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## **RIS** **Discussion Papers**

**WTO and Trade in Electronically  
Delivered Software (EDS):  
Emerging Challenges and Policy Options -  
An Indian Perspective**

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# WTO and Trade in Electronically Delivered Software (EDS): Emerging Challenges and Policy Options - An Indian Perspective

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Sachin Chaturvedi\*  
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*Abstract:* This paper makes an effort to address these issues in light of Indian experience with the usage of ICT in trade transactions. The section II summarises key issues being debated at various committees of WTO while Section III provides India's growing interests in software exports while Section IV enumerates the perspectives on emerging debate at the multilateral fora and also provides policy recommendations.

## I. Introduction

As the globalization has intensified and the outreach of internet has expanded<sup>1</sup>, the digitalization of the trade has assumed new dimensions. The Information and Communication Technology (ICT) including the electronic commerce is being looked at as a key links for trade facilitation. The electronic trade in music, software, movies, games and other digital products has assumed an increasingly important place in the fast expanding global trade in these products. The scope of these transactions to transcend national boundaries has thrown up several issues, which are being discussed at various multilateral

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fora. At the WTO, intense discussions are on, for almost a decade now, on liberalizing trade in software products regardless of whether those products are delivered on carrier media or by electronic transmission. In the “Declaration on Global Electronic Commerce” adopted at the Second Session of the Ministerial Conference in May 1998, the WTO members launched a work programme to examine all trade-related issues especially those linked with global electronic commerce.<sup>2</sup> The WTO currently has customs duty moratorium on electronic transactions. Despite of these extensions to the on-going moratorium on imposition of customs duties on electronic transfer of software (EDS), there is hardly any movement in the ‘substantive work programme’ launched on e-commerce at the WTO in 1998. The Hong Kong WTO Ministerial (2005) Declaration further renewed the earlier arrangement of non imposition of customs duty on EDS

The intense opposition, by several developing countries, particularly African countries, against permanent exemption and a binding commitment, during the Doha Development Round, assumes importance in the backdrop of this non movement in the electronic commerce work programme particularly in the backdrop of the fundamental concern raised by the developing countries on the potential revenue losses on duty free trade in EDS. In most of the other sectoral negotiations at WTO the developing countries have taken a position which, with varying nuances, asks for incorporating the concept of “less than full reciprocity” for developing countries, for instance, developed countries’ proposal for zero tariffs on non-agricultural products, are often rejected, characterizing them as “ambitious and not realistic”. Largely the argument is on ignoring the role of tariffs and customs receipts in raising revenues to meet social service expenditures and in infant-industry protection. There are major differences on the perception on how to classify some deliveries which would have practical implications in the policy areas such as customs duties, classification, customs valuation, rules of origin, and import licensing etc.

The debate basically brings in issue related to whether GATT should be applied to online/electronic/digital transactions (e.g. downloading), as trade regime recognizes the similar trading transactions as physical goods (e.g. CD-ROM). IT and e-commerce are being discussed through trade in

services negotiations and the work program on e-commerce particularly from the point of view of having an internationally consistent regulatory regime on these aspects of international trade. The WTO has also failed to respond to various developments within the Information Technology Agreement (ITA) in 1996. The ITA -II has placed on table several hundreds of new IT products invented in past decade which are to be covered in WTO on-going negotiations.<sup>3</sup>

These issues assume relevance in light of the fact that some of the developing countries have constraints related to access to modern technology for digital certification, electronic transactions, data protection and the authentication of documents.<sup>4</sup> These issues actually cut across different other WTO agreements for instance the services related GATS provisions and also the provisions related to TRIPs. The Council for Trade in Services has the mandate to look into the need to increase the participation of developing countries through Article IV of GATS. This article has the provisions for liberalization for ensuring market access to developing countries in the areas of their export interests and regarding better access to technology, including technology relating to encryption and security of transactions.

In this paper we make an effort to address these issues in light of Indian experience with the usage of ICT in trade transactions. The next section summarises key issues being debated at various committees of WTO while Section III provides India’s growing interests in software exports while Section IV enumerates the perspectives on emerging debate at the multilateral fora and also provides policy recommendations.

## **II. Emerging and Unresolved Issues in EDS**

The second WTO Ministerial conference at Geneva adopted the ‘Declaration on Global Electronic Commerce’, on 20 May, 1998 which urged the General Council to launch a comprehensive work programme on all aspects of electronic commerce particularly issues related to trade. This Declaration also vetted the on-going practice of not imposing customs duties on electronic transmissions. In the subsequent meeting, it was decided that the work programme on electronic commerce would be handled at various committees viz. Councils for Trade in Services, Trade in Goods and TRIPs and the

Committee on Trade and Development for addressing issues related to their respective areas of competence (see Table 1).<sup>5</sup> At the fourth session of the Ministerial conference in Doha (2001) the Ministers agreed to continue the

**Table 1: Relevant WTO Councils and their mandate on E-commerce**

| Relevant Council | Areas of Responsibility for WTO E-commerce Work Programme   |
|------------------|---|
| GATT Council     | Aspects of e-commerce relevant to the GATT and other WTO agreements affecting trade in goods (e.g., Agreement on Technical Barriers to Trade, Agreement on Antidumping, Agreement on Rules of Origin), including Market access, customs valuation, import license procedures, customs duties, technical standard, rules of origin, and classification.  |
| GATS Council     | The treatment of e-commerce in the GATS legal framework, including: Scope (including modes of supply), MFN, transparency, increasing participation of developing countries, domestic regulation, competition, protection of privacy and public morals and prevention of fraud, market access and national treatment commitments on electronic supply of services, access to and use of public telecommunications transport networks and services, customs duties and classification.  |
| TRIPs Council    | Intellectual property issues arising in connection with electronic commerce, including Protection and enforcement of copyright and trademarks, and new technologies and the access to technology.   |
| CTD              | The development implications of e-commerce, including: Effects of e-commerce on trade and economic prospects of developing countries (especially their small – and medium-sized enterprise (SMEs); challenges/solutions to enhancing participation of developing countries as exporters of electronically delivered products, including the role of improved access to infrastructure, transfer of technology, and the movement of natural persons; use of IT to integrate developing countries into the multilateral trading system; impact of e-commerce on traditional means of distributing physical goods; and financial implications of e-commerce. |

*Source:* Wunsch-Vincent (2004).

work programme on electronic commerce. The Declaration (paragraph 34) acknowledged that irrespective of the stages of economic development, the member countries may derive advantages from the promotion of electronic commerce, which may create new challenges and opportunities for all the countries. The Declaration (paragraph 34) also announced that the members would not be imposing customs duty on electronic transmissions. This moratorium was renewed at the Fifth WTO Ministerial at Cancun (2003), where in the paragraph 24, it was announced that no customs duties would be imposed on EDS. This exemption was further renewed at the Sixth WTO Ministerial Conference at Hong Kong, 2005 (paragraph 46).

One may be astonished to find that though the developing countries have been raising so many concerns about electronic commerce, just like in case of Trade Facilitation but in no way come out with any substantive proposal to voice their concerns in a consolidated manner.<sup>6</sup> While smaller delegations express inability to analyze on the pretext of manpower limitations, the bigger ones just end up seeking ‘clarifications’ and sounding ‘words of caution’.<sup>7</sup> In context of infrastructure gap for implementing possible commitments for e-commerce, there are no cost estimations attempted and no position papers issued envisaging nature and magnitude of technical assistance required far is the question of pro-activism for articulating their business interest. There is also no estimation available of expected revenue loss or gain from the continued moratorium on electronic transfer of software. This phenomenon brings back the point that the developing world still needs to work on articulation and approach the negotiating table with better formulations to reflect on their actual concerns.

### ***II.1. Debate on Moratorium***

There were intense discussions at various General Council meetings regarding the moratorium on electronic transfers. Several developing countries particularly, African countries have raised the point that they could not agree to any longer-term extension of the moratorium.<sup>8</sup> At the General Council meeting in 2005 several developing countries raised the issue of the language of the moratorium which had led to confusion about its coverage. The suggestion was that the term “electronic transmissions”, which

is vague, could be replaced with the term “products transmitted electronically”, which seems to be more clearer.<sup>9</sup> Similarly, although most of the WTO members agree that all IT goods and services facilitating e-commerce should be subject to as liberal a trade regime as possible but at times are scared of the expanding definition and nature of goods to be covered. The effort to extend beyond software and include, in particular, telecommunications and all computer services, as well as government procurement of IT goods and services facilitating e-commerce etc. need clarification.<sup>10</sup> There is also a need to clarify the very definition of “software” itself. During the discussions, it has also come out that some countries applied a value-added or sales tax to internal operators and later extended it to the foreign based operators, which effectively goes against the spirit of moratorium.<sup>11</sup> In the classification debate, the issue of the software would have to be without linkage to negotiating areas including on whether electronic deliverables with a physical equivalent are goods or services.

## ***II.2. Classification***

The other contentious issue is about the classification of the content of certain electronic transmissions. One of the major issues at the WTO discussions on e-commerce is related to the examination of the classification question which has eventually ended up with an impasse, despite of the fact that the group had spent over five years debating this issue. There are several members at WTO which have clearly expressed their understanding that everything delivered electronically is to be regarded as services and that therefore the GATS rules and commitments should be applied to electronic deliveries. As the EU puts in their proposal, “the issue at stake has not been how to classify all electronic deliveries but how to classify some deliveries involving so-called “digitised products”.”<sup>12</sup>

There was an intense debate at the Council for Trade in Goods on nature and categories of transactions to be captured as part of the e-commerce. In this context four categories were suggested at the discussions:<sup>13</sup>

- electronically conducted transactions combined with physical delivery of goods; in this case the traditional GATT commitments would apply;
- trade in goods related to electronic commerce (e.g. computers); also in this case, the traditional GATT commitments would apply;

- sale of carrier media such as CD’s or tapes, which contain digitalized information (e.g., software or music); the question of content of the carrier media would relate to customs valuation questions
- digitalised information transmitted by electronic means, i.e. electronic transmissions.

However, it is also to be appreciated that the number of new categories of products made possible by digitalization is likely to multiply in the days to come. Emerging advances in the technology offers the possibilities to converge digitalized products that in physical applications are actually independent of each other, such as by combining educational, entertainment and even business applications in a single product. Infact digitalization has made classification more problematic, as digital products on physical carrier media are approaching a state where they are increasingly difficult to be characterised, the type of product based on physical appearance or physical characteristics.<sup>14</sup>

Since Harmonised System of Classification (HS) system is based on physical characteristics hence incorporating these goods under HS is a major challenge. In context of HS debate at WTO, it also came up that ‘content’ itself was not dealt with in the goods agreements, but appeared to be an intellectual property question. At the World Customs Organisation a proposal was mooted to create a new category under HS to cover ‘software without carrying media’, similar to HS 27.16 which covers an intangible commodity viz. electricity.

At the General Council of WTO, point was raised that the GATS covered all forms of supply, in comparison with the GATT which covered only cross-border supply.<sup>15</sup> Also, the disciplines under the GATS on issues such as domestic regulations would be more conducive to the development and liberalization of the trade of such electronically deliverable products as a service, deliverable products such as e-commerce and in effect would also cover all modes of supply including Mode 3, which was not covered by the GATT. The scope for addressing domestic regulations under the GATS to ensure that they would not become a barrier to trade was therefore an advantage of having such trade be treated under the GATS rather than

under the GATT, was the view that emerged at the General Council meeting.<sup>16</sup> However, the legacy of trade agreements means that anything physically crossing a border has to be treated under the GATT.<sup>17</sup> This includes the outcome of services, such as architectural or industrial designs. It therefore does not become clear when WTO Members have to apply both the GATS (to the supply of the service) and the GATT (to the physical outcome) and how to ensure consistency between the national treatment commitments made under the GATS for such services and the possible tariffs collected on the good delivered. Within GATS, there are also issues related to mode 1 vis-à-vis. mode 2 classifications and treatment of new services for instance, access to audio-visual markets, and have surfaced at the WTO.<sup>18</sup>

### ***II.3. Valuation Issues***

If the valuation of carrier media bearing software for data processing is addressed as per the Agreement on Customs Valuation (ACV) then the members get the policy space to charge customs duty as per the value of the carrier media. The ACV provides a set of valuation rules, expanding and giving greater precision to the existing provisions on customs valuation in the original GATT agreement.<sup>19</sup> The ACV is largely a manifestation of Article VII of GATT which was revised during the Tokyo Round of GATT Negotiations. The relevance of ACV in context of electronic commerce has assumed importance, as several WTO members have expressed that, at this stage, CV should not be excluded for electronic transmissions. The ACV may become relevant, and valuation issues based on that agreement could still be applied. Electronic payments for the imported good (such as credit card payments over the internet) could pose problems with regard to the valuation of goods, if domestic banks are not involved in the transaction.<sup>20</sup> In developing countries the improper valuation of products which are imported through electronic channels may create major challenges. However, there is a view that carrier medium is just incidental and should not be taxed.<sup>21</sup>

### ***II.4. Rules of Origin***

If electronic transfers are to be viewed as goods then the question of rules of origin occupies the central position among all other challenges. How this should be settled for electronically transferred goods. In the Council for

Trade in Goods meeting (July 26, 1999) it was suggested that for recorded media or sound recordings (HS Code 8524) there had been a proposal to confer origin to the country where recordings were produced by photographic producers located or established in that country, as opposed to where the sound is copied onto a carrier medium.<sup>22</sup>

In context of electronic commerce relevance of rules of origin is a matter of serious doubt as emergence of sophisticated technology allows for easy duplication and unlimited routing of digitalized data and with multi-setting networks, across different countries, which makes it difficult to point out at what stage which border is crossed.

### ***II.5. Tax Issues***

At the GATS Council meeting, the WTO Secretariat noted that theoretically there is no reason why customs duty can not be imposed on the services whether provided electronically or otherwise.<sup>23</sup> US in their proposal (WT/COMTTD/17) argued that bias towards electronic commerce is not a violation of principle of technological neutrality. It is often observed that since physically delivered imports still attract customs duty while same product delivered electronically is free of customs duty. As a result, one often finds varying prescriptions for instance, Panagariya (1999) suggests that developing countries should be sure that e-commerce is not classified as goods trade with zero customs duty made permanent, which may eventually lead to complete liberalisation of e-commerce and undermine the bargaining power of developing countries.

The international debate on taxation of electronic commerce has gone through an interesting phase. The US Treasury Statement (1996) suggested to allow growth of e-commerce without any additional taxation. In US, there is no general Federal sales or consumption tax.<sup>24</sup> In case of EU, the approach was slightly different. The European Commission in April 1998 decided to appoint the committee to look into implications of e-commerce on VAT and customs. The committee recommended to continue with existing mechanisms and legal basis to ensure taxation of e-commerce transactions. However, this committee acknowledges a need to address the problems likely to be caused by an increase of scale in the transaction such as the

protocols dealing with identification of parties to transactions, audit issues, etc.<sup>25</sup> Later, EU joined US and issued a joint statement on e-commerce, suggesting no imposition of additional taxation on e-commerce. In July 1998, EU endorsed a number of guidelines drawn up by the European Commission suggesting that EU's VAT system will function as usual for e-commerce.<sup>26</sup> The adopted guidelines had following key features:

- No new taxes are to be levied on e-commerce. Instead, existing ones, specifically VAT, should be adapted.
- On-line supply of a digitised product is to be treated as the supply of a service, not a good.
- Consumption of services within the EU should be taxed within the EU, whatever their origin and whether supplied via e-commerce or otherwise. Services supplied by EU traders for consumption outside the EU are not to be subject to EU VAT, but VAT on related inputs would be deductible.
- The VAT system, covering supplies to both businesses and private individuals, must be enforceable.
- Electronic invoicing must be authorised for VAT-liable transactions within the EU, subject to agreed rules
- The compliance burden for e-commerce operators should be as light as possible.
- Electronic VAT declarations and payments should be possible.

At this stage, action shifted to OECD which came out with the Ottawa Taxation Framework Conditions, 1998. This set out a number of principles that governments should adopt in their approach to taxation of the electronic commerce sector. Since 1998 the work of the OECD's Committee on Fiscal Affairs has continued to develop these principles into practical guidance for international application.<sup>27</sup>

## ***II.6. 'WTO Plus' in E- Commerce***

Since the WTO talks are stuck US has been exploring alternative ways to push in electronic software related agenda at various regional and bilateral trade fora. In these agreements, new baseline have been set with the expectation that they would lead to significant market opportunities for the US IT and software industries in the years ahead.<sup>28</sup> The United States

concluded a free trade agreement with Jordan which was the first FTA to incorporate explicit provisions on e-commerce. Since then, US ensured that each of their FTA has provisions related to a state-of-the-art chapter on e-commerce. This is generally to ensure commitment of the partner countries for this mode of distribution. In the e-commerce chapter, the main issues covered are taxation on e-commerce trade and digital products, electronic authentication and digital certificates, non-discriminatory measures, on-line consumer protection, personal data protection, security in e-transactions and related issues.

Similarly some other FTAs have also brought in similar features, for instance, e-commerce is discussed at length at the US FTAs with Singapore and Chile (See Table 2). It recognises the trade treatment of software delivered electronically as one of the most important issues facing the software industry and also that software delivered electronically receive the same treatment under the trade laws as software traded on a physical medium.<sup>29</sup> The e-commerce provisions in the Singapore and Chile FTAs recognize, for the first time, the concept of "digital products" in terms of trade. The chapters also establish requirements that further promote barrier free e-commerce, essential in promoting growth and development of the IT industry. The inclusion of this provision is critical in further promoting the growth of cross border e-commerce. However, most interesting feature is that with respect to the physical delivery of digital products, in both agreements, the parties agreed to apply customs duties on the basis of the value of the carrier medium.<sup>30</sup> This provision is essential as valuation on content results in highly subjective assessment of projected revenues.

## **III. Trends in ICT trade in India**

### ***III.1. Global Trend in IT Services Export***

Global trade in services has been expanding impressively over the decades, and more recently since 2003 following revival of the global economy from mild depression. In the export sector, some of the dynamic sectors are performing impressively than others, and some of these competitive dynamic service sectors are computer related services, communication services, financial services, royalties and licenses fees, etc (UNCTAD, 2002). Between



**Table 2: Electronic Commerce related Provisions at the US FTAs**

|   |                                       |  |
|---|---------------------------------------|--|
| USA- Jordan FTA   | Enforced on December 17, 2001         | Jordan and the US committed to promote a liberalized trade environment for electronic commerce. Commitment for investment in new technologies and stimulate the innovative uses of networks to deliver products and services. Electronic transmissions are duty-free between both countries, and trade in digitized products is strongly facilitated through the JUSFTA. |
| U.S. Chile Free Trade Agreement (FTA)   | Came into force on January 1, 2004    | No Customs duty, fee or other charges on digital products by electronic transmission.  |
| US-Morocco FTA  | Came into force on June 24, 2004      | Value of carrier medium to be the sole criteria for customs valuation of the product without regard to the cost or value of the digital product stored on the carrier medium   |
| USA-SACU (Southern African Customs Union - Botswana, Lesotho, Namibia, South Africa and Swaziland). | Negotiation launched on June 2, 2003. | An FTA can serve as laboratories for liberalization and models for global negotiations by establishing innovative new disciplines, especially to deal with fresher topics on the globalization agenda – such as e-commerce, intellectual property in a digital economy, and expanding services trade.  |
| USA-Australia   | Came into force on 1 January 2005     | Agreed not to impose customs duties on digital products (products digitised, or electronic, form), or to discriminate in favour of one form of the same digital product over another.  |

1990 and 2000, some of the dynamic service sectors underwent profound trade expansion, and some of these sectors were communication, construction, financial, computer and information, royalties and license fees and personal, cultural and recreational services. The sector, registering the highest decadal growth rate in the global exports among other services sectors, is the computer and information services, which expanded at the rate of 23.3 per cent per annum in the nineties followed by personal, cultural and recreational services with 12.4 per annum (IMF, 2002). During this decade, developing countries had accomplished highest growth rates in the exports of e-services. These countries have shown their proficiency in the exports of computer related services. Most of the developed countries have gained comparative advantage in the exports of e-services. However, some of the developing countries also emerged as strong competitor to them in these sectors.

Expansion of e-commerce in the 1990s had significantly influenced the growth of the IT services trade in the global economy. The e-commerce faced temporary setback following crisis in the dotcom industry and decline of the shipment of personal computer for the first time in the in the early part of the new millennium (UNCTAD, 2000). These factors became detrimental to the growth of e-commerce though it is also influenced by other factors. The expansion of e-commerce is contingent upon number of other factors such as coverage of host network in the internet, number of people using internet, volume of transaction in goods and services taking place via on line transaction. These factors contribute to the future growth or e-commerce. Various forecasting results indicate that the global e-commerce is likely to grow very fast in the second half of the present decade as shown in Table 3. E-commerce is likely to grow at the rate of 54 per cent to 71 per cent per annum in the current decade. These projections cover trade in both B2B and B2C.

International experience suggest that the surging of services export is depending upon development of e-infrastructure and people's willingness to use e-commerce for efficiency and quick delivery. Countries with more such facilities with public may have witnessed rapid growth of e-commerce. Since internet network was limited in the developing countries, large number

**Table 3: Projection for worldwide E-commerce (US \$ billion)**

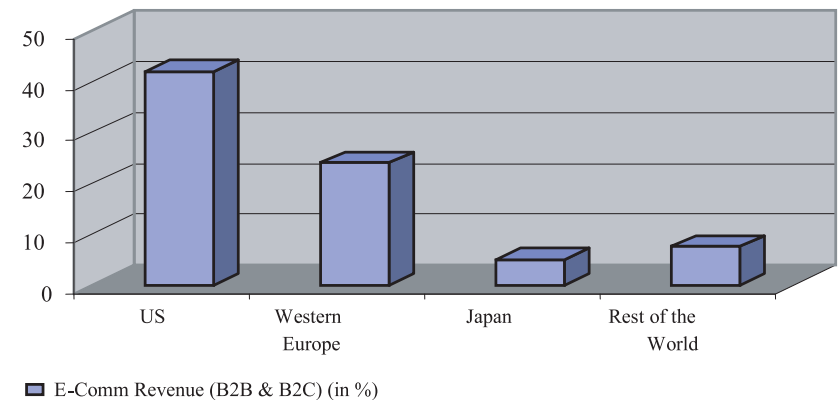
| Source                      | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006  | CAGR (%) |
|-----------------------------|------|------|------|------|------|------|-------|----------|
| <b>Forrester</b>            |      |      | 2293 | 3878 | 6201 | 9240 | 12837 | 53.81    |
| <b>IDC</b>                  | 355  | 616  |      |      |      | 4600 |       | 66.93    |
| <b>eMarketr<sup>†</sup></b> | 278  | 474  | 823  | 1409 | 2367 |      |       | 70.81    |

*Source:* eMaker (2002), Forrester (2001) and IDC (2002).

*Note:* CAGR for <sup>†</sup> B2B only.

of people resort to internet use in industrialized countries since early nineties. As shown in Figure 1, the largest stakeholder in e-commerce in the world is the US, followed by developed Europe and Japan. The size of revenue generation from the e-commerce in developing countries could be very small as compared to opportunities existing in the global economy. The distribution of revenue from this source has been highly concentrated and localized in certain regions.

**Figure 1: Share of World E-Commerce Revenue**

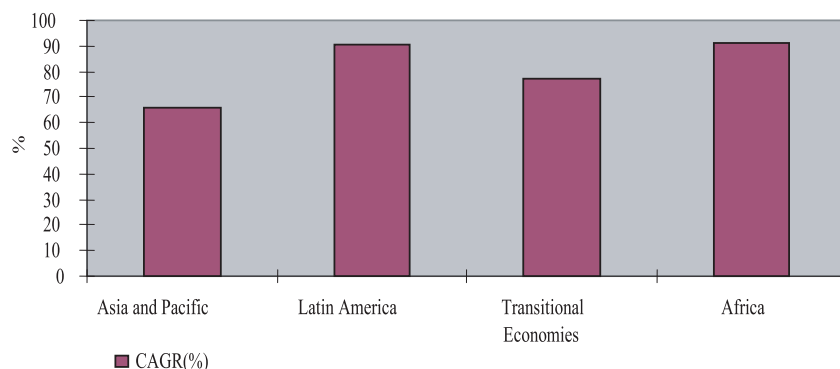


*Source:* IDC (2002)

The distribution of e-commerce revenue is mostly concentrated in developed countries and a very small segment of it is in developing countries. It is shown in the figure 1 that the US shares more than 40 per cent of total global revenue from the e-commerce, followed by Western Europe and Japan sharing 24 per cent and 5 per cent respectively of the total in 2000. The rest of the world shares nearly 7.5 per cent of the total e-commerce revenue of the world. This presents the fact that the US and the European Union are the major stakeholders in the global e-commerce. UNCTAD (2002) analysis has revealed that selected countries in the developed world are not only having comparative advantage in production and trade of IT products and services, but also improving their stake over a long period of time. Some of these countries are UK, Australia, Ireland, Latvia, Lithuania,

New Zealand, Sweden, etc. Several developing countries have also acquired comparative advantage in the exports of IT services and also consolidating their share in the global market. Some of the countries falling in this category are Argentina, Bangladesh, China, Costa Rica, Czech Republic, Egypt, Ethiopia, Moldova, Poland, Romania, Slovakia, and Slovenia, etc<sup>31</sup>.

**Figure 2: Growth of E-commerce in developing countries in 2002**



*Source:* UNCTAD (2002)

The speed of e-commerce in developing countries have picked up despite of their low stake at the global level. According to the UNCTAD (2000) estimate, trade in e-commerce of developing countries is expected to increase from \$104.9 billion in 2002 to \$857.5 billion in 2006. The share of developing countries in global e-commerce trade could be to the extent of 6.7 per cent; and share of developing Asia and Pacific could be to the extent of 77 per cent in the total trade of developing countries in 2006. With the present rate of trade expansion in developing countries, e-commerce is likely to grow at the rate of 65.7 per cent per annum in the present decade. This estimation covers trade in both B2B and B2C with the rest of the world. Rise of e-commerce in most of the regions in the developing world has been very fast. It is shown in Figure 2 that developing countries in Latin America and Africa are showing very high growth in comparison with other developing regions including Asia and transitional economies.

Despite rapid growth registered in developing countries in e-commerce, the gap between developed and developing countries are likely to be profound in the latter half of the present decade. Moreover, the pattern of e-trade of developing countries is significantly different from their counterparts in the developed world.

**Table 4: Regional Distribution of Global E-commerce and Type of Business in 2006**

(in \$ billion)

| Region                 | B2B   | B2C | Total | B2C/B2B (%) |
|------------------------|-------|-----|-------|-------------|
| North America          | 7127  | 211 | 7338  | 3.0         |
| Western Europe         | 2320  | 138 | 2458  | 5.9         |
| Asia/Pacific           | 2460  | 185 | 2645  | 7.5         |
| Latin America          | 216   | 16  | 232   | 7.4         |
| Eastern Europe         | 84    | 6   | 90    | 7.1         |
| Africa and Middle East | 69    | 5   | 74    | 7.2         |
| World                  | 12275 | 562 | 12837 | 4.6         |

*Source:* Authors elaboration of estimates from Forrester (2001).

In the global e-commerce, significant trade flows takes place between enterprises (B2B), but transaction between enterprises and consumer (B2C) is low. Forrester (2001) has forecasted that expected turnover of world e-commerce would be \$ 12837 billion in 2006, and the share of B2B trade is expected to be around 95 per cent and the rest of trade is associated with B2C, as shown in Table 4. The pattern of trade in these two streams is important for WTO negotiations. The volume of trade in B2B is relatively much higher in industrialized countries than in developing countries. Within developed countries, share of B2C trade to the total e-commerce of European Union is almost double that of North America in 2006. However developing countries undertake relatively more trade through B2C channel than that of developed countries. While the share of B2C trade to B2B ranges between 3 to 6 per cent in case of developed countries, the similar statistics for developing countries ranges between 7.1 per cent to 7.5 per cent in 2006. Since high concentration of e-commerce is occurring in developed countries, the global average of B2C trade to B2B has been a round 5 per cent<sup>32</sup>.

Over the years the U.S. business interests related to telecommunications equipment and services, computer and related services, and electronic commerce have multiplied several folds (see Table 5). The U.S. has emerged as one of the major actors in the information and communication technologies (ICT) sector. In the year 2003, the US exported nearly \$125 billion in ICT equipment and services.<sup>33</sup> Liberalized trade in this sector, therefore, is essential for growth of the U.S. economy. The recording industry is no exception.<sup>34</sup> In 2005, North America represented less than 40 percent of the \$34 billion global music market. More U.S. recordings are sold and more revenue is earned outside the United States than inside our borders.<sup>35</sup> And the U.S. music industry and the other U.S. copyright industries are at the forefront of U.S. export growth. From 1991 to 2002, the yearly growth of exports from U.S. copyright industries outpaced total U.S. exports by an average of six percent.

**Table 5: Estimated Revenues Generated by Foreign Sales/Exports of Selected U.S. Core Copyright Industries (\$ bn. 1991-2005)**

| Industry                            | Pre Recorded Records, Tapes, etc. | Motion Pictures, TV, Video | Computer Software | Newspaper, Books, Periodicals | Total for Selected Industries |
|-------------------------------------|-----------------------------------|----------------------------|-------------------|-------------------------------|-------------------------------|
| 1991 estimate                       | 6.15                              | 7.02                       | 19.65             | 3.36                          | 36.19                         |
| 1996 estimate                       | 9.83                              | 11.58                      | 34.81             | 3.96                          | 60.18                         |
| 1999 estimate                       | 10.27                             | 13.70                      | 50.65             | 4.15                          | 78.77                         |
| 2000 estimate                       | 9.76                              | 14.50                      | 56.88             | 4.21                          | 85.34                         |
| 2001 estimate                       | 8.91                              | 14.69                      | 60.74             | 3.93                          | 88.28                         |
| 2002 estimate                       | 8.47                              | 17.00                      | 59.97             | 3.82                          | 89.26                         |
| 2003 estimate                       | 8.42                              | 19.12                      | 66.82             | 4.47                          | 98.82                         |
| 2004 estimate                       | 8.47                              | 19.35                      | 73.66             | 4.74                          | 106.23                        |
| 2005 estimate                       | 8.26                              | 18.45                      | 79.10             | 5.00                          | 110.82                        |
| Average Annual % change (1991-2004) | 2.50%                             | 8.11%                      | 10.70%            | 2.68%                         | 8.64%                         |
| Average Annual % change (1991-2005) | 2.13%                             | 7.15%                      | 10.46%            | 2.88%                         | 8.32%                         |

**Source:** Siwek (2006).

The US trade policy at the multilateral, regional and bilateral fora has been to ensure that electronically delivered goods and services receive no less favorable treatment under trade rules and commitments than like products delivered in physical form; and that their classification ensures the most liberal treatment possible. The emphasis has also been on ensuring that governments refrain from enacting trade-related measures that impede e-commerce and that any such regulations are least trade restrictive, non-discriminatory, transparent, and promote an open market environment, including regulations dealing with content.

As discussed in Section II, issues concerning withdrawal of moratorium on the delivery of e-products and continuation of the practice of imposing zero customs duty on e-commerce, have been complex. While some set of countries argue for the continuation of zero customs tariff on a permanent basis, others argue for imposition of customs tariff at par with ‘digitized products’ delivered in the electronic form. Since developing countries are (a) marginal players in e-commerce, (b) high dependency on the proceeds of trade and (c) large potential in ‘digitizable exports’<sup>36</sup> in future, perspective of developing countries may be considered in order to overcome the current impasse in the WTO negotiations. Since India is an important player in the WTO and a leading country in the developing world and also having high stake in global e-commerce, discussion on India may be help in evolving a consensus on the current level of negotiation.

## III.2. Trends in India’s IT Exports

### III.2.1. Expanding Services Exports

The computer-related IT service sector is emerging as the most important dynamic sector in global services trade and the sector is becoming important for developing countries as a new source of export earning. So far, the contribution of the sector has been small for developing countries, but the sector is growing steadily in several of these countries, and is becoming an important source of foreign exchange earner for them in the service sector. Since many countries are gradually moving towards ‘knowledge economy’, development of the computer-related services sector help them in generating high-value added services for exports and also for meeting pressing needs

of their domestic manufacturing sector. Global IT and IT-enabled services sectors have been growing rapidly during the last decade, and these sectors were under the domain of developed countries. Over the years, the relative comparative advantage of developed countries in specific sectors has been eroding and developing countries are gradually picking up these sectors. In the process of producing and exporting them to developed countries, they themselves are also absorbing them slowly in their domestic economy. India has been one of the successful countries within the developing world in promoting IT services exports to a large extent. Many developing countries in the neighborhood of India have engaged themselves in the exports of computer hardware. Experience of India in the export of IT software may be useful in evolving a model to overcome the present impasse in the WTO Negotiations on e-commerce.

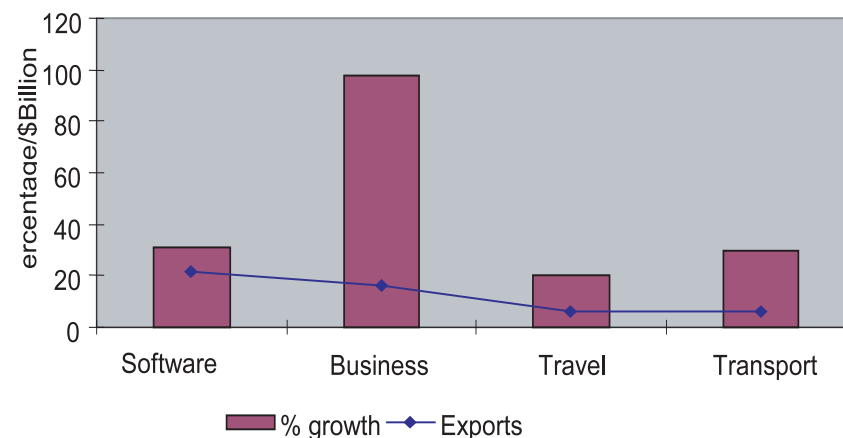
Following India's economic reforms in 1991, there was sea change in the economic policy environment in the country. Switching of policy paradigm from Import substitution industrialization (ISI) strategy to outward oriented strategy had enabled India to emphasize on exports to release pressure on mounting imports. By then India was already a service-driven economy, where services sector contributing nearly half of country's GDP. Though net external sector proceeds from services sector account was positive, the size of the services exports was small. With rapid economic reforms, the services sector received large impetus from two directions. Firstly, there was a structural shift in the growth of various productive services sectors, where fast growth took place in more efficient and value-added sectors such as software, financial, business, business, travel, transport, etc services and this had supported export of services. Secondly, export of service sectors grew rapidly with efficient domestic policy environment and contributed in promoting other domestic sectors to grow as in many industrialized economies. As a result of which export of services sector grew hand in hand with that of the goods sector.

Since the commencement of economic reforms in the Indian economy, the merchandise trade sector has emerged as a resilient sector. A recent study (Mohanty and Arockiasamy, 2007) indicates that the external sector has dynamism to keep the Indian economy on high growth path. At present,

India's export of services is growing faster than that of goods. While India's services export has been growing at the rate of 28 per cent per annum during the period 2000-2005, the merchandise export has increased by 22 per cent annually during the same period. India's total services exports was \$71.6 billion, and it was nearly 73.6 per cent of merchandise export in 2006. In the total exports of the country, services trade shares 38.9 per cent of it in 2006; and the share is likely to grow significantly in future. The absolute gap between services exports and merchandise export is declining very fast in the recent time. In this context, contribution of different sub-sectors to overall services exports is important.

In the overall services exports, performances of different sectors are diverse in terms of their level of exports and also the rate of growth. The relative export performances of specific services sectors are presented in Figure 3. Export of software services is emerging as the largest sector in India followed by business services, travel services and transport services. Growth rate of software services exports has been higher than the overall growth rate of the services exports. Besides software, export of business

**Figure 3: Performance of Services Sectors in India**



Source: FICCI (2007)

services is also emerging important sector in terms of its size and growth performance in recent years.

FICCI (2007) has presented forecasting for Indian services and merchandise exports in the medium term. The study highlights that India's merchandise exports would lag behind services exports by 2012. The projections for both the sectors are presented in Table 6. The study has assumed that continuation of the present level of growth in services and merchandise exports would take total merchandise exports to \$310.9 billion in 2012. However, total services exports would likely to exceed merchandise exports by \$5.4 billion in the same year. Share of services in country's total exports is likely to be 50.4 per cent in 2010. India's current share in world's services exports is 2.3 per cent, and it is like to touch 6.0 per cent in 2012. The study has observed that strong export growth momentum is noticed in service sectors which are mostly dominated by professional and technology related services. Surging of services export has been vital in narrowing down trade account deficit to a large extent.

**Table 6: Projections of India's Exports of Services and Merchandise during 2006-2012(\$ billion)**

| Year | Services | Merchandise | Difference |
|------|----------|-------------|------------|
| 2006 | 71.6     | 112.4       | -40.8      |
| 2007 | 91.5     | 132.7       | -41.2      |
| 2008 | 116.9    | 156.8       | -39.9      |
| 2009 | 149.2    | 185.3       | -36.1      |
| 2010 | 190.6    | 218.9       | -28.3      |
| 2011 | 243.4    | 258.6       | -15.2      |
| 2012 | 310.9    | 305.5       | 5.4        |

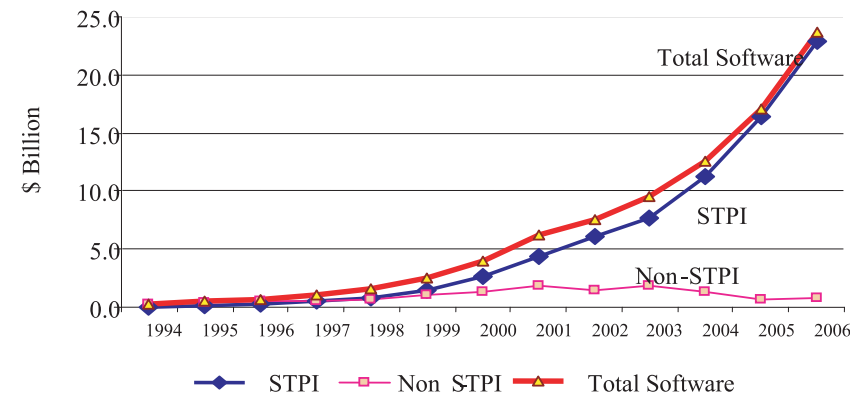
Source: FICCI (2007)

India's IT services exports expanded exponentially since the second-generation of reforms as shown in Figure 4. The sector's total exports crossed one US\$ billion for the first time in 1997, and the sector continued with the same momentum since then. Between 1997 and 2001, export of the sector grew rapidly, but the pace of growth of the sector reduces to some extent due to mild global recession, particularly low growth rate of

the US economy. With the recovery of the global economy in 2003, the IT services exports resumed again. The effect of the mild recession in the global economy was little on the Indian IT sectors. On account of the steady growth of the sector, export of IT services touch the level of \$ 23.7 billion in 2006.

Steady expansion of IT service export is partly due to government's consistent policy on development of IT parks in different locations in the country and developing adequate infrastructure in these locations. In the early phase of the IT sector's development, software firms concentrated outside the software parks. In the total exports of IT services, share of firms in Software Technology Parks of India (STPI) was just 11 per cent in 1994, and it increased to 97 per cent in 2006. During the period of global recession, firms in STPI suffered more in terms of losses of export orders than non-STPI firms.

**Figure 4: India's IT Services Exports from IT-Parks and Total**

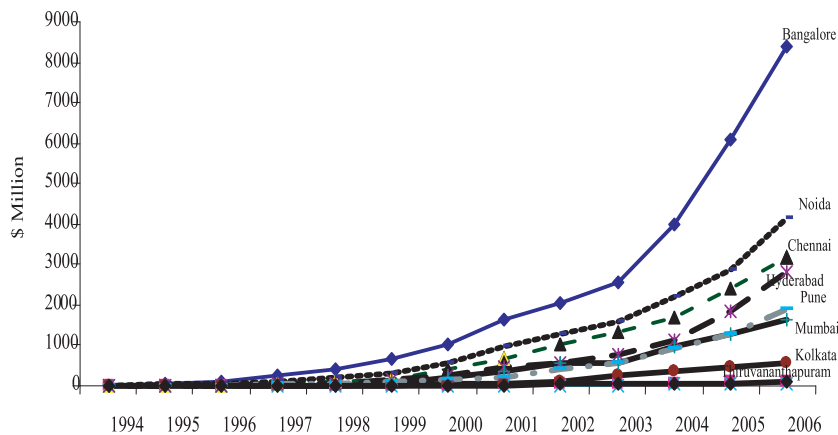


Source: Software Technology Parks of India, Ministry of Information and Technology, GOI

In short, India's policy of development of IT Parks has contributed to surge in the IT services export sector in India. India simultaneously developed

software clusters in different parts of the countries. In 2006, India had ten major software clusters in the country. Among all, the largest software cluster is in Bangalore as shown in Figure 5. Bangalore alone shares 36.6 per cent of IT service exports and 35.4 per cent of total IT service exports of the country in 2006. Fast expansion of the IT clusters in India was noticed since 2003; it is almost coinciding with the revival of the global economy from recession. Bangalore has emerged as the super IT cluster in India and besides this other top clusters are NOIDA, Chennai and Hyderabad. In the second tier of IT clusters, three clusters are existing such as Pune, Mumbai and Kolkata, where IT services export is more than \$500 million in 2006. Three more small clusters are emerging, namely Bhubaneswar, Thiruvananthapuram and Gandhinagar where export of IT services taking place but at a low scale. The recent policy of Special Economic Zones (SEZs) is likely to boost the process of developing new IT Parks in different parts of the country.

**Figure 5: IT services exports from Indian IT-Parks**



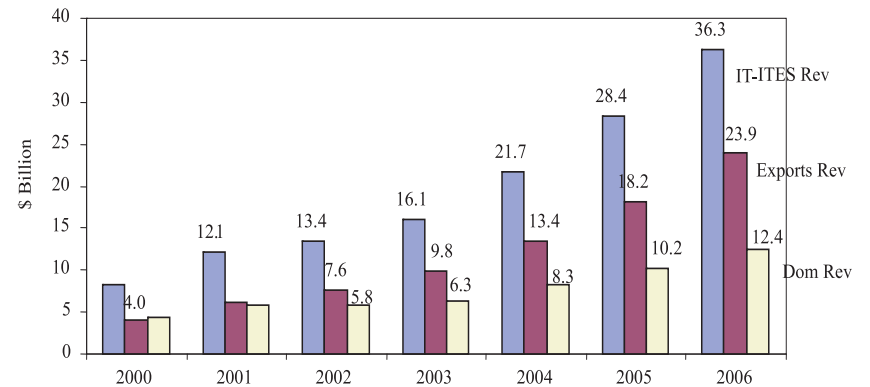
**Source:** Software Technology Parks of India, Ministry of Information and Technology, GOI

**III.2.2. Growth and Outlook for the IT Services Exports in India**

IT industry in India covers wide range of products including hardware, peripherals, networking, training, domestic and external markets for software

and services and ITeS. The total revenue generated from the IT-ITeS source was reported at \$36.3 billion in 2006, registering a growth rate of 27.8 per cent over the previous year as shown in Figure 6. This sector contributed 1.22 percent of India’s GDP in 1997-98, and the contribution improved further to 3.82 in 2003-04. The industry expanded at the rate of 28.4 per cent during the period 2000-05. The IT industry in India comprises of IT export sector and IT domestic market. In 2000, the IT export sector shared 48.2 per cent of the IT Sector, but it rose to 65.8 per cent of GDP in 2006. The IT exports sector could improve its contribution to GDP because it has been growing at the rate of 35.1 per cent in average during the period 2000-05. In the domestic market, the output of the industry is growing at the rate of 20.1 per cent per annum during the period 2000-05. Towards the middle of the current decade, expansion of the domestic has been very fast.

**Figure 6: Performance of the IT Services Export, Domestic Sector and Overall Revenue from the IT Sector**



**Source:** NASSCOM (2006)

*Outlook for the IT Sector*

With the improvement in the global economic outlook and return of the US economy on high growth path since 2003, it helped Indian IT industry to grow faster in the medium terms as long as the current level of movement



persists for over a period of time (Table 7). The total revenue collection of the IT industry covering exports proceeds and collection from the domestic source is likely to be \$ 107 billion in 2012. The result of forecast indicates that domestic demand for IT products is likely to rise in the medium term. Though domestic sector is likely to perform better than export sector, the dominance of the export segment in the IT sector is likely to continue in the medium term because of scale factor. The average growth rate of the IT sector is likely to be robust during the period 2006-12. The outlook for different sectors has been undertaken by the authors with several econometric models and the results are appeared to be robust<sup>37</sup>.

**Table 7: Outlook for the Indian IT services exports: 2007-2012(\$ Billion)**

| Year | IT-ITeS Revenue | Exports Revenue | Domestic Revenue |
|------|-----------------|-----------------|------------------|
| 2007 | 44.9            | 29.3            | 15.6             |
| 2008 | 55.0            | 35.8            | 19.2             |
| 2009 | 66.2            | 42.9            | 23.3             |
| 2010 | 78.7            | 50.7            | 28.0             |
| 2011 | 92.4            | 59.2            | 33.3             |
| 2012 | 107.4           | 68.4            | 39.0             |

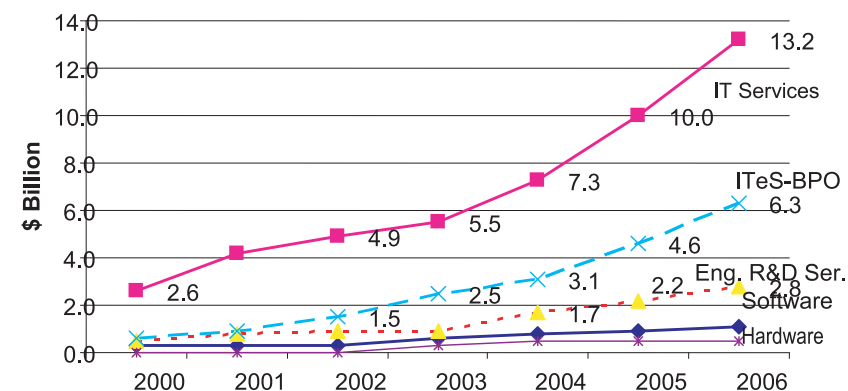
Note: Estimations are based on authors forecasting and Economy Page, Hindustan Times (April 2007)

#### Indian Software Exports

Software and ITeS-BPO continue to be dominant factors in the overall growth performance of the Indian IT industry. The sizes of engineering R & D and hardware are relatively much smaller than the other two components of the IT sector. It is shown in Figure 7 that the growth path of the IT services as showing reflection of the global volatility on the Indian IT sector. The total exports of IT services rose from the level of \$ 2.6 billion in 2000 to \$13.2 billion in 2006, registering an annual growth of 32 per cent per annum during the period 2000-06. ITeS-BPO is also another emerging factor in the Indian software industry, affected marginally by the global recession, but the sector is recently affected adversely on account of rupee appreciation in April 2007. The sector has maintained an average growth rate of 48.8 per cent per annum

during the period 2000-06. During this period, the BPO sector has consistently improved its contribution from nearly 15 per cent in 2000 to 26.4 per cent in 2006 in IT services exports, thus registering an average share of 21.4 per cent per annum during the period 2000-06. The hardware services export from India has been very poor as compared to other neighbouring countries. The growth in the hardware services exports has been marginal in the new millennium.

**Figure 7: Disaggregated Performance of the Indian IT Services Export**



Source: NASSCOM (2006).

#### Outlook for Indian Software Exports

The outlook for the IT services and ITeS-BPO has been strong in the medium term (see Table 8). Both the components of software exports (i.e. IT services and ITeS-BPO) are showing the symptoms of improving their shares in the medium term. During the period 2007-12, exports of IT services are expected to grow at the rate of 20.4 per cent per annum. The ITeS-BPO sector is also likely to expand at the rate of 22.3 per cent per annum. The total export of engineering R&D services is likely to increase from \$3.2 billion in 2007 to \$4.8 billion in 2012 with an average growth rate of 9.6 per cent per annum. Similarly export of services in hardware is expected to rise slowly during the same period.



**Table 8: Outlook for Indian IT Services Exports:  
By sub-sectors(\$ Billion)**

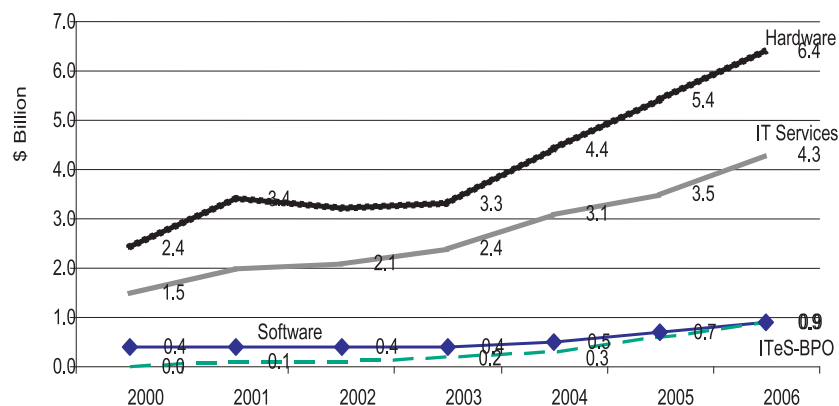
| Year | Software | IT Services | Eng. R&D Ser. | ITeS-BPO | Hardware |
|------|----------|-------------|---------------|----------|----------|
| 2007 | 1.2      | 16.3        | 3.2           | 8.0      | 0.6      |
| 2008 | 1.3      | 20.1        | 3.6           | 10.1     | 0.6      |
| 2009 | 1.4      | 24.4        | 4.0           | 12.5     | 0.7      |
| 2010 | 1.5      | 29.2        | 4.3           | 15.0     | 0.7      |
| 2011 | 1.5      | 34.5        | 4.6           | 17.9     | 0.7      |
| 2012 | 1.6      | 40.2        | 4.8           | 21.0     | 0.8      |

*Note:* Estimations are based on authors forecasting and Economy Page, Hindustan Times (April 2007)

#### **Domestic Market in Software and IT Services**

The size of domestic software market is growing, but is becoming less faster than the export segment of the industry. In this segment, services associated with the hardware is making steady rise, particularly in the phase of steady recovery of the global economy. This domestic services segment shares about 51.6 per cent of the domestic market in 2006. In the

**Figure 8: Disaggregated Performance of the Indian IT Services Sector in the Domestic Economy**



*Source:* NASSCOM (2006).

post-2002 period, demand for such services picked up very fast, but the sustainability of the growth momentum needs to be observed. IT service is important in the domestic sector, possibly next important factor to hardware services. The sector expanded steadily from \$ 1.5 billion in 2000 to \$4.3 billion in 2006 with varying speed at different points of time. During this period the market share of the sector remained volatile and unchanged in the domestic market segment. Both these sectors (i.e. hardware services and IT services) share nearly more than 85 per cent of the total domestic market. The role of ITeS-BPO was marginal in the domestic sector. It was virtually non-existent in 2000, but started expanding steadily until 2006. On the other hand, the market for the IT software was present before 2000 in the domestic market in a stagnated manner, and the size of the sector became similar to that of domestic ITeS-BPO sector in 2006.

#### **Outlook for Domestic IT Sector**

Service in the hardware is the most dominant activity in the domestic IT sector in 2006. Total revenue generated from the sector was \$ 6.4 billion in 2006 and it is likely to reach \$21.7 billion by 2012 by maintaining an average growth rate of 28.4% during 2007-2012 (as shown in Table 8). With the strong undercurrent, the sector is likely to share more than half of the domestic IT sector by 2012. IT services sector is the second most important IT services sector of the economy. It is forecasted that the revenue generated from the IT services sector to be doubled between 2000 and 2012, and the sector is expected to grow less rapidly than most of the

**Table 9: Outlook for Indian IT Services in the Domestic Sector:  
By sub-sectors(\$ Billion)**

| Year | Software | IT Services | ITeS-BPO | Hardware |
|------|----------|-------------|----------|----------|
| 2007 | 1.2      | 5.0         | 1.2      | 8.2      |
| 2008 | 1.5      | 5.9         | 1.6      | 10.2     |
| 2009 | 1.8      | 6.8         | 2.1      | 12.6     |
| 2010 | 2.3      | 7.8         | 2.6      | 15.3     |
| 2011 | 2.7      | 9.0         | 3.2      | 18.4     |
| 2012 | 3.3      | 10.2        | 3.9      | 21.7     |

*Note:* Estimations are based on authors forecasting and Economy Page, Hindustan Times (April 2007)

sectors in the domestic IT services sector. At present, the sizes of IT software and ITeS-BPO sectors are at the similar level but the latter is expected to grow more rapidly than the former.

The above discussion on the present performance of the Indian software sectors presents an overview of the interaction of the IT sector with the Indian as well as with the global economy. The following observations may be made from the earlier discussion:

- The largest share in the revenue generated from e-commerce has been by the US and the EU
- Developed countries have shown their core competence in the IT sector, and their share in the global market is rising in several IT segments
- Some developing countries have acquired comparative advantage in the IT sector and many of them have improve their stake in the global market
- E-commerce is rapidly picking up in developing countries, but the gap between developed and developing countries is very significant at the current position.
- The services export is growing at a faster pace than the merchandise exports in India. If the present condition persists, the volume of the services exports would exceed that of merchandise exports by 2012.
- Export of the IT services has been the strongest arm of the Indian IT sector, but expansion of the domestic sector for consumption of IT services is a major development in the country. It would eventually help India to move towards a 'new age knowledge economy'.
- The success in the IT exports of services has been due to IT services and ITeS-BPO services in India.
- Domestic IT services sector is primarily growing because of dynamism in the domestic hardware and IT services
- The medium term outlook has been robust for these IT services in India.

### **III.3 Implications of withdrawal of moratorium on Software firms in India**

On the issue of moratorium on the customs duty on the electronically delivery system, there has been intensive debate in India. From the prolonged

discussion on the issues, one can broadly identify two streams of arguments on e-commerce. It is argue by one dominant group that the e-commerce generates large forward and backward linkages in the economy, and therefore EDS should be exempted from any customs tariff. The other dominant group argues that some form of customs duty should be imposed on EDS after the withdrawal of the moratorium for various reasons including the spirit of Doha Development Agenda of being development friendly resource mobilisation etc. In case moratorium is replaced by some certain ceiling customs duty, there is apprehension that IT firms may loss interest because of erosion of their profit margin.

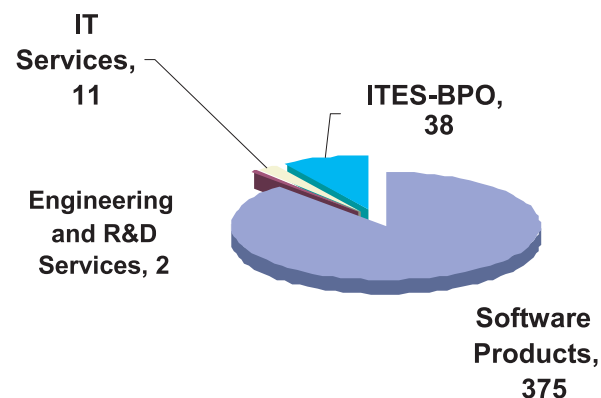
In this paper we have empirically analysed both the lines of arguments. In the preceding discussion, we have shown that India has benefited in several ways because of surge of the IT sector in India.

In the line of other consideration, we would like to examine the implications of some positive tariff on the profitability of IT firms for making fair treatment to different modes of delivery, allowing the nature of deliverable product unaltered.

For this purpose we have chosen 426 listed companies from the IT sector as shown in Figure 9. These companies fall under the group of large and SMEs. These companies are chosen from IT services, ITeS-BPO, engineering and R & D services and software products. We have estimated rate of profits<sup>38</sup> of the firms in each group using firm weights. We have taken data for fifteen years (i.e. 1992-93/2006-07), particularly after the commencement of economic reforms in India.

The group-wise results based in firm level data are shown in Table 9. The results show that average rate of profits in many software groups are consistently high such as software products and ITeS-BPO, and relatively less in IT services and R&D engineering services. The profit level varies significantly from one year to another. In the new millennium, the performances of the IT sector in selected groups are significantly improved then the earlier period.

**Figure 9: Composition of Indian Software Firms in the Empirical Analysis**



Source: Based authors classification of IT sector using NASSCOM and CMIE

**Table 10: Average Rate of Profit of India’s Software firms in Broad Categories: 1991-2006 (%)**

| Year    | Software Products | ITES-BPO | IT Services | Engineering and R&D Services |
|---------|-------------------|----------|-------------|------------------------------|
| 1992-03 | 7.4               | 20.3     | 3.5         | ...                          |
| 1993-04 | 10.5              | 21.9     | 3.6         | ...                          |
| 1994-05 | 11.3              | 26.4     | 6.6         | ...                          |
| 1995-06 | 11.9              | 16.3     | 18.2        | ...                          |
| 1996-07 | 11.1              | 6.4      | 2.1         | ...                          |
| 1997-08 | 11.8              | 2.5      | 2.2         | ...                          |
| 1998-09 | 14.7              | 1.9      | 5.9         | ...                          |
| 1999-00 | 19.6              | 12.0     | 10.3        | ...                          |
| 2000-01 | 25.7              | 10.8     | 13.4        | ...                          |
| 2001-02 | 22.8              | 10.2     | 4.8         | 2.4                          |
| 2002-03 | 19.7              | 17.8     | 4.5         | 1.2                          |
| 2003-04 | 19.4              | 21.4     | 5.1         | 2.4                          |
| 2004-05 | 20.6              | 17.4     | 7.4         | 4.1                          |
| 2005-06 | 21.5              | 34.0     | 6.6         | ...                          |
| 2006-07 | 21.8              | 18.4     | 5.2         | ...                          |

Source: Prowess Database of the CMIE, Mumbai, India.

Note: Estimates are based on calculation of authors

These results suggest that imposition of nominal customs on IT firms or selected IT firms dealing with specific products may not affect their profitability position. Since customs duty is a form of indirect tax, and the financial burden of it eventually transferred to consumers. What could be the ideal level of tariff bindings, may be left to open discussion.

**Challenges in Valuation of Software: Typical Case Examples**

The embedding of information is becoming a commonplace for virtually every manufactured product from smart microwave ovens to internet-connected automobiles and toys. In this sense all manufactured products are becoming carrier media for digitalized information. However, at the Council for Trade in Goods, while discussing this, it was thought to be a traditional issue pertaining to treatment of a physical good, and not of electronic transmission of digitalized data. In practical terms the problem has multiplied several folds.

In India, from 1997 onwards, software is exempted from payment of duty. Initially the exemption was covered only for computer software, but later the scope subsequently expanded to cover other forms of software. Consequent upon India having signed the Information Technology Agreement (ITA), it is obligatory for India to exempt several IT Products from Customs duty. After ITA, valuation problems in respect of software related to these products has become easier. However, valuation of software meant for equipment is not covered by ITA and hence there is need for valuation of software imported as a part of telecom equipment. Moreover, the scope of software has been expanding over the period of time.

During a detailed work programme at RIS on Implementation of Agreement of Customs Valuation in India, we had compiled specific cases, from the Directorate of Customs Valuation, on how exemption on transfer of software through embedded goods may lead to huge revenue losses to developing countries. Names of companies are not given here.

**CASE STUDY No. 1**

Some of the importers declare inflated price of software when imported along with equipment because the software is exempted from payment of duty but the hardware is chargeable to duty. One of the importers imported Dense Wavelength Multiplexing Equipment along with Application Software. The importer declared ratio of hardware to software value as - 32:68. Investigation based on specific intelligence revealed that the actual price of software was only 0.4 % as against 68 % declared.

**CASE STUDY No. 2**

One importer imported separate consignment of CDs said to contain IT software meant for splicing machines previously imported. The investigation revealed that the machines imported earlier were preloaded with required software. The instant consignment of imported CDs was dummy Software to artificially split value of machines. The value declared was four times that of splicing machines.

**CASE STUDY No. 3**

One importer imported telecommunication equipment (BTS, BSC, MSC). A part of invoice value (one-third) was declared as IT software. The equipment was pre-loaded with required software. But on examination it was found that no separate software was there in other media. This case was detected on the basis of specific intelligence.

**CASE STUDY No. 4**

One importer imported a machine containing hard disk preloaded with software. No separate software was supplied in CD or any other media. The importer has made duty free claim for the whole machine as recorded media under heading 85.24. They claimed for abatement (exclusion) of value of software when assessed as machine on the basis of Note 6 to Chapter 85.

**IV. By way of Conclusion**

The fast expansion in ICT technology frontier, across countries has multiplied the options for international trade and transactions. The rapid growth in electronic commerce has given a fillip to multidimensional activities in innovative businesses, markets and trading communities - creating new functions and new revenue streams. The fact that the relative strengths of various countries have grown over the years making software development programme more a collective effort involving, at times, many countries, the pre-requisite for which is that trade should be facilitated for the benefit of countries as both producers and consumers.

The WTO work programme on electronic commerce in this context needs to reflect on the right of the members to regulate and to implement development policies along with their ability to eliminate all barriers to e-trade. There are specific systemic concerns also on the extension of the moratorium. It has come up clearly that the developing countries need to

articulate their positions in a more effective manner and with full pragmatism. Following policy recommendations emanates from the all year discussion:

***Revenue: Applying Principal of Less than Full Reciprocity***

This has also brought in sharp focus on the interlinkages between trade and tax regimes, especially for the developing countries, which have major revenue earnings through customs and trade transactions. Though continued international moratorium on the imposition of customs duties on electronically transferred software is being viewed with reservation by several developing countries, however, the policy makers in these countries need to act with lot of caution.

As in NAMA and other spheres of WTO negotiations, the principal of less than full reciprocity is applied in context of developing countries. In light of emerging concerns about the extension of moratorium on EDS, the WTO members may consider to advance the same principal to electronic commerce as well. In this, the developed countries would continue to impose no customs duty while an upper limit in tariff band may be negotiated among the developing countries. By doing so developing countries may not ask for revenue compensation for zero customs duty as often suggested by the delegations from the developing countries at WTO.

***Trade Facilitation***

The technological context is changing very fast. The policy makers need to ensure that apart from focusing on resource generation they also need to exhibit commitment on trade facilitation in EDS. As discussed, the customs valuation department in India has major challenge in coping up with the customs valuation of embedded software goods most of which are emanating from fast changing technological context. The extension of duty exemption regime to such goods would affect resource mobilisation for a developing country like India and allowing would open floodgates for 'me-toos.' In such a situation, pragmatism from policy makers and exhibition of social responsibility by the private sector are most desired elements of public policy for an effective response. The policy makers have to balance the national interests, in a situation of jurisdictional overlap, against dynamic

cross-border technological advancements and national commitments for trade facilitation.

### ***Private Sector Participation***

In case of the private sector, it is needed to encourage them to promote a culture of voluntary compliance. The private sector along with other stakeholders may also help in the realignment of resources including arranging of appropriate equipment to continue and improve reform process so that their firms and the industry as a whole remains at par with the new technologies being adopted by the customs department. The role of private sector is particularly important in this regard. This help would be most important in terms of minimizing revenue loss in the import process and in continuing the dialogue with all stakeholders to identify specific areas where the private sector can support capacity building. Another means to promote ownership of reform that the policy makers may introduce is to have identified sectoral profiles of industrial groupings which could help in potentially finding of common solutions to shared problems through exchange of experiences.

### ***Special and Differential Treatment***

It is often emphasised that there is a need to enhance participation of developing countries in electronic commerce; however, limited access to encryption technology emerges as a major impediment for the developing countries. Apart from this other limitation related to physical infrastructure like computers and other types of hardware, software programmes and telecommunication services are other areas of concern for policy makers in the developing countries. The Doha Development Agenda, at the outset, pronounces a commitment for insuring that developing countries and LDCs participate in the world trading system and necessary steps are taken for this, which may include adequate technical assistance and special and differential treatment in their commitments. There is also a need to open up the areas of interest for developing countries for export of their services and allow market access in developed countries.

Some important initiatives have been made to overcome these limitations such as the project 'Electronic Commerce for Developing

Countries (EC-DC), launched by the International Telecommunication Union (ITU).<sup>39</sup> However, their scope and impact has been limited and more efforts are needed to address issues such as wider participation of countries and effective extension of related services.

### ***Clarifying Technological Neutrality***

As is clear from the cases mentioned in the Indian experience at directorate of valuation, there is an urgent need to clarify issues related to technological neutrality. The fact that even embedded goods are being extended similar exemption on software as is given to the ones electronically transferred. This also has to be clarified in light of various options within electronic transfer. At the GATS, it is therefore, urgently required to define and elaborate upon various electronic means of transfer and whether their physical form would also attract similar exemptions.

### ***Making GATS Framework more Responsive***

As discussed earlier, GATS framework has to become more responsive to the emerging needs of new technology regimes. The rapid convergence, due to technological advancement in ICT and telecommunication are to be addressed in more pragmatic manner at much higher pace than has been demonstrated so far. In the process, interest of developing countries, specifically pertaining to their catching up with the new technologies and their participation in the new trade channels particularly, electronic transfers.

### ***Emerging FTA regime***

A comprehensive response at GATS may also help in checking the moving away of members to bilateral regimes, which at times, are far more stringent than the prevailing understanding at WTO. As discussed, the bilateral FTAs between US and Jordan, Chile, Singapore, etc. are an indication of this regime which has narrowly defined features on electronic commerce. Similar arrangements have also been reached with Colombia, Panama, Peru and South Korea.

## Endnotes

- <sup>1</sup> That eCommerce is booming, cannot be doubted. Statistics show that it took radio 38 years to reach fifty million households in the USA. It took television 13 years to reach fifty million households. It took the Internet a mere four years to reach fifty million households. Marshal Dale D. L. (1999).
- <sup>2</sup> Electronic commerce is defined as production, advertising, sale and distribution of products via telecommunication networks (WTO 2002).
- <sup>3</sup> Slaughter (2007).
- <sup>4</sup> WTO (2001).
- <sup>5</sup> WT/COMTD/W/51.
- <sup>6</sup> Aitic (1999), Chaturvedi (2007).
- <sup>7</sup> The countries which came up with submissions are Argentina, India, Cub, Egypt and Venezuela
- <sup>8</sup> WT/GC/W/509.
- <sup>9</sup> WT/GC/W/556
- <sup>10</sup> *ibid.*
- <sup>11</sup> *ibid.*
- <sup>12</sup> WT/GC/W/497
- <sup>13</sup> G/C/W/158
- <sup>14</sup> *ibid.*
- <sup>15</sup> WT/GC/W/509
- <sup>16</sup> *ibid.*
- <sup>17</sup> WT/GC/W/497
- <sup>18</sup> S/FIN/M/25, May 8, 2000. Committee on Trade in Financial Services, Report of the Meeting held on April 13, 2000 and S/FIN/M/31, June 1, 2001. Committee on Trade in Financial Services Report of the Meeting held on May 9, 2001 Note by the Secretariat.
- <sup>19</sup> based on Chaturvedi (2006).
- <sup>20</sup> G/C/W/158 Para 6.7
- <sup>21</sup> VAL/W/14/Rev.2
- <sup>22</sup> G/C/W/158 Para 7.2
- <sup>23</sup> S/C/W/68
- <sup>24</sup> Department of Treasury (1996).
- <sup>25</sup> EC (1998).
- <sup>26</sup> *ibid.* and Revenue (2003).
- <sup>27</sup> [http://www.oecd.org/subjects/e\\_commerce/ebooks/ecom2\\_1.pdf](http://www.oecd.org/subjects/e_commerce/ebooks/ecom2_1.pdf)
- <sup>28</sup> ESA (2007).
- <sup>29</sup> Holleyman II (2003).
- <sup>30</sup> *ibid.*
- <sup>31</sup> On account of data constraint, some of the important countries are not covered in the analysis of UNCTAD (2002). Some of the notable exclusions are the US, India etc, which have strong stake in the global trade of IT services exports.
- <sup>32</sup> Trade weight of e-commerce is more with developed countries, and since they trade more with B2B, the weighted e-trade is tilted towards B2B.
- <sup>33</sup> [http://www.ustr.gov/Trade\\_Sectors/Telecom-E-commerce/Section\\_Index.html](http://www.ustr.gov/Trade_Sectors/Telecom-E-commerce/Section_Index.html)

- <sup>34</sup> Bhatia (2006).
- <sup>35</sup> *ibid.*
- <sup>36</sup> For detailed discussion on the 'digitizable exports' in the context of e-commerce negotiations in the WTO, see Teltscher (2000).
- <sup>37</sup> Forecasting of different components of IT industry is undertaken with various alternative econometric models. We have used single equation technique to forecast behaviour of different components of the IT sectors for the period 2007-12. Due paucity of space, we have not incorporated the results in the paper. The results may be available on request to the authors.
- <sup>38</sup> We have taken rate of profit as PAT to sales of firms. We have also examined the return of firms as PAT to net worth ratio. It is found that the former estimate is a better indicator than the latter one in accessing rate of profit.
- <sup>39</sup> WT/GC/W/435.

## References

- Aitic (1999). 'Electronic Commerce within the Framework of the WTO: Implications for the Less Developed Countries'. Agency for International Trade Information and Cooperation, at: [www.acici.org/aitic/documents/Notes/note5ang.htm1#3](http://www.acici.org/aitic/documents/Notes/note5ang.htm1#3) (last visited June 2003).
- Arora, Ashish, V. S. Arunachalam, J. Asundi and F. Ronald (2001). 'The Indian Software Service Industry', *Research Policy*, Vol. 30, pp 1267-1287.
- Arora, Ashish and Suma Athreye (2002). 'The Software Industry and India's Economic Development', *Information Economics and Policy*, 14, pp 253-273.
- Balakrishnan, Pulapre (2006). 'Benign Neglect or Strategic Intent? Contested Lineage of Indian Software Industry', *Economic and Political Weekly*, Vol. 41 No. 36, September 9.
- Bhatia, Karan (2006). Remarks at National Academy of Recording Arts and Sciences. Recording Arts Day by Deputy U.S. Trade Representative, Washington, D.C, September 6.
- Brown, Abbe, Andres Guadamuz and Jordan Hatcher (undated). 'The Impact of Free Trade Agreements on Information Technology based Business'. *AHRC Research Centre for Studies in Intellectual Property and Technology Law*, University of Edinburgh.
- Chaturvedi, Sachin (2007). 'Trade Facilitation and Developing Countries', background paper for *World Trade and Development Report*, RIS and Oxford University Press, New Delhi.
- Chaturvedi, Sachin. (2006). An Evaluation of the Need and Cost of Selected Trade Facilitation Measure in India: Implications for the WTO Negotiations. *ARTNeT Working Paper No. 4*. Asia-Pacific Research and Training Network on Trade (ARTNeT), United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP), Bangkok.
- Department of Treasury (1996). Selected Tax Policy Implications of Global Electronic Commerce. [www.ustreas.gov/treasury/tax](http://www.ustreas.gov/treasury/tax).
- eMarketer, Inc. (2002). *The E-Commerce Trade and B2B Exchanges Report*. March. Executive summary available at [www.emarketer.com](http://www.emarketer.com).

- ESA (2007). Benefits of Free Trade Agreements for Entertainment Software Publishers, Entertainment Software Association, Washington D.C.
- European Commission (1998). Commission Document (COM 98) 374, July.
- European Commission (1998). "E-commerce and indirect taxation". Commission Document (COM 98) 374 final, July. Communication by the Commission to the Council of Ministers, the European Parliament and the Economic and Social Committee
- FICCI (2007), 'Services Exports to Overtake Goods Exports by 2012: India's Share in World Services Exports to Triple in Five Years', Federation of Indian Chamber of Commerce and Industries, New Delhi.
- Forrester Research Inc. (2001). *Global Online Trade Will Climb to 18% of Sales*. Brief dated 26 December. Available at [www.forrester.com/ER/Research/Brief/0,1317,13720,FF.html](http://www.forrester.com/ER/Research/Brief/0,1317,13720,FF.html).
- Holleyman II, Robert W. (2003). 'Trade in Services and E-Commerce: The Significance of the Singapore and Chile Free Trade Agreements', BSA testimony before the Subcommittee on Commerce, Trade and Consumer Protection Committee on Energy and Commerce, U.S. House of Representatives, on the Significance of the Singapore and Chile Free Trade Agreements. 8 May, Washington DC.
- IDC Research (2002). *Western Europe Pulls Ahead of United States*. E-newsletter dated 3 January. Available at [www.idc.com/getdoc.jhtml?containerId=ebt20020103](http://www.idc.com/getdoc.jhtml?containerId=ebt20020103).
- IMF (2002), *Balance and Payments Statistics*, International monetary Fund, Washington DC.
- Kumar, Nagesh (2001). 'Indian Software Industry Development: International and National Perspective'. *Economic and Political Weekly*, pp. 4278-4290, 10 November.
- Mann, Catherine L. (2000). 'Transatlantic Issues in Electronic Commerce', paper presented at an international conference on *Electronic Commerce and Multilateral Liberalization*, organized by the IARI, Rome, 19 May 2000.
- Marshal, Dale D. L. (1999). 'Policy Issues related to E-Commerce and the FTAA Processes', presentation at the American Chamber of Commerce, 19 March.
- Mattoo, Aaditya and Ludger Schuknecht (undated). 'Trade Policies for Electronic Commerce', mimeo, WTO, Geneva.
- Microsoft (1999). 'WTO and Electronic Commerce: Issues for World Trade', *Microsoft White Paper*, 8 September.
- Mohanty, S K and Robert Arockiasamy (2007), *Prospects of Making India's Manufacturing Sector Export Oriented*, Study for the Ministry of Commerce and Industries, Research and Information System for Developing Countries, New Delhi.
- NASSCOM (2006). *Strategic Review 2006: The IT Industry in India*. National Association of Software and Service Companies.
- Panagariya, A. (1999). 'E-Commerce, WTO and Developing Countries', mimeo, UNCTAD, Geneva.
- Purohit, Mahesh C. and Vishnu Kanta Purohit (2005). 'E-commerce and Economic Development'. Foundation for Public Economics and Policy Research, New Delhi.
- Revenue (2003). *Electronic Commerce and the Irish Tax System*, Ireland.
- Schware, R. (1987). 'Software Industry in the Third World: Policy Guidelines, Industrial Options and Constraints', *World Development*, Vol. 15, No. 10/11, pp. 1249-1267.
- Siwek, Stephen E. (2006). *Copyright Industries in the U.S. Economy: The 2006 Report*. International Intellectual Property Alliance.
- Slaughter, Matthew J. (2007). 'Happy Birthday ITA'. *The Wall Street Journal*, 18 July.
- Teltscher, Susanne (2000). 'Tariffs, Taxes and Electronic Commerce: Revenue Implications for Developing Countries', *Policy Issues in International Trade and Commodities Study Series No. 5*. United Nations Conference on Trade and Development, New York and Geneva.
- Teltscher, Susanne (2000), 'Tariffs, taxes and electronic commerce: Revenue implications for Developing countries', United Nations Conference on trade and Development, Geneva.
- UNCTAD (2002), *E-Commerce and Development Report*, United Nations Conference on trade and Development, Geneva.
- UNCTAD (2000). *Building Confidence: Electronic Commerce and Development*. United Nations publication, sales no. E.00.II.D.16, Geneva and New York. Available at [www.unctad.org/ecommerce/ecommerce\\_en/docs\\_en.htm](http://www.unctad.org/ecommerce/ecommerce_en/docs_en.htm)
- WTO (2005). Doha Work Programme: Ministerial Declaration, WT/MIN (05)/DEC 22 December. *World Trade Organisation*, Geneva.
- WTO (2003). Fifth Dedicated Discussion on Electronic Commerce under the Auspices of the General Council on 16 May and 11 July 2003. WT/GC/W/509, 31 July. World Trade Organisation, Geneva.
- WTO (2003) Work Programme on Electronic Commerce, Submission by the European Commission, WT/GC/W/497, 9 May. World Trade Organisation, Geneva.
- WTO (2002). 'Electronic Commerce and the Role of WTO', *Special Studies 2. World Trade Organisation*, Geneva.
- WTO (2001). Need for Unrestricted Global Electronic Commerce, WT/GC/W/435, 16 May. *World Trade Organisation*, Geneva.
- WTO (2001a). Doha WTO Ministerial Declaration, WT/MIN (01)/DEC/1, 20 November. *World Trade Organisation*, Geneva.
- WTO (1999). Work Programme on Electronic Commerce, Council for Trade in Goods G/C/W/158, 26 July. *World Trade Organisation*, Geneva.
- WTO (1998). Development Implications of Electronic Commerce. WT/COMTD/W/51, 23 November. *World Trade Organisation*, Geneva.
- WTO (1998). 'Electronic Commerce and the Role of the WTO'. *Special Studies 2. World Trade Organisation*.
- WEF (2006). *Global Information Technology Report 2006*, World Economic Forum, Geneva.
- Wunsch- Vincent, Sacha (2003). 'The Digital Trade Agenda of the U.S.: Parallel Tracks of Bilateral, Regional and Multilateral Liberalization'. *Aussenwirtschaft*, 58 Jahrgang, Heft I, Zurich: Ruegger, S. 7-46.
- Wunsch- Vincent, Sacha (2004). 'WTO, E-commerce and Information Technologies From the Uruguay Round through the Doha Development Agenda'. A Report for the UN ICT Task Force. Markle Foundation.

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