Just Doing IT?
India's Fabled Services Revolution
Myths, Reality, Prospects and Challenges

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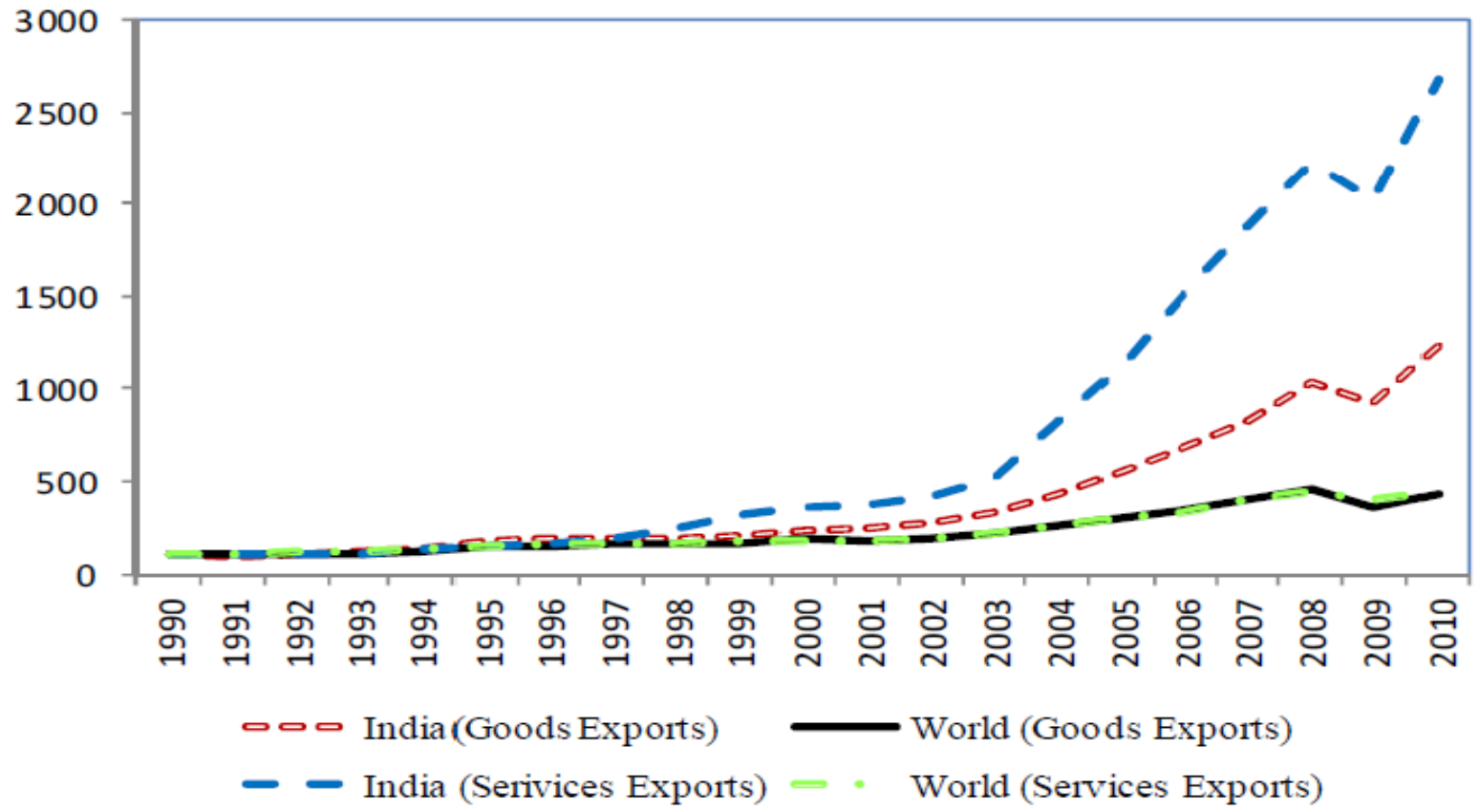
Outline

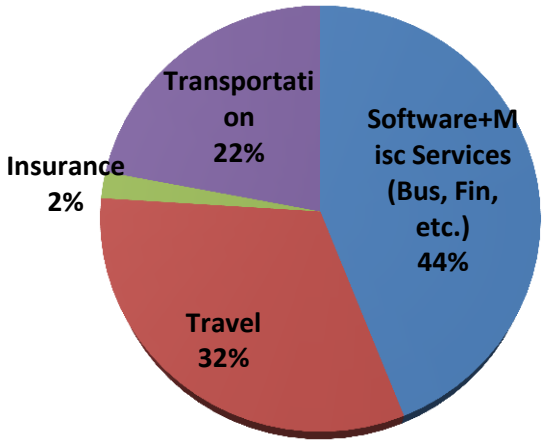
- India’s Fabled Services (Export) Revolution
  - Composition
  - Sophistication
  - Resilience
- Really All About IT and IT-enabled Services
  - Growth and Evolution
  - Concentration (Markets, Geography,…)
  - Trends and Potential Discontinuities
- Broadening the Base

Trends in World Exports and Indian Exports of Goods and Services in current USD (Index=100 in 1990)

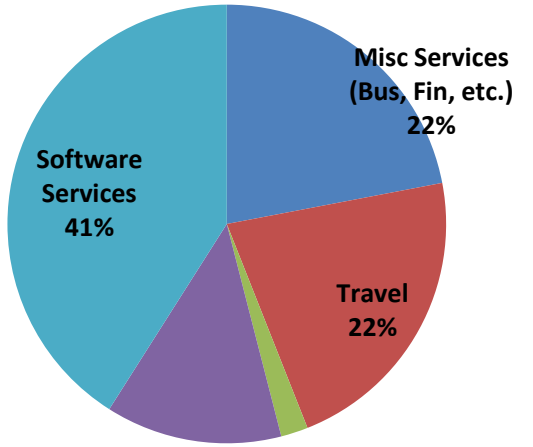


Trends in Service Exports of India Since 1990

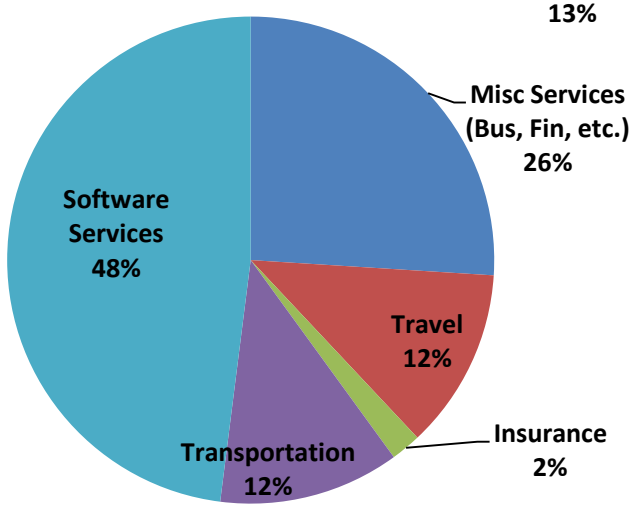
1990-91 Service Exports = $4,551 million



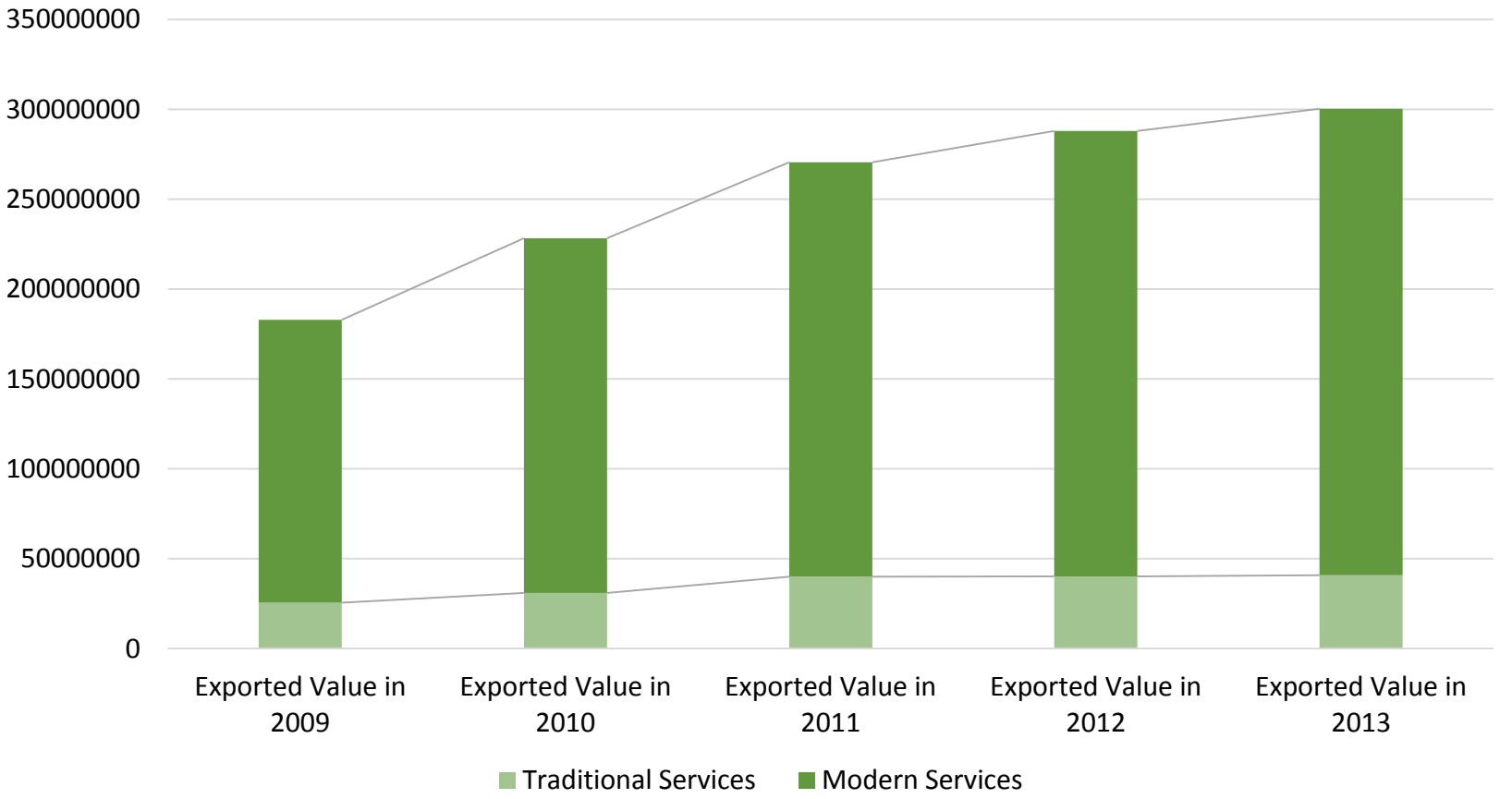
2000-01 Service Exports = $16,268 million



2010-11 Service Exports = $1,31972 million



India's Exports – Share of Services (US$ 000's)



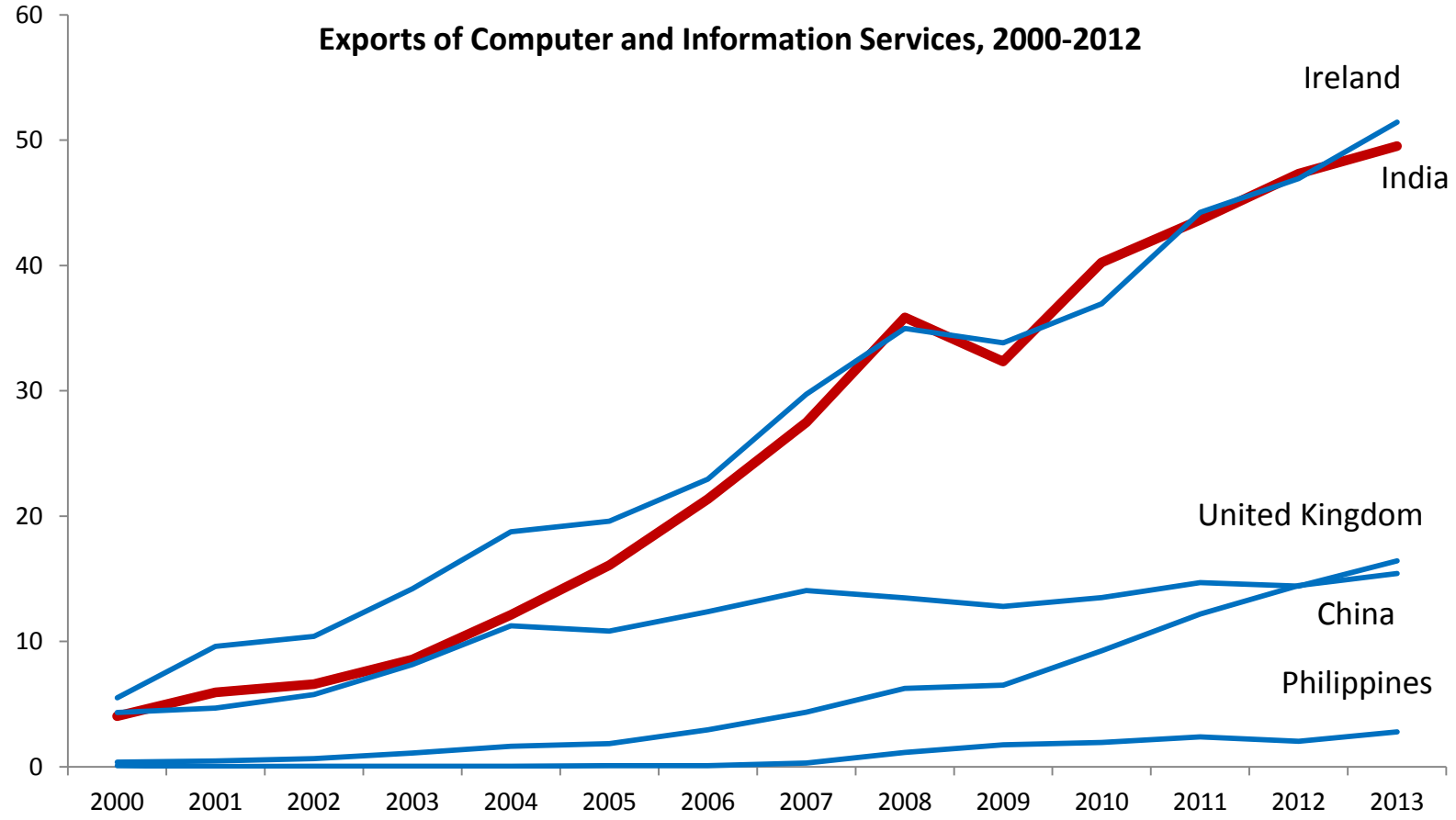
Traditional Services includes: Travel, Transportation, Insurance Services, Personal, Cultural and Recreational Services, Construction Services, Government Services and Royalties & License Fees

Modern Services includes: Commercial Services, Computer & Information Services, Financial Services, Communication Services and Other Business Services

Source: NASSCOM Analysis of WTO Trade Data

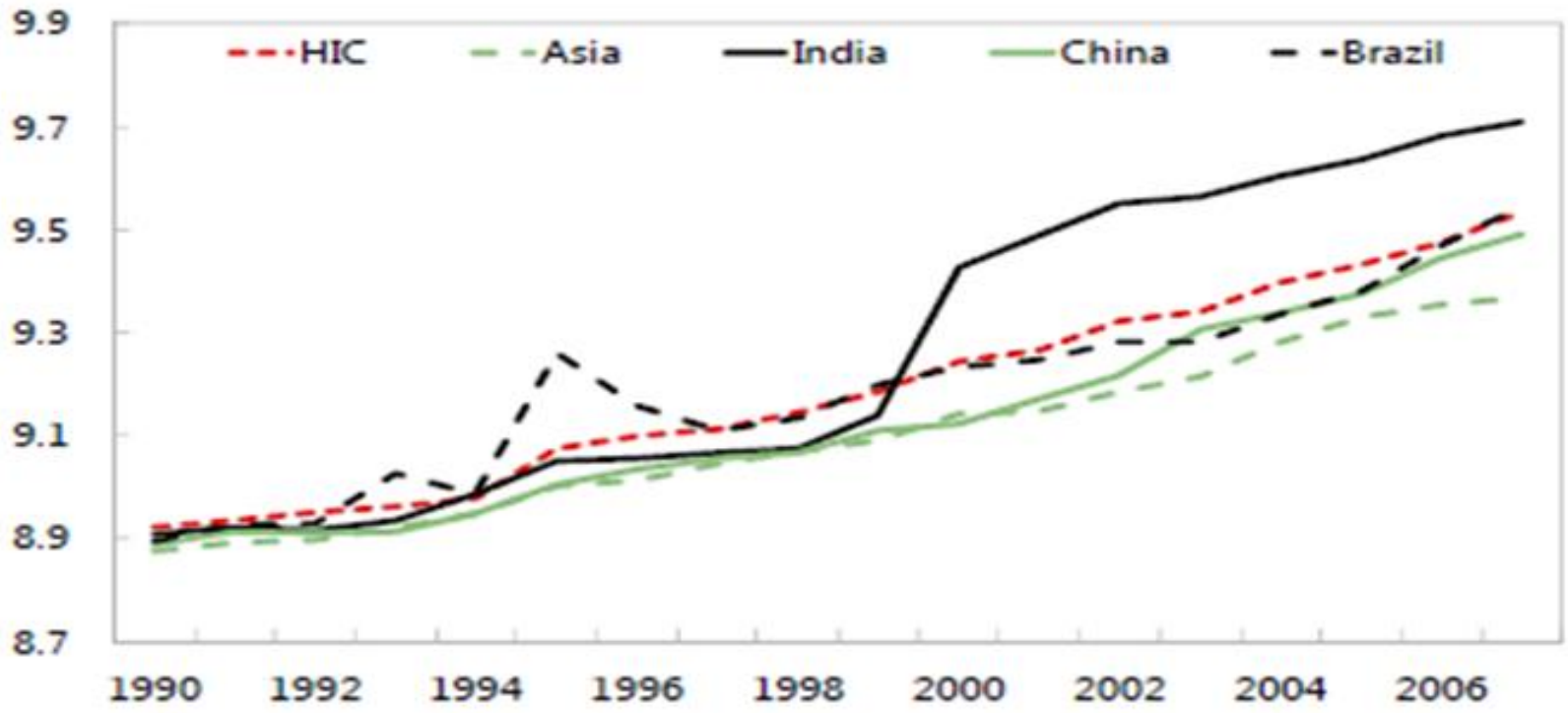
Exports of Computer & Information Services

(US$ billions)



Source: World Trade Organization Time Series on International Trade (2013)

Sophistication of Services Exports

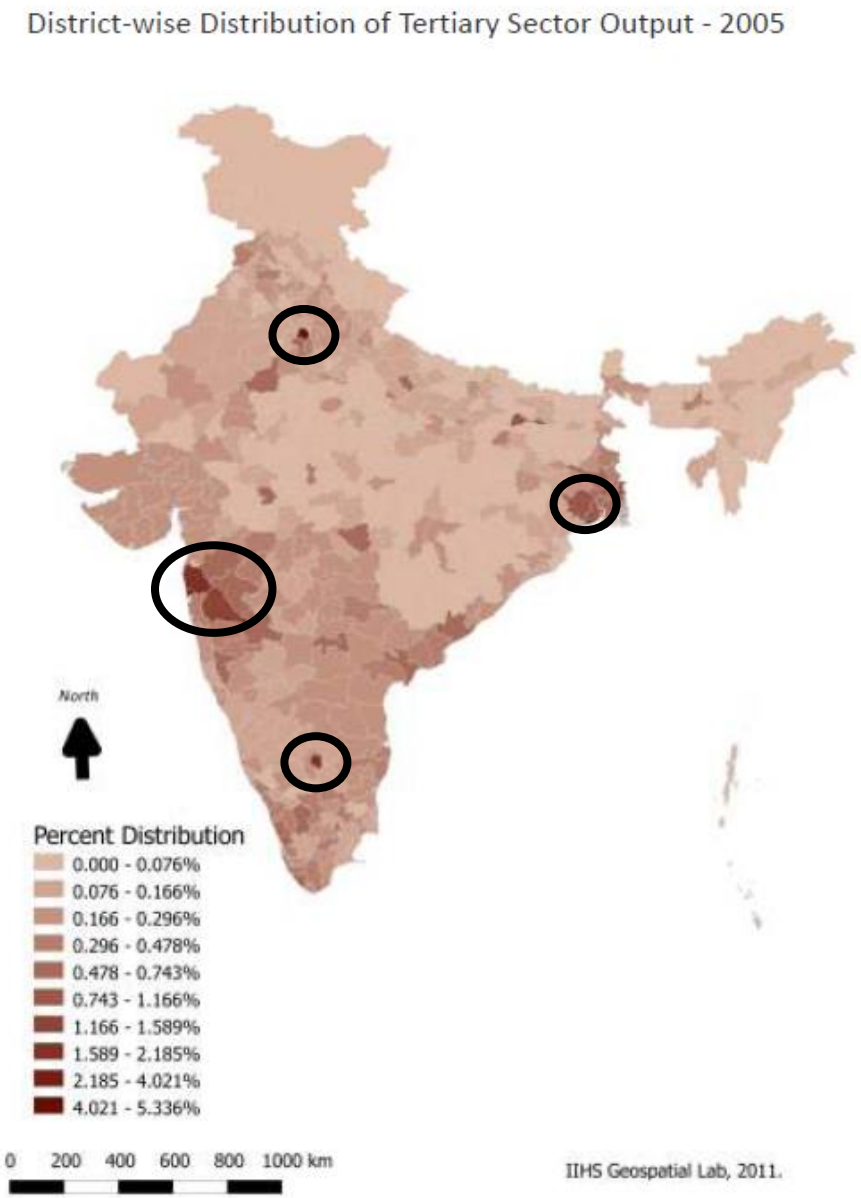


Sources: IMF staff estimates.

Services Trade – Surprising Resilience

- Experience During Last Crisis (2008)
  - *Comparison with Manufactures*
- Differences Across Service Sectors
  - Transport *vs* Tourism *vs* Business Services
    - Finance *vs* Insurance
- Supply Side – Low Vulnerability to Credit Squeeze
- Demand Side Features of Business Services
  - No inventory or vintage effects
  - Less Discretionary Decision-Making
  - Long-Term relationships

Distribution of Output



1)Highest tertiary sector output is concentrated in areas around the 4 mega-cities of India.

2) Districts in the immediate vicinity also show high sectoral output

3) In 1995, India's GDP was split almost evenly between its urban and rural economies, but by 2008, urban GDP accounted for 58 per cent of the overall GDP (MGI 2010)

Business Services and ICT Concentrate in the Largest Cities, Low-End Manufacturing and Personal Services Are Dispersed

location quotient

	City size					
	More than 4 million	*1–4 million*	*100,000–1 million*	*50,000–100,000*	*20,000–50,000*	*Fewer than 20,000*
ICT services	2.09	1.00	0.71	0.27	0.27	0.19
Financial services	1.16	1.02	1.02	0.88	0.82	0.73
Real estate	1.65	0.97	0.79	0.67	0.60	0.54
Manufacturing						
High tech	1.39	1.41	0.69	0.62	1.00	0.48
Fast-growing export	1.33	1.17	0.81	0.88	0.75	0.77
Medium high tech	1.13	1.60	0.77	0.94	0.77	0.70
Medium low tech	1.18	1.30	0.89	0.77	0.79	0.79
Low tech	1.01	1.06	0.97	1.04	0.99	0.94
Utilities (electricity, gas, and water)	0.90	0.84	0.95	1.04	1.17	1.61
Construction	0.99	1.04	1.10	0.93	0.84	0.89
Transport, telecom	1.23	0.94	0.98	0.87	0.83	0.75
Public administration	0.64	0.93	1.21	1.21	1.17	1.10
Education	0.85	0.97	1.06	1.01	1.08	1.25

Source: Calculations based on Ministry of Statistics and Programme Implementation 2005.

Source: World Bank. 2013

Large Informal Sector in Indian Urban Economy

67% of non-agricultural employment is informal (NSSO, 2012)
Contributes nearly 43.2% of NDP
Concentrated in manufacturing, construction, wholesale, retail, transport, storage and communication industries (NSSO, 2012)

Share of non-corporate sector in major service activities (NDP at current prices %)

Category	1980-81	1990-91	2000-01	2010-11	2011-12
Construction	48	55.5	59.1	62.3	64.6
Trade, Hotels and Restaurants	89.7	92.2	79.5	77.4	74.2
Transport (non-railways	65.9	77.7	78.8	80.6	81.4
Storage	67.5	49.4	48.3	48.9	51.6
Real Estate, Ownership of dwellings & Business Services	99.5	99.0	77.3	62.2	60.8
Other Services	46.2	37.0	29.6	42.6	42.9
Total (Share in Service Activities)	**74.4**	**73.5**	**65.3**	**66.5**	**65.8**

Source: NAS 1997, St. 76.1 – 2013, Central Statistical Organisation, New Delhi
Adapted from Vaidyanathan, R., *India Uninc*, 2014

IT-BPM industry – the India story

Strong growth in industry revenues

From USD 100 million in FY 1992 to USD 118 billion for FY 2014

Contributing to economy

4% (Value-Added) of GDP; 23-25% of exports; 7% of FDI share

Large private sector employer

Direct – 3+ million, Indirect – 9.5 million; Women – >30% of workforce; Foreign nationals – >100,000

Leader in the global sourcing landscape

55% share of the global sourcing market; Large pool of IT-BPM companies – 5000+

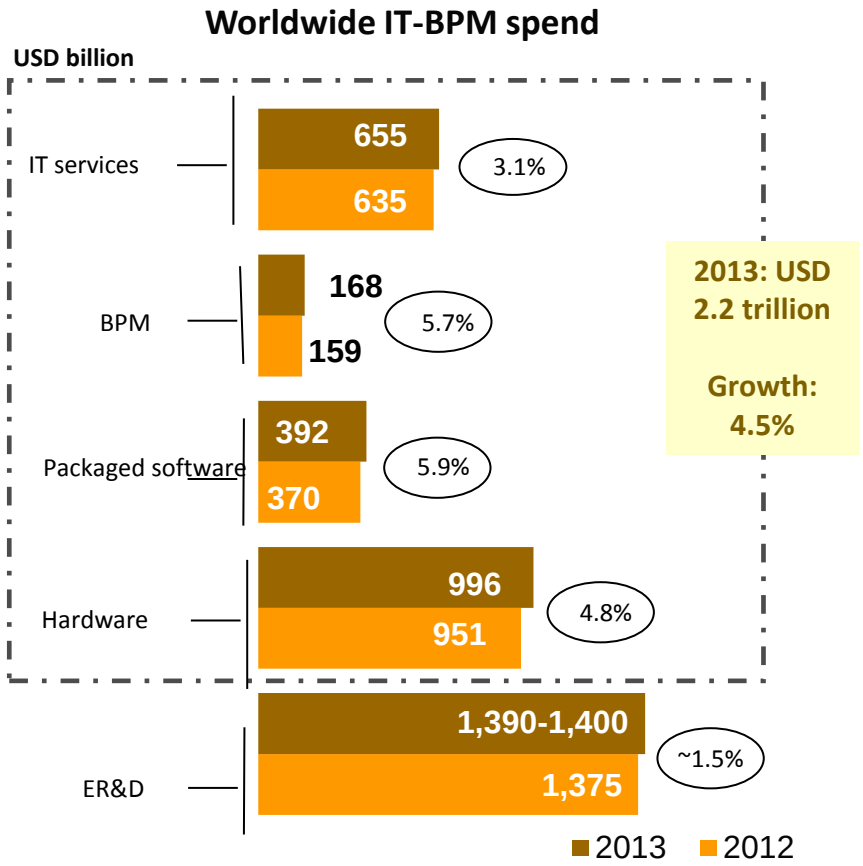
Emerging as an innovation hub

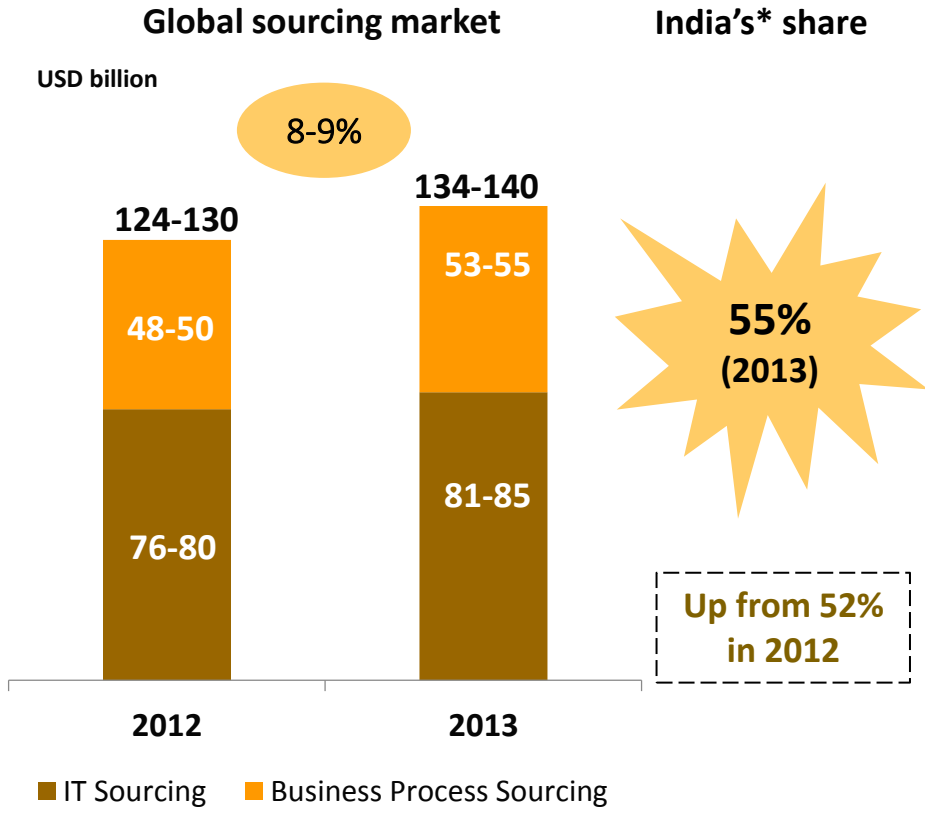
Catalysing business transformation for global clients; Start-ups creating innovative solutions

A UNIQUE INDUSTRY

- A truly global industry
- Mission critical in nature
- Ever changing technology environment
- Skill based industry
- Young industry: average age 26-27
- Constantly evolving value proposition
- Best practices – HR, quality, security

Worldwide IT-BPM Spend Crosses USD 2 Trillion; Global Sourcing Market Growing 2X of Global Spend



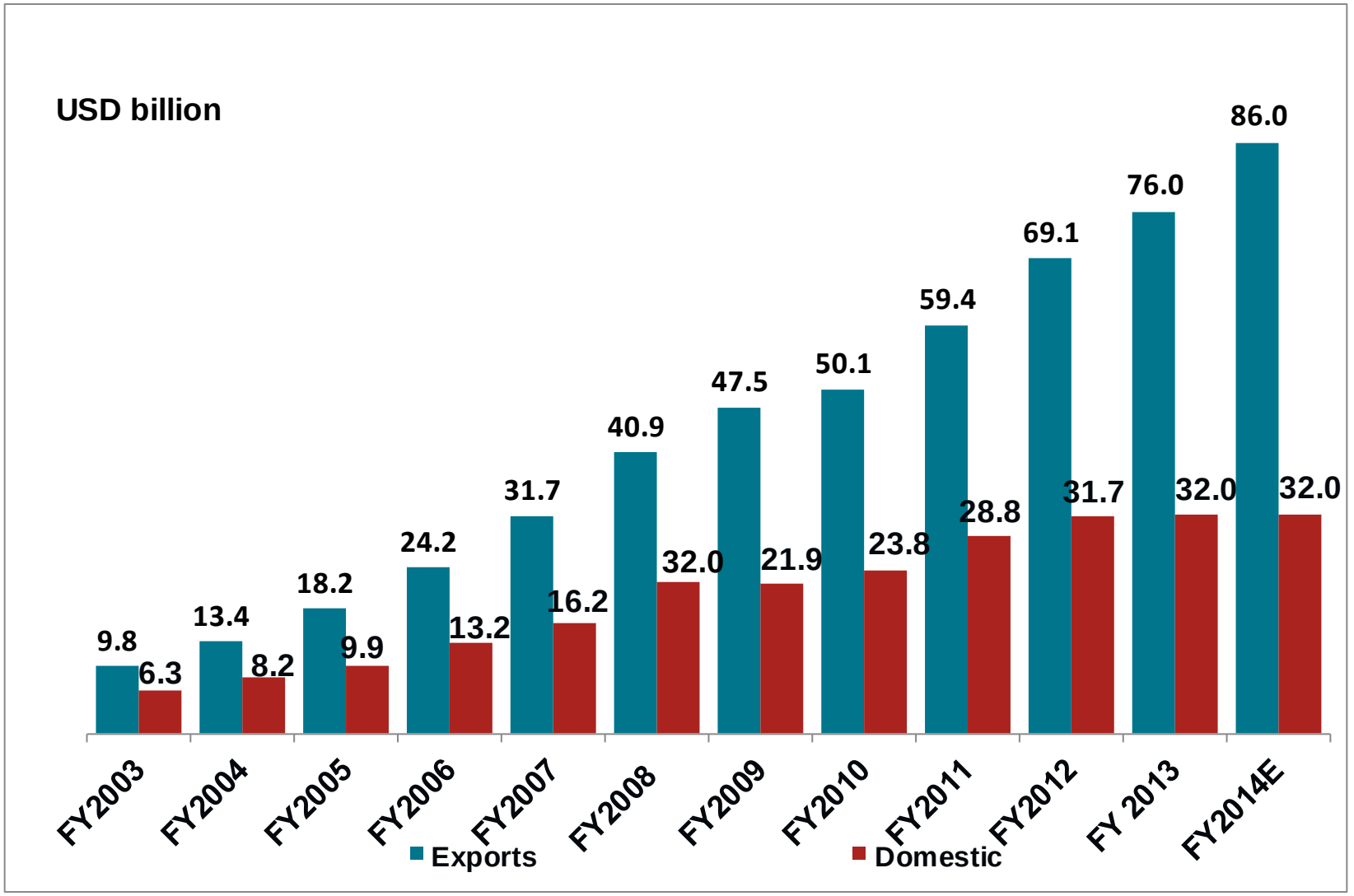


- BFSI, manufacturing, healthcare offset reducing government IT spend
- New lines of businesses, CMOs, SMBs, emerging geographies/verticals driving IT adoption

- Buyers seek more platform solutions for specific industry, geographic, and regulatory needs
- Outsourcing services based on cloud platform and cloud model increasingly become the trend

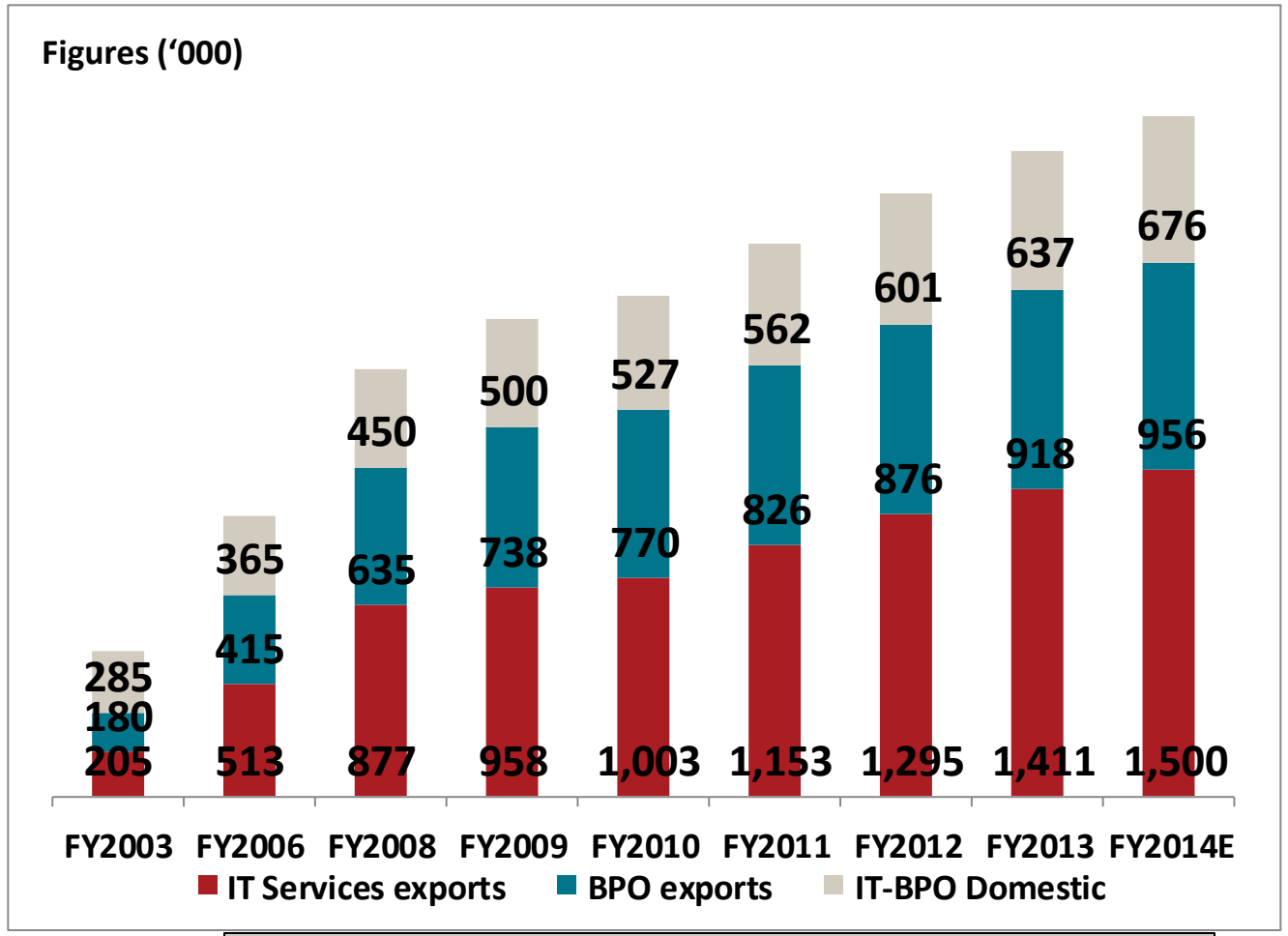
* IT outsourcing numbers exclude ER&D; hence, not comparable with previous years Source: Booz & Company, Everest Research, IDC, NASSCOM

Brief history of Indian IT-BPO revenue



Source: NASSCOM

Brief history of Indian IT-BPO direct employment



The industry added 194,000 jobs in FY2013

* Excluding Hardware

Source: NASSCOM

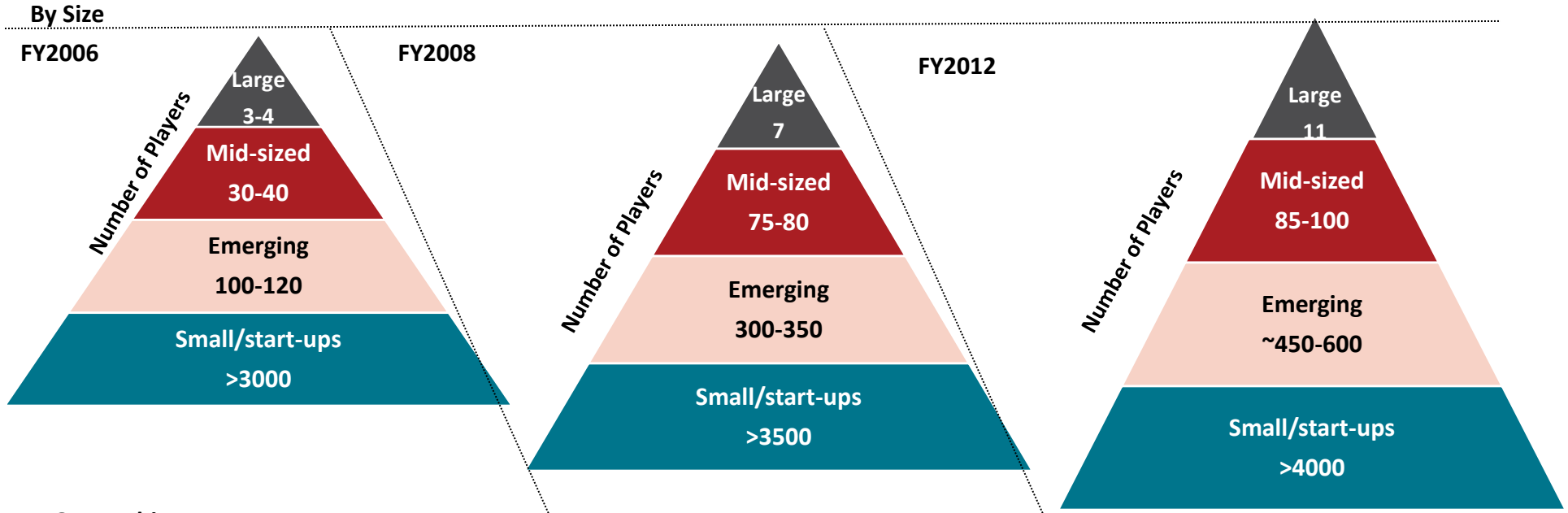
Services Portfolio Continually Expanding

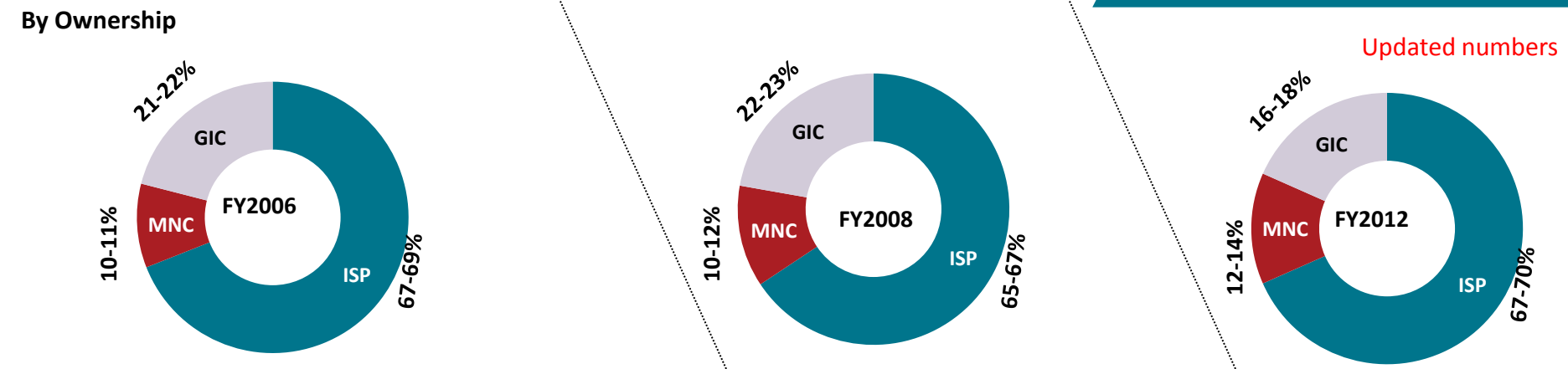
IT Services	BPM	Engineering R&D	Software Products	Internet & eCommerce
• ADM • Infrastructure outsourcing • Integration • Software testing • OSPD • IT strategy & consulting	• Customer support • Transaction processing • Knowledge, legal services • Data management • Analytics	• CAD/CAM • Embedded design • Design and R&D • Product engineering	• Enterprise solutions • Platforms • Apps • SAAS • B2C products	• eCommerce platforms • Online marketing • Social media technology and solutions • Content and search

Only country in the world with the capability to provide complete end to end services in IT, BPM, Products and ER&D

Source: NASSCOM

Industry landscape changing as model evolves for different ownership segments

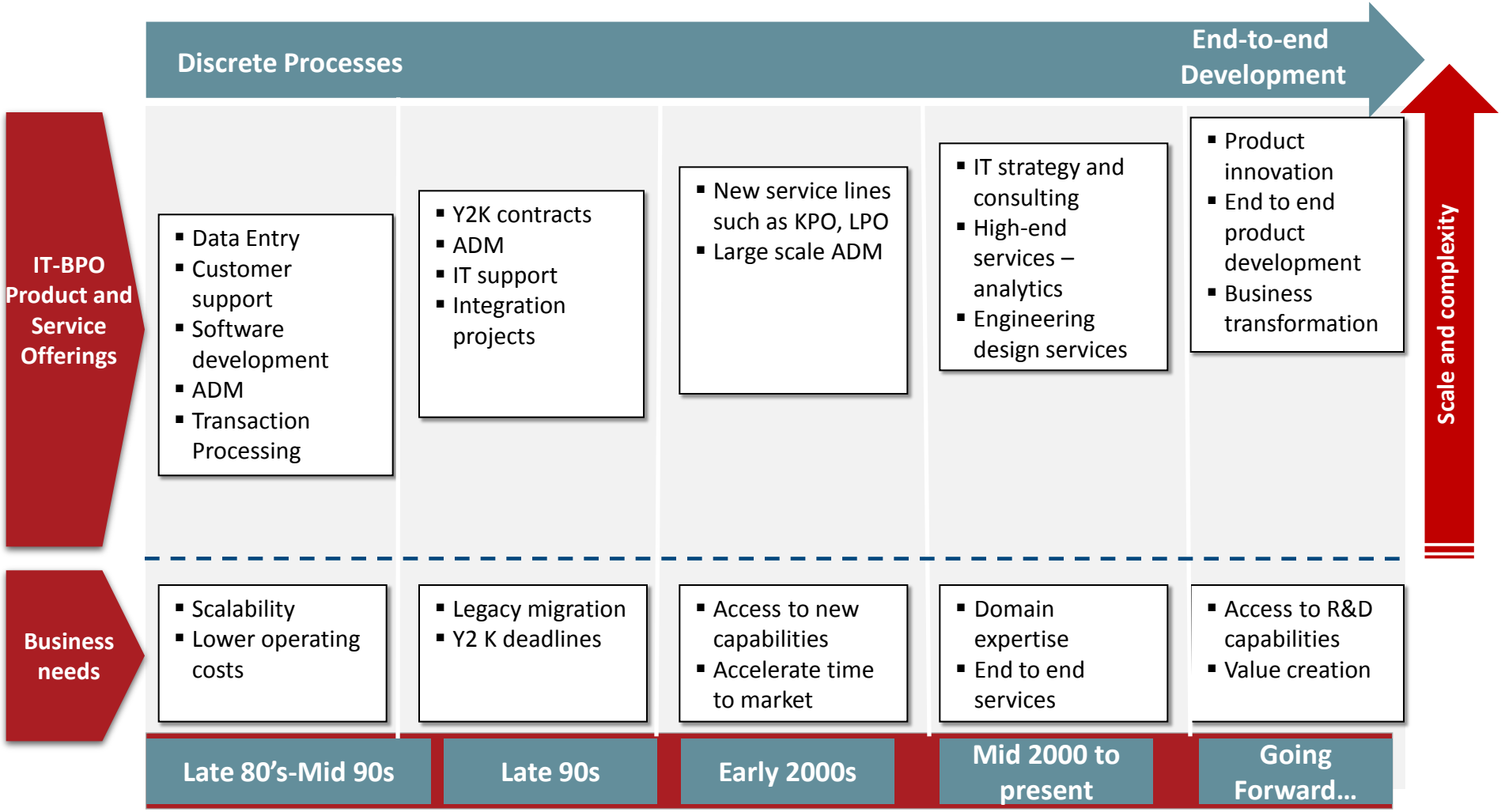




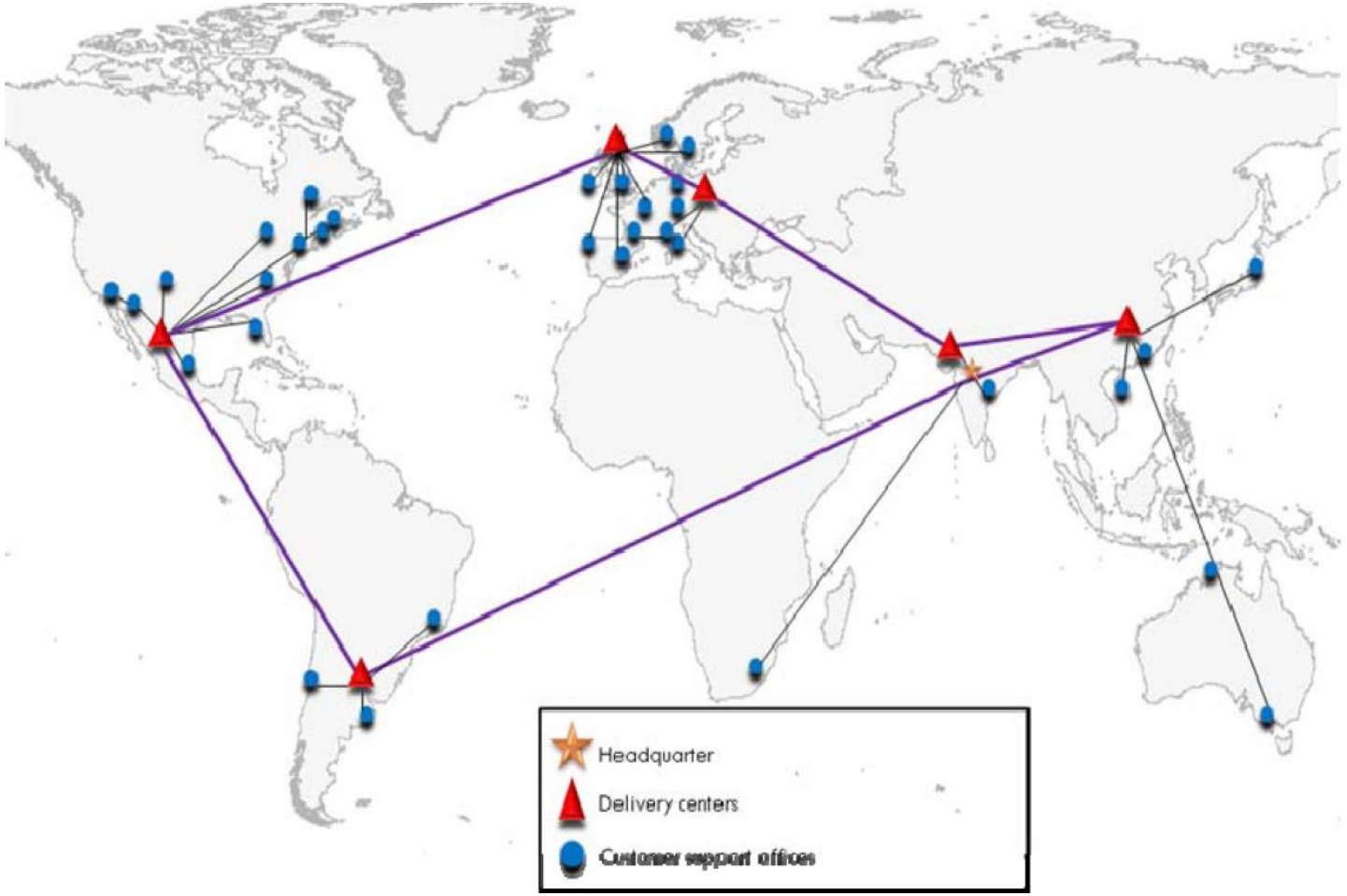
Large: Rev > USD 1 billion; Mid-sized: Rev USD 100 mn- 1 bn, Emerging: Rev USD 10 million- 100 million; Small/Start ups: Rev<=USD 10 million

Source: NASSCOM

Evolution of the Industry - Reinventing & Transforming in a Short Span



Business Model of an Indian Offshore Services Provider



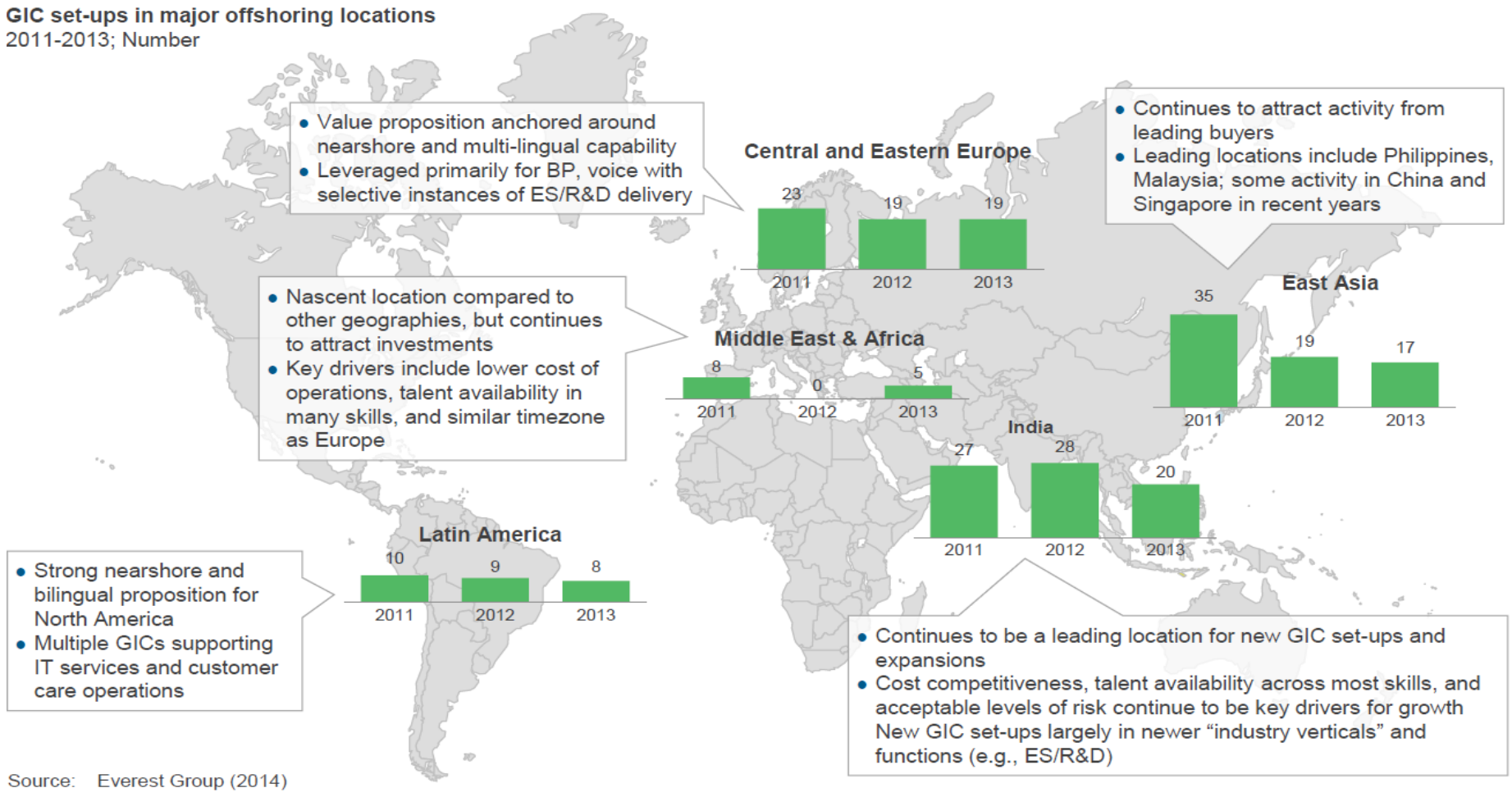
Source: CGGC, 2010

Headquarter: Corporate offices where most of the important administrative functions of the organization are carried out. It is not uncommon for offshore services providers from developing countries to have delivery centers attached to their headquarters.

• **Delivery center**: The facility where services are developed tailored for each client and executed. These offices are almost always located in developing countries.

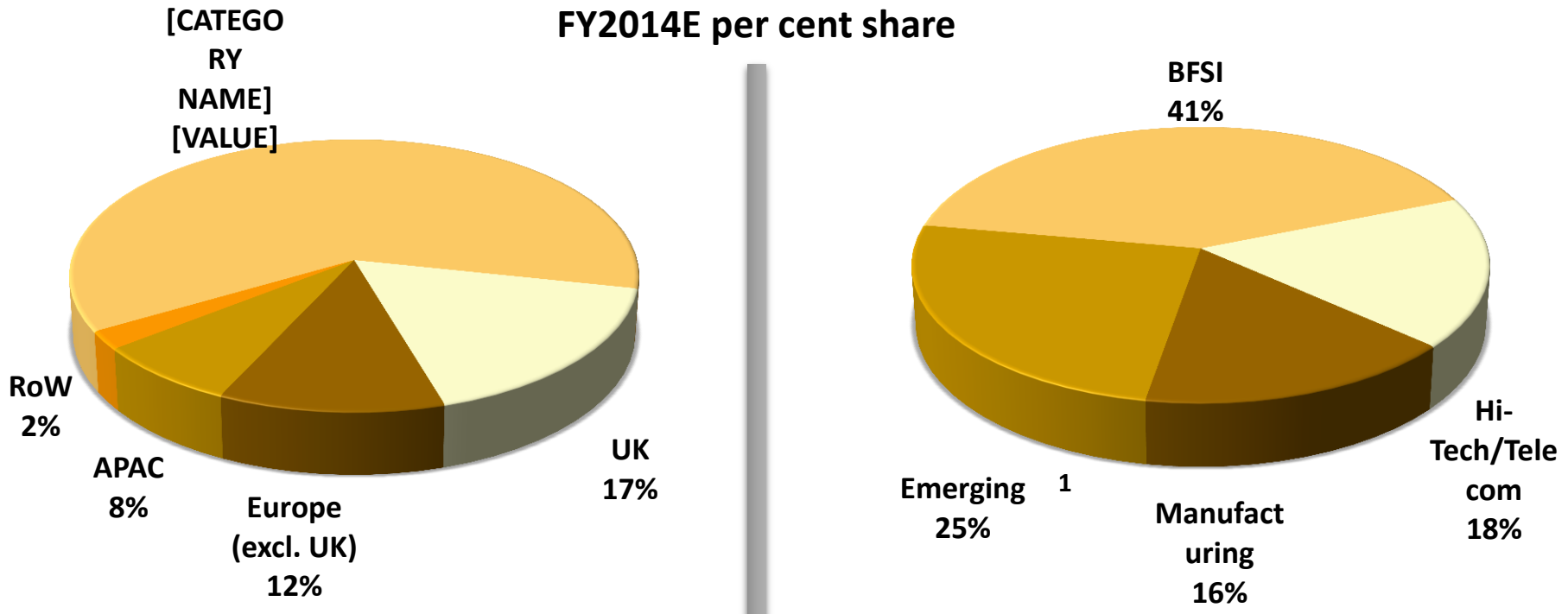
• **Customer support offices**: These are principally sales and customer service offices. They provide a direct point of contact with the client to develop an understanding of client needs.

GIC Set-ups in Major Offshoring Locations



Source: Everest Group (2014)

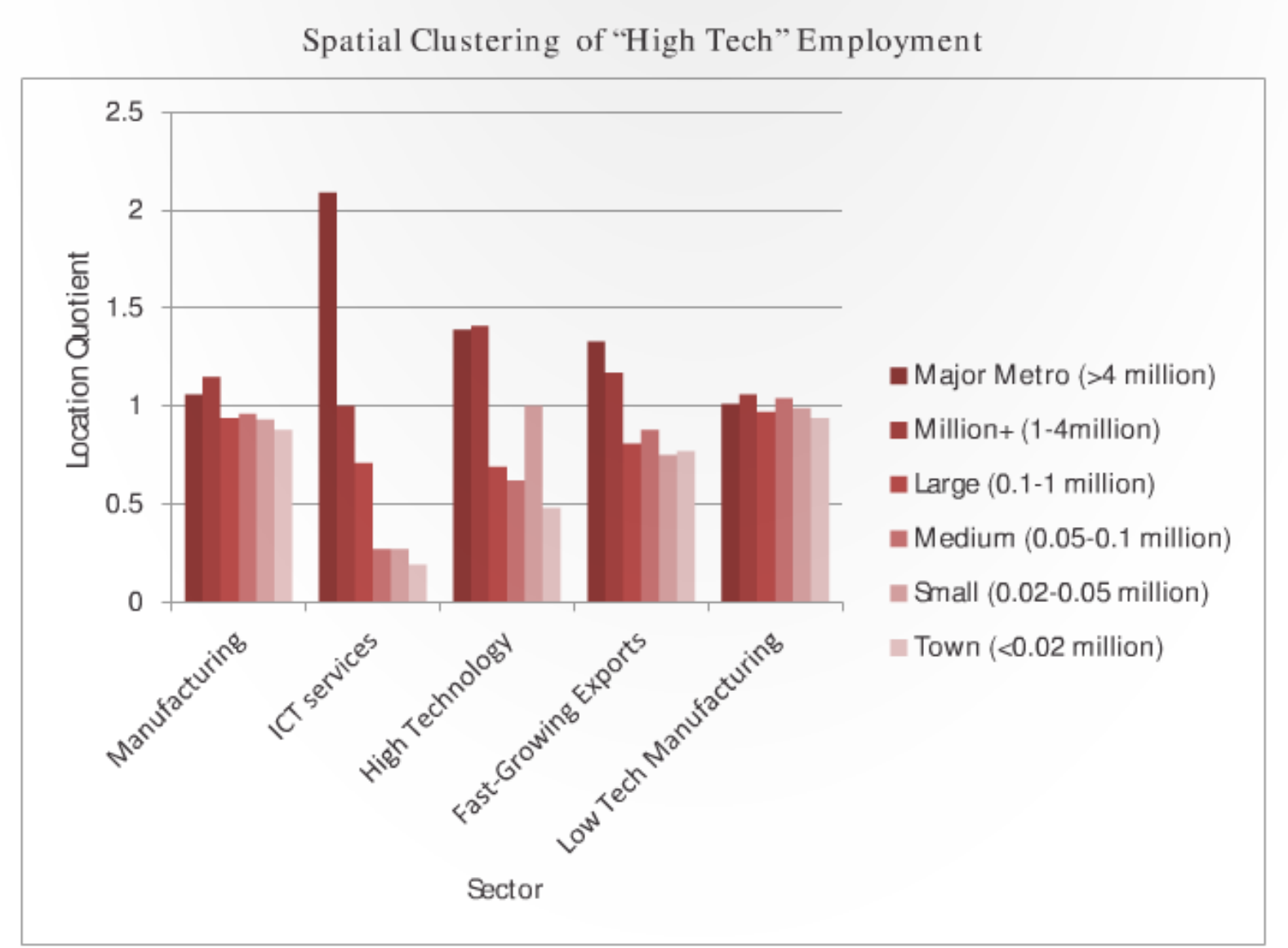
Geographic Growth Drivers- Europe and US;
Vertical Growth Drivers- Traditional and Emerging Segments



- UK, Continental Europe: Seeing increasing demand; fastest growing at 13.5%, 14.3% , respectively

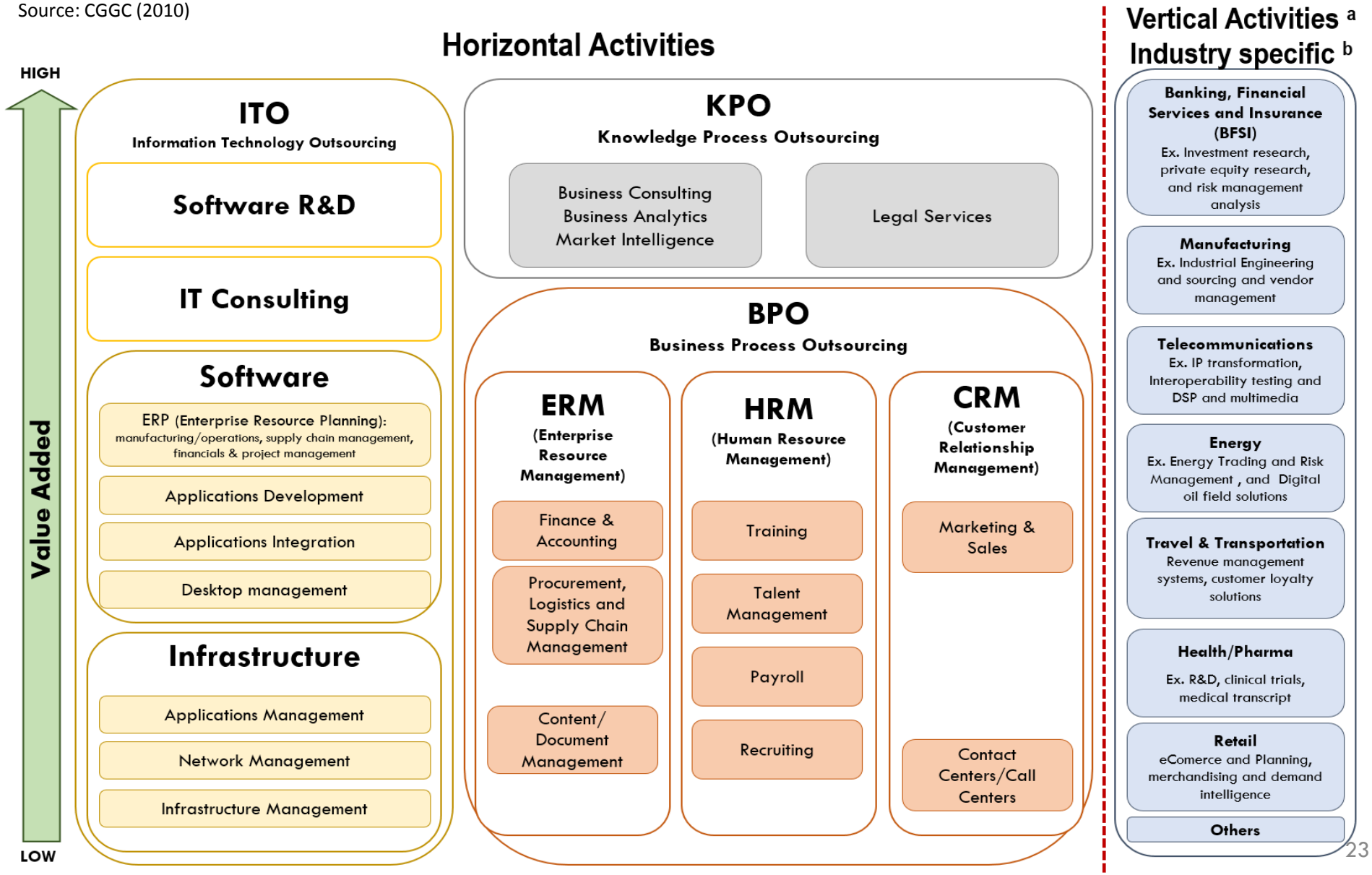
- Emerging segments fastest growing at >14%; demand for mobility, advanced analytics (retail, h'care); government mandates, green technology (utilities); digitisation (media)

E: Estimate; *Excludes hardware exports; [1]Emerging includes utilities & construction, retail, healthcare, services, transportation
Source: NASSCOM


Spatial Clustering of "High Tech" Employment
Location Quotient
2.5
2
1.5
1
0.5
0
Manufacturing
ICT services
High Technology
Fast-Growing Exports
Low Tech Manufacturing
Sector
Major Metro (>4 million)
Million+ (1-4million)
Large (0.1-1 million)
Medium (0.05-0.1 million)
Small (0.02-0.05 million)
Town (<0.02 million)

Offshore Services Global Value Chain

Source: CGGC (2010)

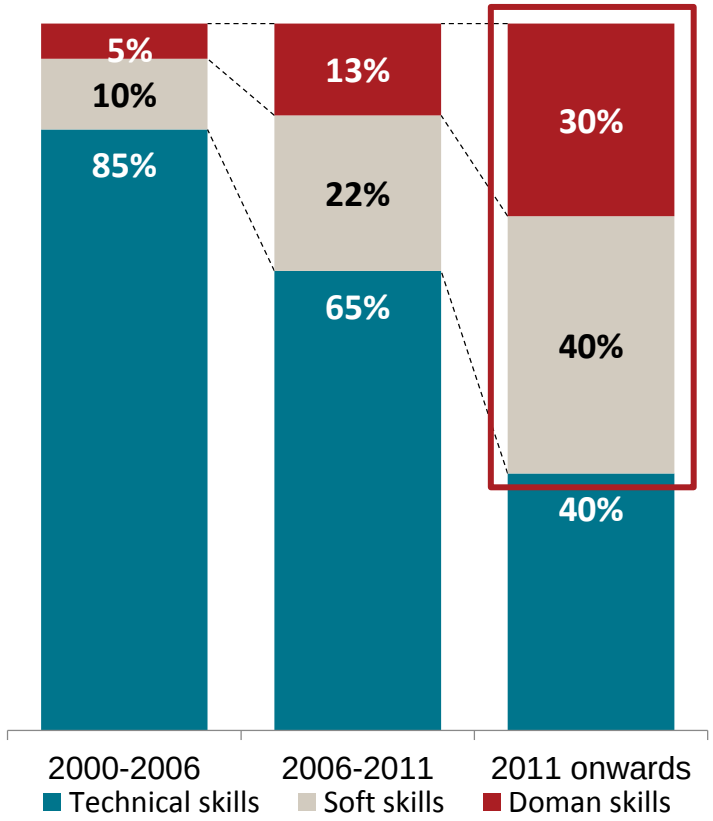


Competitiveness in Service Value Chains *Source: Drake-Brockman (2011)*

- Human Capital
- Intangible Assets
- Digital Infrastructure
- Institutional Quality
- Domestic Regulations
- International Connectedness
- Stakeholder Involvement
- Policy focus

Soft Skills and Domain Skills Increasingly Being Sought Among Candidates

Higher demand for domain and soft skills[1]



DONE

Internal & external ecosystem being leveraged to develop expertise

1. In-house training
2. External certifications
3. Academia tie-up
4. Higher education

Note: Numbers in charts indicate % respondents
Source: NASSCOM

Entrepreneurial Startups Infusing Energy & Innovation

Emerging players
~1,000-1,200

Small sized
~15,000 players

Diverse start-up landscape (Number of firms)

~500	~400+	250+	120-150	100+
eCommerce	Education	MPE, Retail,Travel & Hospitality	Telecom, Real Estate Manufacturing	Agriculture,BFSI, Energy, Govt, Healthcare

Increase in start-ups focusing on solutions around SMAC

~150-200	~750-800	~800-900
Hardware and Devices	Internet/Web	SMAC

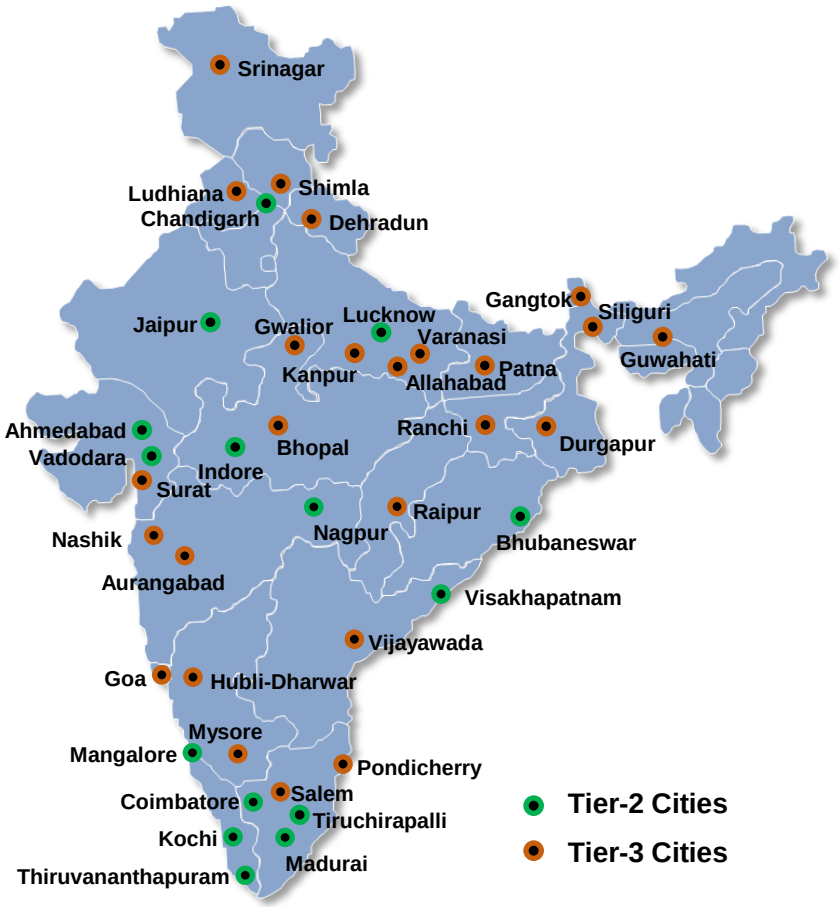
- ~3X growth in new firms set up post 2005
- Bengaluru – one of the Top 20 startup ecosystems globally
- Verticals- Education & retail gained significant traction

Collaboration between large companies and startups

Source: NASSCOM

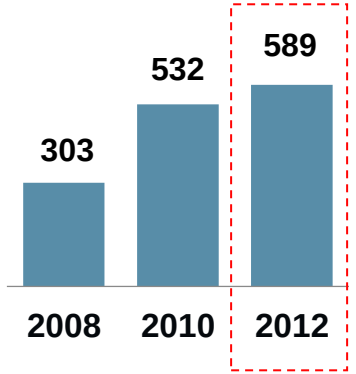
New Emerging Centres

Tier–2/3 cities in India



Tier–2/3 cities account for around 30 per cent of all operational IT SEZs

IT–BPM SEZ Unit Growth*



*Formal Approvals

Source: NASSCOM; SEZ, India; KPMG Analysis; ITP Division, MoEA, Govt. of India

Advantages offered by Tier–2/3 Cities

- Availability of Knowledge Pool
- Lower Operating Cost
- Government Support and regulation
- Developing Infrastructure

"SMAC" (Social Media, Mobility, Analytics and Cloud) --Reshaping the Future of the Indian IT Industry

Mobile payments Smart cities Connected Health Pivot merchandising
mBanking mHealth Smart Buildings mGovernance Platform-as-a-Service

▪SMAC, is becoming a business reality

✓Social, mobility, analytics and cloud are reshaping the business, the consumers and all traditional approaches, Indian Industry has seen till now

✓ Movement towards the next orbit of innovation with consumerization of IT

✓Opportunity to move to higher-margin business by offering creative solutions

✓ Help businesses grow dynamically instead of increasingly cutting margins for typical IT contracts

✓Launching luxury product lines that comprise the SMAC suite of technologies to go the next level

▪ Huge potential for revenue generation

✓IDC Indian IT vendors expected to generate over $225 billion in SMAC related revenue by 2020

Drivers/ factors contributing to the changing landscape of Technology

Transformation
Remodelling business processes through harmonizing technology advancement

Client- specific outcomes
A meaningful change in the business requirements i.e., end-to-end solutions

New paradigm for business
Efficiency, Enhanced customer experience, Reduced time to market, Connectivity, IT Consumerization

Impact is highly evident

- Create a new digital operating model and transformation to a permeable enterprise
- Engagement with a growing digital ecosystem
- Empower enterprises to embrace emerging technology trends and to benefit from the value expectations of customers
- Innovative thinking in business and enterprise architectures

Journey to the Cloud continues; enthusiasm for Big Data, Mobility and Social Analytics also remains strong

Hypermobility…but only for some ??

Inclusive ITeS Innovation Examples

- Mobile Financial Services: EKO
- Mobile Phones for Data and Text
- Rural Development: Ekgaon , Nano Ganesh
- Health Diagnostics (Avoidable Blindness): 3nethra
- Public Health (Maternal & Child Health): e-Mamata
- Travel Services: iXiGO
- Unique Identification System: Aadhar

Technology can transform India's ability to provide basic services

Basic services	Potential technology and services' solutions
 Healthcare	50% of Indians do not have access to primary healthcare – technology can provide it at half the cost
 Financial services	80% of Indian households are unbanked – technology can enable access for 200 million families
 Education	India faces a 3-fold shortage in teachers – technology can address this through remote solutions (e.g., virtual classrooms, recorded lectures by senior faculty, modular multimedia content)
 Public services	India suffers from a leakage of 40-50% in public food distribution – technology can ensure transparency

Banking and Financial Services:
Increasing security and convenience for end users

- Internet Banking
- Mobile Bank Branches
- ATMs
- SMS/Mobile Banking
- Phone Banking
- Customer Care Services
- Core Banking Solutions

Improving Security for both the User and the Provider

- Mobile and Internet Banking lower the requirement of cash handling
- Specialised security software ensure data privacy and security

Improving Customer Service

- Ease of information access and issue resolution through call centers
- Convenience due to higher responsiveness of online and mobile banking

Increasing Agility in Processes

- Enhanced efficiency in basic processes reduces number of trips to a branch
- User-friendly mobile/online payment solutions

Integration of Different Services and Processes

- Enhanced customer convenience due to integration of applications
- Ability to demand customised solutions on basis of the past track record

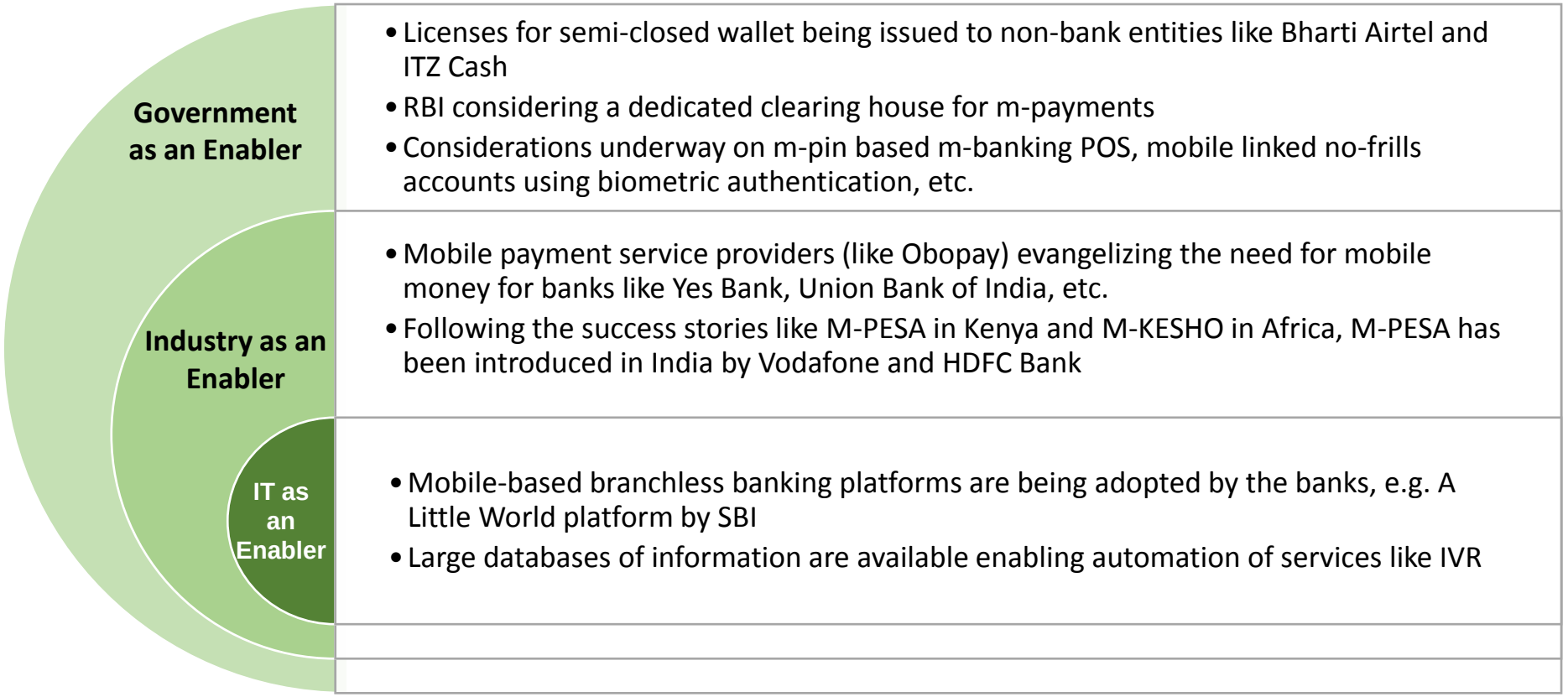
Source: Evalueserve Analysis

Mobile Banking

India's mobile banking customer base was 0.887 million in Sep '10

Mobile Banking

RBI guidelines have restricted the mobile banking transactions to INR 2,500 per transaction



Government as an Enabler

- Licenses for semi-closed wallet being issued to non-bank entities like Bharti Airtel and ITZ Cash
- RBI considering a dedicated clearing house for m-payments
- Considerations underway on m-pin based m-banking POS, mobile linked no-frills accounts using biometric authentication, etc.

Industry as an Enabler

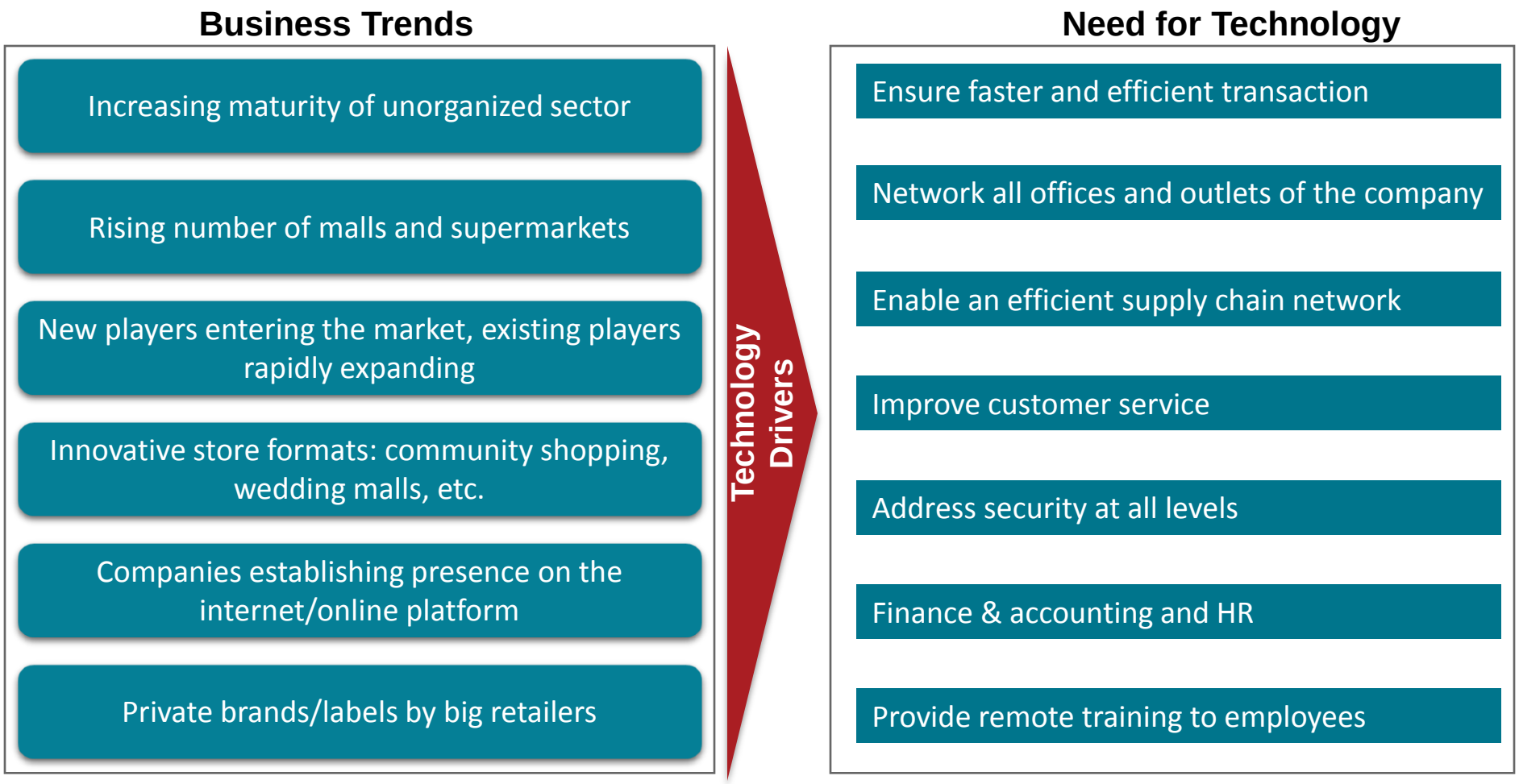
- Mobile payment service providers (like Obopay) evangelizing the need for mobile money for banks like Yes Bank, Union Bank of India, etc.
- Following the success stories like M-PESA in Kenya and M-KESHO in Africa, M-PESA has been introduced in India by Vodafone and HDFC Bank

IT as an Enabler

- Mobile-based branchless banking platforms are being adopted by the banks, e.g. A Little World platform by SBI
- Large databases of information are available enabling automation of services like IVR

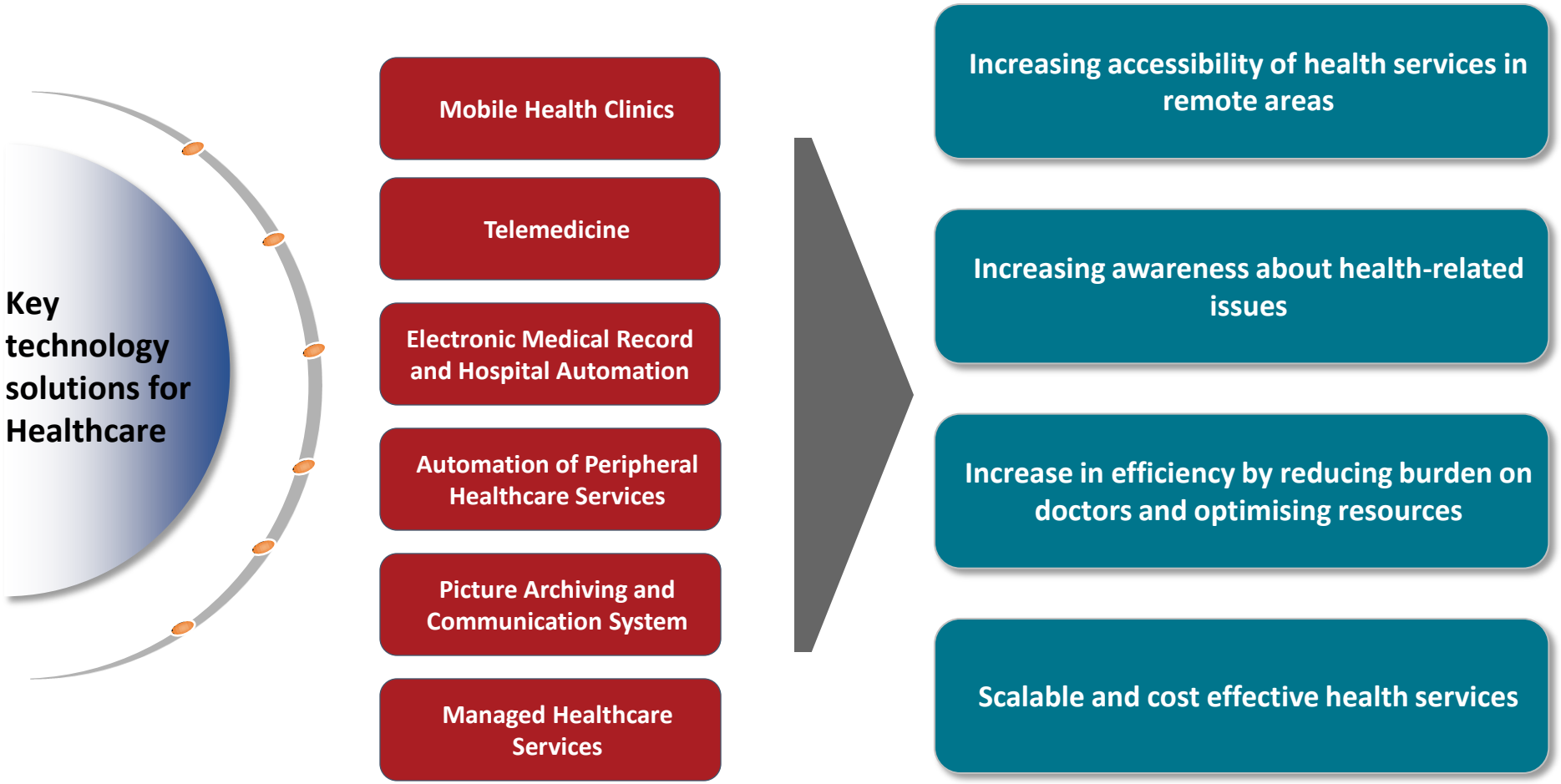
Note: [1]; IMG- Inter Ministerial Group,, MNO – Mobile Network Operators, POS – Point of Sale, IVR -Interactive voice response; SWIFT - Society for Worldwide Interbank Financial Telecommunication
Source: ASSOCHAM Report Mobile Value Added Services (MVAS) 2010; Zinnov Analysis

Retail Industry Growth Drivers



Note: [1]NCR, Mumbai, Hyderabad, Pune, Bangalore, Kolkata and Chennai
Source: Zinnov Analysis

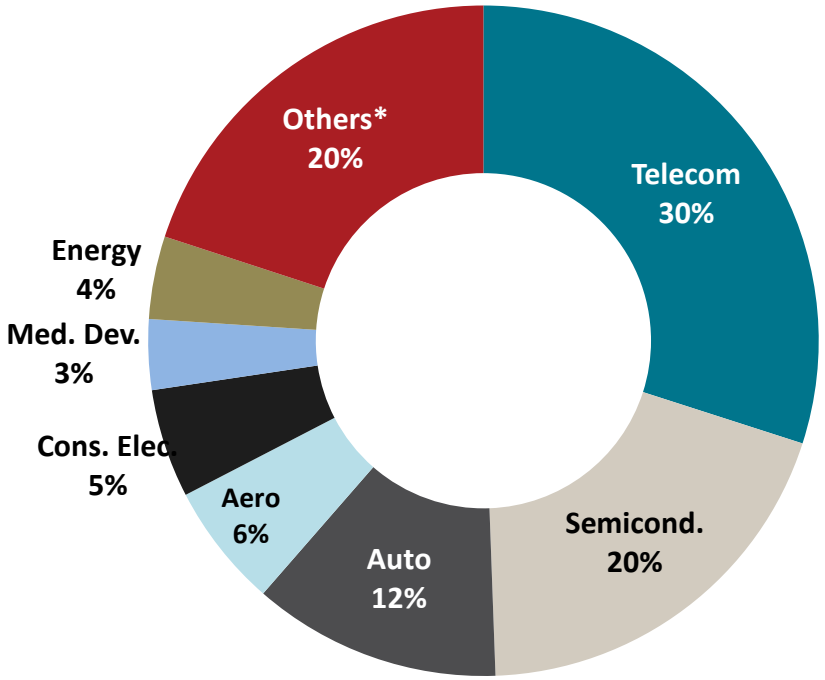
Healthcare: Improving accessibility & efficiency



Source: Evalueserve Analysis

Convergence, Efficiency, Miniaturisation: Driving Force for ER&D

ER&D Exports by Industry, FY2013E



100% = USD 11.2 billion

ER&D focus areas by vertical

Automotive	Energy efficiency, electronics
Aerospace	Green energy, integrated avionics, electronic content
Consumer Electronics	Connectivity, device convergence, digitisation
Computer Systems	Application optimised storage, miniaturisation, energy efficiency
Industrial Automation	Sustainability, safety
Medical Devices	Homecare solutions, medical robotics, wearable technologies
Semi-conductors	Optoelectronics, sensors/MEMs
Telecom	Mobile-cloud, device & network convergence

E: Estimate

* Includes Computing Systems, Construction/Heavy Machinery, Industrial Automation, Infrastructure

Source: Zinnov, NASSCOM

Japanese IT Innovation

- World Leader in the 1990's….Disappeared Last Decade
  - Resurgent Silicon Valley
- Increasing Software Intensity of IT Innovation
  - Documented by Many Japanese Researchers *(Kojima & Kojima, Kurokawa & Hayashi, Nagaoka,…)*
- Literature Offers Two Explanations
  - Management Practices *(Bloom, et al)*
  - Human Resource Constraints *(Arora, et al)*
- Persuasive Evidence in Favour of Latter

Factors Supporting Entry & Competitiveness

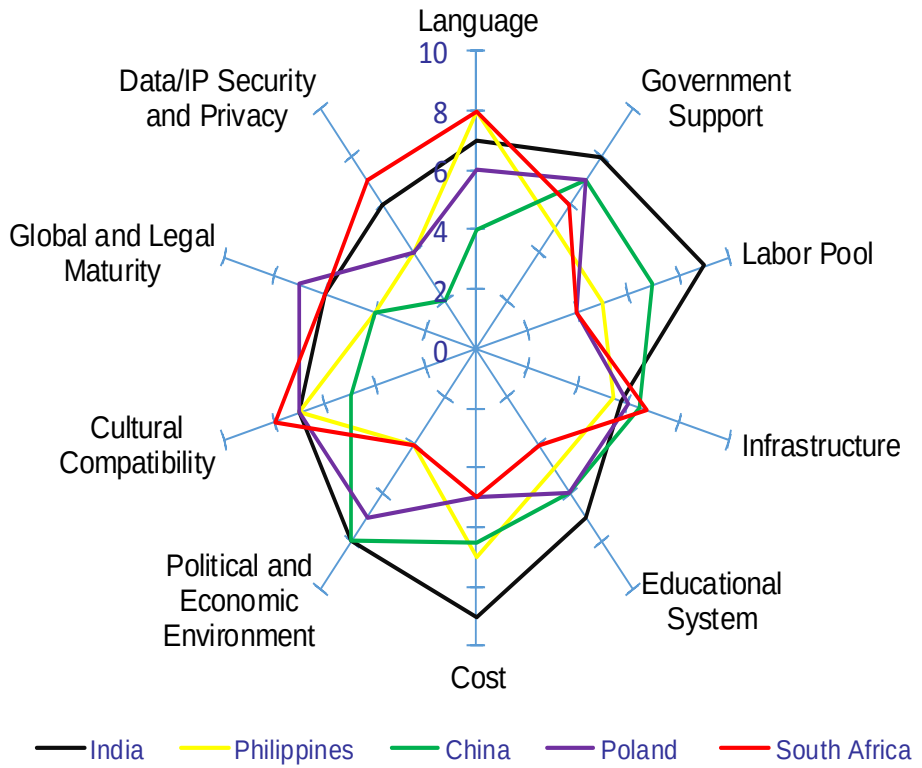
- Facilitating Infrastructure for Knowledge Economy
- Vibrant Innovation System
- Easy Movement of People (including Cross-Border)
- International Connectivity (Hard & Soft Infrastructure)
  - Telecommunications, Airports
  - Global Standards, Interoperability
- Conducive Business Environment (Stable, Predictable)
- Effective Talent Management Ecosystem

Capabilities of the Locations Compared

Capabilities across locations

Locations	Voice	KPO*	Business Processes
China	◔	◕	◑
Philippines	●	◕	◕
India	◕	●	●
Poland	●	◑	◕
Mexico	◕	◑	◑
Brazil	◕	◑	◕
Chile	◔	◑	◔
Costa Rica	◕	◑	◕
South Africa	◑	◕	◑
Sri Lanka	◑	◕	◑

Locations comparison based on 10 dimensions*



* Top 5 countries have been selected based on current outsourcing activities and overall rating based on 10 parameters across locations

Source: Deloitte Analysis, Gartner: Country Analysis for Offshore Services, World Economic Forum (2012-13), NASSCOM

Policy Implications

- Industrial (more broadly, Development) Strategy
  - New Avenues (Entry and Diversification)
  - Small- and Medium-Enterprises
- Foreign Direct Investment (including “Captives”)
- International Trade Policies & Agreements
  - Mode 4 Services
  - Cross-Border Data Flows
- Tax Regime and Fiscal Issues
  - Transfer Pricing
- Government Critical to Shaping “Demand” or Ecosystem
  - Advance Market Commitment (e.g. Laptops for Students)
  - Platforms (e.g. Aadhar)
  - Incentives and Regulation

Policy and Institutional Challenges

- Ensure Favourable Business Environment
  - Stable, consistent and predictable tax regime
  - Elimination of administrative hassles & protracted litigation
- Monitor and Maintain Cost Competitiveness
- Support for SME's & Start-ups
- Innovation is More Than R&D, Even D&E of Products ...Service Dimensions and "Business Models" also Salient
- Attract FDI to move up ladder of "Sophistication"
- Skill Development
- Strategic Priority on Exports
  - Special Economic Zones
  - Institutional & Fiscal Support for New Market Development
- Immigration & Regulatory Barriers to Services Trade

Moving the IT/ITeS Industry to the Next Orbit

- Improving the Business Environment
- Broaden & Deepen Role in Indian Economy & Society
- Support SME's and Start-Ups
- Optimize Spatial Distribution (Agglomeration Economies)
- FDI to Maximize Technology Spill-overs & Market Access
- Maintain Fundamental Economic Competitiveness
- Develop New Geographies and New Verticals
- Watch for Disruptive Technologies & Business Models

A Concluding Thought

Support

Planning,

Do Not

Paralyse It