

# The Establishment of an Electronic Commerce as Endorsement to the B Info Tech Degree at the Waikato Polytechnic, Hamilton, New Zealand.

Danie van der Westhuizen  
Waikato Polytechnic  
Hamilton, New Zealand  
itdcw@twp.ac.nz

## 1. WHAT IS ELECTRONIC COMMERCE?

*Electronic commerce* is any purchasing or selling through an electronic communications medium. Industry sees electronic commerce as the "wave of the future." Internet-based commerce in general and Web-based commerce in particular, are important *subdisciplines of electronic commerce*. *The Web which is short for World Wide Web*, is a set of open tools for graphical-based hyperlink-enabled access to Internet-connected hosts (Minoli, 1998, p4).

## 2. ELECTRONIC COMMERCE IS A GROWING INDUSTRY REALITY.

Electronic commerce is taking the world by storm. It is difficult to get accurate figures as these figures differ substantially in literature. However, there are two common themes in all of the published monetary figures:

1. Electronic Commerce is already big in monetary terms
2. Electronic Commerce is growing fast.

The following quote found on Ozemail.com is indicative of the statistics floating around:

- "However, there have been quite a number of surveys, from which it can be estimated that there are over 30 million users on the Internet, growing at the rate of approximately 1 000 users per day."

On the same trend...

- "By 2003 Forrester Research calculates that the marketspace will grow to 1.3 trillion....making up 9% of the U.S. business trade... From there, Forrester predicts that up to 40% of all U.S. business will be conducted electronically by 2006." (Finger, 2000, p79).

## 3. PROCESSES

The following process has been followed by the Polytechnic to establish Electronic Commerce:

The BInfoTech Programme Committee discussed extensions to the degree offerings to be developed in 2000 for offering in 2001. A working party was set

up consisting of two lecturers. The working party had initial joint meetings to map out the developments as there is considerable overlap in Electronic Commerce. Representatives from Business Studies representatives have also attended these meetings. A white paper for discussion and presentation was developed. The intended audience for this whitepaper was BInfoTech programme committee; Faculty Academic Manager, Paul Wells and the BInfoTech degree monitor, Prof. Justo Diaz.

Once feedback has been received from all parties, a final document was prepared and presented to the BInfoTech Programme Committee for approval. From there it was sent to the Faculty Curriculum sub-committee and then to the Faculty Board of Studies and the Quality Assurance Committee for final approval.

## 4. DOCUMENTATION

A single document was used to “drive” the process. This document was an evolving document. It evolved from a scratch pad to a final document, and acted as single reference point. The following elements were included in the document:

### Version control

Version control was needed as the document was subjected to changes as inputs, suggestions, comments etc were processed. There was a version control table at the beginning of the document. The date, persons responsible and summary of changes were listed in this table.

### Process description

The processes that needed to get approval were identified in the document. This has helped to drive the approval and kept within the allocated time frame.

### Electronic commerce framework

The elements of electronic commerce were identified using brainstorming and literature research. This framework was used in both the curriculum process as well as the comparative study. We have followed a “phenomenological approach”.

### Comparative study

The aim of the study was to get an overview of the Electronic Commerce offerings by other tertiary institutes. This comparative study as well as the

curriculum have used the same framework. The data from the comparative study was acquired from the web pages of four Universities.

### Subject mapping

The identified Electronic Commerce subject elements were mapped onto existing subjects as well as new identified subjects. These subjects will be offered within the Information Technology departments as well as the Business Studies department.

### Detail description

The subject elements were decomposed further into detailed elements to form a complete document.

## 5. CURRICULUM DEVELOPMENT

The design of the curriculum has followed the following steps:

- Subject definition and subject description
- Identify the elements of the Electronic Commerce
- Design a subject framework
- Comparative study of Electronic Commerce at other tertiary institutes
- Mapping of the Electronic Commerce elements onto existing and future papers
- Detail curriculum design and changes to existing subjects.

This phenomenological approach focuses on the “what” before it focuses on “how”. The curriculum is driven from the phenomenon. Other influences like facilities, skills, subjects are addressed after the curriculum is determined.

## 6. COMPUTING FACILITIES

Traditionally the Polytechnic has distinguished itself in a “hands on approach”. The same approach is valid for Electronic Commerce.

An electronic commerce laboratory has been established which will run separately from the polytechnic’s network. This network will be serviced

with a back end server containing Oracle 8i and SQL server Database. The total cost of setting up the Electronic Commerce laboratory was in the order of 40k. This will enable students to build online web enabled Electronic Commerce sites.

## 7. SUITABLE SOFTWARE

Electronic Commerce has a three-tier architecture. Typically there is a browser responsible for UI services, a database at the backend and middleware to provide application services and database connectivity.

Suitable software should be industry related. This will enable the Polytechnic to teach job related skills.

Table 1 shows some of the products available as well and the industry demands for it.

Note: This market opportunity is measured by the hits with the product as keyword at <http://www.seek.com.au> as on 11 May 2001. The results here are indicative not conclusive.

Tools for the development of Electronic Commerce increase daily. The Polytechnics should develop and apply criteria for selecting these tools for lecturing purposes. The criteria should include elements like industry demand, cost, stability, integration with XML etc.

## 8. CONCLUSIONS

A well-defined structured process has been followed to introduce Electronic Commerce at the Waikato Polytechnic. This process has been confined to a single version controlled document.

Product	Tier	Market Opportunity	Academic Programme
Oracle database	3	685	Yes
SQL Server	3	422	
Sybase	3	275	
Informix	3	101	
DB2	3	233	
InterBase (Borland)	3	7	Yes
ColdFusion	2	22	Yes
JADE	2,3	18	
Oracle Application Server	2	0	Yes
AppServer (Borland)	2	0	Yes
Visibroker (Borland)	2	0	Yes
DreamWeaver	1,2	0	
DrumBeat	1,2	0	
TopTier (SAP)	1,2	0	
BizTalk	2	0	
IE	1	0	Free
Netscape	1	0	Free
HTML	1	0	Free standard
XML	1,2	0	Free standard

Table 1

A phenomenological curriculum approach has been followed. New subjects have been identified and will be offered this year.

There are many Electronic Commerce related tools on the market. In some cases it seems that the tool related skills have not reach the market place.

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## USEFUL SITES

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