

# The Role of E-Commerce in Business Education

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## **Abstract**

Educational programs in e-commerce and e-business are still very much in an embryonic stage. In an effort to provide some context for the discipline as it exists today, this paper first presents a review of the literature describing e-commerce and e-business academic programs and various roles in graduate and undergraduate business schools. We provide an initial categorisation of issues discussed in e-commerce higher education. Finally we structure the major issues into a framework for describing e-commerce programs. The purpose of the framework is to provide a foundation for development of further research in e-commerce education, to more

accurately describe the role of e-commerce in business schools, and to facilitate further theory development.

## Introduction

Educational programs in e-commerce and e-business are still very much in an embryonic stage. Among the institutions which were the first to implement e-commerce programs, most did so based on the supposition that the Internet represented a fundamental change in the way business would be conducted. This implied that existing programs in business education would need to be radically overhauled to reflect this extraordinary change or an entirely new discipline would need to be created.

## Scope, definitions and boundaries

In an effort to provide some context for the discipline as it exists today, this paper presents a review of the literature describing e-commerce and e-business academic programs and various roles in graduate and undergraduate business schools. We provide an initial categorization of issues discussed in e-commerce higher education. Finally we structure the major issues into a suggested framework for describing e-commerce programs. The purpose of the framework is to provide a foundation for development of further research in e-commerce education, to more accurately describe the role of e-commerce in business schools, and to facilitate further theory development.

For the purposes of this paper 'e-business' is defined as business which identifies and incorporates the use of the Internet as significant to its business function. E-business typically refers to the entire range of business activities. E-business may be conducted within an enterprise. The term 'e-commerce' is differentiated from 'e-business' by the actual exchange of goods and services between enterprises, or between enterprises and clients, or between peer Internet users (VanHoose 2003, p. 8). Throughout the remainder of the paper, the authors will use the term 'e-business', since it is the more inclusive.

The articles we reviewed represent a continuum from a very practical 'skill based' vocational content to those which represent a more theoretical or broad based introspection with high level recommendations. But as many of the authors and researchers note, e-commerce is a dynamic and relentlessly changing field (Barlow & Hott 2000).

The general emphasis throughout the literature is on graduate, rather than undergraduate programs. This reflects the latest information from accrediting agencies which indicate a preponderance of graduate e-commerce programs and proportionally fewer undergraduate programs. The Association for the Advancement of Collegiate Schools of Business reported that of 347 participating members, only twenty-five (6.7%) indicated they offered undergraduate e-commerce programs. Compare this to 66 of 336 reporting graduate schools of business that indicated programs in e-commerce/e-business, or 19.6% (AACSB 2003).

Undergraduate e-commerce programs seem to be a relatively unexplored topic at this point in time. Morrison and Oladunjoye (2002) address the issue of the infusion of e-commerce into business education and link the level of infusion to faculty internet activities. But only a few articles go into any detail regarding undergraduate specific programs (Etheridge, Hsu & Wilson 2001; Fusilier & Durlabhji 2003; White 2000).

We have discerned four major themes reflected in the literature of e-business education. These major themes are firstly; what is the appropriate mix of technology in business school e-commerce programs? Secondly; what is the appropriate institutional setting for e-commerce programs? Thirdly; what is the appropriate interdisciplinary structure? Obviously there is no single answer for any of these questions. Individual institutions will have legitimate reasons for establishing a diverse mix of disciplines, and e-commerce and e-business offer a vast universe of choices. The final theme is the demand for e-business education.

## **Technology / Business Component Mix**

E-business programs are the educational juncture at which business and technology intersect. Most articles note that some mix of these two keystones of e-business is appropriate and inevitable (AACSB 2000; Bartholome & Olsen 2002; Celsi & Wolfinbarger 2001; Dunning et al. 2001; Durlabhji & Fusilier 2002; Etheridge, Hsu & Wilson 2001; Jenkins 2001; Mechitov, Moshkovich & Olson 2002; Melymuka 2000; Menasce 2000; Seminerio 2001). In fact, this was the single most discussed topic in articles we reviewed. However, there is wide disagreement as to the suitable apportionment of technological integration into the business school curriculum.

Four studies have explored the specific combination of technology and business in e-commerce programs. Mechitov, Moshkovisch, and Olson (2002) found that there was a greater mix of technology oriented courses in MS degree programs than in MBA programs. Durlabhji and Fusiler (2002) noted that over all (MS and MBA programs) there was a greater emphasis on non-technical vs. technical courses, though in later research they see this trend reversing (Fusilier & Durlabhji 2003). Etheridge, Hsu and Wilson (2001) note that no consensus exist in curricula regarding the nature or number of courses which should comprise e-business.

Several articles offer more subjective evaluations of what is the appropriate blend of the two disciplines. At the extreme technology emphasis end of the continuum, Bartholomew and Olsen put forth the arguable tenant that 'it is axiomatic that students emphasizing e-commerce be competent programmers' (2002, p. 20) and note that their institution implemented e-commerce using two thirds of their existing information systems curriculum, a practice that one business school dean refers to as 'repackaging' (AACSB 2000). Repackaging is an easy way to quickly develop a new major, without spending a great deal of time on curriculum development and may have been a frequently used strategy in the race to install e-commerce programs during the 1999-2001 periods. The perceived necessity for business schools to quickly implement e-commerce was a theme in several articles (AACSB 2000; Dunning et al. 2001; Melymuka 2000; Memishi 2002; Seminerio 2001), but some view repackaging with a certain disparagement. Memishi (2002) quotes an AACSB official stating 'I worry that sometimes there's not a lot that's fresh or different in

what's being taught. Some existing courses may have been repackaged or sequenced in a particular way and then branded as e-commerce' .

Fusilier and Durlabjhi (2003, p. 94) posit the notion that the technical/non-technical aspect represents a basic dichotomy in e-business education. They note that 'On the one hand is the need for technically competent employees who can actually program... On the other hand, businesses also need employees who understand the capabilities of emerging technologies.' This suggests there is a need to further identify the technical components in existing e-business programs, perhaps by defining the orientation of the classroom technology experience students encounter. The authors suggest that the true dichotomy is not one of technical vs. non-technical, since technology is perhaps the defining characteristic of e-business higher education programs. Rather the dichotomy is in the approach programs take to infuse technology into the e-business curriculum. By this we mean the extent to which programming or application development is emphasized as opposed to the emphasis on the implementation and management of technology, and exposure to the myriad public policy issues the Internet raises.

Is e-business, at its core, about developing technology, or is it about using technology tools to initiate or manage a business? The view that e-business is not about the technology itself, but the application of the technology to business processes is articulated by Michael Porter (2001, p. 64) when he writes 'We need to move away from rhetoric about "Internet industries", and "e-business strategies," and a "new economy" and see the Internet for what it is: an enabling technology – a powerful set of tools that can be used wisely or unwisely, in almost any industry and as part of almost any strategy.'

Memishi (2002) notes that practitioners feel the business issues are most important because that is precisely where many e-commerce companies are facing the most serious issues. Thus they encourage education to emphasize strategy, initiating e-commerce and organisational change issues. Vinton Cerf, a leader in the Internet Society as well as the Internet Corporation for Assigned Names and Numbers writes 'It's my belief that the policy problems that are arising in the context of the Internet and, more generally, networked information are as important as – and probably harder to deal with than - the technical ones' (Cerf 2002, p. 81).

## **Institutional Placement**

One of the earliest and most contentious issues has been the question of the appropriate organisational placement for e-commerce. The literature reflects three primary views on the issue:

1. It should be treated as a distinct discipline;
2. It should be fully integrated into the functional business school curriculum;
3. It may be treated as a separate discipline initially, but should ultimately (or inevitably) be integrated into the general business school curriculum.

We identified only one source which noted that e-commerce might well start out as an integrated subject within the business school and then evolve into a distinct discipline (Memishi 2002).

Most articles present a balance of opinions on the various dimensions of institutional placement, especially the popular media articles. Nevertheless, the opinions articulated by the proponents of one position or the other are clearly and often bluntly expressed (AACSB 2000; Durlabhji & Fusilier 2002; Leonhardt 2000).

Celsi and Wolfenbarger (2001) favour full integration into the business curriculum, arguing that this reflects the external reality of e-commerce in businesses. They note that often, when universities give the new discipline department status, the program inevitably becomes institutionalized with its own vested interests to protect. It may then become difficult to integrate the program into the functional business program. They cite international business as an example of this phenomenon. AACSB (2000) noted that most academicians they spoke with favoured the integration model.

Dunning and others argue forcefully for e-commerce as a distinct discipline. He frames the argument as one of institutional commitment (Dunning et al. 2001). Hawkins, (1999, p. 102) while writing from the perspective of International Business, reinforces Dunning's position. He writes that unless or until any new program is given department status it will not be taken as a serious scholarly endeavour and will suffer a low level institutional commitment. Some prestigious institutions have established e-commerce as a distinct discipline including the Kellogg School of Management and the Wharton School (Leonhardt 2000).

E-business programs face a dilemma here. None of the articles we review question the proposition that business and e-business will become synonymous, if indeed they haven't already. Yet e-business and e-commerce programs are not so well established in business schools that one can take for granted that any single business school will offer a thorough (or even a cursory) grounding in e-commerce (Morrison & Oladunjoye 2002). So unless the programs clearly articulate this, or unless the program is established as a separate discipline, it may be difficult for students to discern that any given school offers such a program. Leonhardt (2000) suggests that the schools who integrate e-commerce into traditional disciplines must work harder to let students and recruiters know they do, in fact, provide e-commerce classes.

This 'lack of program identification' may have hindered some research attempts as well. Durlabhji and Fusilier (2002, p. 174) were unable to identify the prevalence of e-business education in schools that adopted the integrated approach due to the fact that 'they do not have new programs to announce.'

## **Interdisciplinary Nature of e-Commerce**

E-commerce defies any narrow classification for academic purposes. It is by its very nature interdisciplinary (AACSB 2000; Mechitov, Moshkovich & Olson 2002), encompassing most all of the traditional business disciplines, and in so doing it impacts fields such as finance, marketing, and management in ways researchers and instructors still do not completely understand.

Beyond the obvious connection to technology, e-commerce reach extends to disciplines as diverse as graphic design, public policy, media, communication, international business and information management (AACSB 2000; Rayport & Jaworski 2003). The unanswered (perhaps unanswerable) question is 'how interdisciplinary' e-commerce should be. Celsi and Wolfenbarger (2001) argue for relaxed business degree requirements in order that great flexibility may be obtained in course selection with the goal of attaining a wide dispersion of disciplines. The AACSB article quotes Vanderbilt University Marketing Professor Donna Hoffman stating 'The best curriculum model is one in which all courses, all disciplines, will have something to say about electronic commerce ...' (AACSB 2000, p. 7). Durlabhji and Fusilier (2002, p. 170) suggest that e-business programs should focus on 'the production and management of intellectual property such as research, innovation, and design.'

## **Demand for e-commerce/e-business programs**

Many articles were written in response to the early demand for e-business programs. Articles frequently open by recounting the extraordinary call for e-business programs, and it is clear from their descriptions that in 1999 and 2000 there was indeed a great clamour for e-business classes (AACSB 2000; Dunning et al. 2001; Durlabhji & Fusilier 2002; Jenkins 2001; Leonhardt 2000). What is less clear at this time is whether the discipline is currently going through a phase of contraction. Are business schools implementing e-business programs at all or, as a result of the bursting of the dot-com bubble, has the e-commerce 'brand' itself become programma non grata?

In a recently published article, Fusilier and Durlabhji (2003) suggest that e-business programs are continuing to grow, though the data they cite was collected during the period 2000 and 2001. Their data suggest a slowing in the growth of programs consistent with the slowing in the general e-business economy, but with a lag of about two years (Fusilier & Durlabhji 2003, p. 93 Figure 3: NASDAQ and North American e-business master's and bachelor's programs). If the trend line they chart were to continue, we might expect to see some significant reductions in the demand for e-business programs in 2003-2004.

There are signs that point to just such a trend. At least two high visibility programs, North Carolina State University and Georgia State University have discontinued specific e-commerce and e-business graduate degree programs. NC State's announcement read that 'Student demand for the e-commerce concentration declined and much of the material had been absorbed across the curriculum' (NCSU 2003). Georgia State's highly publicised Global e-Management Program met a similar fate when Dean Sydney Harris (2003) recently announced that 'due to fundamental shifts in the economy, Robinson College of Business will not admit new students into the Global e-Management Program.... Interest in the program began to wane after the dot-com shake-out caused many businesses and universities to re-evaluate their e-commerce initiatives.' This may merely signal the integration of e-commerce into other academic business units as many have suggested would happen, or it may signal a shakeout similar to the dot-com contraction. At least one article suggests that some retrenchment may be under way. See, for example Svetcov (2001).

## **A framework for describing e-commerce/e-business programs**

Much of the existing literature treats the adoption of an e-business curriculum as a discrete event, since it focuses specifically on the adoption of an e-business or e-commerce major. However a variety of other adaptive techniques may be employed by business schools to introduce e-business into the curriculum.

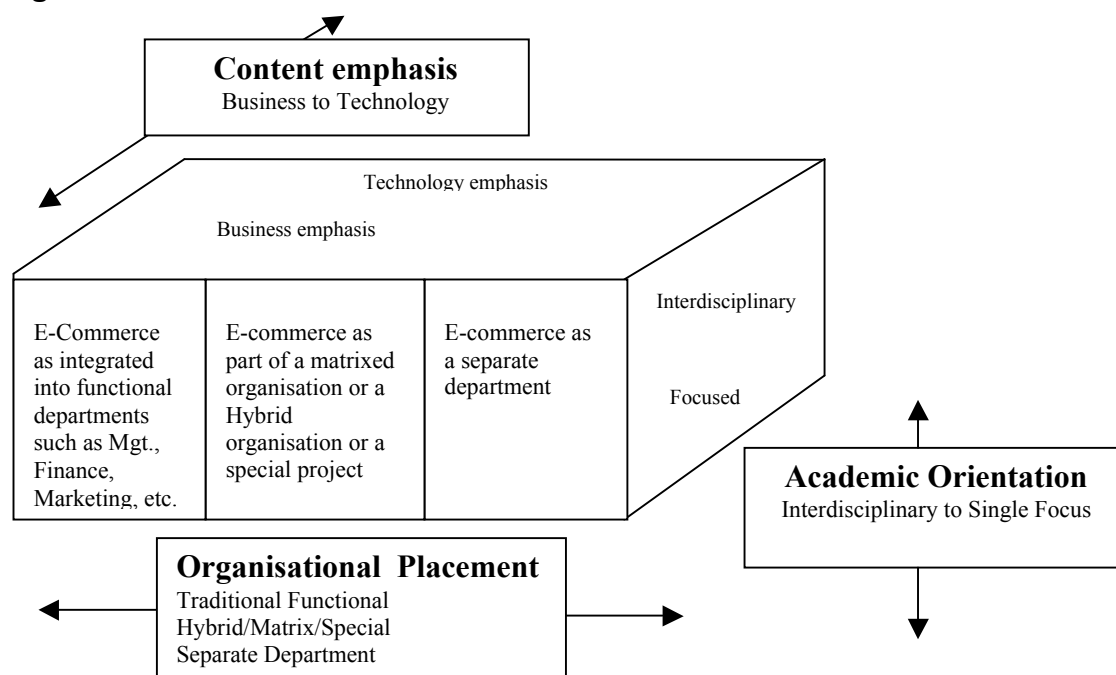
The review of the literature informs us of four topic areas which frequently recur in articles related to e-business education. As noted above, three of these are descriptive in nature – the level of technology infusion in the content of a given program, the institutional placement of the program, and the interdisciplinary orientation of the program. This suggests that a framework for description and analysis of e-business programs in higher education may be constructed using these three descriptors.

The proposed framework describes a tool for furthering our understanding of the extent to which the discipline has been implemented in higher education business schools today. The framework employs suggests a reliable method for representing programs which may have been implemented across a variety of dimensions dependent on institutional and departmental variables. It provides for the measurement of discrete content specific e-business programs, and at the same time allows us to measure the rate of absorption or infusion of e-business in existing program structures. In an analysis of enterprise e-business adoption, Wu, Mahajan, and Balasubramanian (2003, p. 425) write, ‘... there is a growing acknowledgement that a theoretically rigorous focus is required in the study of e-business. For example, few reliable scales are available to measure the various facets of e-business adoption. Furthermore, little is known about the antecedents that drive the patterns of such adoption across organizations and about the differential implications of these patterns for business performance.’

Our framework builds upon Hawkins’ (1999, p. 101) one dimensional framework for describing alternate organization structures for international business research. It expands Hawkins idea into a three dimensional matrix which measure three of the major issues discussed above, and thus makes it possible to describe an individual program by locating it along these three continuum. We propose using a subjective Likert scale to determine the perceived strength for each dimension.

Michael Porter in Argyres (Argyres & McGahan 2002, p. 46) states that ‘A framework tries to capture the full richness of a phenomenon with the most limited number of dimensions... In framework building, the artistry is in providing the smallest number of core elements that still capture the variation and dimensionality of competition. And these dimensions then have to be intuitively grounded.’

**Figure 1.1 – Framework for describing E-Commerce Academic Programs**



The framework is intended to provide a mechanism by which researchers in the discipline of e-business education may now begin to apply their findings to a consistent model. For example, Rayport and Jaworski's (2003) four infrastructures could easily be identified and placed within the framework according to the implementation model the individual institution employed.

An e-commerce program which was fully integrated into the traditional disciplines would be located to the far left of the Organisational Placement plane. It might then be further identified based upon the Business/Technology emphasis and the Interdisciplinary orientation of the program in much the same manner. Thus a program may be described using all three elements as 'integrated into all functional business departments of the business school with an content emphasis on management issues (as opposed to technological content) and interdisciplinary in nature' or 'E-commerce is a distinct department with a strong emphasis on technological skills and focused exclusively on E-commerce.' Further refinement of the description might include a subjective five point Likert scale to define a given program in each of the three matrices. A primary goal is that this framework will provide the foundation for the development of further research questions regarding the e-commerce discipline in higher education. Using the three elements of the framework will help researchers to understand the program emphasis.

Questions that might be of interest are how much does the culture of the institution determine the degree of integration in the business curriculum? How does the allocation of funds to disciplines affect the placement, i.e. would more funding be received if e-commerce were a separate department with a single focus? Is there a relationship between the integration of e-commerce and the reputation of the



university in business, engineering, technology, or hard sciences? Is the placement of e-commerce different among private and public institutions? Does the online capability of the institution influence the content, placement and/or orientation of the e-commerce program?

## **Conclusion**

Each of the issues discussed in this paper offer opportunities for more extensive research efforts. These will in-turn lead to a more precise definition of the discipline and help us to distil the essential elements of e-commerce education.

We realise that one size does not fit all. Most likely, the search for the appropriate placement of the E-commerce program in our varied institutions will be assisted by once again visiting the academic goals of our university, the culture of our colleges, the infrastructure within which we operate, and the basic mission that we are tasked to accomplish. For example, the technical and scientific focus of some institutions will easily dictate both the organisational placement and content emphasis.

The issues that surfaced in this article need to be addressed and resolved because e-commerce is not idle. It continues to infiltrate the global landscape of all sizes of business. The number of internet users, even using conservative measures, continues to rapidly increase globally. Current events on the global stage will interact with e-commerce. For example, the addition of perhaps as many as ten more nations into the European Union as well as some of these adopting the euro as their currency is bound to have an effect on the volume of users and e-business.

We must determine what structure will assimilate best in our respective academic institutions. This will allow us to go about the task of successfully equipping and training the next leaders in this new curriculum.

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