

# CYBER COMMERCE FOR LIBRARIES

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## 1. INTRODUCTION

Internet has brought in a new concept, called electronic commerce (e-commerce), in marketing and business fields. It is, perhaps, one of the most impressive benefits of Internet which made the institutions, industries, individual professionals having expertise in various fields and commercial organisations, contribute to the electronic information resources and thereby gain increased marketability of products, services and expertise. Various known as e-commerce, e-biz, cyber commerce, online commerce, Net commerce, etc, it is the latest phenomenon of Internet. Individuals/professionals also can play a role in e-commerce by becoming consultants offering their expertise or customers for services/products offered over Internet. E-commerce is redefining the way business is conducted by individuals, institutions and industries. It has provided new avenues for marketing, novel ways for advertising, large customer base for vendors and manufacturers, increased visibility for products, and a variety of alternatives for customers.

Internet provides information including profiles of companies, institutions, industries, professional consultants, organisations and their activities, products, services, technologies etc. The Web sites maintained by manufacturers, vendors, and financial institutions participating in e-commerce, and also of organisations supporting it like CommerceNet, Netscape, Microsoft, etc will be more useful for those who would like to enter into the world of e-biz. E-mail distribution lists, manufacturer's and product directories, listservs, etc are also available for product marketing. Realising that the competitive edge/advantage of traditional commerce is fast becoming limited, the business companies started looking for newer avenues to enhance profitability. They found that Internet provides seamless access to customers, partners, suppliers, and distributors besides providing enormous opportunities to expand business beyond local and geographical boundaries. Thus, Internet became a medium to achieve corporate competitiveness and profitability.

Internet allows selling of non-material goods directly while material goods can be delivered by conventional means. The former includes software, downloading articles from e-journals and/or digital libraries, newspapers, magazines, etc. Ordering books and other goods by searching online book stores and shopping malls is an example where the items ordered are sent by post to the specified addresses. Internet facilitates e-commerce in three ways (Opplinger, 1998):

- (a) It provides a very large customer base and reaches maximum number of countries,
- (b) The presence (creation) and maintenance of a site on Internet is cheap, and results in reduced prices, makes more competitive, facilitates instant updation, access and sales (i.e., it results in 'zero time lag' between advertising and sales), and
- (c) It caters to the customer's wide and varied interests, thus saving the time taken for travelling between different places (although physically seeing may help choose quality items).

E-commerce is influencing the structure of business dealings and supply chains. It is growing at a rate of more than 30 per cent promoting business-to-business and business-to-customer/consumer transactions manifold. This is mainly because Web-based transactions offer low service costs. For example, sending a 40-page document from New York to Tokyo costs an average of US\$ 26 through courier services; about US\$ 30 by fax and a mere 10 cents via Internet (Chasia, 1998, p. 43). A host of electronic payment systems used over Internet facilitate cheaper operational costs; about 5 cents per transaction for digital currency as against 45 cents per transaction for credit card payments, 75 cents for check payments and US\$ 1 per transaction for paper currency payments (ter Maat, 1997, p. 69). In a typical Indian scenario, a typical Internet online bank transaction costs 5 paise per transaction as against Rs 1.50 through a teller (Balasubramanian, 1998, p. 49). Internet is an inexpensive medium which allows widespread access to individuals,

institutions and business industry without any discrimination. Internet provides the same facilities, opportunities and avenues to all irrespective of any preference or favouritism on any product or firm. Thus, right from advertising and automobiles to software and value-added services, all thrive over cyberspace. Besides IT companies, non-info tech firms like those from automobile industry, drugs, groceries, books, etc are all trading over the Net. See, for example, how e-commerce benefited some of the companies:

- Yahoo! reported a revenue of US\$ 86 million for the first quarter of 1999, nearly three times to the corresponding period in 1998; for 1998, it raked US\$ 203 million, a three-fold increase over 1997.
- Knight-Ridder New Media, electronic publisher, has developed a Web-based application for making financial operations more efficient, and attracting new subscribers and advertising revenue through innovative online publishing for all the company's newspapers.
- The Internet commerce of Cisco Systems, a major communications firm, in 1996 was US\$ 100 million that rose to US\$ 3.2 billion in 1997.
- The world wide e-business revenues of IBM in 1998 were US\$ 27 billion, more than one-third of total revenues for the year.
- Intel in its first month of operation on the Net made sales of US\$ 1 billion, an e-business record, and is gearing up for an online trade of US\$ 3 trillion by the year 2003.
- The Web site of Amazon.com was visited by 15,10,000 during the fourth quarter of 1997 and 22,60,000 in the first quarter of 1998; It achieved a book sales of US\$ 610 millions in 1998, a growth of 313 per cent over the sales for 1997.
- Dell Computers encourages customers to design their own PCs online with daily sales running around US\$ 10 million up from US\$ 6 million daily during December 1997 holiday period.
- Auto-by-Tel, a Web-based automotive market place, had auto sales worth US\$ 1.8 billion (3,45,000 purchase requests) during 1996. By 1997, it rose to about US\$ 6 billion (12,00,000 purchase requests).
- The AIM Management Group, a mutual fund company, has developed an extranet to provide its customers with up-to-the-minute information, twenty-four hours a day accessible from anywhere. It is able to satisfy all customers and brokers with brochures, literature and financial information all the times.
- The Hong Kong Telecom, the largest Internet Service Provider in Hong Kong with an annual sales of US\$ 32 billion (in 1997), developed and deployed an online application on Internet to deliver higher levels of cost-effective service, twenty-four hours a day, seven days a week.
- Chrysler Corporation reportedly saved more than US\$ 1 billion in cost of materials in 1997 merely by linking its suppliers through a Web-based network and by the year 2000, the annual average savings estimated will amount to US\$ 2 billion.

Although there are differences of opinion as to the revenues generated by global e-commerce, it is steadily growing. As per the NASSCOM (1997) report, the value of global Internet commerce in 1997 was US\$ 9.61 billion; the projected values for the years 1998, 1999 and 2000 are US\$ 13.06, 17.76 and 24.15 billion, respectively. Other reports published in the *Economic Times* (1998) estimate that e-commerce would generate US\$ 45.8 billion in 1998 and US\$ 200 billion by the turn of the century. The IDC of USA estimated that transactions worth US\$ 10 billion were executed over Internet in 1997 (equal to a mere 0.05 per cent of the global commerce). It estimated the value of e-commerce for 1998, 2000, 2001, and 2010 to be US\$ 45.8, 150, 220 and 1000 billion, respectively (Brand Equity, 1996. p. 4). The US Department of Commerce projected that e-commerce will reach US\$ 310 billion in 1999 and by the year 2003 it would reach US\$ 1.5 trillion (*The Hindu*, 5 September 1999). As per the survey of CMP Research in December 1997, it was

observed that nearly two-thirds of the US companies would be resorting to e-commerce by the year 1998. About 40 per cent of the US companies conducted business on Internet in 1997 and another 23 per cent will be joining them by the year 1998 (Punja, 1998, p. 10). This demonstrates the growing value and importance of e-commerce for global economy.

With more than 56.2 million computers attached to the Net spread over 190 countries, 1.6 million domain names, about 2.75 lakh Internet protocol networks, 6.5 lakh Web sites growing at the rate of 9-12 per cent every month, with a number of online shopping malls and over 100 million users, the Net can make a lot of difference in the business world. By the year 2000, about 36 million house holds from US alone, 20 million from the European Union and 12 million from India will be accessing the Web.

The main characteristic of e-commerce is the anonymity it provides to the customers and vendors as well as to the transactions which take between them. Other characteristics include privacy, and integrity of messages sent, authenticity and non-repudiation of transactions taking place on the Net. This has given rise to initial hick-ups including insecurity, fraud, money laundering and impersonation. This situation in turn led to the formulation of security protocols. In the case of online ordering and instant purchases, the payments have to be made either through deposit accounts or smart/credit cards or any of the electronic payment systems. A host of electronic payment systems like First Virtual Internet Payment System, E-cash, ICVERIFY, NetCash, Secure Internet Payment System, CyberCoin, MilliCent, Payword, PayNow, NetBill etc have been developed and are available for the customers to choose from (Loshin and Murphy, 1998; and Opplinger, 1998).

In electronic market place, search costs are heavily reduced, as all the information about an item/product is available at one place (when more than one location is involved, hyperlinks are provided). This reduces search time and related costs and also enables in locating suppliers matching the needs of the buyers. However, this is not true in all cases. As per a study, the average prices of second hand cars sold through AUCNET, an electronic market place for used cars in Japan, were found to be much higher than that of traditional non-electronic markets. But the higher prices made many sellers list their cars on AUCNET, which in turn attracted more buyers as it offered better choices. It had also created risks of buying inferior quality vehicles as transactions are made without physical inspection (Lee, 1998, p. 73).

But all is not well with e-commerce. While it is growing steadily, many customers get dissatisfied, some times frustrated, with some sites. This is because of the 'out of stock' messages that are encountered by customers; it has been observed that 10 per cent of the orders could not be satisfied because of the non-availability of the advertised stocks. The consumers are annoyed for the failure to get feedback from the Web sites. A majority of the consumers felt that more information is needed on their purchases.

## **2. WEB ADVERTISING**

Internet facilitates advertising, marketing and sales thereby promoting e-commerce. Marketing through advertisements is one of the well-established channels in business. Advertising over Internet involves low premiums, assures easy access and has global appealing as against the conventional print media. Whereas the print media generally have a restricted domain, Internet caters to all kinds of vendors and customers in almost all subject areas. Unlike print media, there is no restriction of space; one can put up additional information. This avoids the follow up material sent in the case of print media when a user wants to know more about a particular item advertised. Unlike the print media where it takes longer time to know the popularity or otherwise of the product, it is immediately known to the vendor due to the instant feedback received from the customers. Whereas in the conventional commerce the advertiser goes to the consumer, in the Net commerce the latter goes to the former. Quite often, the interaction between the user and the Web site results in online ordering and receiving the products as well.

Advertising on the Web (or Netvertising), i.e., hosting a home page on the Web, is one of the best ways to make the world know about an institution, an organisation, a library or even an individual (say, a professional consultant). This would enable publicity about the various facilities,

services and products offered to the users. It was estimated that there were 25 million home pages available on the Web in 1995 which was expected to reach 200 million by 1999 (Subbaram, 1996). The foreign Web servers charge anywhere between a few thousands to a few lakhs of rupees (depending upon the size) for designing, developing and hosting a Web page. In India NIC and VSNL from public sector and also many private firms are providing this service at competitive rates. VSNL charges Rs 3 lakhs, 6 lakhs, and 12 lakhs for data transfer of up to 1 GB, 10 GB and 30 GB per month, respectively (with an additional Rs 3 lakhs towards general service charges in each case) for hosting a dedicated Web server. As Internet supports audio, video, animation and graphics, this area is gaining more and more attention. The Web advertising and marketing are generally skewed towards educated, middle and high income groups. Many newspapers, newsletters, and ad agencies are advertising on the Net. The ad revenues for Web sites during April-June 1998 was US\$ 422.7 million which is almost double when compared to the revenues for the same period in 1997 (Kaur, 1998, p. 75). As per the Internet Advertising Bureau, the ad revenues have grown from US\$ 267 million in 1996 to 906.5 million in 1997 and to 2 billion in 1998 (*The Hindu*, 5 September 1999). During the first quarter of 1999, the ad revenues reached US\$ 693 million, double the figure for the same period in 1998 ([www.nua.ie/surveys/](http://www.nua.ie/surveys/)). The top three Web advertising categories are computer-related goods, books and credit cards. As per a survey reported in *Computers Today* (16-30 September 1999, p. 35), Amazon.com tops the list of companies with a "Net Presence" (a measure of Internet visibility) rate of 57.6, closely followed by Barnesandnoble.com (56.1) and Microsoft (42).

As a result of the Net advertising, the ISPs in Europe, especially in UK, are moving towards providing free Internet access, without any limit on the hours of usage. Internet telephony and reduced-charge, limitless talk-time long distance telephony (with advertisements at the beginning and at every one-minute interval) are becoming order of the day in the US. Some provide the new customers with cash incentives (up to US\$ 100) on signing. All this is made possible because of the advertising revenues, which partially make up the revenue loss in these situations. The rapidly falling costs coupled with the availability of bandwidth due to the use of fiber optic systems, further helped such freebies possible.

### **3. E-COMMERCE AND LIBRARIES**

Publishing industry is already exploiting Internet by offering electronic/online journals, table of contents of journals, and catalogues of books and products over Internet. Well-known bookstores around the world are offering their holdings over Internet. It is possible to order a book from, say, Blackwell ([www.blackwell.co.uk/bookshops](http://www.blackwell.co.uk/bookshops)), which maintains a database of over 150,000 active titles. Bookwire ([www.bookwire.com](http://www.bookwire.com)) has links to 150 booksellers and over 200 publishers to select publications and for ordering. Many sites of publishers tell the user about the recently published books, include book reviews, and provide information on electronic books, rare book dealers, mailing lists, best sellers in fiction, etc. Online services like AOL provide many forms of online content for attracting subscribers. These include a glimpse of title page, book reviews, contents and excerpts from books. Many well-known (and also obscure) books are available free of charge for downloading from Online Book Initiative, a Gopher site ([world.std.com](http://world.std.com)). A number of electronic reference sources and guides, and many e-magazines (e-zines), business publications and scholarly periodicals are available for subscription over the Net. These are increasing rapidly day by day and represent, perhaps, the largest single resource available to anyone at any given time.

Libraries with Internet access can benefit from online book stores; they can acquire books and journals, reports and other information services from Internet. Of particular importance to librarians is the Acqweb, a Web site intended for library acquisitions. A recent search (December 1999) of Yahoo! for online bookshops/bookstores gave a list of 454 Web sites covering various subject fields. Users can use these sites for online ordering of documents. The search also revealed 464 bookshops, 117 online book publishers, 2709 book publishers (having a home page on the Net) in 11 categories. Many of these offer searching and ordering facilities. There were 1123 sites for online ordering dealing with books, drugs and pharmaceuticals, computers, food, automobiles, art, tours and equipment.

Amazon.com is an online book store offering a wide range of books at prices that are lower than those at retail book stores. The selected book can be ordered through the online order form.

Payment can be made through credit card or when the books are delivered. One can also view the contents of the book and some times read a part or whole of it. It is the most popular and number one destination for online book purchases over the Net. Its Web site was visited by 2,260,000 surfers for purchasing books during the first quarter of 1998, an increase from 1,510,000 customers during the fourth quarter in 1997. It reported US\$ 16 millions and 66 millions in the first and fourth quarters of 1997, respectively thus achieving over 400 per cent growth during the year. The sales touched US\$ 87.4 millions during the first quarter of 1998 (Balasubramanian, 1998). It achieved a book sales of US\$ 610 millions in 1998, a growth of 313 per cent over the sales for 1997. In just three and a half year's time Amazon.com became the third largest bookseller behind Barnes and Noble (US\$ 2.7 billions in 1998) and Borders (US\$ 2.3 billions). The music division of Amazon.com became the largest music seller in 1998 with US\$ 33.1 million sales (*The Hindu*, 5 September 1999).

#### **4. ELECTRONIC PAYMENT SYSTEMS**

Electronic/digital payment, in brief, is a transaction process involving the customer, shopping mall (an intermediary representing various vendors/merchants), vendor, credit card bank and the customer's bank. In a simple process, it involves the customer, online vendor, vendor's bank and credit card bank. The mode of payment varies with different systems. One can choose to pay through a payment system sponsor (for instance, DigiCash) wherein the participants have to register with the system in some way. Another approach is payment through digital currency wherein the customer, having an account with a bank offering digital currency, can withdraw money and transact using *digital wallets*. Digital signatures and cryptographic techniques are used for safe and secure transactions. The procedure of different electronic payment systems has been extensively dealt in the literature (see for example, *Computers Today*, June 1998; Freeman, 1996; Hamilton, 1997; Kambil, 1997 and Opplinger, 1998).

Some of the important players involved in e-commerce include CommerceNet, CyberCash, DigiCash, First Virtual Holdings, IBM, MasterCard International, MicroSoft, Mondex International, NetCash/NetCheque, Netscape Communications, VeriSign, and Visa. There are a number of other firms involved as well. Also, to facilitate payments of very small amounts (of the order of a few cents) and to minimise overhead costs of using the other electronic payment systems, several micropayment systems came into existence. These include, CyberCoin from CyberCash, MilliCent from DEC, PayWord and MicroMint from Ron Rivest and Adi Shamir, and NetBill from Carnegie Mellon University (Opplinger, 1998).

Electronic funds transfer (EFT) through electronic checking has been in usage since 1960s. This involves the customer, the vendor/merchant and the intermediary/financial institution. This resulted in improving speed of transaction, saving time, and reducing costs of paper handling. This has led to the development of digital cash ensuring anonymity of the customer and also made possible the usage of prepaid cards (like telephone cards) and later, electronic cash (e-cash) (Panurach, 1996). In digital payment systems, to transact business, both the customers and vendors have to make some commitment to the payment system; some times they may have to open an account with the digital payment system, install software on their computers to operate and may have to enter into agreements. A detailed account of electronic payment systems has been dealt by the authors elsewhere (Lakshmana Moorthy and Karisiddappa, 1998).

#### **5. E-COMMERCE AND INDIA**

As per the estimation of the Indian subsidiary of IDC, the value of e-commerce in India was about US\$ 2.8 million (Rs 112 crore) in 1997 which is expected to reach US\$ 160 million (Rs 7000 crore) by the year 2001. During 1998-99, e-commerce worth 131 crore was carried out and by the year 2002, the e-commerce related business could touch US\$ 1 billion (Rs 440 crore) (*The Times of India*, 11 June 1999). According to the Management Association for Information Technology, India at present has a PC base of 8,00,000 which is expected to reach 2 million by the year 2001 with an estimated 3,75,000 house holds which possess a PC. The percentages of PC owners and non-PC owners who access e-commerce are 26 and 15 respectively.

E-commerce is the new buzz word in the Indian business industry. Observing the successful exploitation of Internet for promoting business across cyber space, many business firms in India are taking interest in e-commerce. A number of techno-commercial Web sites including those exclusively dealing with Indian scenario (Sinha and Tulasi, 1998). Indian software industry took the lead in establishing Web sites and home pages for marketing Indian software products and value-added services.

Publication industry is exploiting Internet and e-commerce in a big way. In 1995 there were only 20 newspapers on the Web; now there are over 4000, of which 225 are Asian newspapers. Among the Asian papers, roughly one-fourth (60) are Indian. Many of the leading Indian newspapers including *The Hindu*, *Business Line*, *The Times of India*, *The Pioneer*, *The Economic Times*, *The Deccan Chronicle*, *The Deccan Herald*, *The Indian Express*, etc are having Internet editions. About 50 Indian computer and business magazines such as *Dataquest*, *PC Quest*, *Chip*, *Computers Today*, *Business India*, *India Today*, *Business Today*, *Voice and Data*, *Nayi Duniya* etc are available over Internet (see Kogannurmath and Angadi, 1999 for a list of these Web sites). A number of organisations/institutions such as DRDO, NCSI, IISc, IITs, and many public sector institutions like SAIL, ECIL, ONGC, NIC, STPI, All India Radio, Doordarshan, Customs, etc are maintaining home pages on Internet. Some publication groups like *The Hindu* (first in the country to launch Internet edition in 1995), *India Today*, *Deccan Herald*, etc are publishing Internet editions of all their publications. The online Indian newspapers are attracting, besides Indian readers, many Non Resident Indians (NRIs). *The Hindu Online* averages 50,000 page views daily; *The Hindustan Times* about 2,00,000 page views, *The India Today Online* gets 20,00,000 page views daily; *Times of India* about 10,00,000 hits, and *The Indian Express* gets an average of 25,00,000 hits a day. Rediff On The Net, one of the most popular Indian sites, started in early 1996 introduced chat, interactive cricket commentary, Real Audio hits, movie ticket booking, free home pages, online shopping, gift delivery etc over the years now gets 70 million hits each month. The India-specific search engines like *Khoj* and *123India* link Web pages dealing with India. It is interesting to note that although 60 newspapers have Internet editions, only 18 are in English, the rest are from vernacular languages.

Indian book publishers are also joining the race. We too have online books/CDs ([www.indiabookshop.com](http://www.indiabookshop.com); [www.rediff.com](http://www.rediff.com)) with UBS Publishers' Distributors Web site, the largest for Indian books covering 15,000 titles from 700 publishers to be launched shortly, online auction sites ([www.webauction.com](http://www.webauction.com); [www.bid.com](http://www.bid.com); [www.onsale.com](http://www.onsale.com); etc), job hunting ([www.naukri.com](http://www.naukri.com)), super market ([www.cpmall.com](http://www.cpmall.com)), sites catering to travel, tourism, games, IT, and so on (see for example, Kumar, 1999; Sinha, 1999). The Health Education for People, India's first free health library offers doctors full text online access to 37 world renowned reference books and 48 of the world's best journals in the medical field, through Internet, for only Rs 5,999/-. Malamall ([www.malamall.com](http://www.malamall.com)) is introducing e-card for safe, easy and convenient online shopping.

The computer-to-computer business transaction standard, EDI (Electronic Data Interchange), is gaining acceptance in India for both domestic and overseas transactions. Coupled with bar coding technology and Electronic Funds Transfer (EFT), EDI is capable of drastically reducing processing time manifold besides financial savings. It is most suitable in cargo handling systems where a number of players, viz. banks, customers, Customs, cargo forwarders, transporters, and importing and exporting agents, are involved. With the active support of the EDI Council of Ministry of Commerce, Govt of India, for adopting EDI technology by all departments in foreign trade, the scenario is fast changing. In India, the current usage of EDI (among the various Internet services) is only 4 per cent and is expected to grow (NASSCOM, 1997, p. 111). VSNL is the first to start EDI services in the country in 1993 which installed an EDI system in Mumbai with access nodes at New Delhi, Calcutta and Chennai. EDI is being promoted to be adopted by all port trusts; Kochi Port Trust is the first to implement it. Apart from port trusts, the key players in EDI include BHEL, Electronic Research and Development Centre (ERDC, Calcutta), CMC, Customs and Director General of Foreign Trade (from public sector); and Tata-IBM, Satyam Infoway, Wipro Infosys, etc (from private sector). The Federation of Indian Export Organisations (FIEO) is encouraging its members for switching to e-commerce. EDI based e-biz is expected to cross Rs 500 crore by the year 2000.

Internet banking has already been introduced in India for the first time an year back by the ICICI Bank, which in collaboration with Infosys Technologies, developed a software 'Infinity-Internet Banking, a complete online banking solution, wherein Internet can be used as a banking channel for retail and corporate consumers. With this, the ICICI Bank joined a select group of banks in the Asia Pacific region (about 150) which have banking sites on Internet (Cyber-update, 1998, p. 69). At present, a few companies in the country are offering Web advertising services. The DSF Internet Services has exclusive advertising rights to two of the most popular Indian sites—the All India Radio and Doordarshan. The Web sites of IndiaWorld, *Khel*, *Khoj*, *Dhan* and NewsAsia of IndiaWorld Network, launched in August 1998 has generated Rs 5 lakh till November 1998 (Kaur, 1998, p. 76). Rediff On The Net is expecting hoping to sell Rs 5.5 lakh worth of books, music titles and hotel reservations per day within next six months and Mumbai Mart is targeting Rs 5-10 lakh per month (*Financial Express*, 1998).

## 6. CONCLUSION

The government is in the process of taking measures for the growth of Internet and e-commerce in the country. A recent survey by NASSCOM put the e-business during the fiscal year 1999-2000 at Rs 300 crores which is expected to reach Rs 10,000 crore by the end of 2002 (*The Hindustan Times*, 23 September 1999, p.15). But there is no legal framework as yet to govern cyber commerce in the country. The E-Commerce Act of Ministry of Commerce is pending with the government. The IT Action Plan of Govt of India (1998) addressed critical national needs in the areas of e-commerce, Internet access, information infrastructure and R&D in IT among others. It also envisages training citizens in the use of e-commerce, tele-banking, tele-documents transfer, tele-library leading to IT-led economic development. The Plan also targets to achieve an annual export target of US\$ 50 billions (Rs 2200 crore) of IT software and services in the coming 10 years (by 2008). To achieve this target, the Plan also targets improving the PC density from the present level of one PC to 500 people to one PC to 50 people with a universal access to Internet and intranets. Important points favourable to e-commerce include include :

- Opening of Internet access points by DOT and other authorised ISPs at all district HQrs by 26 January 2000,
- Meeting data communication requirements for e-commerce and EDI by DOT,
- Allowing (by RBI) purchase of and permitting advance payment for IT software and services over Internet through International Credit Cards (ICC),
- Giving maximum flexibility in organising marketing of software packages through Internet, and
- Creating 'Mega Web sites' on Internet servers located in India.

The IT Panel has also urged the Reserve Bank of India to allow use of international credit cards for IT-related purchases (thus enhancing the e-commerce) and also for accessing latest technology as soon as it is available. Recently, the Union Cabinet has approved the Information Technology Bill proposed by the Department of Electronics (DOE) to facilitate electronic communications and e-commerce, and to curb computer crimes. The Bill proposes amendments to the Indian Evidence Act (Section 2); and the RBI Act 1934. Salient features of the Bill include (*The Indian Express*, 5 November 1999, p.11):

- Expressing acceptance of contract by electronic means of communications (unless otherwise agreed),
- Facilitating electronic recourse in trade and commerce,
- Eliminating barriers to e-commerce resulting from uncertainties over writing and signature requirements,
- Promoting the legal and business infrastructure development necessary to implement e-commerce,

- Proposing a legal framework for authentication electronic record or communication through digital signature, and
- Appointing certification authorities for licensing, certifying and monitoring.

All these measures will result in a better e-commerce environment in the country that will be more beneficial to all the players including libraries.

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