

## U2010 電子商務系統

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## e-Commerce, e-Technology and e-Service

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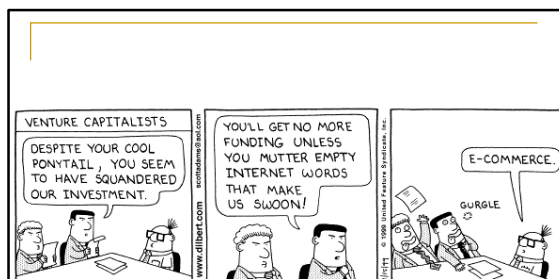
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### U2010 e-Commerce, e-Technology & e-Service

- When: Wednesdays 2:20pm ~ 5:10pm (20min break)
- Where: CSIE#105
- Who: graduate & upper undergraduate CS students
- What: an overview of the technologies relevant to **electronic commerce** and **web services**
- Web site:  
<http://agents.csie.ntu.edu.tw/~yjhsu/courses/u2010>
- TA: TBA
- Instructor: Jane Hsu ([yjhsu@csie.ntu.edu.tw](mailto:yjhsu@csie.ntu.edu.tw))

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### Motivation

- Electronic commerce is shaping many aspects of human life.
- As an information technology professional, what should we do to take part in this revolution?

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### This course

- Is NOT just about building an e-commerce web site.
- Is NOT about web design.
- Is NOT just about defining new business models.
- Is NOT about get-rich-fast e-commerce schemes.
- It IS about how information technology and standards can facilitate electronic commerce and services so that all market participants can benefit.

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## Information Revolution

- Industrial revolution
  - Steam engines
  - Railroads
- Information revolution
  - Computers
  - E-commerce

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## The E-Commerce Revolution

- A new economic dimension
- A new *mental geography*
- Distance has been eliminated.
- There is only one economy and only one market.
- Every business must be globally competitive!

*The truly revolutionary impact of the Information Revolution is the explosive emergence of the Internet as a major, perhaps eventually the major, worldwide distribution channel for goods, for services, and, surprisingly, for managerial and professional jobs.*

-- Peter F. Drucker, *Father of Modern Management Beyond the Information Revolution*

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## Promise of E-Commerce

- Friction-free commerce, in which
  - Information is equally distributed and accessible by all
  - Transaction costs are low
  - Prices can be dynamically adjusted to reflect actual demand
  - Unfair competitive advantages are eliminated
- Disintermediation
  - A new direct relationship between manufacturers and content originators with their customers
  - Displacement/decline of market intermediaries

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## Estimated Quarterly U.S. Retail E-commerce Sales

Source: US Census Bureau, E-Commerce Report (May 23, 2003)  
(Data not adjusted for seasonal, holiday, and trading-day differences)

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**Q1**

**Table 1. Estimated Quarterly U.S. Retail Sales<sup>1</sup>: Total and E-commerce**  
(Data in millions of dollars, not adjusted for seasonal, holiday, and trading-day differences.)

Period	Retail Sales <sup>2</sup>		E-commerce as a Percent of Total Sales	Quarter-to-Quarter Percent Change		Year-to-Year Percent Change	
	Total	E-commerce		Total Sales	E-commerce Sales	Total Sales	E-commerce Sales
1999 4 <sup>th</sup> Quarter	787,362	5,393	0.7	8.2	(NA)	9.1	(NA)
2000 1 <sup>st</sup> Quarter	715,102	5,722	0.8	-9.2	6.1	11.3	(NA)
2 <sup>nd</sup> Quarter	775,364	6,250	0.8	8.4	9.2	7.6	(NA)
3 <sup>rd</sup> Quarter	768,559	7,079	0.9	-0.9	13.3	5.6	(NA)
4 <sup>th</sup> Quarter	812,667	9,248	1.1	5.7	30.6	3.2	71.5
2001 1 <sup>st</sup> Quarter	723,710	8,009	1.1	-10.9	-13.4	1.2	40.0
2 <sup>nd</sup> Quarter	801,115	7,904	1.0	10.7	-1.3	3.3	26.5
3 <sup>rd</sup> Quarter	777,882	7,894	1.0	-2.9	-0.1	1.2	11.5
4 <sup>th</sup> Quarter	850,608	10,788	1.3	9.3	36.7	4.7	16.7
2002 1 <sup>st</sup> Quarter	740,020	9,470	1.3	-13.0	-12.2	2.3	18.2
2 <sup>nd</sup> Quarter	818,609	9,761	1.2	10.6	3.1	2.2	23.5
3 <sup>rd</sup> Quarter	822,125	10,465	1.3	0.4	7.2	5.7	32.6
4 <sup>th</sup> Quarter	864,653	13,770	1.6	5.2	31.6	1.7	27.6
2003 1 <sup>st</sup> Quarter *	772,234	11,921	1.5	-10.7	-13.4	4.4	25.9


NA Not available. \* Revised. † Preliminary.

<sup>1</sup> Does not include Food Services.

<sup>2</sup> E-commerce sales are sales of goods and services where an order is placed by the buyer or price and terms of sale are negotiated over an Internet, extranet, Electronic Data Interchange (EDI) network, electronic mail, or other online system. Payment may or may not be made online.

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## Textbooks

- **E-Commerce: business, technology, society** by Kenneth C. Laudon and Carol Guercio Traver, published by Addison-Wesley, 2002. 
- **References:**
  - **Web Services: A Technical Introduction** by Deitel et al., published by Prentice Hall, 2003.
  - **Distributed Computing: Principles and Applications** by M. L. Lin, Pearson/Addison-Wesley, 2004.
  - Selected papers will be available from the course web site.  
<http://agents.csie.ntu.edu.tw/~yjhsu/courses/u2010>

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### Course Outline

- E-commerce business models and concepts.
- E-commerce infrastructure: the Internet & world-wide web
- Architecture of e-commerce systems
- Security and encryption
- B2B e-commerce
- Media commerce and online content
- E-Commerce payment systems
- Web services
- E-commerce standards
- Data mining and business intelligence
- Auctions and agent-mediated transactions
- Mobile e-commerce
- Social and legal issues

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### Grading

■ Homework assignments	30%
■ Midterm	20%
■ Term project	30%
■ Final report	20%

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### What is “Commerce”?

- Transactions (sales and purchases) having the objective of supplying commodities (goods and services)
- Social exchange, especially of opinions, attitudes, etc.
- The federal department that promotes and administers domestic and foreign trade (including management of the census and the patent office); created in 1913 (US).

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### New World of E-Commerce

■ <i>Business Opportunities</i>	■ <i>Customer Opportunities</i>
□ Efficient channel	□ Choice
□ Large market	□ Convenience
■ <i>Business Challenges</i>	■ <i>Customer Challenges</i>
□ Customer attention	□ Finding relevant stuff
□ Customer loyalty	□ Trust and privacy

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***E-Commerce Technology =***

***Enabling technologies that educe new perspectives on elements in an Internet business model***

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### E-Commerce Technology Stack

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### Web Based Technology (e-Technology)

- Internet Fundamentals
  - HTTP, Browser
  - Instant Messaging
  - XML
  - Web Services
- Servers
  - Cache server, Cluster
  - Java, J2EE
  - Grid computing OGSA
- Performance
  - QoS
  - Real-time
  - Transaction (WS-Transaction)
  - Fault tolerance
- Security
  - Secure (WS-Security)
  - Payment
  - Trust
- E-Commerce
  - Infrastructure, B2C, B2B
  - Auction
  - Business Process, CRM, SCM, ERP
- Intelligence and Agent
  - Agent
  - Data mining
  - Negotiations
  - Web Intelligence
  - Semantic Web
- New applications
  - Pervasive
  - Mobile EC, P2P
  - Autonomic
  - 3G

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