CHAPTER 11

E-COMMERCE STRATEGY FOR INDIA

11.1 The Digital Divide

In spite of the increase in e-commerce activity in India, the access to information has so far been limited to a small fraction of the population when measured in terms of access to the World Wide Web. It is becoming clear that there exist massive differences in access to ICT. This is known as the "digital divide" and it exists between the economically developed sections of the population and those in the low income groups. Various surveys reveal that ICT has initially given an advantage to the rich, excluding the poor from its benefits. This phenomenon is, however, true for all countries. It exists in the so-called "North" and the "South". An analysis of the "digital divide" around the globe indicates that less than 5% of the world’s population has so far gained access to ICT. This is true of India as well. It is, therefore, important to examine how ICT, especially e-commerce, can improve the conditions of life for the 95% lacking access to ICT. The basic question is whether scarce resources should be invested in ICT or in providing basic needs, when most people lack basic education, essential health care, and adequate nutrition.

In this context it is important to understand that there is no contradiction between ICT and the other critical human and social goals. ICT is not an end in itself. It is an instrument in the pursuit of other goals. Investment in ICT helps not only economic growth but also society in a variety of ways. The most creative use of ICT seems to be in the application of other computer-based technologies, including embedded chips and satellite based information in order to meet local needs better.

To illustrate this point, one application that has been successfully adopted in India relates to the dairy sector. ICT has helped this industry, which is the world’s largest producer of milk and dairy products. It started with the setting up of a well-organized co-operative movement of dairy producers in Gujarat. Traditionally, individual milk producers brought their milk to the central collection point, where payment was based on volume and the butterfat content. Volume was easily ascertained, but assessing the butterfat content was a complex process. This meant lengthy delays before payment. Complaints and charges of fraudulent assessment were frequent.
The solution to the problem involved the use of partially automated equipment. Initially, expensive imported instruments were used at the milk collection centres. This totally automated butterfat assessment machinery was of European manufacture and functioned poorly in Indian conditions. This was therefore replaced by a local design featuring computer-based assessing equipment. It was less sophisticated, less expensive, partially automated and needed some human intervention; but it gave accurate butterfat readings in a few minutes. This computer-based equipment gives a readout that automatically combines the volume of milk with butterfat content to yield a payment voucher immediately encashable by the farmer. The new process was transparent. It diminished delays and complaints and satisfaction of suppliers increased considerably.

In addition to private-public participation, the private sector has also singly participated in such projects, which has lead to the development of the community. One such example is that of ITC (formerly the Indian Tobacco Company) in Uttar Pradesh. The company has developed a nexus between the grower and the market, yielding benefits to both. The ITC project suggests that interventions linked with the stage of development and resource strength in a particular geographical location can benefit rural masses considerably.  

Another example of creative use of sophisticated ICT relates to fishermen living on the Andhra Pradesh coast of the Bay of Bengal and on the Kerala coast of the Arabian Sea. In both these areas, scientists from the Indian Space Research Organization (ISRO) download information on ocean temperatures from satellites. This information helps predict where fish are most likely to be found offshore. The scientists translate the digital satellite information into maps of the offshore fishing areas, which are transmitted by telephone or fax to the coastal regions, increasing the probability of better catches. Here, sophisticated satellite technologies serve local fishermen to improve their livelihood.

ICT also plays an important role in improving the efficiency of firms and industries, enabling them to compete in an open economy through increased information flow. This results in knowledge transfer as well as improved industrial organization. ICT also makes possible the emergence of new activities such as online outsourcing of services and production of different types of goods. In particular, ICT has become an important tool for improving productive capacity and increasing international competition by reducing the transaction costs.
In spite of the rapid growth in e-commerce and related ICT activities in India, its access has been limited to a very small fraction of population causing a “digital divide”, the character and contours of which are shaped by the policy and regulatory environment in the ICT sectors. Consequently, India has reached the Information Age but its masses have not been able to avail of its full benefits. This is due to insufficient telecommunications infrastructure and Internet connectivity, high cost of Internet access, absence of adequate legal and regulatory frameworks, and failure to use local languages and content. Keeping these constraints in mind, this chapter presents policy imperatives that will help growth of ICT and consequently, e-commerce in the near future.

**Reducing cost of access and bridging the “Digital Divide”**

For enhancing the use of e-commerce and ICT, one of the most important requirements is the access and affordability of these services. While the Indian telecom sector has made considerable efforts in the past through liberalization and restructuring, much more needs to be done.

The National Telecom Policy 1994 emphasized the provision of affordable telecom services, and gave a thrust to the liberalization of the overall sector. The Telecom Regulatory Authority of India (TRAI) was created through the TRAI Act in 1997, which gave broad powers to make technical, licensing, and operational recommendations, and facilitate healthy competition. The IT Action Plan, 1998 was an important milestone for the ICT-related sectors in India. The country’s informatics policy and strategy was given a forward thrust with the setting up of the National Task Force on Information Technology and Software Development, in 1998. The Task Force brought out its first basic document, IT Action Plan I, in July 1998. The Action Plan contained recommendations to facilitate India’s emergence as an Information Technology Superpower. This was followed by IT Action Plan II (October 1998), which focussed on IT hardware and the associated services sector. IT Action Plan III, released in April 1999, focussed on a long-term national IT policy. The Action Plan forms the basis for the National Informatics Policy, which came into effect in 1998.

**Reduction in cellular tariff**

With the above policy measures cellular tariffs have reduced over time, but they must fall further to be affordable to all. The prices of handsets have come down by over 90% between May 1999 and 2001. As a result the cellular subscriber base has significantly increased. This is a promising sign. The cellular services industry has consolidated significantly over the past
With the announcement of the Internet Services Provision (ISP) Policy, in January 1998, the monopoly of the then Government operator, VSNL, ended. Subsequently, in August 1999, ISPs were permitted to set up their own International Gateways for Internet provision. Some issues relating to DOT interconnect charges were also resolved in favour of private ISPs. In April 2002, restricted IP telephony was allowed.

The internet subscriber base in the country on 31st March, 2006 stood at 6.94 mn against 5.55 mn a year earlier – an increase of about 25%. The Planning Commission projects the increase of subscribers and users in the near future as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Internet Subscribers (Million)</th>
<th>Broadband Subscribers (Million)</th>
<th>Internet Users (Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>15</td>
<td>6</td>
<td>75</td>
</tr>
<tr>
<td>2007</td>
<td>35</td>
<td>14</td>
<td>175</td>
</tr>
<tr>
<td>2009</td>
<td>60</td>
<td>24</td>
<td>300</td>
</tr>
</tbody>
</table>

Source: Planning Commission

India’s aggregate international Internet bandwidth has also grown from nearly 80 Mbps in January 1999, to about 3Gbps as on January 2003. Subscribers, as shown above, are also going to increase from 6 mn in 2005 to 24 mn by 2009.

However, fulfilling these targets seems rather far fetched owing to three pre-conditions, viz., infrastructure access, access devices and content costs. The Internet Service Providers Association of India (ISPAI) points out that the bottlenecks include the high cost of leased lines and the high costs of renting premises when co-location is resisted. Almost 85% of the Internet traffic is routed through the US. International connectivity has high costs attached. If this situation is reversed through a domestic Internet exchange, it would save costs all round. Although a decision to set up such an exchange was taken two years ago, there has been little progress.

**Affordable Internet subscriber tariff**

Internet tariff has progressively come down, although this is neutralized to some extent by the increase in telephone dial-up access charges. The cost of Internet leased lines has also dropped significantly over the last few years. However, Internet access is still unaffordable
for the average consumer; it remains in the urban domain, although it has made some inroads in rural areas.

While the tariffs for cellular services and long-distance services are market determined, fixed-line service tariffs are regulated by TRAI. The trend in urban local tariffs, in recent years, has been to reduce cross-subsidy between local services by promoting long-distance services. But the Government owned BSNL faces stiff price-competition in long-distance services, which makes cross-subsidy of local services no longer as practicable as it was in the pre-competition regime. In terms of the digital divide, several marginal urban telephone owners will be priced out of the subscriber base. This trend is already noticeable in metros such as Mumbai. It points to the need for increasing public access in urban and rural areas and making it affordable.

**Subsidising rural tariff**

Rural tariffs contain a high subsidy component. Even at these levels, affordability is low in rural area and is limited to a small portion of the population. Over 85% of the rural population cannot afford to own telephones. It is also observed that a significant proportion of outgoing rural calls are long-distance. This underlines the need to provide a model with sustainable public access, with rural PCOs providing STD facilities. At present, a large proportion of rural PCOs are not equipped with STD facilities.

**Implementation of National Internet Backbone**

One of the significant contributions in increasing Internet access has been the implementation of the National Internet Backbone (NIB). With its completion, Internet Points of Presence have been provided at district headquarters, and Internet calls to the nearest Point of Presence are charged at local call rates. As a result, Internet access is available from every exchange in the country. However, reliable telecommunication needs to be extended to exchanges (RAXs) at the lowest level, and it should be ensured that these exchanges are equipped to fall in with the National Synchronization Plan.

**Strengthening regulations for E-commerce**

The Information Technology (IT) Act, 2000 provides the legal and regulatory structure for e-commerce and e-governance in India by addressing the issues of electronic documents, signatures, encryption, payments, and other features that are an integral part of an e-commerce economy.
Various provisions of the IT Act serve the purpose of legitimising electronic documents and transactions and establishing their authenticity and integrity. Also, these provisions make cyber crime punishable by law. The Act also provides for dispute resolution mechanisms through adjudication, and a higher appellate body in the form of a Cyber Regulations Appellate Tribunal.

The Act provides for investigation of cyber crime by a person not below the rank of Deputy Superintendent of Police and penalties for hacking. It provides for paying damages to persons affected by contravention of the Act, and allows for limitation of Network Service providers’ liabilities in case of violations committed by users, if they can demonstrate that these occurred without their knowledge.

Other legislations which have implications for the implementation of the IT Act are the Indian Penal Code, The Indian Evidence Act, The Banker’s Book Evidence Act, and the Reserve Bank of India Act. These have been suitably amended to make the Information Technology Act operational.

In addition to the IT Act, the existing Indian laws should be synchronised with widely accepted international tax norms. An advance pricing agreement programme should be immediately introduced and an advance ruling authority should be fully empowered to deal with interpretation and application of transfer pricing regulations, just as most courts around the world do.

India’s withholding of a proper tax regime and its practical applications has had a predictable fallout. It is the single biggest impediment to trade with and investment in India. India has traditionally insisted on source-based rather than revenue-based taxation.

However, in a few years from now India will move from IT services to becoming the global IP hub, whereby it will begin to generate revenues from licensing and sale of products. If this happens, India will have to forego its revenue first to source states and give credit against foreign taxes, leaving very little to be taxed in India.

Therefore, there is a need to reconsider India’s stance on this front. It is essential that there be pragmatic and frequent use of CBDT’s powers to issue clarifications in conformity with internationally accepted principles. CBEC must introduce advance rulings in the indirect tax
field for completed transactions (and not only to proposed transactions, as is currently the case) as provided for under the direct tax laws.

**Tightening information security**

Information is an intangible asset for a business organization. The security of information is essential for the very existence of a business. This enables the business to maximize its return on investments, and acquire more business opportunities. Hence, for e-commerce to be successful, security of information is of paramount importance.

All information, whether printed or written on paper, stored electronically, transmitted by post or using electronic means, shown on films, or spoken in conversation or in whatever form it is shared or stored, must be appropriately safeguarded. Failure to do so will mean that no organization will venture into e-commerce transactions because much of the information stored on computers or shared or exchanged with business partners is of critical importance to them. Information security enables protection of information and computing assets. It has three basic components:

- **Confidentiality:** This requires protecting sensitive information from unauthorized disclosure or intelligible interception. In fact, there is a growing concern that the information may be disclosed or modified, e.g. due to misuse, error or theft. Increasingly, organizations and their information systems are faced with a range of security threats from computer-assisted fraud to sabotage to the more traditional threats of vandalism, fire, flood and other disasters. Apart from commercial reasons for protecting information, businesses have legal obligations to take care of the personal information entrusted to them. Good information security implies actions, which relate to the prevention of unauthorized or unlawful processing, and of accidental loss or damage to information.

- **Integrity:** Business integrity requires safeguarding the accuracy and completeness of information and software; and

- **Availability:** It is important to ensure that information and vital services are available to users when required. This implies that the information will be protected from computer viruses and computer hackers.
Information Security Management System (ISMS) is the means by which senior management monitor and control their security, minimizing the residual business risk and ensuring that security continues to fulfil corporate, customer and legal requirements.

In order to build an appropriate ISMS, the first step of an organization should be to assess and define specific security requirements, design a solution that meets those unique requirements, deploy the necessary policies, technology and procedures and continuously maintain, adapt and improve that solution to meet changing requirements. An organization's overall information security strategy will provide such a framework.

In this context, it is extremely important that the person involved in e-commerce has the requisite confidence in the network security. Various initiatives of the Department of IT, as given below, will strengthen the confidence of the consumer in network security:

1. The IT Act 2000 covers security of information under e-commerce, e-governance, computer related offences, and security related issues

2. Indian Computer Emergency Response Team (CERT) has a mandate to serve as a central point for responding to computer security incidents and provide a reliable, trusted, 24-hour referral contact for emergencies; to disseminate best practices among system administrators and service providers; to increase awareness and understanding of information security and computer security issues among the Indian cyber user community; to alert the community on latest security threats in the form of advisories, vulnerability notes and incident notes; to serve as a coordination centre among organisations to solve computer security issues; and to establish linkages with similar organisations in the international arena.

3. Information Security Management (STQC) Services have been developed to issue certificates on the quality of security management (e.g. giving BS 7799 part 2 certificate); imparting training and conducting workshops or seminars to create awareness among users on topics related to information security; conduct audit and assessment of ‘Network Architecture Security Assessment’; to conduct IT security audit and developing norms of security standards, and conducting research and development in these areas.

4. R&D in e-commerce and Information Security: The Department of IT is helping to
develop R&D capabilities in core technologies and national capacity building. It is funding several projects at leading academic institutions, R&D laboratories and industrial units, helping build up IT capabilities.

5. Cyber Forensics: The department is engaged in issues related to fraud detection in the use of cyber sources. In this context it has prepared a Manual on the handling/processing digital evidence. Also, a state-of-the-art Cyber Crime Lab has been set up at the National Policy Academy, Hyderabad, to conduct training for law enforcement officers and forensics personnel on procedural and technical aspects of cyber forensics. A Technical Resource Centre has also been set up at C-DAC, Thiruvananthapuram, to develop appropriate indigenous technology for handling/processing digital evidence and to undertake R&D in Cyber forensics.

6. Human Resource Development: The department is also engaged in developing requisite human resources for the application of the security issues developed by it. In this context, it has chalked out a plan of action in HRD on Information Security & Enhancement of e-commerce skills. The programmes involve both long term and short term certification Courses (CISA, CISSP etc). The different programmes are under various stages of implementation.

While the efforts of the Department of Information and Technology are appreciable, it is important that the next generation cyber laws are prepared well in advance. It is essential to review India’s experience in implementing the IT Act. Deficiencies in existing laws need to be removed and suggestions put forth to improve them. Also, it is important to analyse the experience of other countries in implementing their respective cyber laws and the manner in which these have been addressed. Finally, to draw upon the experience of international agencies, it is useful to study new cyber laws/acts enacted in the world, with special emphasis on the work of UN and other multilateral agencies like UNICTRAL, WIPO, UNCTAD, European Council etc. A study group should be appointed to analyse their relevance in the Indian context and thereby formulate appropriate Indian cyber laws.

The IT Act allows businesses, governments, and citizens to communicate electronically. With the legal validity and admissibility accorded to email, for instance, it could become a formal medium of communication both within the organization, and with external parties.
E-commerce will get an impetus, as on-line transactions and digital signatures are made legally valid and become admissible as evidence. Further, mandatory corporate information can be preserved in electronic form, as long as authentication and format issues are dealt with in the course of electronic recording.

E-government will also be more effective, as documents can be filed electronically, governments will be in a position to issue authenticated licenses, permits, and authorizations on-line, and citizens will be able to transact conveniently with various governmental departments.

One of the contentious issues is ensuring the privacy of citizens’ data. The CCA has been given powers to access any data, if the need arises, in the national interest. There is a point of view that these powers go against the principles of data privacy. On the other hand, there is a view that cyber crime needs to be tackled effectively, and there isn’t enough evidence of the efficacy of IT in this respect.

In spite of these limitations, the positive aspects of the IT Act will go a long way in building the environment for legal and secure electronic business and governance.

**Convergence of all communications**

Today, separate regulatory mechanisms exist to govern telecommunications, data networking/Internet services, and cable TV broadcasting. These, by and large, make distinctions on the basis of technologies and media.

On-going technology developments have resulted in increasing convergence of media and technologies. Convergence is possible at the provider’s end as well as at the consumer’s end. The traditional boundaries between telecommunications, computing and broadcasting are slowly disappearing. Voice communication, data, and video/broadcasting services can be transmitted over IP Networks. Cable TV networks and receiving sets can be used for Internet services. A service provider thus has a range of technology options to provide his applications/content. A consumer, similarly, has a choice of options to receive communications and information/entertainment services.
Against this backdrop of convergence, dealing with several regulatory mechanisms that distinguish on the basis of technologies becomes increasingly impracticable, particularly from the point of view of providers who wish to exploit the concept of convergence and convergence technologies.

It is in this context that a Convergence Bill was drafted in the year 2000, and made open for debate and consultation. The Bill seeks to facilitate the use of convergence technologies in the provision of communications services, to draw more realistic categories of service providers, and thus facilitate the exploitation of convergence, ultimately benefiting the consumer.

**Urgency of Last Mile Connectivity**

Last mile connectivity is of cardinal importance in the promotion of the Internet in a country like India where two-thirds of the population lives in rural areas. While network expansion has been attempted in most urban areas, there still exists the problem of connecting it to the villages, known as the problem of the Last Mile Connectivity. Fibre is expensive and the cost to the subscriber is prohibitive. Use of DSL technology with its variations is one good answer, as it partly enables the existing copper wire network to be used for Internet and for broadband. BSNL is providing a pilot scale broadband service on copper wires using DSL technology. However, the problem with the copper wire network is that BSNL and MTNL own 95% of it and are reluctant to share this capacity with their competitors.

Access devices and their costs also keep the middle class out of the Internet loop. The cost of the PC, Windows OS and unreliable power supply create the need for expensive back-up systems. In addition, with the lack of a PC recycling system, all of these are listed as access hurdles. Alternative access devices have not fulfilled their promise. The Simputer, for instance, does not give significant cost savings for the level of features it provides, and there is no widespread business model for bundling the access device with Internet services at a monthly instalment rate, which some mobile service companies are presently doing. Adding to these woes is the lack of availability of significant local language operating systems and applications. In addition, content providers are hesitant to invest in space as there is no widespread base of subscribers. Moreover, there is no incentive for the Internet user to invest in Internet subscriptions and devices. The entire set of factors acts to mutually reinforce their impact decelerating the growth of the Internet.
There is an inverse relationship between the present Internet costs and infrastructure. Both the cost of a PC and the cost of a DSL or cable modem is more in India than in Korea where their use is the maximum (over 50%). In India, the competition is between copper with DSL, fibre optics and wireless, and the quality of service (QoS) should be a factor built into any arrangement. QoS, however, cannot be a sole responsibility of the ISP, as the access provider also comes into the picture. ISPs want any media for setting up the last mile. This will create problems of interconnection with the access provider’s infrastructure.

Under the present circumstances, it will be interesting to see how the Reliance Infocom experiment with its own broadband service works out. Now that the government is going to lift the 49% ceiling on FDI in telcos for all purposes, the investment in the last mile should rise and the basic complaint of innumerable Internet/broadband users about the quality of service should be a thing of the past.

While huge investments have been made in the broadband sector, it is important to jumpstart broadband in a meaningful way. It is important to note that India needs to vigorously pursue a proactive national broadband plan, similar to the one pushed by the government of Korea. This will reduce costs considerably. Significantly, the US is far behind with a penetration level of around 10% and a monthly price of USD 25, as compared to Korea where the penetration level is 58% of households at a monthly price of USD 20. A national broadband policy could be used in a very cost-effective manner for the masses in India, provided in a phased manner, to all government owned educational institutions and get the curriculum development authorities incorporate distance learning into the education system.

A significant contribution that broadband can bring to education is the sharing of teachers. If a teacher is absent at one school, the students could still attend class via a two-way video connection at another location. As another example, many schools do not teach certain subjects for want of enough students take that particular course; hence, it is not worth employing a special teacher. Videoconferencing can help aggregate such students across the country. This would make it easier to gainfully employ a few experts in certain areas. Distance learning is also an excellent means to train teachers, who cannot travel to attend special training programs, to keep pace with the rapid changes in science and technology. Broadband distance learning will have a positive impact on teacher employment, and give youth better opportunities to develop their potential.
Finally, policy and facilitation will now become more important because technologies are not the barriers. They already exist: e.g. corDECT for rural connectivity with a variant termed nLogue, free-space optics (FSO), 3G mobile and VSAT. Wi-Fi could also be fruitfully used for the last mile access. This is the cheapest means to bring telecom to India’s educational institutions and villages. As it is broadband, remote doctors can actually see their patients and remote teachers their students. Networks, as large as dozens of kilometres away, are being set up worldwide, with information hopping from node to node as it does on the Internet.
11.2 Stepping stones to make countries e-competitive.

Five stepping stones to make countries e-competitive

*International Trade Forum - Issue 1/2001*

**Legal framework**
- Create trust in the mechanics of e-trade (electronic signatures, copyrights, consumer protection, consumer privacy, dispute resolution).
- Reinforce international competitiveness (tax laws).
- Don’t overregulate: overregulation creates technological bias and unforeseen barriers.
- Work internationally: e-commerce is by nature without borders and harmonizing national laws is critical.

**E-government**
Give citizens online information and transaction services. Emphasize online government services for exports. E-government has several benefits:
- greater public-sector efficiency and transparency;
- faster, more accessible services for business; and
- induces firms to become e-competent, to benefit from online procurement, export information and administrative requirements.

**Financial access**
- For the public sector, to develop telecommunications infrastructure.
- For digital economy start-ups that require initial working capital.
- For “bricks and mortar” firms that wish to invest in computers and build e-trade capabilities.

**Education and training**
Governments do not have the resources to invest single-handedly in necessary changes.
- Explore public-private initiatives; IT corporations, for example, may have training institutes that can be adapted to broader uses.
- Consider high-end training for IT specialists, more basic training for employees, e-literacy for the general public and e-management events for senior managers.
- Reconsider the role of Internet service providers (ISPs), Internet cafés and community centres.
- Bring technology into the classroom at an early stage, and keep it there.
Internet access

Basic telecommunications services and Internet access are essential.

- Leapfrog if you can, but don’t postpone decisions based on evolving technology.
- Focus on technology that does the job, not necessarily the latest technology.
- Consider low or no tax on hardware and software imports in order to promote access.
- If you must choose, concentrate first on serving areas where export businesses are clustered.
- Leverage your resources: find ways to maximize the number of users per connection. Combine Internet access and training, for example, by setting up community telecentres.
11.3 Strategy for rural e-commerce in India

11.3.1 Rural e-commerce – an advantage and a challenge

The obvious advantage of rural e-commerce is the removal of digital divide between rural and urban folk. An instance has been cited that availability of access facilities and training prevents digital exclusion in remote rural locations and can generate viable economic and e-transaction activity linked with overseas market demand. In the Philippines, students from remote villages, equipped with programming knowledge acquired in free tutorials, low cost technical schools or through Internet, come together to do programming jobs for overseas customers.

Substantial growth in demand for PCs and internet has been experienced in the recent past. In India the rural areas can provide the same services that are being provided from Indian metros to US Clients. A call centre based on local language or a data processing/entry centre for Indian MNCs, where content is being processed/entered by rural folks will offer the same advantages as offshoring to India from the USA.

Another significant advantage of products from rural areas in comparison with the other products being sold in the virtual world is exclusivity. E-Commerce has increased the reach and is a new infomediary model for these products. Consumer electronics or air tickets sold through internet have lower conversion rates (ie the number of users who visit the product on a web page and the number who buy them). Researches have shown that buyers use e-commerce for a virtual window shopping before making the actual buying decision. Even though the exclusivity of rural products will give them a tremendous advantage, the initial challenge lies in building trust and a brand name in the virtual world.

A major challenge is the financing of all these initiatives and it includes funding infrastructure developments designed to enhance rural India’s ability to participate in the information economy. This can be done by those stakeholders who will benefit from rural e-commerce and improvement of telecommunication infrastructure in general. For example, a sugar factory in Nellikuppam in the south of Tamil Nadu has reportedly funded 65 local Internet Kiosks. Sugarcane farmers who supply to this company can check their account details online and track information on fertilizer and pesticide prices and make orders when needed. The facility lessens their trouble and cost of bus ride to the factory for getting such
information. This and similar isolated projects are indicating that there is scope for expansion of market for information and IT enabled transactions. However, there is need for socio-economic research to establish the nature of policy stimulus needed to evoke market spontaneity so that success stories are replicated elsewhere.

11.3.2 Recommendations for promoting E-commerce in Rural India.

Rural India cannot afford to ignore the changes being wrought by the information economy, nor can it afford to just sit back and passively wait to receive its benefits in the form of more convenient access to products and services, information and entertainment. The basic steps to increase the awareness and popularity of the IT in rural areas have to be proactively taken. Some of the initiatives possible to increase the awareness and popularity of IT are

- **Develop regional portals**
  Portals are websites offering easy access to information about specific geographic areas, services or markets. A regional portal can present a distinctive face to the global marketplace as well as making it easier for rural communities to source local goods and services electronically, helping to arrest business leakage. It can also be a means for local businesses using e-commerce to negotiate better deals with ISPs and financial institutions by aggregating their demand.

- **An approach for “Rural” Indian IT**
  Steps for possible use of computer in local languages like “Lipi” software and Computers specially designed in Indian ‘mass market’ such as ‘Simputer’ and ‘iStation’ should be made available. It is also necessary to increase the popularity of operating systems and content in local languages which makes it easy for rural people.

- **Creation of learning infrastructure**
  Create a learning infrastructure to satisfy the huge unmet demand for skill development and IT education among the rural population. Creation of learning infrastructure which may evoke sufficient response for using it for e-commerce and other IT applications. An example has been cited of a backward semi-arid sparsely populated district of Rajasthan, where more than 100 computer training centres have been opened under the franchise of popular brand names in the field of computer training. These centres are meant to run along commercial lines. High enrolment has been observed despite the absence of ‘reliable connectivity’ in the district. It may also help improve interaction between various stakeholders in society, as seen through efforts like Lokmitra (http://www.himachal.nic.in/lokmitra.htm) in Himachal Pradesh and Naidisha (http://naidisha.nic.in/) in Haryana.
► Learn from the success stories
It is always better to learn from successes. Studying exemplary cases of rural self-determination projects such as Akshaya in Malappuram district of Kerala, Warana in Maharashtra, and Bhoomi in Karnataka, can provide inspiration and guidelines for rural India. These projects can be cited as demonstrations of how communities, industries, the private sector and government can work together to reverse the trend of rural decline through outstanding regional leadership and community driven initiatives.

► Form community leadership teams
Encourage the emergence of regional leaders from industry, business and community groups, through support for leadership development programmes. Effective facilitation of regional economic development requires local leaders with commitment, energy and initiative, and skills such as negotiation and collaboration.

► Strategic vision & thinking
Recognize regional diversity as a crucial differentiating factor, and develop an economic vision based on natural strengths. Use this vision to focus community efforts, e.g. towards securing specific infrastructure resources and IT awareness. To minimize costs and to address the problem of rural IT penetration practically use new technologies such as WLL, wireless-cum-wired technology (developed by C-DOT), radio systems, switching systems of varied capacity (integrated with underground cables) medium capacity satellite systems, Wi-Fi etc.

► Raise awareness
Inform industry and business groups about e-commerce issues through local media campaigns, forums, presentations and meetings. Showcase examples of successful incorporation of Internet technologies into the business strategies of rural and regional enterprises. Highlight the information resources available from government.

► Tap into government funding
Publicise the availability of assistance from government programmes such as Rural Infrastructure Development Fund, Rural ICT Development Fund etc., and work collaboratively to take advantage of these programmes.

► Use demand aggregation strategies
Aggregating demand for telecommunications services across a region allows communities to achieve bulk purchasing capacity and bargain more effectively with potential investors and suppliers.

► Foster the right image
An attitudinal barrier preventing urban-based businesses from employing skilled rural-based teleworkers will need to be addressed by exchanging the image of the 'slow-talking, slow-
thinking bushy' for an image of 'smart people living a smart lifestyle'. Clever marketing and publicity campaigns will help this process.

- **Manage the transition period**

  Public Internet access points such as libraries, telecottages and online access centres provide an important means of alleviating the 'digital divide'. Lobbying for the availability and retention of such facilities will help reduce inequity of access to web-based government and financial services. Also, until widespread computer literacy is achieved, rural communities will need to campaign for the continuation of sufficient physical infrastructure to meet the needs of those people who are not prepared to go online for services.

  Some of the added benefits of rural e-commerce and IT expansion are the capacity to increase employment in regional communities in two distinct ways — by more work being located in rural areas and by rural people being able to work remotely for urban-based enterprises (teleworking). Either form of growth would help improve the economic and social vitality of rural India. More jobs could reduce the exodus of rural youth to urban areas; alleviate the shortage of doctors, academics and other professionals by improving the chances of their spouses finding work; and make it easier for people on the land to supplement their income with non-agricultural work.

  One basic thing to remember is that there is no technological panacea to fuel rural growth — it has to be a mix of political willingness, social reforms, and public-private cooperation. Technology will act as the last link.
11.4 The Future Horizon

E-commerce and the Internet, if correctly utilised for development, can be major instruments to ensure future sustainable economic growth. Throughout the world, the profound impact of e-commerce on economies and societies will no doubt improve economic efficiency, competitiveness, and profitability (for those engaging in e-commerce) and therefore result in the development of the information society. E-commerce and the new emerging digital technologies and services can be tools for development and help improve the livelihoods of millions across the globe, by linking up remote regions and bringing together scientists, administrators, development professionals, managers, and people into projects and programmes to promote economic and social development. The potential use of e-commerce and the Internet is indescribable today. Its opportunities range from finance and transport to education and health. Many governments (including India’s) have in many spheres recognised this and have been proactive in promoting the IT revolution even within government itself through initiatives such as e-government.

ICTs in general and e-commerce in particular can bring important benefits and opportunities for enterprises, and indeed for whole economies, in the developing world.

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, proactive and supportive 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 to India.
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 to those who cannot afford it. E-governance, public Internet terminals, rural access at subsidized cost and eAwareness, are some of the initiatives that must be considered and promoted. Simultaneously ensuring that the regulatory approaches are transparent, harmonised, and independent of specific technologies, along with open and competitive telecommunications policies, is necessary in order to attract the investment needed for telecom and e-commerce promotion.

Based on the study, the following is a listing of some of the main findings and recommendations for the proposed policy agenda:

- E-commerce is more about strategy and business management than it is about technology.
- Initiatives for a strategic approach to the digital economy require a dynamic and not static approach.
- It is essential to create a policy and regulatory environment that favours the development of e-commerce and harmonises national approaches.
- Hardware and physical infrastructure alone are not enough for e-commerce promotion. What is required is the right info-structure meaning.
- The issue is not whether the Internet should be regulated, but how.
- Certifying and authentication authorities that have to come up as a sequel to the IT Act need to be fully operational soon.
- These steps need to be matched by sorting out the issues of security and payments. Banking laws and regulations thus need to be adjusted to the new formats and requirements so that electronic fund transfers and credit card culture evolves and gets established in India.
- In the area of privacy, which is closely related to data-collection, interpretation, dissemination and circulation, standards are required to govern the way in which personal information is acquired, disclosed, and used on-line.
- Implementation of e-governance needs to be pushed through despite the constraints and hurdles that will develop against it.
- Future tax policy on e-commerce needs to ensure that e-commerce competes with traditional commerce on a level playing field; is consistent with the principles of international taxation; minimizes compliance costs; and is transparent, predictable, and follows simple rules.
Capacity building in the field of IT, in the knowledge of the existence of a global market for such skills, is crucial. This requires the development of education and training policies, to ensure that training institutions’ curricula match industry needs.

A national debate is needed on the issue of supplying human intellectual capital to developed countries. India also needs to raise it at the multilateral level at organizations such as the WTO to demand negotiation on it between governments on the one hand, while putting in place an agenda to gain from the economic opportunity on the other.

Regulating the e-commerce and IT teaching shops needs to be addressed in order to ensure standards and coordination between government and private agencies.

Developing countries, such as India, also need to prepare themselves for the future multilateral trade agenda which will necessarily include e-commerce.

For the WTO negotiations on e-commerce, India needs to ask the WTO itself to assist it in studying the full global implications of e-commerce from the developing country angle. These would include examining the revenue and other fiscal implications of e-commerce for developing countries, erosion of market access of developing countries and implications of intellectual property regimes vis-à-vis electronic commerce and economic development and technology access at affordable cost.

For arriving at a national position, account must be taken of the larger economic perspective of India Inc. at both national and global levels—a perspective that should see the potential of India as a global knowledge power. The private sector must be involved and consulted in arriving at any such position.

E-commerce or Internet based supply of services (such as health, engineering, legal, accountancy etc.) internationally is in India’s interest, and it would benefit from cross-sectoral links with (and through) e-commerce in them.

India should 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.

India needs to prepare strategies to access the production and supply chains at various stages in the evolving paradigm of e-trade.

India should follow the strategy formulation framework in arriving and monitoring any such plan.

India must become e-compatible for e-commerce and e-trade in order to preserve its existing market share in international trade. To do this, the Ministry of Commerce should launch a work programme for studying the implications and relevance of e-commerce in
different product groups and areas, including services, and for working out strategies to e-enable Indian trade and industry.

E-commerce expands the marketplace nationally and internationally. What used to be a single physical marketplace located in a geographical area has now become borderless. By becoming e-commerce enabled, businesses now have access to people all around the world. With minimal capital outlay, a company can easily and quickly locate more customers, the best suppliers, and the most suitable business partners worldwide.

Few innovations in human history encompass as many potential benefits as E-commerce does. The global nature of the technology, low cost, opportunity to reach hundreds of millions of people, interactive nature, variety of possibilities, and resourcefulness and rapid growth of the supporting infrastructures (especially the Web) result in many potential benefits to organizations, individuals, and society in India. These benefits are just starting to materialize, but they will increase significantly as E-commerce expands.
REFERENCES
CHAPTER 11


4. The recommendations were notified in the gazette on July 25, 1998. The three broad objectives of the IT Action Plan were: to build world-class IT infrastructure; to achieve US$50 billion in software and IT service exports by 2008; and IT for all by 2008: that is, to make telecom, computing, Internet, and IT-enabled public services available to all by 2008.


6. Annual Report 2005-2006, TRAI, 61 p,


8. The Department of Information Technology, Ministry of Information and Communication Technology http://www.stqc.nic.in/interservices/overview.htm

9. Korea, with a per capita income of US $10,000 pays US & 500 for a PC, while India, with a per capita income of US $465 pays US $ 600. The cable or DSL modem costs US $60 in Korea versus US $100 in India. The subscriber charge for 100Kbps of broadband in Korea is just US $0.25, in India it is US $15.63.