AN OVERVIEW ON ELECTRONIC COMMERCE

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Abstract:

The notion of 'electronic commerce' is proposed as a means of drawing together a wide range of business support services. These are inter-organizational e-mail, directories, trading support systems for commodities, products, customized products and custom-built goods and services, ordering and logistic support systems, settlement support systems, and management information and statistical reporting systems. With the rapid expansion of the Internet, there are a number of initiatives underway for the creation of a secure cost-effective payment system which will be able to support growing commercial activities on the network (especially in finance sector). It is contended that an integrated framework is needed to ensure that organizations view these electronic support mechanisms as parts of a whole rather than as independent elements. A five – phase process model is suggested, and a classification proposed for the various degrees of change induced in organizations and industry sectors.

Introduction:

Electronic commerce is a rapidly growing area enjoying considerable attention in conjunction with the emergence of the information superhighway or the building of the National Information Infrastructure (NII). Numerous firms are beginning to position themselves on this superhighway in terms of providing hardware, software, information content or services. It has also become important for other firms to hang out a signal on the highway in the form of a home page on the World Wide Web. Between 1990 and 2000 the estimated number of Internet users grew from around 1 million to 300 million[1] This explosion has had a major impact on commercial activities, as firms realize the potential of the Internet to reach a consumer audience beyond the reach of traditional marketing means.

Electronic commerce is a generic term that encompasses many forms of trade of goods and services, all of which relay on the Internet to market, identify, select, pay for, and/or deliver these goods and services.

Concept of Electronic Commerce:

It is important to know the exact definition of the Electronic Commerce before going to overview of various segments of Electronic Commerce. Electronic

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commerce can be defined to encompass many things. For some, it emphasizes all forms of electronic interaction between business, but downplays linkages to end consumers. The Electronic Commerce Resource Center takes such a view, defining electronic commerce as " a broad term describing business activities with associated technical data that are conducted electronically." They Further note that " The goal of Electronic Commerce is to mold that vast network of small businesses, government agencies, large corporations, and independent contractors into a single community with the ability to communicate with one another seamlessly across any computer platform." [2]

The National Telecommunications and Information Administration (NTIA) uses a broader definition that includes the end consumer who participates via electronic shopping. They note that, at its broadest level, electronic commerce can mean any use of electronic technology in any aspect of commercial activity.[3]

Electronic Commerce is usefully defined as:

> "The conduct of commerce in goods and services, with the assistance of telecommunications and telecommunications-based tools."

Some people use the term ' electronic trading' to mean much the same thing. Others use ' electronic procurement', 'electronic purchasing' or ' electronic marketing'.

In a short term it can be defined as " Electronic Commerce is a general term for the conduction of business with the assistance of telecommunications infrastructure, and of tools and services running over that infrastructure."

Segments of Electronic Commerce:

1. Inter-Organizational Email
2. Directories
3. Trading Support Systems
    a. Products
    b. Commodities
    c. Custom-Built Goods and Services
    d. Customized Products and Services
4. Ordering and Logistic Support Systems
5. Settlement Support Systems
6. Management Information and Statistical Reporting Systems

Inter-Organizational E-mail

E-mail, a tool to support the transmission of unstructured messages between individuals, is complementary to Electronic Data Interchange (EDI) . In the area of international trade, for example, studies have established that about 100 structured messages are supported by about 40 kinds of communications between individuals, which are at best poorly structured and at worst entirely informal (PMA 1989).[4]

Directories:

Many organizations applying IT have concluded that the greatest difficulties arise not from the preparation or dispatch of purchase orders, but from the discovery and/or selection of the appropriate party to send them to. Access is needed to database of goods and productised services which can be purchased, and of suppliers of classes of goods and productised services. Reflecting the popularity of the ' white-page ' and ' yellow-pages' services provided by telephone suppliers, it has become conventional to refer to such databases as 'directories'.

Trading Support Systems:

There are various ways in which sellers and buyers discover one another, and several ways in which the negotiation of price, quantity, delivery and related terms and conditions are performed.

The value of external networks for product search increases as geographic, temporal, or cognitive constraints make product location and selection difficult. Thus, use of information networks should lead to more market-like relationships between buyers and sellers, when there are large numbers of potential suppliers, when suppliers are geographically separated, when there are many comparable products in the industry, and when prices or products change rapidly.

There are sub-class of products, generally referred to as 'commodities', which are products that exist in identifiable form, in considerable quantity, and in essentially identical form , and are available from a variety of sources. Trading in Commodities requires special forms of electronic support. On line or screen based trading is appropriate for high value commodities such as large parcels of stocks and shares, and of currencies. On the other hand automated matching of buy and sell instructions is appropriate to smaller parcels of the same kind of commodities.

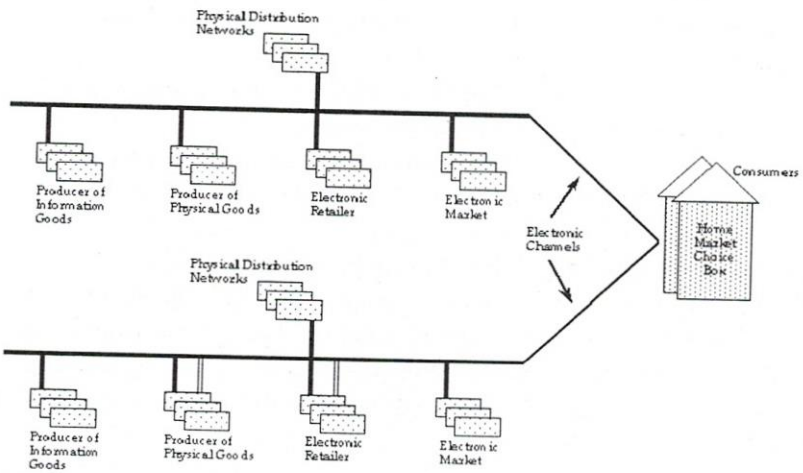
All the other extreme forms of commodities are goods and services which are not standardized, but are custom-built to customer specifications. Custom-built goods and services are generally the subject of requests for information (RFIs) or requests for proposals (RFPs). Various forms of electronic support can be devised for trading

in custom-built goods and services. Clearly much of the work involves relatively poorly structured communications, and hence compound-media email is important.

The apparently clear distinction between custom-built goods and services, products and commodities is not sufficient to cope with all forms of trading. Many circumstances exists in which base products are modified under contract to suit a particular customer's requirements, or a standard specification is modified according to customer need and semi-custom-built goods or service constructed. Because the acquisition of customized products and services has characteristics of both product and custom-built trading, it requires a rich combination of Electronic support.

Figure: 1

Stakeholders in the Value Chain Connected to the NII



Ordering and Logistics Support Systems:

EDI is well –established as an electronic support mechanism for the ordering of products under previously negotiated contractual arrangements, and the delivery of the goods and services through the transportation networks.

Settlement Support Systems:

Electronically- based settlement systems have been in operation since the 1960s and have been expanding rapidly as well as growing in complexity. A mixture of different payment systems has evolved to service the growing requirements of both trade-and non-trade –related commerce. In the majority of cases, these systems

operate as closed proprietary networks creating incompatibilities between different systems. There is a particularly sharp division between the payment and settlement systems which are used for large value transfers and those which are available to settle smaller payments, particularly on a cross border basis. This has led to an inverse relationship between the volume and the number of transactions. It has also further accentuated the division between large multi-national corporations and smaller enterprises wishing to utilize electronic systems or making payments.

However, in most of the major industrialized countries, an inverse relationship exists between the volume and the number of transactions handled electronically. Typically, of business payments around 85-90 % or more of monetary value will be processed electronically, while less than 5-10 % of the total number of payment transactions will be handled in this way. This has been due to four related factors:

1) Proprietary closed networks were developed by banks to handle large and increasingly internationally based payments systems,
2) Large value of payments are increasingly associated with foreign exchange and global securities transaction,
3) Large value of payment systems were not designed nor are they cost-effective for small value payments , and
4) Paper-based non automated payment systems remain an established part of accepted business practice for varying institutional reasons.

Management Information & Statistical Reporting Systems:

The completion of each transaction seldom represents the completion of the cycle as a whole. Accumulation and summarization of transactions, routine search for exceptions, and reporting to holding companies or super ordinate agencies are part of the conventional Management Information System (MIS) activities of almost any company or government agency.

These ' spin-off' activities have become, in some countries, and in some industries, seriously tiresome and expensive activities, whose automation relieves the organization not only of expense, but also of considerable deflection of its attention from its primary activities.

A Five-Phase Process Model of Electronic Commerce:

Phases are –

The pre-contractual phase, concerned with the gathering of 'intelligence' Concerning the products or services being sought, and the discovery of the sources of supply .

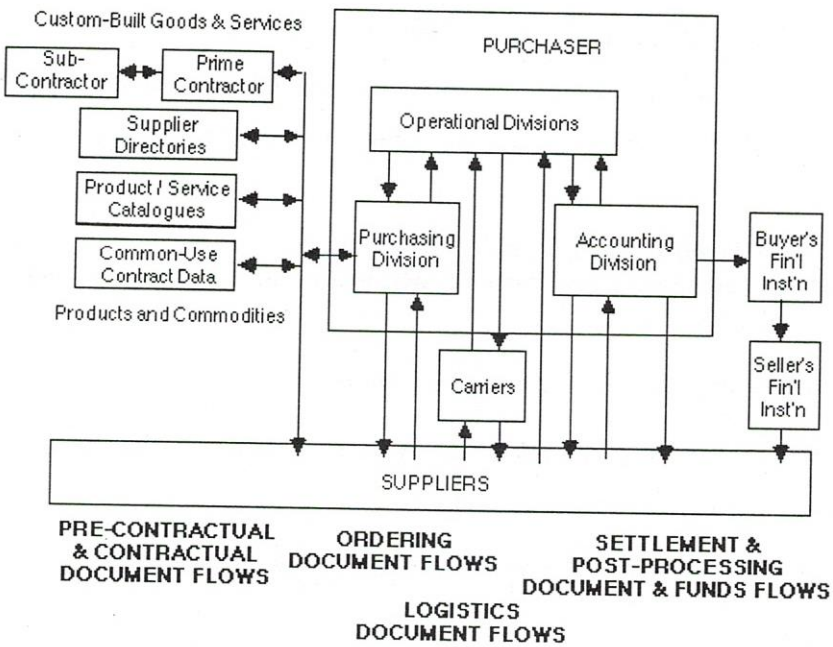
The contractual phase, in which a formal relationship between buyer and seller is created, including the establishment of the terms and condition to apply to transactions under the contract.

The ordering and logistics phase, in which purchase orders are placed and processed, the goods transported and/or the services provided, and post-delivery functions performed.

The settlement phase, in which invoicing, payment authorization, payment and remittance advice transmission take place.

The post-processing phase, in which management information is gathered and reported, and the storage and analysis of trade statistics takes place.

Figure 2
Provides a schematic representation of above mentioned phases



Opportunities:
The growth of the Internet has resulted in a critical mass of consumers and firms that are engaged in commercial activity, as part of the global online marketplace.

As the Internet continues to evolve as a commercial medium, firms have invested in innovative experiments with marketing methods, in their bid to attract consumers in computer-mediated environments. These cutting edge initiatives have expanded the perception of the Internet from a communications medium, to a viable new market environment. Like all new market opportunities, e-commerce presents a number of opportunities and challenges for all parties involved. These are briefly discussed below.

For consumers, the benefits of e-commerce are multifold. They include :

1) Increased availability of information about products ,

2) Reduced costs from increased competition; which in turn results in improved quality, quantity and variety of goods and services, through an expanded market.

For business, the benefits include:

1) The enormous potential of the Web as a distribution channel ;

2) A global medium for marketing communications:

3) Lower distribution costs, as the use of middlemen no longer becomes essential;

4) Lower marketing costs, as buyers and sellers are able to communicate directly with each other.

Operational benefits such as reduced errors, time, and overhead costs in informational processing; and easier, faster, and cheaper creation of, and entry into, new markets.

For governments, e-commerce provides a chance to:

1) Showcase the country's products and investment potential on the world scene;

2) Support a new form of commerce that benefits all classes of society;

3) Increase foreign export earnings; and increase tax revenues.

Challenges:
Apart from the multifold opportunities that e-commerce provides, it also presents certain challenges to consumers, firms and governments. The main challenge of e-commerce is to attract potential customer business web sites. Therefore, the development of a critical mass of Internet users, willing to use the Web as a

commercial medium, is essential for the success of e-commerce. Some of the main challenges to this development relate to:

Ease of access: The level of convenience in access determines the ultimate success of the adoption of the Web as a commercial medium. This includes such aspects as the speed of access (preferably high): the ease of finding a suitable and reliable service provider; ensuring that services are not disrupted by frequent power outages; and the diffusion of computer hardware / software / modem package in homes.

Ease of use: User-friendliness of appropriate software, and the ease of software installation are important considerations for potential customers unfamiliar with the new IT world.

Prices: Determining an optimum price which would help both the buyer and seller to successfully complete transactions.

Concerns: With respect to privacy and security in conducting online commercial transactions this concern has a direct impact on consumer willingness to buy or sell products on-line.

Facilitating policy environment: The benefits of e-commerce for all parties involved are fully realized in policy environments that are liberalized, transparent, efficient, predictable, and governed according to the rule of law.

Conclusion :

Commerce on internet is already a reality. The communication facilities which are on offer are rapidly become integrated as core business tools (Cronin , 1994) . There are currently more than 25,000 companies which are using the internet to conduct business. The volume of US electronic " home shopping" retail business already reached US dollars 2.6 million in 1993, although this included all online services and interactive television (BIS strategic Decisions , 1994) . Business transactions carried out over the Internet are presently estimated to reach US Dollars 500 million in 1995 rising to between US dollars 2-5 billion in the year 2000.[5]

New trading opportunities are being established as a result of the growth of the internet and other on-line networks. At the same time there is increasing pressure to move from existing paper based payment systems to electronic transfer. Microsoft Chairman , Bill Gates, is not alone in believing that the convergence of money , commerce and personal computers represents one of the great new markets of modern times. New and unforeseen opportunities can be expected to arise once a secure and cost effective 'mass' market electronic system for making low value payments is successfully established.

In the new world of Internet there are no national borders any where; moreover this world is switched, interactive, broadband, networked and standards based. The idea of EC has just started running through all these useful and valuable channels. inquest of a new form of trade and commerce which will ultimately design an open world for small businesses to large, small producers to big manufacturers, and all consumers will inhabit between north pole and south pole.

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