


E-Commerce and E-Business



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Introduction

- From its beginning in 1985, the Internet has grown to 80 million.coms and well over 200 million websites.
- **Electronic commerce (e-commerce, EC)** describes the buying, selling, transferring or exchanging of products, services or information via computer networks, including the Internet.
- **E-business** is a broader definition of EC, including buying and selling of goods and services, and also servicing customers, collaborating with partners, conducting e-learning and conducting electronic transactions within an organization.
- Amazon.com can be considered as one of the most successful online businesses worldwide.

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Pure versus Partial Electronic Commerce

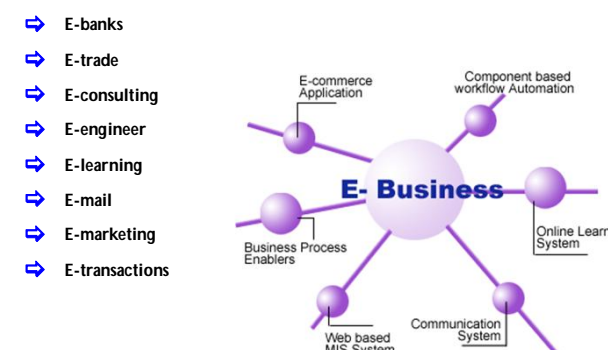
Pure vs. Partial EC depends on the **degree of digitization** involved.

- The product can be physical or digital.
- The process can be physical or digital.
- The delivery agent can be physical or digital.

- **Brick-and-mortar** organizations are **purely physical organizations**. (Buy books at university bookstore)
- **Click-and-mortar** organizations are those that conduct some e-commerce activities, yet their business is primarily done in the physical world. i.e. **partial EC**. (Use Internet to order physical book from Amazon)
- **Virtual organizations** are companies that are engaged only in EC. Also called **pure EC** (Order and download book from Amazon)

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E-business category



business

⇒ E-banks
⇒ E-trade
⇒ E-consulting
⇒ E-engineer
⇒ E-learning
⇒ E-mail
⇒ E-marketing
⇒ E-transactions

E-commerce Application
Component based workflow Automation
Online Learning System
Communication System
Web based MIS System
Business Process Enablers

E- Business

Types of E-Commerce

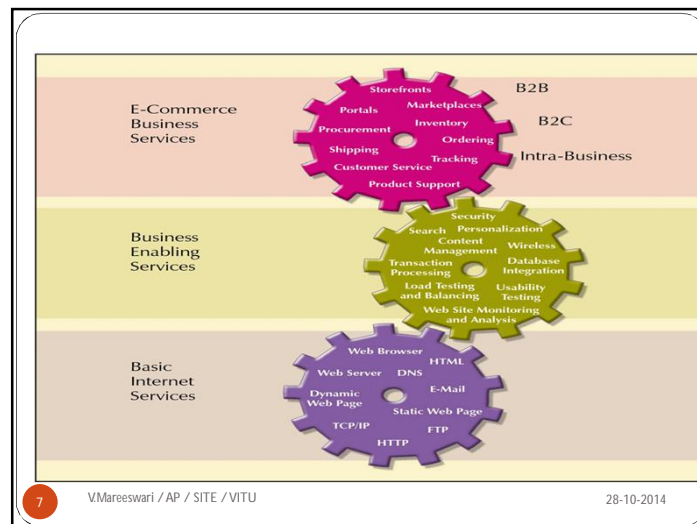
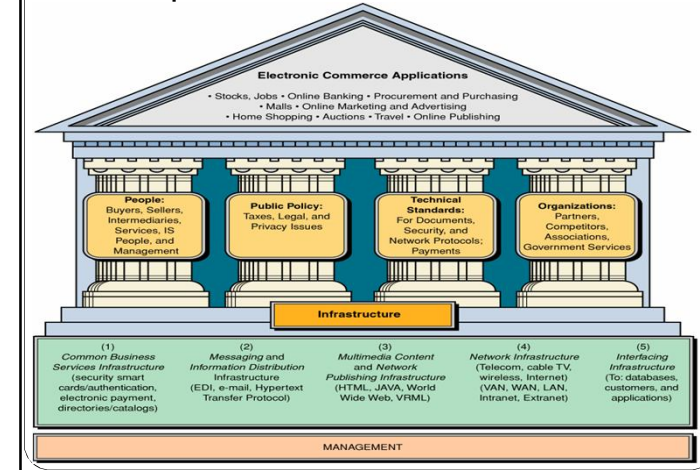
1. **Business-to-consumer (B2C):** the sellers are organizations and the buyers are individuals.
2. **Business-to-business (B2B):** both the sellers and buyers are business organizations. B2B represents the vast majority of e-commerce.
3. **Consumer-to-consumer (C2C):** an individual sells products or services to other individuals.
4. **Business-to-employee (B2E):** An organization uses e-commerce internally to provide information and services to its employees. Companies allow employees to manage their benefits, take training classes electronically; buy discounted insurance, travel packages, and event tickets.
5. **E-Government:** the use of Internet Technology in general and e-commerce in particular to deliver information about public services to citizens (called Government-to-citizen [G2C/ECI]), business partners and suppliers (called government-to-business [G2B/ECI]),
6. **Mobile Commerce (m-commerce)** refers to e-commerce that is conducted in a wireless environment. For example, using cell phone to shop over the Internet. Japan is seen as a global leader in m-commerce.

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Components of E-Business

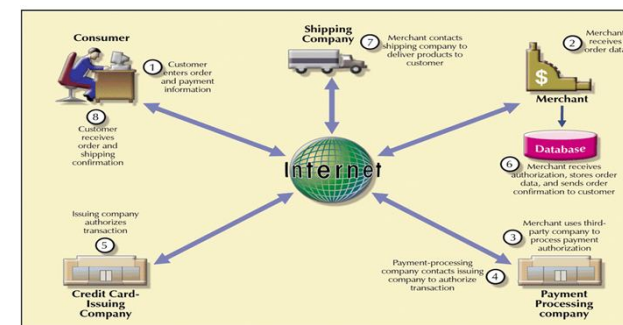


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A Sample E-Commerce Transaction



Business Applications - Example

- Online shopping
- Online banking
- Online office suites
- Teleconferencing
- Electronic tickets
- Social-networking
- Domestic and international Payment systems
- Instant messaging
- Newsgroups

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Benefits of EC

Benefits to organizations

Makes national and international markets more accessible

Lowering costs of processing, distributing, and retrieving information

Benefits to customers

Access a vast number of products and services around the clock (24/7/365)

Benefits to Society

Ability to easily and conveniently deliver information, services and products to people in cities, rural areas and developing countries.

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Limitations of E-Commerce

Technological Limitations

Lack of universally accepted security standards

Insufficient telecommunications bandwidth

Expensive accessibility

Non-technological Limitations

Perception that EC is insecure

Unresolved legal issues

Lacks a critical mass of sellers and buyers

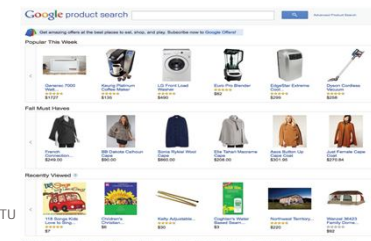
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Business-to-Consumer (B2C)

- An **electronic storefront** is a Web site that represents a single store.
- **Electronic malls** are collections of individual shops under a single Internet address.
- Note: clicking on the images above will take you to the respective Web sites.



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Luxury E-Commerce



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Action

- Establish some basic business rules and their effects on the design.
- Define database required to support the e-commerce activities.
- Designed to facilitate the exchange of structured documents (XML) such as orders or invoices over the Internet

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DTD and XML Documents for Order Data

OrderData.dtd

```
<!ELEMENT OrderData (ORD_ID, ORD_DATE, CUS_NAME, ORD_SHIPTO, ORD_PRODS, ORD_TOT)>
<!ELEMENT ORD_ID (#PCDATA)>
<!ELEMENT ORD_DATE (#PCDATA)>
<!ELEMENT CUS_NAME (#PCDATA)>
<!ELEMENT ORD_SHIPTO (#PCDATA)>
<!ELEMENT ORD_PRODS (P_CODE, P_DESCRIPT, P_QTY, P_PRICE)+>
<!ELEMENT P_CODE (#PCDATA)>
<!ELEMENT P_DESCRIPT (#PCDATA)>
<!ELEMENT P_QTY (#PCDATA)>
<!ELEMENT P_PRICE (#PCDATA)>
<!ELEMENT ORD_TOT (#PCDATA)>
```

OrderData.xml

```
<?XML VERSION="1.0"?>
<!DOCTYPE OrderData SYSTEM "OrderData.dtd">
<OrderData>
  <ORD_ID>34523</ORD_ID>
  <ORD_DATE>12/08/2002</ORD_DATE>
  <CUS_NAME>111 Atkins</CUS_NAME>
  <ORD_SHIPTO>1234 Crown Rd, Chicago, IL 34564</ORD_SHIPTO>
  <ORD_PRODS>
    <P_CODE>23109-HB</P_CODE>
    <P_DESCRIPT>Claw hammer</P_DESCRIPT>
    <P_QTY>2</P_QTY>
    <P_PRICE>5.95</P_PRICE>
  </ORD_PRODS>
  <ORD_PRODS>
    <P_CODE>23114-AA</P_CODE>
    <P_DESCRIPT>Sledge Hammer, 12 lb.</P_DESCRIPT>
    <P_QTY>1</P_QTY>
    <P_PRICE>14.40</P_PRICE>
  </ORD_PRODS>
  <ORD_TOT>26.30</ORD_TOT>
</OrderData>
```

Annotations in the image:

- A bracket on the right side of the DTD elements `ORD_ID`, `ORD_DATE`, `CUS_NAME`, and `ORD_SHIPTO` is labeled: " " " " sign indicates one or more ORD_PRODS elements".
- Two arrows point from the `ORD_PRODS` section of the XML document to the `ORD_PRODS` element in the DTD. A label says: "Two ORD_PRODS elements in XML document".

XML Data Binding in HTML

productlist.htm - Notepad

```
<HTML>
<HEAD>
<TITLE>BINDING THE PRODUCTLIST XML DATA TO HTML TABLE (IES.0)</TITLE>
</HEAD>
<BODY>
<XML ID="PRODLIST" SRC="PRODUCTLIST.XML"></XML>
<TABLE BORDER="1" DATASRC="#PRODLIST">
  <TR>
    <TD><SPAN DATAFLD="P_CODE"></SPAN></TD>
    <TD><SPAN DATAFLD="P_DESCRIPT"></SPAN></TD>
    <TD><SPAN DATAFLD="P_QTY"></SPAN></TD>
    <TD><SPAN DATAFLD="P_PRICE"></SPAN></TD>
  </TR>
</TABLE>
</BODY>
</HTML>
```

BINDING THE PRODUCTLIST XML DATA TO HTML TABLE (IES.0) - Microsoft Internet Explorer

23109-HB	Claw hammer	2	5.95
23114-AA	Sledge Hammer, 12 lb.	1	14.40

A red arrow points from the `PRODLIST` XML element in the Notepad window to the table in the Internet Explorer window.

Ways to Improve E-Commerce Operations

- Technology (hardware and software)
- Business Process Reengineering
- Agile production (mass customization)
- Just-in-time system
- Supply chain management
- Business intelligence
- Customer relationship management

Evolution of Web Technologies

