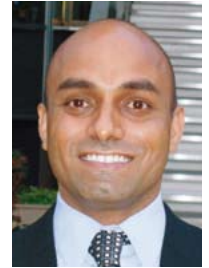


# India: Information Revolution



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Foremost of all, India is a democracy. And, especially for a huge country like India, information infrastructure along with education is just as essential for an effective democracy as economics.

By Sanjeev SINHA

## Education and Information as Foundation of Democracy

India adopted democracy when the literacy rate in India was still a meagre 18.3%. Accomplishments since Independence in 1947 in terms of literacy, spread of institutions, participation, and equalisation of educational opportunities have been quite significant. There has been a phenomenal increase in the number of educational institutions, faculties, teachers, and students. The number of teachers has gone up five-fold and the number of schools three-fold. The literacy rate has nearly trebled. The decennial census in 1991 saw India cross the 50% mark to achieve a literacy rate of 52.2%.

Along with the improving literacy, India also saw an improvement in the quality of politics.

As a country driven by a vision of independence, the freedom struggle of India witnessed great leaders who set examples of leadership not just for India, but after achieving independence, the lack of education and information infrastructure of the country gradually started to take its toll on the quality of the politics and democratic processes there. While India continued to struggle with a vicious cycle of a bad economy, leading to limited opportunities and corruption at the cost of development, and resulting in slow social development, we saw a dip in the education level of the political leadership of the country around the 1980s.

Consequently, as the national physical infrastructure was purely in the hands of the government, India experienced painfully slow growth or even deterioration.

While most of the country's industry was controlled under a license system and suffered from bad politics and corruption, one area where the lack of awareness on the part of the bureaucracy and political system of India, combined with its colonial legacy, ironically helped the country, was IT exports.

The strengths of English ability in a limited but significant class of India and a conceptual mindset in general helped in the development of India's IT industry. Limited dependence on large-scale physical infrastructure and the lack of license control, due to the fortunate lack of awareness by the bureaucracy of the time, allowed the industry to flourish and give India a global presence.

The Y2K problem created a huge human resource cost-arbitrage opportunity for India, while a high-class human resource pool, including Indian University of Technology (IIT) graduates, in the US in particular started to make its presence felt at top executive, high-tech entrepreneurship, and economic leadership levels.

In the meantime, the slow yet steady and inevitable development in education for the masses led to general improvements in the country. With the spread of TV and other mass media, the political

situation also started to improve. The global presence of India in the IT field brought home a bright new confidence, and for the first time India started to see a big new class of rich people who made money without any involvement in corruption.

As if orchestrated for its good timing, India also saw a crisis in foreign exchange reserves in 1991, which forced the country to liberalize in many economic areas and allow greater control to the private sector.

This global exposure also brought a new ambition for infrastructure and consumerism in India. The improving education for the masses led to a sustainable building of human resources. The growing opportunities in the private sector and entrepreneurship led to a new demand for education and effective reduction of unemployment. New confidence in the economy combined with global exposure led to a new demand for both consumer goods and infrastructure. This new phase of economic opportunities made the people realize the value of time, and in an unprecedented new phenomenon, people were willing to pay tolls for good-quality roads. The privatization process allowed the natural economic processes to kick-start and start catering to this new demand. With the fast speed of these changes, it's now a new time in India, where the demand is huge while the supply is lagging behind in almost every field.

In the process, the democratic and electoral process of the country also improved greatly. The good progress of particular states like Gujarat is now vied for by other states such as Bihar, and people expect their elected representatives to deliver results, which are better measured and discussed now than in the past, through improved transparency and media. And with the more educated public debate, poor performances by public leaders and the government are also penalized through the election process. This has created a completely new and much healthier performance incentive for Indian politicians, and good leaders are widely acknowledged and appreciated. We regularly find educated politicians talking about developmental economics and openly discussing the logical implications of their policies on TV.

## Governance and Information Revolution

For an effective democracy, education, information, and public analysis through media are musts. If they are lacking, it is not easy to tackle bad politics or corruption.

India has made great investments in education and, with the liberalization of the media and ground-breaking legal frameworks such as the Right to Information Act, the public debate has become very vibrant, as is essential for the democratic process.

After India started with exports in IT human resources overseas, the

domestic process of computerization, though it began late, has created a great impact on the availability of information and information-enabled services.

Indian Railways is a classic case. This is the world's largest commercial employer with the longest railway network under a single management. However, the reservation system in India was fraught with inefficiency and petty corruption till a computerized reservation network was introduced in 1987, a major public infrastructure project whose impact is felt by almost every Indian.

E-governance has taken a major stride with projects like Lokvani. Championed by an IIT graduate bureaucrat, Amod Kumar, this provides an internet kiosk-based system for providing various kinds of information, services and public grievance redress in a transparent, accountable and time-bound manner for the semi-urban and rural public.

Tax collection and related corruption has been another big area of concern and corruption in the country. Online filing of taxes and Personal Account Number projects to bring transparency and efficiency have greatly improved tax collection.

This did not come easily. India's labour unions initially opposed the process of computerization vehemently, until the economic benefits were evident and clearly for all to enjoy.

## Digital Divide to Digital Lead

I remember our new class at the Indian Institute of Technology in 1990. A professor of computer science told the students to learn C programming language in a matter of a weeks as a pre-requisite. The class of IIT, who had entered through a severe national competition, included many students who until then had never seen a computer in their lives, but still they lived up to the lecturer's requirement and today many of them are renowned professors in the leading universities of the world.

India has always been a land of great contradictions and nowhere is this more pronounced than in the use of information technology. According to the June 30, 2010 issue of *internetworldstats.com*, India has the world's fourth-largest population of internet users after China, the US, and Japan (*internetworldstats.com, June 30, 2010*). However, considering its size, the internet penetration is at a low 6.9% as against 31.6% in China. Similarly, if you look at the growth of the IT & ITes industry, India today boasts an IT/ITes sector of revenues close to USD 73 billion – making it the second largest exporter of IT/ITes after the US. However, again the use of IT by local businesses and the government pales in comparison with the usage by many developed and also emerging countries within the Asian region.

That being the case, India today offers some the most interesting business opportunities when it comes to information technology and the web revolution. Here I would like to mention some of the major developments in the country that present great opportunities to global investors including those in Japan.

## E-commerce Revolution

India has been a rare example of transition from the primary sector of agriculture to the typically tertiary sector of services, and is now starting on the typical secondary sector of manufacturing.

In the process, the country has had the advantages of adapting to



*Fashion and You, an e-commerce online marketing company*

the best practices and technology in the world in the services sector as well as the information-led manufacturing sector.

Due to the difficulties in building the physical infrastructure in the country, India leapfrogged the land-lines set-up and went straight to mobile phones. While the country still lags behind in the print media compared to that of many other developing countries, India also leapfrogged to the internet. In a very similar manner, while still only 5% of India's retail sector is organized, the country has also leapfrogged to e-commerce.

According to the Internet and Mobile Association of India, by the end of 2011, the size of the Indian e-commerce industry will be USD 10 billion. While that number is itself quite small considering the size of the Indian economy (approx. USD 1.5 trillion), further analysis of this number reveals that close to 77% of this market is captured by the online travel industry. It is curious to understand that the reason for the distortion is that, unlike most other e-commerce models, online travel or e-ticketing models do not require or involve physical delivery, etc. Hence, they are not affected by India's weak physical infrastructure. However, over the years there has been development in the businesses and infrastructure required to support the broader e-commerce industry, such as effective supply chain management and alternative payment models. With these developments a new window of opportunity has opened for a variety of other e-commerce business models.

Today you can see a range of business models that have achieved a roaring success globally and are now making a roaring entry into the Indian market. Models such as online private sales and group buying have been hugely successful. Ventures such as *Fashionandyou.com* (private sales) and *Snapdeal.com* (group buying) have seen unprecedented success in the market. Both these companies, and many others, got valuations exceeding hundreds of millions of dollars within less than a year of their inception.

This is a big opportunity for many a global investor. These are globally proven models which are coming to India after a lag of from three to five years, and are proving very successful - a phenomenon not all that common till a few years back. The Indian market is clearly ready to accept new ideas and has a strong appetite to try things out.

Many online businesses are now able to serve a big audience not only in large Indian cities such as Delhi and Mumbai but also targeting the growing wealth of tier-2 cities, many of which are growing at a much faster rate than the metros.

## Mobile Technology and Infrastructure

India is the second-largest wireless market in the world after China, with 792 million mobile subscribers and growing at more than 2.5% month-on-month. According to data from the official telecom regulator, one-third of the subscribers are in the rural sector. This results in an overall telecom penetration of close to 80%. This comes in stark contrast to the low internet penetration of around 7%.

What this means is a huge opportunity for all service providers from mobile commerce companies to banks to offer mobile-based services. Add to this the fact that India today boasts one of the lowest tariffs on voice-based services, making mobile phones affordable to all strata of society. Other advanced data-based services such as 3G have only recently been introduced in the country and that itself offers huge opportunities to many international companies, especially Japanese companies like NTT Docomo, who have very strong telecom services. It is estimated that 3G subscriber numbers are likely to exceed 107 million by 2015, growing at a CAGR of 190% between 2011 and 2015. Overall, 3G subscriber penetration in India is expected to rise from 0.1% in 2011 to 8% in 2015.

This will fundamentally change the way Indians access services, purchase products, transfer money, etc. Companies with a strong presence in these associated technologies will have much to gain in the market.

## UID & E-governance

While we talk about the fast growth in e-commerce in India by more than 50% per year, we still see only the tip of the iceberg. The majority of Indians still do not have bank accounts and, with the illiteracy and inadequate social infrastructure, many people in rural India do not even have a proper identify yet. Imagine the potential growth of e-commerce when these hundreds of millions of members of the so-called Base of the Pyramid of India start to participate in e-commerce. The Unique Identification Number (UID) project aims to achieve exactly that!

The Indian Government launched the ambitious UID project in September 2010. For the ID, every citizen will be required to produce proof of their residence, identity and birth to the authorities concerned. It is expected to revolutionise the Indian industry as it removes various road-blocks, namely, red tape and time-consuming procedures, while at the same time enhancing safety.

The 12-digit Unique Identification Number will be mandatory for all government schemes. Apart from providing identity, the UID will enable better delivery of services and effective governance. In becoming a single source of identity verification, it could enable the easier roll-out of a wide number of services such as bank accounts, passports, driving licences, and LPG connections. Proof of identity and greater financial inclusion could lay the basis for checking fraud and corruption, avoiding duplication, and targeting intended beneficiaries in a range of programs such as the Rural Employment Guarantee Schemes and the Public Distribution Systems. The first set of UID numbers will be issued between August 2010 and February 2011. A total of 600 million UID numbers will be issued in the next five years.

The UID project itself will offer multiple opportunities for companies and technology providers. The project will bring in an effective means to offer services like banking credits and social security to a large population which was previously not tapped

effectively. This will open the markets to many companies from fields such as banking, FMCG, and technology.

Moreover, the Government of India has planned an investment of up to USD 9 billion over a period of four years to offer a planned 1,100 e-governance services by 2014. According to government records, over 600 such services are already being delivered to citizens by various states and the central government. This offers opportunities for multinationals to collaborate with the government towards the implementation of these services.

## Education and Human Resources

India has the world's second-largest English-speaking population, at 72 million people, and the second-largest number of engineering graduates, after the US. India adds over 350,000 engineers every year. The availability of a skilled talent pool with strong technical and English language capabilities is a key reason for India's attractiveness as a destination for BPO/IT services. Also, it has emerged as the undisputed leader for English-based outsourcing services. The abundant English-speaking educated workforce makes India a unique destination for human resource exchange with non-English-speaking nations such as Japan.

With a strong, large domestic market, India is set to play a very prominent role in the new global economy, creating many new opportunities.

## Global Human Resources

Along with the advantages of English, India also enjoys an already widespread community of 25 million-plus Non-Resident Indians and People of Indian Origin. For historical reasons, the Indian community is especially well-represented in Commonwealth countries. Post-independence, the Indian high-tech community also reached the US in big numbers and is known to have made a substantial contribution. From the perspective of Japan, it's very interesting to note that only two regions of the world, north-east Asia and south America, have a conspicuously small presence of Indian people.

This gives India a particular strength in global information access in terms of the people themselves, and this is an area where India complements Japan very well, enabling it to be a good partner in Japan's efforts for globalization.

## Asian and Global Impact

With the spread of the internet, the world has come together in an unprecedented manner. With faster and deeper access to information, many new cross-border opportunities have come up that could not be thought of in the past.

Indian human resources have a special role to play in this process because of their global strengths. Especially, the diversity of India makes the Indian mindset very adaptable to different cultures of the world and hence especially effective in cross-cultural situations. The strengths of English and the existing global outreach of the Indian community define a special role for India in the new global world order. **JS**

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