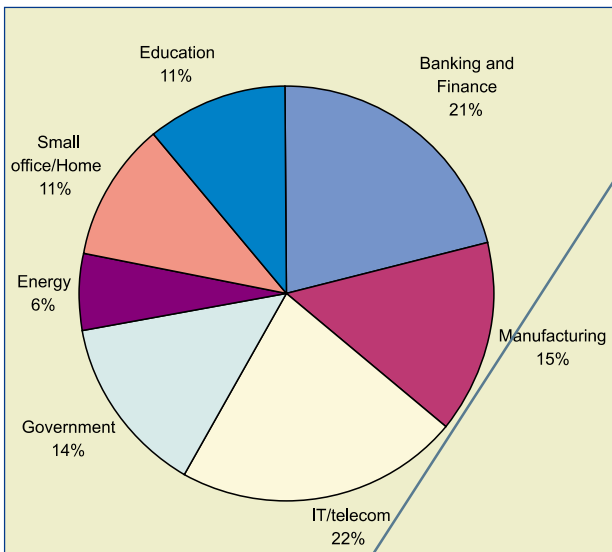# CHAPTER 7

Information Technology in Key Verticals

The manufacturing sector, banking and finance, government and education comprise key verticals in the Indian IT market. The manufacturing sector holds 15 per cent of the total domestic IT share of the market. The banking and finance sector holds 21 per cent, government 14 per cent, education 11 per cent, small office/home 11 per cent, energy 6 per cent and the rest (22 per cent) is accounted for by the ICT sector itself.

Figure 7.1: Domestic IT market; Key Vertical Markets: Share of Market (per cent) 2002-03

Source: NASSCOM.

7.1. Application of Information Technology in Key Verticals- Global Scenario

Since exports account for roughly two-thirds of the ICT market, we look at key verticals in the global context, main drivers of the demand for ICT products from key verticals and stakes they offer for Indian ICT segment. The level of IT investments and the key drivers for investment vary widely across the various sectors of the economy, depending on the level of competition, and expectations regarding future growth and profitability.

Financial Services

According to NASSCOM estimates, in 2002-03, the financial services sector accounted for the largest share of the Indian software and services exports at around 39 per cent. IT spending in the financial services market includes IT spending by banks, insurance companies and securities firms. At present, the global economic slowdown, intense competitive pressures, deregulation of financial markets and consolidation are factors affecting spending in the financial services industry.

IT spending by banks is driven by initiatives to meet regulatory requirements, manage customer relationships, manage risks, reduce costs and attract new customers. Banks are trying to provide web-based trade support, value added transaction services, basic online transaction services and basic online information services, to attract and retain customers.

Telecom

IT is being used in the telecom sector to enable telecom service providers to extend IP services to subscribers, for leveraging technologies, such as WAP, SMS and messaging constantly to build new services. IT is also used for business support system to support seamless business operations such as billing, data warehousing and customer relationship management. Another application of IT in the telecom sector is for the operational support systems to rapidly deploy services in a scalable and cost-effective manner.

Expenditure by the telecom sector on IT services, as a percentage of revenues, is one of the highest at around 12-15 per cent. This is due to the rapid changes in telecommunication technology, increase in mobile communications, and intense competition in the global telecom service and equipment markets.

In 2003, IT services spending by the telecommunications sector was around $53 billion including $36 billion by telecom equipment manufacturers and $17 billion by telecom service

providers. IT services spending by telecom service providers is forecast to grow at a compound annual growth rate of around 16 per cent in the medium term whereas, IT investment by telecom equipment manufacturers is likely to grow at a lower rate of around 9 percent only. In 2002-03, telecom equipment sector accounted for around 13 per cent of the Indian software and services exports.

Manufacturing

Manufacturing companies invest heavily in IT applications. They operate within complex supply chains, with additional constraints due to the nature of raw material availability, product demand patterns, shelf-life problems, unplanned shutdowns, or significant plant failures requiring complex start-up procedures. Manufacturers invest primarily in ERP systems, SCM, developing shop-floor data collection systems and updating their existing systems. The main factors for investments in IT include improvement in operational efficiency and capital productivity and this is also driving the demand for ERP in the small and medium enterprise sector.

IT services spending by the manufacturing sector is estimated at around $100 billion in 2003. In the medium term, it is expected to grow at a CAGR of around 4-5 per cent. According to NASSCOM estimates, manufacturing sector accounted for 12 per cent of Indian software exports in 2002-03.

Healthcare

The main areas of application of IT in this sector include patient management systems, record management, clinical system management and facilitating the making and implementation of life saving decisions. According to NASSCOM report estimates, the healthcare sector accounted for around 5 per cent of Indian software exports in 2002-03.

Utilities

The main areas of IT application in utilities are

- Support and maintenance services for industry specific applications like forecasting, scheduling and load balancing software

- Enterprise asset management which includes everything from identifying and planning new assets, acquiring or building assets for operation and maintenance of assets

- Integrated billing which helps streamline operations, reduce delays and eliminate manual entry of data

In 2003 the utilities sector (including oil and gas, power and water supply) accounted for around USD 16 billion of global IT services spending. It is expected to grow at a CAGR of around 9 to 11 per cent during 2002-05. According to analysts, utility companies' IT spending is low (5 per cent of revenues) compared with other industries such as telecom (25 per cent of revenues). However IT outsourcing is expected to increase over the next few years.

Retailing

The retailing and wholesale trading sector accounted for approximately $41 billion in global IT services spending in 2003. Over the medium term, IT services spend in retailing is expected to increase at a CAGR of around 8 per cent. Currently, retail spend accounts for 3 per cent of the global outsourced IT services market.

Retail includes general merchandise, catalogue retailers, drug stores, restaurants and chains of food stores etc. IT spending is primarily aimed at increasing productivity, improving customer satisfaction and eliminating overheads. Investing in IT can help reduce costs in the short term and gain competitive advantage in the long term.

Key areas for IT spend in retail include:

- Customer management and business intelligence, data warehousing and data mining applications

- ERP, SCM and CRM applications

Travel, Transport and Logistics

The transportation industry accounts for approximately 4 per cent of global IT spending. Logistics services are the fastest growing sub-segment in the industry for IT spending. Transport organizations especially in the air segment are using IT to optimize costs and improve their business performance in an increasingly consolidated and competitive market place. Some drivers of IT expenditure in the transportation industry include

- Broadening of offerings by provision of additional services such as baggage handling, ticketing etc which require automation

- Introduction of advanced logistics and cargo security systems in the Asia Pacific Region

- Increase in popularity of travel websites. Online leisure travel bookings are expected to increase from USD 4.8 billion in 2002 to USD 13.3 billion in 2004.

- Use of internet by logistics companies to offer reliable low cost communication networks for shipments, freight forwarding, warehousing, distribution and information

- Use of IT by airlines to improve airport experiences providing magnetic cards for faster check-in and boarding and speech recognition technology for providing information. Airlines are also accelerating their automation efforts and are moving human resources functions, crew scheduling and training online.

Government

Around the world governments are increasing their IT spending to achieve the following:

- Deliver faster, more efficient, reliable and cost effective services and information to citizens through services such as online payment of bulls, online application for driving licenses, passports, marriage registrations, online availability of agricultural goods' prices for farmers (e-Choupal) etc.

- Link all government offices and agencies electronically, streamlining flow of information, speeding up processes and reducing costs

- Helping businesses by providing online services such as the registration of companies, sanction of various projects, procurement, taxation etc.

- Helping government employees by providing services such as online filing or tracking of leave, online availability of payroll data etc.

Asia Pacific e-government spending in 2002 was USD 880.1 million and is forecast to reach USD 1477.6 million in 2007 at a CAGR of 10.9 per cent. E-government initiative in Asia can play a significant role in boosting foreign investment. Such initiatives offer investors convenient and transparent online government platforms to handle business for government transactions.

7.2. Software and Services Distribution by Verticals – Domestic Market

We look at verticals' stakes in the domestic ICT market segment. The banking, financial services and insurance sector (BFSI) accounts for the largest share of the domestic IT market. Other main verticals include government and manufacturing sectors.

Banking, Financial Services and Insurance

IT spending by the BFSI sector increased by 18 per cent to Rs. 60 billion (USD 1.24 billion) in 2002-03. Demand ranged from general software and hardware to specialized softwares to enable the internet phone banking etc. the banking industry also focused on CRM technology as part of their marketing efforts to deliver better customer satisfaction. Increased competition from foreign banks forced PSU banks to upgrade there IT infrastructure. The RBI's guidelines on the implementation of real time gross settlement systems also acted as a catalyst in the process.

The BSFI segment will continue to contribute significantly to overall IT spending in India. This will be boosted by the increase by banks on electronic transaction. The implementation of the New Basel Capital Accord will also result in banks adopting new IT technology.

Government

IT spending by the government sector increased by 12per cent to Rs 38 billion (USD 790 million) in 2002-03. This trend is expected to continue and initiatives by both the central and state governments are expected to give a boost to the IT sector. According to NASSCOM, the Indian government plans to invest around USD 2.7 billion to bridge the digital divide and about USD 1 billion on e-governance in India. The government will use web-enabling services, consulting for planning and implementation apart from the hardware and software to build the E-governance platform. Contributions from state governments is also expected to increase as they are now required to allocate at least 2per cent of their budgets for IT expenditure.

Manufacturing

Despite worldwide growth the manufacturing sector needs to overcome certain challenges including the lack of good integration of products and services.

According to Gartner, the Indian manufacturing sector has penetration at 37 per cent for ERP, 15 per cent for CRN and 10 per cent for SCM in 2002, highlighting the untapped potential in the sector. The sector holds potential as prices are expected to drop and awareness about benefits is expected to increase. Total cost of purchase and after sales vendor support will be the key criteria for increased spending by companies on software and IT services.

7.3. Computer Sales across Verticals (2003)

Manufacturing vertical dominates the PC and computer peripherals market. Almost every third PC is used by this vertical. This measure is a surrogate to IT spending; however the IDC data suggests a different picture where manufacturing share seems to be the highest in the ICT market.

Verticals	PC Sales (000 unit)	PC Sales (Rs. Crore)	Share (Computers) (%)	Computer Peripheral Sales (Rs. Crore)	Share (Computer Peripherals)(%)
Manufacturing	586.8	2503	31.8	1045.9	31.8
Services	348.6	1487	18.9	621.6	18.9
Finance	261.9	1117	14.2	467.0	14.2
Govt. & Education	444.4	1896	24.1	792.6	24.1
Others	202.7	865	11.0	361.8	11.0
Total (Non-Home)	1844	7869	100	3289.0	100

Table 7.1: Computer and Computer Peripheral Sales across Verticals

Source: IDC.

The shares of hardware, services, software and others in key verticals at the All India level is captured in the Table 7.2; the IDC data depicts a predominant share for hardware (60 per cent).

Table 7.2: All India IT Spends by Verticals and IT Components

(Figures in Rs Crores)

| Components	Verticals					
	Manufacturing	Services	Banking and Finance	Government and Educational institutions	Others	Total
Hardware	4459	3841	2868	3270	3289	17826
Services	1628	1590	1222	1263	1239	6942
Software	817	384	586	648	968	3403
Others	464	398	314	348	369	1894
Overall	7368	6313	4990	5529	5865	30065

Source: IDC.

7.4. Training and Education in IT

The training and education industry in India showed signs of revival during 2003-04. Industry revenues are estimated to increase by 6per cent to Rs 12 billion (USD 270 million) in 2003-04. Most of the increase in demand has been due to the growth of the BPO sector. The ITES segment also provided a market for soft skills training. Short-term courses (mostly need based focusing on current demand) accounted for a significant percentage of the total revenues of companies and training companies benefited from an increase in enrollment for these courses. Coupled with recession long-term courses have taken a hit due to volatile environment prevalent in the technology booming. Key opportunities for training companies lie in the emergence of new technologies, new market segments and the emergence of skill gaps in areas like biotechnology and engineering design.

Figure 7.2: Indian IT Software Services and BPO (ITES) Revenues: Verticals (2002-03)
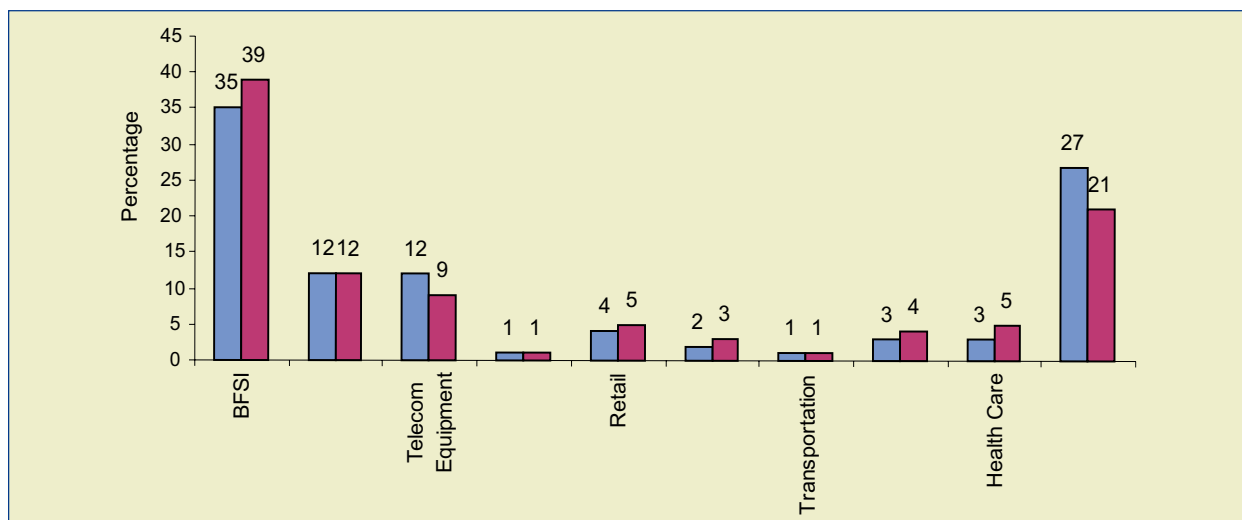
Source: NASSCOM.

At present, India has a significant presence in only two of the ten major IT services. Custom application development and maintenance, and application outsourcing account for nearly 88 per cent of total software exports. Recently, Indian companies have started moving up the value chain by offering services in IT consulting and system integration.

7.5 Statewise IT spending by verticals- 2003

The statewise scenario on IT spending is captured in the Table 7.3.

Manufacturing and Government and Educational sector accounted for the maximum IT spends in most of the Indian states.

7.6 Top Four Statewise IT spends by Verticals and Components

Andhra Pradesh

The IT spending in the state for the year 2003 is Rs. 1422 crores. Hardware amounts to 60 per cent of the total IT spending at Rs. 843 crores, software and

Table 7.3: Statewise IT Spending by Verticals-2003

(Figures in Rs. Crores)

States	Verticals					
	Manufacturing	Services	Banking and Finance	Government and Educational Ins.	Others	Total
Andhra Pradesh	452	269	202	343	156	1422
Delhi	2472	1473	1106	1878	856	7792
Goa	51	30	23	38	17	159
Gujarat	341	203	152	259	118	1072
Haryana	131	78	58	99	45	412
Karnataka	632	375	282	479	218	1986
Kerala	104	62	47	79	36	328
Maharashtra	2501	1486	1116	1894	864	7861
Madhya Pradesh (Incl. Chattisgarh)	127	76	57	96	44	400
Tamil Nadu	1122	667	501	850	388	3527
West Bengal	451	268	201	342	156	1418
Total	8392	4985	3745	6356	2899	26377
Other States	1172	696	523	888	405	3685
All India	9564	5681	4268	7244	3304	30062

Source: IDC.

IT services spending amounts to 11per cent and 23 per cent respectively. The Manufacturing sector accounts for the largest percentage of total IT spending in Andhra Pradesh followed by the Services sector. (Table 7.4)

Table 7.4. IT Spends by Verticals and Components - Andhra Pradesh, 2003
(Figures in Rs Crores)

Components	Verticals					
	Manufac turing	Services	Banking and Finance	Government and Educational intuitions	Others	Total
Hardware	211	186	136	155	156	843
Services	77	75	58	60	59	328
Software	39	18	28	31	46	161
Others	22	19	15	16	17	90
Overall	348	299	236	262	277	1422

Source: IDC

Karnataka

Last year, considerable amount of spending was on hardware in computerizing departments and basic infrastructure such as networking and customizing software to certain departmental activities. In the year 2003, total IT spending in the state government was Rs. 1986 crores. In this state, manufacturing accounts for the maximum percentage of total IT spending followed by services. (Table 7.5)

Table 7.5. IT Spends by Verticals and Components – Karnataka, 2003
(Figures in Rs Crores)

Components	Verticals					
	Manufac turing	Services	Banking and Finance	Government and Educational institutions	Others	Total
Hardware	295	260	189	216	217	1178
Services	108	105	81	83	82	459
Software	54	25	39	43	64	225
Others	31	26	21	23	24	125
Overall	487	417	330	365	387	1986

Source: IDC.

Maharashtra

There will be a marked decrease in the spending on hardware over the years, as hardware spending will show a level of saturation in the government sector. Inversely, there will be an increase in demand for IT services.

Table 7.6: IT Spends by Verticals and Components - Maharashtra, 2003
(Figures in Rs Crores)

Components	Verticals					
	Manufac turing	Services	Banking and Finance	Government and Educational institutions	Others	Total
Hardware	1166	1030	750	855	860	4661
Services	426	416	319	330	324	1815
Software	214	100	153	169	253	890
Others	121	104	82	91	97	495
Overall	1926	1651	1305	1446	1534	7861

Source: IDC.

Tamil Nadu

In the current year, there is a decline in IT spending in Tamil Nadu by 26 per cent. Tremendous amount of cautiousness was seen in the IT spending toward the last two quarters of the year, there has been a freeze in the IT investments in the state. Hardware and software services have experienced a decline in growth rates upto 26 per cent whereas spending on services is declining by 36 per cent. In the coming year a lot of investment is expected in terms of automation and e-governance.

Table 7.7: IT Spends by Verticals and Components – Tamil Nadu, 2003
(Figures in Rs Crores)

Components	Verticals					
	Manufacturing	Services	Banking and Finance	Government and Educational institutions	Others	Total
Hardware	523	462	336	384	386	2091
Services	191	187	143	148	145	814
Software	96	45	69	76	114	399
Others	54	47	37	41	43	222
Overall	864	741	585	649	688	3527

Source: IDC.

Recommendations

CHAPTER 7
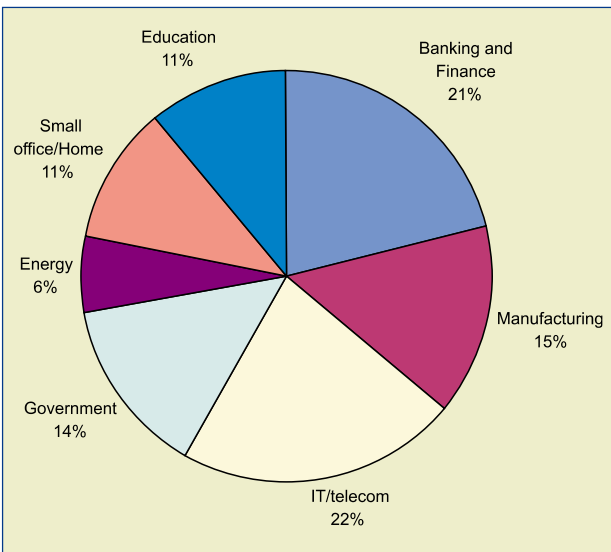
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