CHAPTER 9

DRIVING AND INHIBITING FACTORS OF E-COMMERCE IN INDIA

9.1 The e-environment at a glance

E-commerce is more than just electronics and commerce added together. It represents an entirely new way of doing business through a medium that changes the very rules of doing that business. It is, therefore, far more about strategy and business management than it is about technology. In order to understand e-commerce and its implications for developing countries it is important, therefore, to see it from the perspective of the transactional aspects of e-commerce, i.e. those that represent the business between the different players, as well as the framework aspects, i.e. the basic requirements in developing countries for e-commerce to develop. It is argued that it is in the interest of developing countries such as India to develop in this area so that the promise of the digital economy is shared also by the South.

India's fame in the digital world is due to its software exports and its software professionals (who themselves are often part of the service export). In the last couple of years there has been a distinct shift in the Indian IT world—both external and internal—from software to e-commerce. For the purpose of this study therefore, e-commerce and its definition for India encompasses three areas.

- Software exports (body shopping to e-commerce services);
- Web-enabled services (transcription services to call centres); and
- e-business and e-trade (dot-coms, portals, services, and old and new economy global supply chains)

In the first area, a pronounced shift can be seen from the earlier mainly low-end software solutions to definitive sectoral software projects for businesses, and e-commerce software and services mostly for the external sector.

The second area, i.e. web-enabled services, is a result of the proliferation of the Internet globally on the one hand and the 'death of distance' for industry and services in the West that is leading companies to locate their call-centres and other 'back-office' services in far-flung
locations on the other hand. Such services include medical transcription, insurance claim processing, call-centres, web-services, and a whole host of emerging opportunities in the area of digitisable business processes.

The third area is the hard-core e-business and e-trade services and projects. These include new B2C and B2B websites and portals as well as the e-business that Indian domestic companies are now starting. On the e-trade side are the initiatives where Indian trade and industry is beginning transactions for export and import as well as the digital processes being introduced in Indian regulatory bodies.

India is a developing country that entered the IT revolution several years ago. From low-end data entry type operations to Y2K solution providers, the expertise and business has converted itself into a USD 6 bn industry. Bangalore (and recently Cyberabad) have become buzz-words in the IT world. Today the country is seeking to emerge as a major e-commerce powerhouse in Asia.

India Inc. has established itself as a major global IT brand. This phenomenal growth was not achieved overnight. The CAGR for the Indian software industry revenues between 1995 and 2000 has been 56.3%\(^2\) and its software professionals are the envy of countries across the globe. And yet on several indicators the figures are contra-indicatory to this success. In IT, India is a country of extremes. While on the one hand there is a booming software industry, on the other hand there exists an underdeveloped and unreliable communications infrastructure and low local Internet connectivity.\(^3\)

Despite high growth rates, India's share in the world software product market is still very low. But it still enjoys an advantage over many other nations in software development, services, and exports. This is partly due to the fact that India possesses the world's second largest pool of scientific manpower, which is also English speaking. Coupled with the fact that the quality of Indian software is considered to be good at relatively low cost, it makes for a definite competitive advantage in the global software economy.

For IT enabled services, the competitive advantage is even higher. NASSCOM,\(^4\) in a comparison of several factors such as workforce, market access, infrastructure, and cost across the Asia-Pacific region, has outlined that on average the best location by far is India (see Table 9.1.1).
Table 9.1.1 Comparison of several factors

<table>
<thead>
<tr>
<th>Country</th>
<th>Work force</th>
<th>Market Access</th>
<th>Local Infrastructure</th>
<th>Cosmopolitan</th>
<th>Cost base</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Japan</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>India</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: 1 denotes low; 2 denotes average; 3 denotes high. Source: International Data Corporation, NASSCOM.

For IT-enabled services (ITES), NASSCOM lists the advantages as follows:

- India's abundant skilled manpower is drawing corporate hubs to back end their operations in India. The country's English speaking manpower rates high in areas such as qualifications, capabilities, quality of work, and work ethics. This places India ahead of competitors such as Singapore, Hong Kong, China, the Philippines, Mexico, Ireland, Australia, and the Netherlands, among others.
- India's telecom and physical infrastructure is approaching parity with other countries.
- Indian companies have unique capabilities and systems for setting, measuring, and monitoring quality targets. NASSCOM is working with international certification agencies to set standards.
- In certain ITES categories, Indian centres have achieved higher productivity levels—for example, the number of transactions per hour for back office processing—than their Western counterparts.
- Also, India is able to offer 24x7 service and reduction in turnaround times by leveraging time zone differences. India's unique geographic position makes this possible.
- Incentives such as income tax holiday until 2010 have been provided for the export of IT enabled services.
- The Government of India has announced a special policy for call centres.
- Many state governments in India are offering incentives and infrastructure for setting up IT enabled services.

There is a distinct shift taking place in India today in the form of industry response to the digital economy. As mentioned earlier, from the low end and back end software jobs that were mostly IBM main-frame software projects and body-shopping services provided to US
companies, the three major areas of IT services export that are emerging now are e-commerce software and services, Web-enabled services, and e-business and e-trade transactions and services. From almost complete concentration on software, Indian exports are evolving into these three distinct growth areas. The present status and projections or targets (of the industry and government) are given in Table 9.1.2.

<table>
<thead>
<tr>
<th>Year</th>
<th>External Sector</th>
<th>Internal Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Software</td>
<td>E-commerce related software and business</td>
</tr>
<tr>
<td></td>
<td>Export (USD)</td>
<td></td>
</tr>
<tr>
<td>1999-2000</td>
<td>5.7 bn</td>
<td>0.5 bn</td>
</tr>
<tr>
<td>2000-2001</td>
<td>9.5 bn</td>
<td>1.4 bn</td>
</tr>
<tr>
<td>2004-2005</td>
<td>35 bn</td>
<td>5 bn</td>
</tr>
<tr>
<td>2007-2008</td>
<td>50 bn software</td>
<td>10 bn</td>
</tr>
<tr>
<td></td>
<td>and Web-enabled services</td>
<td></td>
</tr>
</tbody>
</table>

Source: NASSCOM.

Thus the Indian IT and ITES success story and its paradigm changing impact on global service delivery is now a well acknowledged fact.
9.2 Behind the Indian mantra of success – the driving factors

It is a well-known fact that the Indian software exports have grown by leaps and bounds in recent years, from less than USD 100 mn before 1990 to over USD 37.4 bn in 2006. Moreover, the revenue per person per year has also grown from less than $20,000 to over $50,000 in most large companies in last five years. This is not just due to inflation. It is because most of the big players have moved from lower value services to higher value services. Earlier the service primarily provided technical manpower, then they focussed on providing low-value services like coding and testing. Now Indian companies are operating even at the top end of the spectrum. Be it technology (like Corba, Java, E-Commerce etc.) or services (like complete business solutions, consultancy, strategy etc.) they have been successful in impressing not only the developing countries, but also the developed countries, with their amazing performance in the industry. A few strengths of Indian Software companies that have made this industry a major global force are as follows:

The first strength is quality. Indian companies have never taken too long to learn and successfully implement the latest quality models. For instance, they adopted the ISO model soon after it came and then rapidly transited to CMM (Capacity Maturity Model) when it started becoming important. And the main thing is that these models have been by and large absorbed quite well. This has given Indian companies the solid project and process management strengths that accompany these global quality models.

The second strength is the business expertise that now exists in the industry. Sustenance in the global arena calls for a good understanding of business practices in other countries and this is very well acquired by the Indian managers. Having spent significant time serving clients across the globe, they have acquired domain knowledge and an understanding of the cultural context of the customer. This has enabled many Indian software companies get repeat business of 70%, which is an asset when growing rapidly.

Moreover, transformations in attitude and thinking also contribute to this success. Senior managers have started thinking of themselves as global players and not merely as India-based suppliers. This has brought in organization management and business practices that are in line with the developed world.
Finally, Indian software companies have developed the ability to change rapidly with technology. This has been amply demonstrated by the quick movement to Java, e-commerce related technologies etc., which are now a major part of business for many companies.

These three solid strengths -- processes, business skills and amenability to reprogramming -- have bought the Indian software industry to the fore. These achievements are due to the following factors:

Export orientation has helped industry to become receptive to technology and has brought about quality orientation. Leveraging on the fact that the domestic market was not the main market, the industry grew by focussing on the global market.

The second reason is that the Indian software industry grew without government help. Unlike most other developing countries of Asia and Latin America that look for government funding for IT development, Indian companies did not wait for government help because they knew that government money and policies, particularly in developing countries, are too slow, while the IT business is very fast. Hence they rapidly progressed on the path of growth without being affected by these slow practices.

Thirdly, business leaders have also played a key role. Leveraging opportunities in the quickest time and then setting high standards for the rest of the industry has been well demonstrated by the major leaders. After the standards set by TCS, Infosys, Wipro, HCL etc. no company today wants to be just a few-crore company. These high aspirations lead to enhanced efficiency in performance which earns them increased success.

These are a few in-built factors that have made Indian Software industry a success story in the market. The Indian environment has also contributed to this success by virtue of following factors:

Intermediate development strategy model

Telecommunication is the backbone of e-commerce and the Internet. The technology is available but the costs are very high -- especially for a large country like India. Realizing this, Indian software companies have followed an intermediate development strategy. Rather than attempting to provide Internet and satellite links across the country, India followed the strategy of providing Internet access initially to only important commercial centres, especially
where there is a concentration of export-intensive industry. Satellite earth stations were set up by VSNL\(^7\) and STPI\(^8\) at key stations for providing 24-hour guaranteed access to software companies for export activities, much before Internet was available on the existing telecom channels. This was the frame on which the software revolution was built.

*The liberal tradition factor*

Despite democratic policies oriented to welfare and socialism, a very strong private business environment and liberal tradition developed in the country. The structural adjustment programme starting in 1991 served to promote policies of liberalization and trade reforms, which furthered the market oriented economy and the export sector in general, and the software sector in particular.

*The brain gain factor*

There was a time when a large number of Indian software engineers left for better jobs in the West. This phenomenon, then called "brain-drain", has turned into a "brain-gain" as Indian professionals, after having succeeded in the environment abroad, are returning to set up joint ventures and e-commerce businesses in India. They contributed to the brand image of India and also continue to be excellent links for Indian software and overseas businesses.

*The 'English' factor*

Indians are not just English speaking but can quickly adapt to English or American ‘thinking’. While a Chinese immigrant or worker may take five years or more to become ‘American’, a Indian software professional from one of India’s engineering colleges will probably do so in 5 weeks! That is the key to their success not just in software but in several other business and cultural fields.

*The partnership factor*

Public-private partnership in the field of IT and software export promotion greatly adds value to the success of the industry. STPI (Software Technology Parks of India, an organization of the then Department of Electronics) is an example of this unique collaboration. Much of the state-run telephone network (and Internet over it) continues to be unpredictable, but STPI satellite earth stations and the STPI scheme for software exports works very smoothly with total support of the user community. Since the whole software production base was essentially built on and for exports, it won tremendous support of the bureaucracy, who in turn benefited by earning valuable foreign exchange for the nation. Besides, the supportive
policy regime also led to higher levels of efficiency in delivery and production for the sector.

Other factors
There were also other aspects such as availability of highly skilled (IT) and English-speaking manpower in India coupled with a shortage of such manpower in the West (especially in the US), a robust IT market at home, availability of venture capital and other funding, and a largely supportive government, that have earned this industry a big name globally. India also gained because of the first-mover (amongst developing countries) advantage and quickly gained a reputation for quality at reasonable cost, and quantity that seemed unlimited. Links with the Indian diaspora, especially in the US, were also well utilised.

While discussing the critical factors in promotion of the software industry in India, we should also look at the initiatives taken by the Government in this direction.

Initiatives by the Government
The New Telecom Policy, 1999 (NTP '99) stipulates targets in terms of establishing Telecom Network with a view to achieve tele-density of 7% by the year 2005 and 15% by the year 2010. It also stipulates targets for providing Internet Access to all District Headquarters by the year 2002. In addition, the Government initiated various pro-active measures leading to the proliferation of Internet Services in the Country. Some of the important initiatives are as under:

- ISP Licence is one of the most liberal licences, wherein no Licence Fee has been levied on the ISPs until 31st October 2003. Thereafter, a token fee of Re. 1 per year is payable w.e.f. 1st November 2003.
- There is no restriction on the number of service providers in all the three categories i.e. 'A', 'B' and 'C'.
- ISPs have been permitted to set up international gateways through business arrangements with foreign satellites providers and collaborators.
- ISPs have been permitted to provide Last Mile access using radio and fibre optics.
- ISPs have been permitted to provide services through cable TV infrastructure/operators.
- The Government has initiated an ambitious plan to develop a National Internet Backbone (NIB) in the country.
- 100% FDI allowed through automatic route to ISPs without gateways, 74% in case of
ISP setting up International Gateways.

- ISPs permitted to set up submarine cable landing stations either singly or jointly in collaboration with international undersea bandwidth carriers.

- National Long Distance Services opened to private sector on non-exclusive basis.

- International Long Distance Services opened up to private sector on non-exclusive basis w.e.f. April 1, 2002.


- Internet Telephony Services opened up to ISPs w.e.f. April 1, 2002.

- De-licensing of W-LAN in 2.4 GHz band using IEEE 802.11b technology.

- Reduction of Performance Bank Guarantee by 50% for Category A & B ISPs and 33% for Category C ISPs.
9.3 IT Act 2000

Highlights of the IT Act, 2000

For a basic understanding of the IT Act by the layman, the salient features of the Act and its relevant portions on e-business are enumerated below:

- Electronic contracts are legally valid. EDI accorded legal recognition.
- Legal recognition accorded to digital signatures.
- Digital signature to be effected by use of asymmetric crypto system and hash function.
- Security procedure for electronic records and digital signatures.
- Appointment of Certifying Authorities (CAs) and the Controller of Certifying Authority (CCA) including recognition of foreign Certifying Authorities.
- Controller to be appointed who will act as repository of all digital signature certificates.
- Certifying Authorities required to get licence to issue digital signature certificate. Various types of computer crimes defined and stringent penalties provided.
- Appointment of Adjudicating Officer for holding inquiries under the Act.
- Establishment of Cyber Appellate Tribunal.
- Appeal from order of Adjudicating Officer to Cyber Appellate Tribunal and not to any Civil Court.
- Appeal from order of Cyber Appellate Tribunal to High Court.
- Act to apply to offences or contraventions committed outside India.
- Network service providers not to be liable in certain cases.
- Power to police officers and other officers to enter into any public place and search and arrest without warrant.
- Constitution of Cyber Regulations Advisory Committee to advise the Central Government and Controller.
- Amendments effected in:
  - Indian Penal Code
  - Indian Evidence Act
  - Banker's Books Evidence Act
  - Reserve Bank of India Act

Important Concepts Introduced in the IT Act, 2000

Some of the important concepts introduced in the IT Act, 2000 are:

- Electronic record
- Secure electronic record
A secure electronic record has been defined in the Act as follows:

Where any security procedure has been applied to an electronic record at a specific point of time, then such record shall be deemed to be a secure electronic record from such point of time to the time of verification.

The IT Act, 2000 prescribes that electronic records are to be authenticated by means of affixing a digital signature. This digital signature must be effected by the use of an asymmetric crypto system and hash function. The concept of a secure digital signature, as the Act puts it, is:

If, by application of a security procedure agreed to by the parties concerned, it can be verified that a digital signature, at the time it was affixed, was

(a) unique to the subscriber affixing it;
(b) capable of identifying such a subscriber;
(c) created in a manner or using a means under the exclusive control of the subscriber and is linked to the electronic record to which it relates in such a manner that if the electronic record was altered the digital signature would be invalidated, then such digital signature shall be deemed to be a secure digital signature.

The technical requirements for effecting digital signatures by the use of an asymmetric crypto system with hash function are a private key to effect a digital signature and a public key to verify such a signature. The private key must be kept secret, as its name implies. The public key must be made available to any individual who needs to verify a signature created with the private key. The Act stipulates that the association between a subscriber's name and his public key should be made available by a duly licensed certifying authority in the form of a digital signature certificate.

The Act provides for a Controller of Certifying Authorities to be appointed by the Central Government. The functions of the Controller include licensing and regulation of operations of organizations that may act as certifying authorities.
A certifying authority provides a subscriber, for a fee, with a digital signature certificate and a private key. The private key is known only to the subscriber. The certifying authority is obliged to:

1. Make use of hardware, software, and procedures that are secure from intrusion and misuse.
2. Provide a reasonable level of reliability in its services which are best suited to the performance of intended functions.
3. Adhere to security procedures to ensure that the secrecy and privacy of the digital signatures are assured.
4. Observe such other standards as may be specified by regulations.

The digital signature certificate of any subscriber is used by anyone who wishes to verify a digital signature purported to be affixed by that subscriber. Thus the basic role of a certifying authority is to establish trust in the name – public key association that is contained in the digital signature certificate.

**Positive aspects for corporate sector**

From the perspective of the corporate sector, the IT Act, 2000 and its provisions contain the following positive aspects:

1. The implications of these provisions for the corporate sector would be that e-mail will now be a valid and legal form of communication in India, which can be duly produced and approved in a court of law. Corporates today thrive on e-mail not only as a form of communication with entities outside the company but also as an indispensable tool for intra-company communications. However, it is seen that in their intra-company e-mail communications they have not been very careful in the kind of language used. Corporates will have to understand the need to be more careful while writing e-mails, whether outside the company or within, as these communications, in whatever kind of language, could be used as evidence in a the court of law, sometimes to the detriment of the company. Even intra-company notes and memos, till now used only for official purposes, will fall within the ambit of the IT Act and be admissible as evidence in a court of law. A possible consequence of this for a typical wired company would be that any employee unhappy with a particular e-mail communication, whether received in an
official or a personal form, may make it the foundation for launching litigation. Further, when a company executive sends an e-mail to another executive in the company with some defamatory or other related material and copies it to others, there are possibilities that he may land in court.

2. Companies shall now be able to carry out e-commerce using the legal infrastructure provided by the Act. Till now, the growth of e-commerce using the legal infrastructure provided by the Act. Till now, the growth of e-commerce in India was impeded basically because there was no legal infrastructure to regulate commercial transactions online.

3. Corporates will now be able to use digital signatures to carry out their transactions online. These digital signatures have been given legal validity and sanction in the Act.

4. The Act also throws open the doors for the entry of corporates in the business of acting as certifying authorities for issuing digital signature certificates. It does not make any distinction between legal entities for being appointed as certifying authorities so long as the norms stipulated by the government are followed.

5. The Act also enables companies to file any form, application or other document with any office, authority, body or agency owned or controlled by the appropriate government in the electronic form as may be prescribed by the appropriate government. India is rapidly moving ahead in the field of e-governance, and it will not be long before governments start interactions with the public by accepting applications or issuing licences, permits, sanctions or approvals online. This provision can act as a great leveller as it will enable all kinds of companies to do a lot of their interaction with different government departments online, thereby saving costs, time and waste of precious manpower.

6. Corporates are mandated by different laws of the country to retain valuable corporate information. The IT Act enables companies to legally to retain such information in electronic form, if
   (a) the information contained therein remains accessible for further reference.
   (b) the electronic record is retained in the format in which it was originally generated, sent or received or in a format which can be demonstrated to represent accurately the information originally generated, sent or received
   (c) the details which will facilitate identification of the origin, destination, date and time
of dispatch or receipt of such information are available in the electronic record.

7. The IT Act also addresses important issues of security which are critical to the success of
electronic transactions. The Act has also given a legal definition to the concept of secure
digital signatures which would be required to have been passed through a system of a
security procedure, to be stipulated by the government at a later date. In times to come,
secure digital signatures will play a big role in the new economy particularly from the
perspective of the corporate sector as it will enable more secure transactions online.

8. The IT Act has defined various cyber crimes and has declared them penal and punishable
with imprisonment and fine. These include hacking and damage to computer source code.
Often corporates face hacking into their systems and information date; the corporates
were in a helpless condition as there was no legal redress such issues. But the IT Act
changes the scene altogether.

However, despite the overwhelming positive features of the IT Act, 2000 for corporate sector,
some more legislations need to be enacted by the government in related areas.
9.4 The Info-Structure – Issues/Inhibiting factors

Success in the digital revolution depends on several key preconditions. A well functioning, modern telecommunication infrastructure and a satisfactory distribution of electricity, along with access to computer hardware, software, and servers are the basic technical requirements for electronic transactions. For e-commerce to be successful and grow, however, hardware and physical infrastructure are not sufficient. What is required is an ‘info-structure’, namely

- the framework and environment for e-commerce that includes the appropriate legal and financial framework,
- the political and business environment conducive to its development, and
- the capacity or human resources to deal in it.¹¹

An e-compatible legal and financial framework

Legal framework

Legal issues encompass two basic areas – those of regulation and those of making legal systems compatible to and for e-commerce. The latter, though perceived as being facilitatory in content, requires the former for it to be effective. There are in fact many things that governments might reasonably want to regulate on the Internet. These include not just serious affronts to human values such as child pornography and incitement to racial hatred, but also consumer protection, the defence of intellectual property rights, and taxation. These are all issues on which countries already have legislation. The existing rules and laws would and should apply to the Internet and e-commerce. The problem is not whether the Internet should be regulated, but how. This entirely new mode of communication poses several entirely new sorts of problem for regulators.¹² On the first, though governments (such as the US government) have taken several steps, countries like India are yet to develop reliable technologies.

Security and control provisions in the IT Act, especially those relating to cyber-crime, have been criticised by the media and free-speech advocates. After all, the right of freedom of speech and the right to information are fundamental to democracy, and attempts to control IT and e-commerce must not seem to be attempts to curb the growth of the Internet (as some countries in the Middle East and China are attempting to do). The broad and sweeping powers given to the police (without a warrant or judicial overview) have been criticised by several experts as well as by NASSCOM. The Government needs to be extremely careful in this area
as attempts at controlling pornography should not be seen as, or result in, creating hindrances to the growth of the Internet in India.

One of the criticisms levelled against the IT Act is that it does not have any clause ensuring security and protection of the on-line consumer. Legal opinion is divided on this point, with some experts arguing that the existing Consumer Protection Act, 1986 is quite comprehensive and can be extended to cover on-line consumers also, as, after all, on-line shopping is just another way of transacting business. However, even if this be the case, there are several aspects peculiar to digital transactions such as electronic payments, confidentiality, transaction data etc. that lead to problems in cyberspace.\(^{13}\)

**E-governance**

Much of the IT Act as promulgated deals with citizen interaction with government – certainly a proper and far-reaching mission towards e-governance. E-governance implies action and commitment of the state and its agencies at two levels:

(a) the promotion of ICTs – especially, e-commerce – on the one hand and

(b) the adopting of these technologies and all they involve in the matter of a completely new type of commitment, open systems and use of the Internet for government business, citizen interaction and – most important – for development.\(^{14}\)

But there are several hurdles before this becomes a reality, the main being that government departments not only lack the hardware for electronic transactions but will also need to reorient their systems and procedures before they are ready to interact through electronic documents.

Some of the challenges in this regard arc:

- Handling the feudal mindset – information is seen as power and those possessing it do not wish to give it up.
- Implementation requires change management and re-engineering of government agencies, and not so much of technology.
- Transparency, i.e. the issue of making government dealings (including procurement) transparent, thereby reducing corruption.
- Labour and Union problems in government (as these are perceived to be a threat to established procedures and vested interests).
Implementation of e-governance is quite obviously not going to be easy or smooth. There is still a great deal of confusion among implementing agencies at various levels as to what exactly e-commerce and e-governance are and how to go about them. Part of the problem is that some of these organisations have inadequate internal computer personnel who have their own limitations in understanding and implementing e-governance schemes or in serving as a bridge between the organisation and professional external organisations. There is also the need for integration and convergence of services offered by different departments so that a truly single point service can evolve. Extensive coverage of rural areas is also going to take time.

Financial framework

One of the main concerns of developing countries is the perceived dangers of foreign exchange outflow on account of e-commerce, i.e. through the purchase of goods abroad. Figure 9.4.1 presents the results of a study in this regard.

This study indicates that the higher the development of e-commerce within the region/country, the higher will be the purchases from within. In order, therefore, to encourage e-commerce development, banking procedures within developing countries need to be aligned and made compatible with digital trade transactions, so that consumers and buyers can easily make purchases locally through the Internet.

Along with changes in contract and company law, e-commerce would also require a financial and banking framework that allows for electronic payments and transfers. This would include
requirements for certification of documents, electronic signatures, confidentiality, and privacy. Therefore India needs to put in place both the electronic network (between financial institutions) and the regulatory framework to allow for such transactions. Banking regulations (and rules as a result of the changes in the RBI Act) thus need to be adjusted to the new formats and requirements. The IT Act needs matching implementation at the fiscal regulatory level.

E-commerce and Taxation

Taxation issues have a bearing on the very foundations and growth potential of any economic idea. In the case of e-commerce, the ramifications are global and affect the very concept and development of e-commerce, as well as the policy that each developing country would need to adopt regarding its foreign trade and internal taxation. This is important as, for most developing countries, domestic taxes and import and export duties continue to be a primary source of revenue.

There are three levels at which the issue of e-commerce taxation needs to be analysed for national strategy:

1. Does e-commerce have an impact on existing tax laws (including those for exporters)?
2. Are new tax arrangements required to address e-commerce based international trade?
3. If so, how will they be implemented?

The question of enforcement arises for both existing tax arrangements and possible new laws. Essentially the enforcement problem arises when commerce has taken place purely in a digitised format, i.e., where all parts of the transaction have been completed ‘on-line’ in digital or computerized format and no goods have directly passed through a recognized customs or domestic tax point. Where e-commerce operations have only been used to communicate and set up a transaction and the actual delivery is by regular means, the existing customs duty and tax regulations and procedures continue to apply and can be monitored.

For digital transactions, the issue for the authorities is how to monitor or even be aware that a transaction has taken place. One solution proposed in April 1998 by an independent committee appointed by the European Commission involves the now infamous ‘bit tax’ (i.e., a tax on the ‘bits’ of information zooming around computer networks). The basic problem with a ‘bit tax’ is that it is indiscriminate: it would tax not just on-line transactions but all
digital communications, including e-mail. Also the question of valuation would be difficult to determine. Though this proposal was quickly dismissed as being highly impractical and crippling for the growth of the Internet, some organisations have in fact suggested the possible utilisation of the ‘bit tax’ concept, or any other such means of taxing e-commerce, as a means for creating a global development fund. Another concept being proposed is that of the ‘base erosion’ approach which involves a low withholding tax on any payment to a foreign enterprise. This concept too its fraught with several complications.

The basic problem is that e-commerce threatens the fundamental concept of PE, or ‘permanent establishment’, on which most taxation regimes are built. A recent CBDT committee on e-commerce taxation has, however, recommended that the concept of PE be dropped as it is not relevant to e-commerce and an alternative be found by the UN. This committee has also recommended that e-commerce not be kept out of the tax net. In the United States, which does not have a federal sales tax, the idea has not found much favour and the present US administration rejects the idea of any new taxes on the Net.

No matter what the final decision on taxing e-commerce, the basic problem of enforcement will remain. It is essentially dependent on the co-operation of the taxable persons and the producers. Also if taxation, and its strict enforcement, are limited to only some countries, businesses in these countries will simply move off-shore and on-line transactions will take place in a state or country where there is no such tax. Since new businesses focussing on electronic products or the electronic provision of services can be easily moved, any threat of increasing tax liability will just lead them to resort to methods such as transfer pricing to avoid the location-specific liability. This needs to be remembered in India.

**E-enabled human resources**

E-commerce is changing the way we do business. Today’s knowledge revolution largely depends on intellectual capital. We have moved from an industrial economy where machines dominated productivity, to an information-based economy where intellectual content, for which there are no geographic boundaries, is the dominant source of value added. If developing countries are to benefit from this new technological and economic boom that the growth of e-commerce represents, they would need to have the most important component—human resource—in place.
At present, India has this resource in abundance, and opportunities of the new economy could provide it with excellent results. To ensure sufficient human capital, however, pro-active policies and investments in education (especially technical) are needed to realise the potential. After all, to be e-literate, citizens first need to be literate.

As e-commerce develops and the more advanced stages of commercial exchange (i.e. contracting, payment reconciliation, auditing etc.) are carried out electronically, more specific skills are going to be required. Even for surfing the Internet for a product or service, basic familiarity with the computer and knowledge of the Internet is needed. From website design to electronic credit management and software and hardware maintenance – all require skills that may not be so easily available. India must adequately prepare for and ensure its e-readiness for them. Despite the global slowdown, countries across the globe (US, UK, Germany, France, Italy, Japan) are still offering special visas for attracting Indian software engineers. Though a great opportunity for these individuals as well as beneficial for the country in the long run, serious plans are required in India to increase the output of skilled professionals in order to meet the growing demand within the country itself, lest the shortage affect our own growth in e-commerce.

The issue of 'brain-drain' has been talked about for years. Many though see it today as a 'brain-gain' on account of the tremendous benefits in the IT sector that these professionals have brought and are bringing to the country. However, a more serious issue that needs to be addressed at the international level is what could be referred to as the surreptitious creation of 'high-tech indentured labour'. The developed world, to meet its own shortages and requirements, decides on both the timing and conditions of importing such professionals from developing countries. In times of recession, they shed such jobs and repatriate the professionals. This is a serious issue and needs to be given due attention.

**Issues of market access: Customs duty**

Customs duties are a very important source of revenue for cash needy governments in poor countries. It is therefore, important that the full implications of levying duties or otherwise are studied carefully and time given (for better technologies to emerge that would make duty valuations possible and enforceable for digital commerce also) before any final decisions are taken on this matter.\(^{18}\)
According to an UNCTAD study that tried to estimate the loss of revenue on account of digitisable products being purchased on-line, the tariff revenue loss accounts for less than 1 per cent of total tariff revenues. This appears to be confirmed in the Indian case. According to a recent ASSOCHAM report, India imported digitisable media products to the extent of USD 198 mn in 1996 when the applied tariff rate was 26%. The estimated tariff revenue was USD 51.3 mn. Assuming that media products account for 50% of total products deliverable in digitisable form, the revenue loss would be about USD 100 mn, which is less than 1% of the total revenue from import duties. Of course this does not take into account e-commerce services, be they financial, travel, architectural design etc. But then internally we do not tax these directly and today we do not really account for these, as such advice or service conveyed through fax or phone is not taxed.

For India, there are two dimensions to this tariff issue – time and policy. On the first of these, the basic fact is that we really have nothing to lose as of now if the issue of e-commerce remains undecided or unresolved at the WTO. After all, our software and IT-enabled services exports are continuing to grow at a high rate. Does e-commerce threaten our duty collections substantially? Apparently not for the moment, but we may be not willing to extend the 'standstill' indefinitely as we may have such need or requirements to levy duties in the future. It is important to note here that on the domestic front, the question of taxing e-commerce is still under consideration and the Central Board of Revenue has last year circulated a policy paper on it. The industry position on this, as represented by NASSCOM, is that no tax or duties should be imposed on digital e-commerce.

Intellectual property rights and e-commerce

For policy-makers, there are two areas which need to be addressed and understood. The first concerns the management of the Internet addresses, which essentially means exercising whatever marginal control there is over the medium. The second area concerns the protection of IPRs over the Internet. As the Internet is the platform for global e-commerce, the administration of the domain names system is important from both a policy and procedural perspective. The principal players in this are the Internet Corporation for Assigned Names and Numbers (ICANN), and the Domain Name Supporting Organisation (DNSO), which take the few central decisions concerning protocol or for allocating Internet addresses or domain names. These are important issues, the latter with strong commercial implications for the trademarks issue. Developing countries need to be represented on these bodies.
In India, the issue is to develop technology and regimes that can be applied to the digital environment in a manner that promotes electronic commerce while protecting IPRs. Indian law and the courts have already taken a very proactive stand vis-à-vis trademarks registrations and their support vs. domain names. The Indian position, therefore, should be to continue to support the IPR regime while demanding representation on standard-setting bodies such as ICANN. India should also ask for an easier and more affordable access to the arbitration mechanism at WIPO in the matter of disputes over domain names and in WTO over issues concerning TRIPS.
9.5 **Towards an E-commerce strategy for India**

Whether as a tool for development and governance domestically, or to promote and increase export growth and international trade, India needs to adopt a proactive role. It needs to ensure that the benefits of e-commerce accrue to those trying to overcome economic marginalisation due to geographic, financial, technological, or educational handicaps. Indeed, the need to close the gap between those with abundant information and the ‘information poor’ provides a strong rationale for the development of e-commerce as a national objective.

As has been brought out in this study, it is essential to create a policy and regulatory environment that favours the development of e-commerce and harmonises national approaches in diverse areas including telecommunications, trade, competition, intellectual property, privacy and security. Since the key to this is the telecom and Internet network, appropriate policies are a must to reap the benefits of this emerging opportunity. Research is therefore required to examine different initiatives worldwide and their relative success and adaptability for India.

*Development objectives*

A developing country such as India faces a special challenge and responsibility to create a conducive policy environment that, on the one hand, allows for the development of e-commerce and, on the other hand, ensures the social objective of providing access and benefits for those who cannot afford it. E-governance, public Internet terminals, rural access at subsidised cost and eAwareness are some of the initiatives that must be considered and promoted. In order to attract the investment needed for telecom and e-commerce promotion, it is simultaneously necessary to ensure that the regulatory approaches are transparent, harmonised, and independent of specific technologies along with open and competitive telecommunications policies.
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CHAPTER 9

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8. Software Technology Parks of India, a body under the then Electronics Department.
15. UN Human Development Report 1999, South Centre, Union Network International etc. talk of this possibility.
17. On-line transactions could of course be between different sites located in different countries, but since it would probably be the suppliers that would be targeted for taxation, they could locate their site in a tax haven.
21. Domain names are the people-friendly form of Internet addresses designed for computers to recognize the address of a particular site on the network.
22. Top level (country) domain names can even have a political significance, as in the case of Palestine having recently been granted the “.ps” domain. And countries with interesting and commercially significant Web domain addresses like “.TV” for Tuvalu in the Pacific can sell the rights to commercial enterprises (in this case multimedia companies) to register companies with their suffix, and Moldova can sell registration rights to US doctors to register with their unique suffix – “.MD”.