In offering a new educational service product, there are three major areas to be considered, which are presented in the NESPO model in the form of three concentric circles: service product, service distribution and marketing support. As I have argued in Chapter 6, EC/EB programs are in fact new service products and, in this Chapter, I investigate two further elements of new EC/EB programs: service evidence and advertising/promotion. The two surveys reported in this Chapter are not central to the empirical data gathering and analysis of the thesis, and the first of them was not specifically designed to test the NESPO model — but they shed a light on two important and interesting aspects of the educational service product which have not been widely considered in the literature.

The first survey – service evidence: EC/EB employment opportunities

Service evidence includes the subsidiary concepts peripheral and essential evidence.

- **Peripheral evidence** is a piece of critical ‘evidence’ which verifies that a service either exists or has been completed. One example is the issuing of student identity cards which enable their holders to demonstrate that they are studying at the university and are therefore entitled to a range of services and facilities.

- **Essential evidence**, unlike peripheral evidence, cannot be held physically by the customer. However, its impact could be so critical that it could, by itself, determine the customer’s decision whether to purchase or not. Given its importance, it must thus be considered virtually an element in its own right. Shostack (1982, p.52) gives an example of essential evidence in the field of air transportation:

  To a consumer who purchases transportation in the form of an airline ticket (peripheral evidence), the aircraft that “facilitates” the service [the essential evidence] has a strong impact on service perceptions and even purchase. The
If we apply these two service evidence concepts to educational service products, one obvious example of successful service evidence for students is demonstrate the existence of good job opportunities for new graduates from that particular degree program. Students who are already working might look for such evidence as an indication that they may expect better chances for promotion to senior positions, or perhaps a pay rise in their existing position, upon completion of their degree. Service evidence of this sort would count as essential evidence – particularly for a student contemplating investing in an expensive, two-year, part-time graduate degree.

Equally, if there are clear indications that students will find it very difficult to find employment on graduating from a particular degree program, this will definitely affect their view of the degree, as well as their motivation to select and engage in that study program. Employment prospects can therefore be seen as both positive and negative essential service evidence for an educational service product – and are taken very seriously by the majority of students in a fee-based educational environment.

Of course, in addition to job opportunities, there are a range of other forms of service evidence, including such issues as: students’ own intellectual interests, their abilities, the degree of ‘difficulty’ of the program and the social acceptability or status of that particular degree. All of these will influence students in making the decision to choose the program (purchase the service product) in question.

At the time of my initial empirical research work, which took place in the year 2000, EC programs had only just emerged in the AP region. There were then only a comparatively small number of articles in the popular press concerning the introductions of Internet and IT jobs, for example:

- CYBER Management Inc. (1996), identified 125 new Internet job titles in 1996;
- Coles and Sommers (1997) cited eight jobs in the EC area, all of which were concerned with technology and the Internet, including: systems architect, network infrastructure support, project managers, web site developers, content author/publisher, resident artist/photographer/post production editor, webmaster, and technical support/help desk;

However, I found that these articles did not describe EC careers in detail and did not reflect the real job situation. My first piece of empirical data gathering, therefore, was to undertake a study of EC careers in 2000, by visiting recruiter web sites and identifying the careers and skills needed for EC graduates in the market-place.

I had two primary motivations for this survey:

- The first was to understand the world into which EC/EB graduates were heading, with a view to identifying needed skills and qualifications from these degree programs. I felt that this would greatly assist me in my subsequent analysis of the programs themselves.

- My second motivation was to discover whether employers were already targeting specific skills and qualities in a way which would assist program developers to think about their EC/EB degrees and identify which skills would be needed by the EC/EB market-place once their graduates emerged into it.

It seemed clear to me that understanding the job opportunities available to EC/EB graduates was a step towards understanding EC/EB educational programs. Eight different categories of EC/EB jobs were identified as a result of this survey; and the findings were presented during the 2000 Bled International Electronic Commerce Conference (Chan & Swatman 2000). The staggering impact which the dot.com and telecoms crashes have had on the public perception of EC/EB between 2000 and 2003 also led me to undertake a brief and informal follow-up of these same recruitment web sites (or as many of them as were still available for search) in April 2003. I present the results of this EC/EB job opportunities survey in Section 7.1.2 and touch very briefly upon the difference I discovered in my follow-up findings from 2003 (although this search was by no means formal enough to be considered a piece of empirical research in its own right).
The Second Survey: EC Characteristics in EC/EB Degree Programs

Advertising and Promotion are essential elements in offering new service products. Advertising of new programs can be undertaken via radio, television and print media such as brochures, as well as through a variety of alternative media channels. As the Internet is ubiquitous, particularly for users from Generation X and younger, EC/EB concepts are primarily conducted by means of the Internet. I had already discovered that many of the new EC/EB programs had specialist web sites, and it seemed both useful and logical to investigate whether these programs themselves truly possessed the EC/EB characteristics they were teaching to their students. To put this in a more colloquial way, were the universities teaching EC/EB practising what they preached?

I therefore evaluated 46 such web sites in May 2003, using Ho’s web site evaluation framework (Ho 1997) to ascertain just how many of the “true” EC/EB features were being provided by the various universities’ own web sites. I had already undertaken a similar survey one year before, in May 2002, and the findings of that earlier survey were presented at the Australasian Conference on IS held in Melbourne in December 2002 (Chan and SWATMAN 2002b). Section 7.2.2 reports the results of these two surveys.

Figure 7-1 identifies those parts of the NESPO model which are explored in this Chapter.

![Figure 7-1 Elements of the NESPO model studied in this Chapter](image-url)
7.1 Major Categories of Careers and Skills in EC/EB

A study of IS graduates by Castleman and Coulthard (1999) found that IS graduates do not appear to have clear, realistic expectations of what the professional workplace holds in store. I think it highly probable that EC graduates are also unrealistic in their expectations of future employment possibilities – or possibly simply unaware that of the type and variety of opportunities in the workplace. It is also possible that the jobs advertised as being “EC related” are really IT jobs with “sexy” titles, which may not reflect the true picture of the EC job market. Clearly, there is a need for some accurate data on what jobs are available; and what graduates with EC experience can and should be anticipating in terms of career opportunities.

In 2000, I explored and identified the EC job market on the basis of the advertisements actually placed by on-line recruiters, developing a realistic picture of what was available in this field. I identified 8 categories of EC/EB careers, which were based on the EBCM model (described in detail in Chapter 4). This piece of research was therefore fundamentally an analysis of online job advertisements, which were subjected to descriptive statistical analysis only. Table 7-1 below shows the different types of EC/EB careers being offered in 2000 (Chan and Swatman 2000, p.5). Column 1 of Table 7-1 contains the “meta-views” of the model, while Column 2 identifies the objects which might be contained within each component of the meta-view. The third column has been added to the table for this thesis to summarise the major categories of careers in EC/EB.

Table 7-1 Potential E-Commerce Career Types
Modified from: Chan and Swatman (2000, p.5)

<table>
<thead>
<tr>
<th>Meta-view level Components</th>
<th>Objects within each component</th>
<th>Careers in E-Commerce Categories</th>
</tr>
</thead>
</table>
| Infrastructure (Technical) | • Telecommunications / Network technologies (wireless / wire transmission)  
• Multimedia applications  
• Internet / intranet/ extranet  
• Web page development (html, java, perl)  
• Web page browser (Netscape, IE, lynx)  
• Simulation  
• Data mining/warehousing  
• Security of Information  
• EDI  
• Database management  
• Client/server, web server maintenance  
• Internet Service Provider  
• Human Computer Interface  
• Smart card devices | • Web Development and Programming  
• E-Commerce Systems and Solutions |
| Services | • Internet Payment Systems (EFTPOS, EFT)  
• e-publishing | • Business Analysis |
In December 2000, Computerworld identified E-commerce application development as among the “most wanted” skills for IT professionals by way of an IT managers survey (Computerworld 2000). It should be noted that the results of that survey showed the situation after the initial dot.com crash of April 2000, when demand for EC/EB graduates had declined for the first time. That dot.com crash, of course, had only a temporary effect on the share-markets and in 2001 they bounced back again before falling once more, and this time catastrophically, in 2002 (The Economist 2002).

During 2001, the Centre for International Economics (2001) estimated that in Australia a revised figure of around 27,500 experienced IT people (the original estimate was 45,000 people) would be in demand over the coming five years, even after the bursting of the ‘dot.com bubble’ and as the business cycle in the US started to turn downwards. Part of this optimism, of course, came from the fact that the Australian economy has remained far more buoyant than that of its trading partners – many of which have slowed down or, in some cases, actually gone into recession (The Economist, 2003).

The combined effects of the bursting of the dot.com bubble (first in 2000 and again in 2002), the telecoms “meltdown” of late 2002, the loss of faith in large, formerly high-status companies (typified by the Arthur Andersen scandal of 2002) and the steadily growing global recession have been particularly noticeable in the employment market. The IT and EC/EB employment markets are no exception and, indeed, have been particularly hard-hit over the last 12 months or so (The Economist 2003). Yet despite the increasingly difficult outlook for professionals – both in IT generally and in EC/EB more specifically – the basic expectations of EC/EB
graduates have not really changed (although, in Section 8.5, I present three “mini-
cases” from Singapore and Australia which suggest that universities offering EC/EB
degrees may be starting to respond to the market downturn by closing or renaming
degree programs and educational teaching units).

The follow-up investigation of recruitment web sites which I was able to undertake
in 2003 was severely limited by the time I had available, but generated some
extremely interesting insights. It would be quite misleading to describe this search as
a follow-up survey – but I include some brief comments relating to my findings
because the change in the market has been so remarkable as to make even this
limited information valuable. In the next section, I discuss the EC/EB employment
categories, already summarised in Table 7-1, which I classified in 2000, to update
those skills which appeared to be required by the market in April 2003.

7.1.1 The major categories of EC/EB jobs

I divided EC/EB careers into 8 categories in 2000. Even at that time, I was aware that
the rapid rate of change of both technology and society might well require
amendment of these categories within a fairly short space of time. In April 2003,
interested to see the effects of the significant economic and business events which
had taken place over that 3-year period, I visited the recruitment web sites once again
and updated the skills required for each category. The recruiter web sites I visited are
listed in Appendix IV-1.

The primary result of my follow-up study is shown in the modification of the EC/EB
career categories (I highlight changed information in italics), but the most striking
change was the significantly reduced number of EC/EB jobs on offer in 2003.
Whereas I had found more than five hundred jobs within the 8 categories in 2000, I
found fewer than one hundred in 2003. The updated job descriptions of each EC
career category are described below. The job titles, qualifications, key selection
criteria and specific accountabilities of each category are attached in Appendix IV-2.

Category 1 — Web Development and Programming

The most obvious group of jobs created by the advent of Internet-based EC/EB
relates to those positions which are concerned with the development and
maintenance of WWW sites. In general, this category contains positions which
involve the construction of web pages using a variety of programming languages.
Starting with the entry-level position of EC web programmer, which usually requires one year’s work experience, jobs in this category range right through to the position of Web Director, which requires about ten years’ relevant post-graduate experience. Other positions in this group include Application Software Developer – responsible for developing multi-media EC solutions; and EC Developers – who are responsible for developing Internet EC products.

**Category 2 — EB Systems and Solutions**

This category relates to more conventional IT roles in areas such as computer systems / servers and networking – but the work is related to the systems which back up EC/EB applications and therefore requires EB technical skills in addition to IT skills. Experience in different types of systems, especially Windows NT and Oracle, is usually required for these positions (increasingly, familiarity with .NET and other proprietary products is required). As with Category 1, jobs in this group range from junior professional to technical management level.

**Category 3 — Business Analysis**

Business Analysts assist in providing more detailed project objectives, system requirements, business process analysis and cost-benefit analysis. Although Business Analyst is a relatively common role in the IT industry generally, knowledge of EC/EB solutions and business is a pre-requisite for this category of EC positions.

**Category 4 — Sales and Consultancy**

This category is one in which the most rapid growth has been seen since the start of 1999. Jobs offered in this category tend to relate to marketing and sales — and can be found in any industry sector where EC/EB is relevant (essentially, this means all industry sectors). Obviously, a less technical background is required here — but knowledge of EC products and good communication skills is expected.

**Category 5 — Management and Strategic Planning**

Despite the economic downturn and the declining fashionableness of the EC/EB area jobs in this category continue to be advertised – after all, more and more companies are fully or partially online-based, and naturally, senior management roles are beginning to develop for graduates with expertise in this field. Positions in this category can potentially offer very high salary packages (usually combining an
annual salary of A$200K or more, together with stock options and other perks) and applicants are expected to have both technical and managerial expertise.

Category 6 — Education and Training

An EC/EB trainer is responsible for providing training to partners and to all other staff in the company. The other positions in this category are more related to teaching jobs in tertiary institutions, for example, lecturers and professors.

Category 7 — Research

A great deal of EC/EB research is currently on-going, or is in its early, formative stages. These research projects will be carried out mainly in universities and with affiliated industry partners. The research carried out in universities will tend to emphasise on theories and models, while that carried out in industry will be more related to the specific industry sector in which it takes place — for example: travel, banking or insurance. Of all the categories, this one has been least affected by the overall economic events of the 21st century. Positions ranging from Research Assistant, through the “standard” academic teaching and researching roles, to full Professorial positions continue to be offered by universities in almost all countries (although there has been some fall-off in the US).

Category 8 — Lawyers and Legislators/Policy-makers

Legal professionals are required to establish the law and draw up government policy for EC/EB. Areas of interest will include criminal law (including new types of fraud, money laundering using the Internet, and the already well-known problems of electronic break-ins, such as hacking); intellectual property in all its manifestations; the evolving meanings of contractual agreement in the electronic world; changing industrial legislation, as EC remakes the workplace; jurisdictional issues of all sorts; and the vexed questions of privacy and freedom of information, in a world where pornography and terrorist information are readily available to all. These topics, while broad enough in themselves, do not begin to cover the range of policy and legal issues which have already arisen – and there is little doubt that new legal minefields will continue to become apparent as the power and range of the Internet continues to grow (for example, the attempts by a number of developed countries to implement privacy legislation have led to public outcries right across the spectrum). The graduates who apply for the new roles we have mentioned above will not necessarily
have expert technical knowledge (hardware, software and systems), but will certainly need to possess a thorough basic training in EC/EB concepts and issues.

These eight categories of EC/EB career opportunities are as complete as I could make them. Despite the overall downturn in numbers, and the minor amendments I needed to make the categories themselves, I was pleased to see that my original categorisation is still basically sound.

In the next section, I examine the distinction(s) between EC/EB and other professionals.

7.1.2 Distinctiveness of EC/EB professionals

In the previous section, I examined the different categories of EC/EB careers. In addition to the specific requirements for individual positions, many of the online advertisements use more general, common descriptive words for recruiting EC/EB professionals. EC/EB staff members are frequently expected to be:

- motivated;
- well-organised;
- technically confident and resourceful;
- able to learn new skills in a short time;
- energetic;
- entrepreneurial;
- dynamic and driven;
- autonomous;
- proactive;
- possessing good oral, written, communication and presentation skills;
- able to work well in a team but also to work independently;
- possess good analytical, teaching or special skills (such as seeking third-party materials, reading, digesting, rewriting and editing);
- able to work overtime when the project demands it.

Finally — and most importantly — EC/EB staff must understand the technology well enough to realise what it can and cannot do.

The EC/EB careers are, like EC/EB itself, multidisciplinary and have links to IT, business, the law and many other areas. For Categories 1 and 2 (Web development and programming; EB Systems and Solutions) in particular, the nature of the jobs is similar to those found in the more general IT group, but EC/EB skills and knowledge are specifically required by the job advertisements I identified.
What, then, are the differences between “conventional” IT jobs and those IT-oriented positions which include the “EC” or “EB” keywords? Clearly, there is a considerable overlap in terms of the technical proficiencies required for many of the positions listed, although some of the programming languages and specialist tools are specifically designed for website creation and management. The business skills required of the two groups do appear to differ.

Categories 3, 4 and 5 (Business Analysis; Sales and Consultancy; Management and Strategic Planning) were more business oriented. But the additional knowledge/skills, such as business process reengineering, B2B, B2C and B2G concepts, the supply chain model, ability to implement business concepts on the web, are unique to EC/EB professionals and not normally required of business professionals.

Categories 6 to 8 (Education and Training; Research; Lawyers and Legislators/Policy-makers) differ from similar categories for other professionals as all these jobs require EC knowledge and skills to complement their respective professional competencies in order to discharge their roles effectively.

7.1.3 The unique role of the EC/EB professional

If someone tries to identify what makes the role of “EC/EB Professional” unique, I would suggest that such a position includes three key areas: Electronics, Commerce/Business and People. These areas are both inter-related and inter-dependent:

- The area Electronics refers to the electronic technologies which support the applications or roles, for example, software, computer systems and network bandwidth.
- The area Commerce/Business refers to the business processes and marketing techniques which make the electronic technologies relevant to the real world; and
- The area People relates to the degree of adoption of EC/EB by People or Society.

Technology (for example, the systems and the bandwidth of an electronic network) has enabled significant and sweeping changes in business processes – particularly in the service industries, where concepts such as dis-intermediation and re-
intermediation are increasingly apparent. The EC/EB environment is so competitive and innovative that concepts and projects are constantly being modified to keep up with market demands. And yet, despite the unquestioned importance of the technology, marketing is the main driving force for nearly all EC/EB efforts and initiatives – thus the Commerce/Business aspects “push” the Electronics areas.

Finally, if people (for example, customers, users or society) do not accept EC/EB – whether because they doubt the security of the networks which provide their services, or because they believe the newspaper hype concerning the “death” of EC all the effort that has been put into the technology and business processes to develop EC/EB will bear no fruit. Ultimately, it is the “People” area of the concept which controls the success of EC/EB in the real world. And yet, simplified business processes and exciting technology prompt people to participate in the EC/EB world — so that all three areas of the model are necessary for effective EC/EB development and uptake.

Figure 7-2, originally published in Chan and Swatman, 2000, illustrates the three key areas of the EC/EB Professional, and shows how the electronic technical, commerce/business and people components interact. The need for trained professionals who can balance these three quite different areas of competence, while not showing the dramatic growth of the late 20th century, continue to exist and will continue to evolve over time as new areas of EC/EB are created (for example, mobile applications, Virtual or Augmented Reality-based applications and approaches, or still unthought-of concepts based on the increasing convergence of computers, mobile devices and telecommunications – WiFi is only the beginning of this trend) Consequently, the more trained and qualified EC/EB professionals there are on the job, the more likely it becomes that they will ‘push’ the EC/EB profession to develop more quickly and more effectively.
Certainly, career opportunities are one of the major service evidence types of an educational service product. The survey of online EC/EB recruitment covered in this section has shown, firstly, that while the actual availability of jobs has been affected by economic activity, the categorisation I developed in 2000 has stood the test of time remarkably well and, secondly, that it is both possible (and, I would argue, imperative) for EC/EB degree program developers to take the issue of service evidence seriously in planning their programs and their marketing activities.

In the next section, I investigate the second of the two NESPO model elements to be covered in this chapter, endeavouring to discover whether the EC/EB program coordinators have made effective use of their program web sites to advertise their EC/EB service products – whether, in fact, they have taken the next step toward themselves becoming an EB.

### 7.2 EC/EB Degree Program Web Sites

Many, if not all, the universities in the AP region are now offering EC/EB degree programs (a topic I have previously discussed in Section 6.4 – for the interested reader, those universities and their programs are listed in Appendixes III-15 and III-16). A good deal of information related to the new EC/EB programs is embodied in the associated web sites that have been developed, many of which are extremely inviting.

While it is clear that the majority of these universities have adopted the Internet as a marketing / promotion tool in terms of displaying their wares, it is less clear whether

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**Figure 7-2** The Inter-related Role of EC/EB Professional

*Source: Chan and Swatman (2000, p. 15)*
EC techniques, particularly for the \textit{advertisement} element, are utilised by these universities for selling their “educational service products” — degree programs. In the study which is reported below, I apply Ho’s framework for evaluation of web sites (Ho 1997) to review these EC/EB program sites and suggest ways in which universities could make better use of EC/EB techniques for their own portals. In May 2003, I studied forty-six EC/EB degree programs web sites including 33 in Australia, 4 in New Zealand, 7 in Hong Kong and 2 in Singapore.

The results show that within Singapore and New Zealand, only two Singaporean and four New Zealand universities are offering EC/EB programs, which is a small enough number that I have chosen to describe each of these regions separately. I also examined thirty-three Australia and seven Hong Kong EC/EB degree program web sites. Since the population sizes of these two areas were significant enough to enable the carrying out of a realistic comparison, I compared the EC/EB degree web sites of these two regions using Ho’s framework – the details of which I explain in the next section.

\textbf{7.2.1 Ho’s framework for web site evaluation}

Ho (1997) classified the business purposes of a commercial web site into three categories: \textit{Promotion of product and services}, \textit{Provision of data and information} and \textit{Processing of business transactions}. Four types of value creation are identified: \textit{Timely}, \textit{Custom}, \textit{Logistic} and \textit{Sensational}. Ho’s framework is illustrated in Table 7-2, below. Features were defined by starting with a set of conceptual guidelines, followed by the consideration of numerous cases that led to an iterative process of refinement. Typical examples of web site features which fitted into each of the purpose-value combinations are summarised in this table.
Table 7-2 Ho’s Evaluation Framework for Commercial Web Sites (Ho 1997)

<table>
<thead>
<tr>
<th>Value \ Purpose</th>
<th>Promotion</th>
<th>Provision</th>
<th>Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timely</td>
<td>• items on sale</td>
<td>• stock quotes</td>
<td>• on-line auctions</td>
</tr>
<tr>
<td></td>
<td>• special offers</td>
<td>• employment opportunities</td>
<td>• interactive brokering</td>
</tr>
<tr>
<td></td>
<td>• product announcements</td>
<td>• press releases</td>
<td></td>
</tr>
<tr>
<td>Custom</td>
<td>• product/service database search</td>
<td>• general database search</td>
<td>• custom orders</td>
</tr>
<tr>
<td></td>
<td>• customized product/service report</td>
<td>• customized news report</td>
<td>• interactive consulting</td>
</tr>
<tr>
<td>Logistic</td>
<td>• rates and fare quotes</td>
<td>• financial reports</td>
<td>• on-line customer service</td>
</tr>
<tr>
<td></td>
<td>• facilities locator</td>
<td>• research data</td>
<td>• delivery or job status tracking</td>
</tr>
<tr>
<td>Sensational</td>
<td>• contests</td>
<td>• freeware</td>
<td>• “surprise” discounts and bonuses</td>
</tr>
<tr>
<td></td>
<td>• sweepstakes, giveaways</td>
<td>• games</td>
<td>• instant winners</td>
</tr>
<tr>
<td></td>
<td>• outstanding web design</td>
<td>• puzzles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• downloadable multimedia</td>
<td></td>
</tr>
</tbody>
</table>

I selected Ho’s framework for evaluating the EC/EB degree program web sites because of its widespread use and general applicability in such cases. This framework has already been used in a number of studies, for example, in a review of 1,000 North American commercial web sites (Ho 1996); for a comparative study of 1,800 web sites from the USA, Australia, Taiwan, Singapore, Hong Kong, United Kingdom, Germany, France and Italy (Ho 1997); in a review of 60 New Zealand and world-wide tourism sites (Rachman 1999); and for a comparison of web-based business practices in Japan and the U.S. (Sakaguchi et al. 2001).

I found I was able to apply Ho’s (1997) framework directly to examine the EC/EB programs web sites, requiring only a very small amount of additional explanation in terms of headings in the interests of clarity. I conducted interviews with university students, web developers and academic staff members in order to identify the features needed for the framework, using features from both Ho’s and Rachman’s frameworks to provide sufficient flexibility.

I identified 22 features in total which are listed in Table 7-3. Ho’s original ‘logistical’ value was renamed ‘general’ after discussions with the interviewees. It should be noted, however, that the list is by no means either exhaustive or definitive.
Table 7-3 Evaluation Framework for the Review of EC/EB Degree Program Web Sites

<table>
<thead>
<tr>
<th>Value \ Purpose</th>
<th>Promotion (products &amp; services)</th>
<th>Provision (data &amp; information)</th>
<th>Processing (business transactions)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timely</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Individual web site</td>
<td>12. Employment opportunities</td>
<td>18. On-line enquiry form</td>
</tr>
<tr>
<td></td>
<td>2. Identification of the</td>
<td>13. Presses release</td>
<td></td>
</tr>
<tr>
<td></td>
<td>offering department</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Program objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Program structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Subjects description</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>professional bodies</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>7. Entry requirement</td>
<td>15. Contact information</td>
<td>20. On-line application</td>
</tr>
<tr>
<td></td>
<td>9. Scholarship or other</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>financial support</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. Duration of the program</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensational</strong></td>
<td>11. Outstanding web design</td>
<td>17. Catchy information display</td>
<td>22. Surprise discounts /bonuses</td>
</tr>
</tbody>
</table>

7.2.2 Evaluation of EC/EB program web sites

The review took the form of examining whether the twenty-two features listed in Table 7-3 were present in each of the EC/EB program web sites, with a particular focus on features 1 to 11, which are related to the advertisement/promotion aspect of EC/EB programs. A separate review of Feature 11, “outstanding web design”, was undertaken using an automatic tool available at NetMechanic\(^{50}\) to determine whether the web site had an outstanding design. Appendix IV-3 explains the assessment criteria for the web design and shows the scores obtained by each web site in terms of the “outstanding web design” criterion.

As there were only four universities in New Zealand and two in Singapore offering EC/EB programs, I decided not to attempt to compare these two regions. The results of such a comparison would be effectively meaningless, because one small change in the score would affect the significance of the overall results out of all proportion to the real importance of the finding. For this reason, I only describe each of these two regions briefly and Appendix IV-4 shows the result of the features identified in New Zealand and Singapore EC/EB program web sites. Instead, I focused my research on

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Australia and Hong Kong, where many universities were offering EC/EB programs, and where the scores derived were meaningful representatives of these two regions. Appendix IV-5 shows the results of the features identified in Australia and Hong Kong.

As the details of web sites can change rapidly, I decided not to refer to any specific URL or university by name. In the review I analysed three findings: the percentage of features present on the evaluation framework, Ho’s $\beta$ index (Ho 1997), and the top five features present in the Australian and Hong Kong EC/EB degree program web sites.

7.2.2.1 The characteristics of New Zealand and Singapore EC/EB degree program web sites

The features presented in each of EC/EB program web sites in four New Zealand and two Singapore are listed in Appendix IV-4. The results show that all six university sites possessed a lot of features for the purpose of ‘promotion’. The program structures of their EC/EB degree offerings are listed clearly. Among these six universities, however, only one New Zealand university had its own web site to introduce the EC/EB programs. All the university sites possessed the features ‘duration of the program’ in the ‘general promotion’ category. Prospective students could apply to study within the program online in both the Singaporean universities. However, the features for the purposes of ‘provision’ and ‘processing’ were not found in most of these universities’ web sites.

7.2.2.2 The percentage of features present in the evaluation framework in Australia and Hong Kong

Table 7-4 shows the percentage of features present in the evaluation framework (see Appendices IV-3 and IV-5 for details).

<table>
<thead>
<tr>
<th></th>
<th>Australia</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Hong Kong</th>
<th>Promotion</th>
<th>Provision</th>
<th>Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Timely</td>
<td>94</td>
<td>42</td>
<td>9</td>
<td></td>
<td>100</td>
<td>29</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Custom</td>
<td>18</td>
<td>73</td>
<td>12</td>
<td></td>
<td>14</td>
<td>100</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General</td>
<td>85</td>
<td>85</td>
<td>24</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensational</td>
<td>94</td>
<td>18</td>
<td>0</td>
<td></td>
<td>100</td>
<td>43</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
The tables show that all sites (100%) in Hong Kong possessed the features identified in Table IV-3 as *timely-promotion, general-promotion* and *sensational-promotion; custom-provision* and *general-provision* and *general-processing*. With the exception of *timely-provision* and *custom-promotion*, all Hong Kong categories had an equal or higher percentage of features present than those found in Australian web sites. The Australian *processing* categories had very few features. Moreover, neither the Australian nor Hong Kong web sites had any *sensational-processing* features present.

These results show that most of the EC/EB program web sites studied were merely providing information to prospective students – in other words, these are so-called “brochure-ware” web sites (Clarke 1999), although a small number of universities had equipped their web sites with on-line processing facilities for such activities as handling on-line applications, on-line payment of program fees and on-line advanced standing processing.

The data also showed that Hong Kong web sites generally included more features than those in Australia. This distinction is difficult to explain, as universities in both Australia and Hong Kong are equally dependent on student fees – and are therefore equally likely to develop attractive web sites as an added inducement to students. Further research on socio-economic and contextual differences between Australia and Hong Kong is clearly needed in this area. At the moment, I can only hypothesise that the Hong Kong universities may be more entrepreneurially inclined than their Australian counterparts.

7.2.2.3 *Ho’s β Index*

Ho’s β index is a crude coverage measure within the evaluation framework. The measure is the number of categories in the framework; i.e. the maximum β is 12 as there are 12 categories in the framework. Based on the total percentage found in this study, Ho’s β index for Australia is 5.54 and for Hong Kong is 7.29, i.e. Hong Kong EC/EB web sites have more features than Australia web sites of the same type. This index can be used as an indicator for comparison when similar studies are carried out in the future.
7.2.2.4 Top five features found in EC/EB program web sites in Australia and Hong Kong

The top 5 features present in the evaluation framework are listed in Appendix IV-6. For Hong Kong, all these 5 features fell within the promotion category. For Australia, 4 features were in the promotion category, and only one was to be found in the provision category. This suggested that more emphasis had been put on “content driven” web sites and that there was less concern about on-line processing/transactions in the design of EC/EB program web sites.

One of the major EC/EB goals is doing business online. The results of the study suggest, however, that most of the processing features needed for doing business were not available on the web sites at the time of the study (2003). EC concepts have not really been applied to the current EC/EB degree program web sites.

7.2.3 Some suggestions for EC/EB degree program web sites

In 2001, a few Australian universities were themselves using the different EB planning and development techniques I have mentioned in Section 2.4. In this survey (May 2003), the numerical analysis suggested that EC/EB program co-ordinators had the technical wherewithal to make use of their EC/EB program web sites to advertise their EC/EB programs, but that these web sites did not truly reflect EC/EB strategies, being for the most part still information provision-focused.

It is clear that the actual figures and their derived results are of only short-term value, as web sites are regularly being updated, but the deduced phenomena which lie behind the findings are valuable and worth exploring. I therefore make some recommendations for more effective use of university promotional web sites.

Firstly, as a prime objective, universities should make full use of degree program web sites for the promotion of degree programs and for user-friendly online transactions in order to cut down existing administrative overheads. Certainly, the move to online administration and, particularly, to user-based data entry and update of the sort which almost all banks are using today is a logical step for universities anxious to cut costs. Online fee payment, student entry/update of contact information, advanced standing and enrolment changes are obvious starting points for such cost-cutting, efficiency-enhancing activities.

Secondly, when developers build web sites, they may well wish to consider accessibility for that portion of the web audience with disabilities. Not only would
this be very much in line with government policy, but also it would mesh well with universities’ generally strong interest in providing support to students less able to access material in the standard way. An additional benefit of such an approach is that universities providing such access might well attract those fee-paying disabled students who prefer to study online, an increasingly attractive alternative for those with less than full mobility.

Finally, as many new degree programs emerge, program web sites should be studied for improvement to meet the increasing demand and expectations of the market, i.e. increasing numbers of universities will promote their products through web sites. The opportunities for entrepreneurial universities are significant and, as yet, few institutions appear to have realised the chances which are readily available. A study covering only Australia, New Zealand, Hong Kong and Singapore can, of course, provide only indicative evidence of the behaviour of universities around the world. A more comprehensive and geographically full-scale survey could offer a fascinating opportunity for comparison in future.

7.3 Summary of Chapter 7

This chapter has focused on investigating two elements of the NESPO educational service product: service evidence and advertisement/promotion when new EC/EB degree programs are offered, by means of two quite separate studies – a survey of recruitment web sites undertaken in 2000; and an analysis of 46 university EC/EB program web sites, undertaken in 2003.

In the first study, eight categories of EC/EB jobs were identified as providing service evidence of the EC/EB programs and the distinction between EC/EB careers and traditional IT or business was explored. Tying this survey in with the previously developed ECCM model (see Chapter 4 for details), the role of the EC/EB professional was found to be mainly dependent on the inter-relationships between three areas: electronics, business/commerce and people.

The second study, which was rather more detailed, found that most EC/EB degree program web sites do embody the nature of advertisement for their EC/EB programs, although the sites had not been made full use of EC strategies (the program developers were clearly not trying to practise the concepts they were teaching). I have therefore made a number of suggestions for the more effective utilisation of these EC/EB degree program web sites.