

INDIA: INFORMATION TECHNOLOGY & INFORMATION TECHNOLOGY ENABLED SERVICES Profile 2010



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GLOBAL TRENDS IN INFORMATION TECHNOLOGY (IT) & INFORMATION TECHNOLOGY ENABLED SERVICES (ITeS)

(i) Worldwide Technology related Spend (\$ Bn)

Category	2008	2009	2010 (Estimate)	2011 (Estimate)
Services	591	589	605	636
Business Processing Outsourcing (BPO)	110	112	146	164
Package Software	302	307	326	348
Hardware	600	550	620	652
Total	1603	1558	1697	1800

Source: International Data Corporation, NASSCOM

(ii) Worldwide Spending on IT Services (\$ Bn)

	2008	2009
Information System Outsourcing	115.07	114.62
Network & Desktop Operating System (Nos.)	42.4	43.46
Application Management	40.13	42.31
Hosted Application Management	7.03	7.73
Hosting Infrastructure Services	25.22	26.68
IT Outsourcing	228	235
IT Consulting	33.13	31.50

System Integration	106.17	103.50
Network Consulting & Integration	32.90	33.18
Custom Application Development	38.09	35.93
Project Based Services	210.29	204
Hardware Deployment & Support	61.44	59.67
Software Deployment & Support	65.46	65.84
IT Education & Training	25.90	24.08
Support & Training	152.80	149.59

Source: International Data Corporation, NASSCOM

(iii) Worldwide Hardware Spend (\$ Bn)

Region	2008	2009	2010 (Estimate)
North America	203.35	184.75	189.10
Europe	190.36	164.79	168.30
Middle East	34.86	33.44	37.74
Asia / Pacific	171.87	167.03	174.39

Source: NASSCOM

(iv) IT Spending by Vertical (\$ Bn)

	2008	2009	2010 (Estimate)
Banking, Financial Services & Insurance	258 (3.6)	246 (-4.6)	249 (1.2)
Retail	119 (4.6)	117(-1.8)	120 (2.5)
Manufacturing	255 (5.7)	251 (-1.3)	258 (2.7)
Healthcare	45 (6.5)	47 (2.8)	49 (4.2)
Government	172 (6.3)	175 (1.6)	182 (4)
Transport	40(2.7)	40 (-1)	41 (2.5)
Communication & Media	189 (5.1)	189(-0.2)	194 (2.6)
Utilities & Construction	60(5.4)	60(0)	63 (5)
Others	231(5.8)	220(-4.7)	227 (3.1)

Source: NASSCOM

Includes IT services, Software Products & Hardware only

Figures in bracket indicate the rate of growth over the previous year

(v) IT Spending by Geography in 2009 (\$ Bn)

Region	Spending
America (North & South)	638 (41)
Europe	530 (34)
Asia Pacific	328 (21)

Middle East & Africa	62 (4)
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Source: NASSCOM

Figures in bracket indicate the percentage in that category

(vi) IT Services Spend across Verticals (\$ Bn)

	2008	2009
Banking, Financial Services & Insurance	132	130
Retail	50	51
Manufacturing	116	119
Services	41	42
Healthcare	21	22
Government	97	102
Transport	17	17
Communication & Media	49	51
Utilities & Construction	29	30
Others	39	25

Source: NASSCOM

(vii) IT Services – Spend by Geography (\$ Bn)

	2008	2009
North America	246 (41.6)	248 (42.1)
Asia Pacific	93 (15.7)	94 (16)
Europe	252 (42.7)	246 (42.1)

Source: NASSCOM

Figures in bracket indicate the percentage in that category

(viii) Software Products – Spend (\$ Bn)

	Application Software	System Infrastructure Software	Application Development & Deployment Software	Total
2008	147	87	69	303
2009	148	88	71	307

Source: NASSCOM

(ix) Software Products – Adoption across Verticals

	2008	2009	2010 (Estimate)
BFSI	56	55	56
Manufacturing	67	68	701
Retail	32	32	33
Services	32	33	33
Healthcare	11	12	13
Transportation	11	13	12
Communication & Media	22	23	24
Utilities & Construction	14	15	16
Government	29	31	32
Others	28	28	28



Source: NASSCOM

(x) Software Products– Spend by Geography (\$ Bn)

	2008	2009
North America	154 (51.1)	158 (51.6)
Asia Pacific	43 (14.3)	41 (13.5)
Europe	104 (34.6)	107 (35)

Source: NASSCOM

Figures in bracket indicate the percentage in that category

(xi) BPO – Adoption across Verticals (\$ Bn)

	2008	2009
Customer Management	58	59
Finance & Accounts	25	26
Human Resources	18	18.50
Training	7.40	6.80
Procurement	2.30	2.50

Source: NASSCOM

(xii) BPO – Spend by Geography (\$ Bn)

	2008	2009
North America	69.3 (63)	70.62 (62.5)



Asia Pacific	21.67 (19.7)	21.9 (19.4)
Europe	19 (17.3)	20.34 (18)

Source: NASSCOM

Figures in bracket indicate the percentage in that category

(xiii) Worldwide BPO Spend (\$ Bn)

Category	2008	2009
Customer Management	57.55	58.68
Finance & Accounting	24.73	25.87
Human Resources	17.56	18.35
Training	7.38	6.77
Procurement	2.29	2.5

Source: International Data Corporation, NASSCOM



Worldwide Spend on IT – Basic Facts & Trends

- The world economy experienced an economic slowdown in the year 2008-2009 and this impacted the spending of companies on new development projects but non discretionary spending and investment in Research & Development continued
- IT adoption by verticals like Government and Healthcare grew but segments that slowed down were BFSI and Manufacturing due to the slowing down of consumer demand; the Government spend on IT Networking, Software, IT Services increased and areas like National security, Immigration Policy, Disaster Management and Government-to-Citizen services were seen to be emerging; Public Sector Undertakings increased spending on implementation on Enterprise Resource Planning (ERP) System to reduce costs
- The Asia Pacific region experienced a growth in spending on technology by 7%
- The economic crises increased the importance of cost saving and improved efficiency through outsourcing; the BPO segment experienced an increase of 2% world wide; there was an increased in adoption in North America; the Finance & Accounting and Procurement horizontals showed considerable growth where as the Training horizontal experienced a decline
- Governments increased the level of financial intervention during the economic crises which proved beneficial for the ITeS and the BPO sector
- There was an increase in spending on Healthcare sector to support the needs of an ageing population and social security; in countries in Europe and the USA, there was an increase in Healthcare budgets and greater spending on IT was made to reduce complexities of patient billing, reducing medical mistakes and integration of information from various sources
- Companies increased spending on Software as a Service (SaaS) which could bring down cost of installation
- The Small and Medium Business (SMB) segment saw an increased adoption of IT; the spending on IT was \$ 511 Bn in 2008 which increased to \$ 520 Bn in 2009; subsidy based business models, managed services and advertising support solutions became more popular



- Drivers of outsourcing were cost saving due to lower labour costs and access to talent
- Mergers and Acquisitions gained momentum as companies looked at complementing their capabilities and access to new verticals and functions; Pure Play BPOs looked at development of IT capabilities
- Companies in Asia Pacific and the USA would look at offshoring verticals like BFSI, Healthcare and Retail, Service lines like Remote Infrastructure Management and BPO services like Analytics, Data Modelling, Research and Legal Process Outsourcing
- Companies have started establishing Research & Development centres all over the world to enter newer geographies; foreign sites would account for 85% of the Engineering Research & Development work by 2015 from 75% in 2009

**INDIA – TRENDS IN INFORMATION TECHNOLOGY (IT),
INFORMATION TECHNOLOGY ENABLED SERVICES (ITeS) &
BUSINESS PROCESS OUTSOURCING (BPO)**

(i) Networked Readiness Index* Rankings as per the Global Information Technology Report

Country	2008 – 09	2009 – 10
Sweden	2	1
Singapore	4	2
USA	3	5
UK	15	13
UAE	27	23
China	54	37
India	54	43
Italy	45	48
Brazil	59	61
Sri Lanka	72	72
Russian Federation	74	80
Philippines	85	85



Pakistan	98	87
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Source: World Economic Forum

(List not exhaustive)

The Index maps the extent of digital networking achieved by nations in different economic groups, the convergence of Information Communication Technology (ICT) with digital media and its role in bringing about economic sustainability

(ii) Computer Literacy & Growth of the Internet

Year	Internet Users (Mn)	Internet Subscribers (Mn)
2007	32	11.00
2008	45	13.50
2009	60	15.20

(Population Size: 1.2 billion)

(iii) Internet Use in India

Purpose	Percentage Users
Email	87
Information Search	80
Education	65
Music / Video	45
Text Chat	40
Online Job Sites	33
Gaming	33
Financial Information	24

Booking Tickets	18
News Access	16
Net Phone / Video Chat	14
Banking	12

(iv) Employment provided by the Sector

Category	2008	2009	2010 (Estimate)
IT Services & Software Exports	877000	958000	993000
BPO Exports	635000	738000	768000
IT BPO Domestic Market	450000	500000	525000

Source: National Association of Software & Service Companies (NASSCOM)

(v) IT – BPO Market Revenues (\$ Bn)

Category	2008 – 09	2009 – 10	2010 – 11 (Estimate)
IT Exports	40.9	47.5	50.1
Domestic	22	21.9	23
Total	62.9	69.4	73.1
Change (%)	31	10	5.3

Source: NASSCOM

(vi) IT – BPO Revenue as a percentage of GDP

	2007 – 08	2008 – 09	2009 – 10	2010 – 11



				(Estimate)
	5.2	5.5	6	6.1

Source: NASSCOM

(vii) IT Export Destinations

Region	2008 (\$ Bn)	2009 (\$ Bn)	2010 (Estimate)
United States of America	24.2 (60)	30.81 (62)	30.32 (61)
United Kingdom	7.6 (19)	8.94 (18)	8.94 (18)
Europe	5.2 (13)	5.96 (12)	5.96 (12)
Asia Pacific	3.2 (8)	3.97 (8)	3.47 (7)
Rest of World	-	-	0.99 (2)

Source: NASSCOM

Figure in brackets indicate percentage of Revenue from the region

(viii) IT BPO Export Revenue Distribution by Verticals (\$ Bn)

Vertical	2009	2010 (Estimate)
Banking, Financial Services & Insurance (BFSI)	18.8 (41)	20.1 (40)
Hi Tech / Telecom	9.3 (20)	10.0 (20)
Manufacturing	7.5 (16.2)	7.90 (16)
Retail	4.2 (9)	4.70 (9.4)
Healthcare	1 (3)	2.10 (4.2)

Travel & Transport	1.5 (3.2)	1.5 (3)
Construction & Utilities	1.5 (3.2)	1.5 (3)
Media & Entertainment	0.9 (1.95)	1.0 (2)

Source: NASSCOM

Excludes Hardware

Figure in brackets indicate percentage of revenue from the segment

(ix) Composition of Exports (\$ Bn)

Market Segment	2008	2009	2010 (Estimate)
IT Services	22.2 (54.2)	25.8 (54.2)	27.3 (54.4)
BPO	9.9 (24.2)	11.8 (24.7)	12.4 (24.7)
Engineering, Design & Product Development	8.3 (20.2)	9.6 (20.1)	10 (19.9)
Hardware	0.5 (1.2)	0.4 (0.8)	0.4 (0.7)
Total	40.9	47.6	50.1

Source: NASSCOM

Figure in brackets indicate percentage of revenue from the segment

(x) IT Services Exports (\$ Bn)

Market Segment	2008	2009	2010 (Estimate)
Project Oriented	11.6	13.3	14
Outsourcing	8.8	10.4	11.2
Support & Training	1.8	2.1	2.1

Source: NASSCOM

(xi) Domestic ITeS Market Size (\$ Bn)

Market Segment	2008	2009	2010 (Estimate)
Software	1.92 (9.5)	2.73 (12.2)	2.91 (12)
Services	5.00 (25)	8.40 (37.7)	9.4 (38.8)
Hardware	11.90 (59)	9.18 (41.2)	9.47 (39.2)
Business Process Outsourcing	1.37 (6.5)	1.98 (8.9)	2.4 (9.9)
Total Market Size	20.19 (100)	22.29 (100)	24.18 (100)

Source: International Data Corporation

Figure in brackets indicate percentage of Revenue from the segment

(xii) BPO Exports Revenue by Vertical (\$ Bn)

	2009	2010 (Estimate)
BFSI	5.9 (51)	6.2 (50.4)

Telecom	2.6 (22)	2.6 (21.1)
Manufacturing	0.7 (6)	0.7 (5.6)
Retail	0.4 (3.4)	0.4 (3.2)
Healthcare	0.4 (3.4)	0.5 (4)
Travel & Transport	0.6 (5.1)	0.6 (4.8)
Construction & Utilities	0.2 (1.7)	0.2 (1.6)
Media Publishing Entertainment	0.2 (1.7)	0.2 (1.6)
Others	0.8 (5.7)	0.9 (7.7)

Source: NASSCOM

Figure in brackets indicate percentage of Revenue from the segment

(xiii) Technology Spend for IT Products by Indian companies

Nature of Firms	Budget (\$)
Non Metropolitan Firms	20000 – 22000
Government Departments	0.4 – 20 Mn
Industries in Small Towns	0.2 – 1 Mn
Educational Institutes	0.08 - 0.1 Mn

Source: Economic Times

(xiv) IT Spend as a percentage of Revenue

Industry	2008	2009	2010 (Estimate)
BFSI	1.50	0.70	0.6

Auto & Auto parts	0.50	0.60	0.6
Biotech	0.40	0.90	0.9
Manufacturing	0.30	0.60	0.8
Oil & Petrochemical	0.10	0.40	0.4

Source: NASSCOM

(xv) Investments by Venture Capitalists (%)

Sector	2008	2009
IT & BPO	27	24
Manufacturing	12	8.7
Banking, Financial Services, Insurance (BFSI)	11	13.6
Healthcare & Life Sciences	8	9.5
Energy	7	7.9
Engineering & Construction	7	7
Media & Entertainment	6	3.7
Shipping & Logistics	3	3.7
Telecom	3	2.5
Textiles & Garments	2	1.2
Food & Beverage	2	0.4
Retail	2	1.2



Food & Beverages	3.5	0.4
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Source: NASSCOM

(xvi) Drivers for IT – BPO Off shoring to India

Rationale	Ranking (Scale 1 – 5)
Focus on Core Business	4.0
Cost Saving	3.7
Improve Competitive Advantage	3.5
Increasing Flexibility	3.5
Access to Talent	3.5
Access to Local Market	2.6
Free Resources for other Functions	3.0

Source: NASSCOM

(xvii) Operating cost (\$) per Full Time Equivalent (FTE) for Transactional BPO Services

**Bengaluru is a city in South India*



Location	2009
Sao Paulo	60000
Shanghai	26000
Manila	25000
Bucharest	36000
Bengaluru*	19000

(xviii) Indian Hardware – Total Domestic Revenue (\$ Bn)

	2007 –08	2008 – 09	2009 – 10
Servers	0.69	0.78	0.71
Desktop	2.86	3.10	2.23
Notebook	1.34	1.87	1.70
Printers	0.59	0.46	0.33
Scanners, Monitors Storage Peripherals	0.78	1.92	2.00
Storage & Security	0.51	0.45	0.44
Networking Equipment	1.24	1.73	1.59
Total (\$ Bn)	8.01	10.31	9.00

Source: Manufacturers' Association for Information Technology



IT BPO – THE INDIAN PERSPECTIVE

Structure of the IT-BPO Export Sector in India

Size	Revenue	Export Revenue	Workforce (percentage of Industry)	Operation Areas
Large Sized Companies	Greater than \$ 1 Bn	45%	30%	Fully integrated companies with large scale operations and Infrastructure and have presence in 60 companies offer and complex services in the field of IT services, BPO Engineering & R&D
Mid Sized Companies	\$100 Mn – \$1 Bn	37%	30-35%	Operate in many verticals and offer IT, Engineering, R&D and



				software services
Emerging Companies	\$ 10 Mn - \$ 100 Mn	12%	15-20%	Offer all services with specialization in Engineering and IT services
Start up	Upto \$ 10 Mn	12%	15-17%	Small companies in specific niches

Source: NASSCOM

The Indian IT & ITeS can be divided into 3 major components

IT Outsourcing: This includes the outsourcing of the IT applications of a particular company to a service provider; these applications help in the running of the day-to-day activities of the organization

Business Process Outsourcing (BPO): This is the outsourcing of a particular process of an organization to a different entity; the rationale behind this is cost saving and rationalization of manpower that was previously deployed for that process; the entity that manages that process does it at a lower cost than it was being done previously

Software Products: Software companies providing customized software concentrating on a particular market vertical or segments or domain areas, like Retail, Banking & Financial Services, Telecom, Engineering, Research & Development and Manufacturing; these products may be targeted at a vertical segment or may cut across segments

Trends & Opportunities

- There is great difference between now and the past decade when IT, IT Enabled services and the BPO sector were in the nascent stages of development in India. Initially, India was seen as a cheap destination due to lower labour costs but now the cost arbitrage Indian companies enjoy is no longer a key factor as a number of viable destinations around the world has emerged where cost of operations is low; India would be always looked at as a hub of analytical and logical reasoning skills an attribute very important in lifting the level of the sector; there is migration from FTE (Full Time Equivalent) based pricing to Business Models like Outcome Based pricing or development of talent in Tier II, III cities or the growth of verticals like



Knowledge services, Business Intelligence or be it the focus on non English speaking geographies like Latin America and Asia Pacific

- Service Providers as per Category

Services	Indian Providers	Foreign Captives	Foreign Providers
IT Services	70-75%	12%	10-15%
Engineering Design & Software Products	35-40%	55%	5-10%
BPO	45-50%	23%	15-20%

Source: NASSCOM

- The large integrated companies dominate two thirds of the market and provide services across a number of verticals and geographies
- Enterprises which were not adopting IT due to issues like security would re evaluate the model and would adopt services which could be hosted and managed by IT vendors, Telecom Service Providers, System Integrators; organizations would look at Integrated Security Solutions so that they can keep the entire data secure
- India offers a low cost of delivery; there is a saving of 70% in Tier I cities over other locations; in the context of trained manpower, India would produce approximately 3.7 Million graduates in 2010 which is the highest in the world
- India has consolidated its position as the IT & non voice hub and has a market share of 51% of the offshoring market
- There is a presence of both foreign and domestic companies that are Third party, Captive and Virtual Captives offering services related to IT, BPO, Engineering Design and Products
- A Low cost delivery model with an English speaking manpower were factors that made foreign companies start Offshore centres in India
- 2009 – 10 was characterized by a revival in the USA; India's share of exports to USA has increased to 61%; the impact of the economic recession decreased the level of spending levels but IT companies in India tackled this by improving client relationships, enhancing efficiency, bringing out new price models, providing end to end capabilities in core areas, focusing on Process Innovation, Intellectual Property,



Domain expertise & Data Security to consolidate their position; there also was a shift to Outcome Based Pricing where billing is done only when a pre decided criteria is met instead of the FTE Based pricing or the fixed rate pricing

- During the economic recession, companies curtailed the level of spending but Indian IT companies consolidated their positions through a higher level of client relationships, enhanced efficiencies, developing end-to-end capabilities in core areas; there was increased focus on new clients, customer research and introducing new pricing models
- Export of Business Process Outsourcing (BPO) services was still the fastest growing segment and companies focused on new delivery methods
- The Indian domestic market saw companies taking advantage of an increased spend on technology infrastructure by the Government
- There has been a huge improvement in the quality of manpower as companies are making huge investment in the development and training needs of employees; upto 40% of a trainee's salary is the cost of training
- Development of verticals like BFSI in the USA and Retail, Healthcare and Government in Asia Pacific, can triple the addressable market and can lead to a revenue of \$ 225 Bn by 2020
- Due to increases in salaries of employees, the employee cost in India would go up from \$ 30000 in 2009 to \$ 50000 in 2015; even then there would be a saving of 50-60%

IT SERVICES

Indian service providers constitute 65% of the industry whereas Multi National Corporations constitute 35% through captives or third party providers

IT CONSULTING

Revenue from Worldwide spend

	2008 – 09	2009 – 10	2010 – 11 (Estimate)
World wide IT Services spend on IT Consulting (\$ Bn)	33.10	31.5	31.62
World wide offshore IT Services spend on IT Consulting (\$ Bn)	1.40	1.35	1.40

Source: NASSCOM

Revenue from Operations in India

	2008 – 09	2009 – 10	2010 – 11



			(Estimate)
Export revenue from IT Consulting (\$ Bn)	0.65	0.74	0.76
Domestic revenue from IT Consulting (\$ Bn)	0.99	1.04	1.08
Total (\$ Bn)	1.64	1.78	1.84

Source: NASSCOM

Features & Opportunities

- Due to the high level of competition, companies are engaging IT consultants to improve the level of efficiency, performance and increasing Return of Investments
- With India becoming a manufacturing hub, this trend would increase over time and there would be a huge demand for consultants in the vertical of Retail, Manufacturing, Telecom etc

SYSTEM INTEGRATION

Revenue from Worldwide spend

	2008 – 09	2009 – 10	2010 – 11 (Estimate)
World wide IT Services Spend on System Integration (\$ Bn)	106.17	103.49	104.98
World wide Offshoring IT spend on System Integration (\$ Bn)	6.43	6.33	6.58

Source: NASSCOM

Revenue from Operations in India

	2008 – 09	2009 – 10	2010 – 11 (Estimate)



Export revenue from System Integration (\$ Bn)	0.68	0.78	0.80
Domestic revenue from System Integration (\$ Bn)	2.91	3.12	3.48
Ttotal (\$ Bn)	3.59	3.90	4.28

Source: NASSCOM

Features & Opportunities

- System Integrators build computing systems for clients by combining hardware and software products from multiple vendors; for example, a systems integrator may build an IT solution integrating an Oracle-based inventory tracking system, a document management system, a Microsoft CRM system, a group of Panasonic scanners and a Rimage storage system to produce an overall solution for the customer
- Software vendors collaborate with big Integrators to cater to the large customer segment but in order to penetrate further and acquire the Tier II customers they require collaborations with small Integrators.
- Due to Mergers & Acquisitions, companies are trying to integrate the merged company with themselves and this would increase the scope of this segment
- The telecom vertical is emerging as a very important driver for the growth of this segment
- Small Integrators work on building their expertise around a specific solution area rather than offering a variety of solution areas

CUSTOM APPLICATION DEVELOPMENT

Revenue from Worldwide spend

	2008 – 09	2009 – 10	2010 – 11 (Estimate)
World wide IT Services Spend on Custom Application Development (\$ Bn)	38	35.92	36.01
Worldwide Offshore IT spend on Custom Application (\$ Bn)	8.13	7.97	8.08

Source: NASSCOM

Revenue from Operations in India

	2008 – 09	2009 – 10	2010 – 11 (Estimate)



Export revenue from Custom Application Development (\$ Bn)	8.50	9.73	10.21
Domestic revenue from Custom Application Development (\$ Bn)	0.50	0.54	0.57
Total (\$ Bn)	9.00	10.27	10.78

Source: NASSCOM

Features & Opportunities

- This involves the delivery of customized development of software application as enhancements to existing applications
- With increasing demand, enterprises worldwide are finding it difficult to implement and support new applications, while at the same time, maintaining and upgrading their existing systems; to overcome this, companies are expanding their development capacity, accelerating time-to-market and building flexible distributed delivery models to negotiate risk
- An important area in this would be Mobile Application Development which is an area with the greatest potential as the number of mobile phone connections is rising



SOFTWARE TESTING

Revenue from Operations in India

	2008 – 09	2009 – 10	2010 – 11 (Estimate)
Export revenue from Software Testing (\$ Bn)	1.50	1.76	1.85

Source: NASSCOM

Features & Opportunities

- Over the years, India has become an important centre of offshore testing with both Indian and foreign companies increasing their testing capabilities in India
- Service providers are offering testing services keeping in mind particular domains and verticals
- Software testing implies checking any IT system prior to implementation for multiple aspects like functionality, reliability, usability, security, compliance and performance.



- Service providers are establishing Testing Centre of Excellence in India
- Software Testing determines the efficiency and the functioning of a software and can be regarded as a crucial phase in the Software Development Life Cycle; testing pulls out all the drawbacks in the functioning of the software; for e.g., there is wastage to the tune of \$ 60 Bn in USA in fixing software bugs
- Testing is climbing up the priority list of global product companies which is contributing to the increase in offshoring testing services to India; adding to this, is the growth in the domestic software testing market with growth in sectors like BFSI, Government, Manufacturing, etc.

APPLICATION MANAGEMENT

Revenue from Worldwide spend

	2008 – 09	2009 – 10	2010 – 11 (Estimate)
World wide IT Services Spend on Application Management (\$ Bn)	40.13	42.31	45.03
Worldwide Offshore IT spend on Application Management (\$ Bn)	4.77	5.14	5.63

Source: NASSCOM

Revenue from Operations in India

	2008 – 09	2009 – 10	2010 – 11 (Estimate)



Export revenue from Application Management (\$ Bn)	3.10	3.67	3.88
Domestic revenue from Application Management (\$ Bn)	1.03	1.08	1.17
Total (\$ Bn)	4.13	4.75	5.05

Source: NASSCOM

Features & Opportunities

- An organization may have a particular software running in its servers and may hire a consultant or a service provider to run and manage the Application for it; this may include routine maintenance, providing training to personnel of the company, incorporating any change in the Application due to a change in the policy of the company etc.
- A new concept by the name of SaaS-Software as a Service has become very popular; this is an Application Delivery Model which sees a software vendor host applications over the Internet and deliver those applications to the customer for a recurring license fee



INFRASTRUCTURE OUTSOURCING

Revenue from Worldwide spend

	2008 – 09	2009 – 10	2010 – 11 (Estimate)
World wide IT Services Spend on Infrastructure Outsourcing (\$ Bn)	113.07	114.62	117.86
Worldwide Offshore spend on Infrastructure Outsourcing (\$ Bn)	2.17	2.41	2.72

Source: NASSCOM

Revenue from Operations in India



	2008 – 09	2009 – 10	2010 – 11 (Estimate)
Export revenue from Infrastructure Outsourcing (\$ Bn)	3.29	3.93	4.34
Domestic revenue from Infrastructure Outsourcing (\$ Bn)	0.39	0.42	0.47
Total (\$ Bn)	3.68	4.35	4.81

Source: NASSCOM

Features & Opportunities

- Infrastructure Outsourcing involves the managing of the client's hardware and software resources from a remote location and can save labour cost between 10% and 50%; companies can save a huge amount as they do not have to employ people for managing this particularly in the case of Small & Medium Enterprises which could save upto 40% of their infrastructure costs
- Keeping this in perspective, during the economic slowdown, it was seen that the concept of Software as a Service (SaaS) became even more popular; this is a software that is deployed over the internet or is deployed to run behind a firewall in a Local Area Network or a Personal Computer; the provider licenses an application to customers as a service on demand, through a subscription or a "Pay-as-you-Go" model; vendors develop, host and operate the software for customer use; rather than install software on site, customers access the application over the Internet and the SaaS vendor may run all or part of the application on their hardware, or may download executable code to client machines as needed—disabling it when the customer contract expires the software can be licensed to a single user or a group of users



- The concept of Cloud Computing enables on demand network access to a shared pool of computing resources which could be network, servers, storage, applications and services that can be allocated amongst various users; this is very helpful to clients and vendors as clients have to pay lower upfront cost and vendors can look at tapping price sensitive customers like the Small & Medium Businesses (SMBs); prior to this, products were offered on-site and on purchase and needed a large budget and trained manpower; now companies have a choice between an on site products or online SaaS based product where the solution changes the capital expenditure into operational expenditure
- A concept by the name of Remote Infrastructure Management (RIM) has come up in recent years which helps in managing the IT infrastructure of enterprises from a far off location

SUPPORT & TRAINING

Revenue from Worldwide spend

	2008 – 09	2009 – 10	2010 – 11 (Estimate)
World wide IT Services Spend on Support & Training (\$ Bn)	152.80	149.59	150.95

Source: NASSCOM

Revenue from Operations in India

	2008 – 09	2009 – 10	2010 – 11

			(Estimate)
Export revenue from Support & Training (\$ Bn)	1.80	2.04	2.11

Source: NASSCOM

Features & Opportunities

- The demand for skilled workers across sectors ranging from manufacturing to retail and hospitality is fuelling the market for vocational training institutes. Sustained economic growth, rising trade and increasing domestic demand is driving the need for workers with necessary skills
- This is particularly relevant in the case of the IT sector as the sector is on a growth trajectory in India. As the usage and application of IT increases in the workplace and the number of internet users swells, there would be a requirement for organizations and individuals to provide training to the existing workforce on Hardware and Software applications and also to students passing out of educational institutes who require to be imparted just that level of knowledge which would make them suitable for employment in IT & ITeS concerns
- Small & Medium Businesses (SMBs) have been seen to be late adopters of IT in their organizations and so can be looked at as an important source of revenue in the years to come

SOFTWARE PRODUCTS

Revenue from Operations in India

	2008 – 09	2009 – 10	2010 – 11 (Estimate)
Export revenue from the Software sector (\$ Bn)	8.30	9.60	9.99
Domestic revenue from the Software sector (\$ Bn)	2.23	2.69	2.77



Total (\$ Bn)	10.53	12.29	12.77
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Source: NASSCOM

Trends & Opportunities

- In India, companies strengthened their sales and marketing, distribution channels, partnership, product innovation and improved business delivery which made them achieve considerable success
- Traditionally, ERP application was the most popular software product and would have a global market of \$49.8 Bn by 2013 a Cumulative Annual Growth Rate (CAGR) of 2.7% per annum
- Software Development can be categorized into Custom Developed Software and Packages or Generic Software Products; new areas include Security solutions, E learning, Business Intelligence
- Software development involves a number of stages: Conceptualization, Requirement Analysis, High-level design, Low level design, Coding, Testing and Support
- India accounts for less than 1% of global software sales
- A growing middle class has sparked the demand for evolved products
- New business models have emerged to provide Value for Money to customers; innovation is offered in areas like technology, delivery model and platform
- 85% of the software professionals are employed with Multi National Corporations; only 20000 professionals are employed with Indian companies
- Manufacturing & Energy sectors would be the biggest clients and would help the sector earn 80% of the revenue; some other sectors that would increase demand for software products are BFSI (modernization of IT in Banks), Telecom and Retail
- The emerging areas include:

Segments	Global Market Size in 2013 (\$ Bn)
E – Learning	55
Security Solutions	60



Business Intelligence	13
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Source: NASSCOM

BUSINESS PROCESSING OUTSOURCING (BPO)

Indian IT – BPO Domestic IT BPO revenues

	2008	2009	2010 (Estimate)
Export revenue from BPO Services (\$ Bn)	9.91	11.70	12.40
Domestic revenue from BPO Services (\$ Bn)	1.57	1.93	2.28



Total (\$ Bn)	11.48	13.63	14.68
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Source: NASSCOM

BPO Exports by vertical (\$ Bn)

Vertical	2009	2010 (Estimate)
BFSI	5.9	6.2
Telecom	2.6	2.6
Manufacturing	0.7	0.7
Retail	0.4	0.4
Healthcare	0.4	0.5
Utilities & Construction	0.2	0.2
Media, Publishing & Entertainment	0.2	0.2
Travel & Tourism	0.6	0.6

Source: NASSCOM

BPO Exports by Geography (\$ Bn)

	2009	2010
USA	7	7.5
UK	2.6	2.7
Europe	1.3	1.3
Asia Pacific	0.6	0.7



Rest of World	0.2	0.3
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Source: NASSCOM

Structure of BPOs in India

Integrated	BPOs that have 35-40% of the revenue derived from Exports These offer IT services, BPO & engineering R&D services There are 40-50 companies in India within this category
Pure Play	25-30% of the revenue derived from exports Services to a number of verticals offered These companies are expanding service delivery capabilities across the world There are 30-40 companies in India within this category
Captives	25 % of the revenue derived from exports They are arms of large & medium sized MNCs offering support across horizontals like Customer Interaction Service, Finance & Accounts, Human Resources etc There are 100-120 companies in India within this category
Niche	25 % of the revenue derived from exports These are smaller companies that provide service to select geographies and cater to only a few verticals and service lines There are more than 200 companies in India within this category

Source: NASSCOM

Features, Trends & Opportunities

- This is the fastest growing sector with a CAGR of 29%; the growth is due to the growth in the Indian economy; the GDP grew by 7.4% in 2009-10 compared 6.7% in 2008-09
- The impact of recession was negative on BFSI, Telecom and Retail; the impact was lower on Transport & Logistics, Healthcare, Pharmaceutical and Energy
- USA is the biggest market for Indian BPOs contributing 60% to the total BPO exports; there would be a small increase in 2010 and would then contribute 60.4%;



the revenue from Europe was stagnant due to the economic slowdown and Asia Pacific showed the highest growth

- Indian BPO service providers have matured from offering services like Customer Interaction Services, Finance & Accounts, Human Resources where the level of complexity is low to Knowledge Services where the quality of manpower required is of a higher level; in the context of BPOs, maturity indicates high degree of penetration, supply maturity and standardization of processes due to low complexity
- There is a high degree of penetration of services like Customer Interaction Service and processes like Application Processing, Account opening, Collateral Evaluation, Risk Management and functions like Transaction Processing, Control / Compliance
- 80% of the revenue comes from horizontal services like Customer Interaction Services, Finance & Accounting, Human Resource etc; these are services which are common across verticals
- The BFSI vertical was the biggest end user of BPO services followed by Telecom and Manufacturing; now BPOs offer services in verticals like Retail, Healthcare and Utilities
- Emerging areas include Horizontal functions like Process services, Knowledge services, Product development, Treasury operations, Regulatory reporting, ATM management, Campaign management, Field collections, Lease management, Cash handling, Forex management and Credit evaluation
- Companies would always be more dependent on providing service support which would help them sustain their operations whereas they would also go for new product development which would help them maintain their niche in the market
- Pure play BPOs would face tough competition from integrated companies who bundle IT and BPO services together and offer better prices to clients; it is this scale which makes clients outsource 4-5 functions over a larger time frame and there is a 15-20% saving to the client
- BPO companies are now providing a choice to clients in terms of services and delivery locations; the trend nowadays is to shift from horizontal services like Customer care and Payment services to offer more end-to-end solutions; clients are now asking BPO companies to identify areas of improvement in the entire value chain and provide a solution; specialization across a few industries has become important; companies are identifying their areas of strength and developing capabilities around these areas
- The Voice segment refers to call centres which specialize in calling persons / companies on behalf of clients to sell a service / product or to answer queries posed



by clients on their products / service; India would always be looked at as a hub for service for various products; so this model, that of a call centre which would receive queries, service customers would increasingly be used as a tool for Tele marketing for sectors like Telecom, BFSI, Retail etc with focus on Customer support, Customer service or Technical trouble shooting of electronic goods

- Due to the availability of high quality English speaking graduates in India, the sector holds a lot of scope in the future

Domestic IT BPO Revenues (\$ Bn)

	2008	2009	2010
IT Consulting	0.987	1.04	1.07
Systems Integration	2.92	3.12	3.48



Custom Application Development	0.509	0.537	0.574
Project Based	4.41	4.70	5.13
Application Management	1.03	1.08	1.17
Infrastructure Outsourcing	0.39	0.43	0.48
Outsourcing	1.43	1.50	1.64
Support & Training	0.28	0.48	0.51
Captive IT	1.76	1.56	1.66
Total IT Services	7.88	8.23	8.94
Domestic BPO Services	1.58	1.93	2.29
Software Products	2.23	1.69	2.77
Total IT – BPO Services	11.69	12.85	14

Source: NASSCOM

IT Spend by Indian companies (as a percentage of revenue)

Sector	2009	2010 (Estimate)
Energy	0.4	0.4



Telecom	2	2.2
Automobile	0.6	0.6
IT BPO	1.5	1.7
Transport / Logistics	1.3	1.2
Retail	1.3	1.4
Healthcare	0.9	0.9
Manufacturing	0.6	0.8
BFSI	0.7	0.6

Source: NASSCOM

Features, Trends & Opportunities

- The Government of India has been extremely benevolent to the sector; it has planned to spend generously on various E Governance and social sector projects; the IT spend would grow from \$ 3.1 Bn in 2009 to \$ 5.1 Bn in 2011
- The strategy of service providers is enhancing the knowledge of English, offering customized services and providing end to end solutions at low cost
- Demand for various products and services from the middle class is growing; it is estimated that 20-30 Million new households would be added to the middle class every year
- Segments like Telecom, BFSI have reached a high level of maturity in terms of IT adoption but there are sectors like Media and Automobiles which have a lot of scope with them being in the nascent stages
- New markets in India are ones which are relatively untapped lie the Small & Medium Business segment; currently less than 15% of the revenue comes from this segment; the IT spend of this segment was \$ 6-7 Bn in 2009; new offering like SaaS is very popular with this segment
- The BPO sector in India has matured with respect to scope of services offered, buyer segments served and delivery models



- Companies are now building domain expertise to get maximum value
- Service providers are focused on providing end to end services within a horizontal; some providers offer 42 end to end processes in a single horizontal while the best provide 82
- There would be rapid consolidation in this industry with 8-10 large players emerging as distinct market leaders over the next 18-24 months
- Even though over 70 % of India's population lives in rural areas, the majority of BPO expansion in India has occurred in urban areas; this has presented several challenges such as high labor and real estate costs and high attrition rates. Rural BPOs are being set up that have a lower real estate and labor costs and less attrition resulting in costs savings of nearly 40 % over their urban counterparts; these have an employee strength of approximately 5000 and a market size of \$ 10 Mn and are expected to grow 10 times in the next 3 years

IT MARKET VERTICALS & OPPORTUNITIES

A Market Vertical is a specialized area of business having distinct activities and processes leading to the generation of revenue. Each vertical has a specific requirement of IT which helps the organization in streamlining and making the processes and functions attain a particular level which would then help in improving the decision making process and aiding the end customer and stakeholders

BANKING FINANCIAL SERVICES & INSURANCE (BFSI)

Revenue from Worldwide spend

	2008	2009
Spend on Hardware Worldwide in BFSI (\$ Bn)	69	61
Spend on IT Services world wide in BFSI (\$ Bn)	132	130
Spend on Software Products world wide in BFSI (\$ Bn)	56	55

Source: NASSCOM

Revenue from Operations in India

	2009	2010 (Estimate)
IT Services Export revenue from BFSI services (\$ Bn)	12.9	13.9
BPO Export revenue from BFSI services (\$ Bn)	5.9	6.2
Total (\$ Bn)	18.8	20.1

Source: NASSCOM

Features, Trends & Opportunities

- Impact of the global economic recession on the BFSI sector has been the maximum though IT spending was not greatly affected; number of Mergers & Acquisitions in the sector have increased the adoption of IT
- BFSI companies were one of the earliest adopters of IT



- The sector caters to various stratas of society
- Companies look for increased productivity, competitive advantage, regulatory compliance, acquisition of new customers and retention of older ones, expansion into newer markets and ensuring customer satisfaction
- The BFSI vertical has had a positive impact on Application Development and Maintenance segments
- In the Indian context, it is the dominant vertical as 23 global banks are present in India; Application Development & Maintenance is primarily driven by the BFSI vertical and as far as Horizontal Services are concerned, Customer Interaction & Satisfaction, Finance & Accounts, Human Resources Management, Procurement and Knowledge Services dominate
- The services offered in this vertical have evolved from basic voice to Transaction processing, Equity research, Analytics, Strategy and support, Claims management, Mobile net banking, Compliance with regulatory requirements, Policy administration, Customer Relationship Management (CRM), Premium payment renewal amongst others
- As the vertical was an early adopter of IT, it has become highly mature in terms of IT adoption
- 80% of the Indian households are not banked; technology can help in bringing a large population under the ambit of banking services

Current Applications

Online Banking – Account management
Capturing client and transaction details
Commission management, Billing, and Sales reporting
Automated Clearing House (ACH) operations
Electronic Bill Presenting and Payment (EBPP)



Image-based Transactions
 Cash and deposit processing
 Maintaining teller banking information
 ATM fraud detection
 Processing of overdrafts
 Maintaining and monitoring limits in real time
 Extracting and storing transaction and external data from multiple sources
 Loan Servicing
 International payment engines

Emerging Areas

- The rise of online payments and the huge loss for companies and banks from fraudulent transactions have increased the need for payment security to maintain consumer confidence
- Mobile Banking: The mobile phone is evolving rapidly as a channel for financial services; mobile phones will be increasingly used for making low-value payments and purchases in developing economies; users would be able to make payments to each other directly through mobile phones without necessarily going through a bank and would perform real-time clearing of payments between users
- Customer intimation is becoming very popular as the number of mobile connections is increasing; total transaction value for mobile payments could reach \$22 Bn by the end of 2011
- High end Analytics like designing of risk measurement frameworks (key risk indicators and controls), modeling and design of the capital calculation and attribution engine, advanced reporting and scenario-analysis capabilities, Equity Research & Mortgage
- Internet Security: There would be increased use of Biometrics (technology involving scanning and analyzing unique body characteristics and matching them against information stored like fingerprints) as this could enhance security; devices and cards enabled with biometric readers are being introduced by some vendors
- Companies secure all electronic transactions so that customers feel free to use Internet banking or e-banking facilities

TELECOM

Revenue from Operations in India

	2009	2010 (Estimate)



IT Services Export revenue from Telecom (\$ Bn)	6.7	7.4
BPO Export revenue from Telecom (\$ Bn)	2.6	2.6
Total (\$ Bn)	9.3	10

Source: NASSCOM

Features, Trends & Opportunities

- India has the second largest telecom infrastructure in Asia
- It is the major spender on Research & Development due to the need for innovation as there has been a steady increase in the number of mobile phone connections, the per minute cost of mobile telephony has come down by 95%; handsets prices have decreased by 50%, Personal Computer prices have fallen by 40% since 2003
- The current spending on the telecom sector is \$ 17.3 Billion, which is 1.5% of GDP
- IT spending as a percentage of revenue is second highest in the telecom sector
- Voice business is significant in telecom; share of non-voice and knowledge services is on the increase due to changing behaviour and new product and services
- The vertical is in the maturity stage on the basis of adoption as it amongst the earliest vertical to outsource services
- The telecom vertical was among the first to offshore Engineering related work to India; the Engineering Services Offshoring market has grown by 50% in the last 3 years and the highest growth of 30% has come from the telecom vertical
- The BPO sector has shown a growth of 19% in 2009 due to significant voice business from the telecom vertical
- India is the single fastest growing mobile phone market; the growth rate between 2010 & 2013 would be in between 80% and 120%; it is projected to surpass \$37 billion by 2012
- India's telecom companies have been making huge investments and new companies are bagging telecom licenses



- New companies would outsource all their IT operations including setting up of IT networks and managing services; contracts could be between \$200 million and \$ 1 billion
- Indian telecom service providers are offering new services such as mobile TV, broadband and IPTV and are working towards being integrated carriers where they are seeking convergence of a clutch of services; voice, data and content are coming together
- The potential for Mobile Virtual Network Operators (MVNOs) that can rapidly deploy applications to service their clients is also immense
- The percentage of work outsourced is highest in this vertical at 71% compared to 60% in Retail; it is seen that functions like Network, Billing, Customer Support, New Product Development, Sales & Marketing, Administration would be in house where as services like Payment & Collection, Fraud Management, Maintenance of Customer records, Dispute resolution, Call centre operations, performing Audit checks, Payroll training, IT infrastructure operations would be outsourced

Current Applications

- Fraud Detection
- Interconnect Billing
- Data Centre
- Billing & Revenue Assurance
- Order Management
- Network Provisioning & Activation
- Network Inventory Management
- Customer Interaction & Management
- Payment collection
- Responding to calls from customers
- Maintaining records of customers
- Dispute resolution
- Performing credit checks

Emerging Areas

- Third Generation (3 G) integrates voice, data and video on a single platform which allows video downloads that require high speed connectivity; managed services and platform solutions are the areas of 3 G which have great potential for IT companies



- Fourth Generation (4G) allows more data to be transferred over the same bandwidth used by 3G technology and at higher speeds
- Infrastructure Management services
- Value Added Services on the Mobile Phone
- Mobile Number Portability
- Broadband Wireless Access

RETAIL

Revenue from Worldwide spend

	2008	2009 (Estimate)

Spend on IT Services in the Retail vertical world wide (\$ Bn)	50	51
Spend on Software Products in retail vertical world wide (\$ Bn)	32	32

Source: NASSCOM

Revenue from Operations in India

	2009	2010 (Estimate)
IT Services Export revenue from the Retail vertical (\$ Bn)	3.8	4.3
BPO Exports revenue from the Retail vertical (\$ Bn)	0.4	0.4
Total (\$ Bn)	4.20	4.70

Source: NASSCOM

Features, Trends & Opportunities

- India is the fifth largest retail market; the market value of the sector in 2009 was \$ 355 Billion and would grow to \$ 410 Billion in 2010; the Organized Retail segment was worth \$ 9.5 Billion in 2009 and is estimated to grow to \$ 13 Billion in 2010
- The middle class would grow from 50 Million in 2005 to 583 Million in 2025; The aggregate consumption would grow from \$ 17 Trillion in 2005 to \$ 70 Trillion in 2025
- Retailers are very keen to adopt IT for various processes only if they are assured of increased efficiency and profit; they can save millions of dollars annually in outsourcing IT projects to India and have just begun to realize the benefits of outsourcing
- During the economic slowdown, decline in consumer spending had led to increased deployment of IT to cut costs and to remain profitable
- The revenue growth from the retail vertical is four times the mature segments like Telecom and BFSI



- The level of work outsourced in the retail vertical is 60%
- Major retail chains like Wal-Mart, Tesco, Home Depot are outsourcing projects to third party service providers

Current Applications

- Retailers use technology to add value to the business in getting on-line real time market data for material planning, inventory control and demand forecasting, production planning and distribution
- A very important application would be helping the Store Manager plan resource deployment and Merchandise Management and the types of promotion schemes if there is a feedback regarding stock in and stock outs and information about slow moving and fast moving goods; Enterprise Resource Planning (ERP) computer software systems are used to manage and coordinate resources, information and functions of a business
- Business Intelligence (BI) helps to work on basic data and take out relevant data from stored data (Data Warehousing) and form meaningful consumer patterns and get insights into consumer behaviour through Data Mining

Emerging Areas

- As competition amongst retailers grows, Business Intelligence would continue to be very important both in retaining and attracting new customers; This would lead to a higher degree of Customer Relationship Management
- RFID (Radio Frequency Identification) is the use of an object applied to or incorporated into a product for the purpose of identification and tracking using radio waves; RFID vendors would target suppliers who work with mandated retailers or retailers that have adopted the technology at the store level
- High value categories such as apparel and footwear are likely to have higher adoption of IT services

TRAVEL & TRANSPORT

Revenue from Worldwide spend

	2008	2009
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Spend on IT services world wide in the Travel & Transport vertical (\$ Bn)	17	17
Spend on the Software Product world wide in the Travel & Transport vertical (\$ Bn)	11	13

Source: NASSCOM

Revenue from Operations in India

	2009	2010 (Estimate)
IT Services Export revenue from the Travel & Transport vertical (\$ Bn)	0.9	0.9
BPO Export revenue from the Travel & Transport (\$ Bn)	0.6	0.6
Total (\$ Bn)	1.5	1.5

Source: NASSCOM

Features, Trends & Opportunities

- The number of Air Travelers has increased from 12 Million in 2008 to 45 Million in 2008
- Domestic Air Travel has become very common as the cost of ticket has significantly gone down and due to the Airports coming up in smaller towns and upgradation and expansion of the existing ones
- By 2020, Indian airports are estimated to handle
 - 100 million passengers per annum
 - 60 million domestic passengers per annum
 - Cargo in the range of 3.4 million tones per annum
- Since the Indian air industry continues to remain largely under-penetrated, there is still a lot of scope for the growth in this sector



- The Budget Airline industry in India is expected to grow significantly in coming years

Current Applications

- Route planning
- Network Infrastructure and Asset Management
- Infrastructure integration services
- Computerized Reservation Systems (CRS); real time exchange of data for Reservation
- Availability, Rate and Inventory transactions between various channels
- Supply Chain Visibility, Connectivity, Collaboration and Optimization
- Yard management
- Managing the end-to-end transportation system for freight and Intermodal service provider
- Automating key services across the Express Value Chain (EPV) for an International express, parcel and freight
- Implementing RFID based cross dock solutions
- Advanced planning and scheduling
- Revenue Optimization

Emerging Areas

- Radio Frequency Identification (RFID)-based tracking solution enables efficient utilization of ground cargo-handling assets for faster check-in, boarding and speech recognition technology
- Maintenance Repair Overhaul (MRO)
- Fleet management
- Purchasing tickets of busses & other local transport carriers over the internet

HEALTHCARE

Revenue from Worldwide spend



	2008	2009
Spend on IT Services world wide in the Healthcare vertical (\$ Bn)	21	22
Spend on Software Product world wide in the Healthcare vertical (\$ Bn)	11	12

Source: NASSCOM

Revenue from Operations in India

	2009	2010 (Estimate)
IT Services Export revenue from the Healthcare vertical (\$ Bn)	0.6	1.6
BPO Export revenue from the Healthcare vertical (\$ Bn)	0.4	0.5
Total (\$ Bn)	1	2.1

Source: NASSCOM

Features, Trends & Opportunities

- The impact of recession on the IT spending on the vertical was very low and the revenue is 4 times mature verticals
- Hospitals are spending on hardware as they are upgrading servers to set up data centres
- In 2009, work done in house was 57% and work outsourced was 43%
- India has one of the largest populations with diabetes and cardiovascular diseases and prevalence of both infectious and lifestyle-related diseases; this has created a huge opportunity for healthcare products and services
- Hospitals are spending in Hardware as they are upgrading their servers to set up Data Centres



- Around 76 million Indians are expected to be above 65 years of age by 2012, thereby increasing the prevalence of several chronic diseases
- The Global Life Sciences market would be \$ 900 Billion in 2010 and the Global Clinical Trial market would be \$ 60 Billion in 2009 with a growth rate of 10% per annum
- India will become a \$20 billion pharmaceuticals market by 2015
- 50% of the Indian population is out of coverage of Primary Health; the Government's presence in this segment is high and this would help the spending to increase in the years to come
- For Pharmaceutical companies, the biggest challenge is speeding up the drug discovery cycle and this could be met with the use of IT

Current Applications

- Hospital Information System to manage the administration, financial and clinical aspects of the hospital
- Patient Management System
- Record Management
- Clinical System Management and Facilitating
- Healthcare Insurance: Enrollment Services, Drug Monitoring & Prescription Monitoring
- Reconciliation
- Remote Health Monitoring Services
- End-to-End Managed Care System
- Consumer Directed Healthcare
- Enterprise Reporting & Data Analytics
- Medical Transcription
- Policy Generation
- Claims Payment
- Customer Service
- Status Enquiry
- Premium Enquiry
- Compliance Support
- Customer Relationship Management in Pharmaceutical companies to plan and target sales of specified drugs to specific markets

Emerging Areas

- Ensuring Data transparency between Patient –Doctor – Insurance company
- Research & Development in pre clinical and clinical phase of drugs manufacturing



- Regulatory Compliance
- Captive Biometrics
- Insurance companies in future would go for conjoined analysis which would make them analyse the insurance needs of different groups separately; consumers would also be given the choice of doctors they would like to consult
- National Rural Health Mission: seeks to provide effective healthcare to rural population throughout the country with special focus on 18 states, which have weak public health indicators and/or weak infrastructure
- Integrated Mobile Clinics

ENGINEERING SERVICES

Revenue from Worldwide spend

	2008	2009	2010 (Estimate)
Worldwide Engineering spend	1030	1100	-

(\$ Bn)			
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Source: NASSCOM

Revenue from Operations in India

	2009	2010 (Estimate)
Domestic revenues from Engineering Services (\$ Bn)	7.6	7.9

Source: NASSCOM

Engineering services Offshoring Revenues by Vertical

Vertical	Revenue (\$ Bn)
Telecom	2.28
Semiconductor	1.44
Automobile	0.83
Aerospace	0.60
Computing Services	0.60
Construction / Industrial Machinery	0.53
Infrastructure	0.38
Consumer Electronics	0.30
Energy	0.30
Medical Devices	0.22
Industrial Automation	0.15

Source: NASSCOM

Features, Trends & Opportunities

- Majority of companies maintained or expanded their portfolio and pursued newer product lines; they also realised that investment made in Research & Development today would give them returns in the future



- Worldwide, there has been an increase in spending in sectors like defence, fundamental research and emerging technologies; this has increased the IT spending on R&D from \$1030 Billion in 2008 to \$1100 Bn in 2009
- Trend shows that the spend on Engineering Services is moving towards Asia even though the share of revenues from North America is the highest at 62% and Europe at 29%
- Indian companies are now offering higher complexity of work; medium and high complexity activities constitute 25% of the engineering work where as high level product development & innovation has increased by 3 times from 5% to 15% presently
- Companies are building capabilities in Plant Engineering, Green technologies, Green buildings and Infrastructure engineering and India is the most preferred destination due to cost saving and availability of a large talent pool
- Companies are now offshoring the complete product responsibility to design centers in India; there is a high proportion (60-65%) of Multi National Corporations in the vertical that is taking advantage of the design skills of India; India is becoming a base for Offshored Engineering services
- India has emerged as the design services hub of the world and with the emergence of a few large niche players catering to the Engineering outsourcing domain; this is largely because of the fact that Indians have very high standard of engineering skill sets available
- Cost and access to engineering talent in India remain the top two drivers of off shored engineering services
- The global growth for consumer products including automobiles, appliances and electronic equipment is being driven by emerging markets like BRIC (Brazil, Russia, India, China) countries

Emerging Areas

- Infrastructure spending would increase by 20% in the next 3-4 years; the estimate spending in 2011 on the some areas of infrastructure are as follows:



Areas	Amount (\$ Bn)
Roads	14.9
Ports	2.8
Telecom	14.9
Airports	2.5
Railways	19.7
Power	41.7

Source: NASSCOM

- Demand for Engineering Design services with respect to 3 Dimension modeling, prototype testing in industries like Automobile and Aviation is increasing
- The entire Product Life Cycle of is looked at holistically and serve each element of the Life Cycle and provide end to end solutions

GOVERNMENT

Revenue from Worldwide spend



	2008	2009
Government spend on IT Services world wide (\$ Bn)	97	102
Government spend on Software Products world wide (\$ Bn)	29	31

Source: NASSCOM

In 2009, the Government of India spent on

Areas	Total Spend (\$ Bn)
IT Services	1.53
Software	1.02
Hardware	2.55

Source: NASSCOM

Features, Trends & Opportunities

- There is growth in IT spending by Governments throughout the world and this continues to grow consecutively for 2 years and has outperformed other verticals
- New national priorities for all Governments worldwide include National security, Data security and improvement of basic services to citizens
- IT spending by the Government of India would increase from \$ 3.1 Bn in 2009 to \$5.1 Bn in 2011
- E Governance is an extremely important element of Government spending on IT in India; It includes: the basic objective to link all government offices and agencies electronically thereby streamlining the flow of information, speeding up processes, reducing costs and providing basic services to citizens under a single roof
- Ministries under the Central & State Governments are looking to enhance efficiencies in the administration, drive down communication costs and increase transparency in the functioning of various departments



- Large IT companies are partnering with the Government on E Governance projects across India

Current Applications

- E Government Applications like

Computerization of Land Record

Computerization of State Treasury

Online Payment of Commercial / Income / Municipal taxes

Online Property registration

E-courts

Online filing of Police Complaints

Online payment of bills

Online Application / Renewal for driving licenses

Online filing / Renewal of Passports

Online filing of Marriage registrations

Online Registration of companies

Online filing or tracking of leave

Online Railway ticket booking

Online filing and grant of various certificates like Caste, Minority Community, Rural Area & Character

Telemedicine facilities in State Government Hospitals

Emerging Areas

- The Unique Identification Authority of India has been set up to help in the making of a database which would in turn help in the development of Multi-application Smart Cards with Unique Identities (UIDs) for citizens to facilitate easy verification, availing of government or private services, help welfare programmes reach intended beneficiaries and for serving as the basis for E-Governance; around \$6 Billion would be spent on developing these smart cards
- The National Rural Employment Guarantee Act passed by the Indian Parliament envisages 100 days of work to a rural household whose adult members volunteer to do unskilled manual work; the total allocation to this project is \$8 Billion and the administrative cost has been set aside at 6-10% and a large part would be used for the implementation of IT
- The National E Governance Plan has been formulated by the Government which would include providing basic services to all citizens; the spend planned is \$ 9 Bn by 2014; projects planned under this plan include banking, building a National Citizens Database, Passport, Visa, Immigration, Pension, Police, Treasuries, E courts, Income Tax payment, Road Transport, Common Service Centres etc



- The social sector spend is also increasing significantly and offers great opportunity to the IT sector; the allocation to the education sector has increased from \$ 25 Bn in 2007 to \$ 32 Bn in 2009 and on health from \$11.5 Bn in 2007 to \$ 15 Bn in 2009
- The Defence sector holds large opportunities for IT vendors; in India, the sector which is largely managed by the Government has been open to private sector participation
- Services like City Gas Distribution would offer scope for ITeS companies as there would be immense potential for interaction between customers and companies
- The Indian Government has budgeted for the automation and modernization of various of its departments with the help of IT; these are \$ 5.37 Bn for modernizing the Power Sector out of which \$ 1.07 Bn would be spent on consulting, implementation of IT systems and training; automation of the Public Distribution Service, a service where by Food grains and other edible items are distributed to its citizens at a subsidized rate, would cost \$ 1.24 Bn and the automation of the postal service that would cost \$ 1 Bn

MEDIA, ENTERTAINMENT & PUBLISHING

Revenue from Worldwide spend

	2008	2009	2010 (Estimate)
Worldwide spend on Communication & Media (\$ Bn)	189.03	188.70	194.11

Source: NASSCOM

Revenue from Operations in India

	2009	2010 (Estimate)
IT Services Export revenue from the Media, Entertainment & Publishing vertical (\$ Bn)	0.70	0.80
BPO Export revenue from the Media, Entertainment & Publishing vertical (\$ Bn)	0.20	0.20
Total (\$ Bn)	0.90	1.00

Source: NASSCOM

Features, Trends & Opportunities

- The value of the Media & Entertainment sector in India in 2009 was \$ 13 Bn
- The majority of Media and Entertainment companies develops their systems in-house; industry is still maturing in terms of IT adoption and companies are spending the largest share of their IT budget on software followed by hardware
- The markets in metros have already been saturated in many of the sub-verticals like print, films, television, music, radio, online gaming, and Web portals and it is in Tier II & III cities and other smaller locations that companies foresee their future growth
- Local IT vendors have a sizable foothold in the industry as they provide low-cost solutions
- Music companies have realized that content digitization will lead to new revenue opportunities such as paid download, subscription, pay-per-view / listen / read, on-demand and ordering services as well as limited rights models



- Availability of multiple content distribution channels and platforms is forcing companies to invest in new technologies that enable them to sell their content across these platforms
- The percentage of work outsourced was 25% in 2009 and would increase to 28% in 2011
- The sector would grow at a Compounded Annual Growth Rate of 13% to reach \$ 24 Bn by 2014

Areas	Value in 2009 (\$ Bn)	Value in 2014 (\$ Bn)
Media & Entertainment	13	24
Film	1.97	3.1
Print Media	3.90	6
Television	5.71	11.57
Radio	0.17	0.36
Music	0.18	0.38
Animation	0.071	1

Source: FICCI-KPMG Report

- There is great scope for Cross border film production
- New Film makers are contributing to the sector by making new types of films which would require greater role of IT
- Digitization of content is the single most important strategic IT area for Indian Media & Entertainment companies
- The vast scope of the sector in India could be gauged by the following:
 - Over 1,000 movies released annually (largest in the world)
 - 3.2 Billion movie tickets sold annually (largest in the world)



80 Million pay-TV homes (third largest in the world)
119 Million television households
450 Television channels
Over 350 radio stations
6000 newspapers published
10000 music tracks released annually

Current Applications & Emerging Areas

- Digitally archiving large volumes of media, reusing existing content (content syndication), securely distributing it to global organizations and exploiting it on new delivery mechanisms such as Mobile TV, Broadband access, Interactive TV etc.
- Streamlining content delivery and distribution via broadband, Internet and mobile communication devices is also high on the radar of companies in India
- Increasing penetration of the Internet and broadband technologies and their growing alliance with media and entertainment content creation, delivery and distribution will drive significant investments in IT

Publishing & Printing Solutions / Services

Frequency & Bar Coding Solutions
Paper Procurement and Inventory Management Solutions
Subscriber Churn analysis and Data Mining Solutions
Circulation Management
Subscription Management
Rewards and Loyalty Programs
Editorial Workflows
Digital Asset Management
Advertising Management
E-Books and Print on Demand
Custom Publishing

- **Services for Information and News Distribution companies**

Content Filtering and Streamlining
Royalty Processing & Management

- **Services for the Broadcasting and Advertising Industry**



Digital Asset Management
Automation of media buying process
Business Intelligence
Digitization and Streamlining content delivery and distribution

LEGAL PROCESS OUTSOURCING (LPO)



Features, Trends & Opportunities

- LPO indicates a Value Added BPO service which involves legal work that companies outsource to more economical offshore destinations
- Outsourcing legal work to India costs up to 80 % less than the cost of using the services of American law firms
- The availability of English speaking attorneys in India and familiarity with common law doctrines attract foreign firms

Market Size & Projections

- LPO is a \$ 250 Bn industry globally; estimated revenue in India is pegged at \$300 Mn by 2010 and \$4 Bn by 2015
- The industry is growing at over 40 % per annum

Current Applications

- Legal Transcription
- Document Conversion
- Legal Coding and Indexing Document Review
- Accounting and Billing Contract Management Document Review
- Legal Research
- Deposition Summaries
- Litigation Documents
- Patent Renewals
- Patent Research & Analytics
- Intellectual Property (IP) support services
- Data Verification
- Trademark Renewals, Search & Vouching
- Digital Content Vouching
- Contract Drafting
- Management Agreement review

Emerging Areas



- Patent and General Legal Research Services
- Patent Assessment
- Patent Portfolio Management
- Statutory and Case Law Research
- Financial analysis of companies for Mergers and Acquisitions
- Technical, Legal and Contract Drafting

HORIZONTAL SERVICES WITHIN VARIOUS MARKET VERTICALS



A Horizontal is a set of activities within a particular Market Vertical which are common across all verticals. For example Customer Interaction Services is a Horizontal which is common between Market Verticals like BFSI, Telecom or Retail

CUSTOMER INTERACTION SERVICES

Revenue from Worldwide spend

	2008	2009	2010 (Estimate)
World wide BPO Spend on Customer Interaction Services (\$ Bn)	57.55	58.68	62.23

Source: NASSCOM

Revenue from Operations in India

	2009	2010 (Estimate)
Indian BPO Export revenues from Customer Interaction Services (\$ Bn)	5.12	5.37
Domestic BPO Revenues from Customer Interaction Services (\$ Bn)	1.40	1.72
Total (\$ Bn)	6.52	7.09

Source: NASSCOM

Features, Trends & Opportunities

- The horizontal is the oldest and the most mature segment in terms of IT adoption
- This is extremely challenging as acquiring a new customer is five times the cost of retaining an old one; so companies realize the importance of these activities
- The horizontal is dominated by voice-based inbound and outbound activities spanning the entire origination to retention customer lifecycle
- Driven primarily by growth in sectors like BFSI, Telecom & Consumer Durables



Current Applications

- Customer Support Services
- Telemarketing Services
- Technical Support Services
- IT Help Desk Services

Benefits

- Improved customer service levels
- Reduced customer support / marketing costs
- Higher sales conversion rate

FINANCE & ACCOUNTING

Revenue from Worldwide spend

	2008	2009	2010 (Estimate)
World wide BPO Spend on Finance & Accounting (\$ Bn)	24.73	25.87	27.48

Source: NASSCOM

Revenue from Operations in India

	2008	2009	2010 (Estimate)
Indian BPO Export revenue from Finance & Accounting (\$ Bn)	2.20	2.60	2.80
Domestic BPO revenue from Finance & Accounting (\$ Bn)	0.16	0.19	0.25
Total (\$ Bn)	2.36	2.79	3.05

Source: NASSCOM

Features, Trends & Opportunities

- India has become a global hub for offshoring Finance & Accounting functions; an increasing number of companies are outsourcing their requirements for these services to expert vendors and continue to invest heavily in people, processes and technology
- Barriers of entries are low as work does not involve complex processes compared to Knowledge Process Outsourcing and this has made the horizontal highly mature
- Integrates the IT systems behind Finance and Accounts and offers end-to-end solutions



Current Applications

- Credit & Collection Management
- Order Management
- Reduction of Capital Expenditure
- Controlling of expenditures like travel, training, accomadation etc.
- Renegotiation of rates with vendors
- Reconciliations
- Accounts Payable
- Accounts Receivable
- Financial Analysis & Reporting
- Taxation
- Treasury functions
- Statutory reporting
- Fixed Assets Accounting
- Project accounting
- Compliance reporting
- Invoice Verification
- Sarbanes Oxley reporting
- US General Accepted Accounting Procedure (GAAP) compliance

Benefits

- Upgrading processes to benefit the company through the implementation of Best Practices
- Transferring functions to lower cost environments to accelerate savings and the funding for improvement initiatives
- High end Financial Services would be in great demand rather than services which could be replicated by other service providers



KNOWLEDGE SERVICES

Revenue from Operations in India

	2008	2009	2010 (Estimate)
Indian BPO Export revenue from Knowledge Services (\$ Bn)	0.83	0.97	1.02
Domestic BPO revenue from Knowledge Services (\$ Bn)	0.13	0.16	0.21
Total (\$ Bn)	0.96	1.13	1.23

Source: NASSCOM

Features, Trends & Opportunities

- There is growth in the BPO sector due to the increase in the spend on Knowledge Services; these constitute complex analytical and knowledge-intensive processes that require significant domain expertise; the segment is an emerging vertical which is why it is still a niche segment dominated by a few largely integrated companies
- The BPO industry is moving up the value chain to provide higher end services which are encapsulated within the horizontal of Knowledge Services; areas include Research & Analytics, Legal Services, Financial Research and Data Management
- Billing rates for Knowledge Services is higher than voice BPOs; the revenue per employee is \$ 30000 as the persons recruited are qualified professionals like Chartered Accountants, Engineers and Post Graduates
- Unlike BPO, which refers to the transfer of mainly transactional, non-core processes to specialist providers, KPO involves the outsourcing of core business processes
- Indian BPO has evolved to offer the widest breadth of services across industry niches from the lowest end of the value chain to the highest
- Companies need to build their vertical expertise right from scratch either internally or through acquisition



- The Barriers to Entry are very high as it requires high domain knowledge like Insurance, Mortgage, Loan negotiation, complex banking operations etc

Current Applications

- Financial Analysis
- Mortgages
- Industry Research
- Completion Analysis
- Product research strategies
- Optimization strategies
- Actuarial services
- Risk Management
- Investment banking research
- Pricing analytics and strategies
- Data analysis and modeling
- Legal Research
- Data Management

HUMAN RESOURCE ADMINISTRATION

Revenue from Worldwide spend

	2008	2009	2010 (Estimate)
World wide BPO Spend on the Human Resources segment (\$ Bn)	18	18.35	19.31

Source: NASSCOM

Revenue from Operations in India

	2008	2009	2010 (Estimate)
Indian BPO Export revenue from the Human Resources segment (\$ Bn)	0.30	0.35	0.36
Domestic BPO revenue from the Human Resources segment (\$ Bn)	0.08	0.11	0.13
Total (\$ Bn)	0.38	0.46	0.49

Source: NASSCOM

Features, Trends & Opportunities

- Aims at overcoming the administrative and operational issues of an organization and is targeted at re-organization of the HR service delivery
- The segment is dominated by specialist HR firms



Current Applications

- Recruitment
- Selection
- Training & Development
- Benefit Administration
- Compensation Management
- Performance Management
- Travel & Expenses entitlement & claims processing (Reimbursement)
- Separation Management
- Payroll administration (producing checks, handling taxes, dealing with sick-time and vacations)
- Conducting background interviews, Exit interviews and wage reviews

Benefits

- Critical internal resources such as technology and talent can be devoted to the company's core business
- Allows HR professionals to move away from a routine work profile to a more strategic role
- The organization can focus on higher value-added activities while the outsourcing provider takes care of the day-to-day administration

PROCUREMENT SERVICES

Revenue from Worldwide spend

	2008	2009	2010 (Estimate)
World wide BPO Spend on Procurement & Logistics (\$ Bn)	2.29	2.5	2.78

Source: NASSCOM

Revenue from Operations in India

	2008	2009	2010 (Estimate)
Indian BPO Export revenue from Procurement & Logistics (\$ Bn)	0.14	0.16	0.17
Domestic BPO revenue from Procurement & Logistics (\$ Bn)	0.06	0.07	0.08
Total (\$ Bn)	0.20	0.23	0.25

Source: NASSCOM

Features, Trends & Opportunities

- Companies use technology to help suppliers compete against each other, resulting in the discovery of lowest cost of product and services
- It lowers risk and brings about cost efficiency in contract management and supplier selection and performance and control over spend
- Software programmes can help in the reduction of time for suppliers to come together and flow of information



Current Applications

- Requisition Review
- E-Procurement
- Indent Management
- Formulation of Purchase Order
- E-Tendering
- E-Auctioning
- Vendor Management
- Catalogue Management
- Tactical Procurement
- Contract Execution
- Compliance Administration Management
- Expediting and Logistics co-ordination
- Receipt and Return Management
- Supplier Helpdesk
- Catalogue Management
- Payment Processing
- Strategic Procurement
- Market / Demand analysis
- Development of sourcing strategy
- Master Data Management Supplier
- Identification and Collaboration
- Contract Management
- Inventory Management
- Vendor Research
- Negotiating purchase agreements with suppliers
- Maintaining electronic catalogues

Benefits

- Coordinated procedure leads to large order quantities which in turn can be used to obtain good prices and could improve the competitive position in a volatile market
- Reduces sourcing and procurement costs
- Manages orders directly in the customer's system
- Supplements customer systems with tools that simplify processes

OUTSOURCING: OPPORTUNITIES FOR INDIA

- The Government of India has initiated Vision 2014 which would aim at increasing the spending on IT infrastructure resulting in increasing the broadband subscribers from 7.2 Million in 2009 to 214 Million in 2014; total internet users from 60 Million in 2009 to 695 Million in 2014; the Government is also focusing on rural connectivity which would have a positive bearing on sectors like education, healthcare and banking
- Emerging verticals are seen to be Retail, Healthcare and Utilities; new service lines in IT Service sector are Testing services, Infrastructure services, Consultancy, Networking Integration; it was also seen that in the past one year the concept of Cloud Computing became very popular in India
- IT budgets are constrained but new technologies like Cloud Computing, Software as a Service (SaaS), Shared services and selective outsourcing would help; the emergence of new technologies like Cloud computing, Software as a Service (SaaS), Shared services and selective outsourcing would help companies whose IT budgets are constrained; Cloud Computing reduces the cost by 30%
- India has 51% of the market share of the off shoring market; still the market is small compared to the global outsourcing industry
- There is an increase in high-end work focusing on innovation and R&D; technological power will shift from the West to the East as India and China emerge as big players in the global outsourcing market; this has prompted many Indian companies to move to high-end R&D and Product Development and are successfully competing in the global market place
- Work where constant monitoring would not required but is critical would be outsourced to India in the long term; these would never be shelved and would continue to be outsourced
- There would be Bundling of processes along with appropriate applications with a single provider being asked to provide integrated solutions so that it can cross sell different products amongst different clients; the expansion of IT companies in the BPO business is seen as IT companies can expand on the transaction side of the business and BPO companies could expand in the customer service side
- Attrition of employees would be accepted by companies as a part of the expansion of the sector due to increased opportunities



- By 2015, China will be first and India second among the global top five outsourcing destinations; while China will retain its top spot as the destination for manufacturing outsourcing, India will continue to maintain its lead as an IT / ITES outsourcing base
- Mass adoption of technology would take place if new and innovative services for the consumers could be provided; the growing Indian middle class would be seen as the ideal target of many such innovative services which would connect the consumer to a service provider and would offer convenience to the consumer. An example could be Business to Consumer (B2C) services like Online Food Ordering, Online Bus Ticketing, Online Movie Ticket Booking etc
- Mobile Computing would be very popular in the future with the increase in the penetration level of mobile phones among the population; with the increase in the number of companies introducing low cost computers, applications which could become popular with the masses would have great potential
- India would be the fastest growing market for domestic IT spending amongst the countries in the Asia Pacific region
- Low end high volume services will see margins coming down and larger companies would acquire these businesses
- The total global addressable market size in 2008 was \$ 500 Billion and could go up to \$ 1 Trillion by 2020; growth would be due to growth in core markets, new verticals in developed countries, new customer segments and growth in domestic outsourcing market in new geographies
- The Small & Medium Enterprises sector (over 70% of enterprises in India fall into the segment) holds great potential for the IT sector; IT vendors see this as a big market and some vendors are focusing on this sector; SMEs in India spent \$6.6 Bn on IT in 2009 which is an increase of 7% over the previous year; in the year 2015 the figure would go up to \$ 1530 Bn; the segment accounts from 30-40% of the total market spend
- Most of the growth in India will come from verticals where India has an inherent strength like Climate change, Clinical Research, Cloud Computing, Automotive, Technology related Healthcare, Industrial Design, Education, Retail and Mobile applications
- The new geographies for outsourcing will be the BRIC countries (Brazil, Russia, India and China) and new customers would be Small and Medium businesses and individuals who will use more and more of IT



- The total workforce in the IT BPO sector in India is around 5-6 million; the workforce required in the next 10 years would be 8 million. It is estimated that the balance number would come from smaller cities and towns in India which would be called Tier II or non metropolitan cities & towns; educational Institutions and finishing schools which would provide IT training to entry level graduates would be highly in demand because of the gap in the desired level of knowledge and the actual level available
- There would be increased emphasis on ways of fighting Cyber crime and internet fraud. Companies now have to take a certificate to prove that they comply with a particular level of security preparedness to give confidence to clients. Organizations like Stock Exchanges, Banks, Depository Participants for Shares, Job sites, Social Networking sites and other sensitive sites which contain a lot of data of customers could be the worst affected in the event of acts of hacking. Today Passwords are shared resources and it is very easy to misuse them and take out valuable information from an organisation. Due to the increased threats of international terrorism and data theft, organizations such as banks and financial institutions are increasingly becoming vulnerable to such attacks. It is also seen that during recessions, employees are a big source of threat. Organizations would not like manual consultants to look into fixing this as they are very expensive but would rely on software that can guarantee security
- Due to increase in salaries to employees, the operational cost would increase to \$ 34000 in 2011 and \$ 50000 in 2015 from \$ 30000 in 2009; even under such a scenario, there would be a saving of 71% in 2009 to 60% in 2015
- There would be an increase in the working population of 20-60 years from 750 Million in 2008 to 920 Million in 2020; this would be an increase from 63% in 2008 to 67% in 2020; India would have the highest working age population which would be tapped for offshoring work
- Asia would be the second largest target market; Japan, Brazil, Russia, India and China would offer increased opportunities