Inclusive IT/ITeS Innovation Intensifying in India

Dr. Anupam Khanna, Chief Economist, NASSCOM

OECD-DST (South Africa) Conference on Innovation for Inclusive Development
CapeTown, November 21, 2012
About NASSCOM

Represents IT/BPO/Products/Engineering Industry

Over 1300 members – Includes Indian Companies, MNCs and Captive units

- **Policy Advocacy** – Partnership with the Government
- **Industry Development** – Research, Events, Forums, Market development
- **Enabling Environment** – Entrepreneurship, Innovation, Resource building, Security initiatives, Infrastructure
- **Global Trade Development** – Policy advocacy, Market development, International Partnership, WTO/Bilateral engagements
- **Sustainability** - CSR initiatives, Gender inclusivity, Driving Inclusive Growth, Green IT Initiatives
Brief history of Indian IT-BPO revenue

USD billion

<table>
<thead>
<tr>
<th>Year</th>
<th>Exports</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2003</td>
<td>9.8</td>
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<tr>
<td>FY2004</td>
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<tr>
<td>FY2005</td>
<td>18.2</td>
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<td>FY2006</td>
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<td>FY2007</td>
<td>31.7</td>
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<td>FY2008</td>
<td>40.9</td>
<td>32.0</td>
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<tr>
<td>FY2009</td>
<td>47.5</td>
<td>21.9</td>
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<tr>
<td>FY2010</td>
<td>50.1</td>
<td>23.8</td>
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<tr>
<td>FY2011</td>
<td>59.4</td>
<td>28.8</td>
</tr>
<tr>
<td>FY2012E</td>
<td>69.1</td>
<td>31.7</td>
</tr>
</tbody>
</table>

Source: NASSCOM
The industry added 230,000 jobs in FY2012

* Excluding Hardware
Source: NASSCOM
Trends in World Exports and Indian Exports of Goods and Services in current USD (Index=100 in 1990)
Composition of India’s exports basket

Source: Eichengreen and Gupta, 2012
Indian Domestic IT-BPO Market* (INR billion)

- Domestic IT Services: 500 (FY2011), 589 (FY2012E)
- Domestic BPO Services: 127 (FY2011), 148 (FY2012E)
- Domestic S/W Products: 159 (FY2011), 180 (FY2012E)

Note: Excluding Hardware
Source: NASSCOM
Domestic IT-BPO market growing fastest in India; driven by increased PC/broadband and mobile penetration

Source: NASSCOM-Zinnov India’s Domestic IT-BPO Market: Winds of Change
Hypermobility…but only for some ??
### Potential strategic growth engine for India

#### Areas

<table>
<thead>
<tr>
<th>Areas</th>
<th>Contribution by 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy</td>
<td>• ~10% of annual GDP&lt;br&gt;• 18-20% of annual exports</td>
</tr>
<tr>
<td>Employment</td>
<td>• 30 million employment opportunities (direct and indirect)&lt;br&gt;• Job creation in rural and non-metro areas - 20-fold increase in the number of employees operating from tier 2/3 locations&lt;br&gt;• Increased diversity (women are 50% of the total workforce)&lt;br&gt;• Significant global career opportunities due to location-independent models</td>
</tr>
<tr>
<td>Balanced Regional Growth</td>
<td>• 8-10 satellite townships around Tier-I cities&lt;br&gt;• 10-15 Tier-II cities with upgraded basic and business infrastructure</td>
</tr>
<tr>
<td>Reduced fiscal burden</td>
<td>• ICT can provide solutions at a fraction of the cost of traditional solutions</td>
</tr>
<tr>
<td>Globally reputed innovative solutions</td>
<td>• Innovation driving additional GDP contribution of ~2%</td>
</tr>
</tbody>
</table>

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*Innovation driven growth scenario*
# Employment of diverse workforce

## Employment beyond Urban areas
- ~58% of the IT-BPO workforce is from tier 2/3 cities
- ~56% employees are chief bread earners

## Bridging the gender divide
- ~31% women employees in FY09; account for 45% of new intake
- ~26% of the female employees are chief wage earners
- ~20% of the female employees are at managerial level or above

## Empowering the youth
- ~74% of employees are less than 30 years old;
- ~35% are less than 25 years of age

## Livelihood for Economically backward
- ~5% of the IT-BPO workforce from economically backward sections

## Employing the Differently abled
- ~60% of companies provide employment to differently abled people

---

*Changing aspirations of India’s youth*

*Created high paying jobs*

*Setting new standards of work environment*

*Emerging as a “Skill Factory”*

**By 2020**
- ~5 mn women employees
- ~4 mn direct employees from tier 2/3 locations

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*NASSCOM Evalueserve survey findings, 7500 participants pan India*
Reaching out to Tier 2/3 locations

**Contribution to State GDP**
- Accounts for 7% of industry revenues; Constitute 4.5% of total GDP from Tier 2/3 states
- 49 delivery centers opened in tier 2/3 cities as opposed to 25 in tier 1 over the last one year

**Employment Generated**
- Accounts for 10% of total direct employment
  - Direct employment in tier 2/3 locations- 1.7 lakh
  - Direct dependents supported- 4X

**Enhancing the Education system**
- 1.7X growth during FY05-09 in number of engineering colleges and technical graduates
  - Number of engineering colleges- 985

**Creation of Infrastructure**
- Creation of office space- 20 million sq feet
- 23% of the operational STPI units in tier 2 and tier 3 cities
- Almost 40% of notified IT SEZ’s and 30% of operational IT SEZ’s in tier 2/3 cities

By 2020: 300mn sq ft of additional office space; 3.8 mn incremental direct jobs
## Technology can transform India’s ability to provide basic services

<table>
<thead>
<tr>
<th>Basic services</th>
<th>Potential technology and services’ solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>50% of Indians do not have access to primary healthcare – technology can provide it at half the cost</td>
</tr>
<tr>
<td>Financial services</td>
<td>80% of Indian households are unbanked – technology can enable access for 200 million families</td>
</tr>
<tr>
<td>Education</td>
<td>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)</td>
</tr>
<tr>
<td>Public services</td>
<td>India suffers from a leakage of 40-50% in public food distribution – technology can ensure transparency</td>
</tr>
</tbody>
</table>
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
India’s mobile banking customer base was 0.887 million in Sep ‘10

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

Mobile Banking

- 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

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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

**Business Trends**

- Increasing maturity of unorganized sector
- Rising number of malls and supermarkets
- New players entering the market, existing players rapidly expanding
- Innovative store formats: community shopping, wedding malls, etc.
- Companies establishing presence on the internet/online platform
- Private brands/labels by big retailers

**Need for Technology**

- Ensure faster and efficient transaction
- Network all offices and outlets of the company
- Enable an efficient supply chain network
- Improve customer service
- Address security at all levels
- Finance & accounting and HR
- Provide remote training to employees

Note: 'NCR, Mumbai, Hyderabad, Pune, Bangalore, Kolkata and Chennai
Source: Zinnov Analysis
Healthcare: Improving accessibility & efficiency

Key technology solutions for Healthcare

- Mobile Health Clinics
- Telemedicine
- Electronic Medical Record and Hospital Automation
- Automation of Peripheral Healthcare Services
- Picture Archiving and Communication System
- Managed Healthcare Services

Increasing accessibility of health services in remote areas

Increasing awareness about health-related issues

Increase in efficiency by reducing burden on doctors and optimising resources

Scalable and cost effective health services

Source: Evalueserve Analysis
IT solutions to overcome education challenges
...such as lack of teachers and limited student reach

**Rural Classrooms: Comat Technologies**
- Comat Technologies offers supplemental education services through its Rural Business Centres located in thousands of villages. The services aim at boosting student grades and pass percentage in state board exams. Comat also offers coaching for rural youth who aspire to pursue higher education.
- The company has reached more than 10,000 students through these services and has led to a marked reduction in the school drop-out rate in its areas of operation.

**Knowledge Portals: Vidyapatha**
- Vidyapatha is a higher education portal that serves as a one-stop-shop for students evaluating education prospects in India. It offers information on nearly 2,500 courses offered by 250 Indian universities and details of about 15,000 other higher educational institutes. It also has a team of career counselors that answer queries within 24 hours.
- Vidyapatha receives 500 queries per month on different educational issues and 600,000 visits by 30 thousand users per month from all over the world.

**Virtual Classrooms: Educomp Smart Class**
- Smart Class is a multimedia product for private schools that can be used as a teaching aid. It uses digital educational content and infrastructure solutions, making the learning process more clear, interesting and interactive.
- As of January 2009, Smart Class was implemented in 1,267 private schools in India with an order book of over USD 210 million (INR 9.8 billion).

**MIS: District Information System for Education**
- The District Information System for Education (DISE) software is operational in 581 districts in 29 States and UTs of India. The trend analysis of DISE data helps in identifying major block and district specific issues that are vital for policy formulation and preparation of district elementary education plans.
- DISE has completely eliminated time-lag in educational statistics at the national level, reducing it to less than one year from the earlier 7-8 years. Gap between collection and dissemination of data stands is reduced to a few months.

Source: Company Websites; Evalueserve Analysis
IT-BPO solutions making healthcare amenities...available at a fraction of the cost of traditional solutions

**TeleVital’s Telemedicine Installations at VRCs**
- TeleVital installed telemedicine equipment at 100 Village Resource Centres (VRCs) across India where it is used to cater to 40-50 patients daily.
- Provides medical consultation and diagnosis online to people in remote villages, on a daily basis, by medical specialists at super specialty hospitals located in bigger cities.
- Also used for the purpose of conducting tele-training, Continuing Medical Education (CME’s) for doctors and health awareness programs for the village population.

**Wipro’s Wireless Patient Monitoring Technology**
- In 2009, Wipro launched a gateway that uses GSM wireless technology to collect data remotely from medical devices such as blood pressure monitors, glucose meters, pedometers, and weighing scales available with patients.
- Allows the transmission of real-time medical data to application servers, physicians’ handheld devices, and hospital systems through GSM, broadband and dial-up connections.
- Given the high mobile penetration in India, the solution is expected to help urban and rural citizens alike.

**GE Electronic Cardiogram**
- GE Healthcare India developed an electrocardiograph that costs USD 1,000 (one-tenth the price of the standard models used in the past). The machine promises to sharply reduce the cost of an ECG to less than USD 0.2 (INR10).
- Operates on batteries, and hence, can be used even in places with no electricity.
- Equipment would support rural clinics, where patients spend only up to USD 5 on a visit.

**SRIT’s Managed Healthcare Services**
- eCanS (eCancer Services) facilitates collaboration between healthcare facilities, health insurance companies, patients and hospitals and enables early diagnosis, timely treatment, and eases the follow-up of cancer care.
- Reduces the need for upfront investments in hardware and software by participating cancer specialists and hospitals.
- Critical issues such as data security, confidentiality, adoption of standards (HL7, IHE, DICOM, etc.) are handled by the vendor.

Source: Company Websites; Evalueserve Analysis
Aadhar - What will it do?

- The Unique Identification: 12 digit number for every individual, including infants.
- Linked to Biometric and Demographic information
- Will enable 'anytime, anywhere, anyhow' authentication.
- Creation of the world’s largest database – 1.2 bn people.

Benefits and usage

- Empowering poor & underprivileged residents to access public services including banking, public distribution system, education, healthcare, direct benefit transfers, etc.
- Aadhaar provided migrants mobility of identity.

The focus resident segments are:

- Below Poverty Line (BPL) families
- Marginalized and the deprived
- Landless labourers
- Daily wage earners
- Minorities (by caste, religion, etc.)
- Migrants
- Women
- Children, especially 6-14 age group

Source: www.uidai.gov.in
**Initiatives to encourage innovation**

- **Holding events/competitions focused on developing innovative ideas**
  - Talentica Software conducts a Talent Day every six months. The developers are allowed to present their own ideas.
  - Systime Computer Systems conducts periodic White Paper contests to gather ideas from associates worldwide.

- **Recognising innovation through rewards and incentives**
  - Web Access, through an annual event – IMAGINOVATIVE, rewards ideas submitted by the employees. Rewards include certifications, awards, salary hikes, promotion.
  - If an idea is developed into a project, the employee submitting it is made the project lead.

- **Setting up of R&D centres**
  - TCS has established iLabs all over India to develop and incubate new technologies and solutions.

- **Supporting initiatives in implementation stage**
  - Syntel, through its Syntelovation practice, focuses on innovation – new ideas, concepts, approaches, methodologies, processes and tools that lower costs, accelerate timelines, and deliver tangible business results.

- **Conducting training, workshops and seminars**
  - Accel Transmatic conducts trainings, workshops and seminars. There is also a weekly in-house session called tech-chat where any technology is discussed on a macro level.
  - CH Health Solutions conducts Six Sigma training.

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**New solutions**

- Indian centres have been responsible for developing various new products.
- Syntel developed a Technology Consumption Management solution that involved fine tuning programs and databases to improve efficiency, costs, speed, and quality. The program has helped the company achieve savings worth more than USD 49 million over 2003-08.

**Product/process improvement**

- Improvements in the existing products and processes have helped companies gain efficiencies and have been a major driver for continued focus on innovation.
- Talentica invites ideas from employees to solve their business problems, e.g., developing internal leave management or reducing bandwidth consumption during cricket matches using a server that collates information.

*Source: Evalueserve Analysis*
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
Blindness
A Global threat

Problem

• Blindness is a Global threat to health and productivity
• Of the 39 Mn blind people in the world 12 Mn live in India
• Africa has approximately 19% of the world’s blindness
• 80% blindness caused due to –
  • Cataract / Glaucoma / Refractive Errors/ Diabetic Retinopathy/AMD
• Of the 60 Mn Diabetic patients in India 20% will develop diabetic retinopathy

80% of blindness can be prevented if pre-screened

Challenges

• Scalability – Low Patient-to-Ophthalmologist ratio; 1:70000 in India
• Affordability – Expensive devices which require trained ophthalmologist
• Rural reach – Only 7-10% of the people are screened on time
• Awareness – Lack of awareness about detecting eye disorders early

An Effective Pre-screening tool is the Unmet need!
Addressing the Unmet Need!

**Scalability**
- Take the Ophthalmology pre-screening closer to the patient
- Create a *new market* for remote ophthalmology pre-screening – *“Paradigm Change”*
- Enable diagnostic labs, diabetes centers, clinics etc to perform ophthalmology screening

**Affordability**
- Indigenously developed in India
- Robust device with minimum complexity
- Low maintenance cost and zero consumables

**Rural Reach**
- Non-Mydriatic, Non-invasive & portable device
- Robust system to be operated in rustic environments
- Minimally skilled technician required to operate device

**Awareness**
- Create awareness about the importance of detecting ophthalmic diseases early
3nethra is an affordable multi-functional portable ophthalmic imaging system
3nethra Pre-screening in Rural India

ForCare

Studies uploaded to ForCare

Cloud

NOTIFICATIONS:
1. by SMS
2. by EMAIL

Doctor - 1

Doctor - 2

Doctor - 3

3nethra - 1

3nethra - 2

3nethra - 3

Doctors access Studies and provide Diagnosis

Report automatically sent to the right 3nethra

Report printed and given to patients at their door step
Pre-screening enhances the value chain

High Footfalls
Walk-in patients
Low footfalls

HOSPITAL

Home Screening
Mobile Clinic
Vision Center
Medical
Diagnostic Lab
GP's Office
Optician
A Paradigm change!

Optical Retail Chains

Govt. / NGO

Mobile Units

Diabetes Center

GP / Doctor’s office

Medical camps

Pre-screening can broaden the impact
Problem: Communities in remote villages in India do not have access to Public Health care systems.

Limitation: Comprehensive screening tools cannot be transported as imaging devices are not portable and lack of skilled medical technicians.


Impact:
- Doctors spend more productive time at Hospital as they can remotely screen patients.
- The medical staffs are able to educate and convince the patients their problem by showing image on screen.
- High turn-out at hospitals for treatment and surgery after screening camps.
Problem: To screen patients at remote villages in Rampur (Uttar Pradesh).

Limitation: Lack of skilled professionals and multiple expensive diagnostic equipment's. Clinics not viable.

Solution: Hospital in Delhi sets up vision centers in villages (as part of the hub/spoke model) equipped with 3nethra, which can screen and send images to hospital.

Impact:
- Doctors in Delhi Hospital remotely diagnose patients at Rampur and publish reports.
- The medical staffs are able to educate and convince the patients their problem by showing image on screen.
- High turn-out at hospitals for treatment and surgery from the vision centers.
- Have screened to close to 500 patients in 3 months.
Enabling Rural Reach through PPP

**Problem:** To screen patients (adults and children) across the state of Odisha, India.

**Limitation:** To reach the grass root villages, where infrastructure and lack of equipment is a huge bottleneck.

**Solution:** Enabling a PPP model, for a service provider wherein the local community is involved in screening and the diagnosis and treatment is advised through Telemedicine.

**Impact:**
- Created Livelihood for the community.
- Created a technical pool of skilled healthcare human resource.
- Created an infrastructure in rural areas to deliver healthcare service at their door step.
- Telemedicine capability increases efficiency of Doctors at hospitals.
Screening of Private Drivers (Indore, MP)

**Problem:** Eye test and medical records of all Private drivers in Indore City (MP)

**Limitation:** Test has to be performed and certified at the RTO office. 25000 people have to be screened

**Solution:** Along with Refraction 3nethra becomes a significant tool to capture and record medical information.

**Impact:**
- Records of all certified drivers are maintained – Vision test and fundus image
- 10000 drivers screened in 4 months; 5-6% have been identified with Diabetic Retinopathy
- Non mydriatic system allows high throughput screening.
- Telemedicine capability allows Doctor’s to remotely verify and publish reports.
Screening for Diabetic Retinopathy

Problem: To study prevalence of DR – Theni region of Tamil Nadu and screen for DR among Diabetic patients in Chennai

Limitation: Existing fundus imaging system is not portable and the model required a door to door screening

Solution: A portable and non mydriatic imaging device that can be used by a trained technician and can be taken door to door.

Impact:
- More than 1000 patients screening in Theni district
- 50 Diabetic patients were screened in 5 days of launching the program in Chennai - 7 patients required immediate cataract surgery and 11 were diagnosed with Diabetic Retinopathy. Patients provided with digital reports
- Healthcare service become affordable and accessible at door steps
Mauritius

**Problem:** High prevalence of Diabetes in this region

**Limitation:** Limited infrastructure and no high throughput screening device

**Solution:** Affordable, robust and portable system that can be used in a rustic environment with a minimally qualified operator

Mogadishu, Somalia

**Problem:** Country of 20Mn with not enough medical experts in the area of ophthalmology

**Limitation:** Poor infrastructure. Limited funds to build clinic and purchase equipments

**Solution:** Affordable, robust and portable system that can be used in a rustic environment with a minimally qualified operator
The Journey so far…

June 2011
- CE Certification
- Launches 3nethra

Jan 2012
- 3nethra in Vision Centers
- Mobile Unit installation
- Launches 3nethra in Diabetic Center
- International Sale, Mauritius

Oct 2012
- Launches Tele-ophthalmology software
- Second international Sale, Mogadishu, Somalia

> 60 installations across the World

375,000 reports since June, 2011

That’s 375,000 lives touched
Take Away’s for Policy & Strategy

• IT not just for “big boys” or rich yuppies...can play transformational role in society, polity and economy

• Refocusing Strategic Priorities for Indian IT in Next Decade ...Domestic Markets and Developing/Emerging Countries ...Not just about Growth, also about Learning

• Affordability, Scalability, Reach and Education/Awareness Key to Direction of Entrepreneurship & Innovation

• Innovation is More Than R&D, Even D&E of Products ...Service Dimensions and “Business Models” also Salient

• Government Critical to Shaping “Demand” or Ecosystem
  • Advance Market Commitment (e.g. Laptops for Students)
  • Platforms (e.g. Aadhar)
  • Incentives and Regulation
Learning Agenda

• Employment & Skills in the IT/ITeS industry
• Economic Implications of New Technologies (SMAC)
  • Social Media, Mobility, Analytics, Cloud Computing
• Impact Evaluation of Various Policy Interventions
• Mechanisms of Incremental & Radical Innovation
  • Role of IPR’s, Complementary Infrastructure, FDI
• Service Value Chains in Different Verticals
• Role of Small & Medium Enterprises
Thank You
Growth Drivers

Drivers for Education in India

- Increasing Demand for Education and Huge Demand-Supply Gap
- High Level of Government Involvement/Public Spending
- Favorable Policy Initiatives
- Private Sector/Foreign Varsities Participation
- Improving Funding Opportunities

Technology Adoption Drivers

- Enable computer and technology education in millions of schools across India – currently only 14 percent of Indian schools are ICT enabled
- Provide education to remote locations using technology
- Improve efficiency in administration
- Digitization of institutes’ records for better archival
- Enable high-tech solutions like online tests, e-learning, etc.

Source: Technopak; The Parthenon Group; IDFC; ASSOCHAM; IDC; www.indiastat.com; Zinnov Analysis
Aadhar - What will it do?

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- Will enable 'anytime, anywhere, anyhow' authentication.
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Benefits and usage

- Empowering poor and underprivileged residents to access government programmes and services such as – banking, public distribution system (PDS), education, healthcare, taxes, direct benefit transfers, etc.
- Aadhaar will thus give migrants mobility of identity.

The focus resident segments are:

- Below Poverty Line (BPL) families
- Marginalized and the deprived
- Landless labourers
- Daily wage earners
- Minorities (by caste, religion, region, etc.)
- Migrants
- Women
- Children, especially those in the 6-14 age group

Source: www.uidai.gov.in
**Industry continues to grow**

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<th>Aggregate revenue for the sector estimated to cross <strong>USD 100 billion</strong> mark</th>
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<td>Growth trends</td>
<td>Industry continues its growth trajectory, despite volatile business environment; Growing impressively <strong>CAGR 2007-12 : 17 per cent</strong></td>
</tr>
<tr>
<td>Inorganic Growth</td>
<td>From 2009 to 2011, <strong>M&amp;As increased 77 per cent</strong> CAGR to reach <strong>USD 4.5 billion</strong></td>
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<td>Global Footprint</td>
<td><strong>70 countries, 560 delivery centers</strong> – providing skills, domain, language and disaster recovery; non Indian employees – 5-6% for large firms</td>
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<td>Changing model</td>
<td><strong>Fixed price contracts, cloud based solutions, productising services</strong></td>
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Source: NASSCOM
### Employment opportunities for diverse sections of the society

#### Employment beyond Urban areas
- ~58% of the IT-BPO workforce is from tier 2/3 cities
- ~56% employees are chief bread earners

#### Bridging the gender divide
- ~37% women employees in FY09; account for 45% of new intake
- ~26% of the female employees are chief wage earners
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*Created high paying jobs*
*Setting new standards of work environment*
*Emerging as a “Skill Factory”*

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*By 2020*
- 5 mn women employees
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*NASSCOM Evaluseerve survey findings, 7500 participants pan India*
Domestic Market – consistently healthy, growth of 16.7 per cent

IT-BPO Domestic revenues* (INR billion)

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<tr>
<td>500</td>
<td>589</td>
</tr>
</tbody>
</table>

• Maturing domestic market – key thrust area for the industry – **growth faster than exports**

• IT services growth 17.8 per cent, driven by localized strategies by service providers

• Domestic BPO - 16.9 per cent driven by demand from new verticals and technology platforms

• Software products to grow by 13.3 per cent: New wave of start-ups driving growth

• Government spending on e-governance projects

• IT seen as a critical enabler for inclusive growth and transformation

Source: NASSCOM

* Excluding Hardware
Varied mix of service providers – large integrated, captive and niche

- **Large**
  - ~44-47 per cent
  - 8 players
  - Indian+MNC

- **Mid Sized**
  - 35-37 per cent
  - 75-80 players
  - Indian + MNC

- **Emerging**
  - 9-10 per cent
  - 300-350 players
  - Indian+ MNC

- **Startups**
  - 5-6 per cent
  - >3,500 players

- **Share in exports**

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- **Large**
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  - 8 players
  - Indian+MNC

- **5000+ companies, vibrant ecosystem**

- **Over 750 MNC global in-house centers**

- **India has become focus for all**
  - Global experience
  - Domestic market
  - Customer centricity
  - Enabling cross vertical innovation and multiple partnership opportunities
Services firms are also realigning themselves to suit customer needs; Using India as a test-bed

• Pre-building integrated solutions
• Product companies are developing their own SI capabilities

1. Developing domain expertise

2. Aligning business to client requirements

3. Leveraging India as a test-bed

• Replicating the learning from highly demanding Indian projects to other markets
• Organisations like Infosys are testing business models (e.g. Risk-Reward model) in India with an objective to replicate them in other markets
• Integrating business divisions to create greater value for customers. e.g. MindTree
• IBM has set up the Institute of Business Value to help clients with domain knowledge

Besides, product firms are also strengthening their support base in India. EMC, for instance, has expanded its on-location support services in over 100 cities in India

Source: NASSCOM-Zinnov India’s Domestic IT-BPO Market: Winds of Change
Indian IT-BPO value proposition hinges on five pillars

<table>
<thead>
<tr>
<th>IT /BPO Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transforming Client’s Business Needs in the New Global Economy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optimum Cost Efficiency</th>
<th>Unparalled Human Capital</th>
<th>Unique Customer Centricity</th>
<th>Scalable and Secure</th>
<th>Supportive Ecosystem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivering 50-80 per cent in cost savings</td>
<td>Highest out-turn of technical grads – CAGR of 16 per cent</td>
<td>Building capabilities in emerging verticals</td>
<td>India’s size offering inherent concentration mitigation</td>
<td>Strong investments in infrastructure development</td>
</tr>
<tr>
<td>Expanding delivery centres</td>
<td>Highest ready-to-hire talent (36 per cent) compared to other sourcing markets</td>
<td>Re-engineering business delivery models to create IP</td>
<td>BCM practices at par with US, UK standards</td>
<td>Expansion in to maturing Tier II locations</td>
</tr>
<tr>
<td>Cost control on entry-level salaries – CAGR of 4.6 per cent during FY06-11 period</td>
<td>Talent re-engineering initiatives leading to diverse talent pool</td>
<td>Deeper strategic client relationships</td>
<td>Expanding global delivery network footprint (over 560 centres across 70 countries)</td>
<td>e-Governance initiatives driving ICT investments</td>
</tr>
<tr>
<td>Control over non-employee costs</td>
<td>Industry implements globally accepted engagement models</td>
<td>Focus on re-engineering delivery models</td>
<td>Adoption of global information security best practices</td>
<td>Quality business infrastructure highly competitive</td>
</tr>
<tr>
<td>Role progression 1.5-2X faster in India than the US</td>
<td></td>
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</tbody>
</table>

Source: NASSCOM
Domestic market

Indian Domestic IT-BPO Market
(INR billion)

FY2008

FY2012E

932

1,533

601

450

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Note: *Excluding hardware
Source: NASSCOM
Drivers fueling growth of IT-BPO adoption in India

- Aspiring Indian Enterprises
- Aggressive IT Investments by Central & State Governments
- Huge “Native to IT” Population Base
- Emergence of Disruptive and Innovative Technologies
- Aggressive Focus by Service Providers
- Regulatory Factors

Source: NASSCOM-Zinnov Domestic IT-BPO market study
Public Services and E-Governance Projects
• Elimination of inefficiencies
• Reduction in redundancies and increase in collaboration among different departments
• Reduction in corruption, improvement in citizen’s experiences

Some key eGovernance projects are:
• Online registration of companies
• E-Filing of Income tax returns
• Online application of passports
• Aadhar/UID

Innovative Products and Services
• Increase in accessibility of essential amenities such as health care and education
• Increase in affordability of products while maintaining quality
• Elimination of structural inefficiencies

Some key technology solutions are:
• E-Learning and knowledge portals
• Telemedicine solutions such as e-Sanjeevani
• Online banking

E-Governance: Harnessing technology to increase access, affordability and accountability for essential services
Focus on better service delivery & increasing transparency is the key demand driver for IT adoption

- Delivering government services at citizens’ doorstep
  - Banking
  - Land records
  - Healthcare
  - Education
  - Food and civil supplies
  - Employment

- Focus on increasing transparency
  - Right to Information
  - Complaint registration
  - Public grievance redressal
  - Taxation
  - Audits

- Focus on reducing administrative and commercial losses
  - Efficient utilization of resources/grants
  - Interoperability/integration
  - Electronic transactions

Source: Zinnov Analysis