

**AN ANALYSIS OF TRADITIONAL AND E-MARKETS: FROM  
SELLER AND CONSUMER POINT OF VIEW**

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**ABSTRACT**

*This study shows why sellers and consumers nowadays prefer e-markets rather than traditional markets. This study will also throw light on whether buyers and seller have any extra benefit when going for the e-markets and to what extent.*

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## **ELECTRONIC MARKETS: IMPACT AND IMPLICATIONS**

### **Electronic Markets Meaning:**

Electronic commerce, commonly known as e-commerce, ecommerce or e-com, refers to the buying and selling of products or services over electronic systems such as the Internet and other computer networks. However, the term may refer to more than just buying and selling products online. It also includes the entire online process of developing, marketing, selling, delivering, servicing and paying for products and services.

Electronic commerce that takes place between businesses and consumers, on the other hand, is referred to as business-to-consumer or B2C. This is the type of electronic commerce conducted by companies such as Amazon.com. Online shopping is a form of electronic commerce where the buyer is directly online to the seller's computer usually via the internet. There is often no intermediary service involved, and the sale or purchase transaction is completed electronically and interactively in real-time.

### **Electronic Market description:**

Electronic markets are the foundation of electronic commerce. They potentially integrate advertising, product ordering, delivery of digitizable products, and payment systems. An electronic marketplace (or electronic market system) is an inter-organizational information system that allows the participating buyers and sellers to exchange information about prices and product offerings. The firm operating the system is referred to as the intermediary, which may be a market participant - a buyer or seller, an independent third party, or a multi-firm consortium (Bakos, 1991). E-markets provide an electronic, or on-line, method to facilitate transactions between buyers and sellers that potentially provide support for all of the steps in the entire order fulfillment process. The business process model from a consumer's perspective consists of activities that can be grouped into three phases: pre-purchase determination, purchase consummation, and post-purchase interaction (Kalakota and Whinston, 1996). Each of these phases can be supported electronically in a complete e-market, but e-markets today generally support only the pre-purchase determination activities, although they are moving toward more purchase consummation.

## **ELECTRONIC MARKETS EXAMPLES:**

### **Flowers:**

Traditionally, the value chain that supplied cut flowers involved a grower, jobber to transport to a wholesaler, and finally a florist. According to the survey done by a florist in Boston in July 1995 the price, including delivery charge and tax, for an arrangement of flowers was

\$60. They were able to provide an electronic market to customers to buy directly from growers with the flowers being shipped using Federal Express. Their delivered price was \$54. Much of this was due to the elimination of some of the intermediaries between the growers and the customers. The price paid to the firm providing the electronic market is generally lower than the profits made by the traditional wholesaler and retailer intermediaries.

**Automobiles:**

Thanks to the World Wide Web, new car shoppers have more options, including access to valuable information, such as what a car really does cost a dealer. As a result, consumers are increasingly locking in better deals online. The trend has also attracted the attention of some of the biggest car dealers, financial institutions and insurance companies. Electronic markets that exist enable consumers to shop for and buy a new car, insure it and take delivery without ever setting foot in a dealership

**Books:**

Books are another product that consumers purchase on-line. One bookseller on the Web is Amazon.com Books. Their site advertises a spotlight book, book of the day, titles in the news, featured books, and books that are hot this week. Some of their books are discounted as much as 30%. By clicking on book titles, and some authors, more detailed information can be accessed (Amazon). It is no longer necessary to either go to a bookstore to buy a book or to find mail order bookstores through a print advertisement. Also, Web advertising is likely to be more current than print ads.

**Airline Tickets:**

Discount airfares are popping up on the Internet. American Airlines, Virgin and Cathay Pacific Airways are using their Web sites to reduce the thousands of seats that are unsold on flights every day. American Airlines pioneered this trend by selling fares on 20 routes as much as 70% below the lowest fares consumers would be quoted through a travel agent or American Airline's toll free 800 numbers. Besides filling empty seats, airlines wanted to cut distribution costs by selling directly on the Internet instead of through travel agents.

**Stock and Securities:**

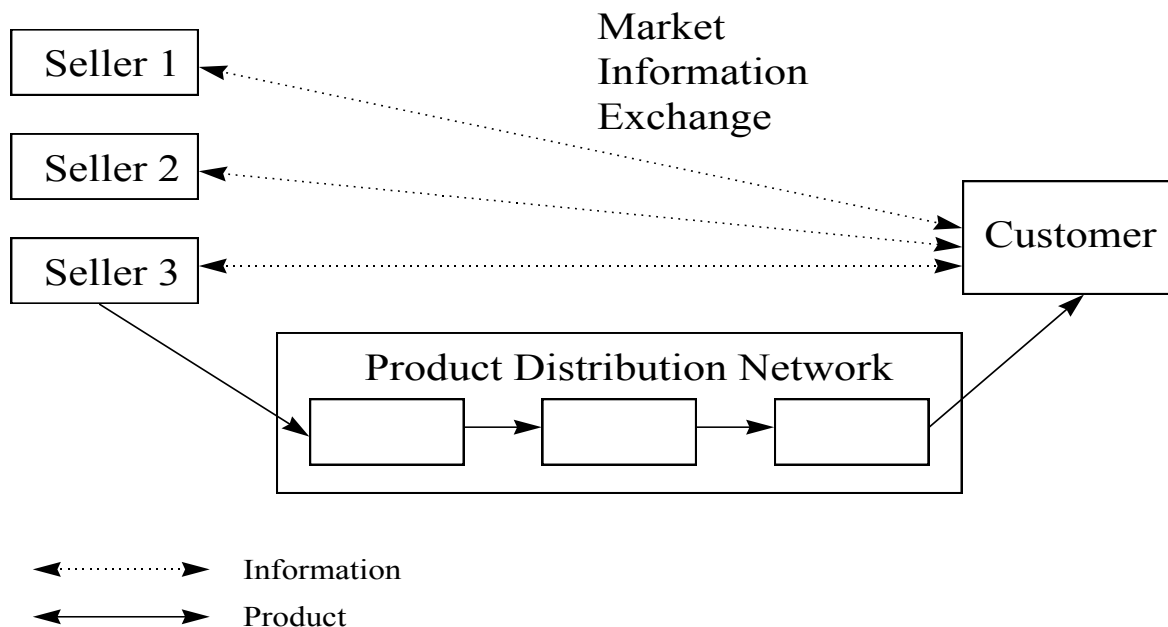
All of a sudden, innovations in technology, particularly the Internet, are bringing profound changes to this sector that hold a lot of promise, and a lot of peril, for the powerful firms that make their money in the securities business. For many people, the Internet could replace the functions of a broker. For example, almost a dozen small companies are trying to sell their stock directly to the public using Web sites like those run by Direct Stock Market and IPO

Data Systems. Because it allows traders to find each other easily, the Internet may ultimately make it possible to have a stock exchange that exists only in cyberspace, with no trading floor, directly open to every investor with a computer and a modem.

## MARKET STRUCTURE:

### Traditional Market

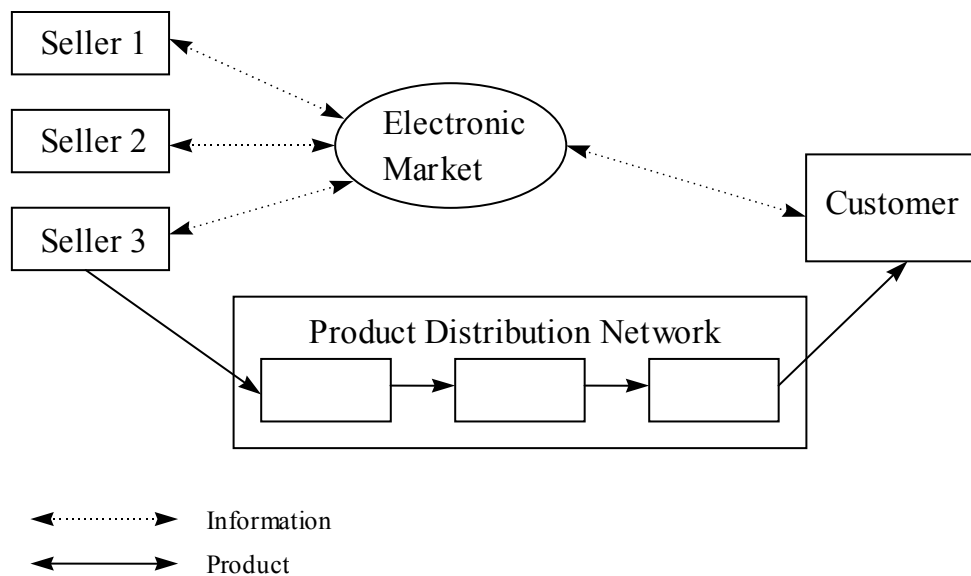
In a traditional market (for a non-impulse purchase), the customer searches out information about the products available and their prices, quality and features. This information comes from a wide range of sources including advertising, traveling to retail stores, and so forth. At some point they stop their search because they realize further searching will probably not benefit them. Once the information gathered has been analyzed, the consumer decides where to buy the product. The product is then either purchased and transported home by the customer or is delivered to them through a distribution network.



## HOW TRADITIONAL MARKETS CAN BE TRANSFORMED INTO ELECTRONIC MARKETS:

### PHASE I:

The first phase in the transformation of the structure of an industry is the digitization of the market mechanism. This is described in Figure 2.

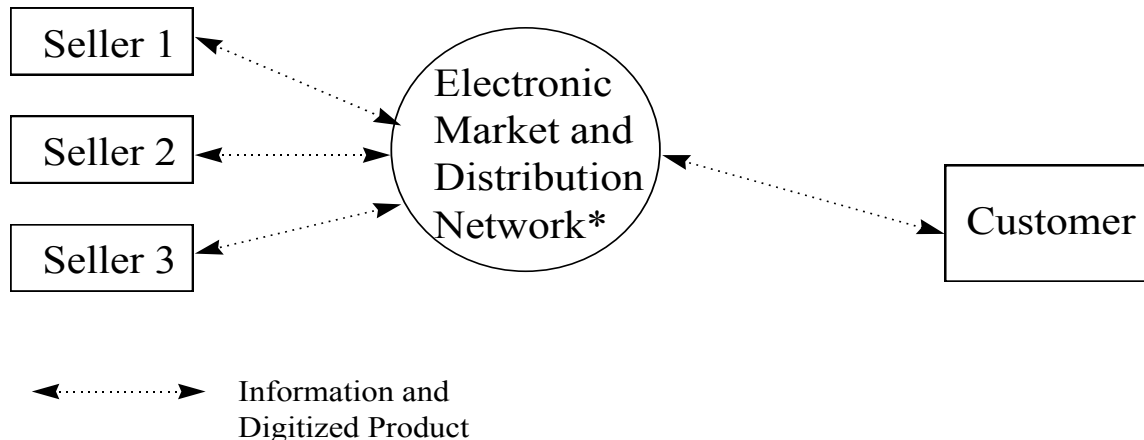


An electronic market provides a mechanism for reducing the search costs (money, time and effort expended to gather product price, quality and feature information) for consumers. The phenomenon “search” can be described as a buyer canvassing various sellers to ascertain the most favorable price. Search also reduces the likelihood that sellers will be able to charge significantly higher prices than their competitors because the consumer is unaware of the other prices (a form of regional oligopoly or monopoly). The result is that consumers can buy products for lower prices, intermediaries such as wholesalers are eliminated from the value chain, a new industry that provides access to electronic markets is created, and firms that produce products are able to maintain a profit margin comparable to the traditional markets.

## PHASE II

The second phase in the transformation of the structure of an industry is the digitization of the product itself as well as its distribution. These products involve a cost structure with increasing returns and low marginal reproduction costs. Increasing returns accrue when a business incurs large up-front expenditures to develop a new product/service and the incremental cost of producing each new unit is minimal. For example, if a consumer wants a new version of Navigator software from Netscape, the software can be downloaded from one of their sites on the Internet (Netscape). This eliminates the need for Netscape to maintain an inventory of software on CDs or diskettes that must be physically shipped to the consumer. The electronic market and distribution network enables a wide range of seller and customer activities to converge into one place including marketing, order processing, distribution,

payments and even product development processes that involve several separate firms. This makes these activities easier and more convenient while also reducing the costs involved. Value chain costs can be further reduced by digitizing the industry's product. Examples of digitizable products were given earlier. Digitization of the product reduces inventory and packaging costs. Digitized products can then be distributed electronically to the consumer which minimizes distribution costs which would otherwise be paid to the firms in the distribution network and passed on to the final consumer.



\* convergence of marketing, order processing, distribution, payments and product development

### The Phases Of Industry Structure Transformation Enabled By Electronics Markets

	<b>Traditional Market (example: retail store)</b>	<b>Electronic Market (Phase 1)</b>	<b>Electronic Market and Distribution (Phase 2)</b>
Required industry characteristics	Transactions that do not require hierarchical governance	Accepted standards for describing the product through the electronic market	Description standards plus product that is feasibly digitized
Market digitized?	No	Yes	Yes
Product and distribution digitized?	No	No	Yes
Examples of		Wholesalers and some	Phase 1 intermediaries

intermediaries removed		forms of brokers (ones that simply gather and analyze information for consumers)	plus firms in the physical distribution network
Examples of intermediaries added		Firms that provide access to the electronic market (ISPs or firms that operate electronic markets or electronic auctions) and possibly new forms of brokers (such as online better business bureaus)	Phase 1 intermediaries

## TRADITIONAL AND ELECTRONIC MARKETS:

### Buyer Cost Perspective

Electronic markets provide buyers with an additional sales channel through which they can buy products. Although there may be certain benefits derived by buyers in electronic markets (lower prices and search costs), it also increases the complexity of their decision process by adding another option to consider. It may also add new forms of consumer risk. In this section we describe a model to compare the cost-based differences between traditional markets (such as retail stores) and electronic markets.













### Buyer Perspective Relevant Costs


The product price is the sum of the production costs, coordination costs, and profits of the value chain that provides the product or service. Search costs include the time, effort and money involved in searching for a seller who has the product demanded at an acceptable price with acceptable product features and quality. The cost of the time and effort involved would be determined by the value the buyer places on their time and effort. Risk costs include the costs involved in minimizing transaction risk as well as the costs associated with losing value in a transaction. The risk dimensions typically considered are economic risk, performance risk, and personal risk (Simpson and Lakner, 1993). Economic risk stems from the possibility of monetary loss associated with buying a product. Performance risk represents the consumers' perception that a product or service may fail to meet expectations.


Personal risk relates to the possibility of harm to the consumer resulting from either a product or the shopping process. An additional form of risk that is potentially important to Internet shoppers is privacy risk. Privacy risk reflects the degree to which consumers envisage a loss of privacy due to information collected about them as they shop (Jarvenpaa and Todd, 1997). Additional costs of concern include distribution costs, the costs associated with physically moving the product from the seller to the buyer, and sales tax. Market costs are the costs associated with participating in a market. Traditional markets are assumed to be costless to the buyer, while e-market costs may include fixed access costs and/or transaction (variable) costs paid to the firm(s) that operate the e-market.

### Comparison of Buyer Costs in Traditional and Electronic Markets

Assuming rational decision making, the buyer's objective is to minimize the sum of the individual costs subject to the constraints that the product quality and features, including how soon the product can be received, must be acceptable. Figure 4 summarizes the findings of our evaluation of the costs relevant to a buyer's choice between traditional and electronic markets.

	Traditional Market	Electronic Market
$P_B$		
$SC_B$		
$RC_B$		
$DC_B$		
$T_B$		
$MC_B$		

Lower 

Higher 



product price ( $P_B$ ),  
search costs ( $SC_B$ ),  
risk costs ( $RC_B$ ),  
distribution costs ( $DC_B$ ),  
sales tax ( $T_B$ ), and  
market costs ( $MC_B$ ).

## **TRADITIONAL AND ELECTRONIC MARKETS: SELLER COST PERSPECTIVE**

Electronic markets provide sellers with an additional sales channel where they can market and sell their products. As with buyers, electronic markets provide sellers with certain benefits including reduced advertising costs (costs associated with seller's search for buyers), enhanced ability to target customers, greater ability to tailor products and services to their customers, lower overhead costs, broader geographic reach, and disintermediation potential (Hagel and Armstrong, 1997). But, it also increases the complexity of their operations by adding a new potential sales channel to evaluate which changes the way they may do business in the future. In this section we describe a model we developed to compare the cost-based differences between traditional markets (such as retail stores) and electronic markets from a seller perspective.

### **Seller Perspective Relevant Costs**

From the seller perspective (supply side of a transaction), the potentially relevant costs that we have identified include:

1. marketing (advertising) costs ( $AC_S$ ),
2. overhead costs ( $OC_S$ ),
3. inventory costs ( $IC_S$ ),
4. production costs ( $PC_S$ ), and
5. distribution costs ( $DC_S$ ).

Marketing costs are the costs associated with informing the consumer about the availability and features of a seller's products or services. Advertising channels in traditional markets include television, radio, newspapers, yellow pages, and so forth. Newer advertising channels include push-based methods (such as electronic mail), and pull-based methods (such as electronic bulletin boards and the Web) (Kalakota and Whinston, 1996). Overhead costs include the more fixed costs of the business including physical retail space and warehouses.

Inventory costs include the costs to handle and hold inventory to deal with demand uncertainty for physical products. Production costs include the variable costs of producing a unit of a product including labor and materials. Distribution costs include the costs associated with moving the product from the seller to the buyer.

#### Comparison of Seller Costs in Traditional and Electronic Markets

	Traditional Market	E-Market (non-digital product)	E-Market (digital product)
$AC_S$	○	●	●
$OC_S$	○	●	●
$IC_S$	○	○	●
$PC_S$	○	○	●
$DC_S$	●	○	●

Lower      ●

Higher     ○

Advertising costs are lower in e-markets than in traditional markets. For example, the advertising cost per consumer for a Web page is much lower than a television ad or a print ad (magazine or newspaper). This is true whether the product is digitized or not. Overhead costs are similar to advertising costs. Traditional retail store markets require a seller to have a physical location they may either own or rent. In e-markets, a Web site may also serve as the storefront. This is especially true when the capability to order products electronically is integrated into the Web site. Inventory costs are more closely related to the product characteristics instead of the consumer interface. When products are digitized they require an inventory level of only one unit and the product is stored on a computer disk. The situation for production cost differences is similar to inventory costs. Physical products involve significant variable costs per unit for materials and labor. Reproduction of digitized products generally involves the copying of the computer file. Distribution cost differences are more complex. In an e-market with a digitized product, the product can be distributed electronically, perhaps through FTP, to the consumer. This is a very low cost distribution

method. Traditional markets also have low distribution costs for sellers because the consumer comes to the store and transports the product to their home themselves. An electronic market with a non-digitized product still requires physical shipment of the product, for example through the USPS or Federal Express. This is the situation with the highest distribution cost to the seller.

## **INHIBITORS TO ELECTRONIC MARKET SUCCESS**

**Lack of IT infrastructure:** The lack of IT infrastructure in some world regions is a barrier to e-commerce participation by companies and consumers in these regions. In many countries consumers do not have the same level of access to the Internet, World Wide Web, and so forth that consumers in the United States have. This is a major barrier to electronic market diffusion because even if consumers wish to participate in e-markets, they are physically unable to. Even if access is available, an additional barrier may be poor physical telecommunications. However, the increasing recognition of the importance of telecommunications to national and business infrastructure has resulted in its proliferation to newly opened societies and markets, most notably Eastern Europe and the former Soviet Union, and to rapidly expanding markets such as Egypt and Iran (Goodman et al., 1994). We should expect a continuation in this trend toward greater access.

**Computer illiteracy:** The level of computer illiteracy associated with the world's consumers that have access to IT infrastructure is a barrier to e-market success. Because of a lack of education about computers, or a lack of willingness to accept new technology, a certain proportion of consumers are unable or unwilling to participate in electronic markets. As more and more children are introduced to computers in school, the proportion of consumers who potentially may participate in electronics will increase in the future. Electronic markets are likely to be considered normal instead of novel for future generations of consumers.

**Insufficient security:** Insufficient data and message security may inhibit some companies and consumers from participating in e-commerce because they feel the level of risk is unacceptable. Confidence, reliability, and protection of information against security threats is a crucial prerequisite for the functioning of electronic commerce (Kalakota and Whinston, 1996). Many initiatives are under way to improve security through improved data encryption and digital signatures. A specific example is S-HTTP, a more secure version of HTTP that is used in the World Wide Web. As the level of transaction security for e-commerce related information transfer improves, the expected level of e-market impact on industries, and the global economy in general, will increase.

**Hierarchical transaction governance:** An additional inhibitor to e-market success is the fact that a significant portion of all transactions are not market transactions, but are hierarchical transactions. Hierarchical transaction governance is often associated with transactions involving high asset specificity (Williamson, 1985). Asset specificity is the difference between the value of an asset (machine, employee and so forth) in its present use and its next best use. Transactions involving high asset specificity will continue to be governed by hierarchies because the firms involved generally need to maintain greater control over the transactions (perhaps through vertical integration or long term contracts) to minimize their overall risk.

These inhibitors, as well as other factors such as high market access costs, have resulted in the failure of some electronic markets. One example is an electronic market for real estate. The National Association of Realtors' widely publicized information network, created two years ago to provide extensive real-estate information on the World Wide Web, has run out of its \$12.9 million in funding and is on the verge of collapse. Association officials and people in the industry say the network fell victim to overly ambitious goals, some free-spending ways and unexpected changes in technology that made it less attractive to its primary customers, real-estate agents. Funded from the national association's reserves, Realtors Information Network, or RIN, had lofty plans for keeping Realtors in control of real-estate transactions. The for-profit subsidiary would provide real-estate listings nationwide on the Web to consumers and would act as something of a proprietary America Online for real-estate agents. Agents who purchased the system would have access to information, chat rooms, real-estate vendors and e-mail. Along the way, network officials misjudged their audience.

Initially, the network tried charging \$2 for each home listing on its Web site. But when competition charged less, it cut the price until it stopped charging for listings at all. Meanwhile, advertising for the site, which now has about 350,000 listings, never materialized. At the same time, the proprietary system for agents bombed. In New Jersey, a pilot state, fewer than 1,000 New Jersey Association of Realtors' 36,000 members chose to subscribe, says Michael Ford, the state group's president-elect and a national association director. Only four of the state's 18 multiple-listing services posted their listings on it (National Association of Realtors). This example highlights the need to understand the needs of both product/service providers as well as consumers in a market, especially when start-up costs are in the millions. Market participants should not be charged anything to subscribe to a new electronic market until a large number of product/service providers and consumers are

participating and both sides see the value of the e-market. With limited revenues at the beginning, new electronic markets need to tightly control their startup and operation costs.

### **CONCLUSION**

Although the e-markets are fast becoming the more popular means of shopping for consumers and selling goods by sellers, but the low penetration of internet and safety and privacy issues related to online shopping still pose hurdles. In order to increase the customer base for e-markets, these issues will have to be resolved.

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