

Electronic Commerce and International Trade of Pakistan

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I. INTRODUCTION

The international trade theories assume complete information on demand, supply, prices, product specification and technologies but such assumptions generally do not hold. In particular information is inadequate for both the importers and exporters to make optimal choices. Obviously countries with elaborate information mechanism move closer to their export and import potential than those who lack such mechanism. It is therefore, no wonder that the governments help producers in organising exhibitions, fairs etc for introducing their products. The advent of information technology, e.g. e-mail, Internet and Web sites, provides easy access to information. It provides an opportunity to introduce products and assess the demand for the products and at the same time allows importers to reach the minimum cost source. This also allows the producers to acquire technologies and explore the possibilities of subcontracting. Needless to add that the expanded net work affects disproportionately different producers and different countries; it depends on the intensity of use of electronic commerce.

Electronic Commerce can play a major role in boosting Pakistan's exports, which have stagnated. Pakistan has found it difficult to introduce new product and explore new markets [see DRI (1998)]. Inadequate information on Pakistani exports in the countries where demand for these products exist have contributed significantly to this phenomenon and the electronic commerce would therefore be quite useful.

Electronic commerce is on the rise in the world. The trade in services especially in computer software, entertainment products, information services, technical information, product licenses, financial services, and professional services has already grown rapidly. In case of US it accounts for well over \$ 40 billion of U.S exports [See U.S. Policy (1998)].

In Pakistan e-commerce plays relatively insignificant role. Many factors including lack of awareness on the part of businessmen about its potential, non-availability of requisite human resources, government regulations and high prices charged for the use of these facilities have contributed to this phenomenon. The Information Technology policy announced recently tries to address some of these issues.

Plan of the paper is as follows: In Section II we define the electronic commerce, various instruments of the electronic commerce and technologies. Main issues in the electronic commerce are examined in Section III. Electronic Commerce and small business is examined in Section IV. Pakistan's information technology policy is reviewed in Section V and conclusions are presented in Section VI.

II. INSTRUMENTS OF ELECTRONIC COMMERCE

Electronic commerce is the application of communication and information sharing technologies among trading partners in the pursuit of business. It allows the entrepreneurs to initiate new businesses with lower investment requirements. We may distinguish four types of Electronic Commerce:

- Information access: Search and retrieve capability for public domain and proprietary data archives.
- Inter-personal communication: Methods for parties with mutual interest to exchange information and improve co-operation.
- Shopping services: To seek and purchase goods or service through electronic networks.
- Virtual experience: Business arrangements in which trading partners are separated spatially but are able to engage in a complex joint business activities as if they were single enterprise.

Government can have a profound effect on the growth of commerce on the Internet by setting a set of principles, presenting a series of policies, and establishing a road map for international discussions and agreements. Government should refrain from imposing unnecessary regulations, bureaucratic procedures, or taxes and tariffs on commercial activities that take place via the Internet. Government intervention should be to facilitate electronic commerce, by ensuring competition, preventing fraud, fostering transparency, supporting commercial transactions, and by facilitating dispute resolution.

Technology of Electronic Commerce

There are at least seven technologies of electronic commerce. [For details see *Electronic Commerce Primer (1998)*]. These are:

- **Electronic data interchange (EDI):** It is the computer to computer exchange of structured business information in a standard electronic format for transmission to one or more trading partners.
- **Bar codes:** These are used for automatic product identification by the computer. The technology carries tremendous potential to improve any process requiring tight control of material flow. These are useful in shipping, inventory management, and work flow in discrete part manufacturing.
- **Electronic mail:** It allows the messages composed by an individual and sent in digital form to other recipients via Internet.
- **Internet:** It is a decentralised global network of computers and computer networks which can all "talk" as they have agreed to use a common communications protocol. It is a tool for communication between people and businesses.
- **World Wide Web:** It is a collection of documents written and encoded with the Hypertext Markup Language (HTML). The browser enables a user to access these documents even though document is on a computer of a totally different network elsewhere in the world. HTML pages contain many different kinds of information such as text, pictures, video, sound, and pointers, which take users immediately to other web pages.
- **Product data exchange:** It refers to any data needed to describe a product. It could be in graphical form, character based, as in the case of specifications, bills of material, manufacturing instructions, engineering change notices and test results. It differs from other types of business communications in two important ways. First, because graphics are involved users must contend with large computer files and with problems of compatibility between software applications. Second, version control very quickly gets rather complicated. Because manufacturing processes are involved, even small product change can have major consequences for getting a product in the production.
- **Electronic forms:** This is a technology that combines the familiarity of paper forms with the power of storing information in digital form which allows storage in data bases, automatic information routing, and integration into other applications.

III. MAIN ISSUES IN ELECTRONIC COMMERCE

The main issues in the electronic commerce may be grouped into technical using trading agents, financial, legal, and market access problems. Trading agents relate to search agents. The financial issues relate to customs and taxation and

electronic payments, legal issues include Uniform Commercial Code' for electronic commerce, intellectual property protection, privacy and security and market access issues include telecommunications infrastructure and information technology and content technical standards.

Search Agents

There may be a very large number of suppliers who provide information on the World Wide Web. If the importer decides to visit all the web sites and find the minimum price it may be quite costly and time consuming. The importer may instead employ a search agent who visits all the sites, interrogate them and come out with the lowest price. Vulkan (1998) examines the impact of the use of such search agents on product prices and the range and quality of products on the consumers and concludes that even though one expects markets to become competitive, this may not happen especially if the suppliers block interrogation by search agents. Moreover exporters may also use the search agents to find the maximum prices it could get rather than offering the price.

Financial Issues

Internet lacks clear and fixed geographic lines of transit that historically have characterised the physical trade of goods. Any product order over Internet delivered via surface or air transport can still be taxed in the normal way but it is rather difficult when the product or service is delivered electronically. Should the internet be declared a tariff-free environment whenever it is used to deliver products or services needs critical examination.

The second main financial issue is the payments through internet. Some methods link the existing electronic banking and payment systems, including credit and debit card networks, with new retail interfaces. Substantial private sector investment and competition is spurring an intense period of innovation that should benefit consumers and business wishing to engage in global electronic commerce.

Legal Issues

A predictable and widely accepted legal environments supporting commerce, development of both a domestic and global uniform commercial legal framework that recognise facilities and enforces electronic transactions worldwide is a pre-requisite for promotion of trade and commerce. Fully informed buyers and sellers could voluntarily agree to form a contract subject to the uniform legal framework, just as parties currently choose the body of law that will be used to interpret their contract.

The United Nations Commission on International Trade Law (UNCITRAL) has come out with a model law that supports the commercial use of international

contracts in electronic commerce. UNCITRAL formulates rules and norms that validate and recognise contracts formed through electronic means, sets default rules for contract formation, provides for the acceptability of electronic signatures for legal and commercial purposes, and supports the admission of computer evidence in courts and arbitration proceedings. The proposed legislation needs close examination to make sure that Pakistan's interest are properly guarded. While examining the law, the following may be considered:

- That the exporters and importers are free to order the contractual relationship between themselves as they see fit.
- That the rules are technology neutral and forward looking.
- That the existing rules are modified and new rules adopted only as necessary or substantially desirable to support the use of electronic technologies.
- That the new commercial sector and businesses are brought online.

The expansion of global electronic commerce depends crucially on the participant's ability to achieve a reasonable degree of certainty regarding their exposure to liability for any damage or injury that might result from their actions. Inconsistent local laws coupled with uncertainties regarding jurisdiction may substantially increase litigation and create unnecessary costs.

If the internet users do not have the confidence that their communications and data are safe from unauthorised access or modification they are not likely to use internet for commercial purposes. They need to be ensured that telecommunication net work is secure and reliable, there is an effective method to protect the information system and there is an effective means for authenticating and ensuring confidentiality.

Market Access Issues

The electronic commerce depends upon telecommunication networks, computers and information appliances. Of crucial concern in this regard are the following five areas:

- **Leased Lines:** Data networks of online service providers are based on the leased lines obtained from Pakistan Telecom, a public monopoly. Since there is no competition they charge artificially inflated leased line prices and usage restrictions and thus impeding the provision of service by online service providers.
- **Local Loops Pricing:** The online service providers to reach their subscribers have to purchase local exchange services, which are priced at excessive rates, inflating the cost of data services to customers.

- **Interconnection and Unbundling:** The telecom price interconnection well above cost, and refuse to interconnect because of alleged concerns about network compatibility or absence of need for other providers.
- **Attaching Equipment to the Network:** Telecom may restrict the connection of communication or technology devices to the other networks.
- **Internet Voice and Multimedia:** These should not be subject to the same regulatory restrictions that apply to the traditional services as it can be used to control both the carriage and content offered. Such an approach may hinder the development of new technologies and new services.

The second element in market access issue is the content of the information passing through the Internet including World Wide Web page, news and other information services, virtual shopping malls, and entertainment features, such as audio and video products, and the arts. The four priority areas of concern are:

- **Regulation of Content:** Companies wishing to do business over the internet, and to provide access to the internet are concerned about liability based on the different policies of every country through which their information may travel.
- **Foreign Content Quotas:** Some countries currently require that a specific proportion of traditional broadcast transmission time be devoted to "domestically produced" content.
- **Regulation of Advertising:** Advertising will allow the new interactive media to offer more affordable products and services to a wider, global audience.
- **Regulation to Prevent Fraud:** In order to realise the commercial and cultural potential of the internet, consumers must have confidence that the goods and services offered are fairly represented, that they will get what they pay for, and that recourse or redress will be available if they do not.

The third issue relates to technical standards critical to the long run commercial success of the Internet as they can allow products and services from different vendors to work together. They also encourage competition and reduce uncertainty in the global marketplace. Since standards can also be employed as de-facto non-tariff trade barriers, to "lock out" non-indigenous business from a particular national market, this needs careful attention.

IV. ELECTRONIC CMMERCE AND THE SMALL BUSINESSES

Electronic Commerce is an excellent method to deal with the forces impinging on the business. This presents both the challenges and opportunities especially to the small businesses. This is of crucial importance as Pakistan has recently established

SMEDA to encourage the small businesses to overcome the problems of employment and to improve the overall efficiency of the industrial production.

- Electronic commerce would increase the foreign competition in the global markets. However, small industries may have more opportunity to sell into overseas markets in both developed and the developing world. But that would depend on their effective use of the electronic commerce. Since the small producers in Pakistan may not have any access to the information technology SMEDA may have to download the relevant information for the small producers.
- Manufacturing supply chain may be enhanced for the small producers. Small producers may be asked to provide more (and more complex) sub-assemblies rather than individual components. Similarly, demands on suppliers to provide design and engineering services may increase. Manufacturers, both large and small, may outsource more of their non-core capabilities. Linkages among companies in supply chains will become tighter as related systems proliferate.
- Customers will demand more electronic communication for functions like bidding and ordering. As large customers make these demands, there will be a ripple effect down supply chains.
- Communication and coordination within companies will improve as a result of more use of networking, information technology, and systems integration. There will be more use of automated manufacturing technology, presenting greater opportunity for integrating external data into internal operations.
- Competition will increase among vendors of information and telecommunications services. The variety of information and telecommunication services offered to manufacturers will increase.
- Information itself will become significant commodity for sale. (e.g., data bases on product history) and as such more of companies internal data will be accessible for use in decision-making. Through networking, manufacturers will have more and better access to a wider variety of useful business and technical information.
- SMEs will use networks to gain greater access to a wider variety of potential customers.

V. PAKISTAN'S INFORMATION TECHNOLOGY POLICY

Even though at present Pakistan does not have an information technology policy a draft of the new policy has been circulated [Information Technology Policy (1999)]. The policy envisages setting up of an electronic highway which inter-

connect “electronic devices into a single network of computers, telephones, televisions and other electronic devices”. The strategy consists of three elements:

- To establish information technology infrastructures with a view to facilitating geo-spatial data management, Tele-medicine, Tele-education and E-commerce activities;
- To engineer the applications and databases using the Information, Engineering methodology and concept of data warehousing;
- To systematically develop the Decision Support Systems and Expert Systems to materialise the concept of an electronic government ensuring good governance.

The main thrust of the information strategy is on

- Evolving an information infrastructure.
- Improving the quality of life.
- Enhancing the potential of individual.
- Developing a cyber village.
- Establishing E-commerce information centre.
- Founding science and technology parks.
- Ensuring good governance.
- Promoting electronic government.

The information technology policy would aim at comprehensive strategies and plans for advanced technological developments and facilitation of electronic commerce. The main elements of the policy impacting on the electronic commerce included in the draft policy are:

- Attracting new capital to the IT sector, increasing the public awareness, establishing IT infrastructure, projects, parks etc.
- Improving economic development and global competitiveness in other sectors of the economy, such as service sectors like travel, finance, professional and insurance services.
- Effective establishment of implementing the liberalisation of telecommunication infrastructure.
- Addressing legal, regulatory, technical, funding and social aspects to access information and use thereof.
- Promoting collaboration among government and private organisations in harmonisation, regulation and standardisation effort required supporting trade and sector services.
- Preparation of fair competition policy based on free market, open access to networks and intellectual property.

- Cooperation and access to R and D in the development of new software, hardware, applications etc.
- To promote private sector investment in software development with focus on software exports.
- To enhance the training facilities in IT at schools, universities and other levels to produce skilled manpower.

As pointed out earlier the government should have a promotional role and a regulating role where necessary. The policy suggests complementary roles for the private sector and the government and rightly recommends that the government's role be confined to providing the enabling policies, incentive infrastructure and institutional mechanisms for the IT industry, and to adopt appropriate practices for IT projects in the government sector.

The Information technology argues for visible short run projects and targets, which are practical and revenue earning. It identifies call centres and data entry projects yielding maximum revenues with the minimum inputs, especially in the absence of highly skilled IT personal. Nevertheless it requires massive amounts of international bandwidth at a low cost but it can easily be done either by giving independent direct satellite (VSAT) links or forcing the PTCL, a public monopoly, to charge on a cost plus basis rather than making excessive profits. Telecommunications and information technology needs a "paradigm shift" which allows information with minimal government intervention and at competitive rates.

To promote software industry the industrial revival committee makes the following suggestions.

- Establishment of technology parks
- Making Pakistan Software Export Board (PSEB) more effective and functional by providing adequate funding.
- Designating PSEB as focal point for co-ordination of software requirements of the public sector organisations. The public sector organisations be obliged to meet all their requirements from Pakistani firms.
- Data rates and spectrum cost of PTCL for software should be brought down to the competitive levels.
- Enhancing trained manpower through quality training and education.

The incentives for development of software industry proposed in the policy include fiscal and tax incentives to the IT industry and financing the new firms as well as growth of existing IT firms. While the information technology policy does not detail the proposals regarding incentives the industrial revival committee recommends the following:

- Declaring the software industry as priority industry in the Youth Self-Employment Scheme and now it has been declared a priority are in the policy of SMEDA.
- Allocation of Rs 200 million for software industry out of Prime Minister's export and employment generation scheme.
- Encouraging venture capital for development of software and the fund allocation to be made to venture capital industry for disbursing to software companies.
- Extension of Export Refinance Schemes to software development and export. For new companies export agreements may be considered collateral, as software-exporting companies cannot provide collateral for obtaining credit facility.
- Prudential regulations may be relaxed for the software industry.

The draft information policy and the measures under consideration of the government is in line with the principles enumerated earlier and addresses almost all the issues raised earlier. However, it fails to provide the concrete policy suggestions.

VI. CONCLUSIONS

While the electronic commerce is on the rise in the world and it provides vast opportunities to Pakistan to diversify its export products and destinations, it has made very little use of the electronic commerce. The main reason has been the lack of information, non-availability of human resources required and the cost of connections provided by the telecommunication. The new information technology policy promises a lot in deregulated framework but it lacks the concrete policy measures. It is high time that these measures are formulated and implemented. A speedy action can result in a very sharp growth in Pakistan's exports but delayed action may result into loss of the existing share of trade.

Information technology also holds challenges and promises for small producers. Since most of small producers in Pakistan will not have access to the computers and Internet SMEDA will have to download for them and provide the information. Similarly, the benefits of information technology will have to be demonstrated to the small and medium producers by way of subcontracting etc.

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