Topics for Week 1

- Introduction to Unit Outline
- Assessment Requirements
- Study Guideline
- Lecture 1
- Tutorial 1 and Case Study

Unit Controller

- Associate Professor Lance Fung
- School of Information Technology
- Division of Arts
- Murdoch University
- Tel/Voice Mail: 9360 7586
- Office: ECL3.042
- Email: L.Fung@murdoch.edu.au

Tutor

- Mr Eric Li
- Office: Transportable 1, Room 7
- Email: J.Li@murdoch.edu.au
- Phone: 9360 2828

Schedule

- Lecture: Monday 12:30 – 14:30
  – @ Biological Sciences LT
- Tutorial: Monday 14.30 - 16.30
  – @ ECL3.005
- Lab: Monday 14.30 - 16.30
  – (unsupervised, available for use for project development, research and presentation)
  – Venue TBA
Unit Description

- Deals with the issues of Electronic Commerce (e-commerce) and Virtual Organisations from the perspectives of technology, business and society.
- Topics include management of e-commerce technology, consumer based e-commerce, e-commerce and taxation, new organisational forms, new forms of marketing, legal issues in e-commerce, e-commerce and taxation, e-commerce structures such as virtual workplaces, virtual banks and transnational corporations, and virtual business applications.

Unit Overview and Objectives

- To provide an overview on the developments of Electronic Commerce (EC) from the perspectives of technology, business and impacts on organisations and the society.
- To provide an understanding of EC and an appreciation of its future development.
- To analyse and understand changes as a result of EC such as new technologies, business models, initiatives and organisational forms.
- To understand emerging issues on the legal systems, security and privacy, taxation, government, health and the society as a whole.

Development of Graduate Attributes

- In depth professional knowledge.
- Analysis and problem solving.
- Communication.
- Global perspectives.

Schedule

- Introductory aims and themes, e-Business and e-Commerce Era
- E-Business Models and Concepts
- Infrastructure for E-Commerce: The Internet and World-Wide-Web and Websites
- Security, encryption and Cyber crimes
- E-Commerce Payment Systems
- E-Commerce Marketing Concepts
- E-Commerce Marketing Communications
- Ethical, Social and Political Issues
- E-Retailing and Online Service Industries
- B2B E-Commerce: Supply Chain Management
- Auctions, Portal and Communities
- Online Content Providers
- Review
ASSESSMENT

- A project on the design/development of an EC site (30%)
- Submission and presentation of a major assignment (15%)
- Submission of answers for three weeks of self-study exercises (15%)
- End-of-semester Final Examination (40%)

Project (30%)

- The project should be undertaken by a group of up to 3 students. The deliverables are:
  - Presentation of an Abstract to discuss and justify the objectives of the site. (Presentation on Week 4, 12th March, tutorial session) (5%)
  - Design and development of a Web-site to fulfill the requirements of the project. (Submission by Week 11 Thursday, 17th May, 2007) (10%)
  - A detailed report on the design, development and implementation of the project. (Submission by Week 11 Thursday, 17th May, 2007) (10%)
  - An oral and multimedia presentation of the developed work. (Presentation on Week 12 Monday, 21st May, tutorial session) (5%)

Major Assignment (15%)

- Each student is required to research and report on a major assignment on a topic relevant to the unit. The submission will include an oral presentation and a written report.
- Report submission deadline and presentation (Monday Week 8, 23rd April, 2007)
- Oral Presentation (5%)
- Written Report (Minimum 5 pages, Maximum 10 pages) (10%)

Self-Study Exercises (15%)

- Each student is required to work on each weekly self-study exercises which include tutorial questions and case studies.
- Answers to anyone weekly exercises during three periods are to be submitted for assessment.
  - Submission 1 on Monday Week 5, 19th March, 2007 (for any weekly exercises during week 1 to week 4) (5%)
  - Submission 2 on Monday Week 8, 23rd April, 2007 (for any weekly exercises during week 5 to week 8) (5%)
  - Submission 3 on Monday Week 12, 21st May, 2007 (for any weekly exercises during week 9 to week 11) (5%)

Final Examination (40%)

- During the examination period (4th to 15th June, 2007).
- Closed Book examination with an emphasis on application and understanding of the subject material presented during the semester from the prescribed text and any other material covered.
- The duration is two hours plus ten minutes reading time.
- Variety of question types (3 Sections)

Assessment Schedule

- Oral Exam: Project/Assignment, Presentation 5% Weekly Exercises 10%
- Written Exam: Project/Assignment, Presentation 5% Weekly Exercises 10%
- Final Exam: 3 sections 80%
Final Grade

- Your final grade for the unit will be reported as a letter grade and percentage based on:
  - the practical component, which consists of journal submissions, project and presentation, and
  - the supervised component, which is the final examination

Changes in 2007 Assessment

- Project: (reduced to 30% instead of 40%) – Oral presentation and design/development components reduced by 5% each
- Journal and Self-Study Exercises (reduced to 15% from 20%). Journal is taken off and only answers to 3 weeks of self-study exercises are required at 5% each.
- Major Assignment (new, 15%) – Oral presentation 5% and one written assignment 10%. Each student is required to complete a substantial independent research assignment on a specific topic relevant to the unit.
- Final Examination (40%) No change

Final Grade

In order to pass this unit, you must satisfy the following conditions:
- achieve an overall aggregate score of 50% or higher for all of the combined assessments (Continuous Assessment and Final Examination); AND
- achieve a satisfactory performance in the final examination. A satisfactory performance is normally considered to be 45% or higher; AND
- achieve a satisfactory performance in the continuous assessment (Project, Assignment and Self-study Exercises). A satisfactory performance is normally considered to be 45% or higher.
- Failure to achieve the above indicates that the unit objectives have not been met and so the unit has not been successfully completed.

The award of the grade of S shall be at the discretion of the Unit Coordinator and recommendation from the Board of Examiners.

Section 11 of the Assessment Policy regarding grades and The grade descriptors are provided in the Murdoch University Handbook and Calendar at http://www.murdoch.edu.au/admin/policies/assessment.html#11

Attendance / Participation Requirements

- Attendance at Tutorials will be recorded for the first 4 weeks although this is not part of the assessment.
- Attendance at lectures is recommended but not compulsory. If you are unable to attend a series of lectures for any reason, it is strongly recommended that you discuss this with the lecturer or unit coordinator.
- For example, it may be suggested that you obtain a medical certificate as evidence that you experienced health problems during the semester.
Submission of Assignments

• **Internal Students**
  - Submit assignments/journals into the assignment box at ECL Building Level 3. The box will be labeled with the unit code outside of the School of IT office.
  - Assignment must be submitted in hard copy and soft copy. Marking will be done on the printed hard copy only. The soft copy may be submitted on a floppy disk or a CD-ROM.
  - Each assignment must have a standard cover sheet.

• **External Students**
  - External Students should submit assignments through external studies.
  - Each assignment must have a standard cover sheet.
  - Cover sheets are available at: http://external.murdoch.edu.au/support/info.html

UNIT RESOURCES

• The **Study Guide** will provide you with introductory comments on each topic, required reading from the textbook and direct you to study questions.
• The **Study Questions** cover the broad conceptual issues that you ought to be considering. They could be used as a means of reflecting on your own learning and understanding of each topic. Although presented topic by topic, it would not be unusual for you to be able to use the questions from a variety of topics to arrive at a more general, systemic view of the broader issues covered by the unit.

Unit Text

• Laudon & Traver
• E-COMMERCE: BUSINESS. TECHNOLOGY. SOCIETY., 3rd Edition
• Copyright 2007
• ISBN: 0-13-173516-0,
• Pearson Prentice Hall
• The unit text has a companion website where the authors have provided additional resources. The URL of the website is:
  - http://wps.prenhall.com/bp_laudon_ecommerce_3

Having difficulty?

• If you cannot complete all the assignments, you should consider to send in what you have completed by the due date.
• If you need an extension for an assignment, contact the unit coordinator before the due date has passed. Extensions are granted only in exceptional circumstances. In requesting an extension you should also suggest for consideration a schedule for submission which meets your circumstances.
• Alternative work may be required if information about the solution has been distributed or assignments returned.
• Unless you have obtained a prior extension to the submission deadline, be advised that late submissions will incur a penalty of 10% deduction per day late, based upon the total possible mark for the assignment.
Chapter 1
The Revolution Is Just Beginning

Learning Objectives

- Define e-commerce and describe how it differs from e-business.
- Identify and describe the unique features of e-commerce technology and discuss their business significance.
- Describe the major types of e-commerce.
- Discuss the origins and growth of e-commerce.
- Explain the vision and forces operating during the first five years of e-commerce, and assess its successes, surprises, and failures.
- Identify several factors that will define the next five years of e-commerce.
- Describe the major themes underlying the study of e-commerce.
- Identify the major academic disciplines contributing to e-commerce research.

WA ICT Industry Development Forum Report

- “Enabling Growth: The Contribution of ICT to the WA Economy” (Feb 2006)
  - Revenue earned by ICT specialist firms in WA was estimated to be in excess of $6.6 billion in 2004
  - There are estimated 1,800 specialist ICT firms in WA
  - ICT provides direct employment 23,000 people, nearly as high as the state’s high labour intensive accommodation and hospitality industry
  - ICT contributed between 12.7% to 23.8% to the state’s Gross State Product in 2003-2004
  - ICT indirectly responsible for between 107,000 to 161,000 jobs (10% - 17%) of the state’s workforce.
  - The biggest constraint on using or increasing use of ICT was identified as being a shortage or appropriately skilled people.

Recommendation 3

- Leveraging ICT enabling from business use
  - Making simple e-commerce tools readily available to small businesses
  - Lowering the cost of ICT-related information to business

(Initiative 3.1 & 3.2)
Amazon.com: Tuned-Up and Profitable

Amazon at 10: Profitable at Last

Class Discussion

"Story of Amazon in many ways mirrors story of e-commerce itself"
"Process of continuous change and exploration for profits"
"What are the reasons why people shop at Amazon?"
"Why wasn’t it profitable from Day 1?"
"When did it become profitable?"
"How many of you have used Amazon recently?"
"What was your experience?"
"Do you think Amazon will remain profitable?"

The Story

- Started in ’94 when Jeff Bezos realised Internet usage was growing at 23 times per year.
- Concept of “virtual bookstore”
- Amazon.com opened in Dec ’95. Four features:
  - Selection (1.1 million titles)
  - Convenience (1-click)
  - Price (discounts)
  - Service (e-mail, phone, order confirmation, tracking and shipping...)

The Facts

- 1996: 200K customers, revenue $15.6M, loss $6.24M
- 1997: raised 50M, 1M customers, revenue $148M, loss $31M
- 1998: expended product line, revenue $610M, loss $125M
- 1999: borrowed $1B, more services, revenue $1.6B, loss $720M
- 2001: losing $ on sale and living on borrowed cash, revenue $2.7B, loss $1.4B
- 2001-2002 – Strategy for Profit
  - Cut prices
  - Free shipping
  - Leverage investment in infrastructure and brands
  - Lowering cost significantly

The turn around

- 2001: closed 2 of the 8 warehouses, laid off 15% workforce.
- Hired Jeffrey Wilke and half a dozen mathematicians to figure out how to cut cost.
- Redistribute book inventory
- Six Simga Quality to reduce error (a failure rate of 3.4 parts per million or 99.9997%)
- Lowered shipping cost
- Reduced fulfillment cost from 15% to 10%

How about Dell.com?

- Started in ’85 selling PC by Mail Order
- In ’93, 1 of top 5 PC makers. Order by fax and snail mail
- ’94, $100M losses
- ’00, No 1 in worldwide PC shipment
- Internet sales $50M per day
- Today, Dell.com sells $50B per year computer related products with profit of $3B
- What happened?
The solution: Direct marketing Online

- 4 major groups
  - Individual
  - Small Business
  - Medium to large businesses
  - Gov’t, education and health-care
- Business-to-Business EC
- E-Collaboration (e-procurement)
- E-Customer Services (CRM)
- 100 country-oriented websites
- TechKnow Program to recycle old computers for community

E-commerce Developments and Themes—2006

- More and more people and businesses are using the Internet to conduct commerce
- The e-commerce channel is deepening as more products and services come online
- Broadband and wireless Internet access are growing
- E-commerce business models are being refined to achieve higher levels of profitability
- At societal level, there is continued conflict over copyrights, content regulation, taxation, privacy, and Internet fraud and abuse.

WHAT IS E-COMMERCE?

E-commerce Defined

- E-commerce involves digitally enabled commercial transactions between and among organizations and individuals
- Digitally enabled transactions include all transactions mediated by digital technology
- Commercial transactions involve the exchange of value across organizational or individual boundaries in return for products or services

E-commerce vs. E-business

- Debate among consultants and academics about meanings and limitations of terms e-commerce and e-business
- We use the term e-business to refer primarily to the digital enablement of transactions and processes within a firm, involving information systems under the control of the firm
- E-business does not include commercial transactions involving an exchange of value across organizational boundaries
- (Note that some literature uses the terms interchangeably.)

The Difference between E-commerce and E-business
E-commerce primarily involves transactions that cross firm boundaries.

E-business primarily concerns the application of digital technologies to business processes within the firm.

Other aspects of EC

- Communication – delivery over computer or related networks
- Commercial – buying and selling goods and services
- Business Process – substituting traditional processes
- Service – addresses needs and improve quality
- Learning – online training and education
- Collaboration – framework for inter & intra organisation collaboration
- Community – gathering place in cyber space

EC Framework

- People – buyers, sellers…etc
- Public Policy – laws and standards
- Marketing and Advertisement – research, promotion and content
- Support Services – logistics, payments, security…etc
- Business Partnership – exchange, collaboration, consortia…

Why Study E-commerce?

- E-commerce technology is different and more powerful than any of the other technologies that we have seen in the past century.
- E-commerce has challenged much traditional business thinking
- E-commerce has a number of unique features that help explain why we have so much interest in e-commerce

Seven Unique Features of E-commerce Technology and Their Significance

- Is ubiquitous (available everywhere, all the time)
- Offers global reach (across cultural/national boundaries)
- Operates according to universal standards (lowers market entry for merchants and search costs for consumers)
- Provides information richness (more powerful selling environment)
- Is interactive (can simulate face-to-face experience, but on global scale)
- Increases information density (amount and quality of information available to all market participants)
- Permits personalization/customization

The Changing Trade-off between Richness and Reach

Figure 1.2, Page 15

![Chart showing the trade-off between richness and reach]
Types of E-commerce

Classified by nature of market relationship
- Business-to-Consumer (B2C)
- Business-to-Business (B2B)
- Consumer-to-Consumer (C2C)

Classified by type of technology used
- Peer-to-Peer (P2P)
- Mobile commerce (M-commerce)

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Business-to-Consumer (B2C) E-commerce

- Involves online businesses attempting to reach individual consumers
- In 2002, total B2C revenues were about $72-$78 billion
- Many types of business models within this category including online retailers, content providers, portals, transaction brokers, service providers, market creators and community providers

Business-to-Business (B2B) E-commerce

- Involves businesses focusing on selling to other businesses
- Largest form of e-commerce ($800 billion in 2002)
- Two primary business models within B2B:
  - Net marketplaces (includes e-distributors, e-procurement companies, exchanges and industry consortia)
  - Private industrial networks (includes single firm networks and industry-wide networks)

Consumer-to-Consumer (C2C) E-commerce

- Provides a way for consumers to sell to each other, with the help of an online market maker
- eBay most well-known example
- Estimated that size of C2C commerce will reach $15 billion by 2004

Peer-to-Peer (P2P) E-commerce

- Uses peer-to-peer technology, which enables Internet users to share files and computer resources without having to go through a central Web server
- Napster most well-known example until put out of business for copyright infringement
- Today, Kazaa is the leading P2P software network, although also under attack for copyright infringement (see end-of-chapter case)
M-commerce

- Use of wireless digital devices such as cell phones and handheld devices to enable transactions on the Web
- Most widely used in Japan and Europe (especially Finland)
- Expected to grow rapidly in U.S. over the next five years.

Growth of the Internet

- The Internet is a worldwide network of computer networks built on common standards
- Internet was first created in 1960s
- Today world’s largest network, connecting over 500 million computers worldwide (still growing)
- Services include the Web, e-mail, file transfers, etc.
- Can measure growth of Internet by looking at number of Internet hosts with domain names:
  - In January 2005, there were 317 million Internet hosts in 245 countries, up from 70 million in 2000
  - Growing at about 35% a year since 2000
The Growth of the Internet, Measured by Number of Internet Hosts with Domain Names

Figure 1.3, Page 20

Growth of the Web

- Web is the most popular service on the Internet
- Developed in early 1990s
- Provides access to Web pages -- documents created with HTML
- Can include text, graphics, animations, music, videos
- Web content in form of Web pages has grown exponentially, from over 2 billion pages in 2000 to over 6 billion pages in 2003 and 8 billion pages in 2005

The Growth of the Web

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Insight on Technology: Spider Webs, Bow Ties, and Scale-Free Networks

- Small world theory of Web (every Web page is thought to be separated from any other Web page by a small number of clicks) has been debunked by recent research
- New research indicates Web has “bow-tie” form with a strongly connected component, In pages, Out pages, tendrils and tubes.
- Barabasi calls Web a “scale-free network” with “very connected super nodes”

- SCC – strongly connected component
- OUT page – from the centre and could not return to the centre. E.g. Corporate Intranet and pages designed to trap the visitors.
- IN pages – get to the center but cannot travel to from the centre. E.g. Pages that do not have linked to centre pages.
- Tendrils – pages do not link to the center
- Tubes – connected to each other without passing the centre.

- very connected super nodes provide connectivity to less well connected nodes.
- “Scale Free” networks parallel to growth of cancer.
- Most web search engines only index about 6M pages while the overall population of hosts is 170M.
- Need to connect to “super node” for maximum exposure.
Insight on Technology: Spider Webs, Bow Ties, and Scale-Free Networks

Origins and Growth of E-commerce

- For our purposes, we will date the beginning of e-commerce to 1995
  - First banner advertisements - October 1994
  - First sales of banner ad space - early 1995
  - Since then, has been fastest growing form of commerce in U.S.

Precursors to e-commerce include
- Baxter Healthcare (in 1970s, used telephone-based modems to reorder supplies; in 1980s, became a PC-based remote order entry system)
- Electronic Data Interchange (EDI) standards developed in 1980s; permitted firms to exchange commercial documents and conduct digital commercial transactions across private networks
- French Minitel (1980s videotext system; still in use today)

None of these precursor system had functionality of Internet

The Growth of B2C E-commerce

The Growth of B2B E-commerce

Technology and E-commerce in Perspective

1. First, the Internet and Web are just two of a long list of technologies, such as automobiles and radio, that have followed a similar historical path:
   - Creation of business models designed to leverage the technology and explosive early growth, followed by retrenchment and then a long-term successful exploitation of the technology by larger established firms
2. Second, although e-commerce has grown explosively, eventually its growth will cap as it confronts its own fundamental limitations.
Potential Limitations on the Growth of B2C E-commerce

- **Expensive technology** – Although currently a limitation, may become less so as prices of entry-level PCs fall.
- **Complex software interface** – Integration with television may reduce this limitation.
- **Sophisticated skill set** – This limitation may recede as PC operating system evolves, becomes more simple.
- **Persistent cultural attraction** of physical markets and traditional shopping experiences – unlikely to change.
- **Persistent global inequality** limiting access to telephones and computers – unlikely to change.

Growth Projections for Wireless Web Devices and Broadband Home Connections in the United States

E-commerce I and E-commerce II

- **E-commerce I**:
  - A period of explosive growth and extraordinary innovation; key concepts developed and explored
  - Begins in 1995, ends in March 2000 when stock market valuations for dot.com companies begin to collapse
  - Thousands of dot.com companies formed, backed by over $125 billion in financial capital
- **E-commerce II**:
  - Characterized by a reassessment of e-commerce companies and their value
  - Begins in January 2001; ongoing

The Visions and Forces Behind E-commerce I

- **For computer scientists**:
  - A vindication of the vision of a universal communications and computing environment
  - Belief that Internet should not be controlled by government, and remain free for all
- **For economists**:
  - Vision of a perfect market and friction-free commerce, characterized by low transaction costs, low search costs, price transparency, low menu costs, dynamic pricing, disintermediation, and elimination of unfair competitive advantages
The Visions and Forces Behind E-commerce I: 1995-2000 (cont’d)

- For entrepreneurs, their financial backers and marketing professionals, e-commerce represented an extraordinary opportunity to return far above normal returns on investment based on:
  - Worldwide access to consumers
  - New marketing communications technologies that were universal, inexpensive and powerful
  - Ability to segment market
  - First mover advantages
  - Network effects – prices drop because more users of common tools

Quarterly Amounts Raised by Venture-Backed Firms

Insight on Business: A Short History of Dot.Com IPOs

- What explains the rapid growth in private investment in e-commerce firms in the period 1998–2000? Was this investment irrational?
- Why do you think investors in 2005 are once again interested in investing in or purchasing e-commerce companies? Would you invest in an e-commerce company today?
- What’s happening today? Go to the PricewaterhouseCooper MoneyTree Web site for the latest information: http://www.pwcmoneytree.com/moneytree/index.jsp

Reasons for crash:
- Run-up in technology stocks due to enormous information technology capital expenditure of firms rebuilding their internal business systems to withstand Y2K
- Telecommunications industry had built excess capacity in high-speed fiber optic networks
- 1999 Christmas season provided less sales growth that anticipated and demonstrated e-commerce was not easy (eToys.com)
- Valuations of dot.com and technology companies had risen so high supporters were questioning whether earnings could justify the prices of the shares.

E-commerce Today: Successes and Failures

- E-commerce I a stunning technological success
- E-commerce I a mixed success from a business perspective
- Many visions developed during E-commerce I not fulfilled
  - Economists’ visions of “friction-free” commerce and Bertrand model of extreme market efficiency not entirely realized
  - Entrepreneurs and venture capitalists’ visions have not materialized exactly as predicted either
Predictions for the Future

- Technology of e-commerce will continue to propagate through all commercial activity
- E-commerce prices will rise to cover the real cost of doing business on Web and pay investors reasonable rate of return
- E-commerce margins and profits will rise to levels more typical of all retailers
- In B2C and B2B, traditional Fortune 500 companies will play growing and dominant role
- Number of successful pure online companies will decline and most successful e-commerce firms will adopt mixed “clicks and bricks” strategies
- Growth of regulatory activity worldwide

Understanding E-commerce: Organizing Themes

- Technology: Development and mastery of digital computing and communications technology
- Business: New technologies present businesses and entrepreneurs with new ways of organizing production and transacting business
- Society: Intellectual property, individual privacy and public policy

The Internet and the Evolution of Corporate Computing

Figure 1.10, Page 40

Insight on Society: Keeping Your Clickstream Private is Getting Harder

- What are the techniques of privacy invasion described in the case?
- Which of these techniques is the most privacy-invading? Why?
- Is the Internet and e-commerce any different than traditional markets with respect to privacy? Don’t merchants always want to know their customer?
- How do you protect your privacy on the Web?

Insight on Society: Keeping Your Clickstream Private is Getting Harder

- One-to-one marketing/personalization is one of the virtues or vices of e-commerce, depending on one’s perspective
- Clickstream—clicking behavior at a site; used to create a user profile by advertising networks such as DoubleClick, ValueClick, 24/7 Real Media
- Web sites also use Web logs, cookies, Web bugs and spyware/adware
- Many consumers feel these practices constitute invasion of privacy
- Ways to protect privacy—merchant and advertising network privacy policies, new technologies, laws