An Introduction to Electronic Commerce

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Definition of E-commerce

1) conducting business transactions
2) sharing of business information
3) maintaining business relationships
4) prospecting customers
5) managing and fulfilling orders

with the assistance of telecommunications and telecommunications-based tools

i.e.

not only the buying and selling of goods and services

but also the various processes that support this goal
Interorganizational Systems

An interorganizational information system (IOS) involves information flow among two or more organizations.

**Major objective:** *efficient routine transaction processing*, such as transmitting orders, bills, and payments using electronic data interchange (EDI) or extranets.

**Scope:** An IOS is a unified system encompassing two or several business partners.

A typical IOS includes a company and its suppliers and and/or customers.
Traditional commerce, Pure E-commerce, Partial E-commerce

Three dimensions
1) the product (service) sold [physical / digital]
2) the process [physical / digital]
3) the delivery agent (or intermediary) [physical / digital]

Traditional commerce: All dimensions are physical

Pure EC: All dimensions are digital

Partial EC: All other possibilities including a mix of digital and physical dimensions
The three dimensions of E-commerce

- Physical product
- Digital product
- Physical process
- Digital process
- Physical agent
- Digital agent

The core of electronic commerce

Traditional commerce
Examples of digital goods and services

- documents, including articles and books;
- data, including statistics;
- reference information, including dictionaries and encyclopaedias;
- projected sound, such as speeches and musical performances;
- projected video and video-with-sound, including television, video-conferencing and video-clips; and
- interactive voice, such as telephone conversations and teleconferencing;
- interactive video and video-with-sound, such as video-conferencing;
- images, including structured graphics such as diagrams and musical scores, and photographs;
Examples of digital goods and services

- news;
- weather forecasts;
- entertainment, infotainment, edutainment and education via multi-media;
- bookings and tickets for live events;
- software, quite generally;
- commerce in insurance;
- commerce in money, including foreign currencies;
- commerce in securities, and financial derivatives such as stock-based, interest-rate-based and index-based options; and
- commerce in commodities, and commodities derivatives such as futures.
A **market** is a network of interactions and relationships where information, products, services, and payments are exchanged.

The market handles all the necessary transactions.

An **electronic market** is a place where shoppers and sellers meet electronically.

In electronic markets, sellers and buyers provide information, negotiate, submit bids, agree on an order, and finish the execution on- or off-line.
Categorisation of Marketspaces

B2B (Business to Business)
Includes non-profit organisations (co-operatives, industry associations, chambers of commerce, trade unions, charities, community associations with a social purpose, e.g. sports clubs).

B2G / G2B (Business to Government / Government to Business)
- sales by business enterprises to government
- service delivery by government to business enterprises

B2C (Business to Consumer)

C2C (Consumer to Consumer)
'classified ads’, auctions of personal possessions...
Electronic Commerce Applications
On-line banking, On-line shopping, On-line marketing and advertising, etc.

People
Buyers, sellers, intermediaries, programmers, systems developers, etc.

Public policy
laws and regulations

Technical standards
for document handling, security issues, and network protocols payment

Organizations
Partners, competitors, associations, government agencies

Infrastructure
Messaging and information distribution infrastructure (EDI, e-mail, Hyper Text Transfer Protocol)

Multimedia content and network publishing infrastructure (HTML, JAVA, World Wide Web, VRML)

Interfacing infrastructure (databases, applications)

Network infrastructure (Telecom, cable TV wireless, Internet, VAN, WAN, LAN, Intranet, Extranet)

Common business services infrastructure (security smart card, authentication, electronic payment, directories, catalogs)
Shopper/Purchaser

Product/service information request, Purchase request, Payment or payment advice

Response to information request, Purchase acknowledgment, Shipping notice, Purchase/service delivery (if online)

Payment acknowledgment

Transaction Handler’s Bank (Automated Clearing House)

Payment approval, Electronic transfer of funds

Shopper/Purchaser’s Bank

Seller/Supplier

Purchase fulfillment request
Purchase change request

Response to fulfillment request, Shipping notice

Seller/Supplier’s Bank

Transaction Handler’s Bank (Automated Clearing House)

Payment remittance notice, Electronic transfer of funds

Electronic transfer of funds
# Major business pressures

| Market and economic pressures | Strong competition  
|                              | Global economy  
|                              | Regional trade agreements (e.g. NAFTA)  
|                              | Extremely low labor cost in some countries  
|                              | Frequent and significant changes in markets  
|                              | Increased power of consumers  
| Societal and environmental pressures | Changing nature of workforce  
|                                  | Government deregulation of banking & other services  
|                                  | Shrinking government budgets subsides  
|                                  | Increased importance of ethical and legal issues  
|                                  | Increased social responsibility of organizations  
|                                  | Rapid political changes  
| Technological pressures | Rapid technological obsolescence  
|                          | Increase innovations and new technologies  
|                          | Information overload  
|                          | Rapid decline in technology cost vs. performance ratio  

# The marketing shift

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How the Web influences advertising practices

1) The direction of the advertising message is reversed

2) Content regains importance as the core of the advertising effort
Reversal of the direction of the advertising message

**In traditional advertising**

The message is imposed on the consumer, who is passive.
The model of marketing communications is one-to-many.

**In Web advertising**

The consumer *chooses* to view an advertisement on a site.
The consumer *takes actions* to uncover the information the advertiser wishes to deliver.
Renewed importance of **content** as the core of the advertising effort

**Traditional advertising**
- uses brief distilled messages to catch and hold attention
- depends on repetition to deliver the message
- minimizes and simplifies content to fit the time constraints of media or the size constraints of the page
- relies on packing the maximum amount of meaning into the minimum amount of content

**Web-based advertising** works with different constraints emphasizing content and presentation
- Time and page size limitations become less important
- Presentation, content, navigation, and flow become more important
- Content must be dynamic, current, and relevant to a variety of audiences
- It must catch the viewer’s eye in 10 seconds or less
Changes in the workplace

Impacts on Manufacturing
Pull processing, mass customization, shorter cycle time, integration (ERP), electronic bidding and procurement

Impacts on Finance and Accounting
Electronic payment systems, electronic cash, home banking, electronic stock trading

Human Resource Management
Electronic recruiting, on-line training, distance learning
Benefits to organizations

♦ Expands the marketplace to national and international markets

♦ Decreases the cost of creating, processing, distributing, storing and retrieving information

♦ Reduces inventories and overheads

♦ Allows for customization of products and services, thereby providing competitive advantage

♦ Lowers communication costs
Benefits to customers

♦ Customers can shop or do other transactions at any time and from any location that has on-line access

♦ Customers can receive information quickly and can thereby more easily compare offers and prices

♦ Quick delivery of products and services in some cases, especially with digitized products

♦ Customers can participate in virtual auctions

♦ Customers can interact with other customers in electronic communities and exchange ideas as well as compare experiences

♦ E-commerce increases competition, which results in substantial discounts.
Benefits to society

- Enables more individuals to work at home,
  - less traveling for shopping,
  - less traffic on the roads,
  - lower air pollution

- Allows for some products and services to be sold at lower prices
  - increased purchasing power of lower income individuals

- Enables inhabitants of developing countries and rural areas to enjoy products and services which otherwise are not available to them

- May facilitate access to products and services to
  - the sick,
  - the disabled,
  - the elderly

  (provided that they get adequate training and on-line access)
Technical limitations of E-commerce

- Lack of sufficient system’s security, reliability, standards, and communication protocols
- Insufficient telecommunication bandwidth
- Difficulties in integrating the Internet and E-commerce software with some existing applications and databases
- The need for special Web servers and other infrastructures, in addition to the network servers (additional cost)
- Possible problems of interoperability (some E-commerce software may not fit with some hardware, or may be incompatible with some operating systems or other components)
Organizational limitations

The cost of developing E-commerce in house can be very high:
- home page system development and maintenance
- server and network acquisition and operation
- merchandising
- order fulfillment
- collection of payment
- changing the way of doing business

Mistakes due to lack of experience may result in:
- delays
- lost customers
- loss of reputation

To justify an E-commerce investment, one needs to deal with some intangible benefits that are difficult to quantify.
Security and Privacy

Privacy of Personal Behaviour
People's 'private space' is invaded by the intrusions inherent in most direct marketing techniques.

Privacy of Personal Data
Threatened for example by endeavours on the part of marketers to convert hitherto anonymous transactions into identified ones, through such means as so-called 'loyalty' schemes.

Consumer Profiling
- accumulation, acquisition and cross-referencing of data about individuals, possibly combined with geo-demographic data
- use of such data for various micro-marketing purposes.
Lack of trust and user resistance

Customers often have trouble trusting:
- an unknown faceless seller,
- paperless transactions,
- electronic money.

Factors influencing trust:
Credibility
  e.g.   backing up objective content with data and references
         acknowledging content sponsored by or affiliated to other parties
Transparency
  e.g.   displaying cost prominently and early in the process
Service-orientation
  e.g.   providing feedback about the order
          facilitating the return of products and refunds
Other limitations of E-commerce

- Lack of touch and feel online
- Many unresolved legal issues
- Rapidly evolving and changing markets
- Lack of support services
- Insufficiently large number of sellers and buyers
- Breakdown of human relationships
- Expensive and/or inconvenient accessibility to the Internet