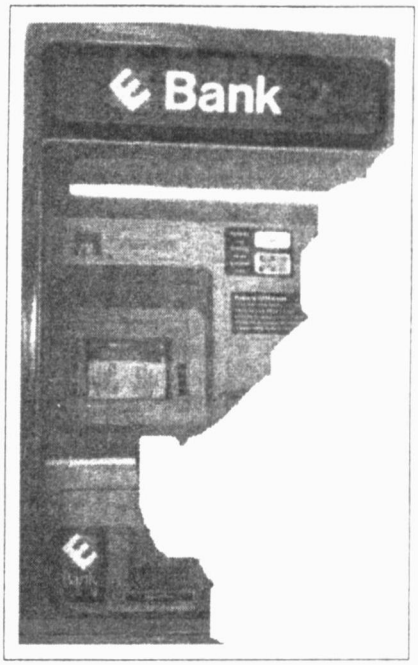
Electronic Commerce & Network Money

Vincent Mervyn Fernando*

Electronic Commerce (e-commerce) will be the back bone of the new global economy in this century, a market place which can be entered from anywhere which can take its users anywhere, which can give access to an unimaginably diverse range of products and services. The **Internet** has contributed largely to the involvement of e-commerce in its present form and is accepted today as an essential feature in an e-commerce environment. With the development of e-commerce on the Internet, new uses for electronic money are emerging. Electronic money on the internet, which will be described as **network money** or cyber money includes card based and/or software-based e-money. One company that has been setting the pace in this area is the California -based start-up Next Card Inc. In December 1997, the company launched the **'Next Card'** – the world's first true Internet Visa credit card. The main purpose of this article is to examine various aspects of e-commerce and network money with 'Next Card'.

Electronic Commerce

There is no universally agreed definition of electronic commerce. However, in the World Trade Organisation (WTO) work programme on Electronic Commerce (e-commerce) it is understood to mean the production, distribution, marketing, sale or delivery of goods and services by electronic means[1]. It can be described simply on "Doing business electronically". More precisely it is conducting the exchange of information using a combination of structured messages i.e. Electronic Data Interchange (EDI)[2], databases, unstructured messages (E-mail) and database access across the entire range of networking technologies. The sharing of information with business partners leads to cost savings, increased competitiveness, improved customer relations and greater efficiency through the redesign of traditional processes.



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 may be carried out electronically and may therefore, be covered by the concept of **'electronic commerce'**.

Electronic Commerce is a business strategy and uses technology to achieve business objectives. It improves external business relationships and an evolution in the way companies interacts. E-commerce provides information to facilitate delivery of goods and services and supports change initiatives and reinforce business process re-engineering.

Electronic commerce can be categorised into three areas: Business to Business, Business to Consumer, and Business to Government Electronic Commerce. Although business to consumer e-commerce is much talked about, business to business is much larger than business to consumer e-commerce. It is basically selling consumer goods and services such as TVs, telephones, computers, software, CDs, books, and travel services on-line over the Internet. Business to business e-commerce on the other hand involves supply chain integration and management, and formation of strategic alliances, Business to government e-commerce involves government tendering and procurement, and trade procedures such as customs.

Electronic commerce will have a significant impact on various economic actors and sectors. E-commerce greatly enhances the speed at which transactions are completed. Minimisation of time spent in communicating, exchanging information and documents, results in increased efficiency in markets. At the same time trading in an electronic environment necessitates market players to be more efficient in all their activities, such as decision making promotional activities and implementation of new strategies in order to have their ware ready to meet new demand. **Quality of goods and services** and **productivity** in the production processes will increase as suppliers strive to maintain their competitive edge in the market. E-commerce itself will hail in new products related to the field of telecommunication and the computer industry. **Employment opportunities** will also arise in these and related fields. The value-added created through e-commerce and the Internet, and the indirect effects on other sectors are likely to generate much new employment. In the

* Deputy Director, Centre for Banking Studies, Central Bank of Sri Lanka

United States, Internet-related employment reached almost 400,000 in 1998.

Data on the growth implications of e-commerce are unavailable but a few sources discuss the growing importance of information and communication technologies and their contribution to **economic growth**. For the European Union, the cumulative contribution of the emerging information economy to growth is projected to reach 3-7 per cent GDP between 1993 and 2008. In Japan, the share of new information and communications technologies in GDP is estimated to increase from less than 1 per cent in 1993 to about 2.5 per cent of GDP by 2010.

E-commerce is also likely to transform a number of other service sectors particularly in the Financial Sector. Many banks already report a majority transaction being conducted electronically without personal contract between client and bank employees and electronic settlement of payments is well established. Potential cost savings in the financial services sector are enormous; while the administrative (marginal) cost of clearing a check average US $ 1.20, and for a debit or credit card payment US $ 0.40 – US $ 0.60, the transaction costs for an Internet payment can be as low as one cent.

Today, when we talk about electronic commerce, reference is made mainly to business conducted over public networks such as the Internet[3]. Internet – based e-commerce is growing rapidly. A survey by Forester Research revealed that companies, which already sell their products on the Internet, still conduct over half of their sales by the telephone or fax. The Internet accounts only for 15 per cent of their sales revenue. However, the share of online sales is projected to grow to 42 per cent of all sales for these companies by the year 2000 (Table 1).

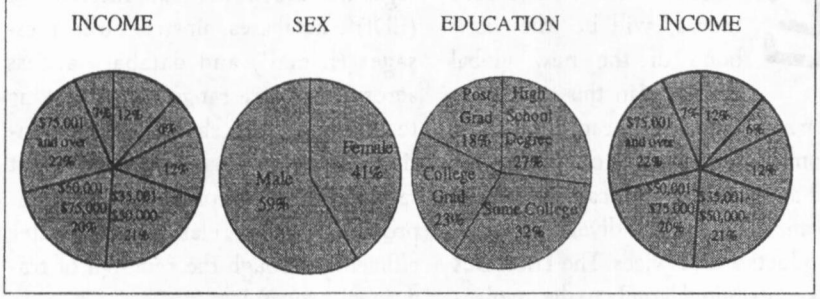
Table 1

The Relative Importance of Commercial Channels

Channel		Percentage
*	Phone or Fax	51 % 32 %
*	Direct Sales	22 % 17 %
*	Mail	2 % 1 %
*	Non-Internet e-commerce	10 % 8 %
*	Internet commerce	15 % 42%
	Total	**100 100**

Source : Forester Research Inc. 1997

Figure 1 **DEMOGRAPHICS OF INTERNET USERS**



The fastest – growing communications tool over, the Internet had more than 140 million users in mid-1998, a number expected to pass 700 million by 2001[4]. In mid-1998 industrial countries – home to less than 15 % of people – have 88 % of Internet users. North American alone with less than 5 % of all people – had more than 50 % of Internet users. By contrast, South Asia is home to over 20 % of all people but had less than 1 % of the world's Internet users.

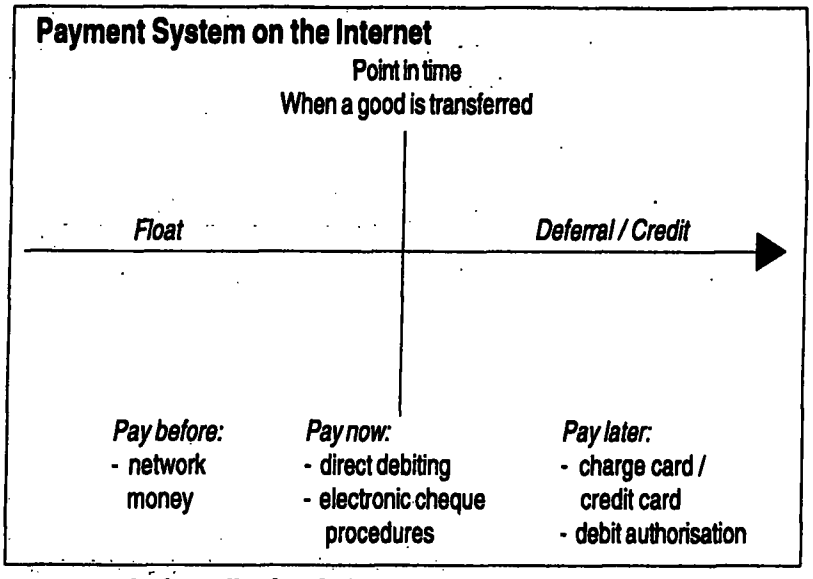
Figure 1, summarises the demographics of Internet users. As a whole, Internet users remain an elite group. The Net population is younger, more affluent, better educated, and more male than general population[5].

Over the past four years the computerised Trade Information Network (Trade net SL)[6] which was established under the Ministry of Internal and International Commerce and Food in May 1995 at the Sri Lanka Export Development Board, has successfully established electronic trade information services and continue to manage, maintain and enhance the electronic trade information base and the computing and network infrastructure. It was now developed a range of e-commerce services in a very professional manner with the establishment of the Cyber Trader – the service of Trade net SL – in May 1999. The objective of this venture is to promote the use of the electronic medium within the Sri Lankan business community. Cyber Trader is successful in developing a business to business e-commerce environment among Sri Lankan exporters and overseas buyers.

As the e-commerce pie expands, new uses for e-money are emerging. In general, one can distinguish between two forms of electronic money. One is money units on prepaid cards which the European Central Bank (ECB) calls "Card-based products" and defines as "plastic card(s) which contain(s) real purchasing power, for which the customer has paid in advance ...[7]" The other form is "software-based products" which transit electronically stored money units through telecommunications networks such as the internet. Basically, card-based products can also be sued to make payments over the internet though it was initially designed for use in traditional over the counter (OTC) trade. The e-commerce can use both types of e-money products. Hence, e-money on the internet can be described as network money or Cyber money.

Network money

Network money can be defined as "e-money transmitted via telecommunication networks such as the internet."[8]The payment system on the



internet can be basically classified as shown by the Chart 1.

Network money (or Internet money) is a "pay before" type of payment instrument. From the point in time when electronic money units are obtained, i.e. before the time of the actual purchase, the payer forfeits the opportunity to invest his funds in an alternative interest bearing manner. As opposed to cash, though, electronic money, basically offers the issuer the technical whereas that to pay interest on balances. This is time at least in a system where the operator centrally records the balances of all participants. Part of the yield could thus be returned to the network money holders.

In view of the alternative payment instruments available on the internet, the future spread of network money will basically depend on the relative costs and benefits of its use. From the payers' perspective, classifying the payment into one of the three categories of payment into one of the three categories of payment instruments reflects a major part of the costs of a transaction. If the liquidity effect sets in prior to receipt of the good, the buyer incurs opportunity costs in the form of lost interest income. If the good is paid for after receipt, interest gains should be taken into account. To the providers of payment services, classification into the three liquidity effect categories also plays a key role. Thus, a pre-paid payment instrument enables the issuer to invest the funds at interest, whereas the use of a payment instrument where the liquidity effect sets in only after the transfer of the good involves a deferral or a loan to the buyer.

Unlike other payment instruments, the use of network money as a pre-paid bearer instrument involves transforming purchasing power in the form of stored money units via the internet. As in a cash payment, this type of transaction also carries the risk of loss, theft and counterfeit. Besides, other risks may arise in banks network money business such as special operational or legal risks.

The aforementioned costs of network money transactions contrast with the benefits resulting from the special features of electronic money. As a bearer instrument, network money is the only payment instrument on the internet which involves definite and final settlement of a payment. In addition, the anonymity of the transaction which is particularly associated with software-based network money[9] may promote the use of cyber money as a payment instrument.

Network money (internet money) poses additional challenges to monetary policy, first of all due to the possibility of the cross-border use and issuance of network money. It is conceivable, particularly with software-based products that residents will use money issued by a non-resident for domestic purchases. If such transactions increase significantly and if they coincide with rising holdings of money abroad, the link between the domestic money stock and the domestic transaction volume is likely to be come less pronounced. Consequently, monetary aggregates would probably lose some of their productive power regarding future inflation trends. In addition, one cannot rule out the possibility of network money circulation becoming independent of monetary policy. (Courtesy : State Bank of India Monthly Report)

1. *World Trade Organization, Committee on Trade and Development; paper on Development Implications of Electronic Commerce, WT/(OMTO) WS1, 23 Nov. 1998.*

2. *EDI is the Direct computer to computer exchange of business documents between two organizations. For example, documents such as invoices, purchase orders can be exchanged using EDI.*

3. *Internet is an open worldwide communication infrastructure consisting of interconnected computer networks which allows access to remote information and the exchange of information between computers.*

4. *Human Development Report - 1999 UNDP, New York Oxford University Press.*

5. *Kotler, P & Amstrong G. (1999): "Principles of Marketing" - eighth edition - Prentice - Hall, Inc. PP518-519.*

6. *The main objectives of the Tradenet SL are (a) To provide local users and international users timely information on internal and international trade, commerce and investment and access to information services, national and international levels. (b) to promote and popularise e-commerce in Sri Lanka (c) to provide electronic communication / internet services at an affordable price with the objectives of popularising use among small & medium enterprises.*

7. *European Central Bank (1998), Report on Electronic Money, Frankfurt am Main, page 7*

8. *Monthly Report - Deutsche Bundes Bank - June 1999 Vol. 51 No. 6 p.57*

9. *Software based e-money is a form of electronic money which is based on a special form of software stored on a PC and which is characterised by the transfer of electronically stored money units via telecommunication network such as the internet.* ■