Cyber Security Initiatives in India

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NASSCOM
Some Numbers: Internal and External
# Growth of Internet User Population

<table>
<thead>
<tr>
<th>#</th>
<th>Country or Region</th>
<th>Internet Users, Latest Data</th>
<th>Population (2007 Est.)</th>
<th>Internet Penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>United States</td>
<td>211,108,086</td>
<td>301,967,681</td>
<td>69.9%</td>
</tr>
<tr>
<td>2</td>
<td>China</td>
<td>137,000,000</td>
<td>1,317,431,495</td>
<td>10.4%</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>86,300,000</td>
<td>128,646,345</td>
<td>67.1%</td>
</tr>
<tr>
<td>4</td>
<td>Germany</td>
<td>50,471,212</td>
<td>82,509,367</td>
<td>61.2%</td>
</tr>
<tr>
<td>5</td>
<td>India</td>
<td>40,000,000</td>
<td>1,129,667,528</td>
<td>3.5%</td>
</tr>
<tr>
<td>6</td>
<td>United Kingdom</td>
<td>37,600,000</td>
<td>60,363,602</td>
<td>62.3%</td>
</tr>
</tbody>
</table>

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Electronic Banking in India Trends

- **ICICI Bank Illustration**
  - Second largest bank in India, after SBI
  - Quants
    - Branches 450
    - ATMs 1750
    - Assets Rs.112,024 crore
  - Pioneer in Internet banking

- **Netbanking user base in India**: 46 lakh
India is not just a land of mystics and wonders...

- India’s GDP has grown at nearly twice the global rate over past 20 years.
- Steady annual growth in real GDP, industrial production and domestic demand of 5-6%.
- Sustained real growth in foreign investment inflows (FDI and FII) since economic liberalization (1991).
- Cumulative forex reserves of ~USD 200 bn.

FY06 GDP Growth in India is amongst the Fastest in the Region.

Source: JM Morgan Stanley

Source: Citigroup
A maturing economy led by high growth in services...

Over the last few decades the Indian economy has transitioned from an agrarian economy to a predominantly services based economy.

Key services sectors – Personal services, trade, hotels, banking, communications and business services.
Indian IT-BPO sector growing at 28%; industry aggregate to reach USD 47.8bn, direct employment to exceed 1.6 million in FY2007

Tenfold growth over a decade
Industry is on track to reach the targeted USD 60 billion in software and services exports by 2010

<table>
<thead>
<tr>
<th>Period</th>
<th>Total (USD Billion)</th>
<th>Domestic Market*</th>
<th>Exports*</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY00-10</td>
<td>28.9%</td>
<td>22.1%</td>
<td>31.2%</td>
<td>10 YR TARGET</td>
</tr>
<tr>
<td>FY00-06</td>
<td>31.5%</td>
<td>23.4%</td>
<td>34.6%</td>
<td>ACHIEVED</td>
</tr>
<tr>
<td>FY06-10</td>
<td>23.1%</td>
<td>18.6%</td>
<td>24.2%</td>
<td>REQUIRED</td>
</tr>
</tbody>
</table>

* Includes IT Software and Services, ES and ITES-BPO
SIGNIFICANT UNTAPPED DEMAND AND INDIA’S DOMINANT POSITION

SUPPORT THESE ASPIRATIONS

US$ billion, 2005

* Includes addressable markets in currently offshoring industries
** Includes Philippines, China, Russia, Eastern Europe, Ireland, Mexico

Source: McKinsey Outsourcing & Offshoring practice; McKinsey Global Institute; Gartner 2005 database; IDC; NASSCOM Strategic Review 2005
The Legal Framework
The US and the UK Approaches for Data Protection and Privacy

The US

• Health Insurance Portability and Accountability Act (HIPPA) – Health Care Sector
• Gramm-Leach-Bliley Act (GLBA) – Financial Service Sector
• Right to Financial Privacy Act (RFPA) – Personal Financial Records
• Other Indirect Laws - Computer Fraud and Abuse Act, Electronic Communications Privacy Act, etc.

The UK

• Data Protection Act 1998 – Personal data
• Regulation of Investigatory Powers Act 2000 – Interception of communication
• Privacy and Electronic Communications (EC Directive) Regulations 2003 – Telecommunications Sector

The US has sector specific laws both at federal and state levels while the UK has a single law covering all sectors
India’s Legal Framework Meets Most Requirements

Indian IT Act, 2000
- Section 65 - Tampering with computer source code
- Section 66 - Hacking & computer offences
- Section 43 – Tampering of electronic records

Indian Copyright Act
- States any person who knowingly makes use of an illegal copy of computer program shall be punishable.
- Computer programs have copyright protection, but no patent protection.

Indian Penal Code
- Section 406 - Punishment for criminal breach of trust
- Section 420 - Cheating and dishonestly inducing delivery of property

Indian Contract Act, 1872
- Offers following remedies in case of breach of contract:
  - Damages
  - Specific performance of the contract
Proposed Amendments to the IT Act

» Changes in definitions and introduction of technology neutrality
  - Intermediary
  - Electronic Signature

» Section 43A: Liability of companies
  - For not following ‘reasonable security practices and procedures’
  - Defines ‘sensitive personal data or information’
  - Recognises the role of ‘professional bodies and associations’
  - Upto Rs 50 million to each person wrongfully affected by the breach

» Section 66: More specific definition of data crimes

» New offences introduced
  - Cyber stalking (section 66A)
  - Privacy invasion
  - Identity theft

» Powers to direct interception or decryption (s. 69)

» Identification and protection of Critical Information Infrastructure (s. 70)

» Clarification of the role and liability of the intermediaries (s. 79)

» Strengthening of investigation mechanism
  - Delegation to junior officers (s. 78)
  - Creation of Examiner of Electronic Evidence (s. 79A)
Other Government Measures

» Information Security and Awareness Project
  – Introduction of information security curriculum at B.Tech. and M. Tech. levels
  – PhD programme for research
  – Exchange with CMU and other institutes
  – Train system administrators through diploma and certificate courses
  – Information Security Awareness for the end user
  – 7 Resource Centres and 35 Participating Institute
  – Five year project with $17.5 million outlay

» Digital forensics software project
  – Alternative to disk imaging and analysis software
  – Executed by Centre for Development of Advanced Computing, Trivandrum

» Cyber Security Research Centre, Chandigarh
  – Partners: Chandigarh, NASSCOM and Punjab Engineering College
  – Regional Centre of Excellence
  – Capacity building in secure network operations
Trusted Sourcing Initiatives
About NASSCOM

NASSCOM is...

» Premier trade body and the chamber of commerce of the Indian IT-ITES industry
» Global trade body with over 1100 members, of which nearly ~200 are global companies from the US, UK, EU, Japan and China

Objective

» Primary objective – to act as a catalyst for the growth of the Indian IT-ITES industry.
» Facilitation of trade and business in software and services
» Encouragement and advancement of research
» Propagation of education and employment
» Providing compelling business benefits to global economies by global sourcing

Strategy

» Partner with the Central and State Governments in formulating IT policies and legislation
» Partner with global stakeholders for promoting the industry in global markets
» Strive for a thought leadership position and deliver world-class research and strategic inputs for the industry and its stakeholders.
» Encourage members to uphold world class quality standards
» Strive to uphold Intellectual Property Rights of its members
» Strengthen the brand equity of India as a premier global sourcing destination
» Expand the quantity and quality of the talent pool in India
» Continuous engagement with all member companies and stakeholders to devise strategies to achieve shared aspirations for the industry and the country

Vision: To establish India as the 21st century’s software powerhouse and position the country as the global sourcing hub for software and services
NASSCOM – 4E Framework for Trusted Sourcing

» Engagement
» Education
» Enactment
» Enforcement
The 4-E Framework for Trusted Sourcing

**The Initial Roadmap**

**E1: ENGAGE**

- Creation of Global and National Advisory Boards on Security
  - Define the Charters for the Global and National Advisory Board

- Engaging Stakeholders
  - Identify Stakeholders and actively engage them

**E2: EDUCATE**

- Training & Awareness Campaigns
  - Identify Audience
  - Evaluate possible tie-ups with prospective trainers
  - Devise training modes & methodologies
  - Develop training modules
  - Conduct Training and Awareness Sessions
  - Key institutes to include information security as a key course

**E3: ENACT**

- Legal Framework Strengthening
  - Conduct Gap Analysis in Legal Scenario
  - Mandate Information Security Certification

- Regulations & Coalitions Involvement
  - Identify and influence regulators in India and abroad and Identify unique country-specific information security requirements

- Information Security Assurance Framework
  - Establish the Security Framework maturity model program
  - Establish ASSCOM Seal for InfoSec Assurance
  - Establish Cyber-Cop Award

- Instilling Best Practices in Member Companies
  - Institute Award for member companies
  - Influence Major Insurance Companies
  - Influence Government to offer tangible benefits

**E4: ENFORCE**

- Enforcement Procedures
  - Institute the NASSCOM Seal of InfoSec Assurance
  - Perform Security Audits and Certifications for members
  - Create an enforcement body under the aegis of NAB
  - Perform Yearly Review
  - Develop Incident Response Database aka CERT
  - Develop a Database of all IT/ITES employees

**Public-Private Initiatives**

- Propagation of The Mumbai Cyber Labs Concept
NASSCOM - 4E Framework – Education

» Focus on IT companies – secure sourcing
  - Research reports
  - Model contracts, SLAs, best practices
  - Software Asset Management seminars

» Educational collateral for law enforcement in India
  - Two level approach
    - Half day seminars for senior police officers to educate on cyber-security
    - Six day basic training programme for investigate cyber crime
  - Four Labs at Mumbai, Thane, Pune and Bangalore
  - Bangalore Lab with the support of Canara Bank
  - Programmes conducted all over India
  - Trained 3300+ police officials till July 2007
  - Programmes for prosecutors
  - Advanced training topics

» India Cyber Cop Award 2005
  - Recognise outstanding work in technical investigations
  - Promote excellence in the emerging area of law enforcement
  - Foster community of practice in protecting cyber space
NASSCOM - 4E Framework – Education-II

Continuous media briefing around security and privacy

Cyber Safety Weeks
- Mass awareness campaign for promoting information security among end-users
- Mumbai 2003, 2004 and 2005
- Establish ‘capable guardianship’
- The ‘Broken Windows’ approach
- Hyderabad CSW: 20-22 July 2006
  - 20,000 sq. ft. of publicity
  - 100 kiosks
  - 18 hoardings
  - 100 banners
  - 1000 posters
  - 5000 students covered
  - 4 million page views of visibility
  - 700,000 eyeballs visibility (for hoarding, kiosks etc)
  - 7 sponsors
  - 12 supporting associations
  - 100,000 e-mails sent
  - 32 speakers
  - 4125 man hours of work

Information Security Awareness Portal
- www.indiacyberlab.in
- Mailing lists for law enforcement and information security professionals
NASSCOM - 4E Framework - Enforcement

- Working with members to enact secure practices
  - High rate of ISO 27001 adoption
    - Japan 2256
    - UK 317
    - India 301
- Physical security – access codes, et al
- Network security – technological solutions
- Information security
  - Employee background checks
  - No access to internet, cell phones, email, instant messaging, not even paper and pens
  - Stringent customer audits to ensure compliance with GLBA, HIPAA, and other regulatory provisions
- Few cases of infringement – inter-agency co-operation between FBI and CBI – cases in court
- Partnership with Business Software Alliance, toll-free numbers to report software piracy
- National Registry of IT & BPO employees
- Self Regulatory Organization: to educate and enforce
National Skills Registry

» Database of pre-verified resumes.
  - Data ownership with IT Professional.
  - Finger Print for unique identification.
  - Operated by NSDL, which is a capable database company

» Web based secure interface

» Subscriber
  - Image Enhancement
  - Pool of country’s IT Skills
  - Safer & Efficient Recruitment
  - Standard Verification Process
  - Cost & Time Saving

» IT Professionals
  - Reduced Recruitment Time
  - Transparent Verification Process

» Current Status (Updated)
  - 40 large employers have pledged to recruit through NSR
  - Enrolments till beginning of June 2007: 122 thousand
  - More details at http://www.nationalskillsregistry.com
Data Security Council of India

» **Self-Regulation**
  - Industry best position to regulate itself
  - Greater knowledge of data privacy and security standards
  - Better understanding of the commercial issues involved

» **Adoption of best global practices:**
  - Drawing on the experience in other countries
  - Different variants for different verticals
  - Increasing maturity levels

» **Independent Oversight:**
  - Board of Directors a balanced mix of industry, government and independent directors.

» **Focused Mission:**
  - Establish itself as a body catering to the entire cross-section of the industry
  - Promote a culture of privacy and security through education and outreach.
  - Education-led, enforcement-backed

» **Enforcement Mechanism:**
  - Voluntary compliance
  - Graduated penalties, ranging from warning, corrective action, disgorgement, fine, suspension or expulsion from membership
  - Specifically, pursuant to well-defined procedures, DSCI might refer certain egregious violations to the government for its review.
More details

» Other features
  – Whistle-blower mechanisms
  – Commission/promote research on security issue

» Benefits:
  – Help assuage the growing concerns internationally regarding how personal information is safeguarded in India
  – Help the Indian ITES-BPO industry distinguish itself and meet competition from a growing number of regions around the globe. It’ll provide a competitive advantage vis-à-vis alternate destinations for outsourcing

» Key objective: Raise the floor when it comes to strengthening India as a secure outsourcing destination, across the IT Industry
Thanks.

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