

Cyber Security Initiatives in India

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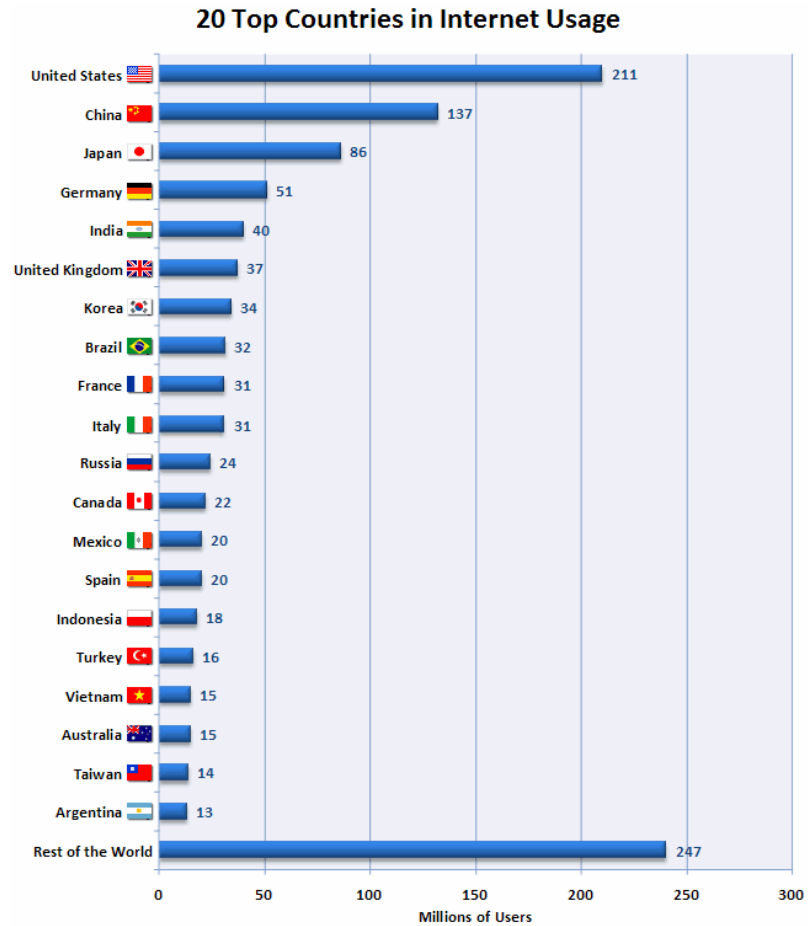
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NASSCOM

Some Numbers: Internal and External

Growth of Internet User Population

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



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Electronic Banking in India Trends

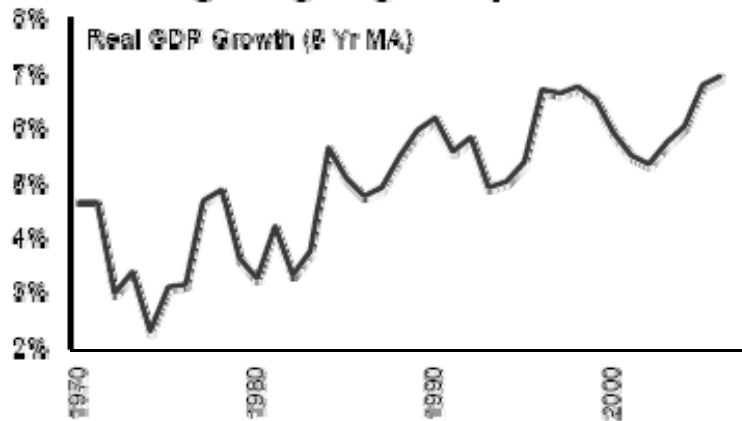
» ICICI Bank Illustration

- 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

Transaction mix		
Channel usage	March	
	2000	2006
Branch	94	22
ATM	3	46
Internet	2	18
Call-centre/ Mobile	1	14
Total	100	100

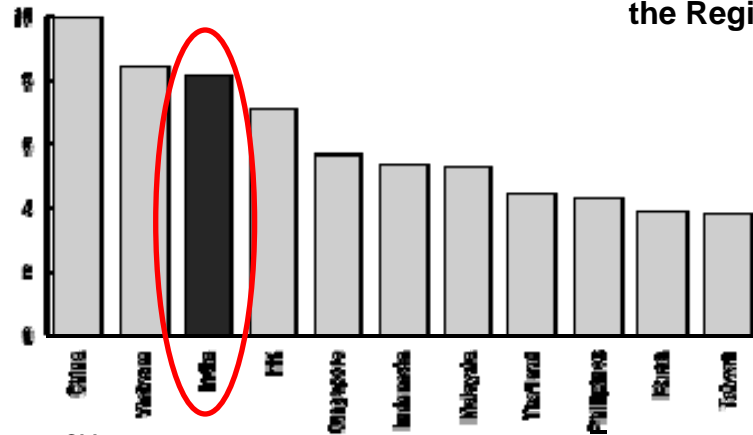
India is not just a land of mystics and wonders...

Transitioning to higher growth path



Source: JM Morgan Stanley

FY06 GDP Growth in India is Amongst the Fastest in the Region



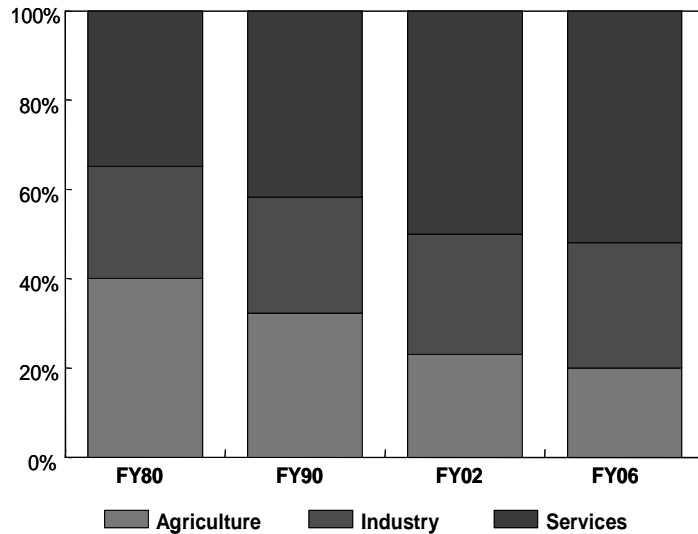
Source: Citigroup

- » 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

A maturing economy led by high growth in services...

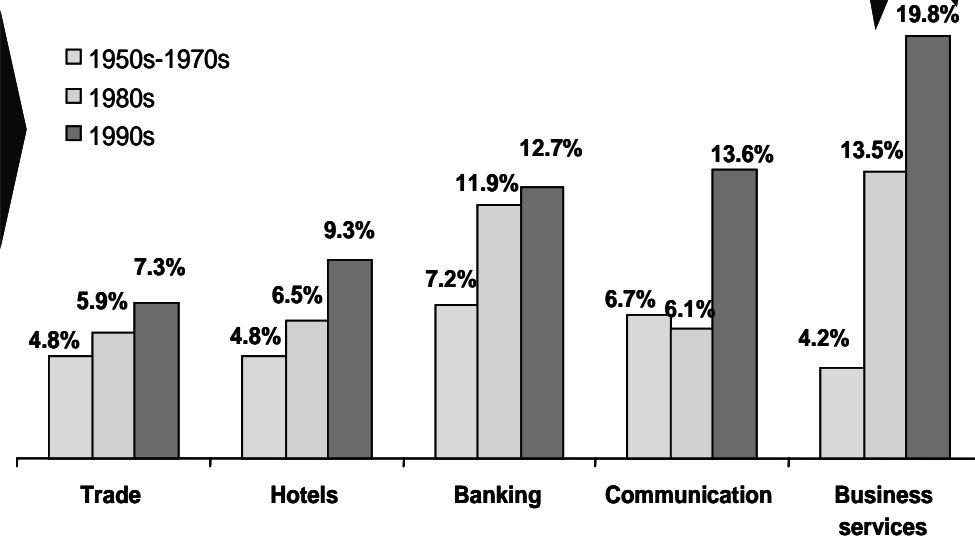


Changing Composition of India's GDP



Source: Citigroup

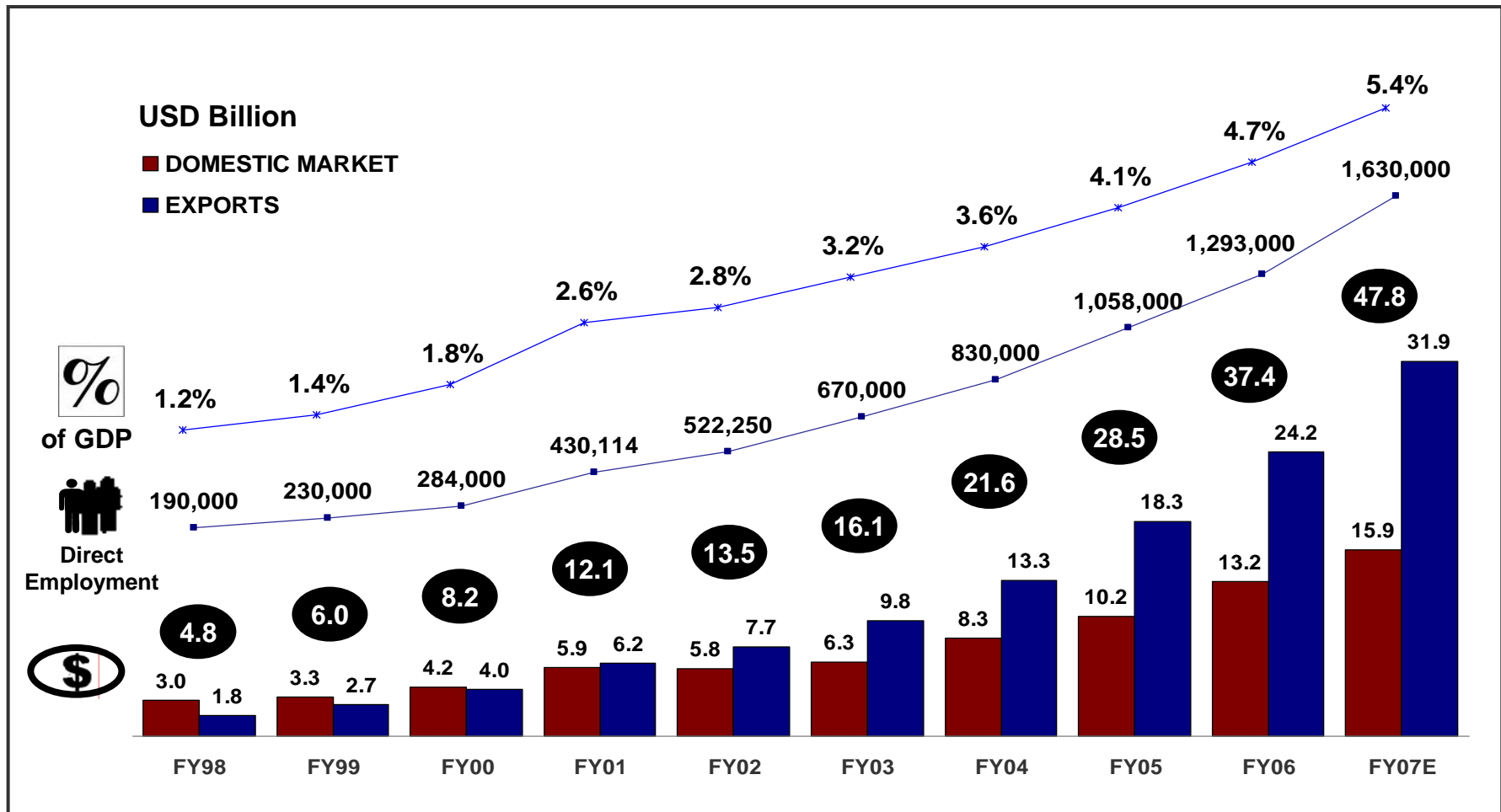
Growth in Key Services Segments



Source: IMF

- » 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



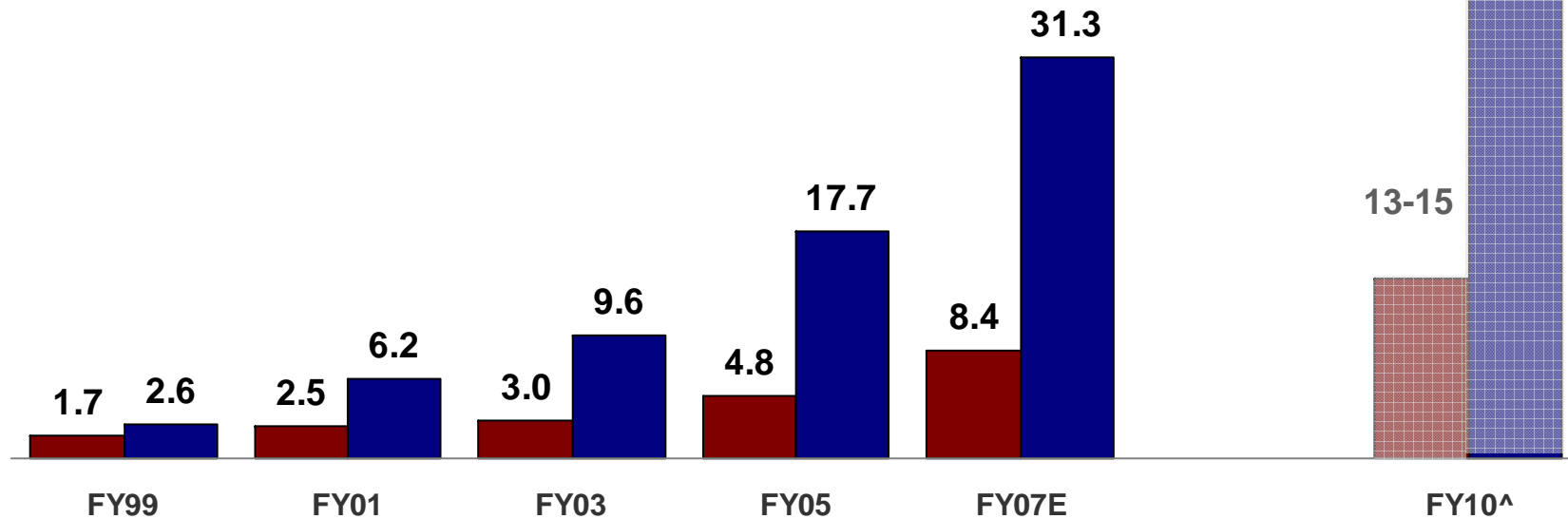
Tenfold growth over a decade

Industry is on track to reach the targeted USD 60 billion in software and services exports by 2010

USD Billion

CAGR	PERIOD	DOMESTIC MARKET*	EXPORTS*	TOTAL
10 YR TARGET	FY00-10	22.1%	31.2%	28.9%
ACHIEVED	FY00-06	23.4%	34.6%	31.5%
REQUIRED	FY06-10	18.6%	24.2%	23.1%

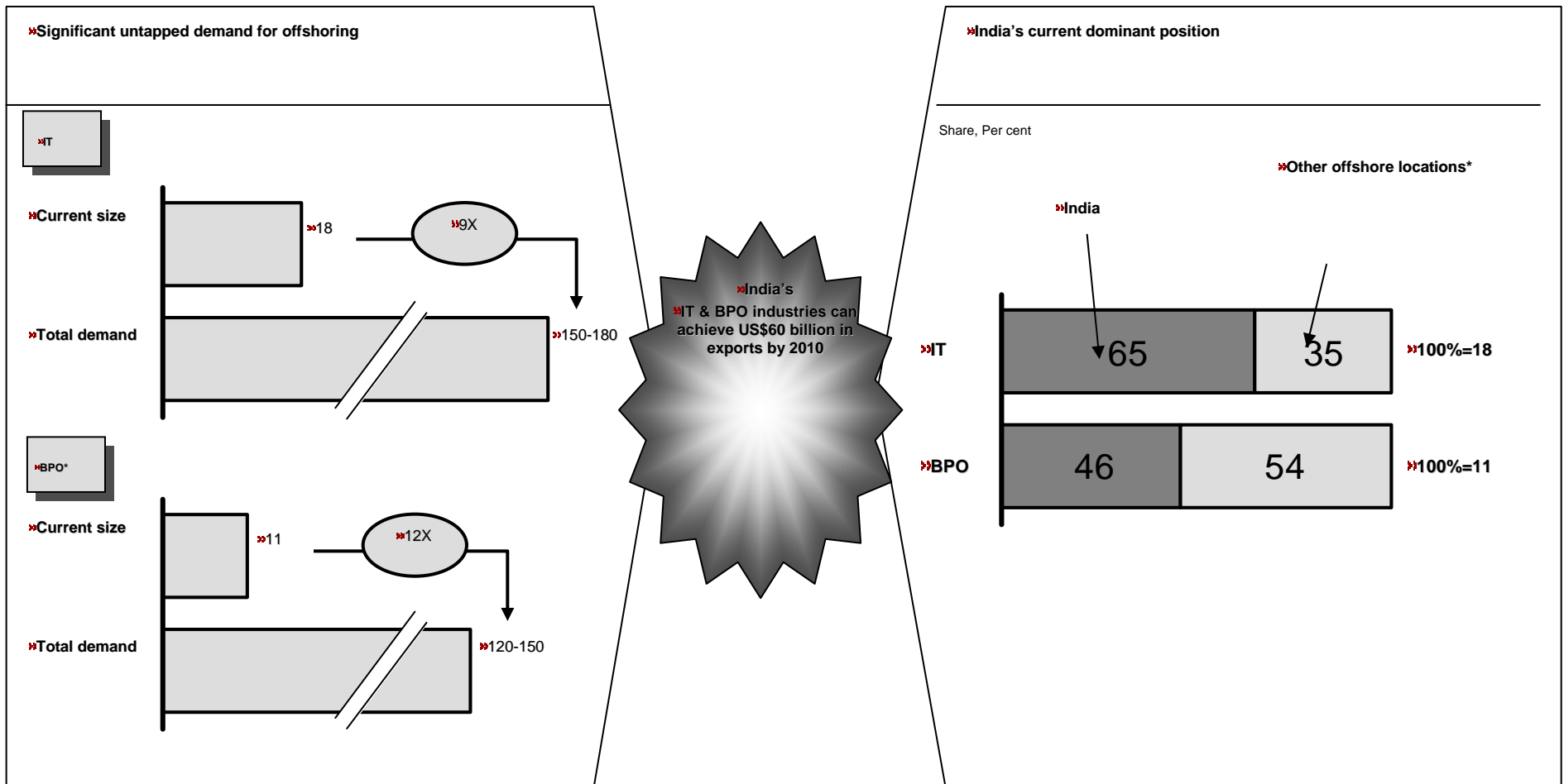
* Includes IT Software and Services, ES and ITES-BPO



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

The Legal Framework

The US and the UK Approaches for Data Protection and Privacy

The US

- **Health Insurance Portability and Accountability Act (HIPAA)** – 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
- **Others** - Computer Misuse Act 1990, Crime and Security Act 2001 and the Freedom of Information Act 2000, etc.

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	<ul style="list-style-type: none">• Section 65 - Tampering with computer source code• Section 66 - Hacking & computer offences• Section 43 – Tampering of electronic records
Indian Copyright Act	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Section 406 - Punishment for criminal breach of trust• Section 420 - Cheating and dishonestly inducing delivery of property
Indian Contract Act, 1872	<p>Offers following remedies in case of breach of contract:</p> <ul style="list-style-type: none">• 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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