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# PARADIGM SHIFT IN E-CULTURE IN DEVELOPING COUNTRIES: A CASE STUDY

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## ABSTRACT

E-Commerce is contributing in performing the tasks beyond national boundaries and time zones. While it is gaining momentum in developed countries, developing countries are trying to catch up with them. The question is with limited resources can the developing countries meet the challenge? This paper discusses the phenomenal growth in the Indian continent and a shift in perceptions and attitudes of the people in moving towards an electronic society.

Internet usage and the participation in eCommerce by Indians are growing from strength to strength. India has experienced an explosion in Internet access. A new e-society is emerging at this part of the continent using the Internet with increasing regularity and for a much greater variety of purposes. Businesses are now engaging in new technology to do business in a more successful way. They face constant pressure to speed up operations and perform efficient and effective services. A comparison of the Internet growth in India is shown against Australia.

## KEY WORDS

e-Commerce, e-Society, Developing Countries, Economy, Legislation

## 1. INTRODUCTION

Paradigm shift is a change from one way of thinking to another. It's a revolution, a transformation, and a sort of metamorphosis. It just does not happen, but rather due to the change of attitudes of people often driven by agents of change. Such agents of change are driving a new paradigm shift today, particularly in developing countries. For example, the Internet has impacted both personal and business environments, as a catalyst for a Paradigm Shift. We are shifting from a mechanistic, industrial society to a service based, information centered society, with increased use of technology. The Internet has undergone a steady evolution from being a source of instant communication in the early 90s to a rich source of information, entertainment and education. Growing customer expectations with the content of Internet has driven this evolution. Newer segments of Internet usage have emerged in particular in the area of business operations. User segments and usage pattern of the Internet have changed the surfing habits of the users. Businesses are now engaging in electronic channels, particularly the Internet to do business in a more successful way as it crosses beyond boundaries and time zones to create a global competitive market. Due to varying definitions and non-uniform indices, global estimates for e-Commerce can vary from \$1000 billion to \$7000 billion for the year 2004.

This paper covers some of the areas in internetworking that the developing countries are concentrating in the new business paradigm sweeping across the world. Research had shown there is a change in the attitude and perceptions of the people in developing countries, in particular the Indian community, due to the introduction of e-Commerce legislation, telecommunication developments and economic conditions. The Country is currently in the midst of Internet revolution.

## 2. INDIAN SCENE

India, a culturally diverse nation has more than a billion population. It's the 12th-largest economy in the world and at the same time, it is the largest single recipient of World Bank lending. With a robust democratic federal system, India has a large market with substantial purchasing power. It has the second largest GDP

among developing countries, based on purchasing power parity. India's vast rural hinterland is one of the biggest potential markets in the world, as 70 per cent of India's billion-plus population lives there. But only a handful of rural homes have electricity or clean running water and most people live on subsistence wages. Demand for the Internet is eventually rising throughout the entire Subcontinent and the use of the Internet is spreading rapidly in India, as it is in the rest of the world, with 16,580,000 Internet users as of Dec/2002. The Usage is mostly, restricted to the affluent in metropolitan areas. There is a phenomenal growth in telephone connections (from 0 to 4 million during 1950-1990), and connections to cable TV. With 52.21 percent literacy rate, Information Technology sector is at a stage of spectacular growth. Major global enterprises are already active in India. The global move towards e-business is sweeping the continent in a big way. The Government of India is working toward a better economic climate for e-business (NASSCOM, 2001) (1,2).

### 3. INDIAN ECONOMY: FORECASTS

India exports to the tune of US\$37 billion out of which software exports seem to grow rapidly. Despite a slowdown in the global economy, India is still on course to achieve earlier estimates of over \$US50 billion worth of global information technology exports by 2008 (McKinsey and NASSCOM Report). The report says the country's software and services sector is on track to notch up \$US77 billion-worth of business in the next five years (7) and Internet and e-commerce related software and services exports from India are expected rise to US\$3000 million by 2003-04 (NASSCOM, 2001). The Government's recent policies and reforms on foreign collaborations and investments has brought in a new spirit of economic freedom and aimed at stimulating foreign investment. New reforms with regard to E-commerce ensure a progressive trend in the Indian economy. Several multinationals have established their presence in the Indian market through joint ventures or wholly owned subsidiaries. Some of the leading investors are from USA, UK, S. Korea, Mauritius, Japan, Germany, and Australia.

Forecasts for the next 10-15 years is that the economy can grow at a sustainable rate of 8% a year, and by 2020 India can be the fourth largest economy with a per capita of approximately \$1500. Industry experts say if the rural business initiatives gather force they will boost India's overall economic growth and bring economic benefits to the lower levels. Continued strong expansion in the services sector is expected to underpin a forecast growth rate of 6.3 percent in 2003-04 (World Development Report, 1999 / 2000, World Bank).

The NASSCOM (National Association of Software and Services Companies) -BCG report 'on e-commerce opportunities for India Inc', also projects a \$9-billion business opportunity for Indian IT companies from the global e-solution services market by 2005. "The domestic market for e-solutions is expected to grow from a base of \$65 million in 2000 to \$500 million in 2005. In the area of e-solution product, the Indian IT industry is likely to achieve a business of \$1 billion by 2010." In the consumer goods sector, the BCG estimates that almost 15-20 per cent of durable buyers will be seeking information on products online by 2005. In the telecom sector, the BCG findings reveal that about 20 per cent of all supplier side transactions of hardware manufacturers and 10 per cent of transactions with distributors are likely to be online, resulting in a combined online transaction volume of Rs 53 billion. The B2C market in the financial services sector is projected to be Rs 3 billion, while, the B2B transaction volume (online brokerage) is to be Rs 900 million. (8).

### 4. TRENDS AND DEVELOPMENTS

The general culture of business and business practices is now changing to stay in line with the advancing technology of e-commerce. There is a swelling in the electronic revolution, which is influencing the many different cultures of both the individual and businesses in India. The Indian government is encouraging the e-commerce activities and works with all state governments to reduce the barriers and adapt to the technology based business opportunities. Homes, offices, educational institutions, businesses and others across the nation use the Internet and it will no longer be seen as a new technology, but a business, information and communication channel. The Internet has become an integral part of life for a rising number of people. Though India's adoption to e-business is behind the developed countries, Indian business has now accepted the Internet is not a fad but moreover a business tool that has become an integral component of business

strategy. At the national level down to small business, e-commerce is creating new cultures in business practices. It now provides the avenues for business to generate sustainable economic growth and employment, via the new business opportunities available in the new markets.

#### 4.1 Trends in Telecommunications

India's telephone network is among the 10 largest networks in the world. Its teledensity has grown from about 1 per cent in 1990 to almost 3 per cent now, with telephone connections growing at a rate of almost 25 to 30 per cent per year over the decade. Private sector mobile telephone services are now available in almost all parts of the country. The announcement of the National Telecom Policy 1999 and the consequent changes in policy have rekindled interest in the sector. Domestic long distance services have been opened to the private sector. The teledensity is likely to reach 7 by 2005 i.e. 75 million telephone connections and 15 by the year 2010 i.e. 175 million telephone connections. Cellular Mobile Services are becoming popular throughout the country.

#### 4.2 Trends in Internet Use & ISP

India's Internet subscriber base stood at 3.8 million customers at the end of September 30, 2002. The number of Internet users is forecasted to reach 50 million, by the end of 2004. Massive proliferation of the Internet usage has shown signs of significant growth in e-commerce and advertising. Businesses are spending larger portions of their budgets to Internet advertising. India is now a potent hub for web-development as 55% of young Indians are opting for careers in web-related activities (design, integration, web services, content writing, database integration, e-commerce etc). India's web shops are quite popular and improving constantly. Currently more than 95 per cent of the Internet subscribers use dial-up for accessing the Net. According to the data released by Internet Service Providers Association of India (ISPAI), the total number of operational ISPs in the country was 212 against an estimated 570 licenses issued. Satyam Infoway is the largest ISP with a subscriber base of more than 600,000, followed by Videsh Sanchar Nigam Ltd (VSNL) with a subscriber base of 550,000 and Mahanagar Telephone Nigam Ltd (MTNL) with over the 400,000. Services are made available to all its basic telephony subscribers at a charge of Rs. 6 (A\$0.17) per minute. (4,5).

National Internet Exchange of India (NIXI) is to be established following the recommendations of the Telecom Regulatory Authority of India. NIXI would be a domestic exchange, with Internet exchange points across the country so that all the ISPs can together route the domestic traffic within India. It is expected to result in cost savings and better quality of service for the users. Meanwhile Bharat Sanchar Nigam Ltd (BSNL) has set the ball rolling on its Phase-II of the National Internet Backbone (NIB-II) Project that could include an additional 1.1 million customers over the next two years. (5).

Some Interesting Findings By Survey on the Internet:

Over 78% of the Internet Users are in the age group 18 - 39 years out of which 75% are Males. The Capital Cities account for 79% of Internet Connections in the Country. More than 86% of top Corporate Houses have endorsed that Internet and E- Commerce is an integral part of their corporate strategic framework. Among the users, over 76 % of the Internet Users use E-mail Services

While 61% of the Users Access Internet from school, colleges, place of work and Cyber Cafes, 27% access Internet from homes. Career conscious and education driven middle class view Internet as critical to success in professional life. There are 46 million (approx) telephone connections (including Mobile) and 7.5 million (approx ) PC base in India. (Source: DoT, NASSCOM & Telescope Survey) (5).

##### 4.3.1 Tables

Table 1. Internet Users by Age

Age	Users
15 - 20	25
21 - 25	29
26 - 30	14
30+	32

Gender % of Users: Male 76; Female 24

Table 2. Monthly Household Income (MHI) and Internet Access

MHI	% of all Individuals	% of Internet users
< Rs.10,000	61	40
> Rs.10,000	39	60

Table 3. Internet Usage Pattern

Used for	% of Users	% of Time
Email	90	35
Information	50	9
Chat	43	9
Education/ Academic Info	41	11
Downloads	38	6
Music/ Movies/ Entertainment	27	4
Jobs	23	4

Table 4. Point of Access

Net accessed from	% on a Working Day	% on a Holiday
Home	25	47
Cyber Cafe	30	27
Work	29	07
Others	16	19

Table 5. Time Spent

Users are online for anywhere between 1/2 hr to 2 hrs

Time logged on for	% on a Working Day	% on a Holiday
< 1/2 hr	21	16
1/2 hr - 2 hrs	64	71
> 2 hrs	15	13

[Internet Usage in India, 31 July , 2003] (9).

## 5. GOVERNMENT INITIATIVES

### 5.1 Information Technology Act, 2000

Recognising the need for a comprehensive law to govern various aspects of e-commerce transactions, the Indian Government passed the Information Technology Act in 2000. Along with the Act, a number of other Indian laws have also been amended. The Act provides legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication, which involve the use of alternatives to paper-based methods of communication and storage of information, to facilitate electronic filing of documents with the Government agencies. The Act, has created an environment conducive for the safe and secure e-business. The law enables the users to buy over the Internet through credit cards without the fear of misuse. The current Act is not imposing tax on e-Commerce transactions. The Act also paves the way for e-governance by providing for the use and acceptance of electronic records and digital signatures in Government offices and agencies. It aims to make interaction with government offices hassle free. Overall, the legislation represents a considerable step forward in a developing environment. The Information Technology Act allows for contract finalisation and permits creation of parties' rights and obligations

through e-commerce. It imposes a strict punishment regime for infringement of the legislation and allows for the creation of tribunals, for resolving IT related disputes. The Act provides legal recognition for electronic records and digital signatures. Digital signatures can now be used to authenticate electronic records. Electronic forms, issue or grant of license, permit, sanction or approval, and receipt or payment can now be effected by means of electronic forms. The Act sets down rules for attribution, acknowledgment of receipt, time and place of despatch and receipt of electronic records. Further it allows the Government to establish Cyber Regulations Appellate Tribunal that will have the same powers as are vested in a civil court. It empowers the Government with powers to access computer systems and data for the purposes of investigation, and specifies severe penalties for a range of cyber-crimes. (5)

## **6. ELECTRONIC CULTURE: A BIG CHANGE**

There is a tremendous change in the way Indians have accepted the electronic version of transaction. In the last two years there is a distinct development in areas such as Transaction and Payment Clearing Houses; Network services; Web-based e-commerce retailing services; Shopping malls; Banking services; Travel and Education.

### **6.1 Payment System**

The bill payment culture in India has now changed. Customers are able to pay all their utility bills in the city from the convenience of home or office. Old practices of waiting in long queues, lost bills, keeping a tab of due dates and paying commissions to local errand boys are all gone. Customers are able to View and Pay bills anytime, anywhere at a fast, convenient and hassle-free manner. Access to all major utility billers is now available. The Indian banking system has a network of over 63,000 branches supported by a number of national and state level financial institutions. During 1990s, the Reserve Bank of India (RBI) started promoting automation in the banking industry. This forced the banks to upgrade their technology, and e-payment systems enable banks to offer their clients value-added services. Banks are able to manage their funds effectively and boost their productivity. The credit card market has shown tremendous growth in recent years. HDFC Bank, a major card issuer in India, has teamed with Visa International to enable its customers to make secure online purchases by using virtual card numbers that are generated from their credit or debit cards. When buying online, users of the new service, Netsafe, can create one-time-use virtual cards from their credit or debit card, with a designated limit that is valid for just 24 hours. The new service will enable credit cardholders to maximize the value of their credit and debit cards, while catalysing the growth of eCommerce in India in the next three to five years. UTI Bank through its Internet Banking module "iConnect" offers Electronic Bill Presentment and Payment (EBPP) for around 55 utility billers spread across 14 major centers. Utility bills can also be paid through ATMs.

### **6.2 On-line Shopping**

Banks offer Shopping across all the major online stores and delivery made at the customers' doorstep. Customers can shop as much as they would like and make payments through a secured payment channel. UTI Bank offers shopping on all major portals including Fabmall, Sifymall, Rediff, Indiatimes, Baazee, Indiagiftsportal and Charaghdin. Items ranging from Grocery to Computer & Accessories, Books, Music, Movies, Jewellery, Apparels, Gift items etc are available on the various portals listed on their website. The Bank also has tie-up with IndiaMART, a portal that facilitates online B2B transactions.

### **6.3 Internet Banking**

Internet Banking has reached its full status by providing a wide range of transactions. In addition to the facility of Balance inquiry, Transaction Query, statement of account, Changing of Password and request for issue of chequebook, Fund Transfer Facility (FTF) is also available to the customers.

## 6.4 On-line Stock Trading

The process of online trading has become seamless. Customers are able to trade online. The entire process is speedy with limited to zero paper work. Customers have a wide choice of online trading brokers to choose from. Customers will have to go on to the brokers' site of their choice where they get real time quotes from the trading room, place a buy or sell order on the spot, and direct the site to debit the requisite amount from a bank account. In just a few seconds customers get their conformation and after the trade settlement the bank and Depository accounts will reflect the changes, which can be, viewed anywhere anytime.

## 6.5 Travel

Indian Railways has the distinction of being one of the largest railway systems in the world under a single management. It covers over 63,140 route kms (as on 31.3.2002) and carries about 14 million passengers everyday. Indian Railways has now introduced online ticket reservations for travel within the Country. Payment methods help the customers to choose from over 13 bank options.

Indian Airlines and Air-India are providing online bookings to their customers. Air India is introducing attractive incentives to promote bookings through its website [www.airindia.com](http://www.airindia.com). *Indiatimes.com* and *Air-India* recently launched *online auctions* of international air tickets under a co-branded property - *Fly the World*. It is the first time in India that international air tickets are being auctioned online. Travellers can also make Hotel reservations and Travel packages for domestic as well as international destinations through the net.

## 6.6 Credit Card

India's payments market is still dominated by cash and cheques. Debit cards are fuelling India's cards market, given its credit-averse consumers. Almost every bank issues credit cards, with MasterCard leading in terms of market penetration, at 4.21 million, or 84 per cent of cards and Visa leads in terms of card usage. In the last three years, India's cards market has grown at a compounded annual growth rate of 31 per cent, with the average cardholder spending Rs. 1,500 to 2,000 per month on their card. "Projections for 2005 ranging from 10 million to 14 million cards, up from about 6 million in early 2003, according to Electronic Payments International. Merrill Lynch reports, card transaction volumes to have risen 41 per cent in 2003 over 2002, to USD 2.2 billion, with a total of USD 5.3 billion likely by 2005. In terms of card numbers, annual growth of 20 per cent to 25 per cent is expected through 2005, when some analysts expect 14 million to 15 million credit cards to be in issue, even if debit cards are overtaking credit cards in popularity". MasterCard being the acknowledged leader in terms of market penetration, with 84 per cent of cards, Visa leads in terms of card usage, and in 2002 had 64 per cent of transaction volume, EPI reports. (6).

## 7. COMPARISON WITH AUSTRALIA

Whilst comparing the development of the Internet against a developed country like Australia, the following table indicates the growth level with limited resources.

CRITERIA	AUSTRALIA *	INDIA
Population	20.1 million (apprx.) (May 2004)	1.01 Billion (apprx.)
Internet subscribers	5.2 million **	3.8 million (Sep, 2002)
Internet Users	6.9 million adult users (Nov 2000)	16.5 million (Dec 2002)

Dial-up subscribers	4.52 million **	95% of the subscribers
Non Dial-up subscribers	690000**	N/A
Digital Subscriber Line (DSL) subscribers	372,000	N/A
ISPs	667	212
Availability of Dial up Access Lines	626,554	N/A
Availability of Non-Dial up Access Lines	680,933	N/A
Total Access Lines	1,307,487	N/A
Broadband Subscribers	657,000	N/A
SPAM filtering available through ISPs	384	N/A
Data Downloaded by subscribers	4,665 million MBs	N/A
IT Act	Federal <i>Electronic Transactions Act</i> passed in 1999	<i>Information Technology Act</i> passed in 2000

\* <http://www.abs.gov.au/Ausstats/abs> \*\* 30<sup>th</sup> Sep 2003

## 8. FINDINGS AND CONCLUSION

### 8.1 Barriers Affecting e-Business Growth

Major factor that hinder the Internet and e-business growth in India are:

- Lack of PC population - Use of personal computers is quite low. Currently the figure stands at 3.6 computers per thousand people
- Lack of new technologies such as Digital Subscriber Line (DSL) and cable not being utilized fully. The current telecom infrastructure does not support high bandwidth access.
- Non-Uniformity in the dial-up Internet access charges by different providers
- Availability of unlimited Internet usage on flat-rate basis
- High Telephone charges
- Regulations on the use of credit cards by merchants and consumers.
- Most businesses do not see credit card acceptance as beneficial
- Inadequacy in online advertising
- Western-based portals not in tune with local customs to capture the Indian market

The domestic market seems to be a strong potential for providing e-commerce solutions. The Government's initiatives in cable TV sector is likely to contribute in increasing internet subscribers and users from the current 2 million Internet subscriber population to 50 to 120 million users in 2008. It is expected that e-business transaction be expected to exceed Rs. 40000 million in 2003-04 (NASSCOM, 2001).



E-commerce is revolutionising the Indian continent in a big way. It has a major impact on the life style of people. The Internet in India is going to jump dramatically in the next few years. The government will have to deregulate telecommunications and Internet and develop the infrastructure. Liberalization in the tax and regulatory framework for venture capital funds is likely to boost venture capital investment in e-Business. There is tremendous potential envisaged in the B2B and B2C segments, with B2B segment likely to be the dominating factor. The bandwidth issue is likely to be solved early. The existing bandwidth available to India is likely to be utilized completely (NASSCOM, 2001).

## 8.2 Challenges

The Challenge is with a low telephone penetration, high level of illiteracy, low Internet uses and low uses of credit cards, can India effectively participate in the global electronic market place? It is possible if the following strategies are employed:

- Raising e-commerce awareness
  - Campaigns to raise awareness
  - Identify the target audiences
  - Organizing awareness seminars
  - Publicity through media
- Enhance consumer confidence
  - Through media publicity, encryption ...
- Improve network infrastructure
  - Network penetration in rural India
- Adapt e-commerce technology
  - Use of Standardized technologies

If India is to become a global player in the e-commerce arena, it must spend more on infrastructure. Bureaucratic bottlenecks need to be cleared. More of IT related training is required. There is also a need to invest as much in non-IT related spending as in IT-related spending. E-commerce in India is very much alive and spreading its realms quickly.

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