Chapter 2

Influences of new service development on EC/EB educational programs

“To be sure of hitting the target, shoot first and whatever you hit, call it the target.”
~ Ashleigh Brilliant ~

In mid 1998, when I first began to undertake research into EC educational programs, (at that time, the term EC was more popular than EB) there were not many universities which offered such programs in the AP region. I did a thorough survey of EC programs in the AP region by emailing the Heads of all the appropriate Schools within the universities in the region, and by studying the web sites of educational organisations and ISWorld EC web sites (I will discuss the result of these data gathering activities in Section 6.1 of this thesis). I also developed an EB component model which formed the basis for my survey of EC/EB curricula in the AP region, which I discuss in Chapter 4 of the thesis.

The results from the surveys I undertook between 1999 and mid 2000 showed that 18 Australian universities out of 39 (46.2%) were offering EC/EB undergraduate and postgraduate programs; as were 2 out of 3 (66.7%) universities in Singapore; 3 out of 8 (37.5%) universities in New Zealand; and 6 out of 8 (75%) in Hong Kong (Chan and Swatman 2000a; Swatman and Chan 2001). The situation I found in Hong Kong was supported by Kwok (2000) who stated that: “the first ever degree programme in Electronic Commerce was started less than a year ago (1999) in Hong Kong. By this September (2000), nearly all the universities in Hong Kong will offer some form of Electronic Commerce degree or diploma programme.”. I also observed that around that time academics began to make use of the term EB rather than EC for their new programs. As we know, there are some differences in these terms and I will explain these in Section 4.2 of the thesis.

Following this sudden growth of EC/EB educational programs in the AP region circa 2000, it was clear that I would need to change the focus of my research. Instead of developing a generic curriculum model for tertiary EC/EB educational programs, which would almost certainly be out of date before I finished the thesis (or, at the
very least, would be redundant – because all the universities in the region would already have such a curriculum) I decided to investigate the basis on which these educational programs were developed.

Having considered the motivation and activities involved in creating timely and popular EC/EB degree programs, I felt that it would be both interesting and valuable to discover the extent to which the developers of such programs were making use of new service product techniques. It was clear that the market was playing a major role in the various universities’ desire to create these new degrees, and a number of factors caused me to focus on the new service product topic (which is a specialist field within the marketing discipline).

Figure 2-1 EC/EB Educational Programs: New Service Product

Figure 2-1 illustrates the way in which the various aspects of the literature review provided in this Chapter led me to set the topic EC/EB educational programs into the context of existing research into new service product development. The literature review has provided a thorough survey of appropriate literature in the four reference fields: curriculum development models; EC/EB education at tertiary level; markets and competition in tertiary education and new product and new service development, and concludes that a pedagogic approach is neither sufficient, nor even truly appropriate, for offering new EC/EB educational programs. I therefore believe that there is a need to use the new educations service product offering (NESPO) model when offering a new program in this fast-paced and rapidly-changing environment.
2.1 Curriculum Development Models

As I have already mentioned, the original idea on which this research project was based was the development of a curriculum model for EC/EB degree programs for tertiary education in the AP region. Despite the major change of direction which the project underwent during 2000, it is clear that the issue of curriculum development is still one which must be considered as a part of the revised research topic. In this section, therefore, I discuss two curriculum development models: the strategic and the systematic. These two models are chosen for discussion because they are relevant to the development of a degree ‘program’ as a whole, rather than merely relating to the development of a single ‘course’ (or ‘subject’ or ‘unit’, depending on the terminology used within the reader’s academic environment). These two models are also interesting because they represent two completely different approaches to this area.

Before we can analyse the development of a curriculum, however, it is important to ascertain the particular higher education paradigm within which we are siting our discussion. The two relevant models – the holistic and the aggregative models – are defined by the Nuffield Foundation (1976, pp. 34-35).

- University education is traditionally identified with the holistic model. This means three to four years of continuous study in one university. Study is sequential and involves work primarily associated with a single discipline. In this holistic model, the institutional life of both students and teachers centres on the department\(^9\), the organisational correlative of the discipline and, within the department, on the year or class. However, once it is argued that disciplines are not seamless wholes, that they can be sub-divided in various ways, that something of them can be studied without studying everything, then the way lies open for the introduction of a smaller, more flexible unit of academic currency.

- In the aggregative model of higher education, the basic academic unit is no longer the degree program: it is the course, unit, subject or module. The emphasis within this paradigm is less on the community and more on the curricula, teaching methods and assessment. The ongoing changes in

\(^9\) In the AP region, as in much of the Anglo-American academic world, the term ‘Department’ is increasingly being replaced by that of ‘School’. For the remainder of this thesis, therefore, I shall use
university education within the AP region have made the holistic model less relevant than the aggregative – and discussion from this point on is therefore based upon the second of these paradigms.

The aggregative model is increasingly being adopted by tertiary institutions – not only within the Asia-Pacific region, but also within the U.S. Walker & Black (2000, p. 196) state that the dominant approach to United States business education is patterned after the Harvard University model of a core. The theory behind the model is that knowledge should be compartmentalised into courses (or subjects); that these courses are then combined and integrated into cores, and that cores are combined into curricula. All the EC/EB degree programs in the AP universities I studied make use of the aggregative paradigm for their curriculum development. The specific curriculum development models I discuss in the next section naturally also fit within this paradigm.

The aggregative model which most universities have adopted leads to changes in the ways in which curricula are developed. As early as 1977, the Carnegie Foundation for the Advancement of Teaching (1977, p.29) listed a number of external influences which had an impact on the undergraduate curriculum within America universities. Figure 2-2 shows these forces.

the term School to refer to the basic administrative grouping within which a particular degree is taught.
In the 25 years since the Carnegie study was undertaken in 1977, it is clear that a number of significant additional influences (in particular, market forces and rapidly changing technology) have also had an impact upon curriculum design.

Ratcliff (1992) suggest that there are two primary types of model explaining the undergraduate curriculum: an institutional-structural model and a student-development model. The institutional-structural model describes what is intended by the institution and in contrast, the student-development model describes the interaction between a student and the educational environment which produces the learning experience. In my discussions of curriculum development models I refer only to the institutional-structural model.

Finally, before I discuss the strategic and systematic curriculum development models, I quote the guidelines for quality assurance in university course (or program) development and review by the Australian Vice-Chancellors’ Committee (AVCC 1992). Effective program development will include the following seven steps:

1. The establishment of administrative mechanisms and procedures to ensure that administrative, academic and resource implications are thoroughly examined and that there are well publicised and commonly accepted routes for course development proposals to be considered, rejected, revised and/or adopted.
2. Development of preliminary plan and discussion within universities, stating the perceived need for the course and setting out the relationship of the proposed course to the university's mission and strategic plans. Initial proposals for courses may spring from departmental innovation, special reviews undertaken in response to advances in knowledge, university restructuring, inter-departmental discussions, evidence of demand arising from consultations with students and graduates, discussions with professional bodies or employers, or in response to perceived national or local priorities.

3. Preparation of a formal detailed proposal.

4. Wider consultation involving and inviting comment from the community, relevant professional associations, students and groups largely composed of academic and professional peers to assess matters such as the demand and necessity for the course and the amount of support which can be given to it.

5. Detailed proposal to be subjected to formal accreditation processes of the university involving the senior academic bodies of the university.

6. Inclusion of the course in the university's educational profile.

7. Establishment of review mechanisms and timetables.

The AVCC guidelines suggest a set of generic steps to develop a new course effectively. In the next section I am going to discuss two different curriculum development approaches: strategic and systematic models, and contrast their recommendations with those provided by the AVCC.

### 2.1.1 Strategic model (Foster 1993)


*Strategic behaviour and thinking means it is broad in scope, considering global matters rather than being focused only on detail, it is long term rather than concerned with current problems and it is outward as well as inward looking, in that the effects of forces outside the department are taken into account, as are the views and contributions of those extra-departmental bodies, groups and individuals who have legitimate interests.*

(Foster 1993, p.3)

There are two loops to represent the strategic planning process for designing university programs, as Figure 2-2 shows:
Figure 2-3 The Strategic Planning Approach for Developing a New Program
Reproduced from: Foster (1993, p.5)

The upper loop represents the policy analysis phase. Foster (1993) identifies strengths, weaknesses, opportunities and threats (SWOT analysis) of that phase, which starts with an initial formulation of an ideal vision, then adds the strengths and weaknesses of internal factors, such as: the organisation, the academic program and the people involved in it. Next, account is taken of stakeholders’ interests and external environmental issues, then opportunities and threats are considered. An analysis of the values of the organisation and of the people in it provides an additional source of data for the articulation of the mission statement. The lower loop of Figure 2-2 takes the vision, values and mission of the institution and uses them to inform the design and development of the curriculum by means of the practical necessities through which they will be implemented.

The benefits when a whole program is designed strategically are improvements in cohesion and integration. Since the design is grounded in an agreed vision of the purposes of the program, it is possible to ensure that every component contributes to this vision and, since the whole program is being developed as a single enterprise, the relationships between the components can be seen explicitly and taken into account.
We can see that Foster’s strategic approach for developing a new program includes a similar function to step No. 2 of the AVCC (1992) guidelines for effective program development — stating the perceived need for the course and setting out the relationship of the proposed course to the university's mission and strategic plans.

Foster believes that a degree program might be expected to retain a recognisable identity for a span of five to ten years, although a subject in a rapid-evolving discipline such as computer science might be out of date in as short a period as three years. This suggests that in areas such as EC/EB, where the ‘state-of-the-art’ moves extremely rapidly, it might well be difficult to calculate how long an existing academic program could exist without major modification – or, perhaps, leads us to wonder whether such programs might need to be updated on an on-going basis.

In the next section, I discuss an alternative approach to curriculum development: the systematic model.

2.1.2 Systematic model (Diamond 1989)

Diamond developed his systematic model for developing a new degree program in the early 1960s, although it has since undergone a number of significant revisions. Figure 2-4 shows a systematic model for educational program development.
The systematic model has two basic phases: first, *project selection and design* and second, *production, implementation, and evaluation*. Diamond says there are five major characteristics which, when combined, differentiate this model from most others:

1. It forces those using it to think in ideal terms.
2. It encourages the use of diagrams to show structure and content.
3. It relies heavily on the use of data.
4. It encourages the team approach.
5. It is politically sensitive.

Diamond (1989, p. 7)

In the *systematic model*, the emphasis – in contrast to that of the *strategic model* – is on a thorough planning of the details of the program itself. Basic planning inputs are considered but this model has a narrower view of what should be practised in developing programs.

Both the *strategic* and *systematic* models clearly and thoroughly describe the steps for developing new programs. The advantages of the *strategic* model are that the new
program will conform to the mission and vision of the organisation (the university); and that the stakeholders’ interests have been taken into account. Hence a co-ordinated and uniform new program will be developed in the university. It avoids the danger of “market-share cannibalisation” which is caused when different schools/departments within the same university offer effectively similar courses or programs which compete with one another. The advantage of the systematic model, by contrast, is that the essential procedures for developing new programs have been clearly illustrated, establishing effective guidance for a less-experienced program developer.

However, both of these approaches have a number of deficiencies in terms of meeting today’s new program development needs. Some critical elements at the planning stage which will affect the success of new programs have not been considered – neither model takes into consideration elements such as: facilities/technologies requirements, or the availability of adequate staff expertise to develop or deliver the new programs. These models are therefore unable to cope with the complex, fast-pace and stringent technological demands of rapid, market-driven curriculum development.

Other discussions on curriculum development include, inter alia: Dressel (1971, pp. 267-281), who suggests eleven different curriculum models for general university programs; or Ristau and Roth (1977, pp. 157-158), who discuss a philosophical foundation for program development. None of these, however, adds significantly to the two models described above – and, in the interests of space, I have omitted a detailed discussion of these authors’ contributions.

In the next section, I discuss EC/EB education and examine whether the current EC/EB curricula are using specific curriculum development models.

### 2.2 EC/EB Education at the Tertiary Level

Before I discuss the literature of EC/EB curricula, I briefly discuss why I have focussed on the need for EC/EB education in the AP region.

#### 2.2.1 The need for EC/EB education

As I mentioned earlier, prior to 1999 very few EC/EB programs were offered in universities in the AP region. Around 2000, however, there was a sudden burst of interest in this area. A number of universities began to offer such programs at a very
rapid rate – which may have been due to the demand for graduates with knowledge and skills in this field.

Firstly, the need to teach EC/EB was motivated by significant worldwide employer demand for graduates. Despite the bursting of the dot.com bubble in April 2000 (Buckman 2000; Fingar & Aronica 2001, pp. 253-261) and the rather later telecoms crash of 2002 (The Economist 2002; Freeman 2002), there is still a need for EC/EB skilled employees for internet-related jobs among brick-and-mortar companies (IT Skills Hub 2003). The OECD (2002) reports that EC has the potential to transform economic activity, but transactions are taking off more slowly than predicted in the years before the bursting of the dot.com bubble. However, electronic transactions continue to grow and the Internet is increasingly used for purchasing (OECD 2002). This article also points out that the need for Information Communication and Technology (ICT) skills at all levels of competence is of continuing concern, suggesting an on-going demand for EC graduates over the coming years. I discuss this phenomenon in greater detail in Section 7.1.

Secondly, university Departments or Schools without EC/EB offerings risk losing students interested in this area. Employers seeking graduates with EC knowledge and skills also motivate universities to offer these programs (Dean and Nasirin 2002, p.380; Wheeler 2002, p.204). A thorough discussion of universities’ activities in response to this demand is found in Section 6.3.2.

Thirdly, government promotion provides another major impetus for universities to offer EC/EB programs, as the following summary illustrates. In the late nineties, member governments of the Asia-Pacific Economic Cooperation (APEC) tried to find ways to encourage and facilitate greater participation by Small and Medium Enterprises (SMEs) in the online economy and global commerce. The Asia Oceania Electronic Marketplace Association (AOEMA) worked with APEC to propose a project for identifying best practices for SMEs planning to implement EC. This report was compiled in October 2001 (AOEMA 2001) and shows clearly that

10 SMEs definitions differ widely in the APEC region, and depend on the phase of economic development as well as their prevailing social conditions. Various indexes are used by member economies to define SMEs, such as number of employees, invested capital, total amount of assets, sales volume and production capability. The most commonly used index is the number of employees.

Source: APEC Survey on Small and Medium Enterprises <http://www.actetsme.org/archive/smesurvey.html#p1>

11 AOEMA is a not-for-profit international association dedicated to the promotion and development of electronic commerce in the Asian region. Since 1996, it has been focused on the issues that SMEs have with the implementation of electronic commerce. During that time it has worked closely with APEC in order to access the broadest range of SMEs through government contact.
governments in the AP region had espoused regional promotion of EC with great enthusiasm.

In Australia, throughout 1998-99 the Australian Government played a significant role in the development of the Organisation for Economic Corporation and Development (OECD) Guidelines for Consumer Protection in the Context of Electronic Commerce, which provide guidance for businesses around the world. In 1999, the then Minister for Financial Services and Regulation, Joe Hockey, appointed an Expert Group of leading industry and consumer professionals to advise him on consumer protection in EC. The Expert Group looked at how the OECD Guidelines could be translated into practical tools for business and developed Building Consumer Sovereignty in Electronic Commerce: A Best Practice Model for Business (Commonwealth of Australia 2000) which, on its release, was one of the world's first self-regulatory responses to the OECD Guidelines. Other examples of Australian government initiatives in the EC arena include the Western Australian Electronic Commerce Centre, which is run by the Western Australian Department of Industry and Technology (Department of Industry and Technology 2002) and the federal Attorney-General’s Department (2002) web site, which gives legal and policy advice on a range of EC issues.

In Hong Kong, the Chief Executive of Hong Kong, Mr Chee Hwa Tung, set a vision for Hong Kong to be “a leader and not a follower in the information world of tomorrow”, as well as to use Information Technology (IT) to retain its competitive edge and to drive overall economic expansion (Hong Kong Digital 21 Strategy 2001, p.4). In November 1998 the Government initiated the development of Hong Kong as a leading digital city (Digital 21 199912). Demand increased as the Hong Kong Government began to provide encouragement for EC activities (see Daily

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12 To realise the Chief Executive's Information Technology (IT) vision, the Information Technology and Broadcasting Bureau of the Hong Kong Special Administrative Region Government commissioned the 1998 Digital 21 Strategy in November 1998. The strategy focused on building Hong Kong's information infrastructure and putting in place the right environment for e-business to prosper.
In Singapore the government launched an Electronic Commerce Plan in 1998, to stimulate the widespread adoption of EC in Singapore, and to strengthen Singapore’s position as an international e-commerce hub (Chen 2001, p.9). In addition, the Singaporean government has its own website which encourages its citizens to move to EC (Info-communications Development Authority of Singapore 2000). In 2000, the Singapore government set aside S$150 million to make the e-government action plan a reality. Mr. Tony Tan Keng Yam, Deputy Prime Minister and Minister For Defence said, “Governments all over the world have a major role to play in realising the socio-economic potential and benefits of the internet economy for their industries and their citizens.” The e-government action plan includes the establishment of a broadband network — Singapore ONE — and more than 99% of homes, all schools and many public libraries and community centres have access to this network. The government has also put in place a secure infrastructure to support EC (McNulty 2000). To further strengthen the adoption of EB and increase EC transactions among businesses in Singapore, the Infocomm Development Authority of Singapore (IDA) and Singapore Productivity and Standards Board (PSB) has put in place a S$30 million incentive programme, known as the e-Business Industry Development Scheme, which is still in existence in Singapore (as at February 2003). The money provided by this project is designed to fund companies which already have some EC capabilities and which are seeking to further their activities in this area; and which have the ability to generate a large volume of online transactions. The applications for funding are evaluated on a case-by-case basis and one of the selection criteria is that projects will bring more client/supplier companies online (Infocomm Development Authority of Singapore and Singapore Productivity and Standards Board 2000). The Singaporean government is encouraging its SMEs to move into the EC environment.

13 In April, 98, Mr Donald Tsang, the then Financial Secretary, stated that the market conditions for mass market E-commerce would ripen progressively over the coming years and during this time governments would have some precious breathing space in which to address the relevant issues which are appropriately their responsibilities in the promotion and facilitation of E-commerce.

14 In June, 98, Mr Tak Hay Chau, the then Secretary for Trade and Industry, at the meeting of the Asia-Pacific Economic Co-operation (APEC), announced a work programme developed by the APEC Task Force on Electronic Commerce.

15 In Feb., 99, Mr K C Kwong, the then Secretary for Information Technology and Broadcasting, when addressing members of the business associations of Germany, Australia, Austria, France, Singapore and Hong Kong, said, “Our aim is not only to provide more efficient and better quality public services to the community, but also to encourage the community to accept electronic commerce as an integral part of daily living.”
In New Zealand, the Minister responsible for EC is the Minister for Information Technology. This position has been held by Hon Paul Swain since 1999 and the Government has consistently maintained a web site on EC policy and initiatives, including the EC strategy and regional broadband initiatives (New Zealand Ministry of Economic Development 2002). In March 2001, the New Zealand government set up the Electronic Commerce Action Team (ECAT) which is a group of private sector representatives tasked with driving the uptake of EC in New Zealand. ECAT set up a government funded project, nzecommerce.co.nz for providing quality assistance to New Zealand business (nzecommerce.co.nz).

These limited examples show clearly that governments in the four AP regions studied were eager to move to EC in the late nineties – and that this enthusiasm has shown little or no sign of waning, despite the bursting of the dot.com bubble and the subsequent press claims that “eCommerce is dead”. With both government and employers still comparatively enthusiastic about EC/EB, it is hardly surprising that universities, searching for attractive degree programs to entice fee-paying students, would be equally enthusiastic about offering EC/EB courses and full degree programs.

But what should these EC/EB programs contain? In the next section, I provide a literature review of tertiary EC/EB programs.

2.2.2 Literature of EC/EB learning and teaching issues

Before I start to investigate EC/EB curricula, I would like to examine the literature on EC/EB teaching and learning issues, as Helsby (1999) suggested because they are very much part of the curriculum. Helsby (1999) in Knight (2001) states:

*The expectation that higher education will help students to become more autonomous compounds that complexity and draws attention to curriculum scholars’ view that curriculum is more than just content. It can be defined as a set of purposeful, intended experiences. It may be divided into at least four parts: content, organisation, learning and teaching methods, and assessment.*

The relevant literature is discussed below.

Teaching EC development courses (subjects) needs to cover both business concepts and the application of technology and tools (Surendra 2000). Projects on teaching EC concepts by using simulation techniques in order to provide students with real experience of EC include, for example, Parker and Swatman who developed a series of web-based business simulations: Teaching Realistic EDI and Telecommunications
(TREAT) (Parker and Swatman 1997), later extended into Teaching Realistic Electronic Commerce (TRECS) (Parker and Swatman 1999). Joyce (1998) describes a virtual electronic teaching environment, the Deakin Electronic Trading Community (DETC), which was developed by staff within the Deakin University School of Information Systems to demonstrate the principles of EC to students. Rosenbaum & Davenport (2000), used a pedagogical strategy of problem-centred learning, and a virtual economy — a simulation of a competitive marketplace for information products and services which provides a challenging, student-centred learning environment where students are experiencing EC in real time. Hajnal & Riordan (2002) used a simulated company experience, where students can come to appreciate what business functions are, and where they can experience some of the challenges a firm faces on the road to becoming an integrated, EB enterprise.

Teaching EC technology by means of a team-project technique is also found in the discussions of Chan (2002) and Rob (2002). Through this technique, opportunities are provided for students to develop real-life EC systems. Bartholome and Olsen (2002) mention that students of Business Information Systems Department at Utah State University are required to complete an internship of at least 300 hours working with a business in some phase of their EC course. These examples show how individual EC subjects are being developed and implemented in order to relate EC concepts to real life situations to enhance students’ experience. They also imply that teaching has been moving from a primarily lecturing-based style of pedagogy which promotes passive learning, to an active learner-focused style. EC has seen a proliferation of interdisciplinary teaching (Crable, Walker & Gunnarsson 2002; Ge & Sun 2000) and EC courses are often designed for multidisciplinary programs (Dhamija, Heller and Hoffman 1999). Lang and Zhao (2000) discussed the role of EC in the transformation of Distance Education. Vogel and Klassen (2000) analyse the iMBA program of the Faculty of Business, City University of Hong Kong to see how the management, teaching and learning culture has been affected by networked learning. Attributes of EC introduction and adoption are drawn upon to explain and predict emergent cultural change in faculty involved in networked learning. Vogel (2001) organised a conference on developing a dynamic, integrative, multidisciplinary research agenda in EC/EB in Salzburg, Austria, with active participation from educators and researchers from around the world. Recently, Zhang
and Chau (2002) describe how one university in China created and incorporated EC courses with native reference tools, indicating that the trend continues.

In the next section, I look at EC/EB curricula.

2.2.3 EC/EB curricula

EC/EB emerged in North America in the early ‘90s. The first popular, user friendly Web browser, NCSA Mosaic, was introduced in 1993 (NCSA Mosaic 2002). This browser began to bring people and business to the Web. By the mid 90s, many universities in the United States and Canada started to offer EC/EB programs (see Section 1.1.3.1). But, surprisingly, not many journal papers discussed the issue of EC/EB curricula.

Ngai and Wat (2002) did a survey of nine journals\(^\text{16}\) and thirty-five IS publication outlets\(^\text{17}\). From these publications, they identified 275 EC articles from 1993 to 1999 and categorised them into four broad EC research categories: applications, technological issues, support and implementation and others. However, only 7 articles were found in the education and training sub category within the application category. Perhaps even more surprisingly, of these seven articles, not a single paper discussed EC/EB curricula. I therefore extended my search to business education journals, some IS and EC conference proceedings, the Americas Conference on Information Systems in 2000, the Educational Resources Information Center (ERIC) database – and finally identified some articles on EC/EB curricula.

However, there is still a limited number of references in the literature, perhaps because it is still ‘new’, or perhaps because academics do not think that curriculum is an interesting research topic. The following quotations may shed some further light on this topic.

Diamond (1988, p.2) notes that:

\[
\text{in many instances, the faculty involved in course development activities have devoted significant time and energy despite the fact that often they received little recognition for their efforts, no matter how successful these projects were.}
\]


\(^{17}\) Ngai and Wat’s 35 publication outlets were based on Walczak, S. (1999) A re-evaluation of information systems publication forums 40 (1) pp.89-97.
Dutt (1997, p.6) adds that:

*curriculum development is a complex task, particularly in a rapidly evolving field such as information systems. There is always the danger that a course developed in reaction to an industry need will become obsolete in several years as technology changes.*

Sagi (2000, p.2) makes the point that:

*Developing an EC course is very challenging.*

And Siau and Davis (2000, p.21) warn that:

*E-Business is changing every day and every hour. What was true one month ago may no longer be true today.*

In the next section, I review the literature on EC/EB program curricula and see whether academics have applied any curriculum development techniques or theories.

### 2.2.3.1 Earliest EC curricula

One of the earliest reports in the literature about EC curricula was from Australia in 1997 where Deakin University offered an undergraduate EC specialisation (Braithwaite, Fountain & Joyce 1997). The program bridged the operations, communications, management and marketing requirements of industry. Table 2-1 shows the structure of the EC Majors.

| Table 2-1 Structure of EC Majors of MIS Degree at Deakin University in 1997 |
|---|---|---|
| **Bachelor of Commerce** | **Master of Commerce** | **Unit Description** |
| **Six Unit from:** | **Four units from:** | |
| **LEVEL ONE** | | |
| Business Information systems | Business Information Systems | Provides a basic understanding of computers and communication systems. |
| **LEVEL TWO** | | (At least 2 units) |
| Systems Implementation A | Systems Implementation | Provides a basic understanding of human-computer interaction and software concept. |
| Information Systems Networks | Business Communication Networks | Provides essential skills and knowledge in computer based communication systems. |
| Introduction to Business on the Internet | Commerce over the Internet | Provides exposure to practical skills and knowledge in using services available on the Internet, and experience in new business practices and opportunities. |
| Electronic communication and Information sources | | *(offered by School of Computing and Mathematics)* |
| **LEVEL THREE** | | (at least two units) |
| Advanced Internet Applications | Internet Business Applications Development | Extends students’ knowledge and experience of the tools available for Internet and Intranet communication. |
| Electronic Commerce | Electronic Commerce | Discuss a variety of fundamental concepts associated with electronic commerce including EDI, EFTPOS, and trading over the WWW, and elaborates on associated issues including security, business impact, technology and legal aspects. |
Bachelor of Commerce
Six Unit from:
Information Systems Project

Master of Commerce
Four units from:
Electronic Document Design (offered by School of Computing and Mathematics)

<table>
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<tr>
<th>Unit Description</th>
<th>Bachelor of Commerce</th>
<th>Master of Commerce</th>
</tr>
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<tbody>
<tr>
<td>Gives students the opportunity to consolidate the skills they have acquired by applying them to the development of a business-oriented web site or similar project.</td>
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</tbody>
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The table shows us that the subjects in the earlier EC programs made use of many existing IS subjects.

About the same time, in the United States, Dutt (1997, p.2), then at Bloomsburg University, found that the various IS model curricula developed in the past twenty years did not deal with EC in any significant way. He suggested that an integrated approach which both focused on EC studies and provided students with the opportunity to conduct actual EC operations would be a more appropriate way of teaching this increasingly important area of IS.

Wang (1998), based on an Internet survey undertaken during summer 1997, suggested one of the earliest EC curricula. He identified twenty MBA programs and fourteen undergraduate programs in the US which possessed significant components of EC. He believed that EC programs were essentially industry-independent but associated with the background of IT. He summarised the common characteristics of these programs into a curriculum structure for EC, as shown in Figure 2-5.

Figure 2-5 A Curriculum Structure for EC


We can see that the curriculum structure of early EC borrowed from existing academic areas such as IS, accounting and law.
The literature of the late 1990s shows an increasing emphasis on specific aspects of EC, as institutions responded to the variety of demands from the market. Davis et al. conducted a survey on online EC courses (subjects) in Canada and the United States. As at March 1998, there were about 50 courses offered (Davis et al. 1998, p.36) and the authors categorised EC programs into four major groups:

- General “business-centric” Electronic Commerce majors.
- Business-oriented Electronic Commerce majors or concentrations taken in association with a certain amount of training in information systems. These programs usually are associated with an MIS department.
- Electronic commerce programs with a specialized focus within business. The focus is usually on marketing.
- Hybrid management/technical “Techno MBA” programs with Electronic Commerce in the title.

(Davis et al. 1998, p. 22)

Still later in the decade, a number of additional articles on EC/EB curricula were published. These either describe EC/EB programs within the author(s)’ own institutions or provide a survey of EC/EB programs in a number of universities within a region. Although these articles do not add greatly to the overall understanding of EC/EB curriculum development, they do show the basis on which many of the courses taught were being developed. In the next section, I summarise these EC/EB curriculum articles from 1997 to 2002.

2.2.3.2 EC/EB curricula 1997-2002

The summary of the EC/EB curriculum articles from 1997 to 2002 is listed in Appendix II. I divide these EC/EB curriculum articles into 2 categories: local and regional. Local means the curriculum was intended only for that particular university. Regional refers to a focus on an area, i.e. many universities. I have also divided the articles into those which focus on graduate programs (masters, post graduate certificates/diploma); and those which focus primarily on undergraduate programs (bachelors). I examined about twenty papers on EC/EB curriculum and Table 2-2 summarises the EC/EB curricula research articles from 1997 to 2002. For a description of each paper, please refer to Appendix II (EC/EB research papers on curriculum).
Table 2-2  EC/EB Curriculum Research Papers from 1997-2002.

<table>
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<tr>
<th>Undergraduate programs or individual subjects</th>
<th>Graduate programs</th>
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</thead>
<tbody>
<tr>
<td>Siau and Davis (2000;2000a)</td>
<td></td>
</tr>
<tr>
<td>Siau and Davis (2000;2000a)</td>
<td>Mahrer and Brandtweiner (2001)</td>
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<td>King, Frank and Platt (2001)</td>
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Among all these curriculum research papers, very few discuss the development of overall curricula. Examples of this broader approach are Dean and Nasirin (2002), Wheeler (2001) and Fedorowica and Gogan (2001).

Dean and Nasirin (2002) focus on the development of EC/EB education within the structure of an MBA program, suggesting two models for EC courses (subjects) and curricula at the masters levels. These authors studied the EC offerings of MBA programs and non-MBA programs by the top fifty UK business schools and suggest two different approaches for implementing EC content within a curriculum: the integrated, interdisciplinary (refer to the Recommended Curriculum Model of Figure 2-6 below); and nonintegrated approaches (Refer to the Problematic Curriculum Model of Figure 2-6 below).
The first approach — integrated, interdisciplinary — is the one which these authors recommend. Within this model, courses offered by business school teaching departments such as Marketing, Accounting, IS and other disciplines include some EC content, together with traditional content in their core course offerings. In this way, all students obtain some EC principles within the context of the respective discipline, whether they plan to specialise in EC or not. This approach also suggests that students obtain prerequisite subjects prior to taking the EC specialisation.

The authors found that the second approach — non-integrated — led to a number of potential problems. Using the example of a specific MBA degree program, they cite the case of an EC survey course (possibly they are referring to a general introduction to, or survey of, EC) which was offered early in the sequence of classes then followed by the traditional courses. They found that this structure led to two quite separate problems: understanding on the part of the students of the EC survey course; and the staffing of the courses themselves:

- in terms of student understanding, the authors found that it was not effective to talk about EC marketing, for example, without an understanding of basic marketing principles and strategies;
• in terms of staffing the course, they also found that staff assigned to teach the EC survey course faced the difficult task of trying to stay abreast of topics and evolving practice and theory across multiple disciplines.

There is another disadvantage to this model — as EC principles become accepted as part of reference disciplines, topics taught in the course eventually also appear in the courses offered by each business discipline. This “content erosion” means that faculties who invest in lecture content become unable to use their preparation over many offerings of a course. A lot of wasted course preparation effort results from this early multidisciplinary course.

The Dean and Nasirin article has the potential to cast considerable light on the issue of integrated vs. non-integrated EC/EB academic curriculum development. Unfortunately, however, it appears that these authors have concentrated their efforts on discussing the problems brought about by teaching an inter-disciplinary course into an MBA program, rather than considering the broader issue of how to create an integrated EC/EB curriculum per se. As a result, although they make some very useful points about the need to link course content in an effective manner across disciplines, they do not add significantly to my discussion of the way(s) in which EC/EB curricula are actually being built.

Wheeler (2000) suggests three design principles for EB curricular initiatives and, in a later article, adds two further principles for designing and executing an EB curricular revision within Schools of Business at both undergraduate and master’s levels. The five principles are:

1. Design for the end state – examine whether e-business is an area of study, such as the academic discipline of marketing, or more of an interdepartmental process such as business process reengineering.
2. Design for speed – the landscape of e-business is changing rapidly, an a curriculum’s relevancy is dependent on engaging the speed imperative.
3. Design for an evergreen evolution over time – similar to trees that adapt to a range of climates and stay green all year, the governance of an e-business curriculum must enable adaptations toward the end of ‘e’.
4. Design to cultivate absorptive capacity – absorptive capacity has been defined at the organizational level as “… the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends. …” The prior knowledge of a firm and its individuals affects a firm’s absorptive capacity. Our concern is to cultivate absorptive capacity at the individual student level.
5. Design for global commerce in a connected-world – an e-business curriculum must incorporate an international view at its very core, rather than treat it as a separate set of topics added on at the end of a course.

Wheeler (2002, pp.204-209)

Wheeler (2002) also argues that three end states for EB curricula seem possible:

1. An integrated set of courses that composes an e-business major.
2. A collection of topic eBusiness courses
3. e-business concepts being diffused into existing courses without a special e-business offering


Wheeler (2002) addresses the five principles in designing EB curricula. These principles may at first sight appear rather simple, but executing them within the political framework that always exists in university curricular revision is not nearly so simple, i.e. it is very hard to implement in practice. Hence a more practical way for developing EC/EB program offerings becomes essential.

Fedorowica and Gogan (2001, p.318) believe that some professors feel accelerated expectations for curriculum development and professional development activities conflict with their research agendas. To solve this problem, they suggest two ‘new’ processes for developing fast-cycle EB curricula, and demonstrate these by a case study of Bentley College in Massachusetts. The two processes are research-driven curriculum and stakeholder-driven curriculum initiatives.

Research-driven curriculum development is where new subject materials are generated and introduced into the curriculum within the first six months of an ongoing research effort. Stakeholder-driven curriculum development starts with an analysis of stakeholder needs and preferences. The stakeholders here include students, alumni, current and potential employers, and benefactors. The stakeholder driven curriculum development processes came in two waves. In the first wave, a set initiative enhanced faculty members’ awareness by having key stakeholders providing knowledge about best practices in several IT-intensive business activities. In the second wave, the stakeholders helped to define and scrutinize the development of several new graduate programs.

Both research-driven curriculum and stakeholder-driven curriculum development processes can give rise to a need for new or directed resources and reconsideration of
existing policies and practices. However, both of these processes rely considerably on the availability of internal staff/stakeholders’ expertises which may lead to coherency of the whole program.

Since these three articles are clearly of considerable interest to anyone investigating EC/EB curriculum development, I examined the advantages and drawbacks of all three sets of recommendations – Dean and Nasirin’s (2002) integrated and interdisciplinary development approach for masters programs; Wheeler’s (2002) five principle for designing EB programs; and Fedorowica and Gogan (2001) fast-cycle curriculum development strategies to the EC/EB program development – very carefully; and have drawn a number of conclusions from them:

Firstly, the majority of the published articles relate to the US, with only two academic discussions of EC/EB curricula in the AP region having been written (Braithwaite, Fountain & Joyce 1997; and Ee 2001). Even these papers only covered the authors’ own institutions, Deakin University and Curtin University of Technology, leaving a gap in the research relating to EC/EB education in the AP region. I hope that my own findings relating to EC/EB programs in the AP region have gone at least some way towards closing that gap (Chapter 6, in particular, contains the results of my major surveys of institutions and individuals developing such programs in the region).

Secondly, it is evident that technology is central to EC/EB, so that the rapid changes in technology make demands for constant changes in curricula. The question of how much lead-time for development is available for EC/EB programs is of critical importance but is not discussed in the literature except in Fedorowicz and Gogan (2001). The contributions of my research to this issue are discussed in Chapter 8.

Thirdly, it is clear that EC/EB programs were offered by different institutions over very short periods of time, e.g. in the United States (US), about two-thirds of the 75 departments which responded to Dutt’s survey did not teach EC courses at either the graduate or undergraduate level and did not plan to add one in 1996 (Dutt 1997, p.2); and yet 20 postgraduate programs and 14 undergraduate programs were found in 1997 (Wang 1998, p.33); five times more courses were being offered in 1999 than in 1997 (Sendall 1999) and more than 77 EB programs at AACSB-affiliated business colleges programs were available in 2000 (only the AACSB-affiliated programs are counted in this survey – note that some US universities are not AACSB-affiliated) (Etheridge, Hsu & Wilson 2001, p.328). Growth in EC graduate programs from Chapter 2
February to November 2000, within several months, increased 109% (Durlabhji & Fusilier 2002).

In Australia, the growth rate was particularly fast, with 30 out of 38 universities offering such courses in 2002 (Chan 2003; Australian eBusiness Guide 2001, pp. 577-597). In Hong Kong, only one EC subject was offered in 1995 (Singtao 2000) and only one university started to offer an EC program in 1999 (Kwok 2000). But by 2003, 7 Hong Kong universities out of 8 offered EC/EB programs. The relevance of this ultra-rapid program development is clear – no matter which development approach one favours, it is difficult to see how the developers can ensure the highest possible quality within the time available.

Finally, the literature seldom shows no evidence of the use of curriculum development theories for these new programs, nor of the use of any theories to support the findings of the authors writing on this topic. Only four papers (see Fedorowicz and Gogan 2001), discuss curriculum development technique, with only three further papers (Dean and Nasirin 2002; and Wheeler 2000, 2002) discussing approaches to integrating EC content into academic educational programs. It is also interesting that these four papers are among the most recent of those published on EC/EB curriculum issues. The lack of established theory on this topic left me largely to make my own way in identifying curriculum development approaches and techniques; and led me to make use of empirical data-gathering to establish just what was happening in the Asia-Pacific region in terms of academic EC/EB program development. I discuss these findings in Chapters 6-8 and the theory which informs this research project can be found in Chapter 5.

In the next section, I consider the role of pedagogy and market orientation in EC/EB programs.

2.3 Role of Pedagogy and Market Orientation in EC/EB Programs

I have discussed the role of pedagogy in EC/EB programs, particularly the teaching and learning issues, curriculum development method and the content of the curriculum in Section 2.2. There is little evidence of the use of pedagogical theories in developing new EC/EB programs, as the last column of Appendix II shows. From the literature, there are very few discussions about the pedagogical issues of EC/EB programs.
In the late eighties, universities were shifting into a phase where the curriculum was market-driven, in an economic sense. Jones (1990, p.161) illustrates this by the case of the Commerce Faculty of the University of Auckland.

Over the past four years (1986-90) at the University of Auckland, first year enrolments in Commerce have more than doubled to a point where new enrolments each year will approach to a thousand and still not satisfy the demand. The reasons for this wish to graduate in Commerce are not hard to divine. Commerce students are more ‘employable’ than almost any other cohort (according to figures published annually by the NZ Vice Chancellors’ Committee), and they earn salaries which are significantly higher than graduates who emerge with other degrees. This is an international phenomenon.

The new EC/EB programs will bring income to the universities, particularly as the majority of these programs are fee-based. This is absolutely true in both the Hong Kong and Australian situations, where all the EC/EB masters degree programs are fee-based. Students have to pay a large amount to study an EC/EB program, (see discussion later in Section 8.4.4). This situation is very similar to that of the universities in the United States – or, indeed, almost anywhere within the English-speaking or Anglo-influenced academic community.

The situation is different for those countries where there is no charge for education, for example, Germany. In Germany, the term ‘university’ implies a certain quality of education — higher rather than further — something which makes university education qualitatively different from other forms of education that occur after initial education (Jarvis 2001). Higher education is free, and the German government sponsors almost all funding of universities. Business schools, in the sense in which this term is used in the English-speaking world, are unknown in German state universities (although there are a few, rather small, private universities which have Anglo-style business schools offering MBAs – many of them teaching primarily foreign, i.e. non-German, students), and it is interesting to note how few EC/EB programs are offered in German universities, in comparison with the English-speaking world in general and the AP region in particular.

Nowadays universities in the AP region are under-funded by governments. This ensures that they earn income by responding to demands from potential fee-paying students or their employers (Jarvis 2001, p.8). Education has become a commodity to be sold in the marketplace of learning (Shumar 1997). Basically, it is not education that is the commodity, it is knowledge, since this has become a knowledge society.
(Stehr 1994). In the marketplace, the significance of knowledge is well illustrated by Lyotard (1984, p.5) quoted in Jarvis (2001, p.9).

*Knowledge in the form of an informational commodity indispensable to productive power is already, and will continue to be, a major – perhaps ‘the’ major – stake in the world-wide competition for power.*

EC/EB degree programs are a commodity of ‘new’ knowledge, and there was thus a demand from the market for the development of such programs.

The new programs, driven by market demand, have been developed over a very short time period, leaving little time to think about the needs of pedagogy. The universities’ purpose is to assemble a service product — new EC/EB degree programs which can and should be done efficiently. Therefore, I would argue that EC/EB programs which have emerged during these few years, are more oriented to the market than to pedagogy.

In the next section, I discuss the tertiary education as a market.

### 2.4 Markets and Competition in Tertiary Education

There was rapid growth in university enrolments in all the OECD countries after the Second World War (Williams 2000, p.150). In Australia, higher education was free prior to 1974. In 1980 a small charge for overseas students was introduced, and in 1985 fees began to apply. In 1988 the Higher Education Contribution Scheme (HECS) was introduced (Williams 2000, p.156), albeit originally at a very low level (A$250 *per annum*). Since then (1987) competition has existed in Australian higher education (Marginson 2000), with tertiary institutions having considerable discretion to set their own course priorities. Over the past decade and a half there have been substantial shifts in the distribution of courses across the sector in response to labour market developments and student demand. (Department of Education, Training and Youth Affairs 1998). Marginson and Considine (2000, p.3) studied 17 such cases in Australian universities, and found the following changes in the universities studied:

- *Forms of university governance and academic work that survived previous restructures are now under more direct assault. In many places, claims to privilege and special status outside the market have been rejected.*
- *Strong increasingly independent forms of executive control give expression to the contemporary university’s idea of itself as an ‘academic enterprise’. We have chosen the title The Enterprise University to symbolise the emergent institutional type.*
They claimed that universities are moving to the form of some sort of ‘enterprise’ and they further describe some characteristics of the Enterprise University as:

- University purpose is now defined by forms of strong executive control.
- University missions and governing bodies start to take on a distinctly corporate character (drawn not so much from business, itself as from an ‘ideal form’ corporation modelled in public sector reform), marketing mediates much of the relationship with the world outside, and performance targets are superimposed on scholarly honorific
- Driving these changes is a redefined internal economy in which under-funding drives a ‘pseudo-market’ in fee incomes, soft budget allocations for special purposes and contested earnings for new enrolments and research grant.
- Some elements of this ‘market’, particularly the education of international students, are driven by a frankly commercial and entrepreneurial spirit, now a key (though by no means always dominant) element of the enterprise culture.

(Marginson & Considine 2000, p.4)

There has been increasing pressure on Australian academics to undergo metamorphosis to become more commercialised service providers in the higher education ‘industry’. Students are attracted to universities through marketing and promotion activities which inculcate the perception that the student is a customer (Brennan & Bennington 1998). And this phenomenon is not restricted to Australia – Moogan, Baron and Harris (1999) examined the decision-making behaviour adopted by candidates hoping to gain admission into higher education institutes in UK. Their surveys suggested that potential students find the decision-making process to be complicated and risky, and that they spent a lot of time exploring, investigating and examining all the evidence. With the introduction of student fees in 1998 in the UK, prospective students became even more selective and searched for institutions which could offer the best value for money.

In Hong Kong, the University Grants Committee (2002) announced the Higher Education Review 2002 on 26 March. One of the recommendations was to create extra capacity at senior years of universities for new entrants and to introduce a credit accumulation and transfer system to facilitate student mobility. This recommendation further encourages universities in Hong Kong to compete with one another for the in-take of students with academic excellence.

Kotler and Fox (1995, pp.4-5) point out that “making a direct comparison between university and business would have been shocking a few decades ago”. The mindset of the public at large had changed significantly from the time when:
Educational institutions educated students, relying on money from tuition and gift to pay teachers; salaries and the other expenses of operating their programs. Their aim was to impart knowledge and skills that would improve the lives and work opportunities of their graduates. Businesses, in contrast, aimed to make a profit, defined in narrowly financial terms. Education and business were considered distinct “worlds” with little or nothing in common.

However, Kotler and Fox (1995, p.6) believe that when educational institutions encounter problems such as a decline in the number of prospective students, donations, and other resources in the face of mounting costs, they would tend to shift to a marketing-oriented approach in order to attract more students.

The higher education sector is moving from ‘education’ to ‘business’ can be further demonstrated by NOIE’s report on EB in education sectors (NOIE 2002). NOIE provides a scan (March and September 2001) of the different way EB is currently being used in the higher education in Australia and New Zealand. The findings are illustrated below.

- **Deakin University** demonstrates the breadth of its initiatives in the field of eCommerce, that is online financial transactions. Deakin University is also developing its broader eBusiness capability, for example with links between the front office delivery of online learning and the back office processes that support the front office services, such as online library systems.

- **University of Western Australia** provides a snapshot of its current activities and future plans in eBusiness. The University is particularly active in facilitating online payments.

- **Flinders University** is a typical position amongst Australian universities at present: the university is focusing on online student enrolment, online fee paying and eProcurement.

- **Curtin University** has participated in an online auction process for travel(hotels), with Optus involvement.

Other examples of EB plans or developments in the higher education sector in Australia include:

- **The University of NSW** has called for tenders for an eProcurement system.

- **The West Australian government** is piloting an eProcurement initiative (the GEM project) and some West Australian universities are waiting to participate.

- **The University of Melbourne** operates a procurement and workflow system (electronic in-tray) that uses digital signatures and eliminates internal
New Zealand universities are actively embracing eBusiness. For example,

- The University of Waikato in Hamilton, New Zealand, is very clear about the challenges that eBusiness might address. The university is also piloting eProcurement, developing student and staff portals, undertaking national research and conducting experiments with marketplaces and digital exchanges.

- The University of Auckland recently tested in the Faculty of Arts an eProcurement system called OneZone and plans are now in place to extend the system to the whole university. The University of Auckland is aware of the benefits of eProcurement and is pleased with the technology selected and the collaborative arrangements established with the supplier.

Furthermore, universities use different ways of EB can improve service to their diverse clientele (Blustain et al. 1998).

2.5 New Product Development

The nature of the market is competitive. The dynamics of customers, competitors and technologies prompt companies to review and reconstitute the product they offer to the market, that is, requiring the development of new products to replace current ones (Levitt 1960). New Product Development (NPD) possesses similarities to EC, being a cross-functional activity which has been reflected in the disciplines that have paid significant attention to it (Maylor 1997).

... These include marketing and strategy (e.g. Craig and Hart, 1992), economics (e.g. Schmookler, 1966) and sociology (e.g. Kanter, 1983), in addition to operations management (e.g. Chiesa et al., 1996)...

(Maylor 1997, p.1196)

The American consultants Booz Allen Hamilton developed one of the most recognised NPD models (Booz, Allen & Hamilton 1982). In their model, the stages of developing new products were identified as new product strategy, idea generation, idea screening, concept development and testing, business analysis, product development and testing, test marketing and launch. In the next few paragraphs I briefly summarise the literature on new product development.

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18 Booz Allen Hamilton is a management and technology consulting firm which provides services for international corporations and government clients around the world.
Maidique and Zirger (1984) found new product successes to be characterised by a high level of top management support. Cooper and Kleinschmidt (1987), however, found less proof of top management influence, discovering that many new product failures often have top management support. Cooper and Kleinschmidt (1990;1990a) suggested some factors for the success of new product.

In Hart’s (1993) survey of British manufacturing firms, business people themselves defined the dimensions of new product success – both financial and non-financial – to be technology, cost and price and time-to-market. Mahajan and Wind (1991) conducted a survey of 69 firms to assess the role of 24 new product models. They found that the use of new product models was not widespread but that, despite their infrequent use, developers tended to use these models to improve the success rate of new products, as well as to identify problems with the product and alternative marketing strategies. Urban and Hauser (1993) suggested a new product design process for customers' needs.

Wind & Mahajan (1997) addressed 18 critical issues in NPD, believing that current approaches to NPD and marketing research and modelling for NPD were inadequate. Rao (1997) noted a need for advanced books on research methods and models for NPD which would include some of the recent methodological advances in the analysis of customer perceptions, preferences and choices. Moorman and Miner (1998) believed that planning for NPD was an important aspect of effective marketing management and decision making, although improvisation can sometimes be a valuable and effective approach to marketing action.

Saban et al. (2000) presented the results of a survey of 212 diversified businesses, which suggested that organisational learning does have an impact on new product performance, and should be considered a critical component in the NPD process. Around the same time, Filson and Lewis (2000) found that the difficulties encountered in the implementation of new product development processes come up against habits and attitudes that have developed over years, and are affected by the extent to which the cultural characteristics of a company (SME) influence the overall change process. Keller (2001) provided important evidence that cross-functional groups in research and NPD can deliver better technical quality, faster schedule performance, and better performance through the indirect effect of external communications.
2.6 New Service Development

Lovelock *et al.* (2001) notes

*As Theodore Levitt (Levitt 1974) observed some two decades ago:*

*We live in an age in which our thinking about what a product or a service is must be quite different from what it ever was before. It is not so much the basic, generic central thing we are selling that counts, but the whole cluster of satisfactions with which we surround it.*

I discussed NPD in the previous section. In this section I discuss New Service Development (NSD) and outline the differences between NPD and NSD and ways in which new service development relates to the offering of a new educational program.

Financial services, health care, telecommunications service and education are services which can be involved in NSD. Doubtless, education may be considered as a service or service product (Corkindale *et al.* 1989, p.210; Lovelock 2001, p.47). These services can be sold either to customers or to other businesses, or sometimes to both. The actual service offer is only produced when customers interact with those who serve them.

The major differences between new products and new services are captured under four main characteristics. They are *intangibility, heterogeneity, simultaneity* and *perishability* (Johne & Storey 1998; McGuire 1999)

- **Intangibility** – services are predominantly intangible. They are processes (cannot be touched) rather than “things”.

- **Heterogeneity** refers to the heterogeneity of output produced by firms claiming to produce the same service. The heterogeneity characteristic means that it is difficult to establish standards for the output of a service firm, and even more difficult to ensure that standards are met each time the service is delivered.

- **Simultaneity** means that services are typically produced and consumed at the same time.

- **Perishability** — services are perishable, i.e. they cannot be inventoried.
Scheuing and Johnson (1989) developed a normative model of the new service development process. Johne and Storey (1998) review the literature on the new service development process and identify six key themes:

1. The corporate environment;
2. The process itself;
3. The people involved;
4. Analysis of opportunities;
5. Development; and
6. Implementation.

Johne and Storey (1998, p.199)

Johne and Storey note that the lack of skilled and experienced development staff in the corporate environment is a major barrier to innovation. This can also apply to the tertiary institution environment, where a lack of expertise in new subject areas can make it hard to develop an innovative (completely new) degree program.

For the process itself, Shostack (1984) has identified four essential characteristics for new service development: objectivity, precision, fact-driven and methodologically based. A ten stage development process is identified.

There are three groups of people involved in the NSD – the development staff, the customer-contact staff, and the customers themselves. In the educational context, this is similar to a team of course developers who develop a new program, other academic staff members who deliver that program to students, and the students themselves. Analysis of opportunities can prevent the offering of a new service which focuses on “me-too” services, where most development is being reactive and defensive in nature (Piercy & Morgan 1991).

As the discussion in the previous sections of this chapter has made clear, there was a sudden emergence of a large number of EC/ED programs in the AP region, sufficient to make one wonder whether they are ‘me-too’ services. Development, according to Edvardsson and Olsson (1996), can be broken into three activities: service concept development, service system development, and service process development. The service concept is the description of the customers’ needs and how these are to be satisfied. This is more or less like the objectives of a new program. The service system represents the static resources required for the service. These consist of the teaching staff, the teaching environment (whether in the classroom or online etc.), the structure and administration of the support systems (for example, student service
section, examination offices in universities etc), and the customers themselves can be considered as ‘co-producers’. The service process is the chain of activities which must occur for the service to function, for example, lecture, tutorial, workshop etc. Lastly, implementation is regarded as the most critical stage in new service development (Schneider & Bowen 1984). This is where the plans regarding the service concept and the service process are put into action, or the launching of a new degree program and the running of it.

It can be seen that the six themes of Johne and Storey (1998), of the development of new service process can be ‘borrowed’ for development of new degree programs. I will discuss the issue of new service product development in greater detail in Chapter 5.

2.7 Summary of Chapter 2

At the time 1998-1999, I was conducting my research activities exploring models for course development for EC programs at tertiary level, and, as I have stated earlier, there were few such programs in the AP region. It was also anticipated that EC courses would continue for years to come. However, in April 2000, the first dot.com crash occurred, changing the world scene for EC – and hence my research plan – dramatically. I changed my focus in the second half of 2000 to investigating educational program development for programs which may have a temporary but critical life span. At this point I realised that such academic programs were, in fact, a service product in a market. In reviewing the marketing literature, I found an entire body of work in the area of new service product development which appeared likely to yield the kind of solution needed for developing academic programs with a short life span and hence with a short lead time for development.

Following this flow of thinking, in this Chapter, I initially discussed the pedagogy aspect of a new program — curriculum development approaches. Then I examined the existing literature on EC/EB curricula and found that academics rarely adopted curriculum development theories. The literature suggests that the higher education environment changed recently, at the time of government funding cuts. Universities trying to solve their financial problems by offering fee-paying degree programs are more like a market dealing with competition. Finally, the literature also shows the nature of NSD, which could be relevant for developing such new degree programs. New academic degree programs emerge suddenly when there is a demand from the
market. It is evident that there is a need for a model of new service product development in educational programs.

In Chapter 3, I describe the research methodology for this PhD project and in the subsequent chapters, I explain the theoretical and empirical research on which this project has been based.