

CHAPTER 26

Electronic commerce

What is electronic commerce

There is no universally accepted definition of the term 'electronic commerce'. However, it is generally used to cover the "distribution, marketing, sale or delivery of goods and services by electronic means". The rapid growth in electronic commerce during the last decade has been due to the increasing use of the Internet for commercial purposes.

A commercial transaction can be divided into three main stages:

- ❑ The advertising and searching stage;
- ❑ The ordering and payment stage; and
- ❑ The delivery stage.

Any or all of these stages can be carried out on the Internet (or by other electronic means such as the fax or the telephone) and may therefore be covered by the concept of electronic commerce.

Electronic means are being increasingly used aggressively by commercial firms to advertise and market both goods and services all over the world. Virtually all products can be sold on the basis of the information available on the Internet. Information on prices, quality, delivery and payment conditions enables manufacturing companies, retailers or consumers in far-off countries to order their requirements from the most competitive suppliers. Physical goods are then delivered by other means of transport.

It is becoming increasingly possible to deliver certain types of products electronically; in fact any product that can be reduced to a digital format can be delivered in this way. The potential product range is vast: financial and insurance services, audio-visual products (films, games and music), travel services (airline tickets, hotel reservations), news and information services (on-line wire services and data bank retrievals), telecommunications services, and information technology services and software. This list is not exhaustive and additional products are likely to be found suitable for electronic trade in the future. Today, computer software is the leading product sold via the Internet.

Benefits of electronic commerce

Electronic commerce provides consumers and business enterprises with information on the availability worldwide of products or services, prices and conditions of sale, enabling them to obtain their supplies on the best terms possible. It provides suppliers with an on-line marketing service, and enables them to do business without having to open an establishment or to hire an agent abroad. Virtual shops and contact points on the Internet, by facilitating

Box 62**Main instruments of electronic commerce**

There are six main instruments of electronic commerce: the telephone, fax, television, electronic payment and money transfer systems, electronic data interchange and the Internet. While the term 'electronic commerce' is used in many discussions to refer exclusively to the Internet and other network-based commerce, the telephone, fax and television are in common use as media for commercial transactions, particularly in industrialized countries. Orders, for example, are regularly placed over the telephone and paid for by credit card. The emergence of instruments like the Internet did not therefore mean the invention of electronic commerce.

But the Internet does open up many new possibilities: with the Internet most elements of a commercial transaction can be conducted on an interactive basis with one or several persons, unconstrained by time and space, in a multimedia environment with sound, image and text transmission, and at relatively low (and still declining) costs. This makes the Internet much more versatile than other instruments of electronic commerce. The latter typically need to be used in combination with each other or with more traditional instruments such as mail or physical shopping, for a transaction to be concluded. The Internet will therefore reduce the barriers to communications and trade to a greater degree than established electronic and traditional means of commerce.

Source: WTO, Electronic Commerce and the Role of the WTO (1998).

communications, eliminate some of the delays in the flow of supplies. The quick and assured availability of supplies may also enable industries, wholesalers and retailers to reduce the levels of inventories and stocks they hold. This will help companies, particularly the small and medium-sized, to reduce their costs.

Internet-based international trade

The United States accounts for the bulk of the trade conducted through the Internet. Its Internet-based sales are expected to reach US\$ 200 billion - US\$ 300 billion in 2001, attributable mainly to sales in the domestic market. This will be equivalent to 2%-3% of the country's economy-wide sales. The use of electronic means to sell products and services is also on the increase in Europe, though it is much smaller in magnitude than trade in the United States.

Reliable estimates of Internet-based international trade do not exist. Rough estimates, however, indicate that it could reach US\$ 40 billion - US\$ 60 billion by 2001.

Internet commerce and developing countries

In general, developing countries lag far behind developed markets in the availability of the technical requirements for conducting electronic commerce. This can partly be attributed to the inadequate development of their telecommunications infrastructures and to the cost of using the Internet. In addition to the cost of basic computer equipment, the cost of using the Internet depends on several factors, including the costs of routers and other computing facilities and, to a lesser degree, the wages of operators.

Internet charges can be significantly higher in developing than in developed countries. Thus, the average cost of a subscription to a dial-up Internet connection in Africa is quoted by ITU as US\$ 75 per month compared to US\$ 10 in the United States and US\$ 15 in the United Kingdom. Considering the low levels of income in Africa,³⁶ these subscription charges are almost prohibitive and beyond the reach of the common man. Further, the cost of local or long-distance telephone calls giving access to the Internet can be significantly higher in developing countries.

Many of the human skills needed for electronic commerce are distinct from those required for other forms of trade. The more stages of a commercial exchange are carried out electronically, the more specific are the skills required. Basic computer knowledge and knowledge of the Internet are needed even if only to search for a product on the Net. Extensive language skills may be required to browse foreign Internet sites. If a product is to be advertised through the Internet, skills in designing an Internet site are necessary and, if electronic payments are to be accepted, there is a need for people with skills in electronic money transfer. While some developing countries are well advanced in developing these human resource capacities, most of them do not yet have a widely skilled workforce in these areas.

Problems and issues

Revenue implications of electronic commerce

Physical products that are ordered from other countries electronically are delivered by air, rail, road or sea. Customs duties on such products are collected at the border, much like the duties collected on products ordered through non-electronic means.

However, products like books, films and music may be digitized and transmitted to consumers directly. This may lead to an anomalous situation as Internet trade grows. A book or a CD record may have to pay customs duty when crossing a border, while their digitized versions delivered direct to consumers through the Internet would escape such duties. It may also be difficult to collect Internet taxes (e.g. value-added or sales tax) on such products.

Recent research, however, shows that non-collection of customs duties on digitized products may not have serious implications for a country's revenue. Only a limited number of countries have high duties on products that can be rendered digital, and customs duties collected on such products contribute only a small share to government revenue even in these countries. Moreover, it is not impossible to tax electronic transmission, if a country wants to do so. Different methods that can be adopted for this purpose are being studied at present.

Protection of intellectual property rights

Increasing Internet trade may pose problems in the enforcement of intellectual property rights. Similar trademarks can exist in different territories; in the borderless world of electronic commerce, this may lead to conflict. A related issue is the allocation of domain names and the resolution of conflicts arising from the use of the same or similar domain names. In one initiative, WIPO has been asked

³⁶ NUA Internet Surveys, "Constraints on the Development of 'Wired' Economy in Africa" (15 May 1998).

to develop recommendations for the resolution of trademark and domain name disputes and to report its findings to the United States Department of Commerce in 1999.

Other legal issues

Trade and business communications through electronic means give rise to a number of questions of a legal nature. Among those are: What is the origin of electronically traded products? When is an electronically delivered product 'domestic' and when is it 'imported'? How do traders who use electronic means of communication deal with situations in which national laws or international conventions applicable to international trade transactions require 'written' agreements, 'original' documents or 'manual' signatures? How can the authenticity of a message be secured, so that parties will know with certainty the identity of a sender of an electronic message or enable them to verify that an electronic message has not been altered in transmission? Uncertainty over the enforcement and potential for redress of electronically concluded contracts may create obstacles to the development of electronic commerce across borders. The use of electronic means of communication, for instance in preparing and concluding a contract and in delivering products, requires not only technological solutions but an appropriate legal framework.

A number of initiatives at the international level have been taken to assist governments to deal with inadequacies in applicable laws. For example, UNCITRAL, the United Nations body responsible for promoting the harmonization and unification of international trade law, has undertaken work which led to the adoption of a Model Law on Electronic Commerce in 1996. The Model Law establishes rules and norms for the validation and recognition of contracts formed through electronic means, sets default rules for contract formation and performance, defines the characteristics of valid electronic writing and an original document, 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 Model Law can be used by States to enact legislation that will help remove legal obstacles to, and uncertainties arising from, electronic commerce. Both the United States and OECD are encouraging the development of an international convention on electronic transactions based on the Model Law. The convention will have two aims: eliminate paper-based legal barriers to electronic transactions, and provide an effective approach to authentication.

Some initiatives have also been taken by individual countries, the European Communities and international organizations to deal with the legal issues arising from electronic commerce. These include contractual interchange and trading partner agreements which address issues related to EDI (electronic data interchange). EDI is an order-management system which is defined as a set of data definitions that permit business forms to be exchanged electronically. It has been around since computers came into existence, but as it is complex and expensive to implement, typically requiring dedicated and proprietary value-added networks (VANs), it has never really caught on except among large companies with long-term and high-value supply partnerships. However, there are now numerous software companies seeking to deliver EDI across the Internet, which should put it within the reach of smaller business enterprises and effect savings for the larger ones. However, for this to be workable on an international level, there must be a universal standard for sending EDI information over the Net. Several national trade facilitation bodies as well as regional and international organizations have been working on this aspect.

Finally, almost all countries, developed and developing, are concerned about the content of the Internet. This is natural, as the Internet contains a wide

range of more or less desirable 'information'. There are many differing views on what may constitute risks to public morals, security or other types of offensive material. To police all the content available on the Internet is next to impossible. However, possibilities exist to prevent access to undesirable content, either through individual filtering software installed on the personal computer or, on a broader level, by Internet service providers.

WTO work programme

The increasing use of the Internet and other electronic means in international trade in goods and services led WTO Members, at the Geneva Ministerial Conference (held in May 1998), to adopt a *Declaration on Global Electronic Commerce* directing the General Council "to establish a comprehensive work programme to examine all trade-related issues relating to global electronic commerce". In accordance with this mandate, work on examining whether any modifications or improvements are necessary in the rules on trade in goods and services and in the area of intellectual property is ongoing in the relevant WTO forums. In addition, the General Council has asked the Committee on Trade and Development to examine, *inter alia*, the effects of electronic commerce on the trade of developing countries and particularly that of small and medium-sized enterprises in these countries, and the means for maximizing benefits accruing to them. The General Council is expected to submit its report on work done and its recommendations for action to the Third Session of the Ministerial Conference, to be held in November 1999.

Customs duties on electronic transactions

In the same Declaration, the Members agreed to continue (until the next Ministerial Conference) "the current practice" of most of them of "not imposing customs duties on electronic transmissions" (digitized products). A decision on whether the Declaration should be extended and made binding is to be taken at the third Ministerial Conference, taking into account the progress of the General Council's work programme.

Summing up

The value of electronic commerce, an increasingly significant feature of international trade, is expected to increase dramatically in the new century. In order to participate in this trade, countries will have to build their capacities to engage in this trade as a priority. The difficulties, however, of doing this should not be underestimated. Countries need to invest in both physical and human infrastructures, specialized education and training, and provide an appropriate legal framework for conducting commerce electronically.