service portfolios with a view to offering one-stop-shopping opportunities for their present and prospective customers. It remains to be seen whether this trend also translates into a greater reliance on partners. At least for the time being, the major IT companies in India have preferred to source their projects from inside the company.

Marketing of BPO services in Continental Europe

Europe can offer great opportunities for BPO service providers, as the market is currently mostly untapped. Traditionally, Indian BPO companies have found it difficult to enter the Continental European (i.e. non-English speaking) market because of obvious reasons: different languages as well as many socio-political reasons (e.g. greater resistance to free trade and competition than in the Anglo-American culture). To circumvent this challenge, the current focus has been on exploring new possibilities in language-independent and knowledge-intensive services, e.g. in business analytics. Some of the Indian BPO companies have opted for the 'near-shore' delivery model to cater for the European market, thus following the example of the major Indian IT service companies. For example, HCL Technologies has set up BPO units in Ireland to cover the UK and Continental European markets with the requisite language skills. Similar centres are planned to be established in the Eastern European countries in the coming years. With the integration of Romania and Bulgaria into the extended EU family, further possibilities for near shore operations are opening up. In addition, some Indian players are facilitating knowledge transfer by relocating expatriates to their locations in India.

Investments in transition and process management

A typical offshoring project takes about three months. Simpler processes take less time, while complex ones require much more. The most critical aspect of migration is knowledge transfer, which can take up to two-thirds of the total time. In the case of a complex process, knowledge transfer is often takes 19–20 weeks (BPO Industry Report 2006). KPO processes like data analysis and modelling or health claims adjudication would take longer to migrate because of the underlying complexities. Most of the leading ITES/BPO organisations are currently employing dedicated teams with process management expertise (e.g. 6-sigma) to create operational service level agreements (SLAs) with their customers. SLAs also form the basis for value-based pricing – an area that is receiving an increasing amount of attention among the leading IT and ITES/BPO service providers.

Growth and restructuring in the domestic ITES/BPO market

The domestic ITES/BPO market is currently in an adoption mode and, owing to the current low levels of penetration, the market is expected to continue its steep growth. Pantaloons, the retail chain, and Pizza Hut are quite positive about telemarketing opportunities and are actively scouting for staff in this area. Bharti Airtel has recently signed up four international BPO companies for five years to manage call centre operations. The deal was worth Rs. 1000 Crore (around EUR 175 million). Indian Railways is also considering building call centres across the country that would handle

inbound calls to its single 3-digit number (139). These initiatives indicate that there is a greater awareness and willingness to adopt ITES among Indian companies. While customer care is still expected to remain the largest segment, some companies are expected to move towards outsourcing a wider range of services in the coming years.

There will be shift from captive BPO units (providing services mostly for their own parent companies) towards third-party BPO entities. The emergence of GE from a captive BPO unit into GENPACT, a large third-party BPO service provider, Sequoia Capital's investment of USD 22 million in 24/7 Customer, and Warburg Pincus' investment in WNS are indicators of recent market shifts. Venture capitalists, private equity funds and larger Indian corporations will play a leading role in the shaping of the mergers and acquisitions in this industry. Already some of the prominent private equity funds have played an important role in leveraged buyouts of US-based operations on behalf of smaller Indian companies.

More localised content and software for the domestic market

To encourage IT usage among customers and to improve penetration in the market, software majors are planning to bring in localised and lower-priced versions of their products. Some of these majors are also working with domestic companies to offer solutions in local languages. The same development trend is visible in telecoms and online media (see Chapter 4 for more details).

3.9 Main areas of concern for Indian IT and ITES/BPO firms

There are also many challenges. Some of these have been recognised and are being actively acted upon, while others have proved to be more demanding to cope with. This final section of Chapter 3 summarises the authors' conceptions of the major pain spots of the Indian IT service and ITES/BPO industries.

A declining cost advantage

There is a growing concern among industry players about the long-term viability of the prevailing cost advantage (or wage-arbitrage) model. Indian IT service companies are currently witnessing significant pressures on pricing and profitability – for a number of reasons. Clients in North America and Europe are increasingly aware of the relative cost advantage of Indian firms and are therefore negotiating harder for prices. In the meantime, however, employment costs are rising fast in India. For example, the salaries for technologists are currently increasing at an alarming rate of around 12% annually. Also other countries are entering the game. Many Indian firms providing low-end IT and BPO services run the risk of losing out in the coming years as companies operating

out of cheaper destinations, such as the Philippines, expand their business. Moreover, owing to the increasing volume of foreign investments in the domestic equity markets, pressures on profitability are also likely to increase. All these factors have contributed to the reduction in profits in basic 'low-end' services. Many Indian players have nevertheless managed to increase their revenues as well as profits, mainly through offering a wider range of services and by moving towards higher-end services with better margins.

Insufficient focus on innovation and IPR

Although many of the leading IT service companies in India have set up various research labs and 'innovation cells' to promote and fund new ideas from within the organisation, in most of the cases they have not been able to capitalise effectively on these initiatives. By and large, the primary focus has been on creating topline growth while incentives for the deployment of resources into risky research and new product development activities have been relatively low. Barring a few success stories from Infosys and I-Flex Solutions (which was recently taken over by Oracle Corporation for a sum of USD 1 billion) in the banking sector, the development of strong branded products has proven difficult for most Indian IT service firms. It remains to be seen how the Indian IT majors will cope with mounting pressures on profitability in the future. The lack of strong IPR will nevertheless make it more difficult to sustain good profit margins in the midst of tightening international competition. In addition, since most of these organisations are very bottom heavy as a result of the fast growth rate and the incessant recruitment of fresh graduates (mostly with a Bachelor's degree in some engineering discipline), the proportion of employees with a Master's or PhD degree is relatively low. This poses further challenges to demanding R&D and marketing work.

Difficulty of developing the necessary domain expertise in IT and ITES/BPO

Most of the fresh engineers hired by the Indian IT majors become career software developers and are expected to pick up sector-specific knowledge as part of their work. Many of these services companies also provide their employees with short-term training programmes for picking up the necessary skills. This has been the dominant thinking for a substantial period before and after the turn of the century. However, there has been growing scepticism about the efficacy of this model. Many prospective customers are said to have rejected bids from Indian IT service firms because of their lack of exposure to and expertise in specific domain areas. In order to build up this domain-related expertise, IT service companies are hiring senior executives from other industries and are trying to harness their expertise.

Also many ITES/BPO service providers have been confronted with the same problem, especially when it comes to high-end knowledge-intensive services. Many companies in

the sector are facing problems in recruiting professionals in verticals like insurance, healthcare and legal services. For example, in insurance, where actuarial exposure is usually required for employees, capable candidates are currently in short supply. In some fields of healthcare a medical degree is considered necessary, but most doctors and general practitioners are not willing to join this profession. Industry experts have pointed out huge opportunities for Indian companies also in the mortgage and legal sectors (where the value of the attainable market has been estimated at USD 20 billion and above). However, taking advantage of this opportunity would require extensive training in US mortgage and civil law, an area of expertise that is yet to be developed.

High attrition rates and training costs

The IT service and ITES/BPO segments suffer from high attrition rates among employees. While within IT services it is around 18–20%, within ITES/BPO the rate is much higher at 40–60%. These figures translate into huge recruitment and training costs. The largest IT service companies have managed to keep their attrition rates much lower, at around 10–14%, owing to better work content and career prospects available to their employees. Often peer companies 'poaching' each other's employees aggravate this problem of attrition. With training and wage costs increasing, most companies have agreed in principle to reduce the extent of 'poaching' from the peer group of companies. The nodal body for Indian software and service companies, NASSCOM, has proposed the establishment of a national register of IT and ITES employees to keep track of employees' employment history and to help identify those individuals who are prone to shift between jobs quite often. Understandably, the proposal has been given a mixed reception.

Data security and privacy issues

Recently, there have been major outcries against outsourcing in the UK, following the cases of at least two identity thefts and fraud cases that took place in Bangalore. Since then there have been constant calls for better regulation in this area to prevent corresponding incidents in the future. Such measures are expected to improve the image of the industry in the eyes of the US and UK markets. However, there are differing views of the need for regulation as far as data security is concerned. One set of companies wants to promote self-regulation. They believe that the sector has grown because of a lack of government intervention and that the prevailing situation should be maintained, as cumbersome regulations and guidelines could possibly stunt the growth of the industry. Companies should therefore develop processes to create awareness among employees so that fraud could be prevented in advance. NASSCOM has promised to take a look into the development of suitable guidelines. The current industry standard BS7799 for data security, however, is already in place in many companies, including the biggest Indian IT service providers. Data privacy, moreover, is

an entirely different ball game. The medical transcription industry uses the HIPAA as the authoritative guideline for ensuring data privacy. It is presumed that such systems could be modified to handle data privacy issues also in the banking sector. Many of the service providers are ready to comply with related global standards, such as ISO 17799, COBIT and ITSM.

4. Telecoms and online media

4.1 Introduction

The dream run of the Indian telecom sector is a fairly recent phenomenon. Even years after the economic liberalisation of the country, which started in 1991, telecoms penetration remained abysmally low, at 1.2 per thousand of population. The sector operated under the hegemony of three public sector giants, Bharat Sanchar Nigam Limited (BSNL), Mahanagar Telephone Nigam Limited (MTNL) and Videsh Sanchar Nigam Limited (VSNL), and growth was limited to urban locations. In order to boost the market, the government introduced the National Telecom Policy (NTP) in 1994, when the sector was being prepared for the entry of private players. There were few entrants in the fixed line sector, whereas several urban circles were opened up for wireless services on GSM standards. The circles were divided into four categories as follows: Metro, A, B and C. The Metro area came to include the largest cities of India, i.e. Delhi, Mumbai, Kolkata and Chennai, and was also assumed to carry the greatest revenue potential. Category C circles include such poor rural states as Bihar and Orissa, as well as India's North and North-Eastern states, such as Himachal Pradesh and Assam.

Before 2001, telecom operators had to pay a hefty licence fee for each circle in which they wanted to operate. The licence fees were also fixed. As a result, operators charged very high usage fees (Rs. 16–24 per minute) to retrieve their investments. Also mobile handsets were expensive (around Rs. 20,000 and upwards). Consequently, the wireless market remained fairly small until the turn of the century. When the new revenue-based licensing regime was introduced, this encouraged the operators to attract new subscribers by cutting use charges, and the number of mobile subscriptions started to rise sharply. The development was further supported by a reduction in the prices of mobile phones. During the last five years, growth has been exponential and the number of mobile subscriptions has soared from 6.5 million in March 2002 to 149.62 million in December 2006. During the 4th quarter of 2006 more than 20 million new subscribers were added. These figures correspond to an average annual growth rate of 93% (Figure 3). At the moment, the number of mobile phone subscriptions surpasses that of fixed line subscriptions by over 100 million in India and the mobile phone penetration rate is approaching 14%.

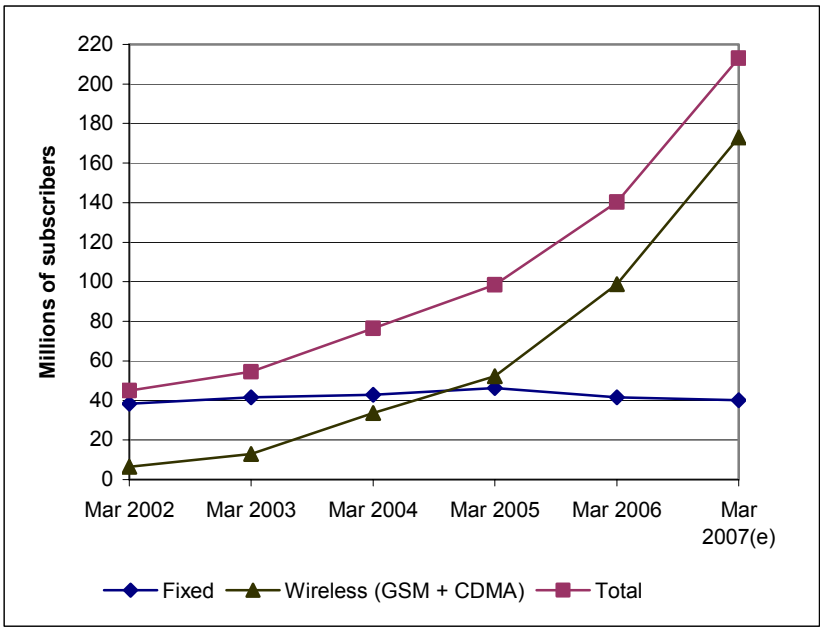

Figure 3. The development of fixed and wireless telecom subscriptions between 2002 and 2007 in India[10] (source: TRAI Performance Indicators).

4.2 The Indian wireless market: Evolution and the current state

The two important incidents that redefined the growth pattern in the country were:

- The New National Telecom Policy in 1999 and the introduction of a 4th operator in 2001–2002. These initiatives resulted in a shift from the fixed licence fee regime to a revenue-sharing model, which enabled much lower usage rates and boosted growth in subscriber numbers.
- The entry of Reliance Communications in the CDMA technology space in 2003. The company offered new customers usage rates as low as Rs. 0.40 per minute and brought Internet connectivity to mobile phones in India. This in turn forced many of the GSM players to reduce their own rates and to invest in new services.

The gradual reduction of call charges from more than Rs. 20 to around Rs. 1 (less than 2 euro cents) per minute[11] has had an avalanche effect, and millions have joined the Indian 'telecom revolution'. The sheer numbers have made a lot of money for the operators, despite the fact that the average revenue per minute (RPM), when both outgoing and

[10] The figures for March 2007 were estimated on the basis of corresponding data for December 2006 and growth rates recorded during the quarter October–December 2006.
[11] The all-India average GSM subscriber outgo charge per minute declined from Rs. 1.45 in September 2006 to Rs. 1.26 in December 2006. The corresponding figures for CDMA subscriptions were Rs. 1.05 and Rs. 0.86 (TRAI, 2007).

incoming traffic are taken into account, has fallen from Rs. 6.7 in 1999–2000 to Rs. 1.06 in 2005–2006 (Figure 4). The RPM can be expected to sink well below Rs. 1 in 2006–2007[12]. This is because incoming calls are free to the receiver in India (excluding roaming). The share of incoming traffic (including voice, SMS and data) is currently around 55% of all traffic across different technology and subscription types.

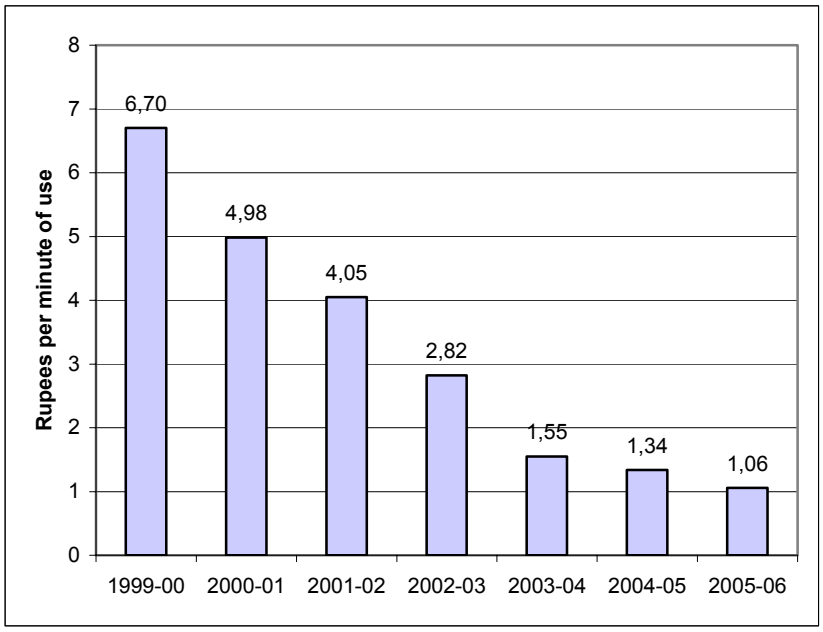

Figure 4. The development of average revenue per minute in wireless services, including outgoing and incoming traffic (source: TRAI Performance Indicators).

The lowering of mobile handset prices is another key factor in the growth of the wireless segment. Since 2000, handset prices have fallen dramatically and have become more accessible to the ordinary consumer. The availability of feasible handsets in the price range of Rs. 5000–8000 has been essential to growth. However, the demand for a much more affordable handset with basic features has been seen as necessary among industry experts to expand the user base within the lower socio-economic strata. Finally, Spice Telecom announced the launch of its sub Rs. 1000 phone (around EUR 17.5) in March 2007.

Two technologies: GSM and CDMA

The wireless market in India has opted for the co-existence of two technology standards at the same time, GSM and CDMA. CDMA currently holds about 30% of the market, while the share of GSM is about 70%. Most industry players and experts expect that the

[12] The estimate for financial year 2006–2007 is based on corresponding figures for March–December 2006.

market shares of these two different technologies will saturate at the present 30:70, although the proportion of CDMA subscriptions has been increasing until recently (see also Table 9). Although in many other markets consumers have gravitated towards one dominant technology, it seems that the co-existence of two different technologies will remain the reality in India. The main growth drivers of GSM have been, in addition to its position as the first wireless communication standard in India, a good selection of different handsets and international roaming. The main strengths of CDMA have been built-in Internet connectivity, a good selection of content and cheaper usage charges.

Pre-paid v. post-paid: Catering to a wide spectrum of customers

In addition to two different technologies, the Indian wireless market can be divided into two different segments on the basis of subscription types: pre-paid and post-paid subscriptions. Pre-paid subscriptions are significantly more popular and they drive the growth of the industry. In December 2006 pre-paid subscriptions accounted for 86% of all GSM and 88% of all CDMA subscriptions in India. An ever-increasing portion of new subscriptions are pre-paid, and their share is expected to reach 90% in the near future. The pre-paid segment consists of the price-sensitive sections of the population, mostly low-income individuals.

Pre-paid customers need to buy currency, which includes talk value and has a specific validity period, usually ranging from 15 days to 1 year. Various discount offers characterise the market dynamics in this segment. For example, in 2006 Bharti Airtel launched a special offer featuring "lifetime" validity for a onetime charge of Rs. 999. This offer was targeted and also managed to expand the base of low-income subscribers who could now stay connected for a long period of time without having to purchase top-up currency (as local incoming calls are free). To become a post-paid customer, one may need to make a substantial deposit on the operator's account, with the exception of major companies. In a country like India, where many people have not got a bank account or regular income, pre-paid is an easy option for service providers as well as for most customers: There is no need to check creditworthiness, to send invoices or to collect claims, and the customer can easily control his or her expenses and avoid nasty surprises. It is worth noting that the same services are made available to both pre- and post-paid subscriptions.

Revenues and usage patterns

Since the turn of the century, average revenue per user (ARPU) has been falling significantly in India: From Rs. 1319 in 1999–2000 to Rs. 366 in 2005–2006 (Figure 5). In December 2006 the all-India blended APRU, including GSM and CDMA as well as pre-paid and post-paid segments, had fallen to Rs. 278. This rally has taken place in tandem with the very fast expansion of the mobile subscriber base. Average monthly

usage (minutes of use, MOU) has also been on the rise. During the same period of time it doubled from 200 to around 400 minutes per month per subscriber. However, the exact usage patterns of mobile phones and operator ARPUs vary according to the type of subscription (technology and pay mode) and the geographical location (circle).

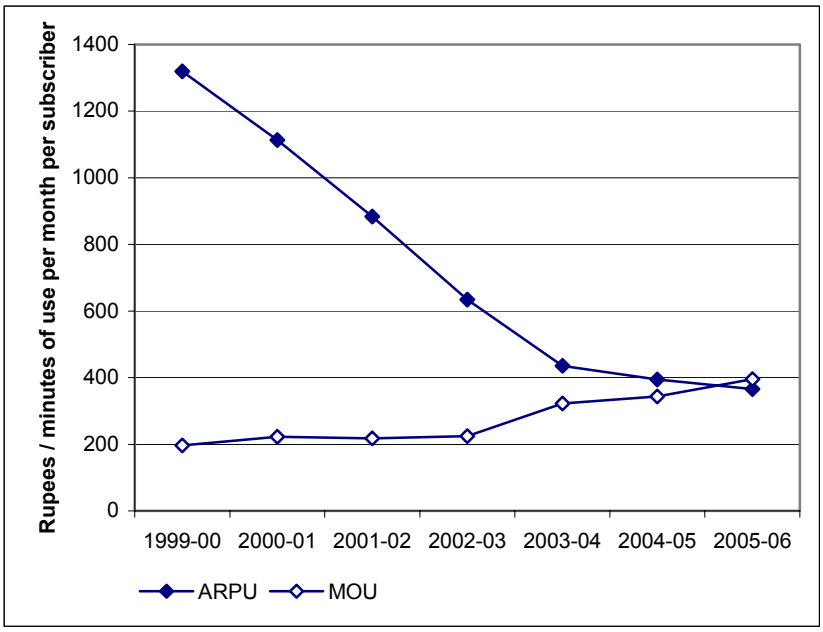

Figure 5. Development of ARPU and monthly usage (MOU) in the GSM segment between 1999–2000 and 2005–2006 (source: TRAI Performance Indicators).

On the one hand, the post-paid segment generates much higher ARPUs (Figures 6 and 7). In December 2006 the ARPU in the GSM post-paid segment was Rs. 632, which is 2.4 times higher than that of the GSM pre-paid segment at Rs. 262. For CDMA subscriptions the corresponding figures were Rs. 456 and 159, the post-paid ARPU being 2.9 times higher than the pre-paid ARPU. Between September 2005 and December 2006 the ARPUs in the two pre-paid segments have continued to decrease slowly, while the development trends relative to the post-paid ARPUs are more complex. In the GSM post-paid segment the ARPU has settled around Rs. 630, while in the CDMA post-paid segment it has oscillated between Rs. 450 and 550. The future ARPUs will depend not only on effective call rates, but also on subscribers' usage patterns relative to the amount of time spent online and the type of services used.

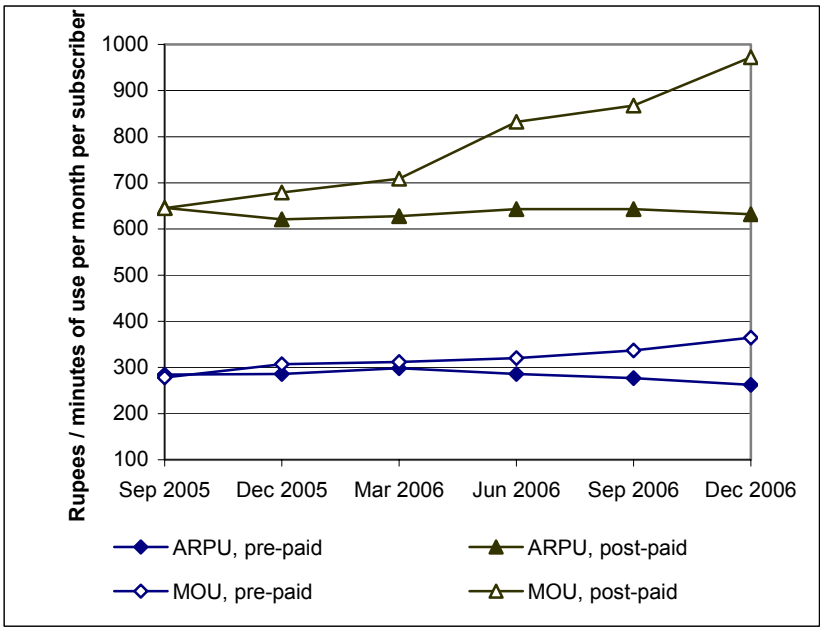

Figure 6. ARPU and monthly usage in the GSM segment between September 2005 and December 2006 (source: TRAI Performance Indicators).

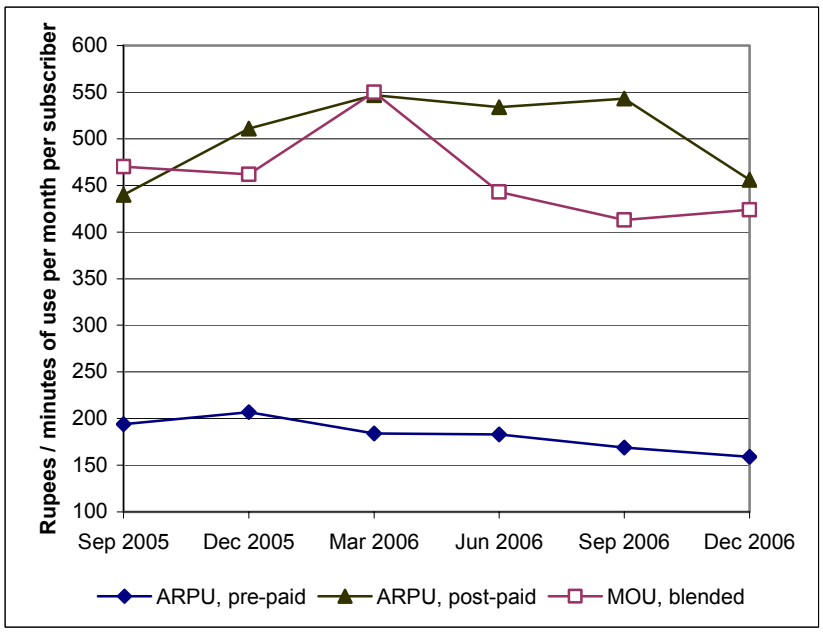

Figure 7. ARPU and monthly usage[13] in the CDMA segment between September 2005 and December 2006 (source: TRAI Performance Indicators).

[13] Separate figures for the usage of pre- and post-paid CDMA subscriptions were not available.

Monthly usage of both GSM pre-paid and post-paid subscriptions has been on the rise, although use of post-paid subscriptions is increasing faster. Between March–December 2006 the average usage of GSM post-paid subscriptions rose from 709 to 972 minutes per month. In consequence, an average GSM post-paid subscriber now stays online for around 2.7 times longer than an average GSM pre-paid subscriber. Again, the trend with respect to the CDMA segment is more complex: During the first quarter of 2006 the average monthly usage of CDMA subscriptions rose from 462 to 550 minutes, but then nosedived to 443 during the next quarter and bottomed at 413 in September 2006, before recovering towards the end of the year. Perhaps this can be partly explained by the explosive growth in the number of CDMA pre-paid subscribers in 2006 (exceeding 175%). This growth is taking place mostly with very price-conscious, low-income people who use their new phones very cautiously. However, in the absence of separate usage patterns for CDMA pre-paid and post-paid subscriptions, the interpretation of the statistics remains highly speculative. In general, it can be assumed that many post-paid customers are getting increasingly interested in data-intensive services (other than SMS, e.g. music or games), while most pre-paid customers will stick to inexpensive local calls and SMS.

The most lucrative and fastest growing subscriber segments

When the whole wireless market is taken into account, most money is being made in the GSM pre-paid segment (Table 9). In December 2006 it generated over 56% of all the revenues that Indian telecom operators gained from their subscribers[14]. The GSM post-paid segment is still the most lucrative in the sense that it generates over 22% of revenues, although it represents less than ten per cent of all subscribers. However, its position is likely to be challenged by the CDMA post-paid segment which although smaller is also growing much faster. The CDMA pre-paid segment had the fastest growth rate in 2006, owing to the lowest call rates in India. Should it continue to expand at a similar speed, the share of CDMA subscriptions will certainly reach 35% in the near future, despite the views of industry experts. Moreover, if this occurs then the all-India ARPU will also continue to decrease towards Rs. 250.

[14] Please note that these figures do not include fixed telephone or Internet services, or any other commercial activity than the provisioning of wireless services in the GSM and CDMA segments.

Table 9. A comparison of the four mobile subscriber segments (source: TRAI Performance Indicators)[15].

Technology	Attribute	Pre-paid		Post-paid	
		Dec 2005	Dec 2006	Dec 2005	Dec 2006
GSM	Of all subscribers	60.06%	60.20%	16.94%	9.80%
	Of all revenues	51.12%	56.72%	31.09%	22.27%
	ARPU	Rs. 288	Rs. 262	Rs. 621	Rs. 632
	Growth (2006)	97.48%		13.98%	
CDMA	Of all subscribers	18.86%	26.40%	4.14%	3.60%
	Of all revenues	11.54%	15.10%	6.25%	5.90%
	ARPU	Rs. 207	Rs. 159	Rs. 511	Rs. 456
	Growth (2006)	175.79%		71.33%	

It is also important to see behind the averages. According to the interviews, the heaviest users in the post-paid segment can generate from Rs. 7,000–8,000 to Rs. 28,000 per month. They represent around 2–4% of the market. These are the people who also invest in the latest gadgets. In 2006, 65 million handsets were sold in India, of which around 4% were smartphones of different types, integrating PDA functionality with the regular phone features and costing upwards of Rs. 20,000 (The Times of India, 21 January 2005).

In addition, there is a relationship between circle and ARPU (Table 10). The Metro circles command the highest ARPUs in the GSM and CDMA post-paid segments. The Metro circles retain their position at the top of the list when the blended (pre-paid + post-paid) ARPU is considered, but lose – perhaps surprisingly – to category C circles in the case of GSM and CDMA pre-paid subscriptions. This is likely to relate to the fact that the existing fixed telecom network is relatively weak in many category C states, which in turn encourages the use of mobile services whenever they are available at reasonable cost.

Table 10. ARPU of GSM and CDMA subscriptions in December 2006 in different geographies, Rupees per month per subscriber (source: TRAI, 2007).

Category	Pre-paid		Post-paid		Blended	
	GSM	CDMA	GSM	CDMA	GSM	CDMA
Metro	280	178	755	539	393	241
A	251	148	638	426	306	183
B	256	153	495	387	280	175
C	289	185	550	427	326	196
All India	262	159	632	456	316	196

[15] Please note that in the table the performance data provided by TRAI has been cross-tabulated with respect to technology (GSM, CDMA) and pay mode (pre-paid and post-paid).

Within the Metro area, Mumbai held the first place in September 2006 with a blended ARPU of Rs. 476, followed by Delhi (that was still in the lead in June 2006), Chennai and Kolkata (Figure 8).

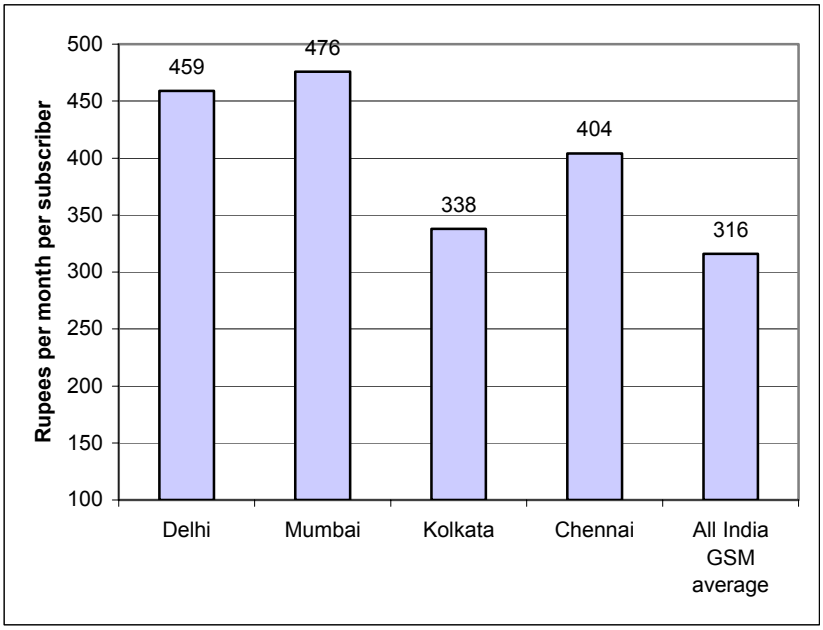

Figure 8. Private GSM operators' ARPU in the four Metro cities in September 2006[16] (sources: COAI, TRAI).

The current growth in wireless subscriptions is originating from circles B and C, i.e. rural areas. Growth in many big cities is currently slow because of the existing large base of customers, whereas smaller towns and villages are witnessing substantial growth. These rural circles have huge growth potential, as the current penetration of telecom facilities in these markets is quite low.

4.3 The major players in the Indian telecom market

In the recent past, there has been a degree of consolidation in the wireless market, whereas the fixed line segment has not witnessed such consolidation, partly because of the small number of companies in the business. In the fixed line segment, the two public companies, BSNL and MTNL, are the leaders, whereas the private players are much smaller. The two dominant public companies control about 93% of the subscriptions, whereas private players like Tata Teleservices (TTSL), Bharti and HFCL share the rest of the market.

[16] Note that CDMA operators and the incumbent BSNL and MTNL are not included.

The situation is far more interesting in the wireless segment, where competition is quite intense. Six companies have emerged as the major players in this market, namely Bharti Airtel, Reliance Communications, BSNL, Hutch Essar (the majority of which was recently acquired by Vodafone), TTSL and Idea Cellular (which is partly owned by TTSL) (Table 11). It is unlikely that the market will face further consolidation, as the two major contenders for the top spot operate in two different technology segments; Bharti mostly in GSM and Reliance mostly in CDMA. However, it will be interesting to observe BSNL's strategy in the coming years. Vodafone's recent multi-billion-dollar investment in Hutch Essar has also prompted many to think that high value acquisitions of this kind could be possible in the near future.

Table 11. Major Indian telecom operators in the wireless market in December 2006 (source: TRAI).

Rank	Operator	Technologies	Subscribers (millions)	Market share
1	Bharti Airtel	GSM, CDMA	31.97	21.37%
2	Reliance Communications	CDMA, GSM	29.98	20.04%
3	BSNL	GSM, CDMA	26.60	17.78%
4	Hutch Essar	GSM	23.31	15.58%
5	Tata Teleservices (TTSL)	CDMA	14.45	9.66%
6	Idea Cellular	GSM	12.44	8.31%
7	Others	GSM, CDMA	10.87	7.27%
Total			**149.62**	**100.00%**

4.4 The role of the Telecom Regulatory Authority of India

The Telecommunication Regulatory Authority of India (TRAI) came into being in 1997. Its powers are limited to an advisory role to the Department of Telecommunication. Since 2001, the TRAI has been allowed to take on a more proactive role in determining the course of the telecom sector in the country. Especially in the high growth mobile and broadband segments, the TRAI has had an instrumental role.

This section will summarise some of the highlights of the TRAI regime, which led to lower usage costs and rapid growth of the telecom sector in India. Most of these recommendations were intended to reduce the status of the incumbent BSNL as the recipient of undue protection from policymakers.

Renewal of the licence fee regime

The shift from fixed licence fees to a revenue-sharing model in 1999 and the opening up of the wireless sector to private operators at the beginning of the millennium brought

forth a lowering of usage rates and made it possible for the ordinary person to use wireless services in India. Before the reform, various fixed fees could amount to 30–50% of the operators' revenues. The current licence fees are 6–10% of the adjusted gross revenue depending on the circle. The TRAI has called for the reduction of all licence fees to a maximum of six per cent of the adjusted gross revenue, and has also proposed to exempt a number of services from all fees.

Unified Access Services Licensing (UASL)

The TRAI's recommendations in the area of licensing brought about significant changes in 2003, when Unified Access Services Licensing (UASL) came into force. This led to greater transparency and simplicity in the licensing process. In the past, separate licences were required for the provision of different services in the different telecom circles of the country. The terms of the licence agreements were distinct from one another with respect to entry fees, rollout obligations, spectrum allocation, interconnection charges, etc. Under the new regime, operators need only one licence to offer a range of wireline and wireless services of their choosing across different technology platforms. Prior to the new legislation, there had also been many cases of violations of telecom licence conditions by operators. For example, some operators by-passed the regulations and offered mobile services in the disguise of Wireless in Local Loop technology (WLL) by routing calls locally through their mobile switching centres.

Universal Service Obligation (USO)

One particular aspect of the Indian telecom market, which has bothered both policymakers and regulators alike, is the issue pertaining to rural telephony. The issue was addressed in the National Telecommunication Policy (NTP) of 1999, where it was proclaimed that it was imperative to provide telecom access to everyone, even in rural areas. Consequently, based on the recommendations of the TRAI, the Department of Telecommunications introduced the Universal Service Obligation (USO) in 2002, which involved a Universal Service Levy of 5% on adjusted gross revenue. Since most players did not have the necessary infrastructure to provide telecom services in the rural areas, the levy was collected from private operators to compensate BSNL for providing the service on their behalf – as the company has to offer some sections of the population telecom services below cost. Initially, the USO fund would only focus on the development of infrastructure for land or fixed lines. However, the TRAI recommended the inclusion of the mobile operators in the USO fund so that they could put up base stations in rural areas. This recommendation was controversial, as some held the opinion that mobile services could not substitute for fixed lines. Especially BSNL maintained that only fixed line service providers should have access to these funds. This will remain a contentious issue in the short term. The Department of Telecommunications will have the final word on the matter.

Access Deficit Charge (ADC)

The Access Deficit Charge (ADC) is another levy that the central government collects to subsidise the telecom service provided by the incumbent BSNL in rural areas. The charge has been imposed on all incoming and outgoing international long distance calls. In addition, the operators have had to pay a share of their non-rural annual gross revenues to the government. In recent years, the TRAI has been reducing the tariffs gradually. The target of the ADC for the financial year 2007–2008 has been reduced to about Rs. 20 billion from the previous level of Rs. 32 billion. The per minute charge for outgoing international long distance calls was reduced from Rs. 2.5 to Rs. 0.8 in March 2006 and from Rs. 0.8 to zero in March 2007. The per minute charge for incoming international calls was cut from Rs. 3.25 to Rs. 1.6 in March 2006 and further to Rs. 1 in March 2007. In addition, the ADC on the adjusted gross revenue has been lowered from 1.5% to 0.75% (The Hindu Business Line, 22 March 2007). The TRAI has recently proposed the removal of the ADC post 2007–2008. This is because BSNL has failed to put a strong case in favour of this subsidy. It is expected that beyond 2008 the ADC will be merged with the USO regime.

Roaming rates

The TRAI tariff orders, which have been effective from February 2007, aim to reduce roaming tariffs in India between 22 and 56 per cent as compared with the previous market rates. The earlier roaming rates of Rs. 3–4 per minute are expected to come down to Rs 1.75 per minute for receiving incoming calls and to Rs. 2.40 per minute for making long distance calls while roaming. Making a local call within the visiting network will now be charged at Rs 1.40 per minute (The Indian Express, 24 January 2007). Most major telecom operators have already announced their compliance with the new regulations. Further, few companies have removed the roaming rentals, which were earlier imposed on a monthly basis. It has been estimated that the combined impact of these changes will amount to Rs. 8–9 billion in lost revenues for service operators. As a result, the Cellular Operators' Association of India (COAI) has expressed its concerns and reckons that operators need to find other methods to balance the loss, including a price hike in local call tariffs.

3G

The TRAI will also play a central role in India's foray into the world of 3G. In connection with the allocation and pricing of spectrum for 3G services and broadband wireless access, the TRAI has recently recommended a hybrid fee structure. It would include an auction system for different circles, with reserve prices ranging from Rs. 15 Crore for category C circles to Rs. 1,400 Crore for an all-India operating licence, and a revenue-based component of one per cent of the adjusted gross revenue per annum as a fee for 5 MHz of spectrum. A separate entry fee to the 3G spectrum has also been supported by

some industry leaders in India, including Mr. Ratan Tata, the chairman of Tata Sons Ltd and the head of the Tata Group of companies (The Hindu Business Line, 14 May 2005). However, contrary to the recommendations of the TRAI, the Department of Telecommunications may nevertheless favour the 'beauty parade' route for allotting the 3G spectrum to telecom operators. The Wireless Planning Cell (WPC), the division of the Department of Telecommunications responsible for the allocation and management of spectrum, has stated that the 3G spectrum should not be auctioned, as it would increase the cost of services (The Indian Express, 4 April 2007). In any case, consumers are unlikely to have access to 3G services before 2008. Much depends on the Defence Ministry, which seems to be behind schedule in vacating spectrum for 3G services.

4.5 Internet and broadband: Yet another story

Although India has experienced great growth in the telecom sector in the recent past, there are urgent infrastructure issues that need to be addressed. At the moment, growth is taking place in the area of mobile subscriptions, not fixed lines, the reach of which still remains dismally low, a mere 50 million out of a population of more than one billion. Internet penetration in particular is currently low: there were only around 8.5 million Internet subscriptions in India in December 2006 (Figure 9). However, the number of actual Internet users was estimated to be around 33 million in September 2006, of which 25 million were classified as 'active users' (IAMAI, 2006).

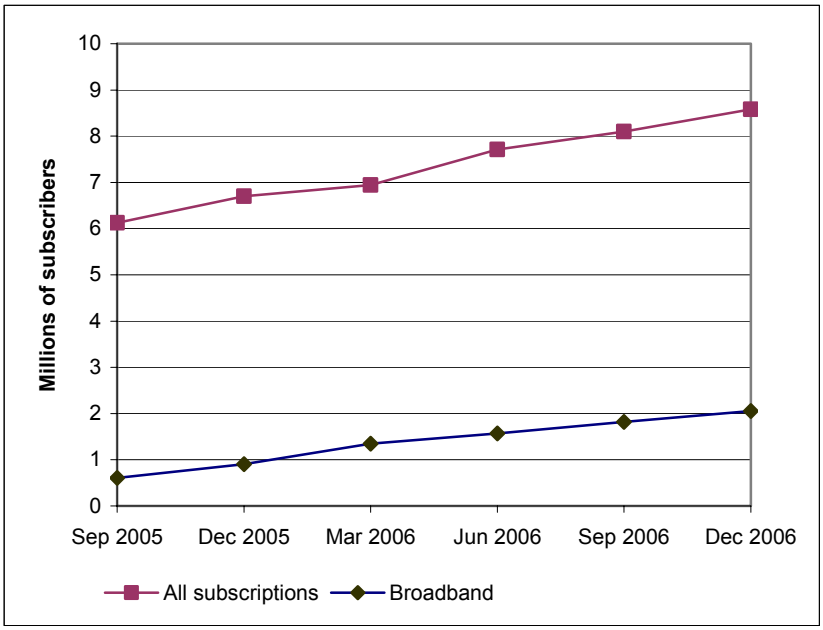

Figure 9. The development of Internet subscriptions in India between September 2005 and December 2006 (source: TRAI Performance Indicators).

Most Internet connections are low-quality dial-up services, where the speeds can range between 24 Kbps to 56 Kbps. This may explain why the most popular place to 'surf' is the cyber café (39% of users) instead of home (31% of users), when all user groups are taken into account, and why the most important access point to the Internet for 'older men' (age 35–54) and 'working women' (age 18–45) is their office (IAMAI, 2006). In India, access speeds greater than 256 Kbps are considered to be broadband. Till now, the broadband penetration has been low, although growth has been fast over the last two years. The current number of broadband connections stands at two million, up from 800,000 in 2005 (TRAI, 2007).

Initially, the high cost of broadband services deterred many from opting for a subscription. In the recent past, however, the rates have been slashed by almost 60–70% and Internet access from homes has been made much cheaper – Rs. 250–400 per month with unlimited downloads. However, most people still do not see value in home usage, as the use of the Internet is currently limited to casual browsing and emails. Since most present users have access to the Internet at their office, many do not see any particular need to subscribe at home. It is reckoned that the lack of interesting and especially local language content together with the attractiveness of the mobile phone – which many people prefer to buy – have restricted the Internet subscriber base to some extent. The average monthly usage of the Internet has been hovering around 210 minutes and the service providers' ARPU around Rs. 190 in 2006 (Figure 10).

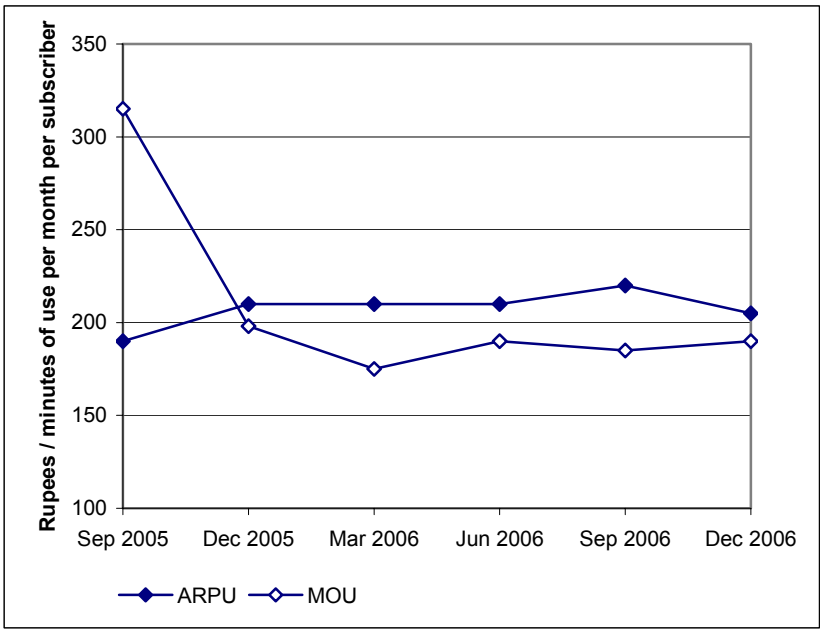

Figure 10. ARPU and monthly usage of dialup Internet subscriptions between September 2005 and December 2006 (source: TRAI Performance Indicators).

Another aspect of broadband penetration that is often discussed is the issue pertaining to the local loop unbundling (LLU). LLU is essentially a means to allow access to the copper wire infrastructure (which the incumbent operators have installed) to other service operators. Access could be allowed in exchange for a fee or otherwise. This is another area of contention, as BSNL has rejected the demand from private operators as well as the TRAI to support LLU. The TRAI suggested already in 2005 that all lines installed before 2000 should be offered for LLU, whereas with respect to the installations made after 2000 the owner of the physical network could decide whether to allow leasing or not. Although this has been the model of growth in most developed nations, experts are not sure whether this might be the best way to proceed in India. According to many consultancies and Ure (2003), LLU in the case of India is not viable because of its scarce fixed line infrastructure. In particular, LLU might provide a negative incentive for operators to build capacity if they are also forced to share this infrastructure. There are sceptics even in the TRAI, who feel that increasing Internet and broadband penetration should not be possible only through LLU, as the current level of the infrastructure is low and because alternative methods like Wi-Fi can be deployed to provide the last mile access.

The two publicly-owned service providers, BSNL and MTNL, have captured a 63.74% market share (Table 12). Their head start over the biggest private player Sify, whose market share has dropped from 13.09% in December 2005 to 9.39% a year later, is clear. Under the current circumstances, the prospects for private players look grim in this sector.

Table 12. Major Indian Internet service providers in December 2006 (source: TRAI).

Rank	Operator	Subscribers (millions)	Market share
1	BSNL	3.81	44.42%
2	MTNL	1.66	19.32%
3	Sify	0.81	9.39%
4	Bharti Airtel	0.60	6.96%
5	Reliance Communications	0.54	6.29%
6	Others	1.17	13.62%
Total		**8.58**	**100.00%**

4.6 The Indian online media market

The Indian online (mobile and Internet) media market is still in a nascent stage, although there are signs that demand for certain product categories has started to grow. The content development market is fairly fragmented with many small players with revenues less than Rs. 10 Crore. There are only a few larger companies, such as

Indiagames, Dhruva Interactive and Paradox Studios, which represent India's emerging games industry. The content aggregation segment is more concentrated, however. Such bigger players as Indiatimes, Rediff, eBay India and Bharti Airtel offer a range of services, of which a great majority has been developed by smaller independent content providers.

The most popular mobile services

As ARPUs decrease as a result of decreasing call rates, telecom operators are getting increasingly interested in additional sources of revenue. Various value-added services (VAS) currently account for around 5–10% of the operators' revenues. It can be said that the mobile VAS segment is becoming an increasingly important element in the growth of the wireless market in India.

At the end of 2006, the size of the Indian mobile VAS segment was estimated at Rs. 2851 Crore (or EUR 500 million), including SMS. The market is estimated to grow at 60% to touch Rs. 4560 Crore at the end of 2007. Person-to-person SMS (P2P SMS) is the largest source of revenue in the mobile VAS segment, with a share of 40%. Ringtones is another important product category with a 36% revenue share (Table 13).

Table 13. The most popular mobile service categories (excluding voice) in India in December 2006 (source: IAMAI, December 2006).

Service	Market size (Rs. Crore)	Market share
P2P SMS	1140	39.99%
P2A/ A2P SMS[17]	428	15.01%
Ringtones	1026	35.99%
Pictures and games[18]	171	6.00%
Others (MMS etc.)	86	3.02%
Total	**2851**	**100.00%**

According to the IAMAI, the major environmental factors driving mobile VAS are

- a booming economy together with higher disposable incomes
- faster acceptance of new technologies, especially amongst the young users
- an increasing emphasis on individuality and the personalisation of digital devices

[17] P2A (Person-to-Application) SMS refers to messages sent by end users for various competitions and for seeking information and entertainment like news and jokes through SMS; A2P (Application-to-Person) SMS includes services pushed by service providers to the end users through SMS.
[18] Games include downloads of one play games offered by Reliance and full play games offered by other operators; pictures include downloads of wallpapers and logos.

- a reduction in call rates, which has lowered expenditure on voice and has also made users more comfortable with the idea of spending on VAS.

The operators have also invested in marketing mobile VAS, especially in relation to movies and music, and SMS competitions. Many popular ringtones, wallpapers and games have been developed around popular Bollywood movies and songs. SMS contests are usually carried out in association with popular TV programmes, which have started giving their viewers the option to participate through SMS. In short, the mobile VAS market is very much dominated by entertainment, SMS and simple downloads (IAMAI, December 2006.)

The most popular Internet services

The use of the Internet in India is dominated by e-mail, although other applications are also gradually gaining ground (Figure 11). An increasing proportion of Internet users are using the Internet for information search and educational purposes. In 2006 this area accounted for 33% of all Internet usage in India, up from 20% in 2001. The share of entertainment is still relatively small but is nevertheless increasing. E-commerce currently constitutes the fastest growing segment: its relative share of all Internet usage has quadrupled from 1% in 2001 to 4% in 2006. Increasing credit card penetration and trust in the security of financial transactions over the Internet are likely to further boost this segment in the future (IAMAI, 2006).

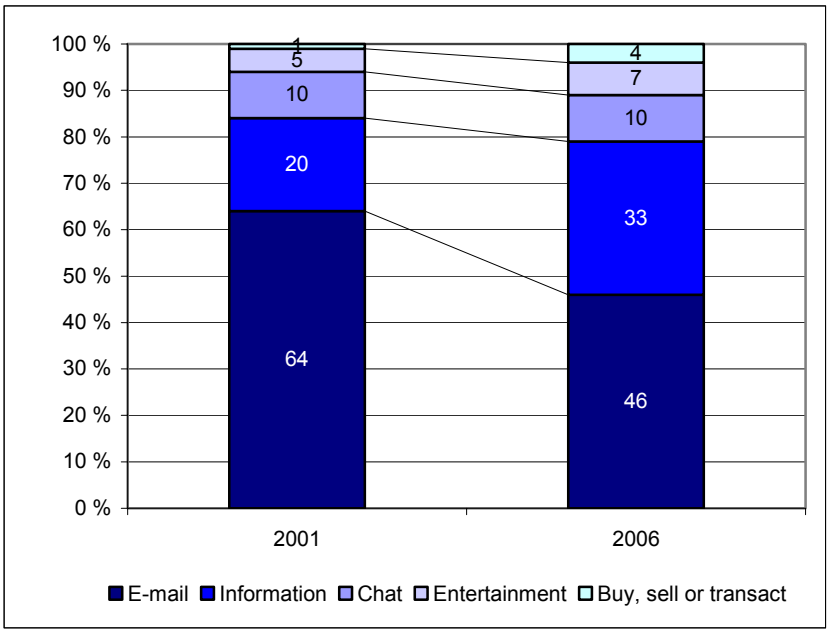

Figure 11. The most popular Internet service categories in India in 2001 and 2006 (source: adapted and modified from IAMAI, 2006).

Internet shopping and auctions, therefore, constitute an increasingly important service category. The website of Indian Railways, through which people can purchase train tickets online, is currently India's largest e-commerce service. Indiatimes is running the second biggest e-commerce site in India. It provides access to a range of services, some of which are free and some chargeable, including economic and political news, online airline and hotel reservations, shopping of consumer goods, sports and entertainment (including astrology, movies and lifestyle), subscription for email and domain hosting services, and so forth. Also matrimonial services have been very popular in India. Ironically, the popularity of these sites is spreading faster among the Tier II cities (semi-urban and rural areas) rather than Tier I (smaller towns) or Metro cities.

Online media value chains and revenue models

The key stakeholders in the online media value chain are content developers, content publishers and aggregators (who can also double up as a portal), third-party copyright owners (e.g. movie producers), telecom operators (in the case of wireless media), technology service providers (e.g. short code providers, platform developers and managers and network administrators) and consumers. In the case of enterprise solutions, which often comprise various SMS-based services, e.g. in the areas of product support, cargo and courier tracking and travel, the company behind the service also becomes a part of the value chain. In the entertainment segment, TV channels in particular often play a significant role by providing the scene for popular SMS competitions.

In a typical case, the content of the service is built around Bollywood or Hollywood movies, songs and themes. Therefore the content developer must first obtain a licence from the brand owner to develop and market related services, e.g. games or ringtones. If the developer is a major player in the market, it may approach telecom operators and Internet companies running popular portals directly and negotiate separate contracts with each distributor (some of which may, however, demand exclusive contracts for a set period of time). The other option is to hand over the product to a mediating producer or aggregator, who works the major distributors and who can make the product available to the designated channels and markets. Bigger media and technology companies may act in the role of producer towards smaller local and foreign content producers: for example, they can help adapt the core product to different technology platforms and terminal devices, build new language versions, and open distribution channels in exchange for a share of the future revenue stream.

The dominant revenue model in the Indian online media is revenue sharing. Because of the current low demand for online media, the bargaining power largely rests with content aggregators and consumer-facing entities, namely web portals and mobile

operators. This means that content developers receive only a small fraction of the sales revenues their products and services generate in the Indian market (Figure 12).

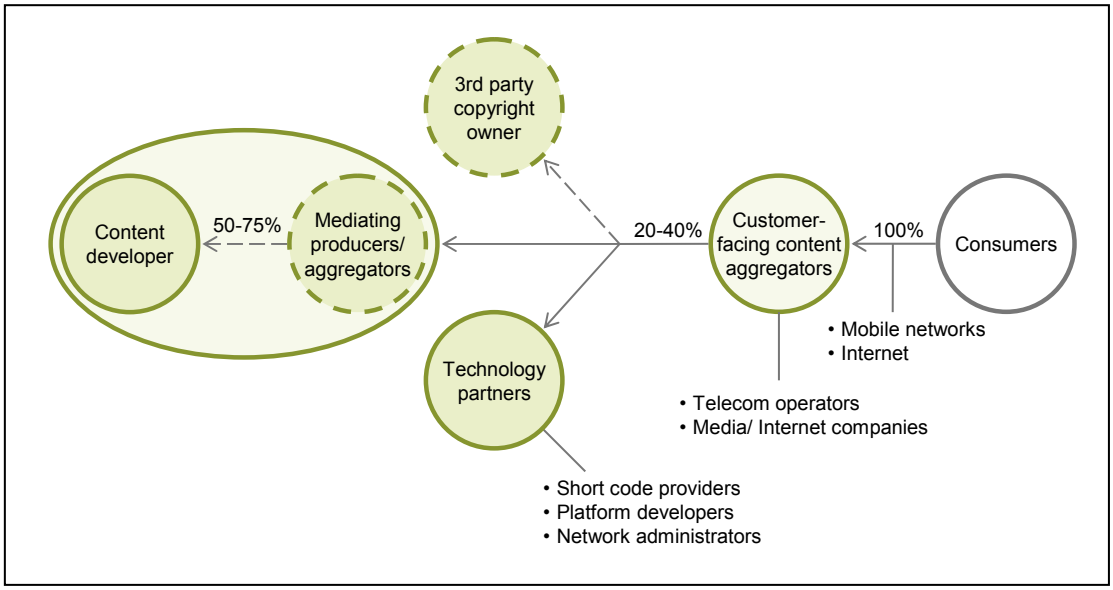

Figure 12. A simplified revenue-sharing model for the Indian online media.

It is very difficult to acquire precise information on the applied revenue-sharing models in the industry since some actors are not willing to disclose such information. In addition, relevant public reports are scarce and they often contain inconsistencies. Based on the interviews and other supporting material, we have concluded that the major telecom operators and Internet companies (i.e. the consumer-facing content aggregators) are currently claiming about 60–80% of the total sales revenue. The rest (20–40%) is then distributed among content producers, technology partners and possible third-party copyright owners (who may also collect their royalties from the content developer). The attainable share of the copyright owner is, of course, closely related to the strength of the corresponding brand.

The above-mentioned figures mean that if there is a major media house between the content developer and the final distributor, the content developer's share is likely to remain under 15% – unless the product in question is an exceptional 'killer application', which everyone wants to represent. On the other hand, through its connections a big media house can often provide the content developer with a huge potential customer base. If the product proves popular, the volumes may well compensate for smaller margins. However, if the content developer has managed to establish contacts directly with the major telecom operators and web portals, it can currently expect to receive a share of around 20–25% of the sales revenue.

In consequence, the Indian online media market is quite different from more mature markets. Internationally, the share of the content developer usually hovers around 50%, being a bit less in Europe, close to 60% in the USA and close to 85% in Japan. In China, the share of the operator is typically 20–30% (IAMAI, December 2006). This loss in bargaining power is partly caused by the current low usage of more developed services, such as mobile games. Developers need to invest a lot of time and energy convincing aggregators and operators to host their products[19], and a typical result of this is a poor revenue-sharing deal. This makes it difficult for many players to justify large investments in the development of quality products and services. In order to bypass this hurdle, many content producers have forward integrated into developing web portals by themselves. For instance, Indiagames has started offering its games on its own website.

Currently, no foreign content provider has entered the Indian online media market in a big way, although some partnerships have been worked out with European and Asian companies for technology and content development.

Present obstacles to the development of the online media market

The scarcity of data-capable handsets and the small base of Internet subscriptions have until recently restricted the online media market from taking off. Also the dominant position of the biggest Indian telecom and Internet operators with respect to content developers, the lack of quality online media in regional languages[20], and cable television – which provides a large variety of entertainment at affordable prices – have been identified as factors impeding the expansion of online media in India. The dearth of quality online media has also been cited by many observers as the key reason for the low penetration of Internet and broadband connections in urban households, thus implying the classical 'Catch 22' problem (few subscribers → lack of good content; lack of good content → few subscribers).

Maybe future growth will be generated by established players. United Television (UTV), a large media group that has been involved in movie production (e.g. 'Metro',

[19] One of the interviewees said that "Dealing with telcos is difficult. A big sales support team of five people is required. It might be six months before the set up is ready".

[20] English enjoys an associate status and is the most important language for national, political and commercial communication. However, depending on the source, only 5–7% of Indians are estimated to have a reasonable command of English. Hindi is the national language and primary tongue of around 40% of the people. There are 14 other official languages: Bengali, Telugu, Marathi, Tamil, Urdu, Gujarati, Malayalam, Kannada, Oriya, Punjabi, Assamese, Kashmiri, Sindhi, and Sanskrit. Hindustani is a popular variant of Hindi/Urdu spoken widely throughout northern India but is not an official language. Moreover, there are hundreds of local dialects in India that do not enjoy any official status. English and Hindi are taught at school all over India. However, since most Indians have received only primary education, the command of English and Hindi among most non-native speakers of these two languages is generally low. On the other hand, the well-educated Indians can without exception speak both Hindi and English regardless of their mother tongue.

the first Bollywood movie to have its premier outside India), recently announced its plan to enter the online media segment. It has acquired equity in Ignition Entertainment (a UK-based console games developer) and Indiagames (an Indian online games developer and producer) in order to drive its plans to develop animation movies. The group has also planned to enter the online broadcasting segment, which is currently untapped by any of the domestic players. Telecom operators are also on the move. According to The Financial Express (24 April 2007) Bharti Airtel Ltd will launch its first full-fledged IPTV (Internet TV) applications on its broadband network at Gurgaon in Haryana by the end of 2007. The Indian online media industry is also fuelled by the growing export opportunities. Indian game developers especially have been active in building distribution channels and marketing their products and services in the USA, Europe and Asia.

4.7 Online gaming – A case of an emerging industry

Gaming in India is a relatively recent phenomenon. Even in the nineties, when India was already well advanced into IT services, gaming was not considered to be a serious career option. Most consumers were also indifferent with respect to gaming. Moreover, PC and Internet gaming were often considered to be a waste of time apart from being prohibitively expensive for most consumers.

There is little agreement about the size of the market and what its constituents should be. For example, according to the IAMAI (April 2007) India's online gaming market is currently worth Rs. 21 Crore (around USD 5.1 million) in revenues, most of which come from organised cyber cafés (Rs. 12.17 Crore). Subscription-based revenues were estimated at Rs. 6.6 Crore, while the contribution of advertising was estimated to be only Rs. 2.24 Crore. Interestingly, almost 20% of this revenue (Rs. 4 Crore) was reckoned to have been generated abroad by players not based in India. However, since the IAMAI defines online gaming as "gaming that requires the use of a PC and Internet connectivity" and declares that "mobile and console gaming is not part of online gaming" it is clear that these figures do not cover the wireless market[21].

When the mobile segment is also taken into account, the figures start to grow. For example, it has been reported that the market for game development was USD 30 million already in 2005 and that the market would grow at a CAGR of 78%, to reach USD 300 million by 2009. At the same time, the share of mobile gaming – which was estimated at 53% in 2005 – has been projected to grow to 68% of the Indian gaming market by 2009 (The new face of Indian gaming, October 2006). These figures are

[21] Despite IAMAI's position, mobile gaming is included in the sphere of online gaming and therefore also online media in this publication.

clearly based on different data and methodology than those presented by the IAMAI, for 47% of USD 30 million (i.e. the supposed share of Internet-based online gaming) is still three times more than the estimate produced by the IAMAI for the same period of time. On the other hand, some game developers have been of the opinion that the actual figures should be closer to USD 5–7 million in 2005 and USD 12 million in 2006. The huge discrepancies have been attributed to the inclusion of built-in games in some estimates and diverging game download statistics. It can be concluded, nevertheless, that the online gaming market in India is still small but most certainly on an ascending track.

The main economic difference between the mobile and Internet gaming markets seems to relate to the viability of different value-capture models. For the time being, most Internet gaming portals in India operate on a free mode and are looking at advertising revenues to sustain growth (IAMAI, April 2007). At the same time, they are also charting possibilities to bill users for playing the games, e.g. in the form of monthly subscriptions. The problem is that most Indian advertisers are just beginning to experiment with online advertising, while Internet users are fairly used to free content (which holds true for the whole world, too). In the mobile sector, however, everyone gets its share each and every time the user downloads the game to his or her handset or, alternatively, plays online using SMS or some other means of communication[22].

Game development and marketing: Case Indiagames Limited

Indiagames Ltd. is one of the first Indian game developers (Table 14). Indiagames' new product development practices differ according to the target market. In the domestic market, development work is spurred by local events, e.g. festivals and new popular movies, whereas development for international markets follows longer term plans and processes. The company also conducts regular market research to identify and assess new opportunities.

The new product development process involves the following main phases:

- creation of the concept document
- compilation of the game design document
- obtaining a preliminary approval from the brand (copyright) owner
- creating the art document
- obtaining an approval from the brand owner and making a licensing agreement
- development work at the studio (incl. art, programming, testing and QA)
- pre-launch review
- launch.

[22] Game developers have been reporting on a serious 'revenue leakage', caused by some operators' dysfunctional billing systems. These problems have been recognised and are being acted upon.

Table 14. Fact sheet on Indiagames Limited.

Website: http://www.indiagames.com/
General information: Founded in 1997–1998 by Mr. Vishal Gondal. TOM Online Inc. has a 62.42% equity stake in Indiagames. The company is headquartered in Mumbai, India.
Management: Founder & CEO: Mr. Vishal Gondal. The management team also includes Mr. Samir Bangara, Vice President – Corporate & Business Strategy, and Sean Malatesta, Vice President – Business Development, Americas.
Financial performance (FY 2005–2006): Revenue appr. EUR 3.7 million (of which 65% is earned in international markets and 35% in the domestic market). Note: Indiagames' annual figures are consolidated into the income statement of the parent company, TOM Online Inc. Profit figures are not available separately.
Employees (October 2006): Over 300.
Main services, products and customers: Mobile games (70% of revenues), PC games and gaming portals. In India, Indiagames plays the role of aggregator and distributor for Warner Bros and other majors, with the responsibility for adapting these games to local requirements and promoting them in the local market. The company has alliances with all major Indian telecom operators, and it supplies them directly. In addition, Indiagames co-operates with all major Indian ISPs to offer games for Internet users on a subscription basis. For international markets Indiagames supplies its own games. Some of the games are based on licensed, typically foreign brands. The distribution of games takes place through partners, including international aggregators like Jamba, Monster Mob and Ebrain, as well as directly to the operators. In autumn 2006 Indiagames had agreements with around 80 operators and its products were available in 67 countries.
Technologies supported: Java, BREW, I-Mode, Flash Lite and Symbian.
Major competitors: There is currently little competition in the domestic market as the market is still in its nascent stage. However, in the international market, Indiagames competes against all large gaming companies based on North America, Europe and the Far East.
Future visions: Indiagames is looking forward to strengthening its position in all major market areas, including the Americas, Europe and Asia (including India and other Asian countries). Through the development of the Games-on-Demand concept, the company's presence in the Internet segment is likely to increase.

The entire process is said to take about six months to complete for global games. If the game is developed on the basis of a movie, then the studio has to bestow its approval, and the promotion may also be done in conjunction with the studio. For some brand-based games, Indiagames has managed to acquire exclusive global rights from companies like Warner Bros and Disney.

Indiagames makes its own designs, although earlier they have also worked with third party suppliers. The graphic engine has been licensed from a UK firm, which has saved a lot of time on development and has consequently boosted productivity. Technology-wise, the main challenge in the Indian market is the high proportion of basic 'low-tech' mobile phones, so games have to be modified to suit the handset (e.g. small black-and-white screens). Another practical challenge is the range of languages to be covered if growth is sought outside the major cities. As a result, Indiagames has launched games in Hindi, Tamil and Telugu along with English. With regard to export markets, the company has developed games e.g. in Spanish, German, Portuguese, Italian, Czech, French and Hebrew. Everything is carried out in-house, although in some cases the translation is purchased from outside.

Mobile gaming: Coping with low-tech handsets and price consciousness

In India, most mobile handsets in use represent the basic, low-tech segment. Only a small portion of all handsets are data capable. In addition, many owners of a data capable handset have not been properly informed about the features of the phone they have. According to Indiagames, about 25% of all handsets sold in India are currently data capable, of which only 25% are 'data enabled' (by the subscriber or the service provider). Of these people with a data enabled phone, only around 25% have ever downloaded a game. The size of the segment in India is thus estimated to be 0.25 x 0.25 x 0.25 = 1.56% of all mobile subscribers (around 2.3 million people by the end of the year 2006). In order to address this issue, many handset manufacturers are now selling data enabled handsets by hard-coding them in advance. Also Indiagames is planning to set up dedicated service centres to help their customers configure and use their phones.

The relatively high price of games has been one reason why they have not become very popular. Game downloads are typically priced at Rs. 50–100 per download, whereas ringtones are available for Rs. 2–6 and wallpapers for Rs. 10–25. Considering the younger users with pre-paid subscriptions and monthly ARPUs of around Rs. 250, each game download is relatively expensive. Therefore the value proposition for games in India has not yet developed very well. However, new business concepts to suit the price sensitive market are emerging. At the end of 2006 there were around four million game downloads per month in India, of which about a million were made using GSM phones and three million using CDMA phones. What explains this difference? That is because of the fact that on a CDMA phone one can play a game for Rs. 5 – i.e. instead of

purchasing a licence for unlimited use the customer pays only when playing the game (The new face of Indian gaming, October 2006).

Internet gaming: Building portals, introducing new business models

Indian game developers and producers are developing imaginative marketing plans to promote their products on the Internet and to develop a large and enthusiastic gaming community in the country. An important aspect of this endeavour has been the development of 'on demand' gaming portals, featuring a large variety of titles and unlimited access in exchange for a fixed monthly fee of around Rs. 200–300. Another important aspect of such offerings is the ability to play 'online' without installing anything on the local PC. This is crucial, since cyber cafés constitute the single most important point of access to the Internet in India, when the number of active users is considered, especially within the consumer segments with the most potential – school kids and college students. In consequence, game publishers are teaming up with cyber cafés to promote their offerings. Similarly, they are establishing partnerships with the major ISPs to gain visibility among the rank and file of the regular subscribers. Some game operators have developed sites dedicated to MMOG (Massively Multiplayer Online Game), where a large number of players can meet and play games together. This model has been extremely popular e.g. in Thailand, South Korea, Singapore and the Philippines.

The revenue-sharing models introduced within the game developer community in India are said to be fair towards content developers and copyright owners in comparison to platforms managed by the leading ISPs. For example, Indiagames has indicated that the (external) game developers and copyright owners, whose products have been made available on its Games-on-Demand portal, will get more than a half of the revenue those products have generated. The cap for the royalties to be distributed is determined by the number and type of subscriptions (since the customers pay a fixed amount), but the partners' shares are determined on the basis of the customer preferences, i.e. the more customers play your games, the greater will be your share of the available royalty pot.

4.8 Ongoing and expected future development trends

This section provides a short overview of selected ongoing and expected future development trends in the Indian telecom and online media sectors.

The wireless market is witnessing unprecedented growth

In December 2006 there were around 150 million mobile phone subscriptions in India. The number of wireless subscriptions has been increasing at an average annual growth

rate of 93% during the past four years, while the number of wireline subscriptions has remained fairly constant at around 40 million for many years. It has been estimated that there will be over 250 million wireless subscribers by the end of 2007 and that India will welcome its 400 millionth subscriber towards the end of 2009 (The India Telecommunications Report, 2006). Vodafone's recent entry into the market is also an indication of its potential in the eyes of foreign investors. However, significant and continuous investments in the country's telecom infrastructure are needed. It remains to be seen how India will manage to introduce the 3G service in the country, while the construction and maintenance of basic GSM and CDMA networks are likely to demand an increasing amount of operators' resources.

Rural India will provide much of this growth. Growth will be sustained through the introduction of affordable handsets, some of which will be priced around and below Rs. 1000, and by decreasing calling and SMS rates. Monthly ARPUs have been consistently falling in the recent years at the average rate of 19.2% per year. Between December 2005 and December 2006, the blended all-India ARPU decreased by 17.8%, from Rs. 338 to Rs. 278. Most telecom operators are currently trying to build up more revenues from data services, which are priced at a premium. So far this has proved difficult because of the relatively small share of company subscriptions and wealthy upper middle class households in the entire subscriber base. In consequence, data usage is likely to remain low throughout India in relative terms.

The latest trends indicate that the track on which the (blended) ARPU has been decreasing is gradually rounding up. It is also important to understand that India is a big country with a wide spectrum of different socio-economic groups. For example, there are many (post-paid) subscriber segments that already generate a lot of money for the operators and whose consumption is likely to increase in the future e.g. due to the diversifying supply of online media, new smartphones that can take advantage of the available content, and the increasing capacity and reliability of telecom networks in the Metro areas. Although the size of the most affluent customer segment is increasing in absolute terms due to the favourable economic development in the country, its *relative* size – around 2–4% of the total subscriber base – is not likely to increase because most of the ongoing and projected growth is taking place in the countryside and within low income households.

Number portability across different service providers is not supported at the moment. The matter is currently being reviewed by the TRAI. It is quite possible that by the end of 2007 the TRAI might come up with some recommendations for allowing portability of numbers. This can potentially add another dimension to the existing competitive framework in India by making it easier for both private and business customers to change operator.

Indian Internet: The poor cousin is slowly gathering strength

Both Internet and broadband penetration levels are currently low in India. At the end of 2006 there were only 8.5 million Internet subscriptions, of which two million could be classified as broadband (having a download capacity of 256 Kbps or more). Nevertheless, the number of subscriptions has been increasing steadily and in the case of broadband even phenomenally (at the rate of 128% between December 2005 and December 2006). The Internet subscriber base is expected to grow up to 20 million by 2010, which would still be a minuscule figure for a country of around 1.1 billion inhabitants. The number of actual Internet users in India is, however, much larger than the above-mentioned figures may suggest. The IAMAI has established that the number of actual users is approximately fourfold in comparison to the number of subscriptions. IMAI estimates that by 2009 there will be 65 million Internet users in India, of which 44 million can be regarded as 'active users'.

The extent to which the projected growth in the use of the Internet will take place in cyber cafés and other public premises – as opposed to private households – as well as the attainable pace of future growth remain to be seen. The state-owned BSNL is holding onto a large fixed network, which is not utilised to its full potential, and it does not want to lease excess capacity to other operators. The situation has been in stalemate for years despite the TRAI's explicit position in favour of local loop unbundling. Many analysts tend to agree that the marketing of broadband services has also been below par and that the service has to be made much more attractive as well as affordable to the consumer along the lines of mobile services. In this respect the available content plays an important role.

Success factors in online media: Price, price and… the language!

Various mobile value-added services (VAS), including SMS, currently account for around 5–10% of telecom operators' revenues in India. Regardless of their meagre share of the whole online media market, the size of the Indian mobile VAS segment was, however, estimated at Rs. 2851 Crore (or EUR 500 million) at the end of 2006. The market is estimated to continue to grow at 60% and to touch Rs. 4560 Crore at the end of 2007. At the moment the mobile VAS market is dominated by entertainment, especially SMS contests and ringtones developed around popular Bollywood movies and local TV series. Future development is very much linked to sales of data capable handsets, the extent to which users learn to exploit their built-in features, and the price of handsets and services relative to the users' purchasing power. When it comes to use of the Internet, e-commerce is currently witnessing the fastest relative growth in India. Its share has increased from one per cent in 2001 to four per cent in 2006. This trend is expected to continue as a greater proportion of Indians obtain a credit card and become acquainted with the idea of effecting financial transactions over the Internet.

Information search and educational purposes are also increasingly important ways of utilising the Internet.

With respect to the development of both wireless and Internet media, a lot depends on the availability of meaningful and affordable content in local languages. The applicability of English is very limited outside the largest cities and special economic zones. It is difficult to say which factor is the most important root cause for the relatively low Internet and broadband penetration in India: the price of the service or the lack of interesting content. Most probably the question is about a 'positive' feedback loop, which in this particular case impedes the development and consumption of quality content over the Internet in India.

Changing prospects for game producers

Another important aspect relates to the power balance between the different players of the online value chain(s). So far the large telecom operators and ISPs possess the bargaining power. As a result, content providers and copyright owners have not been able to extract substantial royalties from their products, which in turn has provided a sort of negative incentive to invest in their further development. However, at least the Indian gaming industry has managed to develop something new by building its own (operator-independent) gaming portals, providing a large selection of well-known games for a fixed monthly fee, enabling gaming on public workstations, and disbursing a larger share of the revenue stream to the developers. Gradually those portals have become more popular, and the major players have also had to rethink their strategies. In general, there are indications of a strengthening of the position of content producers and publishers in the industry. This is not surprising, for the IAMAI also predicts that as a result of the emergence of content aggregators (media companies) with better bargaining powers, a revenue shift from operators to aggregators will take place by the end of this decade. Such a change would make India's online media market more comparable with the rest of the world and thus also more attractive to many foreign players.

Gaming is an emerging industry in India, with strong ties to major international players and brand owners. At the end of 2006 the share of gaming was well below five per cent of the value of the whole Indian online media market. Some industry sources are expecting that share to rise to around 10–15% in the mid-term. Whether or not that will be achievable, the Indians are nevertheless keenly looking for export markets around the world. According to NASSCOM, the size of the global gaming market was estimated to be USD 19 billion in 2005, and was expected to grow to USD 36 billion by 2009. The founder and CEO of Indiagames Ltd., Mr. Vishal Gondal, has been even more optimistic. He believes that "the online gaming industry worldwide is quite huge, and by 2009 it is expected to grow to USD 54.6 billion. Statistics suggest that Asia will be a

high growth market within that, and by 2009, Asia alone should generate revenues of USD 23.1 billion" (Spill Group, 2006). It remains to be seen how the emerging Indian players can capitalise on this growing market.

5. Opportunities, threats and coping strategies

This section aims to present alternative strategy options for foreign companies wishing to explore business opportunities in India and/or the prospects of engaging in business transactions with Indian companies within the selected industrial domains. In the field of IT and BPO services, the question can be formulated as follows: How can one take advantage of – or to cope with – the increasing exports of IT and BPO services from India? For prospective customer organisations the situation translates into greater sourcing opportunities, while in the case of ICT companies targeting the same markets the issue may appear to be a bit more complicated. In telecoms and online media the underlying factor is of course the booming local (Indian) market. While the big international mobile phone, network and IT companies are already there, the really interesting question is the following: How could smaller technology, content and professional service providers also take advantage of this development trend? There are also questions concerning the development of the business environment and the Indian society as a whole, which deserve careful consideration.

5.1 IT services: From East to West

Sourcing IT and BPO services from India

India offers notable cost-saving opportunities for foreign businesses wishing to outsource IT-related work. With two decades of highly diversified application development and systems maintenance experience, major Indian IT service companies can offer a unique blend of cost efficiency and global delivery capability. In addition, many of these companies have gathered substantial experience in various industries. In order to better utilise this experience pool, many Indian service providers have reconfigured their organisation and resources along the so-called industry verticals. This has further enabled them to develop process improvement methods and measures for specific sectors on the basis of their cumulative learning across similar projects. Therefore a client in the banking sector, for example, can expect to benefit from that experience in the form of faster development and implementation, as well as the vendor's greater understanding of the dominant practices and regulations in international banking.

Co-operation can be initiated through smaller pilot projects and continued – should the experiences gained from co-operation appear promising – in the form of larger, higher end and more strategic projects. While smaller projects can help build rapport between the outsourcing firm and the Indian service provider, significant cost savings will be apparent only in the case of larger, high-value projects. This is because of the inherent transition and management costs incurred in the activity: The smaller the project, the

larger the relative share of various overhead costs. On the other hand, the risks also increase as a function of the size of the project.

As the Indian service providers' skills in languages other than English would require substantial time to develop, non-voice and language independent services can be outsourced much faster. There is also a difference between such 'basic' back office processes like telemarketing, customer service or accounting – which in most cases need to be conducted using the dominant language of the market – and more knowledge-intensive operations like product development, ICT consulting or business analytics, where professionals all over the world can communicate with each other using English. This means that, for companies operating out of non-English speaking Europe, the more knowledge-intensive areas of operation are also presumably more suitable for outsourcing. However, there are many other influential factors in addition to the language. The pros and cons of any co-operative arrangement relating to the core competences or strategic assets of an organisation, be it an advanced product technology or a well-managed customer interface, need to carefully assessed from the strategic point of view before the 'green light' can be given.

The Indian business process outsourcing industry is currently in a state of great flux and new models are emerging every now and then (Table 15). Currently, the third-party operator seems to be the dominant model, as larger captive players (i.e. service providers that were originally established to produce services for their own parent company, typically a large foreign multinational) have started to offer their services to other companies as well. However, some analysts feel that in the next phase the joint-venture model may become more dominant, which can open up further opportunities for European and other foreign companies wishing to enter the Indian BPO space.

Table 15. BPO strategy matrix (sources: NASSCOM, NeoIT).

Initial investment	**Transition time**	
	Short	Long
Limited	Third-party service provider	Build-Operate-Transfer
High	Joint venture	Own dedicated unit

The following check-lists aim to help organisations to consider and plan for outsourcing from different points of view. Although the major Indian IT and BPO service providers can come up with their own check-lists and transition procedures, it is nevertheless important to be able to maintain one's own view of the process and to judge possible advantages and disadvantages of the outsourcing decision independently of the prospective service provider's position.

Strategic questions concerning the outsourcing decision:

- Underlying objective: cost savings, complementary strengths, or both?
- Strategic importance of the activity
- Complexity of the activity
- Required and attainable service levels
- Acceptable and evaluated risk levels.

Important attributes to guide the specification and supervision of the service:

- Content of the service (scope, service level, metrics)
- Compensation model (service v. resource-based, bonus and penalty clauses)
- Economic feasibility (direct and hidden costs, savings and new revenue potential)
- Competences (necessary own v. service provider's expertise)
- Transition (knowledge transfer, integration of systems and processes, management)
- Performance (requirements concerning reliability and scalability)
- Compliance (regulatory requirements, data privacy and security)
- Risk management (IPR protection, delays, disputes, disengagement).

General success factors in managing outsourcing:

- Purchasing know-how
- Good documentation
- The service provider's references
- The service provider's domain expertise
- Applicable certifications (e.g. CMM) possessed by the service provider
- Clear contracts, incl. performance measures as well as bonus and penalty clauses
- Selection of the Indian project leader (responsible for the purchased service)
- Clear transition, management and QA procedures
- Readiness to invest in managing the activity
- Continuity.

Finally, it must be pointed out that the outsourcing decision is essentially an investment in an undertaking that involves risks and whose outcome is uncertain. A great deal of all IT projects fail in the sense that they do not yield all the benefits they were originally expected to yield. Purchasing and implementing a service that involves complex interactions is always a demanding task, and sourcing it from a foreign player certainly adds to its complexity. In consequence, securing a suitably qualified and experienced management oversight of the process is a fundamental success factor. Other critical points include the specification of the service, the assessment of offers and the selection of the service provider, knowledge transfer and transition of operative responsibilities,

the ability to disengage from the contract and to insource the outsourced systems and processes in case of a possible failure, and clear contracts and management procedures in general. It is highly recommended to seek advice from other organisations with practical experience in outsourcing whenever possible. The business media also feature articles about the lessons learned.

Competing, partnering, or getting acquired

Many IT companies are facing increasingly tight competition on their own turf. The Indians are aggressively expanding their territory, nowadays also outside the English-speaking world. The most important advantage of any local player is knowledge of the local market and the existing customer base. In general, it is always easier to take good care of, and to expand business within, existing customers than to start developing new business from scratch. It is quite another thing, however, if customers are not really satisfied with your service and/or an outsider manages to come up with an offering that simply sounds irresistible. It is therefore important to be aware of the evident strengths and weaknesses of the major Indian players in the field. That information will constitute the basis for the development of a competitive strategy.

The current strengths of the major Indian IT service providers are well-known. They have hands-on experience in different fields of software engineering, including application development and maintenance, packaged software, infrastructure services and technology consulting. They provide comprehensive turn-key solutions, can operate globally, and are still notably cheaper than most of their capable competitors, at least in comparison to large US, European or Japanese IT companies. Moreover, many Indian IT majors have gathered substantial experience from all major industrial domains, especially banking, financial services and insurance, manufacturing, energy, telecoms, retail, health care and hospitability industries. Equipped with all the references and customer testimonials, the sales and marketing departments of the leading Indian IT service and BPO companies can easily come up with convincing presentations and offerings that may appear unbeatable.

However, the major Indian players are facing many challenges, too. One is a declining cost advantage. Foreign customers are negotiating harder on prices, while employment costs are rising fast in India. As a result, the largest globally operating Indian IT service providers are looking forward to ascending in the value chain towards higher-end services with better margins. This alone may provide many opportunities for ICT companies operating out of Eastern Europe or South-East Asia, where the cost of employing a capable software engineer begins to be roughly commensurate with that of India's major IT centres. Second, the lack of strong Indian brands in the field of IT certainly makes it easier for many US, European and Asian players to defend their market positions. A strong brand conveys a plausible value proposition that is hard to

impugn regardless of the content of the counter argument. Third, the challenges of operating in non-English speaking markets, where the end customer can expect to be served in the local language, certainly provide local players with a significant competitive advantage. To cope with this requirement, Indian IT companies have been recruiting locally while trying to conduct business in English whenever possible. Finally, local as well as better-known multinationals can perhaps also take advantage of the 'exoticism' factor that is attached to India as a country of huge socio-economic disparities and cultural distinctiveness. They may be able to exploit various prejudices against their Indian competitors, e.g. in relation to process focus, data security and privacy, or quality of the end product. This means that the burden of proof is likely to remain on the Indian companies, even if they outperform their Western competitors in terms of objective performance measures.

To summarise, it seems that, in the long run, the major competitive advantages of most small and medium-sized local IT companies targeting the same markets with the major Indian IT service providers, while operating out of countries that are more expensive than India, can be built on two key factors: customer intimacy and strong IPR. Customer intimacy may involve in-depth understanding of the customer's business requirements and expectations, and a long history of joint effort and achievement. In such a situation the threshold for abandoning a reliable partner, even in exchange for a theoretically more value-adding offering, is very high for the customer organisation. On the other hand, well-known trademarks and patents to widely-used or new emerging technologies are hard currency all over world and tend to retain their value quite well irrespective of the evolution of industry structures and value chains. Companies like Qualcomm have managed to generate huge revenues despite the fact that it has only a few products or well-known trademarks of its own (among the actual end users). However, know-how alone does not guarantee future success, because a resourceful competitor can also develop it by itself.

The true business value of customer intimacy will be put to test if, for example, an increasing number of existing customers want to expand – or are already operating – internationally, are running several lines of business and/or are looking for comprehensive enterprise solutions with 24/7 user support and strict service level agreements. Such requirements may get difficult to cope with for a small or medium-sized service provider. In general, international market development calls for a sustainable financial position or a great deal of investor trust. In such a case an obvious direction to look for new business and profitability is partnering. This is where large, globally operating Indian IT firms can come in. Today they can provide access to global markets like any other major Western IT service provider, such as Accenture or Cap Gemini. For example, a European technology company may provide the product, while the Indian partner may provide the channel for marketing the product throughout the

world. Some of the Indian IT majors are keen to improve their product and service portfolios with a view to making their offering more appealing to global clients. They may also be interested in licensing special technology to support their operations, e.g. application development or remote system administration.

The large Indian IT service and ITES/BPO companies are also willing to expand their business through inorganic growth and have been scouting for attractive targets. Since most of these companies' forays into product development have not been particularly successful, their current focus appears to be on the acquisition of (foreign) product companies with an existing client case. For example, Wipro, NIIT and Subex Systems have already acquired a few companies in Europe and North America (Table 16). One possibility to capitalise on the ongoing development trend, therefore, is to put one's business up for sale.

Table 16. Some acquisitions made by Indian IT service and BPO companies in 2006 (sources: articles in business press).

Acquiring company	Target company			Investment, USD millions
	Name	Country	Line of business	
HOV Services	Lason	USA	BPO	148
Subex Systems	Azure	UK	Revenue assurance	140
TransWorks	Minacs	Canada	BPO	125
TCS	TKS-Teknosoft	Switzerland	Banking solutions	80
Wipro	Enabler	Portugal	IT services	52
NIIT	Element K	USA	Learning solutions	40
Wipro	Saraware	Finland	Telecom software	32
NIIT	Room Solutions	UK	Insurance solutions	25
Wipro	cMango	USA	IT services	20
TCS	TCS Management	Australia	Consulting	12

Although the deal sizes have been small in comparison with the largest acquisitions in the manufacturing and metals sectors, so far in the range of USD 20 to 150 million, it is entirely possible that the amounts may go up to hundreds of millions of dollars (or euros). Even Infosys, one of the big three Indian IT service providers, which has until recently relied on organic growth, seems to be open to the acquisition of smaller niche product companies. In general, most of the large Indian IT service providers have maintained a very good cash position. Table 17 shows the liquid assets of the top 5 Indian IT service and BPO companies, totalling around EUR 2.8 billion. This money can come handy when acquiring small and medium-sized firms in Europe, North America and the rest of the world.

Table 17. Liquid assets of the top 5 Indian IT service and BPO companies (FY 2006–2007) (sources: analyst reports, CMIE Database).

Company	Rs. Crore	EUR million
Infosys	3,801	666.84
Wipro	3,769	661.23
Satyam	3,400	596.49
HCL Technologies	3,400	596.49
TCS	1,592	279.30
Total	**15,962**	**2,800.35**

Product companies can increase their acquisition value by expanding and consolidating their client base and undertaking R&D initiatives that result in IPR. The Indian players may also be interested in the professional expertise that the company's employees possess. For example, in response to Nokia Siemens Networks' announced plan to reduce around 700 employees in Finland, Wipro Technologies, one of the big three Indian IT service companies, swiftly expressed its interest in those people (Talouselämä, 10 May 2007). Since one of the handicaps of the major Indian IT companies has been the level of local support, a skilful staff is likely to be highly valued – whether the case in question concerns a bid for acquisition or the search for a capable subcontractor or technology vendor.

5.2 Telecoms and online media: From West to East

Major multinational technology companies are already there

The booming Indian telecom market offers enormous opportunities for mobile phone manufacturers as well as network hardware and service providers. Companies like Nokia, Ericsson, Siemens and Cisco currently dominate these market segments in India. Due to the huge growth in the number of mobile subscriptions and handsets, the telecom infrastructure market is also expected to grow fast in the foreseeable future.

Currently, most telecom operators are lagging far behind in upgrading their telecom infrastructure, which in turn has resulted in inadequate quality of service in many parts of the country. Calls keep cutting off, and while a text message sent from phone A may reach phone B the same does not necessarily work vice versa. Foreign subscribers visiting the country have possibly noticed that reliable data roaming is still a rare luxury, too. The operators, however, are struggling with these challenges.

One of the key aspects of India's wireless revolution has been the affordability of handsets. Prices of handsets have fallen steadily since 2001. The effect has been

twofold: while this has enabled many in lower-income categories to opt for a wireless connection, consumers in higher income categories are taking advantage of the situation by upgrading their handsets with a greater frequency. Ownership of the latest model is a style statement for many Indian youths – and perhaps for many seasoned businessmen as well. In some market segments, growth in the sales of handsets has overshot growth in the number of subscribers. According to analysts, the market will reach its second phase of rapid growth when handsets below the price of Rs. 1,000 hit the Indian market. It will also be interesting to see how Vodafone will play this game, having completed its acquisition of Hutch Essar, currently India's 4th largest wireless operator, with a market share of around 15%.

Nokia is the present leader in the Indian mobile phone market, followed by Sony Ericsson, Motorola, LG, Samsung and other, smaller, players. Nokia's success can be attributed to its wide product portfolio, which caters to the low price segment with simple monochrome handsets as well as to the premium segment with state-of-the-art PDA phones. For a newcomer, it would be a critical to identify and focus on a profitable niche market rather than offer the entire range of phones, taking the established players head-on. For example, O2, a spin-off from the mobile services division of British Telecom, seems to have adopted a niche market entry strategy and is catering predominantly to the high end segments.

India is not UK^2: Challenges and models of tapping the content market

The Indian online media market is still relatively undeveloped. Traditionally, the low penetration of the Internet in Indian households has also been one of the key reasons for the low consumption of online media. However, the wireless segment is currently driving growth. The annual growth rate for mobile subscriptions is currently more than 90%. The value-added services (VAS) segment, which presently accounts for around 5–10% of telecom operators' revenues in India, is expected to grow around 60% during 2007. A major part of these revenues is generated by simple products like ringtones and SMS-based contests and services. When it comes to more developed mobile services, such as games or enterprise solutions that call for data-capable handsets, the Indian market is still small.

On the other hand, this may also be conceived as an interesting market development challenge. Whatever the idea or approach, content developers and brand owners targeting the Indian online media market should take the following basic issues into careful consideration[23]:

[23] The numbers are from the interviews conducted as part of this study. We did have an opportunity to verify them from other sources.

- Rural India will provide much of the coming growth. Most new subscribers will be very price conscious, will prefer voice and SMS over other services, and will purchase basic handsets that lack colour displays and data capability. On the other hand, the most affluent customer segment, around 2–4% of all subscribers, live cosmopolitan lives, are constantly looking for new gadgets and services, and can spend considerable amounts of money on fulfilling their aspirations.
- Outside major cities there is little demand for English-language content. It has been estimated that the proportion of the English-speaking population in Delhi and Mumbai is around 50% and in other big Indian cities (e.g. in Kolkata, Chennai and Bangalore) around 30%. In other parts of the country only the chosen few may use English. Around 5–7% of all Indians can speak English well enough to be considered prospective users of English-language services.

In consequence, the key to growth in the use of VAS outside the major cities is the availability of meaningful and affordable content in local languages. However, the relatively high prices of data-capable handsets, and the inferior telecom infrastructure in the rural areas, are likely to hamper this development for years to come. Within India's metropolitan areas the situation is, however, much more favourable for the VAS segment. In this respect there are many similarities between India and China because in both countries the differences between the most and the least developed areas are huge in every respect (albeit China is well ahead of India when it comes to overall mobile phone penetration). The introduction of 3G, which is to start in January 2008, as well as the overall development of the Indian economy will certainly affect the business potential of the VAS segment in the mid-term future.

The dominant value-capture model in the Indian telecom and online media markets is revenue sharing. This model can take many forms and offers a wide range of options. The model can work extremely well when there is a clear ownership of the intellectual properties involved, including all content, applications and underlying technologies. For the time being, the bargaining power has remained with the customer-facing aggregators, especially telecom operators and large media houses running popular Internet portals. With the exception of very strong branded products and services, these aggregators can claim a major share of the revenue stream, while the share of the content producer may remain under 25%.

However, there are signs of change in the air as some game developers have managed to build new distribution channels for their products and, consequently, also to secure a greater share of revenues for the upstream developers and copyright owners. Maybe they will set an example for other industries to follow. From the operators' point of view, the problem is the heavy tax burden: in addition to VAT there are many other taxes that collectively put Indian telecom operators and ISPs in an inferior position in

comparison with their peers in other Asian countries. This also diminishes the content producers' prospects of negotiating better deals.

For a foreign company, the first step in the process of entering the Indian online media market is to assess the market potential. There are many commercially operating entities to provide related services, as well as national export promotion agencies and alike that may be able to cover part of their expenses from public funds. Should this exercise prove promising, the next step then involves identifying and choosing one or several (prospective) local partners who can market and distribute the product within the targeted customer segments in India and who can also render accounts in the preferred currency (most Indian companies operate only using rupees). It is worth noting that a partnership with a good media house (i.e. a mediating producer or aggregator) may provide much easier access to a number of distribution channels, especially to major telecom operators, but that will happen in exchange for reduced margins. On the other hand, partnering directly with the operators may call for a substantial marketing effort and greater technical capabilities, but will also yield better margins in case of a successful deal.

Whatever the case, establishing well-functioning partnerships with strong local players is the key to large volumes, which is essential in India due to low unit prices. This kind of market access model may be critical for smaller firms who cannot scale up their own operations quickly. The model also allows these firms to gauge the response over a period of time, and then scale up accordingly, e.g. through establishing a subsidiary.

The subsidiary model applies to larger (foreign) service providers with a clear vision of the market potential, hands-on experience in making business in India and a stable financial position. At the beginning, the size of the subsidiary company could be around 25, staffed by Indians with exposure to international business practices and the local market, as well as the representatives of the parent company (in the roles of managers and/or specialists). The engagement can begin with a Liaison Office, which can carry out research and initiate the process of setting up a subsidiary with the help of local legal guidance. The general advantages of operating through a subsidiary company include e.g. greater control of operations, better visibility of the brand, enhanced credibility among the local players and customers, greater share of revenues, and the distribution of risks. On the other hand, the high costs of setting up and expanding operations, the time and energy needed to manage various bureaucratic processes, and the difficulty of making an exit from the business must be carefully considered in the decision-making process.

Experts say that you need to have "a good story to tell about your company – both global as well as Indian". According to Vipul Chauhan, Country Manager of Finpro

India[24], the key co-operation parameters in the area of mobile services are as follows (Table 18):

Table 18. Key co-operation parameter (source: India Mobile Seminar, 2004).

Parameters	Questions the prospective Indian partner may ask
Cost	How affordable is your solution? Is there anybody selling cheaper than you?
Synchronisation	Is your product too advanced for the present time? We might need it tomorrow but not today.
Competitive edge	Will I be able to sell my services better if I opt for your solution?
References	Your solution may be excellent, but who are your existing customers?
After sales	Whom shall I contact in case of a problem? Do you have a local contact?
Transactions	I don't want to pay in dollars or euros. Can you accept local currency?

5.3 India conveys a mixed – but interesting – message

India offers huge opportunities with its sustained economic growth, decreasing regulations, a growing middle class and a technology savvy young population – i.e. a market that is enjoying its newly discovered and gradually evolving purchasing power. On the other hand, for many foreign players India can pose insurmountable challenges in the form of archaic bureaucratic procedures, high taxes, poor infrastructure and sheer cultural hurdles.

India churns out a large number of engineers and other professionals from its colleges and universities every year, and can therefore cater to the various demands of its developing service sector. While employee costs are increasing, India is still a relatively inexpensive sourcing base in comparison to North America and most European countries. Indian labour laws pertaining to services are flexible, too.

In addition, India is gradually developing as the 'knowledge hub' of the world. Along with developing world-class expertise in sectors, like IT service provisioning and bio-technology, many Indian firms have become excellent repositories of business know-how in a number of other sectors. This due to the large variety of IT service and business process outsourcing projects they currently handle.

[24] Finpro is an association that provides Finnish companies, especially SMEs, with a range of services to support internationalisation around the world. Website: http://www.finpro.fi/.

However, India's relative inability in developing a world-class tertiary educational infrastructure makes it difficult to take full advantage of this opportunity. The question is: Can India create new markets for new products and services – and capture the major share of the economic value added – or is it destined to provide capabilities and markets for others who specify the problems and provide the (branded) solutions to those problems? It has been suggested that the level of applied R&D in particular needs to be improved in India.

The central government of India and proactive state governments are doing all they can to attract foreign investments in their respective constituencies. The available incentives may include e.g. tax holidays, public-private partnerships, offers of land at subsidised rates, and even upgrading the existing infrastructure. Of course, these measures are likely to be commensurate with the size and expected economic impacts of the planned investment.

Nevertheless, in spite of recent reforms to introduce procedural simplicity, the amount of paperwork and lengthy procedures still cause headaches. Companies need to prepare for spending substantial amounts of time and money in getting projects through, which can be quite frustrating. As a result of ongoing large-scale e-governance projects, procedures are, however, expected to become simpler and faster in the future.

To summarise, India's rise in stature has been a mixed bag. On one side there are optimists who look at the large talent base, the burgeoning of the Indian population and the ever-increasing consumption, and the recent success in IT services and many other industrial domains. Many analysts have projected growth levels outshining other comparable economies, even China. However, there are others who have pointed out the gaping holes in India's physical and administrative infrastructures that have already been stretched to their limits. Moreover, the steep economic divide within the population is also a concern for social scientists, with expectations of rising crime rates, which in spite of widespread poverty have been quite low till recently. But what is for sure is that the weight of India in the global economy will increase.

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6.2 Seminars

BangaloreIT.com 2004 (organised by Cyber Media, November 2004, Bangalore), selected seminar presentations: Keynote addresses on technology outsourcing (by S. N. Zindal, Director General, Software Technology Parks of India, and T. Sait, Minister of State for Labour & Haj, Government of Karnataka); Information technology: The new context (by P. Gupta, Managing Director, IDC India); BPO leaders: The road ahead (by P. Mukherjee, Managing Director, NeoIT); High-value outsourcing: The future lies here (by A. Srivastava, Director, Xansa); IT outsourcing: Can we look inward? (by P. Roy, Chief Editor, DataQuest); India as an outsourcing destination: Outsmarting the challengers (by B. V. Naidu, Director, Software Technology Parks of India, Bangalore); IT challenges: Managing amidst conflicting mandates (by M. V. Sarma, AVP, Global Infrastructure Solutions, CSC Corporation); Telecommunication solutions as strategic business enablers (by A. Bhardwaj, Vice President, Airtel Enterprise Services); The role of NASSCOM as a facilitator of innovation (by G. Natarajan, CEO, Zensar Technologies); Problems of establishing a mass market for IT in India (by R. Jain, Managing Director, Netcore Solutions).

Directions 2007 (organised by IDC India, July 2006, Bangalore), selected seminar presentations: The flattening world of enterprise IT: Creating opportunity from the coming transition and disruption (by F. Gens, Senior Vice President, Research, IDC USA); IT and communications: Disruptions ahead (by P. Gupta, Managing Director, IDC India); Political, economic and business environment: Weighing the positives and the negatives (by P. Thakurta, Director, Cybermedia); The Indian domestic IT market: Shifts, challenges & opportunities (by K. Singh, Country Manager, IDC India); Shifting business imperatives in industry verticals: How aligned are you? (by M. Chugh, President, EMC, India & SAARC); The new phase of the IT services market: Aligning with the underlying shifts (by K. S. Viswanathan, Chief Executive – India Geography, WIPRO Infotech); Increased relevance of technology: Driving the consumer markets of the future (by P. Chakraborty, General Manager, Research, IDC India); Convergence and content: Opportunities amidst the complexity (by S. Malhotra, Editor-in-Chief, Cybermedia Publications); Technology in the consumer marketing space: From products to brands (by S. Behl, Head of Branding and Marketing, Reliance Infocomm Limited).

India Mobile Seminar (organised by Finpro, August 2004, Helsinki), presentations: Mobile value chains in India (by Vipul Chauhan, Country Manager, Finpro India); Telecom operator case study (by Yatin Pahwa, Senior Manager – Marketing, Bharti Airtel); How to conduct wireless business in India (by Veli-Matti Kajova, Finpro).

6.3 Articles, reports and databases

Macroeconomics, business environment, and cross-industry

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IT services, equipment and ITES/BPO

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Appendix A: Details of corporate and individual taxation in India

The rates given below are subject to the enactment of the 2007 Finance Bill. The rates are for financial year 2007–2008. Note that this sheet is not comprehensive.

Corporate Income Tax (CIT)

The nominal tax rate for Indian companies is currently 30% and for foreign companies 40%. Corporate income (profit) in excess of Rs. 1 Crore (Rs. 10,000,000) is subject to a surcharge that is 10% for Indian and 2.5% for foreign companies. In addition, a surcharge of 3% (the Education Cess that the government of India collects for promoting primary and higher education) is levied on the taxable corporate income inclusive of possible surcharges, if any. For example, the effective corporate income tax rate for foreign companies with net earnings exceeding Rs. 1 Crore is $0.4 \times 1.025 \times 1.03 = 0.4223 = 42.23\%$. Note that there are many exceptions to these basic rules.

Minimum Alternate Tax (MAT)

MAT is levied at 10% of the adjusted book profits, if the payable income tax according to the normal provisions is less than 10% of the profits. A surcharge of 10% is applicable for domestic companies if the adjusted book profits exceed Rs. 1 Crore. In addition, the taxable income is subject to the 3% Education Cess.

Individual Income Tax (IIT)

The individual income tax is calculated for each income 'band' or level as follows: Less than Rs. 110,000 (per year): 0%; Rs. 110–150,000: 10% of the amount by which the total income exceeds Rs. 110,000; 150–250,000: 20% of the amount by which the total income exceeds Rs. 150,000; Over Rs. 250,000: 30% of the amount by which the total income exceeds Rs. 250,000. If the taxable income exceeds Rs. 10 Lakh (Rs. 1,000,000), a surcharge of 10% is levied. In addition, the taxable personal income is subject to the 3% Education Cess. Therefore the maximal effective individual income tax is $0.3 \times 1.1 \times 1.03 = 0.3399 = 33.99\%$. Note that there are many exceptions to these basic rules.

Capital Gains Tax

The Capital Gains Tax applies to sales profits. If the period between buy and sell is 360 days or less, the yield is classified as short-term capital gain. These gains are subject to the regular corporate and individual income taxation. If the period between buy and sell is more than 360 days, then the long-term capital gains tax applies. Long-term capital

gains can be taxed with or without indexation. Indexation refers to a system, in which the amount of capital gains that are exempt from the tax is determined on the basis of inflation and other factors. For example, if the index value has doubled between the period of buy and sell, the 20% tax will apply to the amount by which the current value (or sell price) of the investment exceeds the reference value of 2 x the original investment. If indexation is not used, the capital gains will be taxed on the basis of the difference between the sell and buy prices using a flat 10% rate. On top of this, a 10% surcharge is levied if the total capital gains exceed Rs. 10 Lakh (for individuals) or Rs. 1 Crore (for corporations). Moreover, also the 3% Education Cess applies to the taxable capital gains, including possible surcharges, if any.

Dividend Distribution Tax (DDT)

The nominal Dividend Distribution Tax is 15% and applies to companies paying dividends. The taxable amount is also subject to a surcharge of 10% and the Education Cess of 3%. There are also plans to tax individuals for dividend income, possibly in 2008–2009. In addition, the central government has proposed the introduction of the Fringe Benefit Tax (FBT) that would have an impact e.g. on stock options.

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Abstract

India has come a long way since the troubled days in 1991, when the new government opted for the liberalisation of the economy. This publication provides an analysis of the current development trends and industry practices in two particularly successful sectors of the Indian economy: IT services and telecoms. In IT services the focus has been placed on the export of services from India, and in telecoms on the domestic wireless market. In addition, the publication provides a brief introduction to India as a business environment. The publication aims to help foreign companies and organisations explore possible benefits, risks and forms of engaging in business in India and/or with Indian companies within the selected industrial domains. The study was carried out between 2004 and 2007 as a joint effort of VTT Technical Research Centre of Finland and Indian Institute of Management Bangalore.

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