



eBusiness in Education

Case studies on the effective use of electronic business in the education sector

These case studies are intended to provide managers in the education industry and other stakeholders with a reliable source of information on the current and potential use of electronic business (eBusiness) to improve efficiencies in the administration of education delivery. The focus is on administrative functions and not the online delivery of learning (eLearning) in order to promote a better understanding and discussion of the role of eBusiness in education.

The information in this publication is based on the research and consultations of John Mitchell from John Mitchell & Associates on behalf of the National Office for the Information Economy (NOIE). The Department of Education, Science and Training (DEST) has provided support and contributed to funding for this project.

National Office for the Information Economy

May 2002



Copyright
Commonwealth of Australia 2002

ISBN (print) 1 74082 001 8

ISBN (online) 1 74082 012 6

This work is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any process without prior written permission from the National Office for the Information Economy. Requests and inquiries concerning reproduction and rights should be addressed to:

The Chief Executive Officer
National Office for the
Information Economy
GPO Box 390
Canberra
ACT 2601
Australia

This publication is also available online
from www.noie.gov.au

Contents

Executive Summary	v
Introduction	1
Section 1: Case studies	3
1.1 Integrated eBusiness: Queensland University of Technology	4
1.2 Customer Relationship Management: Securities Institute of Australia	10
1.3 Systemic Strategic Planning: Victorian TAFE	15
1.4 eProcurement: TAFE South Australia	20
1.5 Enterprise Resource Planning: Department of Education, Tasmania	23
1.6 eProcurement: ACT Schools	28
1.7 International Case Study: University of California, Los Angeles (UCLA)	32
Section 2: Scan of eBusiness across the education sector	39
2.1 Scan of eBusiness in Higher Education	40
2.2 eBusiness in Vocational Education and Training (VET) and in Adult and Community Education (ACE)	52
2.3 Scan of eBusiness in Schools	65
Section 3: Themes from the Study	75
Appendices	87
Appendix 1: Definitions of key terms	87
Appendix 2: Features of eBusiness impacting on educational administration	90
Appendix 3: Interviewees, Survey Respondents and Contacts	92
Appendix 4: Notes from HES eCommerce Conference, 31 May – 1 June 2001	96
Appendix 5: References	98

Abbreviations

The following abbreviations are used in this report:

ACE	Adult and Community Education
ANTA	Australian National Training Authority
CRM	Customer Relationship Management
DEST	Department of Education, Science and Training
ERP	Enterprise Resource Planning
IT	information technology
NOIE	National Office for the Information Economy
SCM	Supply Chain Management
TAFE	Technical and Further Education
VET	vocational education and training



Executive Summary

Scope

This report broadly identifies the current use of eBusiness in each part of the education sector in Australia, including plans for the future. It identifies how eBusiness can improve efficiencies in the principal industry processes and supply chains operating in each part of the sector. It identifies gaps in and impediments to the take-up of eBusiness and provides a range of case studies. The report also identifies examples of leading practice; and identifies the best opportunities for action by stakeholders to enhance the use of eBusiness in administering educational institutions and programs.

The focus of this report is on the higher education and vocational education and training (VET) parts of the education and training sector, and also covers the schools, adult and community education parts. It concentrates on the administrative or 'back office' aspects of online educational functions, rather than online learning applications. The back office of an organisation performs functions in relation to fields such as finance, human resources, information technology, general administration, purchasing and stores. Hence, the report does not cover the use of online technology to facilitate learning outcomes, which is an educational "front office" activity.

Definition and methodologies

eBusiness means conducting business electronically, both within an organisation and externally, with clients, communities and partners. eBusiness involves re-designing business processes and the use of information and networking technologies. Business goals made possible by eBusiness include improving efficiencies, reducing costs, increasing speed of transactions, expanding markets, enhancing business partnerships and, most importantly, providing additional value for clients.

The main methodologies used were the preparation of seven case studies and the undertaking of national consultations and research to inform an appraisal of the sector. The seven case studies included two from higher education, two from the vocational education and training (VET) sector, two from the schools sector and one from overseas.

Each case study provided insights into different aspects of eBusiness, as follows.

Case studies

Case Studies	Sector	State/ Territory	Aspect of eBusiness
Queensland University of Technology	Higher Education	QLD	Integrated eBusiness across an organisation
Securities Institute Australia	Higher Education	NSW	Customer Relationship Management (CRM)
TAFE Victoria MIS eBusiness Project	VET	VIC	Strategic planning for eBusiness across a State network
Douglas Mawson Institute of Technology/SA Govt	VET	SA	eProcurement in a VET institution
Tasmanian Schools	Schools	TAS	Enterprise Resource Planning (ERP) in schools
ACT Schools sector	Schools	ACT	eProcurement in the school sector
University of California, Los Angeles (UCLA)	Inter national	California, USA	International good practice

One group of case studies is revealing about eBusiness plans for the future. The Victorian TAFE case study (Section 1.3) and the Tasmanian Schools case study (1.5) provide insights into system-wide planning activities, while the Queensland University of Technology case study (1.1) and the University of California Los Angeles case study (1.7) provide examples of higher education organisations' plans for eBusiness.

The other case studies provide examples of eProcurement being tested in specific quarters of institutions (eg. within sections of TAFE SA, case study 1.4 and ACT Schools, case study 1.6) in comparison with Customer Relationship Management impacting across the whole of an organisation in the Securities Institute of Australia (case study 1.2) and Enterprise Resource Planning (ERP) impacting on many processes and roles within the Department of Education, Tasmania.

Major findings

While eBusiness in education is in its early stages worldwide, a small number of Australian organisations have reached an advanced stage and there is a range of important eBusiness projects and initiatives starting up around the sector. eBusiness developments in educational organisations overseas are similarly in their infancy. Australia's leaders in eBusiness are on the pace internationally.

The Australian education sector has much to gain from embracing eBusiness more extensively, but the gains will only be realised after considerable planning and management effort. While the benefits of eBusiness are many, its implementation is complex. It requires considerable work to implement thoroughly and the risk of mistakes is high unless adequate planning is undertaken. Most educational organisations that adopt eBusiness practices take a number of years, not months, to implement the required processes and technologies.

An important early requirement for the successful implementation of eBusiness in the education sector in Australia is for educational administrators to be clear about user concerns, not just focus on technology selection.

If eBusiness is to form deep roots in education, the important focus needs to be on users rather than on the availability of technology for eBusiness. Powerful business-to-business technology is available for educational organisations and is applied by leaders in the field. However, some users, such as suppliers, partners and educational organisations, are reluctant to adopt eBusiness. This could be due to reasons such as the conservative culture of their organisations, funding limitations or the perceived lack of business imperatives. Similarly, powerful business-to-customer eBusiness technology is available, but end-user (student, community) demand and access to technology are uneven.

Educational managers are coming to a better understanding of the strategic business issues surrounding the successful use of eBusiness. The pace at which these issues are addressed will determine how quickly the benefits of eBusiness can be realised in the education sector. These strategic business issues include:

- identifying the customer service imperative for eBusiness for each organisation involved in an eBusiness initiative;
- appreciating the advantages and disadvantages of incremental implementation of eBusiness versus a wholesale implementation;
- examining other organisations' cost benefit analyses for their eBusiness initiatives and developing a cost benefit analysis for one's own organisation;
- understanding the value of national, integrated approaches to eBusiness in education versus local initiatives in eBusiness;
- understanding the need to develop user support systems, to underpin eBusiness developments;
- identifying equity concerns and the emergence of the digital divide;
- working within infrastructure limitations, such as low bandwidths in remote areas.

Strategic planning for the implementation of eBusiness within an organisation or a system is critical. This report provides individual organisations and education systems with a range of practical steps and theoretical models to progress eBusiness initiatives.

Practical implementation steps and good practice criteria

Despite the complexity of eBusiness, it is possible to identify practical steps that educational administrators need to take in adopting eBusiness. As an example, the University of California, Los Angeles, case study identifies a wide range of good practice criteria, as set out in the following table.

Table 2: Good practice criteria for eBusiness projects, identified in the UCLA case study

Good practice criteria from the UCLA case study	Description of UCLA good practice
1. Clarity of business drivers and goals	UCLA has a concise list of business drivers and goals for its eBusiness initiatives.
2. Clarity about users' needs	UCLA is basing major decisions on its knowledge of key user groups, including staff, students, suppliers and partners.
3. Focus on return on investment	UCLA is determined to obtain a return on investment from its involvement in eBusiness, particularly by leveraging off investments in existing systems.
4. High-level executive support	The eBusiness development is being driven and supported from Chancellor level down.
5. Commitment of adequate levels of funding	UCLA's funding includes US\$7m over a seven year period to web-enable the business functions in the university.
6. Ability to integrate earlier initiatives with new plans	UCLA is integrating the earlier initiative of MyUCLA, developed by an individual in one Department, with a corporate-wide plan for further developments.
7. Thorough planning at all levels	UCLA has developed an extensive plan for administrative information systems, involving a clear depiction of the technology required. The planning covers technology infrastructure and administrative information systems.
8. Appropriate technology architecture	UCLA has an extensive technology architecture plan for its eBusiness developments.
9. Development of an effective web interface to legacy systems	UCLA developed a web interface to integrate with legacy software systems such as their finance system.
10. Use of effective change management strategies	UCLA has a devolved, non-mandatory approach to the administration of its 400 Departments, preferring to win their involvement in eBusiness by making the benefits attractive.
11. Provision of staff development	UCLA has and is providing staff development for staff affected by eBusiness changes.
12. Use of extensive alliances with software developers and hardware providers	UCLA has long-term alliances with a range of companies.
13. Development of enabling policies	Development of policies and procedures in relation to issues of security and privacy of electronic information about students.
14. Use of trials	UCLA is piloting the use of eProcurement in 2001.
15. Evaluation of trials	UCLA will thoroughly evaluate the eProcurement trial.

Australian good practice

These good practice criteria are met by an equivalent body in Australia – the Queensland University of Technology, profiled in Section 1.1 of this report – indicating that world class eBusiness planning and management skills are also resident in Australian educational administrators. Other case studies in Section 1 also provide examples of good practice in planning and implementing eBusiness.

Further examples of leading practice in Australian education are provided in the report, such as:

- Western Australia's WestOne, the provider of online VET services, and
- DEST's Internet-based communication system, called the Training and Youth Internet Management System (TYIMS). The TYIMS initiative is a comprehensive example of eBusiness for the delivery of online services between Government and VET providers.

International leading practice

eBusiness planning activities and implementations are occurring in educational organisations around the world. Generally the developments are ad hoc, occurring in single institutions or in part of the sector and not in others. As in Australia, most eBusiness activities overseas are in pilot or start-up mode, but some developments are proving successful and are extensive or highly innovative. International examples cited include:

- The London Universities Purchasing Consortium which models good practice in using a collaborative approach between different universities to achieve savings with online suppliers, for instance, for the supply of energy to universities.
- McGraw Hill Education in Canada, one of the world's largest producers of print and electronic learning solutions, which is using Oracle's E-business Suite to provide one global system for all customer service, production, order fulfilment and business management functions.
- The University of Waikato in Hamilton, New Zealand, which is conducting a trial of eProcurement, developing student and staff portals, undertaking national research and conducting experiments with marketplaces and digital exchanges.

Understanding the business case

One of the clear messages to emerge is the importance of every educational organisation understanding their business case for eBusiness. This is true whether they are embracing a comprehensive approach to eBusiness, or just one component, such as Customer Relationship Management (CRM) or eProcurement.

Different business cases are needed for different eBusiness initiatives. For instance, a business case to implement eBusiness within a stand-alone, single campus university will be different to a business case to implement eBusiness within all TAFE Institutes in one State. Additionally, a business case to implement a range of eBusiness components within all TAFE Institutes in one system will be different to the case to implement just one aspect of eBusiness, such as eProcurement.

Valuing relationships with suppliers and vendors

Developing good working relationships between educational institutions on the one hand and suppliers and vendors on the other is a key success strategy.

The seven case studies included in Section 1 provide testimony to the value of educational organisations developing collaborative relationships with commercial parties such as vendors and manufacturers.

Opportunities for stakeholders to enhance eBusiness

The research for this report indicates that the best opportunities to enhance the use of eBusiness by stakeholders such as educational organisations will flow from:

- educational administrators' development of a sophisticated understanding of the needs of customers and students for electronic services;
- conducting an environmental scan of internal strengths and weaknesses and external opportunities and threats in relation to eBusiness;
- understanding how the eBusiness technology will impact on organisational structures and staff development needs; and
- addressing cultural resistance to eBusiness.

The above issues will come into focus early in an eBusiness project, during the strategic planning stage of scanning the environment, including internal resources.

All stakeholders can add most value and have their major impact on eBusiness in education by focusing on the above concepts at the front-end of the planning cycle.

Compatible and interoperable systems improve efficiency

Individual institutional initiatives need to be underpinned by a strategic framework and the ongoing development, propagation and maintenance of technical standards to ensure different systems are compatible and data can be transferred between them. The greater the extent of system interoperability at all levels, the greater the potential efficiency improvements.

Comprehensive planning is essential in order to avoid the pitfall of creating islands of incompatible technologies. Efficiencies are realised when each new item of technology can be integrated with existing technologies to fit with an overall strategic plan for information technology in the organisation. For example, if systems used for administrative purposes can be integrated with the systems used to provide student services, multiple processing of the same information can be avoided. The use of technical standards that ensure ongoing interoperability between systems is important for increasing efficiency from integrated applications.

Introduction

Factors driving eBusiness

eBusiness is having a significant impact on whole industries in Australia, such as banking and finance, on businesses such as travel agents and share brokers, on metropolitan and regional areas and on individuals working in many industries.

The factors driving eBusiness include:

- the availability of global communication networks;
- the development of internal supply chain efficiencies;
- the emergence of new business models to take advantage of the new technology and to cut costs out of the supply chain; and
- the desire of governments and businesses to provide enhanced services for customers.

Developments in eBusiness are beginning to generate opportunities in the business of administering educational organisations.

First steps

A challenge for the Australian education and training sector is to know where to start, when adopting eBusiness. This study aims to assist educational administrators, by identifying the combination of business principles, business processes, planning and implementation strategies that are required to launch eBusiness. By examining current case studies of eBusiness in education, this study highlights some of the practical steps that can be taken by those working within the education and training sector, particularly by decision makers and educational leaders.

Focus on the back office

The focus in this report on the business processes underpinning eBusiness begins to address a major gap in the research and in the knowledge base in educational management in Australia. In the education and training sector in Australia much innovative activity in recent years has been directed at the 'front of house' field of online learning. While the focus by educational organisations on the front office

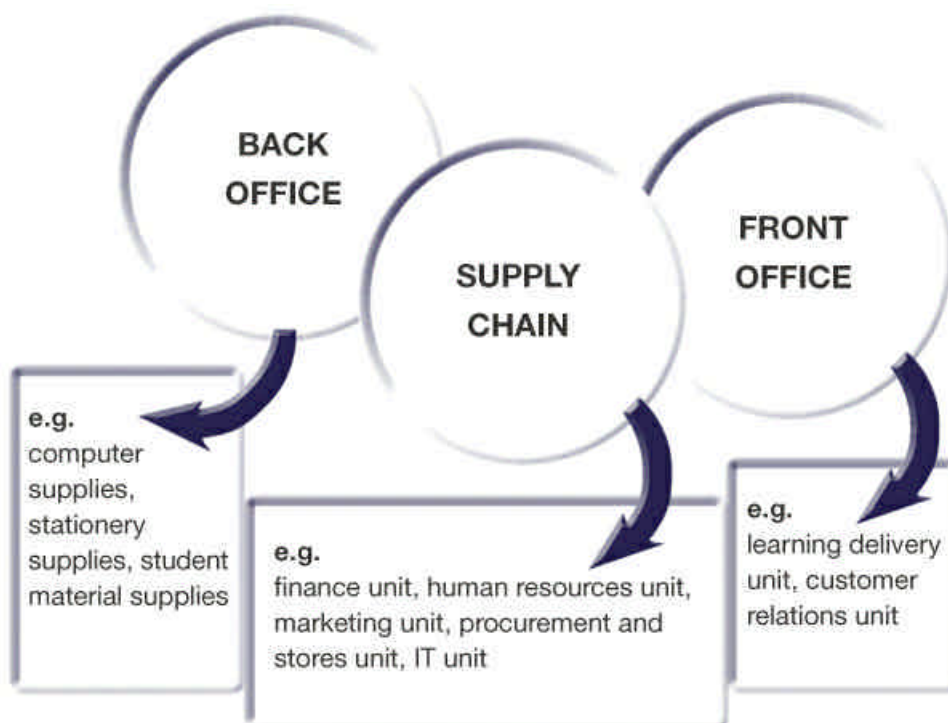
delivery of services to students is understandable, this report deliberately focuses on the under-researched back office functions.

The following diagram captures three domains where 'doing business electronically' occurs:

- in the front office, interacting with customers and the community;
- in the back office, performing functions such as the provision of internal financial services; and
- with the supply chain, interacting with suppliers and partners.

The diagram also shows organisational groups in each domain.

Diagram 1: The three domains where eBusiness occurs in educational organisations



Focus on higher education and VET

The primary focus of this report is on the higher education and vocational education and training (VET) parts of the education and training sector, with some coverage of schools and adult and community education. This broad scan across the different parts of the sector enables identification of common and dissimilar issues regarding the development of eBusiness.