The Impact of E-commerce on Online Learning Systems in the VET sector

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INTRODUCTION

Currently, there is considerable interest in developing online learning systems in the Australian vocational education and training (VET) sector, but very few successful business models for online learning systems exist in practice. Most online learning systems are like many of the speculative dot-com companies: losing money and hoping to pay dividends later. In contrast, appropriate business models help educational businesses to be effective, profitable and sustainable.

To meet this challenge of developing effective business models for online learning systems, this paper will argue that there is value in drawing from the new thinking emerging from the field of e-commerce. The term e-commerce means more than financial transactions over the Internet: it refers to any electronic communication over in business. E-commerce also provides a range of new business models that connect the design, production and delivery of online learning with the need of the organisation to operate as an effective business.

This paper is based on research by the author for a Doctorate in Education within the Faculty of Education at Deakin University, that commenced in 1997 and is continuing. The research for this paper involved an examination of possible models for online learning systems, based on a review of national and international practice. The author has recently undertaken related research for clients, including 'The Unstoppable Rise of E-health' (National Office for the Information Economy, 1999), 'Framing the Future: An E-commerce Operation' (Australian National Training Authority, 1999), 'E-competent Australia' (ANTA, 2000; to be released) and 'E-business Springboards' (Office of Vocational Educational and Training, 2000; to be released).

DEFINITIONS

Set out below are brief definitions of the three key terms in this paper: online learning systems, business models and e-commerce.

For the purposes of this paper, online learning systems are taken to mean educational structures that include a web-based technological infrastructure, online course material and online enrolment, tutoring, communication, assessment and administration procedures. Online learning systems often use complementary delivery methods, such as printed course materials.

The term 'business model' is used differently in theory and in practice. In theory, business models are conceptual frameworks for planning, marketing and managing business operations. In practice, the term 'business model' is used loosely in conversation to highlight just one process of a business, such as its unique marketing or service strategies. For example, it is said that the computer manufacturer Dell has a unique business model in that it bypasses traditional retailers by selling direct to the customer, via email, fax or telephone orders. Similarly, it might be said that company x has a unique business model in that it prides itself on its fastidious attention to after-sales service. Electronics manufacturer Sony has a business model that is heavily focused on unique design features, while it often sub-contracts the manufacturing of its products. These examples show that the term 'business model' is commonly used to describe just one business process from the six basic business processes of design, production, marketing, distribution, sales and service.

Two trends are clear when discussing the definition of e-commerce. Firstly, e-commerce was previously viewed by many commentators as predominantly an information technology issue, not a business issue. Secondly, e-commerce was previously defined by commentators as selling goods electronically. The National Office for the Information Economy (NOIE) sought to reverse these trends during 1999. In April 1999, NOIE indicated that the Commonwealth Government now views e-commerce 'as a business issue rather than an information technology issue' (*e-commerce report card*,

p.20). In October 1999, NOIE confirmed that 'E-commerce is about a different and more efficient way of doing business' (p.2). NOIE's extensive definition of e-commerce in October 1999 was as follows:

> In e-commerce, business is communicated and transacted over networks and through computer systems. The most restrictive definition limits e-commerce to buying and selling goods and services, and transferring funds through digital communications. However, e-commerce also may include all inter-company and intra-company functions (such as marketing, finance, manufacturing, selling and negotiation) that enable commerce and use electronic mail, EDI, file transfer, facsimile, video-conferencing, workflow or interaction with a remote computer. E-commerce also includes buying and selling over the World Wide Web and the Internet, transferring electronic funds, using smart cards and digital cash, and doing business over digital networks. (*E-Australia.com.au*, October 1999, p.60)

This definition widens the scope of what VET businesses need to understand about e-commerce. While the Internet is a major stimulus to e-commerce, there is more to e-commerce than building a website. E-commerce is about fundamental changes in the way business is transacted and in the relationships between customers and businesses. It also impacts on the traditional supply chain and can force some businesses to change their ways of functioning in a supply chain, or risk missing out on business.

E-commerce also provides a raft of business models that may be of value to VET organisations. For instance, the following table cites eleven different e-commerce business models identified by Timmers (1999).

Table 1: E-commerce business models (source: Timmers, 1999, pp. 35-40)

Term	Brief Definition
1. E-shop	Web marketing of a company or a shop
2. E-procurement	Electronic tendering and procurement of goods and services
3. E-malls	A collection of e-shops, usually enhanced by a common umbrella or 'portal' site
4. E-auctions	An electronic implementation of bidding mechanisms, integrated with contracting, payments and delivery
5. Virtual communities	Members adding their information to a web site
6. Collaboration partners	A set of tools and an information environment for collaboration between enterprises
7. Third-party marketplaces	Common marketing front-end and transaction support to multiple businesses
8. Value-chain integrators	Adds value by integrating multiple steps of the value chain
9. Value-chain service providers	Supports part of the value chain, e.g. logistics, payment
10. Information brokers	Provision of information and consultancy services, adding value to the huge amounts of data on open networks, e.g. information searches, customer profiling
11. Trust services	Services provided by trusted third parties including certification authorities and electronic notaries

The above list of business models for e-commerce is not exhaustive, as innovative practitioners are constantly developing new models.

In the following discussion, the relationship between online learning systems, business models and e-commerce will be discussed.

CHARACTERISTICS OF ONLINE LEARNING SYSTEMS IN VET

A range of business models is evident when examining online learning systems in the VET sector, from the sophisticated to the experimental. The author's research shows that many of the earlier online learning systems in the VET sector were technologically driven, that is the proponents were excited by the possible applications of the technology but failed to ask users whether they wanted to use the online medium to learn.

In the mid-1990s, technology companies such as Southrock in Melbourne and TechWorks in Adelaide were among the pioneers in designing customised web-based learning systems for corporate clients such as Telstra Learning and Qantas. The business models for many such corporate online learning systems have become more sophisticated in the last few years, after some early entrants to

developing online learning systems around 1996-98 were perhaps too focused on the Web platform and not on users' learning style preferences (the technology platform model). Some technology companies that have recently entered the online learning arena predominantly have a marketing model, where they contract out the production of learning materials and use mainstream, not in-house, technology to deliver their courses.

TAFE State departments, TAFE Institutes and some sections of TAFE Institutes have developed numerous web sites for online learning in the last few years. These sites vary from those costing several million dollars to ones developed on a small budget. In some cases the sites were designed by external parties, sometimes the sites were designed in-house and in a few cases the TAFE organisations purchased off-the-shelf software. The larger State web sites have varied from those that focused on online course materials (the library resource model) to those that focused on constructing a site that demonstrated the use of leading edge technology (the lighthouse model). Many of the smaller web sites are not underpinned by a business model, so much as a desire to experiment with technology (the play pen model) or to hopefully provide support services for students (the altruistic model). It is interesting to note that private Registered Training Organisations in the VET system have been much more cautious in entering the arena of online learning systems, constrained by the bottom line.

Two ANTA national staff development programs, Framing the Future and LearnScope, have extensive web sites providing online learning opportunities, but the websites are based on different models. Framing the Future's website is part of an e-commerce approach to providing services, while LearnScope's website aspires to the 'virtual community' model. Framing the Future's website is analysed in Mitchell (1999) and is discussed further below.

FINDINGS

The author's research indicates that online learning systems need to be underpinned not just by technological platforms and catch-up professional development. Online learning systems need to be underpinned by business models that take into account factors such as the desired educational outcomes, the nature of the medium, the profile of the users, the need to be cost effective, the need to cater for different markets and the importance of appropriate marketing strategies. Effective and enduring business models for online learning systems need to be based on an understanding of the complexities of the different users, the medium, the subject matter and many other factors.

Paulsen (1998) provides a summary of a 'holistic Online Teaching System', identifying the elements of the online teaching process and explaining how those elements are related. He emphasises that planning choices need to be made in online teaching systems regarding the choice of target group, choice of subject matter, choice of enrolment scale, choice of study location, choice of scheduling and the choice of media. Such choices are only the beginning of developing a thorough business model for an online learning system.

There will always be differences in the business models established by different types of organisations developing online learning systems. For instance, the business model for a small, independent technology company developing customised solutions for training organisations differs from the business model of a multinational software developer developing global online courses. Equally, the business model for a niche registered training organisation will differ from the business model of a State-wide TAFE system. The differences will relate to matters such as the organisation's positioning in the market (e.g. market leader or follower), marketing strategies (e.g market penetration or market development), competitive strategies (e.g. cost leader or niche player) and selection of markets (e.g. growth markets or mature markets). Differences will also be evident in the ways these organisations develop products and services, from developing product in-house to outsourcing part or all of the development.

The author's research indicates that large, State-wide TAFE organisations building online learning systems experience difficulty in working through business issues such as marketing, competitive strategies and product development strategies. State-wide TAFE organisations providing online learning systems are often constrained by significant political and community pressures, such as the need to provide high quality, low cost, widely accessible and well supported online courses. The result is often high institutional costs and slow production rates, due to developers' inexperience with online development, and low enrolments, due to the lack of awareness and readiness of the market (see Warner et al, 1998).

The author's research suggests that organisations such as State-wide TAFE online learning systems will succeed where they develop business models that circumvent the above constraints and are based on business principles. These principles include being clear about what is their core business, selecting a mission statement that is achievable, understanding the market and developing services that are wanted in the market, developing effective marketing and product development strategies, inducting new users, training staff, changing organisational structures to accommodate the new delivery systems and establishing realistic pricing policies and strong financial systems. Selecting the technological platform is only one of the business considerations and not the main one.

It is insufficient for TAFE Departments to have brilliant technology on show on their websites. The websites need to be synchronised with a flexible organisation. Don Tapscott, *Creating Value in the Network Economy* (1999), argues that businesses need to reinvent their business models around the Net or they will be bypassed:

> When it comes to creating value in the network economy, questions still outnumber answers. But the evidence is growing. Firms that don't reinvent their business models around the Net will be bypassed and fail. In the year 2020, we are likely to look back and see that companies fell into the categories of those that 'got it' and those that didn't. (p. xxvi)

While there are differences in the ways organisations will devise business models, the author's research also indicates that some similar criteria need to be applied by all organisations when establishing online learning systems. These criteria include a focus on the customers' needs; the provision of a solution that is customer-centric not technology-centric; access to qualified content providers, instructional designers, online tutors and technology advisers; availability of a user-friendly, fully supported and easily maintained technological infrastructure; efficient and timely production systems; and the cost effective use of complementary delivery systems.

At a more sophisticated level, organisations developing online learning systems need to incorporate in their business models an understanding that online learning systems potentially change the relationship between the customer and the provider, giving the customer much more choice, including the opportunity to easily select another online provider. Controversially, online learning systems also require the development of different organisational structures, as online learning systems eliminate in some cases and alter in other cases the roles of intermediaries, such as librarians, classroom teachers and campus based support staff. The word 'disintermediation' has been coined by the e-commerce community to describe this change in relationships:

> service companies will be in a better position to deal directly with their end customers without the assistance from traditional intermediaries (retailers, wholesalers, distributors or brokers). (Hagel & Armstrong, 1997, p.12)

Disintermediation means that Microsoft can make its certified training available online anywhere in the globe, without needing bricks and mortar or any of the other traditional educational staffing and infrastructure.

The Web environment enables the development of very different business models to the traditional models. For instance, models of traditional educational organisations have been pivoted on the following types of factors: students attending classes dominated by teachers; the architecture of the educational organisation dictating class sizes; the location of the buildings forcing students to travel; and industrial conditions influencing the number of classes offered. In contrast, the web has created the environment for new student markets, new relationships between providers and customers and new ways of conducting the business of teaching and learning.

The web environment has spawned not one but numerous business models, from the global business model of Microsoft's certified training courses to the model of providing tailored courses for students within the one organisation. While different models are available, for an online learning system to be effective, the business model needs to be pedagogically sound, customer-centric, competitively priced, appropriately positioned within the market-place, cost effective to produce and well supported - technically, administratively and educationally.

CASE STUDY: FRAMING THE FUTURE

The following case study provides an example of an online learning system being used as part of an e-commerce business model.

Framing the Future is a national staff development project designed to assist staff to develop the skills required to implement the National Training Framework. A study of Framing the Future's business management processes was conducted from July-September 1999 by John Mitchell & Associates (Mitchell, 1999), and the business processes were analysed in terms the extent to which they demonstrated e-commerce principles. Framing the Future's main business strategies include the use of a website, telephone, post and numerous publications, as well as personal contact via workshops and visits. Many of these strategies could be called e-commerce techniques, as e-commerce involves the use of digital data and electronic communication to provide products and services.

A website is just one of the electronic communication tools used by Framing the Future and it is part of an effective online learning system. Framing the Future evaluator Field (1999) noted:

> This data suggests that a considerable number of staff in the VET sector are using the Framing the Future website to extend their knowledge. The 'projects' page is really a repository of information about past projects; the 'publications' page and the 'information' pages reflect interest in workbased learning and general aspects of Framing the Future; use of 'what's new' reflects quite high levels of interest in keeping up to date with recent program features; and 'related links' provides a doorway into learning about other VET sector programs and initiatives.

The Mitchell (1999a) report shows that informed businesses such as Framing the Future are using e-commerce approaches to improve business performance, such as improving their use of existing resources, enhancing their existing services and increasing their marketing reach. The Framing the Future online learning system is just one component of this flexible business operation.

IMPACT OF E-COMMERCE

Apart from exceptions such as the Framing the Future project management, and initiatives such as Qantas Online College, the impact of e-commerce business models on online learning systems in VET has been slight. However, the potential impact of e-commerce on online learning systems in the VET sector is very significant. The implementation of e-commerce principles within VET organisations can bring about new approaches to designing, producing, marketing, distributing and providing services. When an organisation adopts e-commerce business models, the online learning systems can become a part of the integrated business, not a peripheral activity.

What we have witnessed in Australia in recent years is the regular development of online learning systems that are driven by technology and not business models, within conservative, rigid organisations. It is important for VET businesses to monitor the emergence of e-commerce, as e-commerce provides a range of business models that position online learning systems as just one component of a flexible organisation. Kalakota and Robinson (1999) warn that

If a business design is faulty or built on old assumptions, no amount of fixing and patching will do any good for competing in the digital economy. (p.7)

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