Vanishing E
The Decline of the E-Commerce Discipline in Australia

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Stimulated by the increasing demand for qualified personnel for business ventures that employ the Internet in their operations, electronic commerce (e-commerce) emerged as an academic discipline at the eve of the twenty first century. This paper presents a study on the changing status of e-commerce as an academic discipline in Australia in the second half of the 2000s. The findings of the study show that e-commerce is losing its status as a distinctive academic discipline in Australia. The number of e-commerce educational programs is declining and full-fledged e-commerce programs are now offered at a limited number of Australian universities only. E-commerce is diminishing into a niche area of business education rather than prospering as a significant academic discipline.

Keywords: academic disciplines, business education, e-business, e-commerce, educational programs

With the continuing growth of global Internet population and advances in information and communication technology (ICT), the importance of the Internet to business organizations is ever-increasing in the twenty first century. In the world's largest economy, the United States, online retail sales maintained a stable growth in the 2000s. The value of online retail sales reached U.S. $44.2 billion in the second quarter of 2011 and

accounted for 4.2 percent of the total retail sales in the United States (U.S. Census Bureau 2011). Usages of the Internet in business operations are becoming commonplace around the world and the second generation of Internet applications, collectively known as Web 2.0, offers organizations a more powerful suite of tools to exploit business opportunities (Fusilier & Durlabhji 2009; Levy & Hadar 2010; Li, Yen & Cheng 2008).

A consequence of the growth in business usages of the Internet was the emergence of electronic commerce (e-commerce) as an academic discipline. As evidenced by failures of many early Internet-based ventures, entrepreneurs and managers needed skills and knowledge in both business and ICT disciplines to unleash the business potentials of the Internet (Tse 2008). To fulfil the demand for qualified personnel with knowledge in both business and ICT disciplines, a new breed of educational programs emerged at the eve of the twenty first century (Durlabhji & Fusilier 2002; Etheridge, Hsu & Wilson 2001; King, Frank & Platt 2001; Mechitov, Moshkovich & Olson 2002). These programs distinguished themselves from their traditional business and ICT counterparts by integrating elements of business and ICT disciplines into the curriculum at program level. Influenced by the widespread adoption of the term "e-commerce" at the time of their developments, these programs were labelled as e-commerce programs. At the same time, academicians demonstrated strong interest in e-commerce research. Specialist journals in e-commerce like *Electronic Markets, International Journal of Electronic Commerce* and *Journal of Electronic Commerce Research* were established and professorial chairs in e-commerce were installed in the United States, the United Kingdom and Australia. The proliferation of e-commerce programs, in conjunction with the enthusiasm in e-commerce research, granted e-commerce the status of an academic discipline.

As the importance of the Internet as business platform for organizations continues to increase, it is of interest to study the development of e-commerce as an academic discipline. This paper presents a study on the

changing status of the e-commerce discipline in Australia by comparing e-commerce coursework program offerings at Australian universities in 2005 and 2010. The objective of the study is to develop an understanding of the current status of e-commerce as an academic discipline and in what ways its status changes in the second half of the 2000s. As pointed out in Tse (2008), all Australian universities have self-accreditation power. Developments of educational programs in Australian universities are not subject to external accreditation or approval. As such, examining educational program offerings at Australian universities enable a better understanding of the universities' views on the area of study compared with examining their American or European counterparts.

The remainder of the paper is organized as follows: first comes a literature review, followed by an outline of the research questions and research methodology. After that, the findings of the study are presented, followed by a discussion and concluding remarks.

Literature Review

Defining the e-commerce discipline is a challenging task. E-commerce as a new academic discipline emerged from advances in practice and does not have a solid theoretical base (Tse 2008). There is not even any consensus on the definition of the term "e-commerce" itself and its relationship with the related term "e-business" (Gueldenzoph 2006; Joseph 2002; Tse 2005; Tse & Gong 2008). Attempts have been made to define the discipline in accordance with perceptions of academicians and practitioners, but no consensus has been reached (Rezaee, Elam & Cassidy 2005; Tse 2008). Individuals from business and ICT backgrounds have different and sometimes conflicting perceptions of the nature of the e-commerce discipline and of the relative importance of topics that are considered relevant to the discipline (Featherstone, Ellis & Borstorff 2004; Gueldenzoph 2006; Gunasekaran & Ngai 2004; Joseph 2002; Morrison & Oladunjoye 2002; Rezaee, Elam & Cassidy 2005).

In absence of a generally accepted definition of the e-commerce discipline, developments of e-commerce curricula are heavily influenced by academicians' personal perceptions of the discipline. Differences in perceptions of e-commerce as an academic discipline often lead to differences in designs of e-commerce programs (Tse 2008).

As academicians from different disciplinary backgrounds have different views on the nature of e-commerce disciplines, administrative arrangements of e-commerce educational programs within educational institutions have significant impacts on their design. While it is generally agreed that e-commerce curricula should be grounded in both business and ICT disciplines, there is no agreement as to what is the right combination of contents from the two disciplines to be included in e-commerce programs (Featherstone, Ellis & Borstorff 2004; Tse 2008). When e-commerce programs are administered by a business faculty, the curricula tend to focus on managerial aspects of e-commerce (Dunning *et al.* 2001; Etheridge, Hsu & Wilson 2001). Likewise an ICT or science faculty tends to include more technical contents such as programming, network management and website design in e-commerce programs under its control (Bartholome & Olson 2002; Mechitov, Moshkovich & Olson 2002).

Educational institutions have adopted two different approaches in structuring e-commerce programs. Some institutions elect to structure e-commerce educational programs as disciplinary majors in existing programs (Bartholome & Olson 2002; Fedorowicz & Gogan 2001). Under this approach, e-commerce contents are offered in conjunction with core contents of existing programs. In the United States, the majority of e-commerce programs have been structured as disciplinary majors of master degrees, in particular Master of Business Administration (MBA) (Durlabhji & Fusilier 2002; 2005; Etheridge, Hsu & Wilson 2001; Mechitov, Moshkovich & Olson 2002). Alternatively, some e-commerce programs have been structured as stand-alone programs (Dunning *et al.* 2001; Li, Yen & Cheng 2008; Rezaee, Elam & Cassidy 2005). E-commerce programs developed under this approach have distinctive struc-

tures with titles such as Master of Electronic Commerce. This approach is less popular internationally and is more likely to be adopted by institutions outside the United States (Durlabhji & Fusilier 2005; Fusilier & Durlabhji 2009; Li, Yen & Cheng 2008; Tse 2008).

E-commerce educational programs have been offered at both undergraduate and postgraduate levels. Prior studies show that educational institutions in the United States prefer offering e-commerce programs at postgraduate levels (Durlabhji & Fusilier 2005; Etheridge, Hsu & Wilson 2001; King, Frank & Platt 2001). In contrast, institutions outside the United States have much stronger interests in offering e-commerce programs at undergraduate levels (Chen, Hu & Wang 2004; Li, Yen & Cheng 2008; Tse 2008). The lack of interest in offering e-commerce programs at undergraduate level in the United States coincides with the strong preference to structure them as disciplinary majors of MBAs.

Research Questions

This study addresses two research questions on the e-commerce discipline:

1. what is the current status of e-commerce as an academic discipline in Australia?
2. how did the status of e-commerce as an academic discipline in Australia change in the second half of the 2000s?

The first research question is addressed by examining e-commerce educational programs offered by Australian universities in 2010. In particular, three aspects of the offerings are looked into: orientation (business-oriented vs. technology-oriented), structure (disciplinary major of existing program vs. stand-alone program), and level (undergraduate vs. postgraduate). As discussed in the literature review, developments of e-commerce programs are primarily fuelled by academicians' perceptions of the e-commerce discipline. As such, e-commerce programs offered by an educational institution reflect the views of academicians within the

institution on the e-commerce discipline. By examining e-commerce program offerings in Australian universities, an understanding of the status of the e-commerce discipline in Australia can be developed. To answer the second question, findings on the current status of e-commerce as an academic discipline are compared with the findings of Tse (2008). Changes in the three aspects of e-commerce program offerings reflect changes in the status of e-commerce as an academic discipline at national level.

Research Methodology

The research methodology adopted in this study was identical to the one adopted in Tse (2008). The data was collected from official websites of all Australian universities in April 2010. At each university website, a two-stage search was performed to identify e-commerce educational programs. In the first stage, a keyword search was performed using the website's online search function. Keywords used in the search were: e-business; e-commerce; electronic business; and electronic commerce. In the second stage, all programs under the control of business or ICT/science faculties were examined to identify e-commerce programs that were structured as disciplinary majors of existing programs.

In this study, the orientation of an e-commerce educational program was determined by the administrative unit that controlled the program. An e-commerce program was classified as business-oriented if it was offered as (1) a disciplinary major in an existing business program; or (2) a stand-alone program that was under a business faculty's control. A program was classified as technology-oriented if it was offered as (1) a disciplinary major in an existing ICT/science program; or (2) a stand-alone program that was under an ICT/science faculty's control.

With regard to structure, an educational program with distinctive structure and title was considered as a stand-alone one. When an e-commerce stream was identified in an existing program, the structure of the program was examined. An e-commerce stream was considered as one program if the stream constituted one of the independent sequences of

study (major) in the program. If an education program had more than one distinctive e-commerce stream (e.g. e-commerce technology and e-commerce management) and each stream constituted an independent sequence of study, each of them was treated as a separate program. E-commerce streams that did not constitute an independent sequence of study (minor) were excluded from the study.

Four levels of awards within the Australian Qualification Framework (AQF) were included in this study: bachelor, graduate certificate, graduate diploma, and master. Bachelor degrees were deemed as undergraduate level awards, while the other three types of awards were deemed as postgraduate level awards. When a postgraduate program had one or more exit points, the exit awards were excluded from the study. For instance, when a master program allowed students to exit with a graduate diploma award after completing part of the program, only the master award was counted in the study.

Findings

Number of E-Commerce Program Offerings

Table 1 presents the number of e-commerce educational programs offered by Australian universities and the number of Australian universities offering e-commerce programs in 2005 and 2010. As shown in the table, both the number of e-commerce programs and the number of universities offering them were significantly decreased in 2010.

	2005	2010	% Change
Number of e-commerce programs	84	20	- 76 %
Number of universities offering e-commerce programs	32	11	- 66 %

Table 1. Number of e-commerce program offerings.

In 2010, Australian universities offered 20 e-commerce educational programs. 85 percent of these (*N*=17) were also offered in 2005. 15 out of these 17 programs bore the same titles in 2005 and 2010 while the other two were re-titled. Only 15 percent of the e-commerce programs (*N*=3) offered in 2010 were launched after 2005 and all of them were offered by a single university as substitutes to the university's discontinued e-commerce programs.

Among the 39 Australian universities, 32 of them offered e-commerce programs in 2005. In 2010, only 11 Australian universities offered them. The number of programs offered by each university ranged from 1 to 4 with a mean of 1.91 and a standard deviation of 1.14. All 11 universities that offered e-commerce programs in 2010 also offered them in 2005. In other words, no new player entered the field since 2005 at the same time as existing players were leaving.

Orientation of E-Commerce Programs

The orientation of e-commerce educational programs offered by Australian universities in 2005 and 2010 is presented in Table 2. In both years most Australian e-commerce programs were classified as business-oriented and the percentage of business-oriented e-commerce programs increased from 69 to 75.

	2005		2010	
	N	%	*N*	%
Business-oriented	58	69 %	15	75 %
Technology-oriented	26	31 %	5	25 %

Table 2. Orientation of e-commerce programs.

Australian universities that offered e-commerce programs in 2010 were consistent in terms of the orientation of their offerings. Most uni-

versies offered all of their programs as business-oriented ones or as tech-nology-oriented ones. Only one university offered both business-oriented and technology-oriented e-commerce programs concurrently.

Structure of E-Commerce Programs

As shown in table 3, most e-commerce educational programs were struc-tured as disciplinary majors of existing programs in both 2005 and 2010. The percentage of e-commerce programs that were structured as a disci-plinary major increased from 74 to 90. However, unlike their American counterparts, Australian academicians were less interested in structuring e-commerce programs as disciplinary majors of MBAs. In 2010, only three Australian e-commerce programs were structured as disciplinary majors of MBAs.

	2005		2010	
	N	*%*	*N*	*%*
Disciplinary major in an existing program	55	74 %	18	90 %
Stand-alone program	19	26 %	2	10 %

Table 3. Structure of e-commerce programs.

In 2010, only two Australian universities offered stand-alone e-com-merce programs. For both universities the stand-alone program was the only e-commerce program offered by the university. All other Australian universities offered e-commerce programs as disciplinary majors only.

Level of E-Commerce Programs

A major shift in the level of e-commerce educational program offerings was observed in 2010. As presented in table 4, 55 percent of e-commerce programs were offered at undergraduate level in 2005. In 2010 however,

undergraduate e-commerce programs only accounted for 35 percent of the offerings. The number of undergraduate e-commerce programs was reduced by 85 percent from 2005 to 2010 while the number of postgraduate ones was reduced by 66 percent in the same period.

	2005		2010	
	N	%	*N*	%
Postgraduate				
Master	34	40 %	12	60 %
Graduate Diploma	1	1 %	1	5 %
Graduate Certificate	3	4 %	0	0 %
	38	45 %	13	65 %
Undergraduate				
Bachelor	46	55 %	7	35 %

Table 4. Level of e-commerce programs.

Table 5 presents the level of offerings by universities. In 2005, most Australian universities offered e-commerce programs at both undergraduate and postgraduate levels. In 2010, most universities offered them at either level only. With the exception of one university, all Australian universities that offered e-commerce programs in 2010 offered the same level of programs in 2005.

	2005		2010	
	N	%	*N*	%
Undergraduate level only	8	25 %	3	27 %
Postgraduate level only	2	6 %	5	45 %
Both undergraduate and postgraduate levels	22	69 %	3	27 %

Table 5. Number of universities offering e-commerce programs at under-graduate and postgraduate levels.

Discussion

The findings of this study shows that Australian academicians had a clearer picture of what constitutes an e-commerce discipline in 2010. Australian universities that continued to offer e-commerce programs in the second half of the 2000s had a sharper focus in their offerings. Instead of trying to offer everything at different levels, most universities offered only a handful of programs at either undergraduate or postgraduate level with the same orientations. E-commerce was generally considered a business-oriented discipline in Australia, since most continuing programs were business-oriented. This is consistent with the findings of prior studies in other countries (Durlabhji & Fusilier 2002; 2005; Etheridge, Hsu & Wilson 2001; Fusilier & Durlabhji 2009; King, Frank & Platt 2001).

As an academic discipline, e-commerce was losing its significance in Australia. The majority of Australian universities had closed down their e-commerce educational programs and no new player was entering the field. Only one Australian university had continuing e-commerce programs that started after 2005, and the programs were offered as replacements of the university's undergraduate level offerings at 2005. This represents a reversal of reported international growth in numbers of e-commerce programs throughout the first half of the 2000s (Durlabhji & Fusilier 2005; Fusilier & Durlabhji 2009). In addition, most surviving

programs were structured as disciplinary majors of existing postgraduate programs, a model requiring the least amount of resources to maintain. It is clear that Australian academicians had little interest in maintaining a distinctive e-commerce discipline.

The reduction in the number of e-commerce educational programs in the second half of the 2000s coincided with the abeyance of Collaborative Electronic Commerce Technology and Research (CollECTeR). CollECTeR was an Australian-based inter-university joint venture on e-commerce research. It ran annual e-commerce research conferences in Australia, Europe and Latin America between 1997 and 2008. Nonetheless, CollECTeR has failed to convene its annual conference since 2009, and its website was dysfunctional as of April 2010. The abeyance of CollECTeR provides further evidence on the decline of e-commerce as an academic discipline in Australia.

A key factor that contributed to the decline of e-commerce as an academic discipline was the lack of champions within educational institutions. E-commerce champions played a critical role in the development and maintenance of e-commerce educational programs in educational institutions through influencing their institutions' attitudes toward e-commerce education (Dodor & Rana 2009; Tse 2008). However, as evidenced by the abeyance of CollECTeR, Australian academicians were less keen on engaging in e-commerce in the second half of the 2000s. Consequently, Australian universities' attitudes towards e-commerce education gradually became more negative. The change in attitudes towards e-commerce education prevented the development of new e-commerce programs and made existing programs more vulnerable to program cuts.

Conclusion

While global usages of the Internet in business activities continue to grow, e-commerce is losing its status as a distinctive academic discipline in Australia. Contrary to the prediction of Fusilier & Durlabhji (2009), the continuing growth of e-commerce in practice does not lead to a cor-

responding growth in e-commerce education. The number of e-commerce educational programs was declining in Australia throughout the second half of the 2000s, and full-fledged e-commerce programs are now offered only at a limited number of Australian universities. Instead of becoming a significant academic discipline, e-commerce is diminishing into a niche area of business education. The "E" factor is simply vanishing.

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APPENDIX: LIST OF E-COMMERCE EDUCATIONAL PROGRAMS OFFERED BY AUSTRALIAN UNIVERSITIES IN 2010

University	Program	Major	Faculty/Division
Bond University	Bachelor of Business	Electronic Commerce	Faculty of Business, Technology and Sustainable Development
Deakin University	Bachelor of Commerce	eBusiness	Faculty of Business and Law
	Master of Business Administration	Electronic Business	Faculty of Business and Law
	Master of Commerce	Electronic Business	Faculty of Business and Law
	Master of Information Systems	eBusiness and Supply Chain Management	Faculty of Business and Law
Edith Cowan University	Graduate Diploma of Business	Electronic Commerce	Faculty of Business and Law
	Master of Management Information Systems	Electronic Commerce	Faculty of Business and Law

Macquarie University	Bachelor of e-Business		Faculty of Science
University of Newcastle	Master of Business Administration	eBusiness	Faculty of Business and Law
	Master of Advanced Information Technology	eBusiness	Faculty of Science and Information Technology
	Master of Information Technology	eBusiness	Faculty of Science and Information Technology
University of Queensland	Bachelor of Business	Online Business	Faculty of Business, Economics and Law
	Bachelor of Business Management	eBusiness	Faculty of Business, Economics and Law
	Master of Commerce	Electronic Commerce	Faculty of Business, Economics and Law
University of Southern Queensland	Master of Business Administration	e-Business	Faculty of Business
Swinburne University of	Bachelor of Business	Business Analysis	Higher Education Division,

Technology		eCommerce	Lilydale
University of Tasmania	Master of Electronic Business		Faculty of Science, Engineering and Technology
University of Western Australia	Master of Commerce	Electronic Business	UWA Business School
University of Wollongong	Bachelor of Information Technology	e-Business	Faculty of Informatics
	Master of Commerce	Electronic Commerce	Faculty of Commerce