

Handbook on Electronic Commerce

Chapter 4

Electronic Markets: Impact and Implications

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Introduction

- E-commerce
 - Transformation of the marketplace occurring because
 - Relationship between organizations and customers is facilitated through electronic information technology (IT)
 - Major component – electronic markets (e-markets)
 - Questions
 - Whether there are economic incentives for buyers and sellers to participate in e-markets?
 - or the growth of e-markets is a passing fad?

Electronic Markets: Description and Examples

- E-commerce involves linking consumers to e-marketplaces besides supporting hierarchical transactions within organizations electronically
- Electronic Market Description
 - Foundation of e-commerce
 - Electronic marketplace(e-market system)
 - An inter-organizational information system operated by intermediary
 - Facilitate transactions
 - Support the three phases of activities consisted in business process models
 - Pre-purchase determination
 - Purchase consummation
 - Post-purchase interaction

Electronic Markets: Description and Examples

- Electronic Market Examples
 - Flowers – Calyx & Corolla
 - Customers can buy directly from growers with flowers
 - Elimination of intermediaries between growers and customers
 - Price is lower
 - Clothing – similar to cut-flower examples
 - Automobiles
 - More options for shoppers
 - Consumers can buy a new car, insure it & take delivery without a dealership
 - Music – Cdnw, a cyberstore
 - Books – Amazon.com
 - More current web advertising than print ones.

Electronic Markets: Description and Examples

- Electronic Market Examples
 - Electronic Magazines(E-zines)
 - Airline Tickets – American Airlines, Cathay Pacific Airways
 - For Airlines to fill empty seats – discount tickets, and
 - Cut distribution costs by selling directly without travel agents
 - Stock and Securities
 - Internet replace the functions of a broker
- Three questions concerning the e-markets:
 - What is the impact on the costs relevant to a consumer's choice between traditional retail markets and e-markets?
 - What is the impact on seller costs?
 - What are impacts on other organizations involved in commercial market transactions?

Impact of E-markets on Industry Structure

- Example of a traditional market:

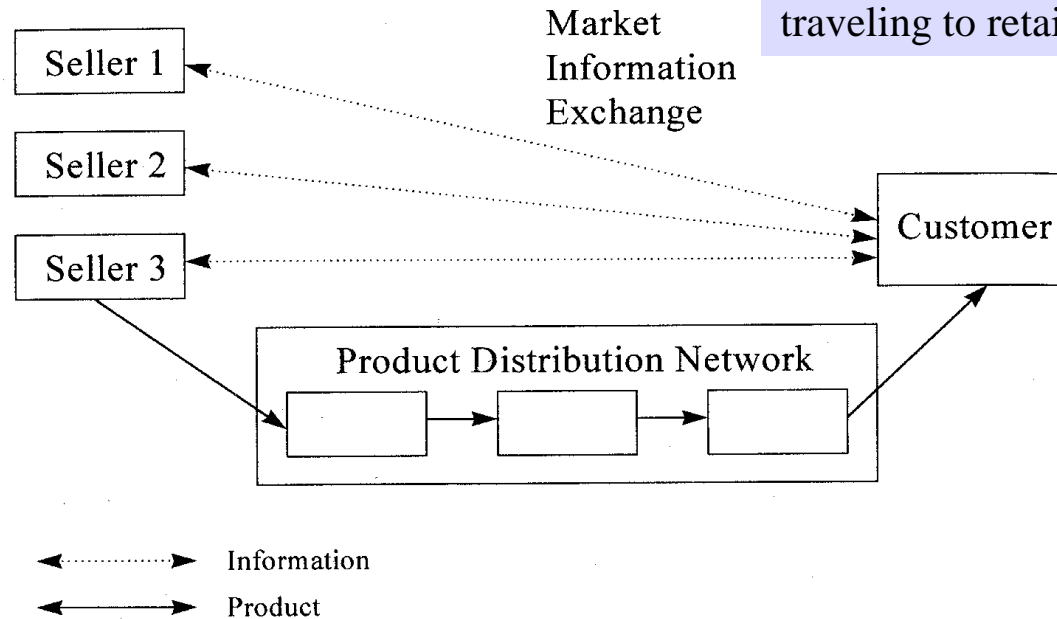


Fig. 1. Traditional market industry structure

- E-markets affect the consumer purchase process

Impact of E-markets on Industry Structure

- First phrase of transformation
 - The digitization of the market mechanism(fig. 2)

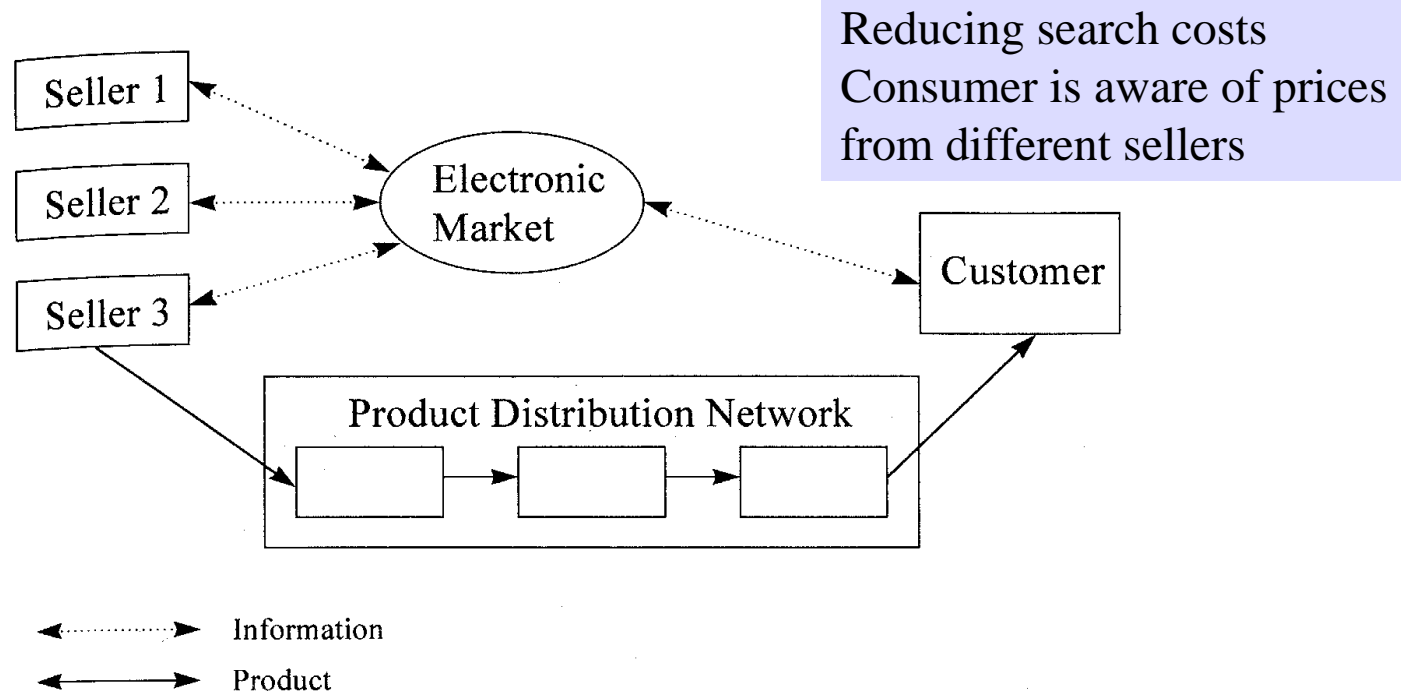


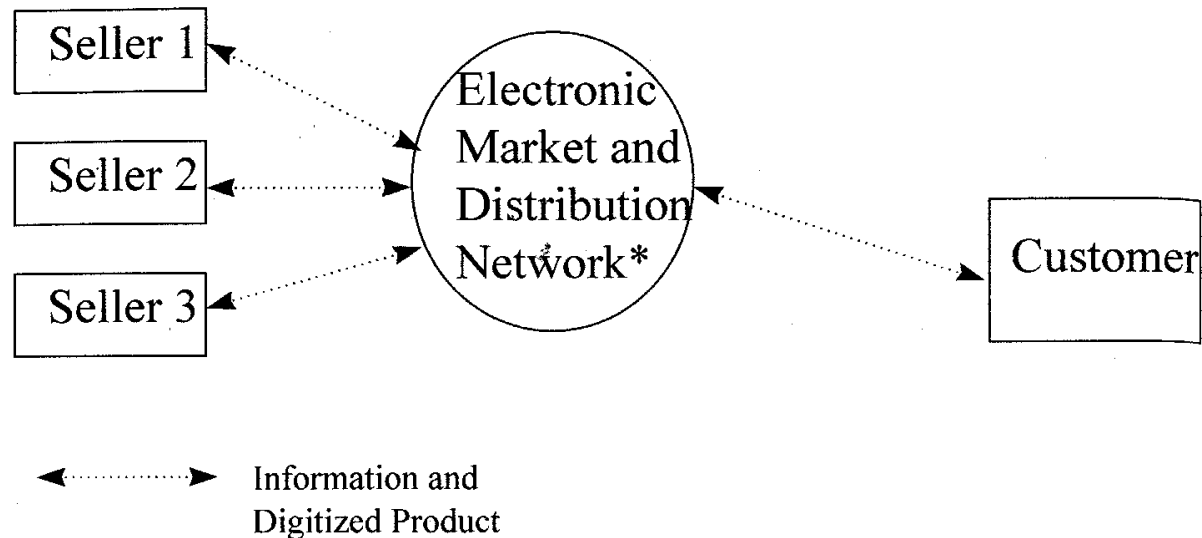
Fig. 2. Industry structure with an electronic market

Impact of E-markets on Industry Structure

- First Phase -- The digitization of the market mechanism
 - E-market
 - Reduce the search costs for consumers
 - “Search” – buyer canvassing various sellers to ascertain the most favorable price
 - Consumers can buy product for lower prices
 - Intermediaries are eliminated
- Second Phase – The digitization of the products and their distribution
 - Cost structure of digitizable products
 - Increasing returns with low marginal reproduction costs
 - E.g. books, newspapers, magazines, software, movies, music

Impact of E-markets on Industry Structure

- Second phrase of transformation
 - The digitization of products and their distribution (fig. 3)



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

Fig. 3. Industry structure with an electronic market and distribution network

Impact of E-markets on Industry Structure

- E-markets and distribution network
 - Converge seller and customer activities into one place
 - Makes the activities easier and convenient
 - Reducing the costs
- Digitization of products
 - Value chain costs reduced
 - Inventory and packaging costs
 - Distribution costs
 - Minimized cycle time
 - Improved customer satisfaction
- Impact of E-markets
 - Not strictly cost reduction and disintermediation
 - New intermediaries and costs may be added to value chain
 - In many instances, the potential benefits outweigh these costs

Impact of E-markets on Industry Structure

Table 1. The phases of industry structure transformation enables by e-markets

	Traditional Market	Electronic Market (Phase 1)	E-Market and Distribution (phase 2)
Required industry Characteristics	Transactions that do not require hierarchical governance	Accepted standards for describing the product through the e-market	Description standards plus product that is feasibly digitized
Market digitized?	No	Yes	Yes
Product and distribution digitized?	No	No	Yes
Examples of intermediaries removed		Wholesales and some forms of brokers	Phase 1 intermediaries plus firms in the physical distribution network
Examples of intermediaries added		Firms that provide access to the e-market and possibly new forms of brokers	Phase 1 intermediaries

Traditional and Electronic Markets: Buyers Cost Perspective

- E-markets -- Additional sales channel for buyers
 - Benefits – lower prices and search costs
 - Increases complexity of decision process and add new forms of consumer risk
- Buyer Perspective Relevant Costs
 1. Product price (P_B) – sum of production costs, coordination costs, and profits of the value chain
 2. Search costs (SC_B) – time, effort, money in searching for a seller
 3. Risk costs (RC_B) – costs in minimizing transaction risks, costs associated with losing value in a transaction.

Traditional and Electronic Markets: Buyers Cost Perspective













Risks involved:

- Economic risk – monetary loss
 - Performance risk – customers' perception of fail to meet expectations
 - Personal risk – harm to customer resulting from product or shopping process
 - Privacy risk – a loss of privacy for consumers due to information collected as they shop
4. Distribution costs (DC_B) – costs with physically moving the product
 5. Sales tax (T_B)
 6. Market costs (MC_B) – costs for participating in a market
 - Traditional markets – costless
 - E-markets – fixed access costs and/or transaction(variable) costs

Traditional and Electronic Markets: Buyers

Cost Perspective

- Comparison of buyer costs in traditional and e-markets
- E-markets
 - Prices lower
 - Search costs – lower, as easier to gather relevant information
 - Additional risks with buying online
- Buyers have incentives to participate in e-market

	Traditional Market	Electronic Market
P_B		
SC_B		
RC_B		
DC_B		
T_B		
MC_B		

Product price (P_B)
Search costs (SC_B)
Risk costs (RC_B)
Distribution costs (DC_B)
Sales tax (T_B)
Market costs (MC_B)

Lower



Higher



Traditional and Electronic Markets: Buyers Cost Perspective

- E-markets -- Additional sales channel for sellers
 - reduced advertising costs,
 - enhanced ability to target customers,
 - tailor products and services to customers,
 - lower overhead costs,
 - broader geographic reach,
 - disintermediation potential
 - Increases complexity of operations
- Seller Perspective Relevant Costs
 1. Marketing (advertising) costs (AC_B) – informing the consumer
 - New advertising channels – push-based methods, pull-based methods

Traditional and Electronic Markets: Buyers Cost Perspective

4. Overhead costs (OC_B) – more fixed costs of business (physical retail space and warehouses)
5. Inventory costs (IC_B) – costs to handle and hold inventory
6. Production costs (PC_B) – variable costs of producing a unit of product
7. Distribution costs (DC_B) – costs with moving the product

Marketing (advertising) costs (AC_B)

Overhead costs (OC_B)

Inventory costs (IC_B)
















Production costs (PC_B)

Distribution costs (DC_B)

Traditional and Electronic Markets: Sellers

Cost Perspective

- Comparison of Seller Costs in Traditional and E-markets
- E-market
 - Digitized products, lower
 - Advertising costs
 - Overhead costs
 - Web site as storefront
 - Inventory costs
 - Production costs
 - Distribution costs more complex
 - Low for digitized products – distributed electronically
 - Lower for traditional markets – consumers transport the product themselves
 - Higher for Non-digitized products

	Traditional Market	E-Market (non-digital product)	E-Market (digital product)
AC_s			
OC_s			
IC_s			
PC_s			
DC_s			

Marketing (advertising) costs (AC_B)
Overhead costs (OC_B)
Inventory costs (IC_B)
Production costs (PC_B)
Distribution costs (DC_B)

Lower



Higher



Revenue Source Implications

- Buyer transaction costs and entity revenue source implications

	P_B	SC_B	RC_B	DC_B	T_B	MC_B
Product and Service Providers	X		X			
Transaction Intermediaries		X	X	X		
Interactive Service Providers		X				X
Government					X	

Product price (P_B)
Search costs (SC_B)
Risk costs (RC_B)
Distribution costs (DC_B)
Sales tax (T_B)
Market costs (MC_B)

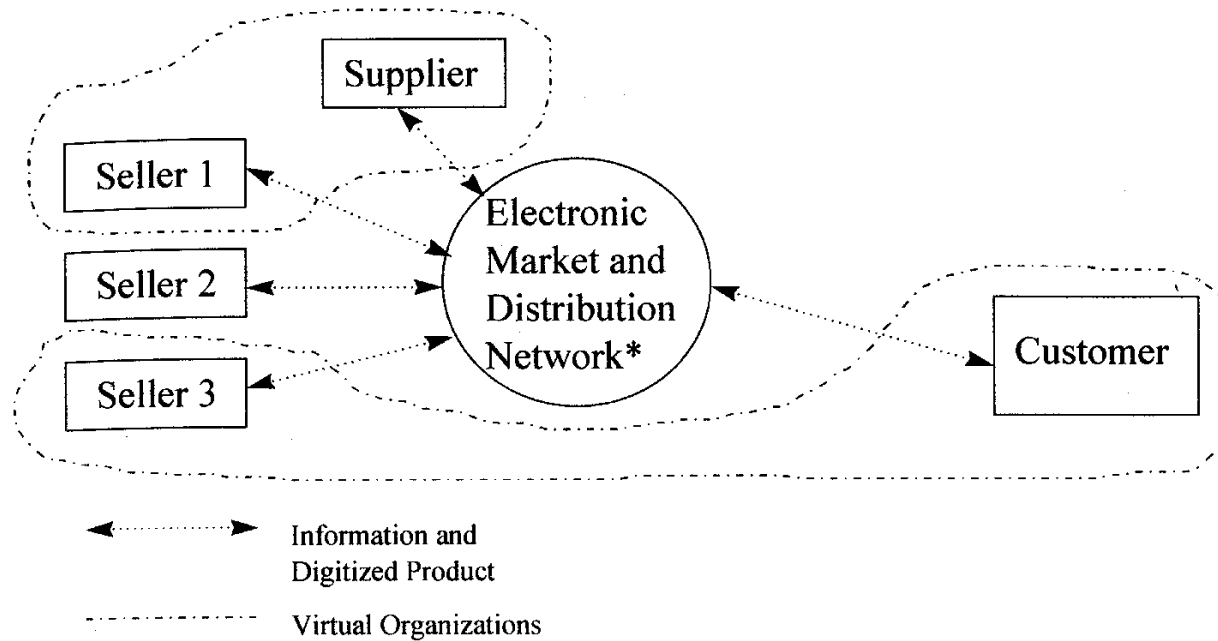
Marketing (advertising) costs (AC_B)
Overhead costs (OC_B)
Inventory costs (IC_B)
Production costs (PC_B)
Distribution costs (DC_B)

Revenue Source Implications

- Product/Service Provider Implications
 - Price and risk cost components
 - Electronic virtual partnership – Competing on reducing buyer risk costs, when seller/buyer relationship is supported electronically (fig. 7)
 - Over time,
 - sub-markets may form
 - Reduced incentives for buyers to search entire e-market
 - Switching cost inhibit consumer from buying from unknown seller

Revenue Source Implications

- Product/Service Provider Implications



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

Revenue Source Implications

- Transaction Intermediary Implications
 - Implications for transaction brokers
 - Search and risk cost components
 - Buyers may pay for someone or some thing to do searching
 - Customers may pay for broker services (e.g. risk assumption)
 - Implications for distribution companies
 - Cost components
 - Growth in business for Package shipment companies with increased e-market usage

Revenue Source Implications

- Internet Service Provider Implications
 - Market and search cost components
 - Consumers may pay ISPs to gain access to e-markets
- Government Implications
 - Tax components
 - Smaller proportion of sales tax collected
 - Problem in collection of sales taxes(including interstate commerce)
 - Harder to track the large number of small sellers
 - More difficult to track transactions with seller and buyer from different countries

Determinants of Electronic Market Success

- Inhibitors to Electronic Market Success
 - Lack of IT infrastructure
 - Barrier to e-commerce participation
 - Consumers in many countries do not have access to e-markets
 - Poor physical telecommunications
 - Computer Illiteracy
 - Consumers may be unable or unwilling to participate in e-markets
 - Lack of education about computers
 - Lack of willingness to accept new technology
 - Insufficient Security
 - Confidence, reliability and protection of information against threats
 - Improve security through data encryption and digital signatures

Determinants of Electronic Market Success

- Hierarchical Transaction Governance
 - Associated with transactions involving high asset specificity
 - Asset specificity – difference between value of an asset in present use and next best use
- With other factors – high market access costs

Above inhibitors result in failure of some e-markets

e.g. e-market for real estate

- Need to understand both the needs of product/service providers and consumers in a market
- With limited revenues at the beginning, new e-markets need to tightly control startup and operation costs

Determinants of Electronic Market Success

- Contributors to Electronic Market Success

E-markets impact some industries more.

Some factors for determining the level of impact:

- Product Characteristics

1. Form of product –

- digitizable products suited for e-markets
 - Take advantage of digitization of market mechanism, distribution mechanism

2. Magnitude of the product price

- Higher the price, greater risk in market transactions

Determinants of Electronic Market Success

- Industry Characteristics
 1. Level of standards in a industry for describing products
 - Lack of available standards is a barrier
 - Current standards – textual
 - Future standards – multimedia options
 2. Need for a transaction broker
 - E-market is able to directly match buyers and sellers
 - Industries require transaction brokers – less affected by e-markets
 - Software and intelligent systems may replace the need for some brokers (stock brokers, insurance agents, travel agents)

Determinants of Electronic Market Success

- Seller Characteristics
 - E-markets reduce profit margins for sellers in long run
 - In oligopolistic situations, the success of e-markets is determined by
 - Whether the sellers in an industry want to maintain an environment of lower volume, higher profit margin transactions
- Consumer Characteristics
 - Consumers
 - Impulse buyers – purchase quickly with little analysis
 - Patient buyers – purchase after some comparisons
 - Analytical buyers – substantial research before purchase
 - E-market has little impact on industries with most purchases from impulse buyers (e.g. grocery store)
 - Larger impact on analytical buyers

Conclusions

- Are there economic incentives for e-markets, or just a passing fad?
 - There are economic incentives
 - For buyers: lower prices and search costs offset potential additional risk, distribution and market costs
 - For sellers: potential new sources for revenue and reduction of production and transaction oriented costs
- E-markets – new institution of capitalism
 - Useful as transaction costs are economized