

*Electronic Commerce, International Trade and Developing Countries*

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**Introduction**

The past a few years saw the boom and bust of the Internet sector, which is perhaps one of the most dramatic business events for several decades. Shutdowns of Internet companies more than doubled in 2001. However, based on a conservative estimate, only at most ten percent of significant Internet companies have shut down or declared bankruptcy. “It may be safer to say that the Darwinian process has left many fewer WEAK Internet companies.”<sup>1</sup> With the burst of the Internet bubble, people now are becoming more rational. Internet has become an important part of business and government, and less a part of frenzied speculation. Electronic commerce (interchangeable with the word e-commerce), which covers a much broader scope than mere Internet companies, has been penetrating our life to various degrees. It is no longer time to consider whether it should get involved in our existence but time to examine its implications and so as to make it bring positive changes to us. This paper provides an overview of the effects of e-commerce and an analysis of the opportunities and

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<sup>1</sup> Webmergers: Year End Shutdowns Report: Shutdowns More Than Doubled in 2001

challenges for the world, especially the developing countries. Emphasis is placed on the evaluation of trade-related issues.

### **Electronic Commerce Defined**

First we need to define electronic commerce. According to the World Trade Organization (WTO), electronic commerce is the production, advertising, sale and distribution of products via telecommunication networks. It include: i) the searching stage where producers and consumers, or buyers and sellers, first interact; ii) the ordering and payment stage once a transaction has been agreed upon; and iii) the delivery stage.<sup>2</sup>

In addition, the member states of the Organization for Economic Co-operation and Development (OECD) have agreed on a working definition of e-commerce: the networks over which E-commerce activities are carried out (Internet or others) and the specific business processes related to e-commerce and the different actors involved (businesses, households or Governments).<sup>3</sup>

### **Values that Electronic Commerce Creates**

Electronic commerce creates value by vastly lowering the cost of transferring many types of information, on a one-to-one, one-to-many, or many-to-many basis. On the demand side, the advantages are improved information about the available goods and services, improved access to them as well as more customization that matches the taste of the buyers. On the supply side, electronic commerce can streamline transaction processes

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<sup>2</sup> WTO: Study from WTO Secretariat Highlights Potential Trade Gains from Electronic

<sup>3</sup> UNCTAD: E-commerce and Development Report 2001, P. XXVI

and reduce cost. When Cisco Systems replaced its phone and fax ordering process with online ordering, the company saved more than half a billion dollars and reduced error rates from 25% to 2%.<sup>4</sup> Study also shows that there is a lot of cost savings in delivery directly to the home rather than doing so through a store.<sup>5</sup> Internet makes the time when transactions take place flexible, a very important feature in a global economy with different time zones. Thus 24-hour online banking service has brought much convenience at low cost both to the banks and the customers. E-commerce also enables better matching of buyers and sellers, which means more transaction volume and higher market efficiency. In addition, e-commerce has created opportunities for brand new products and industries. Examples are Internet appliances, such as Palm Pilots, and Internet-based services, such as PC-to-Phone calls. Moreover, e-commerce creates new markets where previously transaction and coordination costs were prohibitively high. NewView Technologies, formerly known as eSteel.com, aggregates steel producers and purchases from around the world into a single online marketplace.<sup>6</sup>

On the macroeconomic level, it is widely recognized that e-commerce, both B2C (business to customer) and B2B (business to business) models, reduces overall transaction cost, allocates resources better, increases economies of scale and improves the competitiveness of business in general. Despite some existing murkiness, recent studies show that e-commerce does have a positive impact on national growth of productivity and GDP. It is expected that European countries will catch up quickly with the United

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<sup>4</sup> Catherine L. Mann et al.: Global Electronic Commerce P.11

<sup>5</sup> Severin Borenstein and Garth Saloner: Economics and Electronic Commerce P. 4

<sup>6</sup> Catherine L. Mann et al.: Global Electronic Commerce P.10-11

States, and developing countries, with a certain degree of preparedness, could also converge in productivity with the leading e-commerce countries.<sup>7</sup>

### **Prerequisites of Electronic Commerce**

The benefits of being integrated in e-commerce look inviting, especially in trade-related issues. But in order to reap these benefits, there are many prerequisites. First, the implementation of e-commerce needs sufficient technologies and infrastructures of computer and telecommunication, whose development is ever accelerating. Countries should have reached a certain stage of Information and Communication Technologies (ICT) development so that the buyers and suppliers can actually materialize the possibility of conducting e-commerce. Second, electronic commerce also requires the technological and processing capability to make on-line payments and to deliver goods and services to consumers both physically and over the Internet. The appropriate development of financial services and logistics is also an indispensable part of the e-commerce.

Despite its prevalence in certain sectors and regions, e-commerce is still in its infancy. There is urgent need, both on the national and international levels, for the establishment of standards, regulations and laws to create an environment of certainty, trust and security of the purchase and sales, as well as for the conveyance and use of information provided online.

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<sup>7</sup> UNCTAD: E-commerce and Development Report 2001, P. XXVII

## **What E-commerce Means to Developing Countries?**

E-commerce is unique in its great capacity to go beyond the boundaries of time, space and information. An OECD study shows that there is a linkage between the openness of an economy and ICT spending. Trade in the goods and services are facilitated by the dissemination of ICTs. Countries where ICT spending has increased sharply usually also have sharp growth in trade.<sup>8</sup> Therefore, given its immense effect on international trade as well as investment, e-commerce influences the development and globalization processes of the world.

To meet the prerequisites of e-commerce requires a great amount of resources and efforts invested over a long period of time, so e-commerce is one more challenge that the developing countries are facing in the era of so-called new economy. In this realm, there is still much to accomplish for the developed countries and the way is probably even longer for the developing countries. United Nations Conference on Trade and Development (UNCTAD) has studied this issue and come up with two scenarios. In Scenario I, the developing countries may be able to skip certain stages of development, jump on the express train of e-commerce and better integrate themselves in the world economy. A 1% productivity growth in the services sector in Asia would result in welfare gains of US\$ 12 billion, GDP growth of 0.4%, a wage increase of 0.4% and a growth in services exports of between 2% and 3%. Therefore, e-commerce can become an important tool for development and fast catching-up. However, in Scenario II, developing countries might lag further behind technologically. While developed

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<sup>8</sup> OECD: Measuring the New Economy: Trade and Investment Dimensions, P.30-32

countries will have welfare gains of US\$ 117 billion, the developing world as a whole will experience a huge loss in welfare (close to US\$ 726 billion) and GDP, reduction in wages and deteriorating terms of trade. E-commerce could hence constitute an additional factor widening the gap between developed and developing countries.<sup>9</sup>

For individual countries, the trade effect of e-commerce is two-fold: On the one hand, new demand and market for goods and services has been created and expanded. Tourism industry, an information-intensive industry, is an important employer and foreign currency earner for developing countries. E-commerce can help maintain and improve their comparative advantage over developed country destinations. Although developing countries lack in modern ICT and financial infrastructures, their customers usually come from developed countries where such infrastructures are modern. Therefore, this obstacle is not formidable. With the adoption of e-commerce and other improvements in the business, the developing countries can reach their customers more directly with more comprehensive and flexible tourism products, reducing and/or eliminating the cost associated with a chain of intermediaries. As a result, the tourist industry of developing countries can become more competitive. E-commerce also makes it possible for consultancy type work such as software development and support to be carried out in the developing countries where consultants are employed to serve customers abroad. This means the sale of services in which the developing country has a comparative advantage (relatively low labor cost) which has not been fully utilized because of restrictions on the movement of natural persons. Microsoft has just moved its Global Technology

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<sup>9</sup> UNCTAD: E-commerce and Development Report 2001, P. XXVII

Engineering Center to China. This is a net benefit to the exporting country in terms of income, retained earnings and employment. On the other hand, sectors that have been shielded from international competition will now be challenged by foreign producers. This might create serious problems for the developing countries, at least in the short term. In various WTO agreements, they have been granted special treatment for a certain period of time so that their domestic industries will not be overwhelmed all at once. With the advent of the e-commerce, it has to be determined what degree of openness is optimal so that the countries can gain from efficiency rather than suffer from the by-effects such as threats to national security and sovereignty as well as unemployment.

Over the past decade, the regions with the highest annual growth in goods and services exports were Latin America, North America and Asia, whose shares of world exports also rose, while those of Europe, the Middle East and Africa declined. Africa posted the lowest export growth rate (at 1% per year). The most dynamic regions in terms of exports were also the most dynamic in terms of imports, reflecting a better integration into trade.<sup>10</sup> This shows that although trade has increased in every region of the world, not all regions have benefited equally from the dissemination of trade as a result of new economy, where e-commerce plays a major part.

E-commerce helps enhance global economic integration because the new opportunities that it creates bring in certain countries that have previously been left out. For example, [www.EthioGift.com](http://www.EthioGift.com) is selling “Very big sheep– a 35 Kg (Guaranty) Sheep for Your

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<sup>10</sup> OECD: Measuring the New Economy: Trade and Investment Dimensions, P.48

Family's Feast (\$97)", featuring a photo (with zoom view) of an attractive brown and white ovine. This Ethiopia-based website is a model of its kind – an e-commerce venture based in a developing country doing a booming business with clients in the industrialized world.<sup>11</sup> However, without the necessary infrastructure and technology to connect them in the network of e-commerce, the most disadvantaged countries are threatened with even greater exclusion from trade and investment flows. Africa's regression in international trade statistics proves that the digital divide does exist. According to OECD, some countries' exclusion is made even more visible by the digital divide. However, the number of those excluded has been dropping steadily thanks to the new technologies. Although it appears that the developing countries have an interest in trading ICT products, the inequality of access to the new technologies is blatant. As long as this inequality persists, the problem cannot be totally solved.

Therefore, the impact of e-commerce has two sides. Although its overall impact on the world is positive, we cannot assume that, for any single country under current conditions, the net effect of e-commerce is positive, too. Since e-commerce seems an irreversible trend, measures must be taken to make it work better and fairer for each player. Such efforts shall come both internationally and domestically.

### Issues of E-commerce *per se*

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<sup>11</sup> UNCTAD: From selling sheep to transcribing tapes: prospects bright for e-commerce in developing countries, says new UNCTAD report

Since e-commerce is largely a new phenomenon, there are still many tricky issues in the realm of international trade. In September, 1998, the WTO General Council adopted a work program on electronic commerce and issues are being examined by the Goods, Services and TRIPS Councils as well as the Trade and Development Committee.<sup>12</sup> If these issues can be duly clarified and evaluated, if appropriate recommendations can be put forward and well-devised mechanism carried out, some risks of e-commerce can be better controlled.

### Customs Duties and Taxation

Cheaper imports as a result of e-commerce will benefit consumers and businesses. Currently cross-border e-commerce is operating in a tax- and tariff-free environment. In Item 34 of the Doha WTO *Ministerial Declaration* adopted in November, 2001, it is declared that “members will maintain their current practice of not imposing customs duties on electronic transmissions until the Fifth Session”.<sup>13</sup> This tax free situation and duty free moratorium are one cost-saving incentive for businesses to engage in e-commerce. But for governments, they have different concerns. It is estimated that e-commerce will spur cross-border trade with highest growth rates in developing countries. With the predictions of steep increases of e-commerce in the near future, governments are trying to discuss modification to existing legislation to take account of these new situations.<sup>14</sup> Since for the developing countries, tax and import duties comprise higher

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<sup>12</sup> WTO: Electronic commerce

<sup>13</sup> WTO: Ministerial Declaration

<sup>14</sup> Susanne Teltscher: Tariffs, taxes and electronic commerce: Revenue implications for developing countries

shares of government revenue and a shift to other revenue sources is economically less feasible, these issues are of particular concern to them.

There is much debate on the “permanent establishment” (PE) of a business since most countries apply source-based income taxation. According to an agreement reached at the OECD, an Internet-based business can often be construed as non-PE and usually tax will not be levied on non-PE. Even if it is regarded as PE, since developing countries are net importers of e-commerce in the short-medium run, they will run a greater risk of losing revenues if traditional importers are replaced by online delivery.<sup>15</sup> For developed countries, on the other hand, potential tax revenue losses (VAT) are significant as well. Furthermore, even if the tax and customs duties issues are settled, enforcement of tax and tariff payments related to digital delivery is still a challenge.

### Classification

How e-commerce is categorized will determine under which agreement it will be covered and regulated. According to a report summary in June, 2001, the general view of Member Governments of the WTO is that the vast majority of transactions on the Internet are services which are covered by the General Agreement on Trade in Services (GATS). Furthermore, the GATS does not distinguish between technological means of delivery. The provisions of the GATS apply to trade in services through electronic means.

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<sup>15</sup> UNCTAD: E-commerce and Development Report 2001, P. XXXIV

However, there is a disagreement on the classification of a small number of products on the Internet, as to whether or not they are services or goods. This disagreement is on products such as books and software. Whereas a printed book delivered through conventional means is classified as a good, there are Member Governments of the WTO who hold the view that the digital version of the text of such a book is a service which should be covered by the GATS. Other Member Governments hold the view that such a product remains a good subject to the provisions of the GATT Agreement. There are also those who think that such a product constitutes a third category of products which are neither goods nor services and for which special provisions need to be devised.<sup>16</sup>

This disagreement on categorization has become a pivotal issue because of the structural differences between GATT and GATS, which in turn has different revenue implications for countries with different roles in the related business:

- The essence of GATT is to reduce or eliminate tariffs over time through binding of tariff concessions. National treatment for internal taxes is obligatory.
- Tariffs are so uncommon in trade of services that GATS does not even mention them. National treatment for internal taxes is negotiated.
- Levels of benefits extended by GATT can differ significantly from those available under GATS in the short term. In the long term, it is hard to tell but overall, the scope of GATS is far wider.

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<sup>16</sup> Electronic Commerce: Briefing Note: Work programme reflects growing importance

Agreed and explicit confirmation of classification standards is necessary for legal clarity and predictability for trade. Neither GATT nor GATS classification schemes may fully or unambiguously cover products since there is still a lack of clear-cut definition with regard to their content and carrying media. So some classification work is needed.<sup>17</sup>

### Legal Issues

In e-commerce, there are still many legal uncertainties which put the development of e-commerce under systematic risks:

One of the major issues is the commercial law. Traditionally, a transaction is validated and guaranteed through the original document in writing with signatures. When there is need for physical possession of the original document, it is a question how to establish a functional equivalent replicating the “uniqueness” of the document. Electronic Signature comes as a solution for its capability to achieve data origin authentication, message integrity and non-repudiation. But still there should be a commonly accepted legislation to govern this authentication and security.

In addition, because of the easy-and-costless-to-copy nature of many products available online, the intellectual property issue deserves much attention. WIPO Treaties are good guidelines to refer to, but the question of effective implementation makes WIPO commitment short of a total solution. There are also issues such as consumer protection, jurisdiction, arbitration and applicable law, Internet content regulation, computer crime,

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<sup>17</sup> Lee Tuthill: WTO Implications of Classification Issues

data privacy. To handle all these issues, there can be legal solutions at various levels, such as national legislation, international legal instruments, contractual solutions and self-regulation.<sup>18</sup> However, each of them has its own competence and limitation. Much more endeavor on the legal aspects of e-commerce is needed.

E-commerce plays an important in international trade. Solutions to all these issues will push it along a healthy and fair direction of development. With issues solved, both developing and developed countries can be protected from undesirable by-effects of e-commerce. Therefore, these efforts are to be made at the international level with collaboration of various government bodies and organizations.

### **Challenges for Developing Countries**

In order to materialize Scenario I suggested by UNCTAD, i.e. to seize this e-commerce opportunity and catch up with the developed countries through better integration into the world economy, there is much for the developing countries to proactively work on.

As mentioned earlier, well functioning and modern telecom infrastructure, satisfactory supply of electricity and access to hardware, software and servers are basic requirements for e-commerce. This surely requires a great amount of investment. Developing countries should strive to allocate resources and locate investment opportunities from various sources. Widespread access to telecommunications at low prices and availability of telecom equipment at international prices can enhance the capacity of countries to

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<sup>18</sup> Carlos Moreno: Brief Overview of Selective Legal and Regulatory Issues in Electronic Commerce

participate in e-commerce. Therefore, developing countries should not overprotect their frequently monopolistic telecommunications industry but introduce reform, innovation and competition.

In the developing countries now, e-commerce often comes in the form of “online conclusion and offline payment”. When e-commerce goes to the arena of international trade, the capability of online payment, e.g. credit card for B2C and Internet Banking for B2B, becomes imperative. There should be a radical upgrade of financial service infrastructure. As the world financial system is undergoing rapid transformation in Internet age, developing countries should try to integrate themselves into this process instead of staying out. Developing countries often have concerns over their financial stability once online payment is set free. These certainly are important issues to carefully address, but to keep themselves shut out is not the solution. Rather, it would render the developing countries even more uncompetitive in the long run.

Logistics are an essential part of e-commerce though it was neglected before. How logistics are organized is often a key factor to e-commerce success. Experience has shown that the failures of many online retailers result from the unsuccessful logistic activities. Well-organized logistics require business expertise and good software application can be a solution to the problem. However, in the developing countries, the main difficulty in developing software for improving logistics is the general lack of integration between the various applications used for different logistic functions. Another impeding factor is the existence of many trade constraints such as disparate

documentation requirements and outdated procedures. To solve all these would require the governments to nurture a better trading environment with more transparent regulations, more consistent procedures and more available information.<sup>19</sup>

In view of the special situations of developing countries, immense international cooperation and assistance will be needed in addition to the efforts made by the developing countries. These combined efforts shall make e-commerce work better and fairer for developing countries in terms of trade-related development, which in turn facilitates the trade and development of the developed countries as well.

## **Conclusion**

Electronic commerce is an irresistible trend that transforms our ways of life, business and government. It enhances world overall productivity and welfare. However, at closer inspection, we can see that it has both positive and negative impact on different players in e-commerce. E-commerce is a new phenomenon and there are many intrinsic issues to address such as its tax and legal implications. E-commerce poses new opportunities and challenges for developing countries. In order for the developing countries to catch up with the developed countries, much domestic effort and international cooperation is needed so that the development of the world will be substantially furthered with the momentum of e-commerce.

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<sup>19</sup> UNCTAD: E-commerce and Development Report 2001, P. XXXVII

## Bibliography

- Severin Borenstein and Garth Saloner: *Economics and Electronic Commerce*  
(Journal of Economic Perspectives, Volume 15, Number 1- Winter 2001)
- Catherine L. Mann, Sue E. Eckert, Sarah Cleeland Knight: *Global Electronic Commerce*  
(Institute for International Economics, 2000)
- Carlos Moreno: *Brief Overview of Selective Legal and Regulatory Issues in Electronic Commerce*  
[http://www.wto.org/english/tratop\\_e/devel\\_e/sem04\\_e/moreno.ppt](http://www.wto.org/english/tratop_e/devel_e/sem04_e/moreno.ppt) (Accessed on May 13, 2002)
- OECD: *Measuring the New Economy: Trade and Investment Dimensions*  
[http://www.oecd.org/olis/2001doc.nsf/c5ce8ffa41835d64c125685d005300b0/b4fa6e8a89a1e7e4c1256aea004f98ec/\\$FILE/JT00114980.PDF](http://www.oecd.org/olis/2001doc.nsf/c5ce8ffa41835d64c125685d005300b0/b4fa6e8a89a1e7e4c1256aea004f98ec/$FILE/JT00114980.PDF) (Accessed on May 13, 2002)
- Susanne Teltscher: *Tariffs, taxes and electronic commerce: Revenue implications for developing countries* [http://www.unctad.org/e-commerce/docs/tax\\_ecom.pdf](http://www.unctad.org/e-commerce/docs/tax_ecom.pdf) (Accessed on May 13, 2002)
- Lee Tuthill: *WTO Implications of Classification Issues*  
[http://www.wto.org/english/tratop\\_e/devel\\_e/sem05\\_e/presentation\\_tuthill.ppt](http://www.wto.org/english/tratop_e/devel_e/sem05_e/presentation_tuthill.ppt)  
(Accessed on May 13, 2002)
- UNCTAD: *E-commerce and Development Report 2001* (United Nations, 2001)
- UNCTAD press release #2: *From selling sheep to transcribing tapes: prospects bright for e-commerce in developing countries, says new UNCTAD report: 2001.11.20*  
([http://www.unctad.org/e-commerce/docs/edr01\\_en/edr\\_press1.pdf](http://www.unctad.org/e-commerce/docs/edr01_en/edr_press1.pdf)) (Accessed on May 13, 2002)
- Webmergers: *Year End Shutdowns Report: Shutdowns More Than Doubled in 2001*  
<http://www.webmergers.com/editorial/article.php?id=49> (Accessed on May 13, 2002)
- WTO: *Electronic commerce*  
[http://www.wto.org/english/tratop\\_e/ecom\\_e/ecom\\_e.htm](http://www.wto.org/english/tratop_e/ecom_e/ecom_e.htm) (Accessed on May 13, 2002)
- WTO: *Electronic Commerce: Briefing Note: Work programme reflects growing importance*  
[http://www.wto.org/english/tratop\\_e/ecom\\_e/ecom\\_briefnote\\_e.htm](http://www.wto.org/english/tratop_e/ecom_e/ecom_briefnote_e.htm) (Accessed on May 13, 2002)
- WTO: *Ministerial Declaration (Adopted on 14 November 2001)*  
[http://www.wto.org/english/thewto\\_e/minist\\_e/min01\\_e/mindecl\\_e.htm#electronic](http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm#electronic)  
(Accessed on May 13, 2002)
- WTO: *Study from WTO Secretariat Highlights Potential Trade Gains from Electronic Commerce*  
[http://www.wto.org/english/news\\_e/pres98\\_e/pr96\\_e.htm](http://www.wto.org/english/news_e/pres98_e/pr96_e.htm) (Accessed on May 13, 2002)