

Global Sourcing of Services: The Case of India

by

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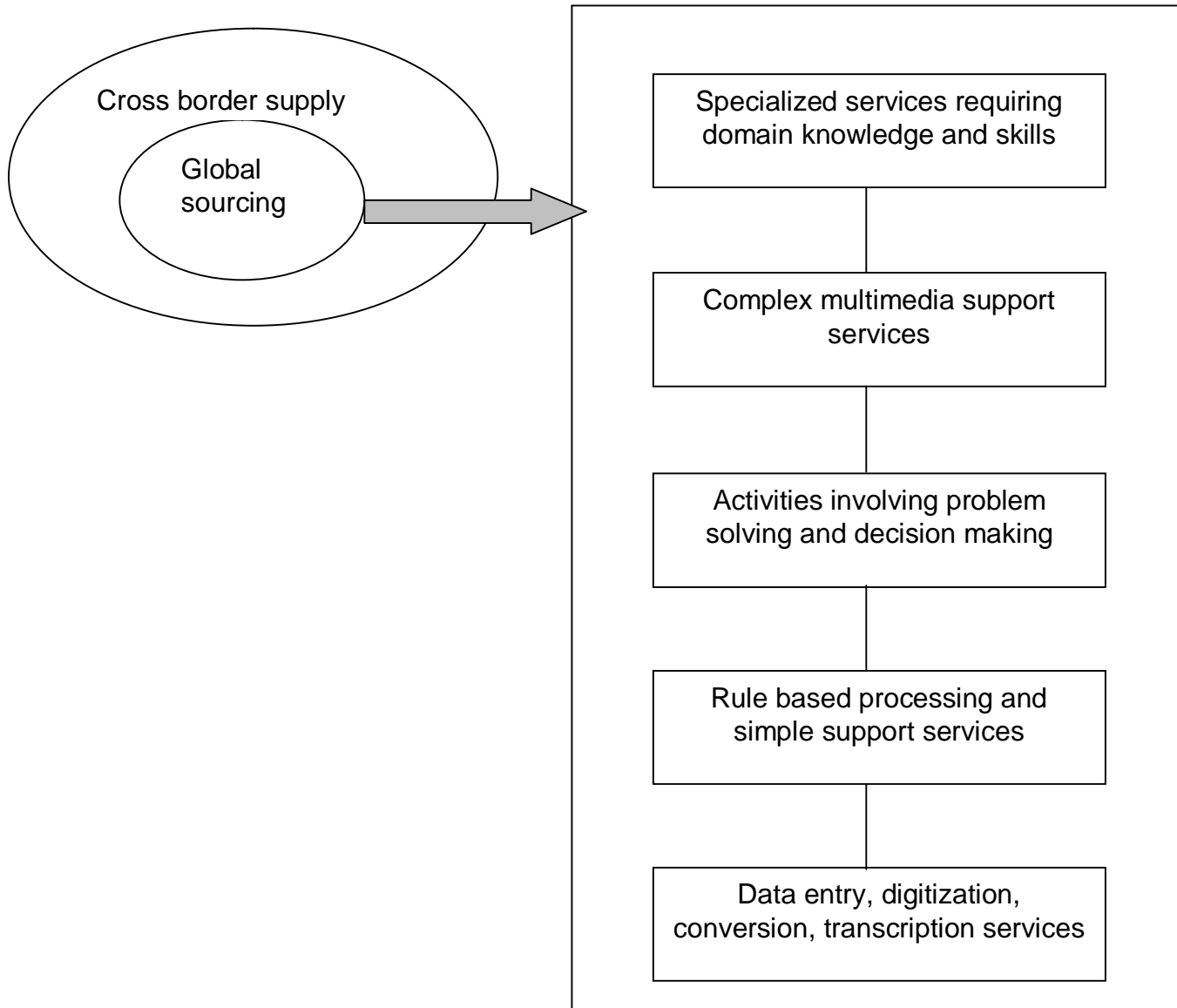
Outline

- Global Overview of Services Sourcing
- Overview of Services Outsourcing in India
 - Trends and key features
 - Facilitating factors
 - Emerging challenges
- Outlook for India in Services Sourcing
 - Prospects for moving up the value chain
 - Prospects for competition
 - Complementary and collaborative prospects
 - Trade agreements
- Evidence on economic and social implications

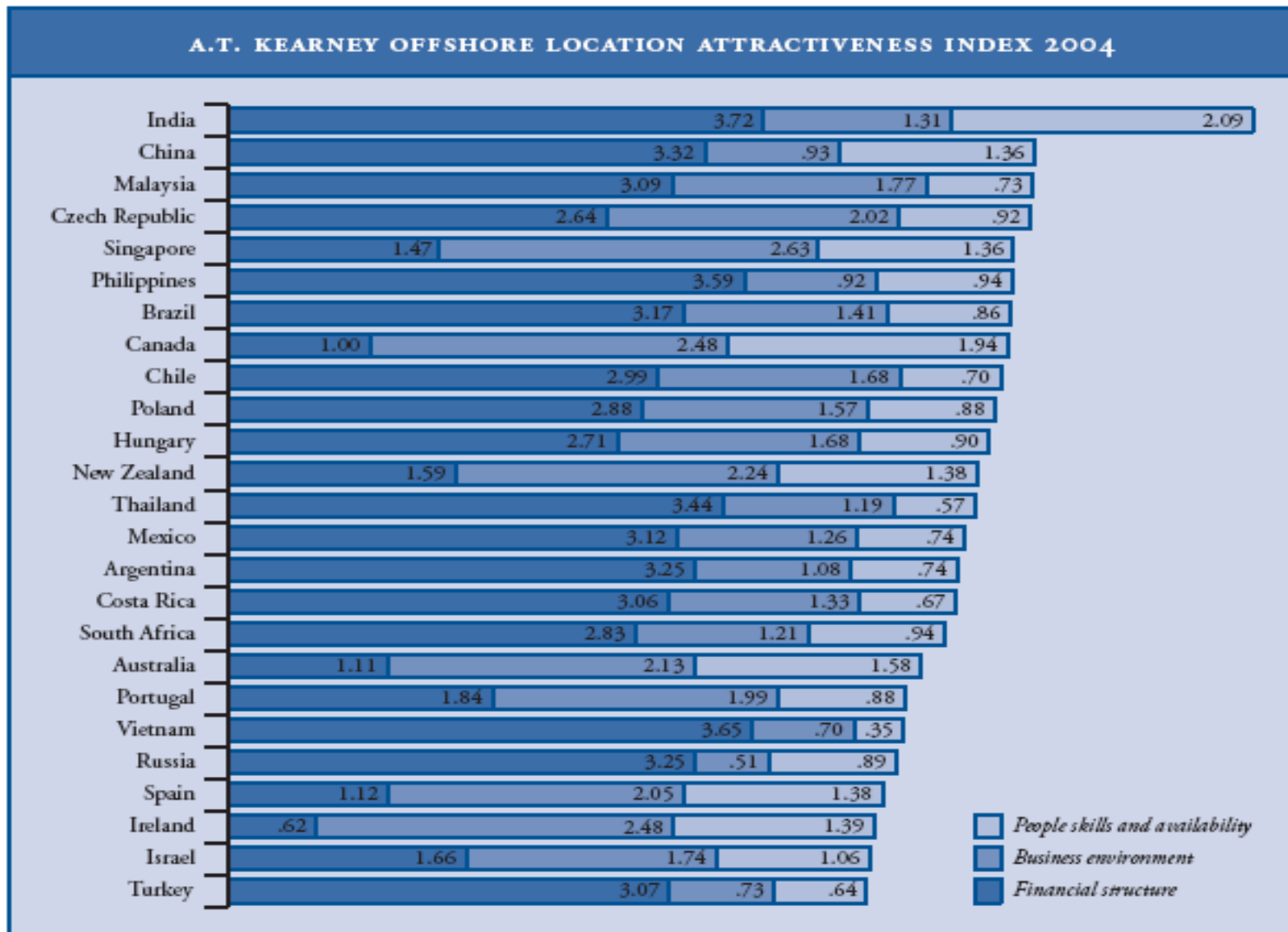
Global Overview of Services Outsourcing

- Businesses increasingly offshoring services horizontally and vertically
 - increase efficiency
 - lower costs
 - focus on core services
 - tap labour market and strengths of other markets
- ITES-BPO market estimated at \$773 bn (2002), to rise to \$1,079 bn by 2006
 - BPO segment estimated at \$234 bn (2005), to rise to \$310 bn by 2008
 - Annual CAGR of 32% between 1998-2003 (ITAA, 2004), 30-40% annual growth projected over next 5 years
- 55% of Fortune 1000 companies source service activities from other countries
- An estimated 3.3 mn jobs projected to be offshored to low wage countries by 2015
- Offshoring destinations include wide range of developing, developed, and transition economies
- Different forms of organizational and contractual arrangements
- Driven by demographic and competitive pressures, technological advancements

Figure 1: Five tier value chain in global sourcing



- Top 20 offshoring destinations



Note: The numbers in the bars are index numbers. The weight distribution for the three categories is 40:30:30, meaning that the financial structure is rated on a scale of 1 to 4, and that business environment, and people skills and availability are on a scale of 1 to 3.

Source: A.T. Kearney

Source: AT Kearney

Overview of Services Outsourcing in India

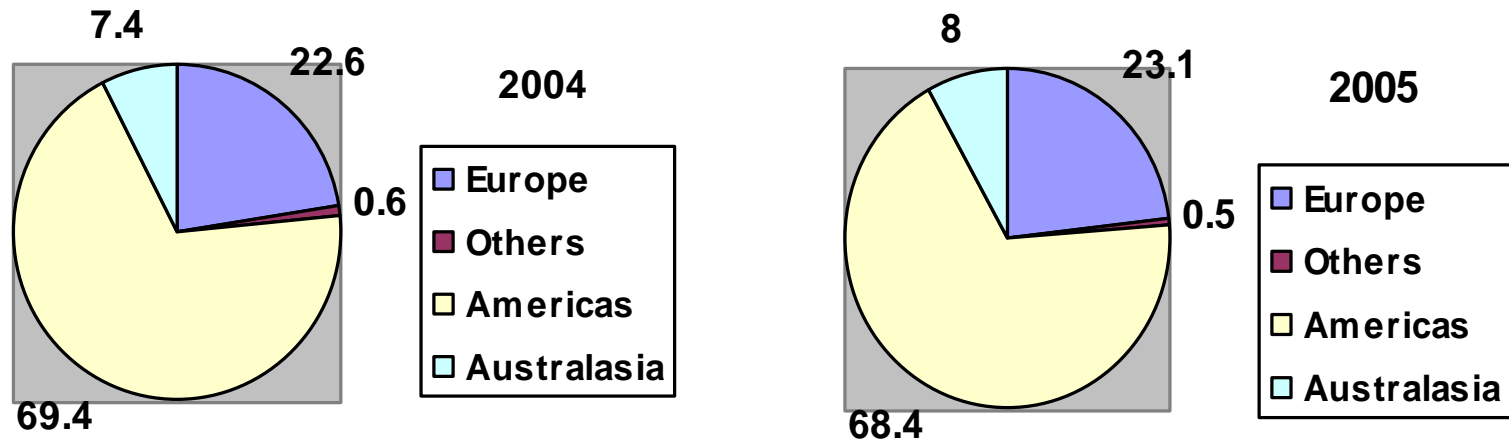
Trends and key features

- India's outsourcing exports grown by 50-60% per year
 - \$2.3 bn in 2002-03
 - \$4.6 bn in 2004-05
 - \$6.3bn in 2005-06
 - Projected to rise to \$30bn by 2010
 - Share in total exports risen from 4.5% (1999) to nearly 16% (2003-04)
 - Share in IT exports grown from 6.5% (1998-99) to 29% (2003-04)
- India is leading destination for global services outsourcing, though its share is declining
- Sixty percent of Fortune 500 companies contracting out IT and business processes to India



Source: DB Research

India's Services Outsourcing Exports: Share of Key Geographic Regions (US\$ billion)

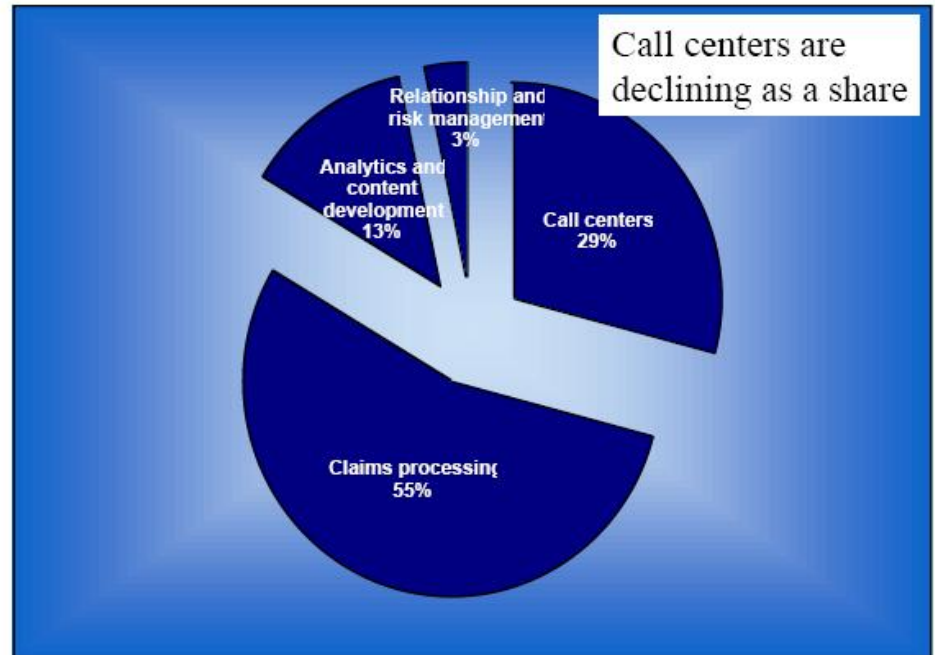


North America most important market (US- 69%) followed by Europe (23%), Japan (7%), others (1%)

- Major segments driving India's BPO and ITES market:

- customer care
- Finance and accounting
- human resource management
- payment & admin. services
- content development
- engineering logistics
- sales
- legal services

India's BPO exports (2004-05)-
DB Research



- Indian outsourcing providers engaged in work across all levels of value and skill
 - Transcription, call centre
 - Reservation and collection services
 - Process reengineering services
 - IT solutions, technical desk support
 - Bioinformatics, design, financial analysis, prototype testing
- Revenue composition: 70% in low end services, around 15% in high value
- Variety of business models: captives, third party providers, JVs, partnerships, BOT

Facilitating factors

- Large pool of computer literate English speaking persons
 - 2 mn college graduates per year
 - 0.3 mn post graduates per year
 - 0.9 mn engineers per year
 - 2,000 MBAs per year
 - Over 270 universities, 2400 colleges
 - 200,000 to 250,000 computer literate workers
 - Scalability not available in other countries (except China)
- Low labour costs
 - Offers savings of 40-60%
 - Labour costs one-tenth to one-fifth of IT wages in US
 - \$6-8,000 in India versus \$50-70,000 in US and Germany
- Good telecom infrastructure
 - Low cost bandwidth, falling costs
 - Large telecom network, good satellite & cable communication links
 - Over 100,000 fibre optic cable
 - Private sector competition

- Time zone advantage
- Existence of a well established, relatively mature domestic IT sector
 - Quality certifications in industry
 - Leads in number of companies with highest level Capability Maturity Model certification (50)
 - Superior project management skills
 - Mature and stable vendors, many indigenous companies
 - Skills in wide range of application services, ability to handle complex operations
- Government policies
 - Tax, investment, subsidy incentives for industry
 - Setting up of IT parks and dedicated zones
 - Flexibility in labour laws for this industry
- Active industry association (NASSCOM)

- Growth in demand for IT experts from various industries
 - Software programmers, specialists, network architects, consultants
 - Y2K problem and surge in demand around 2000
 - Cost imperatives of Western companies
- Role of diaspora
 - Over 1 mn Indians residing in US (2001)
 - Second largest group of doctoral candidates in US
 - Large number of firms set up by Indians in Silicon Valley
 - Share up from 3% (1980s) to 10% (1995-2000)
 - Many returning and setting up/heading companies in India
 - 95% of firms located in Software Technology Parks in Bangalore by returnees

Emerging challenges

- Infrastructure deficiencies (power, transport)
- Rising shortage of skilled and quality manpower, saturation of first tier cities
 - Demand for 20-25,000 graduates/per year in NCR
 - 17-20,000 graduates/per year in Bangalore
 - Only 10-30% of graduates employable with given skill sets
 - Projected labour shortfall of 500,000 by 2010
 - Need to meet increased demand for KPO with requisite skill sets
- Other labour issues
 - High attrition rates (25-40%)
 - 10-15% rise in wages
 - Shortage of middle management
 - Employee screening and monitoring and control mechanisms
 - Heavy English accent
- Growing competition from other countries

Pay pressure

Annual income, USD



Source: DB Research

- Absence of requisite legal and regulatory frameworks
 - data protection, privacy, consumer protection, on-line payments
 - Amendment to IT Act seeks to exclude BPOs from being network service provider, i.e., not held liable for any data theft
 - Lack of national data protection legislation can hurt industry
 - Time for cases to be settled through judicial system
- Lack of office space in major hubs and rising rental costs/real estate prices
 - McKinsey report calls for 5 more Gurgaons and 7 Punes
 - Asking rate of 25 mn square feet of new office space per year
- Possibility of trade unions playing a bigger role in this industry
- Concentrated in low value services which easily moved to other countries
 - Need to move from application development, maintenance or call handling to new lines of activity, more value per head, handling of entire processes than just transactions
 - Indian vendors only 5% of global outsourcing of engineering services (\$7bn to \$10bn), but need to expand to process engineering and plant operation areas
- Protectionist backlash in developed countries

Outlook for India in Services Sourcing

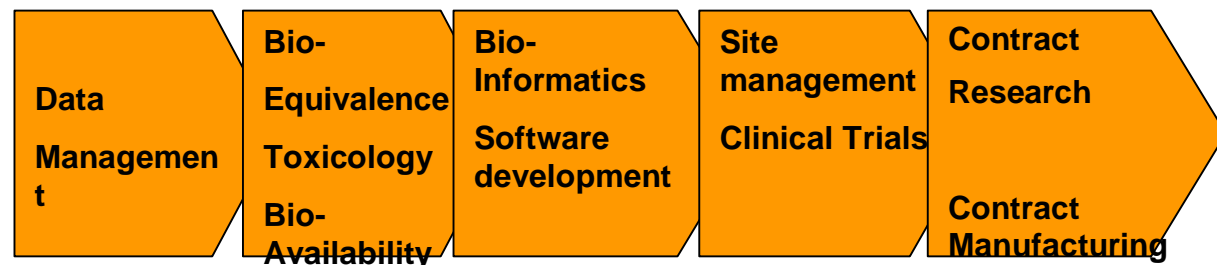
Prospects for moving up the value chain

- Gradual shift in composition of offshore work towards higher skilled and more sophisticated services
 - Chip design, architecture, engineering and design, business consulting, pharmaceutical research, financial analysis, data mining, analytical and modelling services
 - Revenue from product development and R&D services rising
 - Indian vendors moving to high margin segments and diversifying markets
- Driven by MNC R&D centres (IBM, GE, Motorola, Texas Instruments, Cisco)
- R&D sourcing market to grow from \$1.3 bn (2003) to \$9.1 billion (2010), generate 200,000 plus jobs by 2010
- Examples of such services
 - Detailed analysis of X Ray pictures by Indian radiologists for overseas hospitals
 - Risk analysis, business research, equity research, balance sheet analysis, risk modelling
 - Editorial selection and publishing

Clinical Research

- What gets outsourced?
 - Pre-clinical
 - Phase I
 - Safe dosage & Medium
 - Phase II
 - Efficacy
 - Phase III
 - Reaction in Variety of people
 - Phase IV
 - Post Launch Feedback
 - Contract Research
 - Contract Manufacturing
 - Phantom Patients
 - Pharmacogenomics
- Business Models
 - Outsourced
 - Collaborative
 - In-house Research

Projections: Mc. Kinsey	2010
Clinical Research Market	\$ 1.5 Billion
GCP Studies	1,500-2,000
GCP trained investigators	10,000-15,000
Subjects Required	2-3L
Clinical Research Professionals	50,000



Source: Singh and Ramakrishna (2006), IIMB student project

Clinical Trials- SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Competitive costs • Huge patient base • Diversity of diseases • Heterogeneous population mix • Drug naïve population • High enrollment rates • Good patient compliance/retention • Reliable, experienced investigators • Source data in English • ICH GCP quality standards • Good information infrastructure • Large hospital facilities 	<ul style="list-style-type: none"> • IP Protection • Legal System • Trained Manpower • Regulatory System • Physical Infrastructure • Quality of Hospitals- Monitoring • Poor Human Rights record
Opportunities	Threats
<ul style="list-style-type: none"> • Contract Research • Contract Manufacturing • Bio-informatics • Database Maintenance even after Phase 4 trials 	<ul style="list-style-type: none"> • Competition from China/Sri Lanka, East European and the Latin American countries • Hard stance by UN on Human Rights violations • In-House captive units by Big Pharma

Industrial Design

- Areas of Operation
 - Architectural
 - Industrial
 - Residential
 - Mechanical
 - Aerospace
 - Automobile
 - Industrial Engineering
 - Chemical Engineering
 - Product Engineering- PLC
 - Design Optimization- FEA
 - 2D & 3D drafting services
 - Reverse Engineering
- Business Models
 - Captive
 - Service Providers
 - Partners

Projection	Indian	Global
2005	\$500 Million	\$25 Billion
2009	\$10 Billion	\$53 Billion

Source: Singh and Ramakrishna (2006), IIMB student project

Industrial Design- SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> ● Large talent Pool ● Globally competitive local partners ● Presence of second and third tier manufacturers ● Cost Arbitrage ● Time Difference ● Local Market: Easy Road to Market ● Shift of global Manufacturing to India ● Robust Information Infrastructure 	<ul style="list-style-type: none"> ● Poor physical Infrastructure ● Poor/slow legal system ● Poor employability coefficient with MNCs ● Talent Retention- Poaching ● Archaic Labor Laws ● Bureaucracy and red-tape in policy reforms ● Standard Designs- No concept done ● Lack of Higher Education support for Design
Opportunities	Threats
<ul style="list-style-type: none"> ● Core Architectural Design ● Integrated Manufacture and Design ● Software Solutions ● Concept Design in Automobiles Product Lifecycle Management 	<ul style="list-style-type: none"> ● Competition from Taiwan, Phillipines, China and Ireland ● Lack of High end Design Talent

Source: Singh and Ramakrishna (2006), IIMB student project

Animation

- Business Models
 - Services Model
 - Boutique Studio
 - Co-production

Activity	Skills Required
Developing Original Stories	Creative, Artistic
Animation	Technical, Narrative
Backgrounds	Technical, Artistic
Layout	Technical, Artistic, Narrative

Projection	Indian	Global
2005	\$685 Million	\$25 Billion
2009	\$15 Billion	\$70 Billion

Source: Singh and Ramakrishna (2006), IIMB student project

Animation- SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> ●Quality Benchmarks ●Huge Number of Studios ●Rich Mythology and historical Heritage ●8-10% production cost savings ●English Speaking Talent 	<ul style="list-style-type: none"> ●Lack of Creative Skills ●Educational/ Training Institutes ●Risk Averseness: esp. to local content ●Funding Problems ●Poaching ●Salary Issues ●Constant Retraining
Opportunities	Threats
<ul style="list-style-type: none"> ●Special Effects in Bollywood ●Merchandizing ●Mobile Gaming ●Simulation ●Mobile Video ●Interactive Web Environment 	<ul style="list-style-type: none"> ●Competition from Taiwan, Phillipines, Korea, China ●Ever changing technology ●Lack of Awareness in foreign countries

Patent Research

- 300 IP professionals as on March 2005
- Employability : 5000 – 10,000 in a couple of years
- Market: \$400 – 500 m in a couple of years
- 60% of all legal work to India by 2016
- Indian firms cost \$4000 for patent application
 - US firms cost \$15,000 to \$25,000

Patent Research- SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> •Low Cost <ul style="list-style-type: none"> – \$4000 vs \$20000 per filing – \$30/hr vs \$300/hr •Talent Pool •Round the clock service •English Speaking skills 	<ul style="list-style-type: none"> •Lack of Patent Attorneys •Lack of Education/Training institutes •Extensive reviewing required by US Lawyer •Duty of Disclosure: USPTO •High in-house training costs •Domestic Demand- Sluggish •Software patents not allowed in India
Opportunities	Threats
<ul style="list-style-type: none"> •US Lawyers overworked •Post TRIPS: Domestic Demand Upsurge •Product Patents recognized by India •International IP protection - PCT 	<ul style="list-style-type: none"> •Lack of interest in Law as a career •Confidentiality issues •High Application costs/ Long Lead time- detrimental •Lack of awareness of benefits •Poaching •Lack of Awareness of Careers in Patent Research

Source: Singh and Ramakrishna (2006), IIMB student project

- To tap higher value and emerging segments in services sourcing government and industry initiatives needed to:
 - Develop domain expertise in specialized areas
 - Compete on quality and not just costs
 - Introduce new and innovative courses and training programmes in niche areas
 - Improve legal system
 - Improve IP enforcement and administration

Prospects for Competition

- Will India retain its leading position?
- How does India compare with other countries, especially those in Asia?
 - Quality, cost, availability of requisite manpower, government policies
- India clear leader but many other countries engaged in services outsourcing
 - 6 of top 20 offshore destinations in Asia
 - Philippines: graphic design, architectural blueprints, accounting
 - Singapore: Asia Pacific hub for companies, robotics management, genetic diagnostics
 - China key product development centre for electronic giants, hardware design and embedded software
- India's main advantage over other Asian countries is scalability of human resources
- India is comparable to other countries on financial structure and business government

Competition from China

- China competes with India only in scale, not in terms of business segments or markets
 - Geographic orientation very different from India's
 - mainly to Japan, US small share
 - Content wise different from India
 - mainly from IT and telecom
 - Very little independent work done by Chinese outsourcing companies
 - Concerns about IP regime
- China in a better position to do outsourcing related to its manufacturing capabilities, as in IT, telecom, related engineering and design services
- China unlikely to overcome India's lead due to language limitations as US and UK likely to remain main client countries

Competition from the Philippines

- Philippines a closer competitor to India than China in terms of content and orientation of outsourcing industry
- But India able to scale at all levels, has much bigger IT outsourcing segment, more high end KPO services
- Philippines currently oversaturated with call centre work
- Philippines does not have as mature and reputed a software industry
- Filipino outsourcing industry excessively concentrated in Manila
- Political stability and disaster recovery issues in the Philippines

Competition from other Asian countries

- Malaysia a potential competitor
 - English speaking manpower, good infrastructure, government support, but much costlier
- Singapore
 - Pool of professional manpower with multilingual capabilities but high labour costs
 - Attractive for strong IP legislation, good litigation procedures for data fraud and theft
 - Good infrastructure
- Vietnam
 - Able to tap Japanese and Korean markets
 - But limited to low end transactional work
- Others (Bangladesh, Sri Lanka) either lack scale or have poor infrastructure, political instability, too concentrated in one city

- Competition limited for India from other countries at present
- But competition will grow as:
 - labour costs rise in India
 - other capacity constraints become binding in India
 - other countries promote their outsourcing industries
- Within Asia, growing competition:
 - at lower end from Vietnam and Philippines
 - limited extent from Malaysia
 - middle and higher end from China

Complementary and collaborative prospects

- Potential for complementarity in skill sets, service lines
- Collaborative arrangements, subcontracting, cross border investments likely to increase between India and other countries
- Three ways to understand complementarity
 - India will move up value chain and others will move into lower tier activities
 - Indian and other outsourcing firms will meet different needs and tap different markets, so client companies will base operations in India and other countries for offshoring different kinds of service activities
 - Firms will enter into cross border collaborations like joint ventures and training arrangements to learn from each other

Complementarity in the value chain

- India's services outsourcing industry moving into specialized and domain knowledge intensive services
- Other Asian countries in lower end work like data entry, conversion
- In IT outsourcing India moving towards application oriented and consulting services while other Asian countries more in routine software development and maintenance services
- Value chain segmentation is emerging
- Interviews:
 - Several respondents in India noted that companies are increasingly focusing on higher value work
 - Dynamics of job migration changing as Indian companies also moving some of their low end offshore work to other low cost countries in region and outside
 - But due to scalability advantage, India likely to continue all through value chain

- Opportunities for collaboration and joint ventures
 - Indian companies can contribute to CAD, CAM, embedded systems design for Chinese semiconductor, IT and electronics equipment manufacturing companies
 - Indian training companies providing technical and management training to Chinese professionals
 - Huawei technologies set up centre in Bangalore for software research and development to leverage software development skills in india
 - CDC Outsourcing joint venture with vMoksha Technologies to strengthen CDC's outsourcing capabilities in Asia and broaden ITO services to global clients

Outsourcing by Indian firms

- Indian companies outsourcing to other countries, setting up subsidiaries overseas
- Directly providing services from these offshore bases
- Using overseas operations as part of larger global or regional strategy
- Main reasons for reverse outsourcing include:
 - Entry into various new services and markets
 - Enhance service offerings in different languages
 - Broaden vertical focus
 - Exploit nearshore opportunities
 - Improve visibility and marketing
 - Disaster recovery in case of natural calamities or other emergencies
 - Front-end interface for overseas clients
 - Provide services with special focus on overseas market
 - Evaluate serve opened center in China to provide Business Research and Investment Research services with special focus on the Chinese and Asian markets
 - Enter new markets, access new clients
 - HTMT set up center in Philippines as part of its growth strategy

Tata Consultancy Services

- Asian countries part of TCS's global and near shore delivery centres
- China is TCS' global delivery centre
 - Has scale allowing expansion of global operations
 - Helps diversify geopolitical risk
 - Helps address regional requirements of major client companies with interest in Asia Pacific and Chinese market
 - Can leverage local capabilities to meet client requirements
 - Get additional business from MNCs in China to Indian centres
 - Can tap growing offshore business available in China from MNCs which domestic Chinese outsourcing companies not in position to tap
 - China's scale enables Indian companies to hire locally and manage with Indians
 - Can provide offshore testing, design, etc. services to Japan from its bases in China
- Singapore is near shore delivery centre
 - Front end office, liaise with customers
- Segmented delivery model evolving as certain functions provided directly from India, some via network of global delivery centres, some provided directly to customers through overseas establishments

Wipro

- Business from Japan growing rapidly
 - Mainly for product and component development, porting, testing, and sustenance services
 - Main source sectors are consumer electronics, semi conductor, telecom industries
- Development centres in Shenzhen, Beijing, Japan for onshore and offshore engineering services
- Strong link between manufacturing and higher end outsourcing like engineering design
 - Scope to expand engineering services outsourcing from Asia Pacific countries to India (Fujitsu, Hitachi, LG) which do contract manufacturing and require engineering services
 - Potential to outsource manufacturing related support services to India or Indian companies located in China
- India and China can be complements
 - India's skills more on software side, China's more on hardware side

Infosys

- China and some other Asian countries can be means of overcoming talent shortage in India and to meet demands of US and European client companies
- Indian companies with centres in China can take advantage of large contracts being offshored to China which Chinese companies not in position to secure
- Work on Chinese operations of MNCs
- Will eventually consider tapping language capabilities for Japanese and Korean markets using centres in China
- Only China has sufficient scale and depth in talent pool

Trade agreements

- India moving towards bilaterals and regionals, comprising of services
- Indo-Singapore CECA has implications for outsourcing due to provisions on:
 - double taxation
 - withholding taxes on technical fees
 - cross border movement of professionals
 - entry related conditions
- Give boost to bilateral trade and investment in ITES area with increased trade in computer hardware, peripherals, telecom equipment, ODCs and JVs in ITES

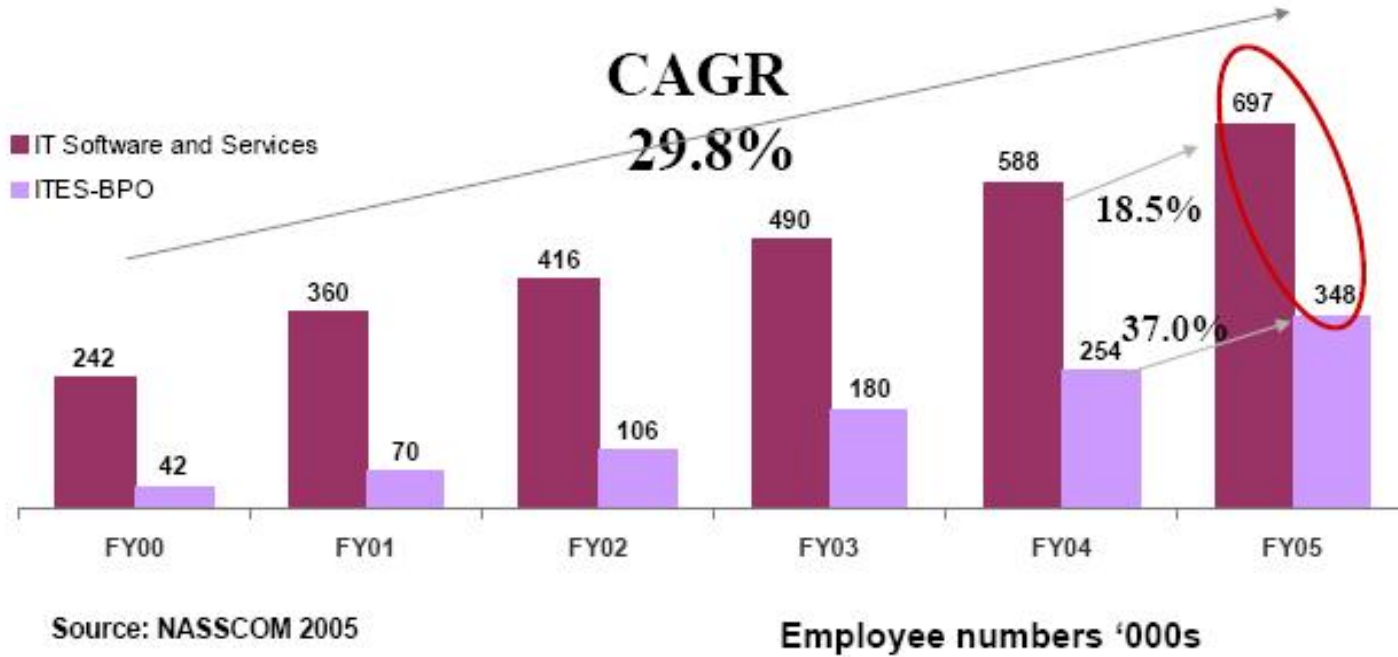
Evidence on Economic and Social Implications

- Sourcing of services impacts delivery economies through direct and indirect channels

(i) Employment creation

- Direct and indirect employment opportunities created due to outsourcing
- Better working environment and compensation than jobs requiring similar qualifications resulting in faster upward mobility
- Economic empowerment of young adults across wide range of skills and qualifications
 - Contact services alone created income of \$375 million (2001-02) in India
- Gender friendly
- Employment opportunities beyond mainstream graduates
 - Less advantaged and minority groups (women, retirees, disabled)
 - Companies experimenting with flexible work hours, work from home
- As industry spreads beyond major cities, employment and income gains likely to become more widely spread

Rapid employment growth in India's services outsourcing industry



- Workforce projected to reach 1.1 mn by 2012

- Demand created for wide range of ancillary services
 - For every job created in BPO industry, five created in other industries (multiplier effect) – 875,000 additional jobs worth Rs. 310 mn in revenues per year (2004-05)
 - Transport, catering, housekeeping, security, computer equipment provision and maintenance, training, real estate
 - Incentives created for entrepreneurial activity and small supporting scale businesses in ancillary services
 - Temporary staffing in supporting areas like HR, administration, finance in ancillary service firms (training and recruitment)
 - Spillover effects on employment via consumption channel to other sectors
 - Estimated 2.5mn indirect jobs generated in 2004-05

(ii) Skill and knowledge transfer

- Specific and generic skills acquired in delivery economies
- Specific skill transfer and acquisition in high end, specialized support services
 - Development of capabilities to undertake prototype designs for testing for mass production (drug testing, engineering design, research)
 - Exposure to cutting edge technology, practices (inventory and supply chain management, GAAP) and related upgrading of skills, technology, infrastructure
 - Productivity gains from specialization and adoption of new technologies and processes
 - Help develop indigenous capabilities for production, R&D, technical analysis without necessarily doing core processes
 - Potential diffusion of technology to other sectors

- Generic skills developed in delivering business support services
 - Knowledge acquisition and transfer in migration phase of outsourced project
 - Learn about client's functional, technical, maintenance, management processes, technical applications, products, marketing techniques
 - Hands on experience through supporting on-site presence
 - Customer relationship management skills
 - Exposure to global, demanding customers causes changes in approach, skills, attitudes
 - Learn importance of efficiency, costs, optimal processes, performance metrics, quality, on-time delivery
 - Improve work discipline, greater professionalism, accountability
 - Help in improving organizational systems, adopting more globally oriented competitive strategies at firm level
- Generic skills portable to other sectors and activities
 - Survey results indicate positive effect on efficiency in other sectors (financial services, telecom, transport, hospitality)
- Can help improve work and management practices in other parts of economy

(iii) Creating resources

- Net value addition to outsourcing and delivery economies
- Export earnings
- Foreign investment
 - strategic investments by MNCs, setting up of subsidiaries, R&D centres, JVs with local firms
 - Confidence and image building attracts investments and further contracts
 - Attract investments to other areas like auto component and pharma industries where scope to outsource design, testing, specialized services
- Reinvestment of profits (around 40% according to survey results)
- Stimulus to government investments in related infrastructure
- Domestic investment
 - establishment of small and mid size entrepreneurial firms, strategic acquisition of smaller players, ramping up of investment by larger companies

(iv) Retention and reversal of skilled persons

- Reduced incentives for migration by skilled persons with expanded job opportunities and attractive wages in offshore centres
- Reverse migration with relocation of expatriates by overseas companies
- Return migration by senior professionals and managers to set up own business, manage MNC subsidiaries
- Associated investment, knowledge, technology flows and contracts
- 50% of firms surveyed in India indicated that BPO industry is helping in retaining skilled people and reversing brain drain
 - better income opportunities
 - global character of industry
 - greater expectations
- But for reversal to be significant, need industry to move into higher value operations

(v) *Externalities*

- New class of consumers created with large demand effect on other sectors
 - Real estate, durables, financial markets, consumer goods

- Real estate
 - Growing demand for office space by BPO industry in major cities but likely to spread as industry expands to other areas
 - Associated rise in property rentals
 - Real estate acquisition by BPO industry grown from 2.59 mn sq ft (2001) to 11.28 mn sq ft (est. in 2005) across major cities in India

- Education and training
 - Spread of incentives for human capital accumulation (IT, computers, language and communication courses)
 - High share of firms responded that positive effect on education and training (74% for China, 53% for India)

- Emergence of domestic outsourcing

- Some negative effects are evident and also emerged from survey results
- Adverse effect on social and cultural norms
 - Loss of cultural identity
 - Loosening of social and cultural values
- De-skilling due to underutilization of training and qualifications
- Bangalore bug- drawing away workers from other sectors
- Skewing of educational incentives affecting broad basing of education
- Redirection of resources from other sectors
- Exacerbating inequalities across sectors, occupations, regions
- Occupational health issues