

India

**India 2005 and Future
Presented at the 2006 SCITC
Moderated by SCWTC's
Mark Condon**



सत्यमेव जयते



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- 5,000 year old ancient civilization
- 325 languages spoken – 1,652 dialects
- 18 official languages
- 29 states, 5 union territories
- 3.28 million sq. kilometers - Area
- 7,516 kilometers - Coastline
- 1.3 Billion population.
- 5,600 dailies, 15,000 weeklies and 20,000 periodicals in 21 languages with a combined circulation of 142 million.
- GDP \$576 Billion. (GDP growth rate: 8%)
- Parliamentary form of Government
- World's largest democracy.
- World's 4th largest economy.
- World-class recognition in IT, bio-technology and space.
- Largest English speaking nation in the world.
- 3rd largest standing army force - over 1.5 Million strong.
- 2nd largest pool of scientists and engineers in the World.

Manufacturing in India

- Bharat Forge has the world's largest single-location forging facility. Its clients include Honda, Toyota and Volvo amongst others.
- Hero Honda with 1.7M motorcycles a year is now the largest motorcycle manufacturer in the world.
- India is the 2nd largest tractor manufacturer in the world.
- India is the 5th largest commercial vehicle manufacturer in the world.
- Ford has just presented its Gold World Excellence Award to India's Cooper Tyres.
- Suzuki, which makes Maruti in India, has decided to make India its manufacturing, export and research hub outside Japan.
- Hyundai India is set to become the global small car hub for the Korean giant and will produce 25,000 Santos a year. By 2010 it is set to supply half a million cars to Hyundai Korea. HMI and Ford.
- The prestigious UK automaker, MG Rover is marketing 100,000 Indica cars made by Tata in Europe, under its own name.
- Aston Martin contracted prototyping its latest luxury sports car, AM V8 Vantage, to an Indian-based designer and is set to produce the cheapest Aston Martin ever.

A Technology Superpower

- Geneva-based STMicroelectronics is one of the largest semiconductor companies to develop integrated circuits and software in India.
- Texas Instruments was the first to open operations in Bangalore, followed by Motorola, Intel, Cadence Design Systems and several others.
- **80 of the World's 117 SEI CMM Level-5 companies are based in India.**
- 5 Indian companies recently received the globally acclaimed **Deming prize**. This prize is given to an organization for rigorous total quality management (TQM) practices.
- 15 of the world's major Automobile makers are obtaining components from Indian companies – worth \$1.5 billion in 2003. The sales is projected to reach \$15 billion by 2007.
- New emerging industries areas include, Bio-Informatics, Bio-Technology, Genomics, Clinical Research and Trials.
- World-renowned TQM expert Yasutoshi Washio predicts that Indian manufacturing quality will overtake that of Japan in 2013.
- McKinsey believes India's revenues from the IT industry will reach \$87 Billion by 2008.
- Flextronics, the \$14 billion global major in Electronic Manufacturing Services, has announced that it will make India a global competence centre for telecom software development.

India's Trade

- Tata Motors paid \$118 million to buy Daewoo commercial vehicle Company of Korea.
- Ranbaxy, the largest Indian pharmaceutical company, gets 70% of its \$1 billion revenue from overseas operations and 40% from USA.
- Tata Tea has bought Tetley of UK for £260M.
- India is one of the world's largest diamond cutting and polishing centres, its exports were worth \$6 Billion in 1999. About 9 out of 10 diamond stones sold anywhere in the world, pass through India.
- Garment exports are expected to increase from the current level of \$6 billion to \$25 billion by 2010.
- The country's foreign exchange reserves stand at an all-time high of **\$120 billion**.
- India's trade with China grew by 104% in 2002 and in the first 5 months of 2003, India has amassed a surplus in trade close to \$0.5M.
- Mobile phones are growing by about **1.5 million a month**. Long distance rates are down by two-thirds in five years and by 80% for data transmission.
- Wal-Mart sources \$1 billion worth of goods from India - half its apparel. **Wal-Mart expects this to increase to \$10 billion in the next couple of years.**
- GAP sources about \$600 million and Hilfiger \$100 million worth of apparel from India.

India's Self-Reliance

- India is among six countries that launch satellites and do so even for Germany, Belgium, South Korea, Singapore and EU countries.
- India's INSAT is among the world's largest domestic satellite communication systems.
- India's Geosynchronous Satellite Launch Vehicle (GSLV) was indigenously manufactured with most of the components like motor cases, inter-stages, heat shield, cryogenic engine, electronic modules all manufactured by public and private Indian industry.
- Kalpana Chawla was one of the seven astronauts in the Columbia space shuttle when it disintegrated over Texas skies just 16 minutes before its scheduled landing on Feb 1st 2003, she was the second Indian in space.
- In 1968, India imported 9M tonnes of food-grains to support its people. Through a grand programme of national self-sufficiency which started in 1971, today, it has a food grain surplus stock of 60M tonnes.
- India is among the 3 countries in the World that have built Supercomputers on their own. The other two countries being USA and Japan. (India built its own Supercomputer after the USA denied India purchasing a Cray computer back in 1987.)
- India's new "PARAM Padma" Terascale Supercomputer (1 Trillion processes per sec.) is also amongst only 4 nations in the world to have this capability.
- India provides aid to 11 countries, has writing-off their debt and loaning the IMF \$300M.
- It has also prepaid \$3Billion owed to the World Bank and Asian Development Bank.

India's Pharmaceutical Industry

- The Indian pharmaceutical industry at \$6.5 billion is the 4th largest pharmaceutical industry in the world. Growing at 8-10% annually, it is expected to be worth \$12 billion by 2008.
- With exports of over \$2 billion, India is among the top five bulk drug makers. At home, the local industry has edged out the multinational companies whose market share of 75% has declined to 35%.
- Trade of medicinal plants has already surpassed \$900million.
- There are **170 biotechnology companies** in India, involved in the development and manufacture of genomic drugs, whose business is growing exponentially.
- **Sequencing genes and delivering genomic information** for big Pharmaceutical companies is the next boom industry in India.









Foreign Multi-National Companies

Top 5 American employers in India:

General Electric:	: 17,800 employees
Hewlett-Packard	: 11,000 employees
IBM	: 6,000 employees
American Express	: 4,000 employees
Dell	: 3,800 employees

- General Electric (GE) with \$80 Million invested in India employs 16,000 staff, 1,600 R&D staff who are qualified with PhD's and Master's degrees.
- The number of patents filed in USA by the Indian entities of some of the MNCs (until September, 2002) are as follows: Texas Instruments – 225; Intel – 125; Cisco Systems – 120; IBM – 120; Phillips – 102; GE - 95.
- Staff at the offices of **Intel (India)** has gone up from 10 to 1,000 in 4 years, and will reach 2000 staff by 2006.
- GE's R&D centre in Bangalore is the company's largest research outfit outside the United States. The centre also devotes 20% of its resources on 5 to 10 year fundamental research in areas such as **nanotechnology, hydrogen energy, photonics, and advanced propulsion.**
- It is estimated that there are 150,000 IT professionals in Bangalore as against 120,000 in Silicon Valley.

India: R&D Labs

R&D Centre	Highlights
 <p>R&D Centre, Bangalore</p>	<p>Established in 1984. The centre started with just 20 people, now has 900 people working on VLSI and embedded software, which goes along with a chip or into the chip.</p>
 <p>India Development Centre, Bangalore, Hyderabad.</p>	<p>The Bangalore centre was established in 1994; the Hyderabad one in 1999. Oracle's largest development centre outside the US currently has 6,000 staff. Does work on Oracle's database products, applications, business intelligence products and application development tools, besides other activities.</p>
 <p>India Engineering Centre, Bangalore</p>	<p>Established in mid-1999 with 20 people, has scaled up to 500 people today. Does work mainly on Sun's software which includes Solaris and Sun One.</p>
 <p>R&D Centre, Bangalore and Mumbai.</p>	<p>Established in 1988 with 20 people, has scaled up to 1,000 today. Drives nearly 60 percent of the company's global development delivery.</p>
 <p>Software Lab, Bangalore, Pune.</p>	<p>Established in 2001. Works on all IBM software like WebSphere, DB2, Lotus, Tivoli and Rational. The centre has added many new areas of activities such as middleware and business intelligence.</p>
 <p>Labs India, Bangalore.</p>	<p>Established in November 1998 with 100 people, the Lab will be scaled up to 1500 by the end of 2004. That will double 3000 staff by middle of 2006. It is the largest single-location R&D lab for SAP outside Walldorf, Germany. Nearly 10 percent of SAP's total R&D work is carried out from the Indian lab.</p>
 <p>Innovation Campus, Bangalore.</p>	<p>Established in 1996 with 10 people, has scaled up to 895 people today, and will be further scaled up to 1,000 before the end of 2003. Works on developing software for Philips products. Almost all Philips products that use software have some contribution from this centre. It is the largest software centre for Philips outside Holland.</p>
 <p>Bangalore.</p>	<p>Established in 2002 with just two people, has scaled up to 20 specialists today. Plans exist to double its headcount by the beginning of 2004. Is totally dedicated to high-level research on futuristic technologies, with special focus on emerging markets.</p>

India: BPO

- The domestic BPO sector is projected to increase to \$4 billion in 2004 and reach \$65 billion by 2010. (McKinsey & Co.).
- The outsourcing includes a wide range of services including design, architecture, management, legal services, accounting and drug development and the Indian BPOs are moving up in the value chain.
- There are about 200 call centers in India with a turnover of \$2 billion and a workforce of 150,000.
- 100 of the Fortune 500 are now present in India compared to 33 in China.
- Cummins of USA uses its R&D Centre in Pune to develop the sophisticated computer models needed to design upgrades and prototypes electronically and introduce 5 or 6 new engine models a year.
- Business Week of 8th December 2003 has said "*Quietly but with breathtaking speed, India and its millions of world-class engineering, business and medical graduates are becoming enmeshed in America's New Economy in ways most of us barely imagine*".

India: Technology Superpower

- Over 100 MNCs have set up R&D facilities in India in the past five years. These include GE, Bell Labs, Du Pont, Daimler Chrysler, Eli Lilly, Intel, Monsanto, Texas Instruments, Caterpillar, Cummins, GM, Microsoft and IBM.
- India's telecom infrastructure between Chennai, Mumbai and Singapore, provides the **largest bandwidth capacity in the world**, with well over **8.5 Terabits (8.5Tbs) per second**.
- With more than 250 universities, 1,500 research institutions and 10,428 higher-education institutes, **India produces 200,000 engineering graduates** and another 300,000 technically trained graduates every year.
- Besides, another 2 million other graduates qualify out in India annually.
- The Indian Institute of Technology (IIT) is **among the top three universities** from which **McKinsey & Company**, the world's biggest consulting firm, hires most.

Indians abroad

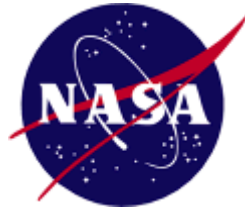
A snapshot of Indians at the helm of leading Global businesses

The Co-founder of **Sun Microsystems** (Vinod Khosla),
Creator of **Pentium Chip** (Vinod Dahm),
Founder and creator of **Hotmail** (Sabeer Bhatia),
Chief Executive of **McKinsey & Co.** (Rajat Gupta)
President and CFO of **Pepsi Cola** (Indra Nooyi)
President of **United Airlines** (Rono Dutta)
GM of **Hewlett Packard** (Rajiv Gupta)
President and CEO of **US Airways** (Rakesh Gangwal)
Chief Executive of **CitiBank** (Victor Menezes),
Chief Executives of **Standard Chartered Bank** (Rana Talwar)
Chief Executive officer of **Vodafone** (Arun Sarin)
President of **AT & T-Bell Labs** (Arun Netravali)
Vice-Chairman and founder of **Juniper Networks** (Pradeep Sindhu)
Founder of **Bose Audio** (Amar Bose)
Founder, chip designer **Cirrus Logic** (Suhas Patil)
Chairman and CEO of **Computer Associates** (Sanjay Kumar)
Head of (HPC WorldWide) of **Unilever Plc.** (Keki Dadiseth)
Chief Executive Officer of **HSBC** (Aman Mehta)
Director and member of Executive Board of **Goldman Sachs** (Girish Reddy)
Chief Economist of the **International Monetary Fund** (Raghuram Rajan)
Former CTO of **Novell Networks** (Kanwal Rekhi)

Indians in the USA.



Microsoft



Statistics that show:

38% of doctors in the USA,
12% of scientists in the USA,
36% of NASA scientists,
34% of Microsoft employees,
28% of IBM employees,
17% of INTEL scientists,
13% of XEROX employees,

... are Indians.

US H1-B Visa applicants country of origin

1. India 44%
2. China 9%
3. Britain 5%
4. Philippines 3%
5. Canada 3%
6. Taiwan 2%
7. Japan 2%
8. Germany 2%
9. Pakistan 2%
10. France 2%

- Of the 1.5M Indians living in the USA, 1/5th of them live in the Silicon Valley.
- 35% of Silicon Valley start-ups are by Indians.
- Indian students are the largest in number among foreign students in USA.

Goldman Sachs Report of 1 October, 2003 – "Dreaming with BRICs: The path to 2050"

India's GDP will reach \$ 1 trillion by 2011,
\$ 2 trillion by 2020,
\$ 3 trillion by 2025,
\$ 6 trillion by 2032,
\$ 10 trillion by 2038, and
\$ 27 trillion by 2050,
becoming the 3rd largest economy after USA and China.

In terms of GDP, India will overtake Italy by the year 2016,
France by 2019, UK by 2022,
Germany by 2023, and Japan by 2032.

Progress during the last 20 years

Poverty (incidence)

1980s	1990s	2000
44%	36%	26%

Education (literacy rate)

1980s	1990s	2000
44%	52%	65%

Health (life expectancy)

1980s	1990s	2000
56	60	69

Source: World Bank (2003)

India's population to be the largest in the world

India is set to overtake China as the world's most populous nation by 2050.

India's population is expected to grow from 1.08bn to 1.63bn people, overtaking China, which is forecast to reach 1.44bn from 1.3bn currently.

India, will also have the highest working population in the World — 700 million people out of 1.1 billion people are young; the young population will continue till 2050.