

4. Technology for e-Business

Module Number: TBA	Module Title: Technology for e-Business	
Module Status: Core		
Semester: 2	Level: M (7)	Credits: 15
Module Leader: Áine McManus		
Direct/Assisted Learning Hours: 48	Lectures: 36 Seminars/Workshops 12	Independent Student Learning: 104
Assessment Mode & Weighting: Class Participation 10%; Coursework 90%;		
Prerequisites: None Concurrent Module: None Post Requisites: None Advisory Constraints: None		

1. Rationale for Module

Although the World Wide Web has enabled the widespread dissemination of information using hypertext as the paradigm, active web sites have been the key driving force behind the e-Business explosion.

This module is aimed at developing problem-solving, strategic and managerial skills in all aspects of E-Business. Students will need to apply an in-depth knowledge of the underlying subject in the development of new solutions and services. They will need to be adaptable in dealing with problems and unforeseen situations.

2. Principal Modules Aim

The overall aim of the course is to provide students with knowledge of the key concepts underpinning modern e-Commerce systems with an emphasis on system architecture, information architecture, and development tools and processes. Advanced topics such as security and privacy issues and agent technology will also be considered.

At the end of the course, students should have a broad understanding of the WWW architecture and associated technologies for developing e-Business applications include client-and server-side programming, web services, agents, etc. Students should also be able to critically compare the various technologies and should also be able to select appropriate technologies for a given problem. They should also be able to build practical e-Business solutions using such technologies.

This module also helps students investigate crimes in the electronic age from both technical and legal points of view. It addresses three important aspects of the subject, namely, prevention, detection and legal sanctions.

3. Learning outcomes

At the end of the unit the learner is expected to be able to:

- Evaluate the critical issues relating to e-Business applications. **(TEBL1)**
- Evaluate technologies which support application integration. **(TEBL2)**
- Select and apply technologies used for service description and discovery. **(TEBL3)**
- Design and implement an application which provides web services. **(TEBL4)**
- E-crimes: prevention, detection and legal sanctions. **(TEBL5)**

4. Teaching and Learning Strategies

The module is taught using a variety of teaching methods including lectures, seminars, case studies and student centred learning. Practical work culminates in the development of an Internet services application.

- Students carry out exercises individually and in groups to develop integrated elements of an e-Business application infrastructure, allowing students to apply conceptual knowledge together with the application of design and development skills. The learner will develop their conceptual thinking from data and process-centric analysis towards the user centred viewpoint required to support a successful trading model.
- Case studies are analysed by students as individuals and as members of a group, enabling them to discuss and compare various approaches to solving business problems and developing solutions by applying appropriate software technologies.
- Seminars will lead students through the research, development and evaluation of these software technologies.

- Students are expected to maintain a current awareness of trends and developments in the rapidly changing field and can expect to undertake both directed and independent research to achieve this.

5. Indicative Content

Topics to be covered will include:

- *Architecture of an e-Commerce system:* Function and implementation of major system components (networks, web servers, browsers, proxies, caches, databases); critical system properties (scalability, reliability, security, safety)
- *Developing e-Commerce systems:* Development team, development process
- *Web data formats:* XML, HTML, XHTML, WML, RSS, ebXML and ways of transforming and displaying them
- *Data modelling and storage:* Relational database management systems (RDBMS); SQL; data warehousing
- *Web Services:* Introduction to the concept of web services and service-oriented architectures (SOA); XML and SOAP; web services description and discovery (WSDL, UDDI)
- *Development tools and technologies:* The Open-Source software stack (Apache, Tomcat, Axis); Microsoft .NET
- *Advanced topics:* Security and privacy, search engine technology
- *e-Crimes:* trends in e-crimes; tools for committing e-crimes; technologies for detecting e-crimes; computer forensics; laws relating to e-crimes; and criminal sanctions.

This material will be complemented by a problem-based learning exercise, to design and evaluate e-Business systems for student-defined companies.

6. Assessment Strategy

Assessment will be through a combination of coursework and unseen examination. Self and peer assessment will also be used in the assignment in order to encourage responsibility, autonomy and professional practice.

- Exam: 30% -

Learning Outcomes TEBL1, TEBL2 and TEBL3 will be assessed by formal examination, part of which will be an in-depth analysis of a case study, giving the learner the opportunity to undertake preparatory research and fundamental analysis appropriate to the context.

- Assignment: 70% -

Learning Outcome 4 will be assessed by the student developing a working e-Business application.

7. Indicative Reading/Research

Essential Texts

Norris, M., West, S., and Gaughn, K., (2000) *E-Business Essentials: Technology and Network for the Electronic Marketplace*, John Wiley & Sons Inc, ISBN: 0471852031

Bocij, P., Greasley, A., Chaffey, D. and Hickie, S., (2005) *Business Information Systems: Technology, Development and Management for the E-Business*, Financial Times/Prentice Hall, ISBN: 0273688146

Ince, D. (2002) "Developing Distributed and e-Commerce Applications", Addison Wesley.

Rosenfeld, L. and Morville, P.. (2002) "Information Architecture for the World Wide Web" 2nd Edition, O'Reilly.

Supplementary Texts:

R. Gordon, S., (2004) *Global Information Technology and E-Business for the Financial Services Industry: Selected Case Studies*, Ivy League Publishers, (ISBN: 0964838257).

Bocij, P., Greasley, A., Chaffey, D. and Hickie, S., (2002) *Business Information Systems: Technology, Development and Management for the E-Business*, Financial Times Management, ISBN: 027365540X

Norris, M., West, S. and West, S., (2001) *e-Business Essentials: Technology and Network Requirements for Mobile and Online Markets (2nd edition)*, John Wiley & Sons Inc., ISBN: 0471521833

McKie, S., (2001) *E-Business Best Practices: Leveraging Technology for Business Advantage*, John Wiley & Sons Inc., ISBN: 0471402516

Laudon, K. and Traver, C., (2004) *E-Commerce: Business, Technology, Society* (3rd Edition), Pearson/Addison Wesley, ISBN: 032120056X

O'Brien, J.A., (2003) *Management Information Systems: Managing Information Technology in the E-Business Enterprise*, McGraw-Hill, 6th Edition, ISBN: 0072823119

Davis, W.S. and Benamati, J., (2003) *E-Commerce Basics: Technology Foundations and E-Business Applications*, Addison-Wesley, ISBN: 0201748401

Gattiker, U.E.,(2004) *The Information Security Dictionary: Defining The Terms That Define Security For E-business, Internet, Information And Wireless Technology*, Kluwer Academic Pub, ISBN: 1402079982

Iverson, W. (2004) "Real World Web Services", O'Reilly.