

# The Development of a Graduate Diploma in eCommerce

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## ABSTRACT

In 2000 Christchurch Polytechnic Institute of Technology (CPIT) developed a new Graduate Diploma in eCommerce, which has been offered since early 2001. The purpose of this paper is to describe how the curriculum and delivery of the Graduate Diploma in eCommerce prepares its graduates for the "Inter-related Role of the eCommerce Professional" as described by Chan and Swatman (2000) and the multi-disciplinary nature of eCommerce as described by Turban et al (2002).

Many tertiary education institutions in the Asia Pacific region have incorporated eCommerce and eBusiness related subjects into their curriculum, with some having created majors or specialisations for existing qualifications, while others have created new qualifications at undergraduate, graduate or post graduate level. The nature and level of many of these new qualifications have been well document by a number of writers including Chan and Swatman (2000b, 2001 and 2002).

Chan and Swatman (2000a) in an analysis of the eCommerce/eBusiness job markets developed a model of the "Inter-related Role of the eCommerce Professional". This model is in affect a three-legged stool made up of Commerce/Business, Electronics and People.

A number of other writers also point to eCommerce being multidisciplinary as opposed to being a single discipline in itself, with most writers, including Turban *et al.* (2002), and Nesbit (2001 and 2002) reaching the point of saying that the underlying disciplines fall into the three categories of business, technology and social sciences.

The paper also includes a description of how the qualification is structured into two optional specialisations of Web Programming and eBusiness Strategies and looks at the combination of courses that typical students might complete as part of the qualification.

## 1. INTRODUCTION

In 2000 Christchurch Polytechnic Institute of Technology (CPIT) developed a new Graduate Diploma in eCommerce, which has been offered since early 2001. The purpose of this paper is to describe how the curriculum and delivery of the Graduate Diploma in eCommerce prepares its graduates for the "Inter-related Role of the eCommerce Professional" as described by Chan and Swatman (2000) and the interdisciplinary nature of eCommerce as described by Turban *et al.* (2002).

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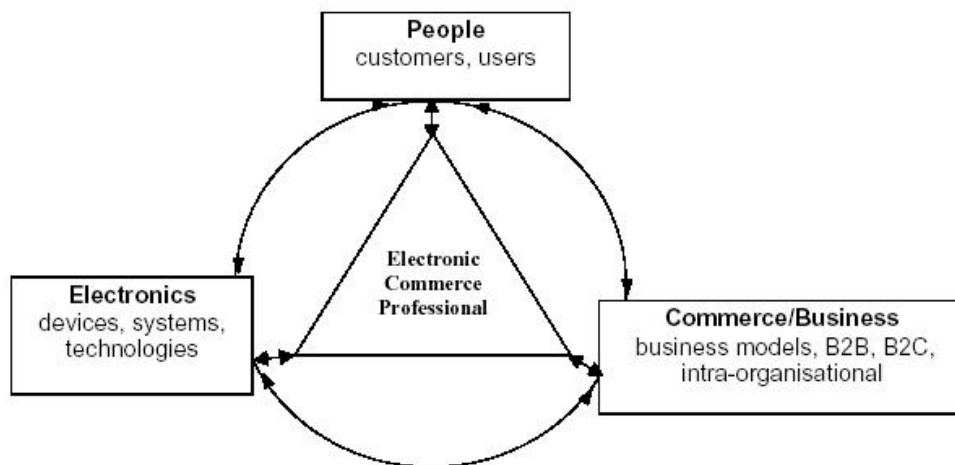


Figure 1 – The Inter-Related Role of the eCommerce Professional (Chan and Swatman, 2000)

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## 2. LITERATURE REVIEW

### 2.1 The Inter-Related Role of the eCommerce Professional

Chan and Swatman (2000) describe the model of the “Inter-Related Role of the eCommerce Professional” and as part of this produce the diagram shown in figure 1 that shows the three main components of the model. The three components shown are:

- People, including customers and users, with an emphasis on the ability to communicate.
- Commerce/Business, including how businesses work and various models and modes of eCommerce that exist from a business perspective
- Electronics, (as it is named by Chan and Swatman), but which could better be named as “Technologies”, and includes hardware, software and other forms of information technology.

Chan and Swatman go on to make a number of observations about this model. Firstly the need for people who can balance these three aspects will

increase over time. Secondly that graduates who can demonstrate a significant understanding of eCommerce technology, or who have completed a number of courses in subjects related to eMarketing will be in great demand into the future. Thirdly, that it is the people aspect that will make or break eCommerce in the real world.

Chan and Swatman also hypothesise that eCommerce is likely to be an evolving area, and that over time new aspects will emerge and that it will be necessary for eCommerce professionals to be able to adapt to these.

The observations taken together suggest that there is a need for people who:

- Have a broad and balanced understanding of the business and technology related aspects of eCommerce
- Have significant skills in and understanding of one of the technologies involved in eCommerce or in eMarketing related areas
- Have good communication and people skills.

### 2.2 The Interdisciplinary Nature of eCommerce

Turban *et al.* (2002) explain how eCommerce is based on a number of disciplines and explain some of what they mean by each of them. These disciplines along with a brief description are shown in Table 1.

**Table 1 – The Disciplines Comprising the Interdisciplinary Nature of eCommerce (Turban et al, 2002)**

|                                 |  |
|---------------------------------|--|
| Marketing                       | Online marketing strategies and relevant issues of offline marketing   |
| Computer Sciences               | Programming languages, multimedia and networks   |
| Consumer Behaviour & Psychology | The behaviour of buyers and sellers in B2C eCommerce. The relationship between cultures and consumer attitude.                           |
| Finance                         | The role of finance markets and banks  |
| Economics                       | The economic impact of eCommerce on firms and the application of micro and macro economic theories                                       |
| Accounting & Auditing           | Issues of auditing electronic transactions and the development of cost benefit analysis methodologies                                    |
| Management Information Systems  | S y s t e m s analysis, planning, implementation, security and payment systems   |
| Management                      | New approaches to management that may be required due to the interdisciplinary nature of eCommerce                                       |
| Business Law & Ethics           | Legal issues related to intellectual property, contracts, jurisdiction and privacy and ethical issues surrounding the use of information |

In Nesbit (2002) the respondents to a questionnaire were asked, among other things, to identify the two most important steps and processes that an organisation must put in place to be successful in eCommerce. The responses were grouped into a number of themes, with these themes being shown in Table 2.

**Table 2 – Important Steps and Processes Needed for Success in eCommerce – Emerging Trends Identified by Nesbit (2002).**

|                                   |
|-----------------------------------|
| Theme                             |
| Marketing and Customer Needs      |
| Business Processes and Structures |
| Staffing and Team Work            |
| Financing and Resources           |
| Innovation                        |
| Technical Issues                  |
| Supply Chain Management           |
| Knowledge Management              |

If the disciplines identified by Turban *et al.* (2002) and the steps and processes identified by Nesbit (2002) are taken together, it is clear that the skills and expertise needed for eCommerce professionals (and their organisations) to be successful are a range of technical, business and people skills, a concept that is also consistent with the inter-related role of the eCommerce professional that was described earlier (Chan and Swatman, 2000).

### 3. THE GRADUATE DIPLOMA IN ECOMMERCE

#### 3.1 Overall Aim

The aim of the Graduate Diploma in eCommerce is to provide graduates from a range of disciplines with the knowledge, expertise and skills in subjects related to eCommerce to make them productive in an eCommerce world, whether in a business role, a technical role or a mixed role.

The structure of the qualification allows students to specialise in programming for eCommerce or in business issues relating to eCommerce, or to complete a combination of the two areas. The qualification can be completed as a one year full time programme or on a part time basis.

#### 3.2 Why a Graduate Diploma

NZQA (2001) define the outcomes of a graduate diploma to be that a graduate is able to:

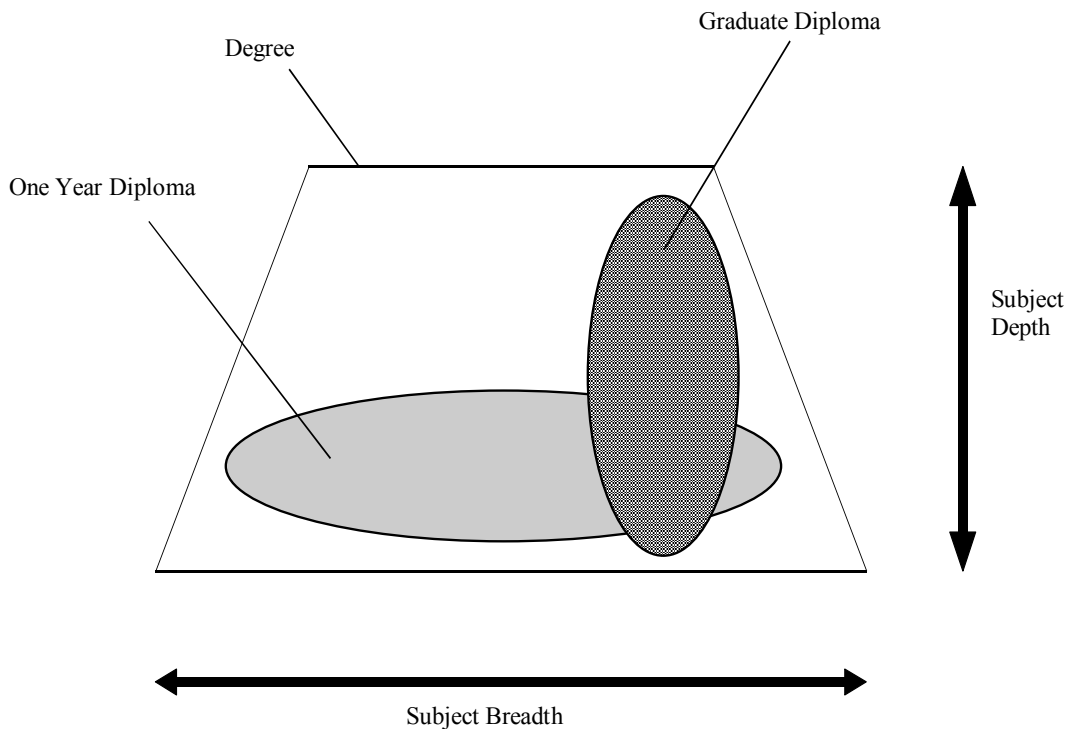
- Engage in self-directed learning and advance study; and
- Demonstrate intellectual independence, analytic rigour, and the ability to understand and evaluate new knowledge and ideas.

The outcomes of a degree are defined by NZQA (2001) include among its outcomes the two outcomes of a graduate diploma as shown above, with these two outcomes not being included in the outcomes of a diploma.

A distinction that has been drawn between a diploma and a graduate diploma and a degree by CPIT (2003) is summarised by Figure 2.

The diagram shows that a degree covers a broad range of subject areas, with some of them being covered in depth. A one-year diploma covers a broad range of subject areas, some of which may be generic skills, but not in a lot of depth.

In contrast, a graduate diploma covers a narrower range of subjects, but covers them in a depth that is similar to a degree. The outcomes of a graduate



**Figure 2 – The Relationship Between Degrees, Diplomas and Graduate Diplomas (CPIT, 2003)**

diploma as shown earlier are a subset of the outcomes of a degree as defined by NZQA (2001). This suggests that basing a graduate diploma on degree courses is an appropriate approach due to the implied academic rigour of a graduate diploma.

### 3.3 STRUCTURE

The courses that make up the Graduate Diploma in eCommerce were either courses that were part of the Bachelor of Business Computing, since renamed the Bachelor of Information and Communication Technologies (BICT), or have since become part of BICT, with an eCommerce stream being introduced into BICT in 2002.

The Graduate Diploma in eCommerce requires students to complete 120 credits of courses of which at least 80 must be at level 7 (3<sup>rd</sup> year degree level), with up to 30 credits being allowed from outside of the approved list of courses. All students must complete a project comprising either 30 or 45 credits, with the following two courses being compulsory:

- BCEB300 eBusiness Strategies level 7  
15 credits

- BCIT241 Web Site Development  
level 6 8 credits

### 3.4 WEB PROGRAMMING AND BUSINESS STRATEGIES SPECIALISATIONS

To qualify for the Web Programming Specialisation, students must also complete the following 2 courses:

- BCPR341 Client Side Programming level 7  
8 credits
- BCPR342 Server Side Programming level 7  
15 credits

To qualify for the Business Strategies Specialisation, students must also complete 30 credits from the following group of courses:

- BCEB310 Emarketing – Themes level 7  
8 credits
- BCEB311 Emarketing – Themes & Implementation level 7  
7 credits
- BCEB320 E-Law A – Contracts and Compliance level 7  
8 credits

Table 3 – Approved Courses For The Graduate Diploma in eCommerce

| Code    | Name  | Level | Credits | Web Prog | Bus Strat | eM/MM |
|---------|---|-------|---------|----------|-----------|-------|
| BCCE330 | Cooperative Education Project               | 7     | 30      | ◆        | ◆         | ◆     |
| BCCE345 | Cooperative Education Project               | 7     | 45      |          |           |       |
| BCCS341 | Web Server Administration                   | 7     | 7       | ◆        |           |       |
| BCEB300 | Ebusiness Strategies                        | 7     | 15      | ◆        | ◆         | ◆     |
| BCEB301 | eCommerce Project Management                | 7     | 8       | ◆        | ◆         | ◆     |
| BCEB310 | EMarketing – Themes                         | 7     | 8       |          | ◆         | ◆     |
| BCEB311 | EMarketing – Themes & Implementation        | 7     | 7       |          | ◆         | ◆     |
| BCEB320 | E-Law A – Contracts and Compliance          | 7     | 8       |          | ◆         |       |
| BCEB321 | E-Law B – Territory, Rights and Obligations | 7     | 7       |          |           |       |
| BCEB330 | eTailing                                    | 7     | 8       |          | ◆         | ◆     |
| BCEB340 | Knowledge Management – Concepts etc         | 7     | 8       |          | ◆         | ◆     |
| BCEB391 | Current Issues in eCommerce                 | 7     | 8       |          | ◆         |       |
| BCIS301 | Management of ICT                           | 7     | 15      |          |           |       |
| BCIT151 | Multimedia and Internet Technologies        | 5     | 15      |          | ◆         | ◆     |
| BCIT241 | Web Site Development                        | 6     | 8       | ◆        | ◆         | ◆     |
| BCIT251 | Multimedia Application Development          | 6     | 15      |          |           | ◆     |
| BCIT351 | Multimedia Application Development Mgt      | 7     | 15      |          |           |       |
| BCPR141 | Object Oriented Software Development        | 5     | 15      | ◆        |           |       |
| BCPR203 | Database Management Systems                 | 6     | 15      | ◆        |           |       |
| BCPR303 | DBMS Design and Management                  | 7     | 7       |          |           |       |
| BCPR341 | Client Side Programming                     | 7     | 8       | ◆        |           |       |
| BCPR342 | Server Side Programming                     | 7     | 15      | ◆        |           |       |

- BCEB321 E-Law B – Territory, Rights  
etc level 7 7 credits
- BCEB330 Etailing level 7 8 credits
- BCEB340 Knowledge Management  
level 7 8 credits
- BCEB391 Current Issues in  
eCommerce level 7 8 credits

### 3.5 Approved Courses and Typical Courses Completed

The approved courses for the Graduate Diploma in eCommerce are shown in Table 3. The range of courses that each students would typically complete vary considerably, with three possible combinations of courses being shown:

- Web Programming Specialisation (WebProg)
- Business Strategies Specialisation (BusStrat)





**Table 4 – How Different Aspects Of eCommerce  
Are Addressed in the Graduate Diploma in  
eCommerce**

| <b>Aspect</b>  | <b>How The Aspect Is Addressed</b>  |
|--|---|
| The need to understand and have some expertise in both business and technical issues | Both BCIT241 and BCEB300 are compulsory   |
| The need for good people and communication skills                                    | The level of the entry requirement, the use of group assignments and presentations, and interviews of practitioners |
| Marketing  | BCEB300, BCEB310, BCEB311   |
| Programming  | BCPR141, BCPR341, BCPR342   |
| Multimedia   | BCIT151, BCIT251, BCIT351   |
| Consumer Behaviour   | BCEB300, BCEB330, BCEB391   |
| Finance, Economics, Accounting and Auditing  | BCEB300   |
| Systems Analysis, Planning, Implementation etc                                       | BCPR141, BCPR203, BCEB301, BCCE330, BCCE345   |
| Management   | BCEB300, BCEB301  |
| Business Law and Ethics  | BCEB300, BCEB320, BCEB321   |
| Staffing and Team Work   | The use of group work in class and for some assessments   |
| Innovation   | BCEB391   |
| Supply Chain Management  | BCEB300, BCEB391, BCEB340   |
| Knowledge Management   | BCEB340, BCEB300  |
| That some skill/expertise is developed to a significant level                        | Cooperative education project: BCCE330, BCCE345   |
| The emerging and evolving nature of eCommerce  | BCEB391 and the ability to include 30 credits from other courses.   |

Business Strategies Specialisation, with an emphasis on eMarketing and a secondary emphasis on Multimedia (eM/MM)

### **3.6 ADDRESSING THE INTER-RELATED ROLE AND MULTIDISCIPLINARY NATURE**

A number of significant aspects relating to the nature of eCommerce emerge from the work of Turban *et al.* (2002), Chan and Swatman (2000) and Nesbit (2002). These aspects are shown in Table 4, along with a brief description of how they are addressed in the Graduate Diploma in eCommerce.

That some skill/expertise is developed to a significant level Cooperative education project: BCCE330, BCCE345

The emerging and evolving nature of eCommerce BCEB391 and the ability to include 30 credits from other courses.

### **4. CONCLUSIONS**

The Graduate Diploma in eCommerce explicitly addresses most of the issues identified by the work of Turban *et al.* (2002), Chan and Swatman (2000) and Nesbit (2002). A number of issues that have not been explicitly addressed are covered to an extent by:

- ◆ Being touched on in BCEB300 (eBusiness Strategies)
- ◆ Being covered as part of BCEB391 (Current Issues in eCommerce)

- ◆ Including a course from outside of the approved list of courses.

Important success factors have been:

- ◆ The integration of ICT and business disciplines
- ◆ Sharing courses with the BICT degree to gain economies of scale

Issues outside the scope of this paper, but which could be the focus of future research include:

- ◆ What do graduates end up doing?
- ◆ Analysis of the nature of projects that students have undertaken

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