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**ELECTRONIC COMMERCE:
ISSUES OF POLICY AND STRATEGY FOR INDIA**

DIDAR SINGH

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INDIAN COUNCIL FOR RESEARCH ON INTERNATIONAL ECONOMIC RELATIONS
Core-6A, 4th Floor, India Habitat Centre, Lodi Road, New Delhi-110 003

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Foreword

Electronic commerce has been identified as one of the key areas for policy research among the WTO-related issues in the area of Services. Despite the much talked about dotcom crash, e-commerce continues to be an extremely important development and vehicle for trade. Economies and enterprises across the globe are integrating their systems with this digital reality. For international trade, the use and benefits of Information Technology (IT) are obvious and growing.

Since 1998, e-commerce has also been on the multilateral trade agenda of the World Trade Organization (WTO). Though formal negotiations in this area have not yet begun separately, all four councils at WTO have been researching and discussing the impact of e-commerce on the existing multilateral trade agreements. In the context of the on-going GATS negotiations, it is all the more important that India, along with other developing countries, should be prepared with a negotiating position. This paper by Mr A. Didar Singh, Honorary Consultant with the South Centre, Geneva, is an attempt to contribute towards that end.

The paper also points out that though India has made giant strides in software and business process outsourcing (BPO) services exports, the use of e-commerce for the rest of its export basket remains an untapped potential. Mr A. Didar Singh concludes his paper by making some useful suggestions and recommendations relating to the future strategy and policy agenda for India in issues related to e-commerce and the international trading regime.

Shankar Acharya
Acting Director and Chief Executive
ICRIER

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1 Introduction

One key issue to be addressed in the area of Services is that of electronic commerce. In order to initiate a policy debate on the subject, it would be useful to present some of the key questions and emerging issues in this area. The WTO related issues for electronic commerce need to be spelt out and examined from the viewpoint of developing countries in general and India in particular. For an India country policy and strategy perspective, it is also important to focus on some of the key policy framework initiatives that need to be concentrated upon for e-commerce to be beneficial and successful. This paper seeks to position these for discussion and debate.

Globalisation and the new ‘digital economy’ together are having a major impact on the global economy. National markets, including in developing countries, have been affected by changes in the global economic environment, and further such changes will continue to affect enterprises and citizens throughout the world. The impact of e-commerce for developing countries is at present mainly in the international trade sector. Studies indicate that over the past few years the import and export industries have grown significantly, and, therefore, the impact of e-commerce would be significant. E-commerce will also have a significant impact on the services sector as not only is this the fastest growing sector today, it is also the sector with the greatest potential for offering digitised service and transactions. For several countries this is of particular relevance as the majority of their workers are employed in the services sector.¹

The potential of e-commerce is no more a matter of debate. From the world of hype and fantasy it has moved to that of digital reality. Since e-commerce already affects the economic relations between and within countries and companies, and will continue to do so more and more, it has to be seen as a matter of key policy consideration.² As e-commerce growth becomes more and more significant, countries such as India must not only address and appreciate its potential for the growth of trade and industry but also as a

¹ International Labour Organization (1999).

² Singh, (1999).

means of survival in the new world of e-commerce-based trade and business. The ability to do so will depend on several factors, the most important of which will be infrastructure, both physical (the telecommunication network) as well as the financial and legal framework, including a business and trade environment conducive to e-commerce. It will also depend on the availability and price of hardware (computers, routers, switches, etc.) and software, as well as the human resource and education standards and policies of the country.

Developing countries, such as India, also need to prepare themselves for the future multilateral trade agenda, in particular the so-called new issues on which the Second Ministerial Conference of the World Trade Organization (WTO) in May 1998 asked the WTO General Council to formulate recommendations. One such issue is e-commerce which is presently under study in the WTO. E-commerce is not only a new technology and a new frontier for global business and trade, it is also still evolving. Developing countries, therefore, need to understand, and assess carefully from their perspective, the pros and cons of the different proposals and issues in this connection that have emerged at the WTO. They need to comprehend the possible impact of this new phenomenon on their economies and work out appropriate strategies and responses to it. However, unlike most other trade-related agenda items before the WTO, this is an area that is not just new but also one where many of the implications are as yet unclear.

It is essential, therefore, to create a policy and regulatory environment that favours the development of e-commerce and harmonises national approaches in diverse areas such as telecommunications, trade, competition, intellectual property, privacy, and security. This paper endeavours to fulfil this requirement. Section 2 provides a description of e-commerce today and its potential as well as the present status of its development. Section 3 outlines the present status of e-commerce in India and traces some of the factors responsible for the success especially in software exports. Section 4 discusses the need in a developing country such as India to firmly establish the required legal and financial framework and to promote the building of the required human resources in the context of the 'info-structure' that is a necessary ingredient for the growth of e-commerce. Section 5

discusses some policy issues relating to e-commerce and the international trade regime. Section 6 lists some of the suggestions and recommendations and pointing towards the possible future strategy and policy agenda for India.

There will always be the distinction and disagreement between *descriptive* and *prescriptive*. Policy making requires both 'knowledge of' and 'knowledge in' policy making,³ as described by Harold Lasswell (1970). Despite the danger of sacrificing 'policy analysis' to 'policy advocacy', it is important to state up front that the emphasis of this paper will be more on the *prescriptive* (how policies ought to be made or should be made in future) than the *descriptive* (how policies are being made or are in existence), with the rider that it should be viewed more as analysing the prescriptions or options rather than recommending any single best practice or fixed approach.

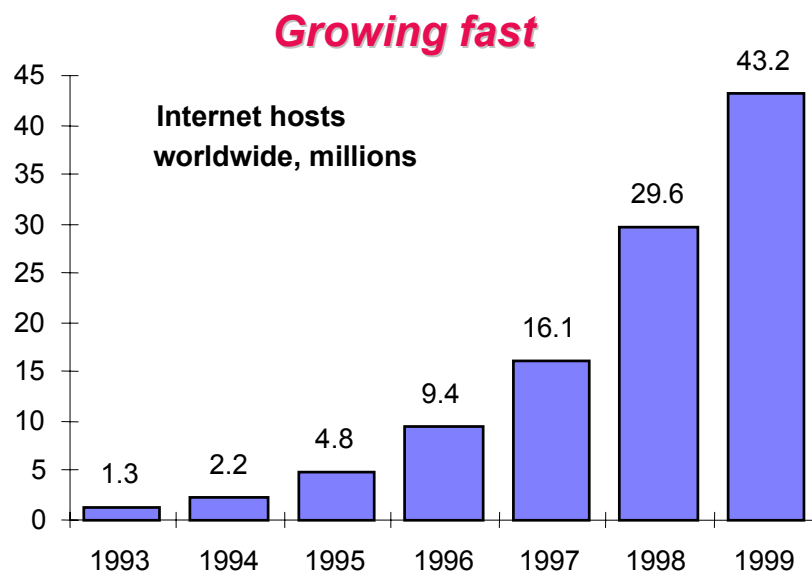
2 The Network

2.1 The Internet today

The Internet is basically a vast and ever increasing network of computers across the globe that are interconnected over existing telecommunication networks. Simply described, it is a, or the, network of networks.⁴ It is still evolving and changing. Although a network in name and geography, it is a creature of the computer, not the traditional network of the telephone or television industry. It will, therefore, continue to change and evolve at the same speed with which the computer industry changes if it is to remain relevant. For the first time, in the history of trade and electronics, the Internet promises to give direct access and control over buying and selling transactions to just about everyone, from the individual investor to the casual shopper. The Internet extends beyond the transaction itself to everything that comes before and after—from marketing and product display to order-tracking, and sometimes even delivery.

³ Lasswell (1970), as quoted in Hogwood et al. (1989).

⁴ WIPO Report (1999).



Source: ITU (1999), 'Challenges to the Network: Internet for Development'.

Fig. 1: Growth of Internet hosts

2.2 *The Internet tomorrow*

The ability of the Internet to bring together distant parts of the world in a global electronic market place and information exchange has a far-reaching and potentially beneficial impact on both the developing and industrialised economies alike. It is estimated that there are over 400 million Internet users today, with recorded double-digit growth rates in many emerging economies. It is calculated that there are some 126 million Internet hosts⁵ worldwide, facilitating a dramatic increase in the volume of trade and economic information available on-line. The overall level of electronic commerce, or business transactions conducted via the Internet and private commercial networks, was estimated at US\$ 8–9 billion in 1997. Researchers have forecast that this figure could rise to as much as US\$ 400 billion (or even over US\$ 1 trillion) by 2004, as businesses and consumers throughout the world expand their on-line commercial activities.⁶ Whether these figures are just hype or based on real data and whether they consist of existing business and trade

⁵ Computers and networks connected to the Internet.

⁶ UNCTAD (1998c).

or are additional to it are key issues. Unfortunately, it is not possible to predict accurately the future growth and share of world trade that will be conducted through e-commerce. It is, however, possible to say that it will be an important and growing component of trade, and the figures and estimates cited above, though speculative, illustrate the trend towards the growing importance and potential of e-commerce.

2.3 Defining e-commerce

It is important to elaborate on the definitions of e-commerce as that will help determine the scope and perspective of the policy agenda in this connection. E-commerce has been simply defined as conducting business on-line. The Organization for Economic Cooperation and Development (OECD) defines electronic commerce as a new way of conducting business, qualifying it as business occurring over networks which use non-proprietary protocols that are established through an open standard setting process such as the Internet.⁷ This definition distinguishes it from the earlier EDI⁸ type proprietary based networks or Intranets that were not based on an open (and, therefore, not cost effective information infrastructure) like the Internet. In the WTO Work Programme on Electronic Commerce, *it is understood to mean the production, distribution, marketing, sale or delivery of goods and services by electronic means. A commercial transaction can be divided into three main stages: the advertising and searching stage, the ordering and payment stage and the delivery stage. Any or all of these may be carried out electronically and may, therefore, be covered by the concept of 'electronic commerce'.* Broadly defined, electronic commerce encompasses all kinds of commercial transactions that are concluded over an electronic medium or network, essentially, the Internet. E-commerce covers three main types of transactions, i.e. business-to-consumer (B2C), business-to-business (B2B), and business-to-government (B2G). It is this business and transactional definition that this paper will base its analysis on.

⁷ OECD (1999).

⁸ Electronic Data Interchange.

From a business point of view, e-commerce is not limited to the purchase of a product. It includes, besides e-mail and other communication platforms, all information or services that a company may offer to its customers over the Net, from pre-purchase information to after-sale service and support. There are essentially two major uses of e-commerce. The first is to use it to reduce transaction costs by increasing efficiency in the use of both time and procedures,⁹ and thus lowering costs. The other is to use it both as a marketing tool to increase sales (and customer services) as well as to create new business through it—for example, Information Technology (IT) enabled business,¹⁰ call-centres,¹¹ software and maintenance services, etc. as well as ‘digital commerce’.¹² It is thus a tool for both existing businesses as well as an opportunity for new business, both for existing companies as well as for new entrants. Though the future of e-commerce may still be unpredictable, it should be noted that in possibly a short span of time, all businesses will need to know how to make use of it—much as most businesses had to learn to adapt to the phone and fax, only more so as more and more trade transactions and supply chains become digital and on-line.¹³

E-commerce, however, is more than just electronics and commerce added together. It represents an entirely new way of doing business over 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. those basic

⁹ This ranges from the use of e-mail and instant chat on the net to EDI (Electronic Data Interchange) and automated supply chains. EDI has a role at both B2B and B2G levels—using the EDI for customs clearance, trade procedures, etc. provides quicker and smoother trade transaction efficiencies for business.

¹⁰ Business that is based on information technology and linked through a network for digital transmission and exchange.

¹¹ Network linked service centres that customers can access through the Internet for information, guidance, maintenance, and services such as bookings, reservations, software support, etc.

¹² Digital commerce refers to goods, services, and digitised transactions that are completed and supplied on-line.

¹³ Term referring to transactions and communication on a network and in real-time (i.e. connected together with little or no loss of transaction time).

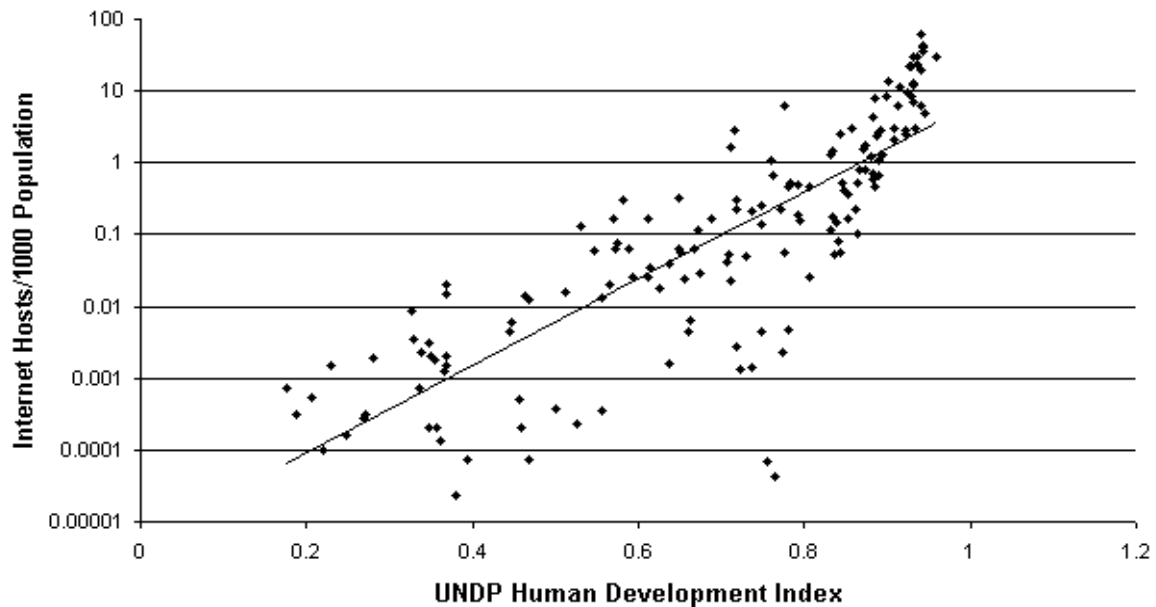
requirements that are needed in developing countries for it to develop. It is argued that it is in the interest of developing countries such as India to develop in this area so that the promise of the digital economy is shared also by the South.

2.4 *E-commerce, development, and the 'digital divide'*

E-commerce and the Internet, if correctly utilised for development, can be major instruments for ensuring future sustainable economic growth. Throughout the world, the profound impact of electronic commerce on the economies and societies of the globe 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 livelihood 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 usage of e-commerce and the Internet is indescribable today. Its opportunities range from finance and transport to education and health. Many governments (including Indian) 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.

The information and communication technologies (ICTs) in general and e-commerce in particular can bring very important benefits and opportunities for enterprises, and indeed for whole economies, in the developing world. One could argue, therefore, that there should be some correlation between Internet usage and development. Figure 2 indeed shows a close relationship between Internet host density and human development. While this does not in itself prove causality, the connection is nonetheless notable. Though the obvious inference is the link between development and penetration of the Internet technologies, the other side of the coin could very well be understood to be the linkage between the prosperous nations and their access to new technologies. It would thus lead to

the conclusion that as with every other technological advance, the benefits tend to be derived mostly by the resource rich.¹⁴



Source: Larry Press (2000). 'The State of the Internet: Growth and Gaps'. INET 2000 Proceedings, www.isoc.org/inet2000/cdproceedings/8e/8e_4.htm

Fig 2: Correlation between hosts per capita and UNDP Human Development Index

The huge development gap that exists between the North and South is being widened further in the new digital economy. The fact that only an estimated 5–10 per cent of the content on the Internet is of non-Western origin whereas the developing world population represents more than half of the world's population indicates how far the Internet is from true cultural and global diversity.¹⁵ This is a serious issue, in view of the potential importance of the Internet for all spheres of life everywhere.

There is another dimension to this issue. Even within the category of 'developing country', new gradations are emerging. Some countries are grasping the opportunities, and

¹⁴ Tanburn and Didar Singh (2001).

¹⁵ It is estimated that 90 per cent of Internet commerce is US based and the top three Internet backbone providers (all US companies) control around 73 per cent of the market (ITU, 1999b).

may even be narrowing the digital divide. Other countries are placing barriers in the way of ICT and Internet adoption, resulting in a further increase in the digital divide. Even within countries there are divides appearing between different regions and within society—between those connected and those not. All of these are serious policy issues that developing countries in general and India in particular must address. For India, the issues are of crucial importance as, at many levels, India stands at a crucial position, both technologically and globally—a position that it must recognise when formulating its policy *vis-à-vis* e-commerce.

2.5 Outlining e-commerce in India

So what should we understand by e-commerce in the Indian context? It is important to define this as it will help us focus on the areas where more thrust is required as well as help us understand the dimensions of the issue. Though e-commerce has a definite developmental context, for the purpose of this paper, its commercial and trade-related implications will be focused upon.

India's fame in the digital world is on account of 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 towards electronic commerce. For the purpose of this study therefore, e-commerce and its definition for India encompasses three areas.

1. Software exports
(body shopping to e-commerce services)
2. Web-enabled services
(transcription services to call centres)
3. 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, as well as e-commerce software and services for mostly 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.

2.6 Software to e-commerce

As a symbol of globalisation, and in many ways its leading feature, e-commerce also represents one of its distinguishing characteristics, i.e. where the extension of the international division of labour goes beyond international trade to geographic enclaves in different stages of the production chain.¹⁶ The development of the software industry in India, and especially its initial concentration in Bangalore, represents this very unique feature of the new digital economy. It illustrates the impact of global value adding networks and supply chains as well as local development and growth – now beginning to occur at multiple levels and ways including state led initiatives as seen in Chennai, Delhi, Hyderabad and so many other parts of the country.

¹⁶ Lateef (1997).

Out-sourced software development is one prominent example of the emerging ‘global commodity chains’¹⁷ where mainly production is distributed between two main parties at different locations linked through a network. E-commerce has the potential to extend those chains to multiple levels and locations, and hence company strategies now need to be analysed and prepared for these different stages and levels of the production and the service chain.

Software development goes through a series of steps, starting from the development of the idea and its design to programming, testing, installing, and finally maintenance. The fact that this process could be distributed to different locations, for purposes of efficiency and cost, made it possible to set up a global chain in its production process. Statement 1 elaborates these different steps in software development and how they are non-location-specific. It is this very feature that has contributed to the success of the Indian story. It must be noted though that the real value addition in this process comes from the initial idea and design and countries like India were used mainly for the lower end of the value chain; however, with e-commerce that may change.

Statement 1

Steps in software development	Location constraints	Remarks
1. Idea	Anywhere	Though mostly appearing at software production location in the US
2. Design	At site/parent production site	Usually in the US or Europe
3. Programming	Remote	Outsourced to India
4. Testing	At site or remote location	
5. Implementation/Installation	At site	Usually through ‘body-shopping’*
6. Maintenance	At site or remote location	

*By taking developing country computer engineers from their country to the US or Europe for short-term jobs such as installation or maintenance.

¹⁷ Gereffi and Koreniewicz (1994).

For e-commerce the steps are not necessarily so orderly and are different for not just B2B supply chain type linkages or B2C for buying and selling, but are different for the various activities, services, and models emerging. Taking the example of Web-enabled services would help illustrate the potential for developing countries like India.

Statement 2

Web-enabled service, e.g. call centres	Location	Remarks
1. Idea	Anywhere	Many of the new ideas now also emerging in countries like India
2. Design	Anywhere	Designing now occurring in India
3. Setting up of service	Remote location	Countries like India preferred for lower costs
4. Hosting of service	On the Web	On server mostly in the US but Indian servers also developing
5. Maintenance	On the Web from remote location	(As in service)

As Statement 2 illustrates, the fundamentals of the software industry are changing. Ideas, designs, hosting, maintenance—all can be situated in or be from developing countries. In software this means e-commerce services and products as well as e-services. For e-trade this can be services for e-business globally, as also the e-enabling of export services and companies in the country. As the involvement and potential of local businesses and regulatory bodies transforms with e-commerce and e-business, countries such as India need to prepare strategies to access the production and supply chains at various stages in the evolving paradigm of e-trade.

3 The Brand 'India'

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 US\$ 6 billion 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. How did India do this and what else does it need to do to maintain the momentum?

India Inc. has established itself as a major global IT brand. This phenomenal growth has not been achieved overnight. The Compounded Annual Growth Rate (CAGR) for the Indian software industry revenues between 1995 to 2000 has been 56.3 per cent¹⁸ 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.¹⁹

Some negatives

- 70 per cent of the population belongs to the rural areas where the majority lack basic amenities
- 14th largest telecom network in the world, though 67 per cent of its villages do not yet have telephones
- PC penetration ratio of 3 per thousand against 460 per thousand for developed countries
- Internet connections of less than a million today, with on-line population of 0.4 per cent only.

And yet

- Goldman Sachs says that by 2003, 70 million Indians will be on the Net.
- Led by export growth of over 50 per cent over the last few years, the Indian software industry has emerged as a leader
- Software exports increased from \$ 15 million in 1987-88 to \$5.7 billion in 1999–2000.

¹⁸ Even in the slowdown of 2001–2002, the Indian software export have grown a decent 30 per cent.

¹⁹ Economist Intelligence Unit (1999) and Booz–Allen (2001).

- 62 per cent of all exports go to the US and Canada. Europe accounts for 23.5 per cent and Japan for 3.5 per cent
- Indians account for 34 per cent of all Microsoft employees, 28 per cent of IBM, and 17 per cent of Intel employees
- The Industry and Government have set a target for 2008 to position India as a leading software force with \$50 billion in revenue and an additional \$20 billion from IT enabled services
- NASSCOM²⁰ has predicted a \$10 billion *e-business* by 2004
- Today, the Indian software industry employs 280,000 people and every year over 60,000 professionals join. A McKinsey study shows an employment potential of over 2 million in this industry by the end of the decade.

Despite these high growth rates, India's share in the world software product market is still very low, though India still enjoys an advantage over many other nations in software development, services, and exports. This is partially 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 definitive competitive advantage in the global software economy.

It would be of interest to analyse some of the main initiatives and experiences in India that led to its emergence as a major software exporting nation. In doing so this paper will seek to identify the steps and initiatives that need to be pursued in order to ensure continued e-commerce success.

3.1 The Indian competitive advantage

Compared to typical US loaded costs, India based software development delivers a huge cost advantage. This is expected to remain 3:1 in favour of India for a long time. For web-enabled services like medical transcription and call centres where just English-speaking graduates are required (as opposed to engineering graduates for software), the cost differential is nearer 5:1. Besides cost, more and more US and European companies

²⁰ National Association of Software and Service Companies, the leading IT industry association in India.

are looking at talent lock-in as a competitive issue as availability in the long-term basis will be in question. Even in situations like the present US new economy slowdown, outsourcing makes sense in a strategy of cost-cutting to address the increased competitiveness. Some experts have calculated that a typical Western bank, for example, can outsource 17–24 per cent of its cost base, reducing its cost-to-income ratio by 6–9 percentage points, and in many cases doubling its profits.²¹

Statement 3 presents a rough comparison of the costs of the five most essential components in the software industry, between the US, Europe, and India.

Statement 3

Software development costs	USA (as base of 100)	Europe (and Japan)	India
(a) Engineers	100	120 or so	33
(b) Land/Rentals	100	100	80–100 (in metros)
(c) Cost of connectivity	100	120 or so	200
(d) Telephone	100	130 or so	200
(e) Allied services (courier, air freight etc.)	100	130 or so	150 and slower

Source: Based on rough calculation and information culled from interviews with IT industry professionals.

Since manpower accounts for some 80 per cent of the production cost in the software sector, overall development of software in India is 40–50 per cent cheaper than in the US or Europe/Japan. As items (c), (d), and (e) become on par with the US, as they will be in due course,²² then Indian salaries could be raised and the competitive advantage still retained.

For IT enabled services, the competitive advantage is even higher. NASSCOM,²³ in a comparison of several factors such as workforce, market access, infrastructure, and

²¹ *The Economist* (2001).

²² In fact India's telecoms costs, which are higher than in rich countries, are falling because of liberalisation.

²³ NASSCOM Directory (2001).

cost across the Asia-Pacific region, has outlined that on average the best location by far is India (see Statement 4).

Statement 4

Country	Workforce	Market Access	Local Market	Infrastructure	Cosmopolitan	Cost base
New Zealand	2	2	-	2	3	2
Kuala Lumpur	1	2	-	2	2	2
Japan	1	2	1	3	1	3
Hong Kong	1	2	2	2	2	2
India	3	2	2	2	3	1

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 a 24x7 service and reduction in turnaround times by leveraging time zone differences. India's unique geographic positioning 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.

3.2 *India.com tomorrow*

There is a distinct shift taking place in India today in the form of the 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 the 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 Statement 5.

Statement 5

Year	External Sector		Internal Sector
	Total Software Export (\$)	e-Commerce related software and business	e-Business
1999–2000	5.7 billion	0.5 billion	Rs 450 cr (\$100 m)
2000–2001	9.5 billion	1.4 billion	Rs 15000 cr (\$330 m)
2004–2005	35 billion	5 billion	
2007–2008	50 billion software and 20 billion Web-enabled services	10 billion	50 billion

Source: NASSCOM.

It must be noted however that these projections are based on estimates as data for domestic and cross-border e-commerce is not readily or easily available. The figures are, therefore, indicative of the expected growth.

In 2000, the top IT industry lobby group, NASSCOM, carried out a survey that has given some interesting predictions for both software and e-commerce in India:

- India has a huge potential for Internet and electronic commerce.
- Internet penetration is expected to be over 9 million by 2003 with e-commerce growing at a CAGR of over 200 per cent.
- More than 86 per cent of the top 100 corporate respondents endorsed electronic commerce and the Internet as being integral to their corporate strategic framework.
- Supply Chain Management optimisation is one of the strongest drivers of the global e-commerce solutions market, as it spurs B2B transactions. More than 68 per cent of Indian software houses have informed of strong expertise in Supply Chain and Distribution Management solutions.
- Almost 32 per cent of IT company respondents have identified web based consumer businesses as a major opportunity area, with expected paybacks beginning in 3–4 years.
- Some of the areas of e-commerce services are: Legacy Application Integration; Internet Application Integration; EDI migration to Web based models; new IT frameworks and integration with business strategy (strategic IT consulting); E-commerce training services; business Web-site development and maintenance.
- Web-enabled services besides customer interaction services are also going to mushroom in the area of content development and animation. According to NASSCOM, India will employ 1.1 m people and earn \$17 bn from what it calls IT-enabled services by 2008. A report to the Electronics and Computer Software

Export Promotion Council (ESC), a government body, sees the industry's exports to America growing from \$264 m in 2000 to over \$4 billion in 2005.

- With corporates planning to revive IT spending, e-commerce solutions would emerge as a major technological and business opportunity, both externally and internally, for Indian software houses.

3.3 *Behind the Indian mantra of success*

It would be of interest to analyse the Indian environment and some of the factors that led to this growth and development. This would not only help in the understanding of this phenomena but also serve as indicators for the continued strategic response.

Physical features and technological advances are not necessarily the only ingredients of success. The most developed and expensive technology may not necessarily be the key as business acumen and entrepreneurship are more important. Similarly, weak or inadequate infrastructure is not necessarily an impediment, just as developed infrastructure is not necessarily a sufficient condition for success.²⁴

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. Realising this and following an intermediate development strategy has been one of the key reasons for India's success in software. 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 was a concentration of export-intensive industry. Satellite earth stations were set up by VSNL²⁵ and STPI²⁶ at key locations for providing 24 hour guaranteed access to software companies

²⁴ Singh (1999).

²⁵ Videsh Sanchar Nigam Ltd., the international telcom arm of the Department of Telecommunications.

²⁶ Software Technology Parks of India, a body under the then Electronics Department.

for export activities, much before Internet was available on the existing telecom channels. This was the frame on which the software revolution was built.

It is interesting to note that this policy prescription matched the technical requirements of the industry, and in a sense explains its concentration on software and, recently, IT-enabled services. Software exports and IT-enabled services like medical transcription and call centres, which were and are directly exported to specific partners or clients in the US or Europe, need just basic connectivity (not even the Internet). This was provided through the VSNL and STPI satellite links. Therefore, bandwidth, legal e-commerce framework, and a payment gateway were not major issues in the last few years. Today, as the industry grows and e-commerce develops, bandwidth has become an issue as the number of companies and domestic Internet requirements have expanded. Similarly, legal framework and payment gateways were not needed as the transactions were via traditional methods between specific partners. Today, for e-commerce market places, digital products like music or videos etc., or large automated supply chains, all these are essential requirements and are only now coming into place.²⁷ This explains why the latter services have been somewhat slow to mature and mushroom.

Inherent and acquired factors

Of course, there were also several other reasons, such as the 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. 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.

²⁷ The Information Technology Act has just been passed and bandwidth expansion is now occurring.

Environmental factors

In analysing the environment that led to the success, it could also be argued that there were also other factors that played a role in creating the right ‘environment’ for success. Some of these cultural, social, and environmental reasons could be said to be the following:

The liberal tradition factor

Democracy and traditions of market oriented philosophy have been a feature of the Indian business environment ever since independence over half a century ago. Despite policies oriented towards welfare and socialism, a very strong private business environment and liberal tradition developed in the country. The introduction of the structural adjustment programme in 1991 resulted in the promotion of policies of liberalisation and trade reforms, furthering the market oriented economy and export sector. Despite the democratic changes of governments with elections since then, the thrust towards liberalising the economy has not been given up, resulting in favourable conditions of growth for the export sector in general and the software sector in particular.

The spill-over factor

In the 1960s and 1970s, the ‘spill-over factor’ accounted for one of the mostly unknown facts of Indian investment overseas—i.e. that it was then one of the highest levels of investment overseas amongst all of Asian countries. One of the most important reasons for this was the restrictive economic regulations and investment rules prevailing in India at that time, which prevented Indian industry from expanding capacities within the country. A similar local regulation even today requiring a three-year profit record before being listed on the local bourses is forcing some Internet companies to make overseas offerings. Such types of controls resulted in the Cable TV revolution of the 1980s, where people starved for entertainment on TV, controlled and regulated by the state run ‘*Doordarshan*’, switched allegiance to the unregulated but booming private cable channels that began to be offered by small operators all over India. Satellite data links and the Internet provided another unique opportunity to cross geographical barriers and state

regulations and take on business contacts and ideas that were truly global. It was a revolution waiting to happen, and it has happened.

The brain-gain factor

They called it brain-drain and derided it for years. This was the phenomenon of the best Indian brains—usually engineers—leaving the country for better jobs in the West. It actually turned out to be a ‘brain-gain’ in the Western and capitalist economies that the brains found themselves to be. The Indian professionals adapted and succeeded quickly in the new environment. There are several success stories of Indian expatriates in the Silicon Valley, where persons of Indian origin run about 30 per cent of the existing software and e-commerce companies. Several of them are now returning to set up joint ventures and software and e-commerce businesses in India. They contributed to the brand image of India and are also continuing to be excellent links for Indian software and overseas business. Indian IT professionals have made major contributions to the development and growth of the Internet, and today they are the key beneficiaries of its growth as well as the information source on the latest trends in technology and business.

The bridge-investment factor

Experts have compared foreign direct investment (FDI) into China with that into India and have seen that one of the main reasons for the high investment coming into China can be attributed to the overseas Chinese investing back home (through Hong Kong mostly). On the other hand, the non-resident Indians (NRIs) did not invest back in India or were very apprehensive of doing so, fearing that their investment would fail or be subsumed by Indian bureaucracy and regulation. Software and IT business provides a chance for the NRIs to invest in India and yet retain one foot in the West (either through a joint venture arrangement or through a buy-back mechanism). In fact they could do their US business out of India—at much cheaper rates. That foot or bridge is the essential and safe link in the investment and, therefore, resulted in NRIs investing in the IT sector in India.

The 'English' factor

Indians are not just English speaking but can quickly adapt to being English or American 'thinking'. While a Chinese immigrant or worker may well take 5 years or more to become 'American', an Indian software professional from one of the engineering colleges of India 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. In no other former British colony has this happened as much as in India. Today, as American standards and business practices become the norm, English or 'American' speaking employees can be a tremendous asset. This accounts for the success of call centres and web-enabled services located in India, catering to the US market and manned by employees speaking English with an American accent.

The partnership factor

Government and private sector collaboration in the field of IT and software export promotion represents a unique and momentous export success story. Such collaboration is unprecedented in most bureaucratic and business dealings in most of the developing world. As an illustration one merely needs to look at the STPI (Software Technology Parks of India, an organisation of the then Department of Electronics) example. 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 for itself tremendous support of the bureaucracy, which was keen to show success in the earning of valuable foreign exchange for the nation. Software exports occur mostly digitally, and exports in India have not been subject to customs duty while export earnings are exempt from Income Tax. This provided an environment having the least contact of businesses in this area with the lower echelons of officialdom. Coupled with a supportive policy regime, the result has been much higher levels of efficiency in delivery and production for the sector.

4. The Info-Structure

The Internet and e-commerce have led to the raising of difficult questions for the domestic political economy. Issues here include those of access, expense, education or e-literacy, security, and control. Who or how to control? How to ensure access at reasonable cost? How to tackle the growing digital divide? What technologies are required and what standards are to be set? Developing countries like India need to find not only solutions but also the means and resources to implement them.

Success in the digital revolution is dependent 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*', viz.

- 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 resource to deal in it.²⁸

4.1 *An e-compatible legal and financial framework*

All over the world, globalisation and the new information and communication technologies that are restructuring the commercial distribution circuits are reinforcing the linkages between internal and external trade. Even developing countries like India, therefore, can no more treat the internal and external sectors in isolation. The legal and financial framework for one sector directly affects the other sector. While the regulations and rules which govern commercial operations remain mostly local or national in scope, the growth of e-commerce will increasingly call into question the ability of public authorities to impose their prerogatives on national markets and international trade by their companies and citizens.

²⁸ Singh (2000a).

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 effectual. 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 legislate already. 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 sort of communication poses several entirely new sorts of problem for regulators.²⁹

A legal framework for e-commerce has been provided by the Information Technology Act, 2001, making India only the twelfth country worldwide which has such a comprehensive legislation for e-commerce in place. This Act also effects consequential amendments in the Indian Penal Code, the Indian Evidence Act, 1872, and the RBI Act, 1934 to bring them in line with the requirements of digital transactions. (Similar amendments are being planned for the Companies Act, 1956 to also facilitate e-commerce and e-governance.)

The IT Act essentially seeks to address three areas or perceived requirements for the digital era:

- (a) to make possible e-commerce transactions—both business to business and business to consumer
- (b) to make possible e-governance transactions—both government to citizen and citizen to government
- (c) to curb cyber crime and regulate the Internet.

²⁹ Singh (1999).

Rules under the IT Act have been formulated and a national controller for enforcing the Act appointed. This controller will regulate the certifying authorities that will issue the digital signatures and the systems for authentication. These steps need to be matched by sorting out the issues of security and payments. Security and authentication arrangements need to be recognised and accepted globally. On the first, though governments (such as the US government) have taken several steps, countries like India are yet to develop reliable technologies. (US companies developing them are presently restricted by their Government from the export of such technologies and that is an issue that needs to be addressed at the international level.)

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.

With the advent of new security mechanisms such as electronic/digital signatures, certificates, etc., the future of electronic commerce rests on confidentiality. Another facet of security is 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.

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 arising in cyberspace.³⁰

An international consensus on *privacy protection* is developing around the OECD³¹ guidelines on the protection of privacy and trans-border flows of personal data, which embodies well-established principles of fair information practices. These guidelines could form the basis of establishing privacy and confidentiality in the Indian e-commerce environment.

Much of the IT Act as promulgated, deals with citizen interaction with government. Certainly a proper and far-reaching mission towards e-governance. 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.

E-Governance

E-governance implies action and commitment of the state and its agencies at two levels:

- (a) It involves the promotion of the information and communication technologies and, 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 medium of the Internet for government business, citizen interaction, and most important, for development.³²

Fortunately today several e-governance projects are underway in several states of India. The introduction of e-governance could turn out to be one of the most far-reaching

³⁰ *Economic Times*, 14 August 2000, IT Act leaves cyber consumers out of its purview.

³¹ Organization for Economic Cooperation and Development

³² ITC Executive Forum (2000).

and progressive steps in India. Not only does it signal a commitment of government to the use and introduction of IT for efficiencies in government services and citizen interface but it could also be the most potent weapon against the emerging and growing digital divide.

Some of the challenges in this regard are:

- Handling the feudal mindset—information is seen as power and those having 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 and thereby reducing corruption.
- Labour and Union problems in government (as these are perceived to be a threat to established procedures and vested interests).

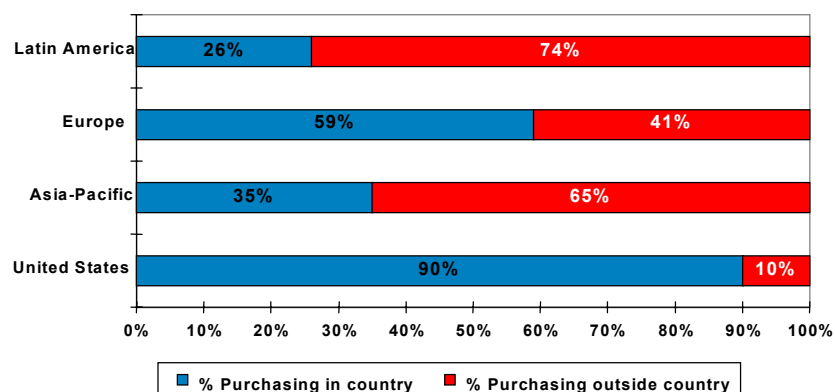
Implementation of e-governance is quite obviously not going to be very easy or smooth. There is still a great deal of confusion among implementing agencies at various levels as to what exactly e-commerce and e-governance are and how to go about it. Part of the problem is that some of these organisations 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.

Despite these constraints, the initiatives here are crucial. By using the Internet as a tool for 'electronic governance', the environment for e-commerce development itself would be furthered and strengthened. The premise here is that in promoting business on-line, governments will facilitate the delivery of information, goods, and services. This will

then deliver more traffic across data networks, which, in turn, will serve to provide the revenues and investment rationale needed to encourage further infrastructure development.

Financial framework

One of the main concerns of developing countries are the perceived dangers of



Source: 1999 Atlas Web-Based User Survey and IDC.

Fig 3: Capital outflows due to e-commerce

foreign exchange outflow on account of e-commerce, i.e. through the purchase of goods abroad. Figure 3 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) as well as 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 thus needs matching implementation at the fiscal regulatory level.

Payment gateways for e-commerce transactions are one of the most essential requirements for establishing and developing e-commerce. These need to be well established and strengthened in India. Today some of the banking institutions are offering this service with international collaboration, but for this to truly make a mark, electronic fund transfers and a credit card culture must evolve and set in India.

4.2 *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 of importance as for most developing countries, domestic taxes and import and export duties continue to be a primary source of revenue. On the one hand, the 'digital economy' holds the potential of significant growth and the hope of a significant contribution to fiscal revenues. On the other hand, there is apprehension that a shift to digital commerce may shrink the tax base.

Understandably, therefore, a fundamental review of tax policies and laws is required as these have their origins in traditional, off-line commerce. E-commerce is, in fact, challenging the adequacy and fundamental validity of the principles of international taxation, such as physical presence, place of establishment, and valuation.

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?

For *existing tax laws*, e-commerce may not raise new or unique issues. The *mode of doing business* through electronic commerce does, however, create certain difficulties for national tax administrators. Take, for example, our tax incentive schemes that are location-specific and designed to promote underdeveloped regions in the country. E-commerce raises the possibility of establishing business addresses (even web-sites) based in such locations without actually having to set up any major facilities or opportunities there. At an international level, exporters could do the same, for example, to access least-developed country export quotas or double taxation treaty benefits (the Mauritius access would be even easier).

Transactions across borders create additional complexities as taxation principles are intrinsically linked to jurisdiction. In the case of digital transactions, such as downloading of software or music from a web-site in another country, it is unclear where the jurisdiction of the transaction should be fixed. Even for transactions within the country, several other provisions of taxation are dependent on the location of the company or person, the status of the goods in question at the time of making the contract, and the definition of the services that may have been involved in a transaction.

A guiding principle being propagated in the matter of *fresh arrangements for taxation* is that any legal obligation should not be restricted to electronic commerce but should apply equally to conventional commerce as well. In other words, that electronic commerce should not be the target of new and discriminatory taxes and that the application of existing taxation on electronic commerce should be governed by the principles of *tax neutrality and fairness*. Similar income should be treated equally in terms of direct and indirect tax requirements, regardless of whether this is earned through electronic means or through traditional channels of commerce. Ensuring that e-commerce competes with traditional commerce on a level playing field is, therefore, a key objective.

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 organisations³³ 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 very basic concept of PE, or ‘permanent establishment’, on which most taxation regimes are built. The OECD’s Committee on Fiscal Affairs has opined that this should be taken to be the server hosting the website of the enterprise. Though hailed as a landmark ruling by many experts, it clearly is a temporary solution. Websites can be moved from one server/country to another

³³ UN Human Development Report 1999, South Centre, Union Network International etc. talk of this possibility.

in no time, and mirror Websites can be created in different countries along with a central redirection service that sends consumers to the Website located at a server in the country with the lowest taxation³⁴. A recent CBDT committee on e-commerce taxation³⁵ has, however, recommended that the concept of PE be dropped as it is not relevant for 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.

The European Commission is planning to pass on the responsibility of collecting the applicable VAT tax (based on the rate prevailing in the consumer's country) to the suppliers of digital products, like music and videos. 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.³⁶ Since new businesses focusing 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.

4.3 E-enabled human resource

Electronic 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

³⁴ Satapathy (2001).

³⁵ Central Board of Direct Taxation, Ministry of Finance, India – Draft Report at <http://finmin.nic.in>

³⁶ 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.

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.

Today the preponderance of the ICT revolution has resulted in dramatic changes in employment patterns, skill-sets needed, and the range of opportunities for employment and economic advancement across the whole world. In particular, an unprecedented window of opportunity has opened up for developing countries. The key to success here lies in realising that the market for many kinds of human resources is increasingly becoming global. The ICT technology is rapidly shrinking the range of human activities that require physical relocation of persons, and therefore opportunity is moving to those countries which can provide the kind of human resources that are needed by the global economy. Opportunity will also go to those who understand and appreciate these emerging global trends in human resource requirements and prepare for them.³⁷

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 designing, to electronic credit management and software and hardware maintenance—all require skills that may not be so easily available. Capacity building in the field of information technology, in the knowledge of the existence of a global market for such skills, is therefore crucial. The development of electronic commerce, therefore,

³⁷ Chandrashekhar (2000).

puts a premium on the development of education and training policies, to ensure that training institutions' curricula meet with the needs of industry.

Aside from IT workers, there is also a huge shift occurring in white-collar jobs globally. Technology is redefining many of these jobs and making them increasingly location-independent. Many firms are establishing call-centres and service support centres in countries like India and Philippines where costs are significantly lower. Tens of thousands of such jobs are shifting *en masse* across the globe, thanks to innovations by IT-enabled service companies. Michael Dertouzos, outsourcing expert of the Massachusetts Institute of Technology, estimates that outsourcing of white-collar jobs from Western countries to India could result in a shift of 50 million white-collar jobs from the West to India in the next few years. At an average salary of US\$ 20,000, they could add a staggering US\$ 1 trillion to the country's GDP! According to a more conservative prediction from NASSCOM, India will employ 1.1 million people and earn US\$17 billion from IT-enabled services by 2008.³⁸ For these jobs, mostly English-speaking graduates with some basic computer training are required and, therefore, the manpower availability will be much easier. Unlike software, where the shortage of manpower was becoming acute (until the new economy recession took place), IT-enabled services have ample scope to increase output, even at the top end. As mentioned before, the recession is also less likely to hurt such businesses, and may even help them as these firms are offering to reduce the cost of back-office processes that are indispensable.

What needs to be done?

For India, the impact of all these changes will be dramatic. 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

³⁸ *The Economist*, India—back office to the world at www.ebusinessforum.com

country itself, lest the shortage effect our own growth in e-commerce. (Though the present recession in the US is easing off some of the pressure, according to some experts a reversal is expected within six months to a year.)

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 professional have 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. Should not this be negotiated between governments on mutually beneficial terms and conditions? In India, we need to have a national debate on this issue and also raise it at the multilateral level at organisations such as the WTO on the one hand, while putting in place an agenda to gain from the economic opportunity, on the other.

Across the country, the requirement of software engineers is being addressed by plans to double the capacity in the State-run university system on a two to three year programme. Quite unplanned but rather successfully, this has been matched by the booming private sector educational services in IT and e-commerce that have proliferated across the country. Even though education has traditionally been a State responsibility, hundreds of private software and e-commerce training institutes have mushroomed all across the country—and not just in the big metros. In fact training and education is itself emerging as a new e-commerce export activity with some of the bigger players³⁹ in the field of computer education now setting up branches abroad and portals on the Internet. These teaching shops provide training from software programmes to e-commerce practices and web-services like medical transcription. The growing demand for such expertise is today creating several employment opportunities. However, the issue of standards,

³⁹ NIIT, one of the oldest of these computer education companies, today has centres in 31 countries abroad, besides 1400 in India.

certification, and recognition of these training programmes is still to be addressed. Some amount of regulation will be necessary here, lest young students and their poor parents get cheated by some of these highly priced teaching shops. Government policies and plans of e-education also need to be aligned with what is happening in the market.

5. The International Trade Regime

The ICT revolution and e-commerce are building a new digital economy where several of the technological issues and standards are being authored and determined by transnational corporations, especially in the telecom world. This is resulting in a shifting of the locus of much policy-making from government to private business. This is best illustrated in the growing importance of the WTO as opposed to the traditional UN organizations that so far determined and discussed these issues such as ITU, UNESCO, UNCTAD, WIPO, UNCITRAL etc.⁴⁰ Though this is the reality, it is important that these other organisations continue to deal with several other important issues that impact on trade such as telecom infrastructure, Internet management, security and privacy, etc.

For India, the trade-related or WTO-related issues for e-commerce should be looked at from a dual perspective:

- (1) The negotiating stand our diplomats and experts would take, where traditionally they would tend to argue from a South perspective. (India, like most other developing countries, has been arguing that WTO negotiations should be confined to the 'built-in agenda' of the existing agreements, though for some years now, it has been indicated that we are willing to negotiate on e-commerce and IT as these can contribute to the development process.);

⁴⁰ Hamelink (1999). ITU: International Telecommunications Union; UNCITRAL: United Nations Commission on International Trade Law; UNCTAD: United Nations Conference on Trade and Development; UNESCO: United Nations Educational, Scientific and Cultural Organization; WIPO: World Intellectual Property Organization.

- (2) The larger economic perspective of India Inc.—both national and global. A perspective that should see the potential of the India as a global knowledge power—irrespective of the result of negotiations at the WTO.

5.1 *E-commerce at the WTO*

The issue of e-commerce was raised first in the WTO by the United States in February 1998 as a market access issue with the proposal for member states not to impose any duties on electronic transmissions. Though pushed through by the US as a ‘standstill’ measure till the next General Council, the issue has been transformed into a full-blown study and debate on essentially three major issues:

- the question of agreeing to a permanent ‘stand-still’ on the customs duty imposition position,
- the question of characterisation of e-commerce, either as a good, service, or something else from the standpoint of the existing WTO agreements, and
- the question of protecting IPRs⁴¹ on the Internet.

The immediate practical concern of the US was to achieve a permanent global ban on tariffs (or ‘stand-still’, as it is referred to) on products and services which can be delivered electronically via the Internet. This resulted in the May 1998 WTO Ministerial declaration on global electronic commerce and the on-going WTO work programme on e-commerce. The Ministerial declaration of 20th May 1999 directed the General Council to establish a comprehensive work programme to examine all trade-related issues relating to global electronic commerce, ‘taking into account the economic, financial, and development needs of developing countries’, and report to the third session of the Ministerial Meeting. (Four WTO bodies—The Committee on Trade and Development, the Council on Trade-Related Intellectual Property, the Council on Goods, and the Council on Services—reviewed the manner in which existing multilateral trade agreements apply to global electronic commerce). It also asked all members to continue their current practice of not

⁴¹ Intellectual property rights.

imposing customs duties on electronic transmissions at least until the next Ministerial meeting. This next meeting was the now infamous Seattle Meeting, where for several reasons the issue could neither come up nor be decided upon. The draft declaration though had penned down the continuation of both the work programme on electronic commerce as well as the 'stand-still'.⁴² Despite reservations from some quarters, Doha 2001 carried ahead this same arrangement. In essence, this perpetuates the status quo on tariffs as desired by the developed world while continuing with the 'negotiations' or discussions in the four councils entrusted with the work programme.

Initially introduced as an issue in international trade policy discussions, e-commerce has become a subject of multilateral negotiation at the WTO. Formulating negotiating positions at the WTO, therefore, continues to be a matter of concern for developing countries including India. Several developing countries are arguing that the continuation of the moratorium on customs duty should be linked with all other transition⁴³ issues and a package solution be found. Some of them (including India) also want that the work programme at the WTO should address all the 'substantive' issues, i.e. to assess also the possible negative impact of e-commerce and the digital economy on developing countries.

The question that arises is why there is so much discussion and debate on this and what the interests of the different countries may be in this.

Complexities of e-commerce transactions

The Internet as a means of trade raises several complex issues. The following example helps elaborate the complexities in the types of transactions that are now possible with e-commerce in relation to a common anti-virus software programme:

⁴² This text was put forward although it did not enjoy the full consensus of all WTO Members (Sen 2001).

⁴³ A reference to the transition periods provided with some of the earlier agreements on trade and services where developing countries feel they need more time.

1. A consumer could just buy it at a store near by, packaged in a CD.⁴⁴ (This could be an imported product.)
2. The manufacturer could send it over the Internet to local or cross-border distributors who then copy the programme on to CDs and sell them at their store to local consumers.
3. A consumer could order it over the Internet from a domestic or cross-border manufacturer and it would be mailed to him.
4. A consumer could order it over the Internet and it could be sent in digitised format directly to the computer of the consumer.
5. A consumer while ordering the software could choose an option whereby the programme is regularly updated through the Internet by the supplier.
6. Another option could be that it would be updated or modified based on interactive and customised requirements of the buyer.
7. A further possibility could be that the consumer makes an illegal copy of the software and either just passes it on to a friend, or in fact sells it further, either in the form of a CD or just as an attachment to an e-mail, for example.

Of the above-mentioned seven different variations on the transaction (there could be more), only the first conforms to traditional processes of buying and selling and is fully covered by existing trade agreements. The balance six are all Internet or e-commerce enabled transactions. (In fact, even in the first, a consumer may have checked out prices, store locations etc. via the Internet before going to a regular store to purchase the software programme).

Some of the complexities are mentioned here. Firstly, there is the question of tariff. This becomes an issue in all the cases where the good has not passed through a recognised customs or domestic tax point (when it does, the existing tariff structure would be applicable). In all the other cases, it would depend on the supplier, distributor, or consumer

⁴⁴ Compact Disc.

to declare the transaction and pay the relevant duty or tax. For governments, the issue is not just enforcement but also valuation. Secondly, this raises the question of whether the trade transaction was for a good (such as CD—transaction no. 1, 2, and 3 above) or was it a service (on-going anti-virus protection—transaction no. 4 and 5 above)? And if it is a service, was it non-standardised and customised (transaction no. 6 above)? Thirdly, the issue of intellectual property protection arises in the last case (transaction no. 7 above). (Variations of this example could be there for any digital transaction.)

All the above scenarios have implications not just on existing international trade agreements but also on future negotiations and positions to be taken by all countries, including the developing countries.

5.2 *Issues of market access: Customs duty*

The question of how to monitor and how to tax is a complex one. For strategy makers, they concern the issues of tax and tariff regimes as much as negotiating stances at the WTO in response to the on-going stand-still on digital transactions. The positions on possible duty impositions are not so clear-cut. For some developing countries such as India, Singapore, Malaysia, etc. where most of the flows of digital services and software (developed domestically) are outwards to other countries, export duty is not an issue because export flows are not taxed. On the import side, software and information inflows for processing in back-end offices⁴⁵ and call centres⁴⁶ are mostly not subject to duties either—a measure to encourage the IT industry and exports. However, this situation may not hold good for financial and other service transactions. Hence the question as to whether or not tariffs should be levied needs to be very carefully considered. 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

⁴⁵ Service, maintenance, and development centres set up in a different location and linked through an Intranet.

⁴⁶ Centres where customers call or connect via the Internet for varied services from reservations to queries.

valuations possible and enforceable for digital commerce also) before any final decisions are taken on this matter.⁴⁷

Tariff (and taxation) issues also raise the concept of PE or ‘permanent establishment’ and the problem of jurisdiction. The Internet and e-commerce challenges the very concept of PE and therefore, gives rise to the question of how business transactions of enterprises located across borders are to be traced and taxed. This also has an impact on classification of the transaction which will be touched upon later in this section.

Essentially this problem of duty or tax occurs only 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 computerised format and no goods have directly passed through a recognised customs or domestic tax point. Where e-commerce has been used only to communicate and set up a transaction and the actual delivery is by regular means, the existing tax and duty regulations and procedures continue to apply and can be monitored. For digital supplies, the problem for the authorities is to monitor or even be aware that a transaction has taken place.

Towards an Indian position

According to an UNCTAD study,⁴⁸ 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,⁴⁹ India imported digitisable media products to the extent of US\$ 198 million in 1996 when the applied tariff rate was 26 per cent. The estimated tariff revenue was US\$ 51.3 million. Assuming that the digitisable media products account for 50 per cent of total products which are deliverable in digitisable form,

⁴⁷ Singh (1999).

⁴⁸ UNCTAD (2000).

⁴⁹ ASSOCHAM (2000).

the revenue loss would be about US\$ 100 million, which will be less than 1 per cent of the total revenue coming 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—the time and the policy dimension. On the first, 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 at 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.

5.3 *The issue of characterisation*

E-commerce raises some fundamental issues at the WTO. First, it blurs the distinction between a good and a service. This matters because WTO rules treat goods and services differently. Goods tend to be subject to tariffs; services are not, but trade in services is limited by restrictions on ‘national treatment’⁵⁰ or quantitative controls on access to foreign markets. So the rules that will be devised for electronic commerce may affect the choice between physical and digital methods of trade.⁵¹

⁵⁰ ‘National treatment’ in this context means the giving of equal treatment to internationally based service providers compared to domestic service providers.

⁵¹ World Trade Survey, October 1998, *The Economist*, London.

The WTO discussions on e-commerce see it as divided into three broad categories for the purpose of policy discussion: (i) the searching stage where producers and consumers, or buyers and sellers, first interact over the Internet; (ii) the ordering and payment stage once a transaction has been agreed upon; and (iii) the delivery stage.

The new issues relate mostly to products that can be delivered electronically through the Internet [stage (iii) transactions], as this is where the most significant policy questions arise. It is also argued that the WTO already has market access regimes⁵² in place—the General Agreement on Tariffs and Trade (GATT) which deals with trade in goods and the General Agreement on Trade in Services (GATS). The obvious question that arises is whether either (or both) of these regimes provide an adequate framework for dealing with market access *vis-à-vis* electronic commerce. The example above illustrates that this is not a simple question.

So far as trade in goods is concerned, there are some products that can be digitised and sent over the Internet to be again converted into a good. Some examples are: music converted into a CD; information or writings converted into a book; videos and films transmitted digitally and converted to hard copies; graphics, pictures, designs, etc. In all such cases, the end usage could of course also continue to be in digital format. Even if they are, there would be a problem of valuation. Also in the case of customised writings and music, say for a theatre production, they could very well be treated as trade in services. In other words it would be a non-standardised usage or service.⁵³

As per classical concepts, goods are tangible and services are intangible. E-commerce complicates this classification as digitisable goods can be electronically transmitted and, therefore, could be considered to be ‘intangible goods’ on the analogy that

⁵² The international agreements on trade that were negotiated and established ostensibly with a view to promote greater (and fair) international trade.

⁵³ A book or music or software on a CD for mass consumption would be treated as standardised products, whereas customised writings, music, software etc. would be non-standardised products and classified as services.

these same ‘goods’ can have physical counterparts that can be delivered physically across a border.⁵⁴

It has also been suggested by some law experts that electronic transactions may be ‘goods’ if they have some value that can be owned, if they exist independently of their owners, and can be traded. On the other hand, ‘services’ could be defined as things purchased by consumers that do not have physical characteristics, i.e. they cannot be possessed and have no independent existence from their owners. For example, the first would apply to music and videos that can be ‘burned’ on to CDs, whereas the latter would be audio and video streaming services on the net. The issue or challenge here would be to develop a set of characterisation factors that apply to all transactions on the net.⁵⁵

It is argued by several countries and experts that the agreement on services (GATS) encompasses e-commerce and that all services are covered by it whether delivered electronically or otherwise. Today the great bulk of products delivered electronically, like telecommunications and financial services, are covered in the services classification lists. However, would this cover all existing services and all digital transactions? Even for existing services, there is no compulsory or universally agreed classification system. In many instances the nomenclature used is that based on the provisional Central Products Classification (CPC) of the United Nations. However, this classification is not used in a number of sectors, including financial services, telecommunications, air transport, and maritime transport. Moreover, it must be noted that this classification was last issued in 1989 and therefore today’s technological developments and delivery options could not have been foreseen.

It is also being argued that for services the principle of ‘technological neutrality’⁵⁶ applies and the mode of delivery does not matter. This notion was used in the negotiations on basic telecommunications and does not have legal binding status. Thus, it cannot be

⁵⁴ Satapathy (2001).

⁵⁵ Shah and Ogoti (2001).

⁵⁶ Concept that in the negotiations concerning the GATS agreement, the services or transactions envisaged were not meant to be dependent on the type of technology used nor the mode of delivery.

applied retroactively and automatically to market access and national treatment principles negotiated in earlier services agreements.⁵⁷ In this debate about ‘transport modes’ what is important is not the way in which goods, services, and information are ‘carried’ (whether electronically or by traditional means) but the way in which value is added.⁵⁸

For most products traded in e-commerce, the distinguishing characteristic is the mode of delivery (whether of the order or the service). For digitised products, the distinction is not clear; e.g. books, music, software are treated as goods as they are delivered in the form of paper, cassettes, or discs. If such products can be digitised then no carrier medium is required and then it becomes appropriate to classify these as services. Such intangible goods could then come under the ambit of intellectual property rights (IPRs) and thus trade in such goods would be considered as trade in IPR and not in goods and services.

Sen (2001) has correctly argued that classification is in fact a cross-cutting issue, and the most significant, as the final resolving of it will decide most other issues. It has direct implications for both the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and, of course, services.

There has been extensive debate on characterisation, with contrasting (and valid) points made on all sides. Yet, no one definition has been agreed upon by all Members. Different classification systems continue to be used for goods and services and, therefore, it is necessary to evolve a single system for electronic transactions. A decision, therefore, has to be taken on the revenue, administrative, and regulatory implications of treating e-commerce as goods or services or intellectual property or anything else (Sen 2001).

The European Union (EU) favours the classification of electronic transmissions of digitisable goods as services and favours the collection of Value Added Tax on such transmissions. The US on the other hand continues to lean towards classification of

⁵⁷ UNCTAD (2000).

⁵⁸ ITU (1999), Millennium World Telecom, ITU, Geneva.

electronic transmissions of digitisable products as ‘goods’ with no tariff being levied on them. These positions are based on the present and perceived usage of this medium where the EU’s desire is to keep the audio-visuals outside the scope of GATT—even when there is cross-border physical delivery.

At Seattle, the WTO draft declaration relating to e-commerce affirmed ‘that the electronic supply of services falls within the scope of the GATS’. This, however, relates specifically to the *electronic delivery of services* (as one more option or mode of supply). It does not encompass the entire gamut of what electronic commerce is and may evolve to be. The Doha meeting did not shed any further light on this position and restricted mention of e-commerce to only the stand-still and the on-going work programme.

Some Implications of Classification

The fact that the debate continues, and is still in discussion, itself implies that the issue is sensitive and has trade implications for software and e-commerce businesses. Some of these are given below.

Characterisation as Goods

- Customs duties/tariff may be applicable for supply of music and videos via the net even though technically this is not yet feasible. Even local countervailing or excise duties could become applicable.
- Anti-dumping provisions could be imposed on music goods for example and quotas on films could be extended to the net.
- Content could be regulated based on varying laws in countries ostensibly to protect ‘public morals’.
- Rules and regulations for prevention of deceptive trade practices may become applicable.

Characterisation as services

- Digitised services could fall within the scope of various services.

- Applicable service tax if leviable would need to be factored in.
- Specific commitments under the four modes would be applicable and market access would need to be re-negotiated.
- Content regulations would apply as GATS permits limitations on grounds of both 'public morals' as well as 'public order'.
- Laws and regulations pertaining to privacy would need to be honoured.

Implications of IPRs

- Some of the country compliances on content relate to effective protection of IPRs.
- Ownership of the IPR would have to be decided upon in most business transactions where value has been transacted.

5.4 GATS 2000 and e-commerce

As mentioned earlier, the implications of e-commerce *vis-à-vis* existing WTO agreements is still under study through the working groups. The discussions here continue to be without any final consensus as the countries still wish to see more study and research of the issues involved as well as to understand the impact of e-commerce on various trade related matters. In order to comment on India's e-commerce strategy or negotiating stand it is essential to also see this in the perspective and compulsions of the on-going GATS negotiations which started on 1 January 2000.⁵⁹ These negotiations could have implications for realising the trade and developmental advantages of e-commerce.

The fact remains that e-commerce is a relatively new technology and, therefore, most countries would not have factored it in during their negotiations and commitments at the time of the Uruguay Round. Therefore, there is a case for evaluating the relationship

⁵⁹ Negotiations of specific commitments are mandated under Article XIX of GATS which states that 'In pursuance of the objectives of the Agreement, Members shall enter into successive rounds of negotiations beginning not later than 5 years from the date of entry into force of the WTO Agreements and periodically thereafter, with a view to achieving a progressively higher level of liberalization.' A fresh round of comprehensive negotiations on specific commitments has, therefore, commenced in the WTO from 1 January 2000.

between e-commerce and the existing commitments particularly since the delivery of services could be in any of the four modes of supply.⁶⁰

The GATS, as it has been understood, involves service transactions where mostly the time and place of consumption cannot be separated and proximity between the service supplier and consumer is required. E-commerce challenges that and redefines proximity via the medium of the Internet.

Box 1: India and GATS 2000 negotiations*

The GATS recognises 4 modes of delivery of services. These are:

- (i) Mode 1-Cross border supply, e.g. supply of diskettes, architects blueprints, etc.
- (ii) Mode 2-Consumption abroad, e.g. a tourist availing of Services abroad
- (iii) Mode 3-Commercial presence, e.g. form of legal entity established abroad, such as a bank branch
- (iv) Mode 4-Movement of Natural Persons, e.g. physical movement of professionals, skilled and unskilled labour for temporary period. It does not cover permanent migration.

While the basic mandate for the fresh negotiations at GATS remains further liberalization, the basic difference between the approach of countries like India and those of the North is that the former wish to consider new proposals using sector by sector traditional approaches whereas there are already attempts by some of the developed countries to bring in specific and far-reaching proposals, ostensibly to facilitate cross-cutting liberalisation. These are the attempts to introduce the horizontal or formulae approach in addition to the existing or classical 'request and offer approach'. Specific suggestions for development of such formulas include:

- a. Establishment of standardised minimum liberalisation commitments on a sub-sectoral or on a modal basis
- b. Exclusion of certain types of restrictions, such as nationality requirements, across the board;
- c. Classification of sectors on a cluster basis and commitments based on the cluster;
- d. Use of model schedules (those used for financial services and basic telecommunication services).

The Indian position on this holds that horizontal formulas should not in any way curtail the flexibility in scheduling commitments and change the basic structure of GATS.

Developed countries would in all probability press for greater liberalisation in mode 3 relating to commercial presence since they would be interested in providing market access for their capital. Hence, the pressure on developing countries, including India, would be to provide greater market access in mode 3 and schedule more sectors in this mode. On the other hand, for many developing countries including India, the most important source of export would continue to be mode 4 relating to 'Movement of Natural Persons'. India, in particular, has interests in seeking greater market access for its professionals and skilled labour in mode 4 because of its surplus trained and skilled manpower. Thus, the trade-off in these negotiations are bound to be cross-sectoral with India seeking market access mainly in professional service sectors and others demanding greater market access in infrastructure sectors like financial services, telecommunication services, transport services, distribution services, etc.

* GATS brief at the Ministry of Commerce website at www.commind.nic.net.in

⁶⁰ Preparations for the 1999 Ministerial Conference: Work Programme on Electronic Commerce: Communication from Indonesia and Singapore, 8 July 1999 at <http://www.wto.org>

Towards an Indian position on e-commerce and GATS

Box 1 illustrates India's position *vis-à-vis* services as a whole. For e-commerce, it is important to first understand a view taken by some experts that all four modes of GATS would apply to e-commerce.

Mode 1, Cross-border supply: Electronic delivery of a service can be cross-border and for e-commerce mostly is.

Mode 2, Consumption abroad: This could involve consumption of an e-commerce service abroad by a travelling executive, for example.

Mode 3, Commercial presence: This would imply e-commerce services by an enterprise in another country through a legal entity established abroad such as a subsidiary of the enterprise.

Mode 4, Movement of Natural Persons: here of course it is through physical movement of professionals, e.g. software engineers who go abroad to run e-commerce services for a temporary period.

In actuality though it is really in mode 1 that most of the transactions would apply. However, it is important to note that this mode impacts and cross-cuts all the other modes too. For example, consumption abroad of a medical service could follow after transactions of information, contract and part-services supplied as cross-border telemedicine. Commercial presence could facilitate e-commerce cross-border supply and movement of persons could be in addition to or follow initial cross-border e-commerce supply of services. Moreover both mode 3 and 4 are crucial adjuncts for e-commerce, especially Indian software services. Much of the Indian software and ITES⁶¹ exports are through commercial presence in the form of subsidiaries and joint ventures (JVs) both abroad and in India as well as through movement of software professionals.

⁶¹ IT enabled services.

Classification of e-commerce as service will also involve WTO members agreeing on classification of the mode of supply. This is extremely important, as it would determine the regulatory treatment of the transaction. For example, a financial service supplied across a border could be classified as cross-border supply or mode 1 and the transaction treated as having taken place in the country of the buyer's residence, thus applying the importing country's regulatory regime—and tax. If the same transaction were classified as under mode 2—consumption abroad, the regulatory regime applicable would be that of the country of the supplier's residence. Such preference of classification would largely depend on whether it is seen as an issue of consumer protection (therefore, prefer mode 1) or as favouring market access (and thus prefer mode 2).⁶²

For India, as an importing country it would appear to be better to prefer e-commerce transactions and services as classified as mode 1. However, with the on-going boom and potential of IT-enabled services, it is rather in India's interest to push for greater market access under existing mode 2 commitments.

India's main interest and focus area in the GATS negotiations would also be to provide effective market access to its professionals and skilled labour force and to bring about an agreed uniformity in the movement of capital and labour. What could be India's position for e-commerce so far as the cross-sectoral market access issues are concerned?

India's stand for the services as a whole is outlined above. As regards its specific interest in the services sector, according to the Ministry of Commerce⁶³ the sectors where market access for its professionals is specifically required are the following: (a) Health, (b) Software, (c) Construction and Engineering, (d) Legal, and (e) Accountancy.

It could be taken that India's interest in these areas stems from its strengths in these sectors and, therefore, we would be interested in the supply of these services in possibly all

⁶² Panagariya (2000).

⁶³ GATS brief at the Ministry of Commerce website at www.commind.nic.net.in

the modes. In order to appreciate the cross-sectoral interest⁶⁴ that we may have between these identified sectors and e-commerce, it would be useful to present a matrix of the link or supply of these services via the Internet or as e-commerce, and view these in the context of the four modes. (India's interest, based on the potential or possibilities, are listed as *High, Medium, and Low.*)

From Statement 6 it would appear that e-commerce or Internet based supply of these services internationally is in India's interest and we would benefit from the cross-sectoral links with (and through) e-commerce in them.

Statement 6

Service vis-à-vis. e-commerce	Mode 1 Cross-border supply	Mode 2 Consumption abroad	Mode 3 Commercial presence	Mode 4 Movement of Natural Persons
Ehealth —health services via the Internet are one of the most potential areas in e-commerce globally.	High EHealth Indian enterprises would like to supply cross-border services.	Low We may be interested in supplying services once the domestic eHealth sector emerges.	Medium Some of the larger Indian health enterprises may set up services abroad linked via the Internet to HQs.	High EHealth professionals from India could be sourced.
Software —supply of software services is part of e-commerce.	High It is already 6 billion dollars and growing.	Medium India's interest lies in the increase of global e-commerce services.	Medium Some of the Indian software companies have already set up shop abroad.	High This is India's main concern and interest.
Construction and Engineering —Internet links are emerging as are B2B portals in this area.	High We have strong potential of growth in this area.	Nil	Medium Some of the Indian companies are in the Middle East for example and they could supply Internet based services.	High Again, this is of prime interest.
Legal and Accountancy —India is already into Web-enabled services in these areas.	High Such services have the highest growth potential for India.	Low	Low Again, it is only very large companies that may set up overseas and supply Web-enabled services there.	Medium Some professionals may go abroad but India's competitive advantage is to supply them from India

⁶⁴ Where services are inter linked or where country commitments in one sector may have an impact on one or more other sectors.

It is beyond the scope of this paper to discuss India's stand *vis-à-vis* other services such as telecommunications, financial services, distribution services etc. Suffice it is to say that in so far as any of these services are deliverable or have an impact on e-commerce supply, our position could continue to be consistent with our GATS negotiation stand as a whole as most of these services are not where India's strength lies.

There is, however, an emerging opinion in India that from the Indian point of view, it would probably be more comfortable if e-commerce is taken to fall in the services arena. India's commitments here are very few. Moreover, the negotiating model of request and offer allows for an easier approach and, therefore, India's needs to stick by it. Also it allows for horizontal exclusions such as the non-granting of national treatment. This would provide a greater sense of security. However, as Statement 6 shows, in the sectors of interest to India, e-commerce transactions and services hold potential based on the Indian strengths. India may, therefore, be willing to take on a more open negotiating position.

We may not have any serious objection to the view expressed above, except with the rider that e-commerce is still developing and emerging. It cannot be limited and classified by definitions of goods or services. It may be either less or something more too. Policy-makers, therefore, need to be prepared to take up new negotiations in the area of e-commerce and then decide on the matter of commitments and principles.

In case e-commerce is to be treated as something different from a service or a good it could afford us the opportunity to negotiate to advantage. However, the danger here could also be that developed countries could come to an agreement among themselves and, picking up support from several 'traditionally supportive/dependant countries', could then force others to accept it (as happened at the time of the TRIPS agreement).

5.5 *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'⁶⁵ 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, with the latter having very strong commercial implications for the trademarks issue.⁶⁶ Developing countries need to be represented on these bodies.

E-commerce entails the buying and selling of products and services at a distance. It is, therefore, becoming increasingly important to rely on the reputation attached to trademarks and other distinctive signs. Not only is the question of their protection an issue, but conflicts arise between them and Internet 'domain names', which, though designed to serve as addresses, have acquired a further significance as business identifiers.⁶⁷ Several addresses containing the trademark names of established companies have been registered as domain names, thus leading to disputes over their usage, as well as to allegations of what is referred to as 'cyber-squatting'.⁶⁸ This practice has become so popular that it is estimated that 98 per cent of the words in Webster's English Dictionary at present have been registered as domain names!⁶⁹ Selling innovative and interesting names as Internet addresses is one thing, but 'cyber-kidnapping trademarks' of existing businesses is another

⁶⁵ Domain names are the people-friendly form of Internet addresses (which are actually numbers) designed for computers to recognize the address of a particular site on the network.

⁶⁶ 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 multi-media companies) to register companies with their suffix, and Moldova can sell registration rights to US doctors to register with their unique suffix - ".MD".

⁶⁷ WIPO Report (1999).

⁶⁸ This is the practice of obtaining well-known people-names or common terms, brand names and trademark names as Internet addresses with the hope of later selling them at a profit.

⁶⁹ *Wall Street Journal*, 25 April 2000, New York.

thing altogether.⁷⁰ The World Intellectual Property Organization (WIPO) has last year issued a report on the issue of trademarks and domain names, recommending practices and guidelines intended to prevent disputes in this area.⁷¹ They also accept complaints in this area and issue judgements from Geneva on the same. This process is, however, rather cumbersome and very expensive for poor countries and their firms.

The protection of IPRs requires that governments and the private sector develop and implement an appropriate mix of regulatory, contractual, and technological measures, and ensure adequate public awareness of the role of copyright and related rights in the information society. This would, on the one hand, provide protection to local industries in global markets and, on the other hand, spur investment and growth by providing a safe and legal environment.

Towards an Indian position

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 intellectual property rights.⁷² 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.

⁷⁰ A new form of cyber-squatting is what is being referred to as the 'typo-squatters', where names very similar to existing popular website addresses are registered with the hope that clients would possibly type the wrong address when trying to connect on the Internet and thus land up at the alternative site.

⁷¹ Under the new Uniform Dispute Resolution Policy adopted by ICANN, the first such case filed by the World Wrestling Federation (WWF) was cleared by the WIPO Arbitration and Mediation Centre this January.

⁷² Alliance for global business, 1999, A global action plan for electronic commerce, AGB, OECD, Paris.

5.6 *ITA and e-commerce*

There is one more WTO agreement that has an indirect bearing on e-commerce and India's strategic position. This is the Information Technology Agreement (ITA) negotiated post-Uruguay Round and embodied in the WTO Ministerial Declaration on Trade in Information Technology Products. The agreement went into effect in March 1997 and provides for its participants to eliminate customs duties and other duties and charges on information technology products by the year 2000 on MFN basis. The agreement relates to IT, telecom, semi-conductor, and scientific equipment and products. It includes software, but only on a hard medium such as diskettes and CDs, etc. It would, therefore, not cover digital commerce or on-line transactions of software. India is one of the 40 signatories⁷³ to this agreement but, being a developing country, has till 2005 to harmonise with the agreement.

The basic principle behind this agreement was the further liberalization of the information communications sector. Though there has been much debate on the way this agreement was negotiated, ignoring developing countries views, for India it means progressing towards the zero duty regime in the phased manner—something that the country has already been doing for IT products. At the macro-economic level the agreement aims at reducing the cost of hardware—therefore, leading to a subsequent positive impact on the cost of service provisioning.⁷⁴ Though the hardware sector in the country may have misgivings with this, so far as e-commerce and the software sector is concerned, this movement should result in cheaper products and, therefore, growth in e-commerce services. For consumers, this means cheaper products and services, and for the economy a possible impetus to the growth of networks. For the country as a whole, however, this could possibly mean two things: (a) that the new opportunities in the ICT sector and hardware may be swamped by multinationals, and, (b) that the IT sector becomes even more software and e-commerce centric. The last few years have shown that in the first some Indian companies are also benefiting from the opportunities; so far as the second is

⁷³ As of 1999.

⁷⁴ ITC (1999).

concerned, that is the country's primary competitive advantage and the software industry should benefit from the growth in the market of standardised software products and applications.

6. Towards A Policy Framework

6.1 *A Framework for strategy formulation*

In formulating a national strategy for e-commerce, it is important to bear in mind, if not actually go through, the set steps of a classical policy formulation framework. These would *inter alia* include:

1. Deciding on promoting e-commerce (agenda setting) — this requires e-awareness
2. Deciding on issue filtration, including defining the stakeholders in the process
3. Defining the issue and forecasting the goal
4. Setting objectives and priorities (what do we want and how will we know we have it)
5. Analysing the options (not only what is easy but being open to alternatives)
6. Implementing the policy and strategy
7. Monitoring and evaluating (in a participatory and analytical manner)
8. Maintaining, adjusting and re-evaluating—continuously

It is also important here to distinguish between policy and strategy. Though one follows from the other, it is necessary for an e-commerce export strategy framework to aim for a focused target oriented approach rather than the usual 'volume of promotion' or the 'muddling through' approach. Developing countries such as India have neither the resources nor the time to aim at broad-band or ostensibly comprehensive strategy aimed at transforming their entire economies to match the new digital age. In this context, short-or-medium term strategies are essential to gain from the trade and developmental benefits of e-commerce.

6.2 *Towards a 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 at hand 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 for India.

Development objectives

A developing countries 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 that cannot afford it. Electronic governance, public Internet terminals, rural access at subsidized cost, eWareness etc. 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.

6.3 *E-commerce and e-trade*

The projections for the future show IT exports of US\$ 50 billion, with 10 billion coming from e-business. The reality of today is that all or most of our success in the IT arena comes directly from software programming. Hard-core e-commerce or e-trade is yet to pick up. This is the danger. If our trade does not become e-enabled quickly, what to speak of new opportunities, even our existing trade will stand threatened as more and more of international trade converts to digital transactions and commerce via the Internet.

In order to analyse which of our trade goods would be well-suited for switching to the B2B global supply chains of the future, it may be of use to view our existing trade basket and see which of the commodities may possibly manage this easier.

Such digital supply chains essentially require automation, of a very high degree, of the entire supply chain. The factors that could ensure a greater chance of compliance and adaptability would be the following:

- (a) Urban based exporter location for easier access to computerization and the Internet.
- (b) The larger enterprises moving first as they alone have the surplus resources for digitization and introduction of ERP and EDI type automation.
- (c) Where the Trading House interface is more as they could be the catalyst in the process or themselves carry out or facilitate the transaction.
- (d) Where export is to fixed or restricted number of buyers in an industry that is switching to digital procedures and digital supply chains

Applying this criteria to India's major export items may give an indication of those that may become e-enabled easier/quicker.⁷⁵ Statement 7 presents a matrix that attempts to

⁷⁵ This analysis is based on discussions with trade experts and personal knowledge of the export sector in India. Further research is required to exactly pinpoint the present status and required interventions for the future.

flag the compatibility for e-commerce transactions of the top 12 product groups in India's export basket. It is these products that will have to become e-compatible for e-trade.

Statement 7: Major export products and their compatibility for e-commerce transactions

Product	1998-99 (Value \$ Mn.)	% share of total	Compatibility to criteria	Remarks
Gems and jewellery	5904.05	17.54	High	Limited no. of exporting community despite large number of units
Engineering goods	3803.51	11.30	High	Several units have already computerized
Readymade garments	4444.42	13.20	Medium/High	Pressure from foreign dept. stores to start e-commerce
Cotton yarn, fabrics etc.	2773.78	8.24	Medium	Dispersed buyers not necessarily in developed countries though producers could lead the way
Chemicals, pharmaceuticals etc.	2646.19	7.86	High	Global chains already emerging
Leather and manufactures	1653.36	4.91	Medium/High	Pressure from buyers
Marine products	1038.24	3.08	Medium	Processing houses need to computerise
Ores and minerals	890.94	2.64	Medium	Global e-market places emerging
Oil meals	454.56	1.36	Low	Dispersed producers
Rice	1473.90	4.37	Medium	Leading exporters need to be activated
Rubber, glass, etc.	808.07	2.40	Low	Dispersed producers
Man-made yarn, fabrics made-ups	720.82	2.14	Medium	Dispersed buyers not necessarily in developed countries. Producers already computerising.
Total (above)	267111.84	79.36		
Total (incl. Others)	33658.55	100.00		

Source: for trade data: India Trade Promotion Organisation, Economic and Trade Data 1999-2000.

From the above analysis it would appear that 9 out of the 12 major product groups are either medium or high in their possible compatibility to participate in e-commerce. On the positive side this shows the potential but on the negative side it indicates the danger for our existing export basket of goods. We must become e-compatible for e-commerce and e-

trade, lest we lose the market share that we presently have. Unfortunately, the ground situation and data on the same is both lacking in terms of interest and compilation. This needs to be addressed by the Ministry of Commerce and Industry on the one hand and trade and industry associations on the other.

E-commerce as a non-tariff barrier

For developing countries such as India, e-commerce can itself become a non-tariff barrier in due course. As more and more international trade and supply chains become digital over the Internet, those enterprises that are not a part of them either stand to lose the trade opportunity or else pay a higher price or charge for the service or trade deal (as a 'fine' for not being e-compatible). Already in India there are several examples of suppliers receiving payments electronically and banks having to make special dispensations (and, therefore, charging an additional fee) from them till such time as the banking regulations and arrangements for such transactions are not in place.

6.4 Towards a WTO negotiating position

The issues of e-commerce and its implications on the international trade regime are of technology and access. Does the global environment ensure equal right of entry and right of use? Unfortunately not. Can the WTO and the international agencies ensure such access to all their members? That is a far cry in reality, though a logical negotiating position. It leads to the almost obvious demand for special and preferential treatment for developing countries in any e-commerce agreement. Getting it is doubtful but negotiating for it may be useful.

Though there is little doubt that e-commerce is an important and major issue for world trade, there are several aspects of it that need to be further studied, especially from the point of view of their implications for the developing world. Most of the e-commerce and Internet technical and economic developments on the one hand and negotiations and discussions at the WTO, ITU etc. on the other, are taking place in the absence of a broader, more integrated framework which takes account of the needs of and possibilities for

developing countries with regard to e-commerce and the information and communications technologies which facilitate it. Several developing countries are therefore adopting a defensive stance and are reluctant to engage in a process (at the WTO) which could lead to commitments and foreclosure of their options. Today the broader picture is still quite unclear and the costs and benefits are difficult to determine and assess. Policy-makers need to ask for the WTO work programme on e-commerce to also examine 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 as well as technology access at affordable cost. There are also several impediments to the availability of and access of this medium in developing countries and unless these are addressed simultaneously, the gap between the developed and developing world and that between the poor and rich will only widen. Therefore, while considering the promotion of e-commerce as part of the world trade agenda, the issues of infrastructure, investment, availability, and marginal cost of hardware and software, awareness, education, and training need to be also addressed and redressed. India has and should continue to take this stand.

On the policy front, the Indian negotiators at the WTO may not be willing to include e-commerce as another issue on the multilateral trade agenda or system. Quite obviously, because they would not like to take on any more obligations as Indian may not have the resources to meet them. The flip side of this could be that the Indian traders and exporters may lose some possible access in the West or elsewhere. Do we have sufficient data to decide on this issue? Not for the moment, as the e-commerce global implications are themselves still emerging. It should, therefore, be India's demand to the WTO to continue to study this as part of their work programme at a global level as it may not have the resources to do it itself.

At the end of the day the Indian negotiators need to remember that India is an emerging leader in the information age. Do we need the WTO and any agreement on e-commerce that it may come up with? Probably not. The markets in the developed world that India is accessing, and will continue to want to access, are already fairly liberal and

open. It is, therefore, in India's interest to not be 'demanders' on the e-commerce issue. Traditionally India has led the opposition on any or most issues raised by the US and other developed countries at the WTO. Perhaps in this case, it would gain more by not standing out as 'opposers' either.

7. Concluding Remarks

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.
- For e-commerce promotion it is not just the hardware and physical infrastructure that is enough. What is required is the right '*info-structure*' meaning.
- E-commerce in India encompasses three areas:
 - (i) Software exports
 - (ii) Web-enabled services
 - (iii) e-business and e-trade.
- 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 early.
- 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 sets 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.
- US companies developing security technologies are presently restricted by their Government from the export of such technologies and that is an issue that needs to be addressed at the international level.
- Implementation of e-governance needs to be pushed through despite the constraints and hurdles that will develop against it.
- Future tax policy on electronic 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 with simple rules to follow.
- Capacity building in the field of information technology, 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 meet with the needs of industry.
- 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 the India as a global knowledge power. The private sector must be involved and consulted in arriving at any such position.
- India's main interest and focus area in the GATS negotiations would be on the one hand to provide effective market access to its professionals and skilled labour force and on the other to bring about an agreed uniformity in the movement of capital and labour.
- 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 the 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 the Indian trade and industry.

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