

**Note**

**Institutional Approach to E-commerce:  
An Integrated Framework for Pakistan**

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Pakistan needs to knit itself into global information economy in order to ensure economic development. E-commerce is the essential tool through which this objective can be met. Currently, the economy is in a transition, the span of which needs to be shortened in order to meet the global challenges in the coming years. An institutional approach is essential to develop e-commerce. An appropriate institutional framework will shorten the time span of the transition period and will ensure a smooth transition to information economy. It will provide an effective and efficient use of the existing institutional infrastructure and development of new institutions. It calls for close coordination between the government, industry, and international organisations.

**1. INTRODUCTION**

Electronic Commerce provides an altogether new way of conducting commercial transactions. The opportunities emerging from e-commerce will have far-reaching economic and social implications. It dramatically reduces the economic distance between producers and consumers. The benefits of improved information, lower transaction costs, and hence lower prices, larger choices, and instant delivery present global access to the marketplace with relative ease.

Pakistan cannot remain aloof to the challenges of globalisation, as it has to knit itself into the global economy. For this it is essential for Pakistan to maintain an environment in which the potential of e-commerce can be realised. Achieving this requires co-operation on key issues, between public and private sectors, on principles to guide the development and implementation of e-commerce policies and on basic policy approaches to major issues. The role of international organisations like the WTO, the OECD, etc., is relevant to addressing questions of where and how these principles and approaches might best be formulated.

This paper presents institutional approach to address the challenges of e-commerce in Pakistan. It underscores the present situation and the potential for development of e-commerce in Pakistan and other developing countries. Furthermore, it identifies the challenges faced by the latter to prepare for harmonious development of e-commerce. An attempt has been made to develop an integrated

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framework to identify the potential role of government, private sector, and international organisations to promote commercial transactions efficiently and effectively. Institutional approach would be a useful and effective vehicle for Pakistan to gear up for and more into the global economy through e-commerce. A well-integrated institutional infrastructure is the key to prepare the ground for the challenges of e-commerce in Pakistan. Moreover, development of human skills provides the required inputs and further strengthens the process of economic growth and development.

## **2. E-COMMERCE AND ITS SCOPE**

The term Electronic Commerce (e-commerce) refers generally to commercial transactions, involving both organisations and individuals, that are based upon the processing and transmission of digitised data, including text, sound, and visual images, and that are carried over open networks (like the internet) or closed networks (like AOL) that have a gateway into an open network [OECD (1997)]. E-commerce is the application of communication and information-sharing technologies among trading partners in the pursuit of business [Kemal (1998), p. 850]. According to the WTO definition, “e-commerce” is understood to mean the production, distribution, marketing, sale or delivery of goods and services by electronic means [WTO (1998)]. The Alliance for Global Businesses (AGB) defines Electronic Commerce more broadly to mean that it “incorporates all value transactions involving the transfer of information, products, services or payments via electronic networks. This includes the use of electronic communications as the medium through which goods and services of electronic value are designed, placed, advertised, catalogued, inventoried, purchased or delivered” [Monterio (2001)].

E-commerce dramatically reduces the economic distance between producers and consumers by eliminating the roles of traditional retailers, wholesalers, and in some cases distributors. The consumers benefit from improved information, lower transaction costs, and thus lower prices. They further enjoy larger choices like customised products and instant delivery for intangible services and products in digital form. For sellers, e-commerce present many advantages e.g., access to the global marketplace with relative ease. Inventory system can be managed more efficiently, with considerable labour cost savings, etc. However, just as it offers new market opportunities, it will also intensify competition.

E-commerce is an Information Technology (IT)-driven trend where impetus comes from the Internet. The IT revolution is the fastest emerging revolution seen by the human race. And the Internet surpasses all. Electricity was first introduced in 1873 and it took 46 years for its mass scale use. Telephone was introduced in 1876 and took 35 years for mass use. Television, introduced in 1926, took 26 years for mass use. PC introduced in 1975 took 16 years; mobile phone, in 1983, took 13 years for mass use, while the Web, introduced in 1994, took only 4 years for mass use.

While in the United States 57 percent Americans have Internet access, it is said that only 0.6 percent people living in the developing countries can access the Internet [Niazi (2001)]. Time factor is critical in IT industry due to its speedy mass use. In order to reap benefits of reduced transaction cost, e-commerce infrastructure should be laid and made available to the users in the short term. In the long-run, transaction cost becomes irrelevant because of loss of information and technological edge over the competitors.

Since anyone with access to Internet has access to e-commerce, however, regulatory structures in many countries still limit market access by infrastructure providers, though this is changing with the liberalisation of telecommunications. Estimates of the number of Internet users are growing very rapidly. The number of commercial transactions made over the Internet is also growing. As of January 2000, over 110 million people have Internet access in the USA as compared with 279 million people worldwide [Qureshi (2000)].

The e-commerce industry, by recent research, transacted business on the Internet exceeding \$403 billion in year 2000. Almost 78 percent of the e-commerce activity takes place in the USA, in domestic market only. Europe's share in e-commerce is 14 percent, bulk of the business being generated in the local economies of European countries. India conducted business on the Internet to the tune of \$24 million in 1999, and expected it to rise to \$262 million in 2000 (ibid.). Pakistan, so far, has attracted \$35 million investment in the IT sector and its exports in software stood at \$25 million in year 2000.

### 3. SCOPE OF E-COMMERCE IN PAKISTAN

Pakistan needs to develop an e-commerce policy and formulate strategies to integrate itself with global economy, as it is still lagging far behind the other countries. Pakistan is widely considered to be in the Third Wave of developing economies; the latter include countries in Asia, Latin America, the Pacific Islands, and the Middle East. These countries started to adopt the Internet from around 1993. Almost all have a state monopoly over the telecommunications sector with low tele-densities per population and very high telecom costs, which restrict Internet access to élitist groups in the population. Less than 2 percent of the population (in Pakistan's case less than 1 percent) is connected to the Internet. These countries have weak political and democratic institutions where the governments welcome new commercial opportunities, yet at the same time they feel threatened (ibid.).

The wiring up of financial and banking sector in Pakistan is crucial because of its central position in strengthening the other sectors of the economy. Moreover, unless the banking sector is strengthened, the other sectors of economy cannot be wired up effectively and efficiently. The savings and cost efficiencies in this one sector alone pay for wiring up the entire economy.

According to Javed Naushahi, co-head of the E-Commerce Working Group of the Ministry of Science and Technology and Treasurer of the Computer Society of Pakistan, “by simply documenting the e-commerce transactions in the economy, the *hundi* money transfer system, which earns about US\$8 to 10 billion per year in profits, can be reduced considerably, and the earnings brought into the white economy. However, we have to find Rs 15 billion in the next two or three years to do this” (ibid.).

The 200 or so official money-changers operating in the country handle about 400 transfers per day, not all of which are documented with the State Bank of Pakistan. Pakistan has about 8,000 bank branches, out of which about 1,500 have some sort of automated connection to a head office or a zonal office. Yet, for various reasons, these 1,500 local bank branches, in 15 major cities, are unable to compete with the *hundi* system, which is publicly perceived to be more trustworthy, convenient, and efficient and can give a better foreign exchange conversion rate for the remittances than the government banking system (ibid.).

Banking officials estimate that 60 percent of the US\$8 billion *hundi* earnings are from delivering a better foreign exchange differential, while 40 percent of *hundi* earnings are drawn from giving efficient service. All these are transactions which, at present, cannot be handled adequately and in time by the 1500 local bank branches operating in Pakistan, because they are simply not wired up to their head offices and cannot run an efficient funds transfer network that can extended over the country (ibid.).

The Governor of the State Bank of Pakistan (SBP) has stated: “If we are able to get 0.2 percent of share total global e-commerce business, it will make a foreign exchange impact of adding two billion dollars which include increase in exports, capitalisation and workers remittances”. [Dawn, July 14, 2000.] The head of the e-commerce working group in the Ministry of Science and Technology has stated that widening of tax net through electronic documentation, cost savings, and increased competitiveness will have a positive impact of Rs 60 billion on the economy, while the estimated foreign exchange impact comes to two billion dollars. These estimates are based on the full-scale implementation of e-commerce”. [Dawn, July 14, 2000.] However, Pakistan is unlikely to capture any significant share of foreign markets without switching to e-commerce.

Estimates reveal that B2B<sup>1</sup> transactions at 80 percent justify the investment in physical connectivity to all those organisations having a stake in trade transactions,

<sup>1</sup>The most common and popular forms of e-commerce are Business-to-Consumers (B2C) and Business-to-Business (B2B). B2B covers everything from communication between the retailers and their suppliers to the orders and the schedule of payment modes, that is, mainly of electronic payment of selling and purchasing of industrial goods. It enables firms to source the inputs from the best supplier. B2C brings the seller and the end-user in contact. However, B2C, as compared to B2G (Business-to-Government), is still running in low-steam owing to lack of security of transactions on the internet, absence of proper legal framework for e-commerce, and last but not the least, limited market for the sellers.

whereas B2C model exploits the infrastructure laid down for the former category. The stakeholders in the public sector are the Pakistan Customs, SBP (State Bank of Pakistan), EPB (Export Promotion Bureau), Karachi Port Trust, Port Qasim Authority, Civil Aviation Authority, Dry Port Authorities, and CBR (Central Board of Revenue). The stakeholders in the private sector are trading companies, clearing and forwarding agents, shipping companies, local and foreign banks, insurance companies, trade associations, and others. Private sector stakeholders outside Pakistan are the foreign trading companies, branches of shipping and airline companies, and local and foreign banks [Monterio (2001)].

At present the freight forwarders' association, the shippers' association, the various port authorities, customs authorities, and SBP come to a consensus in principle to streamline the conversion and development of electronic documents (message development) for the customs and revenue collection network.

Three groups of the trade network have come forward to construct a payment portal or gateway, to be connected to banks, to enable exporters anywhere in the country to receive their payment very fast.

The e-commerce national plan is a "work in progress". Thus far, the following working groups have been formed or are functioning. The Financial Working Group, Electronic Trade Facilitation Working Group, Legal and Security Working Group, and Infrastructure Working Group. Professions and concerned persons wishing to participate are being asked to come forward to set up and work with these working groups [Monterio (2001)].

So far, Pakistan has attracted an investment of \$30 million in IT sector and Pakistan's software exports in 2000 stood at \$25 million as compared to \$16-18 million in 1999 [Dawn, January 24, 2001]. Besides, Pakistan is at the 55th position on e-commerce readiness in Asia-Pacific region [Dawn, July 14, 2000].

India, on the other hand, along with Brazil, provided for years the leadership to developing countries on informatics and communication policy [Petrazzini and Harindranath (1996)]. Since the early 1990s, India has undergone a paradigm shift in its national development strategy. It has moved from protectionism, self-reliance, and central planning to strategies that emphasise liberalisation, global integration, and market-driven growth. Recent policy initiatives to boost the country's national information infrastructure are part of these larger transformations of Indian society. In an effort to build a communication platform, upon which a national information economy can flourish, the government there has introduced significant changes in the telecommunications, informatics, and broadcasting sectors.

In the informatics sector (hardware and software), Indian government turned in the mid-1980s to more liberal policies allowing import of computer parts to support the hardware industry, and later the import of advanced computers to boost the nascent software industry. In the software industry the rapid growth of private firms has been enhanced in the 1990s with the official

initiative of Software Technology Parks. Both of these developments are progressively turning the informatics sector of India into one of the key components of the country's emerging national information infrastructure (ibid).

Changes in the broadcasting sector reflect the general trends found in telecommunications with the difference that, in broadcasting, government policies have followed events rather than led them. The decline of state monopoly and the rise of private initiatives in television have brought about a significant restructuring of the Indian content industry. Traditional firms in both film and publishing sectors are diversifying and investing heavily in satellite and cable television as well as in the production of programmes and on-line information services. Private telecommunication companies soon to enter the Indian market are also venturing into cable-content-related services (ibid.).

#### 4. CONSTRAINTS FOR PAKISTAN

The Government of Pakistan had announced its commitment to put the country on the "Information Super Highway". The measures announced/undertaken in connection with the promotion of Information Technology include [Khawaja (1988)]:

- establishment of Information Technology Commission;
- reduction in customs duties/sales tax on computers;
- fiscal incentives to exporters of computer software;
- concessions to training institutions in computers;
- reduction in telecommunication charges.

These measures however, are not enough to put the country on "Information Super Highway". Moreover, it is an ambitious agenda as Pakistan does not have the required infrastructure for it. Although at present Pakistan does not have an Information Technology Policy, a draft titled "Information Technology Policy 1999" of the new policy has been circulated [Kemal (1998), p. 854]. In July 2000, the federal cabinet, in principle, approved the action plan to promote e-commerce [Dawn, July 14, 2000]. It should be noted too that Pakistan did not participate in the seminar on e-commerce organised by the WTO in 1999, nor did it offer any policy suggestions in this regard. This reflects the country's weaknesses in developing e-commerce.

At present, a little over 5 percent of Pakistan's gross domestic product (GDP) consists of the services sector, out of which 2.5 percent is the financial services sector, while 3 percent is the information and communication technologies (ICTs) sector. To measure how far Pakistan has to travel, as a comparison benchmark, it must be understood that USA's ICT Sector alone is over 50 percent of that country's GDP [Monterio (2001)].

Pakistan, as one of the signatory countries to the WTO, will have to follow the WTO line probably by 2002, when the moratorium and other issues become permanent, and it will need to undertake an across-the-board review of its present laws. Recommendations for the review, among other recommendations, were suggested in a five-volume “Study on E-Commerce for Pakistan”, and are still at the implementation stage (ibid.).

Moreover, all major stakeholders have already given their commitment to implement e-commerce imperatives. A proposal to enable internet merchant accounts and an action plan to enable the financial services sector have been accepted and the numerous common modalities (hardware, software, number of people needed) are being worked out. The Central Board of Revenue accepts the action plan for international trade transactions. The SBP governor formed a task force to set up an electronic clearinghouse for funds transfers, and all banks have been asked to submit an 18-month action plan. The banks have been asked to report on what they can deliver, on a quarterly basis, regarding IT implementation, an electronic payment system, and e-commerce enablement. However, the federal minister for science and technology has expressed his dissatisfaction with the performance of banks, for not implementing e-commerce [*Dawn*, January 24, 2001].

Entrepreneurs in Pakistan are of the opinion that e-commerce means being able to make and receive payments through the Internet—any other activity through the Internet is not considered e-commerce. This low level of understanding has led many Pakistani firms to give low priority to e-commerce due to unavailability of proper framework for the Internet in the country. In Pakistan, e-commerce is still an infant child and faces many barriers to grow. The notable barriers are: unavailability of proper infrastructure (telephone lines of steam age, frequent failure of power), limited users of internet, (hardly one percent of the entire population has access to the Internet), the issue of the security of transactions on the Internet, high bandwidth rates, and last but not the least, the rigid and monopoly role of PTCL (Pakistan Telecommunication Company Limited).

In this backdrop, a survey was carried out to get a feel about how e-commerce is shaping in Pakistan. The survey was focused on identifying the potential of selling through the Internet in Pakistan, to learn about the preparedness of local and multinational firms for e-commerce, and to seek their expert views about the future of e-commerce in Pakistan. The survey findings suggest that although local businesses saw potential of selling on the Internet (83 percent), yet most of them (55 percent) had no idea when they would plan to start selling. Firms at the moment are simply watching the latest developments surfacing in Pakistan. Also, respondents (54 percent) were of the opinion that in Pakistan, the growth of e-commerce is likely to remain slow in the near future. None of the companies surveyed (only 1 company is doing B2B) is doing e-commerce—(B2C) as they translate it. The good news, however, is that some firms (39 percent) have tightened their belts to welcome

e-commerce by floating their websites on the net. Not only that, almost all of them (90 percent) have e-mail addresses and 94 percent have access to the Internet and 58 percent of the companies have LAN (Local Area Network). This is a very encouraging development, and it means that firms have taken the very first step to enter the world of e-commerce. However, around 99 percent of the respondents were still of the opinion that e-commerce means being able to make and receive payments through the Internet, and any other activity through Internet is not considered e-commerce [Hussain (2001)].

The pressing reform and investment agenda dictated by the information revolution aims to move countries into a different kind of economy, *the information economy*, where information is the key factor of production, trade and investment are global, and firms compete globally on the basis of knowledge, networking, and agility. This agenda also leads countries to a new type of society, *the information society*, which is quite different from an industrial society. An information society is better informed, more competitive, more democratic, less centralised, less stable, more able to address individual needs, and friendlier to the environment [Talero (1996)].

## 5. CHALLENGES TO E-COMMERCE

As the importance of e-commerce intensifies, it is also exposed to a variety of threats. While it promises decreasing transaction costs, raising efficiency, and hence increasing the overall wealth, it may also impose adjustments on existing economic structures in developing countries like Pakistan. For example, it may well result in a loss of employment in traditional distribution and retailing. Besides, systems and data are increasingly exposed to a variety of threats, such as unauthorised access and use, misappropriation, alteration, and destruction. There is also the possibility of concealing data related to illegal activities, which may raise a number of law enforcement issues for the government.

Moreover, it facilitates fraud and makes prosecution difficult. In addition, its international nature means that the laws and regulations, on which a consumer relies on for protection at home, may not apply in the merchant's country. Digital products sold via e-commerce such as software, music, or services will create particular challenges for many existing consumer protection laws. Also, if consumers do not have control over the collection and use of their personal data, e-commerce will facilitate the invasion of their privacy. There is also a concern about the detrimental and disagreeable information distributed and accessed on the Internet [OECD (1997)].

In addition to that, it will become difficult for taxpayers and governments, globally, to determine jurisdiction and revenue rights. Besides, the existence of electronic products also raises issues of fairness between taxes and tariffs imposed on physical goods and electronic substitutes. Furthermore, its also raises serious



issues for the collection of taxes, particularly withholding taxes. Finally, it may tend to increase the prevalence of transfer pricing and increase the difficulty of detecting such behaviour. The predicted growth of international e-commerce, much of which may be undertaken by smaller, less sophisticated businesses, may mean that the number of international breaches of international revenue laws could increase (*ibid*). In specific terms, these issues in the e-commerce, therefore, may be grouped into technical, legal, financial, and market access problems [Kemal (1998), p. 851].

All the global challenges to e-commerce are faced by Pakistan as well. Pakistan has to cooperate with the international community to overcome these challenges and take some bold initiatives at the national level also. An institutional approach is recommended to meet the growing challenges of e-commerce.

## **6. INSTITUTIONAL APPROACH TO E-COMMERCE**

The institutional approach offers an explanation of the concept of e-commerce and its unprecedented growth. It also offers a solution and a way to meet the challenges of e-commerce in an integrated fashion. Institutions are the stuff of social existence; they are ways of creating behavioural norms, fixing behaviour, and thereby generating expectations for other people. We rely on institutions—tacitly or consciously—all the time. For example, when we write a cheque we assume that the bank exists, that the money will be honoured, that property rights will endure, that there are specific protocols of business, and so on.

Moreover, institutions are habits and behaviours that are shared by a group of people, which may or may not have a technological expression, and may or may not have an organisational form. Some institutions are organisations; a university or a bank is an institution of this type. But in addition to organisations—such as universities and banks—we have further institutions like language, law, table manners, and traffic rules [Hodgson (2001)]. By these criteria, the Internet can also be treated as an institution, as an established and partially organised network. It has strong elements of self-organisation within it: a spontaneous order created by people interacting, without being ordered by anybody or directed by any central command. Nevertheless, the Internet was organised; it was set up by groups of people. Today the Internet has a life of its own: it has both organised and unorganised aspects to its existence. There is a protocol concerning the Internet. We behave in certain ways in relation to it. Rules have been established. And there are technological constraints as well.

Douglas North defined institutions “as a set of formal and informal rules, and ... thus distinct from the public organisations, which emerge to administer and enforce them” [North (1991)]. Thus institutional development can be defined as a move from a less efficient to a more efficient set of rules, by reducing the transaction costs. However, transaction costs become irrelevant when there are no costs in adjusting or reforming. Since e-commerce also tends to reduce transaction costs, Institutional Development justifies the concept of e-commerce.

Institutional development takes time, and how it should proceed has been the subject of many debates. Experience suggests that technological change will create new and better replacement jobs. E-commerce is already creating new high-quality computing and communications jobs linked to the development of global digital markets. It has been estimated that a hardcore of about 5000 IT experts will be required to be trained to start up and keep the banking sector in Pakistan running. These 5000 experts would need 50,000 IT banking staff in support duties [Monterio (2001)].

Institutional approach can help Pakistan address the challenges of e-commerce. It will be pivotal to global integration of economy and sharing of information. Furthermore, it will provide an effective and efficient use of the existing institutional infrastructure in Pakistan. Institutional approach can play a vital role during the transition phase through close coordination between the government, industry, and international organisations. It will provide new job opportunities by creating demand for new services and thus creating altogether new professions. This will lead to development of human skills and, hence, efficient conduct of public and private organisations.

## 7. AN INTEGRATED INSTITUTIONAL FRAMEWORK FOR PAKISTAN

Keeping the scope of e-commerce in Pakistan, major issues and international initiative to promote this trend globally, an integrated institutional framework for the development of e-commerce in Pakistan is suggested. This framework identifies the integrated role of the government, industry, private sector, and international organisations to promote e-commerce through international policy consensus.

### **Role of Government**

While it is amply recognised that the private sector is the primary engine of the information economy, the role of governments is important as a catalyst for change, as a regulator, and as a guarantor of a level playing field. A legal policy and a regulatory environment that attracts private sector investment appears to be a necessity rather than a choice for developing economies. Of the approximate expenditure per year needed to build up basic networks in Pakistan, up to 50 percent must come from private sources. Internal cash generation can provide up to 40 percent, and only 10 percent may be obtained from official sources. The following suggestions are made for government intervention.

- (i) *Task Force.* A special task force on e-commerce should be established with the objective of making recommendations for the domestic sector and international issues relating to e-commerce. Moreover, if we carefully analyse our existing institutional infrastructure for trade and commerce,

development of government policy on e-commerce may not require new resources, and the existing resources from different government departments and agencies, e.g., SBP (State Bank of Pakistan), NADRA (National Database and Registration Authority), CBR (Central Board of Revenue), EPB (Export Promotion Bureau), and CAA (Civil Aviation Authority) could be pooled together for information, analysis, and recommendations.

- (ii) *Building Trust for E-commerce.* “Trust” is an important condition for the success of e-commerce. Government has to infuse confidence into the system by setting the minimum rules for taxation, jurisdiction, copyrights, privacy, and security. It further needs establishing a chain of trust that links a number of institutions such as customs, banks, transporters, and telecom service providers to the exporters and importers.

Furthermore, government itself should play the role of a model user of e-commerce. It should behave as a “model user” of the Internet and ensure that adequate skills have to be developed in the work force, so that it could take advantage of the enormous benefits offered by e-commerce.

Besides, it is important to pay attention to business-to-government transactions as these would not only bring about increased efficiency and revenues but would also give hands-on experience to government officials and policy-makers on the subject.

- (iii) *Legal Infrastructure.* In order to create a legal infrastructure to support e-commerce, the government should avoid over-legislation, ensure flexibility and technological neutrality, and ensure transparency and predictability in the law. This includes establishing cyber-legislation and cyber-police.

Additional policy of minimal government intervention should be adopted which essentially means that so far as possible the government should depend on existing laws to cover electronic crimes. For example, existing consumer protection laws should suffice to cover transactions over the Web. In matters like privacy protection, self-regulation by industry has already had a salutary effect through online privacy alliances.

- (iv) *Close Cooperation at the International Level.* This should include harmonising national policies with the rest of the world, complying with international standards, and participating actively in international forums on e-commerce.

### **Role of Industry and Private Sector**

Success in e-commerce depends rather on business sense than on the sophistication of the website. Since e-commerce deals with businesses, therefore the following suggestions are made.

- (i) *Promotion of Awareness of E-commerce among Industry and Citizens.* In order to meet the challenges of e-commerce, the first and the foremost step to take is to promote awareness of e-commerce among the industry and citizens. Industry and government should work together to influence global policy.
- (ii) *Self-regulation.* Both technological and legal solutions are required in the electronic world to replace the physical security of the paper-based world. Businesses and consumers will have to help adjudicate the trade-off between protecting privacy and obtaining the benefits of e-commerce that they both value. Education on this issue, therefore, is of primary importance.
- (iii) *Software Development.* Mechanisms are needed to verify certain information independently. The use of software, which offers data security together with an independent trusted source, which attests to some of the information being exchanged, can make electronic transactions verifiable. Some of this will develop through competition; the rest will require international co-operation among the industry and governments. It is expected that some technological tools will offer new ways to deal with some of the issues and allow consumers to protect themselves if they use them and learn to trust them.

### **Role of International Organisations**

International organisations like the WTO, OECD, EC, UNDP, IBRD, etc., can play a vital role in promoting e-commerce and its utility in the new millennium. Suggestions for international organisations are offered in this section.

- (i) *Global Commercial Code.* Development of common rules that should be addressed at this point by international organisations may include recognition of the validity of electronic documents and signatures, authentication of the identity of senders of electronic messages, integrity of transmitted documents, identification of the date, time, place of dispatch and receipt, cross-border legal issues, and the liability of network service providers.
- (ii) *Research and Human Resource Development.* Organisations like the WTO/UNCTAD, and OECD can help provide pre-transactional activities such as providing data for market research, trade promotion including publicity through the Internet, research on electronic tendering, legal aspects of e-commerce, and training activities for government and business.

- (iii) *International Agreement on the Legal Aspects of E-commerce*. UNCITRAL model law, which is an informal and private convention and has not yet become part of the UNCITRAL agenda, may be formalised and made a part of international agreements, and adopted as soon as possible.

## 8. CONCLUSION

The National Information Infrastructure (NII) is expected to help Pakistan develop not only the infrastructure for effective market conduct but also an enabling environment for e-commerce. By playing an effective role in addressing issues and challenges on international forums, Pakistan can become part of the international policy-making process. Besides, it will provide a clear goal to follow for future policy framework.

However, care should be taken in policy design and implementation. While e-commerce facilitates business transactions by reducing transaction costs, it cannot provide business sense. For example, provision of e-commerce cannot eliminate the competition faced by the banking sector from the *hundi* sector. In fact, it will further intensify the competition because the marginal cost of e-commerce will almost be zero for the competitors.

Furthermore, importing technical institutions, like physical infrastructure, is easy to implement. However, importing human institutions, like rules, laws, and regulations, may have a negative impact on the attitude and behaviour of the local users. Therefore, a change in attitude should be ensured through indigenous means. Besides, the speed of reform is critical in this case. A slow reform process could nullify the benefits of e-commerce specially when transaction costs become irrelevant.

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