



GRADUATE ACCOUNTING AND COMMERCE CENTRE

DIVISION OF ECONOMIC AND FINANCIAL STUDIES

**ACCG812: Information Technology
Management**

UNIT OUTLINE

First Semester 2007

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1 Unit Outline

1.1 Overview

This unit is designed to give students a managerial or executive perspective over a very broad range of Information Technology related subjects.

It emphasises the management of Information Technology whilst reinforcing the basic concepts and/or technical perspectives of information technology.

Finally, it summarises the practice of Information Technology which will benefit students who:

- will need to work with Information Technology managers and their personnel who are facing some of the problems and are using the principles addressed in the course, or
- will have (some sort of) Information Technology management responsibility.

Whether you are an IT student looking for hints on management or a 'Finance' student looking to find out more about IT so they can be comfortable talking about it in the work place there is a lot for you in this unit.

1.2 Unit Objectives

The objectives of the unit are many and varied. Primarily it is to get students comfortable with the 'world' and 'jargon' of Information Technology.

Specifically, during the unit we will:

- explore and debate critical issues relating to managing and administering the Information Technology function,
- investigate the overall needs of an organisation and the role of Information Technology in providing them,
- examine alternative ways to match the Information Technology function to the structure and behaviour of the organisation.

The unit makes extensive use of the book's case studies (many of which were clients of the lecturer) as well as the lecturer's over 25 years of practical IT experience.

1.3 Unit Approach

This lecture-based unit will use textbook readings, supplemental readings and extensive class discussion supported by 'homework' assignments. In addition to the usual 'theory' we will examine over 70 'case studies' from both the text and the lecturer's experience.

The weekly lectures/seminars will involve approx. 2 ½ hours:

- 'answering' the questions assigned from the previous lecture, and
- discussion of the current lecture's topics.

1.4 Required Textbook

Information Systems Management in Practice; B.C. McNurlin and R.H. Sprague 7th Edition, 2005, Prentice Hall International.

Note: Copies are available in the University bookshop.

1.5 Unit Timing and Location

- Thursday afternoons commencing at 2 p.m. in room E4B314.

1.6 Unit Schedule – Summary

Week	Thursday	Chapter	Topics
1	1 March	1	Importance of Information Systems Management
2	8 March	2	The Top IS Job
3	15 March	3	Strategic Uses of Information Technology
4	22 March	4	Information Systems Planning
5	29 March	5	Distributed Systems: The Overall Architecture
6	5 April	6	Managing Telecommunications
	n/a	w/c 9 Apr. w/c16 Apr.	University Break = no classes

Week	Thursday	Chapter	Topics
7	26 April	7 8	Managing Information Resources Managing Operations
8	3 May	9	Technologies for Developing Systems
9	10 May	10	Management Issues in Systems Development
10	17 May	11 12	Supporting Decision Making Supporting Collaboration
11	24 May	13 14	Supporting Knowledge Work The Challenges Ahead
12	31 May	n/a	<ul style="list-style-type: none"> • Good, Better, Best – from an IT Department perspective • Review case study (presentations/reports) • Course summary & feedback
	7 June	n/a	<p style="text-align: center;">Final Exam</p> <p>2 p.m. (same as lecture time)</p> <p>Venue = TBA (computer lab at Macquarie)</p> <p>Students are recommended not to book flights until the end of the examination period.</p>

The course covers the following areas:

- **Leadership Issues** - Chapters 2, 3 and 4; and 'Good, Better, Best'
- **Managing The Essential Technologies** - Chapters 5, 6, 7 and 8
- **Managing Traditional Systems Development** - Chapters 9 and 10
- **Systems For Supporting Work** - Chapters 11, 12 and 13
- **Moving Into The Future** - Chapter 14

1.7 Unit Grading – Summary

Students will be graded as follows:

- Class Participation - 25%
- Research Paper - 25%
- Final Examination - 50%

Note: Students must pass the final exam to pass the Unit

- TOTAL 100%

Failure to pass the final exam will result in the student being given a mark commensurate with their exam mark.

2 Unit Schedule – Detail

2.1 Lecture 1 – 1 March

2.1.1 The Importance of Information Systems Management

This lecture / chapter traces the growing importance of information systems management and presents a conceptual model to show the key areas, how they fit together, and the principal issues for CIOs in each area.

It sets up the context for the book: first by describing today's business organizational and technical environment; second by describing a framework for viewing the work of the IS organization; and third by describing an IS organization's evolution from 1985 to present.

MeadWestvaco, described from the mid-1980s to the present, is a case example of how these areas are being implemented in an IS organization.

2.2 Lecture 2 – 8 March

2.2.1 The Top IS Job

The responsibilities of the head of the IS function now go far beyond operating highly efficient "production programming shops." These executives must understand the goals of the enterprise and work in partnership with line executives to deploy IT to attain the organization's goals.

This lecture / chapter discusses the top IS executive's job, looking first at the top job itself by summarizing six major responsibilities, and then exploring several ways the information systems function is evolving in organizations.

The SABRE system, Lifescan, BP, Aetna Life and Casualty, Duke Energy International, AXA Financial, Wal-Mart Versus K-Mart, and Rexam provide examples of how the role of systems management is changing.

2.3 Lecture 3 – 15 March

2.3.1 Strategic Uses of Information Technology

Use of the Internet by businesses was the strategic use of information technology a few years ago. Then came the dot-com bust. Questions remain:

- Has the revolution ended?
- Does an even larger revolution loom?
- Are proprietary systems dead, only open systems will survive?
- Does IT even matter any more, strategically?

This lecture / chapter addresses those questions.

Strategic roles of IT fall into one of three categories:

1. “working inward” (improving a firm’s internal processes and structure),
2. “working outward” (improving the firm’s products and relationships with customers) and
3. “working across” (improving its processes and relationships with its business partners).

Stated simply, the strategic value of IT comes from communication, which allows companies to reorganize and integrate business processes within and across boundaries.

With the rapid growth of the Internet, a public network with low communication costs, many of the traditional strategic systems are being replaced with Internet-based, e-business applications.

Grainger, GE Power Systems, Wire Nova Scotia, The Shipping Industry, Cisco Systems and UPS Supply Chain Solutions, Semco, A Day in the Life of an E-lancer, General Mills and Land O’ Lakes, Sara Lee Bakery Group, and Dell Computer provide examples of how companies are using information systems in strategic roles.

2.4 Lecture 4 – 22 March

2.4.1 Information Systems Planning

Systems planning, especially strategic systems planning, is becoming more difficult and more important at the same time. Technology is changing so fast that it is seems futile to plan for it, yet the dependence on this technology makes planning its effective use a matter of organizational life and death.

This lecture / chapter contrasts the traditional view of planning with the sense-and-respond approach of strategy-making, presenting seven IS planning techniques.

Case examples include Microsoft, Skandia Future Centers, Shell Oil, an automobile manufacturer, Cisco Systems, and Electric Power Research Institute.

An important point to remember is that planning does not necessarily mean determining what decisions to make in the future. Rather, a better view of planning is developing a view of the future that guides decision making today. This seemingly subtle difference turns out to be significant in the way that managers approach and execute the planning process.

2.5 Lecture 5 – 29 March

2.5.1 Distributed Systems: The Overall Architecture

This lecture / chapter describes seven types of distributed systems and discusses the concepts of IT architecture and IT infrastructure.

Case examples include Northwest Airlines, an aerospace company, Chubb & Son Insurance Company, The SABRE Group, 3i, General Motors, FMC Corporation, and the city of Sunnyvale.

An IT *architecture* is a blueprint. An IT *infrastructure*, on the other hand, is the implementation of an architecture. Today, people talk about IT infrastructures and the applications that operate on those infrastructures. The first IT architecture was mainframes doing all the processing with dumb terminals providing some input and output. Today, devices of all sizes handle input-processing-output – a much different architecture.

2.6 Lecture 6 – 5 April

2.6.1 Managing Telecommunications

Telecommunications is the flow of information among individuals, work groups, departments, customer sites, regional offices, between enterprises, and with the outside world.

The Internet has also opened up a “cyberspace” where people can be in a virtual world, where organizations can conduct business, and in fact, a place where organizational processes exist. This is providing the foundation for the e-business economy, as just about everything about telecom is shifting.

This lecture / chapter devotes itself heavily to this evolving telecommunications scene, utilizing case examples from ICG Communications, National Semiconductor, Toronto Pearson International Airport, Louisville Metro Sewer District, BMW, American Greetings, and Keebler.

2.7 Lecture 7 – 26 April

2.7.1 Managing Information Resources

This lecture / chapter explores the management of data, information, and knowledge.

It begins by identifying some problems in managing data, and then surveys the evolution of database management systems, including the next-generation systems.

It explores the various types of information that companies need to manage as they treat information as an organizational resource. Then it concludes by discussing one of the most important issues facing companies today: how to manage knowledge.

Case examples include Monsanto, Owens & Minor, HICSS Personal Proceedings, Tapiola Insurance Group, Tennessee Valley Authority, Eastman Chemical Company, and Groove Networks.

2.7.2 Managing Operations

The three major operational issues discussed are outsourcing information systems functions, information security, and planning for business continuity.

Due to mergers, the Internet, e-commerce, and the September 11 terrorist attacks, the subject of computer operations has been receiving a lot of attention. Systems operations are important because, if they are not professionally run (and backed up properly), a computer or network crash could shut down a company's business for some period of time. The main change in operations is a shift in viewpoint. Traditionally, managing operations has meant managing *inward* — managing one's own operations staff, including those who work in the data center, data administration, network administration, and systems programming. Today, it is just as likely to mean managing *outward* — managing the company's relationships with IT external service providers (ESPs) who have taken over day-to-day operational work.

Case examples include Microsoft, ANZ Banking Corporation, Mobil Travel Guide, Eastman Kodak, Honda Motor Company, Exult, Credit Card Fraud, Plymouth Rock Assurance, and Household International.

2.8 Lecture 8 – 3 May

2.8.1 Technologies for Developing Systems

The traditional approach to system development evolved to give the process more discipline, control, and efficiency. However, problems remained.

In the early 1980s, fourth generation languages and prototyping emerged to improve the process further. In the late 1980s, two other important system development approaches emerged: computer-aided software engineering and object-oriented development. The 1990s promised increased developer productivity and reduced maintenance by linking together components and the widespread adoption of ERP systems. Then, in the late 1990s, e-business and Internet-based systems appeared, and the beginning of a new industry, application service providers (ASPs), represented the Internet version of outsourcing applications.

Technologies and tools have changed, but there's still an awfully lot of systems work to be done, in-house or outsourced.

This lecture / chapter reviews this evolution of system development to provide an understanding of the underlying principles of building applications. It discusses underlying technologies, development methodologies, Internet-based systems, and project management.

Case examples include Du Pont Cable Management Services, MGM, Colgate-Palmolive, a telecommunications firm, and Hong Kong Exchanges and Clearing, and Berkins with a discussion case on ExxonMobil.

2.9 Lecture 9 – 10 May

2.9.1 Management Issues in Systems Development

This lecture / chapter discusses issues IS management faces when developing systems:

- staffing,
- successfully implementing systems (change management),
- ways to replace legacy systems, and
- measuring the benefits of systems.

Case examples include A Day in the Life of a Project Manager, The BOC Group, Dow Corning, Amazon.com, GTE Directories, Toyota Motor Sales, and a trucking company.

2.10 Lecture 10 – 17 May

2.10.1 Supporting Decision Making

This lecture / chapter discusses technologies for supporting decision making:

- decision support systems (DSS),
- data mining,
- executive information systems (EIS), and
- expert systems.

It then discusses IT issues related to creating the real-time enterprise.

Case examples include: a problem-solving scenario, Ore-Ida Foods, a major services company, Harrah's Entertainment, Xerox Corporation, General Electric, American Express, Delta Air Lines, a real-time interaction on a website, and Western Digital.

2.10.2 Supporting Collaboration

This chapter discusses various kinds of groups and the types of systems that support their collaborations.

This lecture / chapter focuses on groups, rather than individuals, and the systems and technologies that support the communication and interaction among people as they work in groups.

As in all the lectures / chapters in this “support systems” section, it emphasizes goal-based systems, which are those systems that support work activities that do not follow the same or similar process every time and also deal with information (and knowledge) that cannot be easily encapsulated.

It ends by discussing managing collaboration in virtual organizations.

Case examples illustrating collaboration include DaimlerChrysler, The Open Source Movement, Burr-Brown, HICSS, and Boeing-Rocketdyne.

2.11 Lecture 11 – 24 May

2.11.1 Supporting Knowledge Work

This chapter isolates two of the most illusive, yet important, topics that relate to supporting knowledge work:

- managing knowledge and
- computer ethics.

Managing knowledge means encouraging people to share knowledge in a form that others can easily access, as well as customer knowledge and researchers' knowledge – and how to embed this outside knowledge in a real-time system. Under this topic are the intellectual capital issues of valuing intellectual property, usage, and sharing knowledge.

Computer ethics deals with such areas as information privacy, intellectual property rights and other legal, ethical, and issues relating to information and knowledge. Old laws and regulations were written before the computer age, yet they are being applied to today's software, challenging the applicability the entire realm of intellectual capital challenges.

Case examples involving knowledge work include Buckman Laboratories, BP, a Pharmaceutical Company, Skandia Future Centers, a U.S. Energy Company, a North American bank, Partners HealthCare System, and Clickwrap Agreements.

2.11.2 The Challenges Ahead

The computer's capability to leverage people's brain power allows companies to not only communicate in new ways, but to compete in new ways.

Using the four goals for thriving in the e-world environment goals as a base, this lecture / chapter explores the organizing principles being proposed for thriving in an Internet-based economy.

It looks at the challenges facing IS organizations worldwide by assembling a collage of opinions about possible principles underlying the e-world. Acknowledging our transformation into a networked world, it describes three viewpoints of the differences between non-networked and networked and their importance.

The lecture / chapter concludes with ways to move forward with the people who need to lead us into this new business world and the people who will be led into it.

Case examples include NYNEX, a football team, Cemex, Semco S.A., National Semiconductor, Sun Microsystems, Capital One, MIT's IT for the Non-IT Executive Program, and SIM's Strategic Business Leaders Program

2.12 Lecture 12 – 31 May

2.12.1 Good, Better, Best – From an IT Department perspective

In this extract from his award winning course, Michael relates his experience and observations in relation to professionalism and success in the IT industry. A few of the 'stories' come from his own experience but most come from a number of his colleagues and friends, many of whom have been very successful 'professionally' and, equally importantly, they have been successful personally.

Originally developed as a training course for 'new hires' at KPMG called 'Things I Wish My Partners and Managers Had Told Me'; it developed into 'Good, Better, Best'. In addition to the IT Department version there is also a generic 'team' version along with versions for Professional Services Firms and Internal Audit Departments.

This IT Department version has been developed with significant input from some of Australia's and America's leading IT professionals. Matthew and Matthew sincerely appreciate their input and contribution.

As this is the last lecture for the course it will also cover revision of the semester and 'critique' of the case studies.

3 Unit Grading

3.1 Class participation

'Class Participation' will consist of both a student's actual participation (contributing to discussion, answering questions etc.) during the formal 'lectures' combined with the quality of their 'homework' which will be required to be submitted each week.

3.1.1 'Homework'

At the conclusion of each lecture, students will be given their 'homework' assignments, which will consist of the following:

- Summarise what you believe are the key five points of (each of) the chapter(s) covered by the lecture. These will be the five most important points in the lecture/chapter, as you perceive them. Include in your answer why you believe each point is important.
- Answer a series of 'Review' and 'Discussion' questions at the end of each chapter as set by the lecturer following each lecture.

Students should bring two copies of their homework to the following week's lecture. One of these copies is for the student to use during discussion etc. The other will be handed in to the lecturer for assessment. Your name, student id and signature should be on the front page.

An example 'front page' is included on the Unit WebCT site.

3.1.2 Assessment

This is an evaluation of your contribution in class to the discussion of the lectures/textbook and questions set along with your submitted formal (written) answers.

Of the 25% allocated, students' grades will be prorated weekly with the following being an indication of the marks a student can expect to receive:

- 25% - Asks good questions, makes valuable observations and answers questions effectively on an ongoing basis.
- 18% - A frequent participant, but all questions, answers or observations are not always effective.
- 12% - Only participates infrequently or questions/answers do not reflect adequate preparation.
- 6% - Very rare preparation or questions/answers reflect little or no preparation or very late to class.
- 0% - Displays no sign of life or absent for the entire class.

Students are expected to attend class and participate.

Not attending class will have an influence on this portion of a student's grade since they can't participate if they don't attend.

3.2 Research Paper

This paper is worth 25% of assessment and is to be submitted following Lecture 10 (17 May).

3.2.1 The required paper: E-Government – Best practice around the world

Background

Your first job after graduating from Macquarie University is that of Special Projects Analyst for a major Government department that advises your country's Head of State (Prime Minister or President) and his/her Cabinet on technology.

You report to the Senior Technology Advisor who, in turn, reports to the Head of the Department.

As you have come to see in your job – it is not only business that is effectively using the Internet, E-Commerce etc. but many Government departments are having similar success.

While the Department (and the Government) is proud of the use of Internet technology etc. to communicate and work with your country's citizens they wonder whether they could be doing more or doing it better.

They would like to know what other governments / countries are doing in this area.

Your Mission

He has asked you to prepare his a briefing paper on what is considered 'best practice' E-Government around the world.

In particular he would like to know of any 'cutting edge' (leading) uses of technology by countries in the E-Government area.

3.2.2 The 'rules' for undertaking this project

The paper is to take a team approach so students will need to work with other class members. Teams of four are preferred.

Please note the following:

- The paper should not exceed 6000 words
- You are able to use any e.g. graphics you want. Feel free to be creative.
- 2 copies of the paper should be submitted 2nd should be 'electronic' – on disk or CD.
- The paper should contain a cover sheet that shows the name of each member of the team along with the proportionate contribution made by each member (if the latter is omitted it will be assumed that each team member made an equal contribution).
- The student id and signature of each team member should also be on this cover sheet.
- Note that the paper can be divided between members of the team. It is not necessary for each team member to work on each section of the project.
- The mark for the project will be awarded to each team member with an adjustment in instances where not all team members contributed equally.
- Whilst the assignment should follow academic standards in relation to non-plagiarism, recognition of sources etc.; the report presented should be of a professional (business) standard in terms of content and layout. It should include:
 - A Table of Contents
 - An Executive Summary
 - Appropriate use of headings, sub headings etc.
 - **Single spacing** and no 'widows and orphans' (paragraphs that go over a page)

4 Web Site Details

A WebCT site has been set up for this Unit at:

<http://online.mq.edu.au>

Students log into WebCT using their Student ID Number and myMQ Portal Password.

Click on ACCG812 to access this unit's resources.

This site contains copies (PowerPoint shows) of all the lecture notes / presentations.

It also contains other relevant presentations and other information.

In addition, it contains i-Lectures which are used in the online running of this unit – OLACCG812.

These are the actual 'face to face' lectures (audio only) from 2nd semester 2005 and Michael thanks the class for letting them be recorded.

These will prove useful should e.g. a student miss a lecture / want to revisit the lectures.

5 Visiting Lecturer Information

Michael Matthew, Principal, Matthew and Matthew

mandm@bigpond.net.au

Formerly a partner with a 'Big 4' accounting firm responsible for their Risk Management practice in Sydney, Michael left the then "hallowed halls" in September 1998 to form his own Business Consulting practice, Matthew and Matthew with his similarly qualified wife.

Matthew and Matthew is a niche business consulting firm whose range of services includes providing outsourced finance department services (accounting) to a range of companies including Australian subsidiaries of foreign companies.

They also specialise in writing customised training courses for organisations on things like:

- Finance for non-finance executives
- Leadership and teamwork
- Report writing
- Sales and proposal writing

Michael also still practices in the project management area including acting as a project manager / 'angel'. Michael specialises in running facilitation sessions for companies in terms of planning (IS and other) and helping resolve problems, particularly with projects that have 'run off the rails'.

One of Michael's major clients is the Information Risk Management practice of KPMG where he operates as a 'skills coach' for Australia and New Zealand.

Other current and recent clients that he is 'allowed' to tell us about (i.e., they weren't clients where he was called in to look at 'sick' projects) include:

- Macquarie University
- Premier Media Group (Fox Sports)
- News Limited
- Australian Rugby League Foundation
- KPMG
- IAG (nee NRMA)
- Fox Studios Australia

Michael is described as an 'interesting' and entertaining speaker who has won numerous best paper awards. He 'lives' by the creed of his hero: Jesse 'The Body' Ventura (ex-WWF wrestler and former Governor of Minnesota and U.S. Presidential aspirant for 2008): **"You've gotta tell it like it is"!**