

## **Chapter Four**

### **ISSUES IMPACTING THE BUSINESS**

The issues that have the greatest impact upon the college will be discussed in respect of the Information Systems (IS) concerns such as

- **IS development**, which will encompass applications development and hardware acquisition considerations
- **IS implementation**, which will discuss the college homepage, access control and accountability as well as liability issues
- **IS equipment management**, which will discuss the software and hardware management concerns
- **IS staffing management**, which will examine the current human resource management of the technical staff

#### **4.1 IS Development**

##### **4.1.1 Applications Development**

Currently, KDU carries out in-house development of the Windows-based College Management Information System (MIS). This encompasses the

- administrative functions comprising the registry, bursary, library and bookshop management systems
- academic functions comprising the grades and progress reports management systems

While there are several off-the-shelf education management systems, these packages need to be customised to a certain degree. KDU has been partially outsourcing the college MIS development work to the School of Computing students.

However, there have been mixed results. This is due to the varying levels of skill displayed by the students – weak students usually would not be able to develop a workable system at the end of the semester. The particular project would then be re-assigned to another group of students the following semester or be totally re-written by the in-house programmers. While the in-house software team consisting of two members is highly skilled, they often take a few months to complete the required MIS since they also support the existing systems running on the older DOS-based platform.

To date, KDU has not outsourced its IT functions to any IT vendors. Lately however, the management has seriously considered outsourcing the maintenance of the college homepage. At approximately RM15,000 per annum, this would be much more economical than hiring an in-house web designer at RM36,000 per annum with annual increments and medical claims. However, the ownership of the content development expertise that might have been enhanced will also be outsourced. This may be a concern should multimedia content development expertise be one day considered a core competence of the college.

#### **4.1.2 Hardware Acquisition**

KDU is in a technology-driven business. Therefore, leasing is extremely feasible as it allows the college the opportunity to obtain better computing solutions than could be purchased outright. Therefore, KDU can shift the burden of outdated equipment to the leasing company.

In fact, the college has already entered into a leasing agreement with ORIX Rentec in July 1998, in which KDU will lease 80 units of Pentium II computers for 24 months at approximately RM18,000 per month. These new computers are currently being used for teaching purposes in the Computer Centre, and there are further plans to lease another 60 units in mid-June 1999. In this manner, the college can protect itself against technological obsolescence, as well as enjoy the flexibility to upgrade, purchase, renew or return the computers at the end of the leasing period.

## **4.2 IS Implementation**

### **4.2.1 College Homepage**

The main features of the college homepage (<http://www.kdu.edu.my>) include the listing of the different academic programmes, the duration of the programmes and their respective entry requirements. There is also a virtual tour of the college facilities that allows the user a low level of interactivity with the tour "guide". In addition, the homepage has several links to its business partners in the United States of America, United Kingdom and Australia. Furthermore, the college magazine "Campus News" is also available in its electronic form in the homepage.

The homepage has enormous potential for expansion by way of incorporating other web-based products such as web-based distance learning and assessment as well as access to the library facilities of the college and those of other universities. In fact, the college has already gained much visibility from its presence in cyberspace. This will be the basis of enhancing KDU's competitiveness through the use of technology-driven initiatives via the Internet.

### **4.2.2 Mailing Lists**

Currently, KDU's homepage allows potential students to register on-line via an electronic form that resembles the application form that is given to walk-in customers. The personal details obtained in this manner are then sent to the Registry database that resides in the administrative network for further processing.

The college has been exploiting information obtained from its administrative databases to compile commercial marketing lists. Flyers and other product brochures have been mailed to the siblings of existing students whose addresses were listed therein.

### **4.2.3 Responsibility**

KDU is very liberal in that all staff are given access to electronic mail (email) facilities. There is no monitoring of its usage and all users have total autonomy over their email accounts.

Recently, however, the Internet has been used to forward false information. One was about Indonesians causing riots in Jalan Chow Kit (The Star, 8<sup>th</sup> August 1998, pp.1-2). KDU staff, not realising that this was pure fabrication and out of concern for their fellow Malaysians, did likewise. Many others in the country were also duped into propagating the same false rumours. Another incident occurred when the former Deputy Prime Minister, Datuk Seri Anwar Ibrahim's supporters spread rumours regarding a conspiracy to smear his reputation (The Star, 24<sup>th</sup> September 1998, p. 3). Once again, KDU staff showed scant regard for facts, believing that what they read was the truth, and unthinkingly forwarded those rumours. This was brought to the management's attention by a former KDU student who was hired by MIMOS to monitor such email. The college management reacted swiftly to stop the spread of these rumours and immediately issued a staff memorandum to that effect (CEO's Address, 2<sup>nd</sup> October 1998).

It is a fact that such monitoring of email will violate privacy rights (OECD, *Privacy Guidelines*, 1997, p. 12). In addition, the college staff have questioned the right of employers to examine the employees' email. The college management, in mitigation, has pointed out the ease with which false information can be distributed by email or made available on Web sites. The CEO also took pains to explain that it was necessary for all staff to be responsible in their utilisation of the email facility. Finally, he agreed that there would not be any monitoring of email provided all users behaved in a responsible manner (CEO's Address, 2<sup>nd</sup> October 1998).

### **4.2.4 Access Control and Accountability**

The KDU MIS concerns information that is directly related to the business, the



most important being student enrolment figures, total collection of fees, student grades and staff personal profiles. Certainly, it is of the utmost importance to maintain the integrity of the information as well as the timeliness of the reports.

One of the most common problems occurs when staff log into the network and forget to log out when they have finished their work. This is not much of an issue when they carry out word processing. However, this becomes more serious when an administrative staff modifies information in the student financial profile and leaves the computer unattended for a period of time. Should errors be introduced into the system by a third party, the first staff would be liable for the errors although s/he might not have been responsible for them. In this case, the management would only have the assurance of the staff that s/he was not responsible for the error, without concrete proof of any wrongdoing.

### **4.3 IS Equipment Management**

#### **4.3.1 Computer Virus**

The maintenance of KDU's computing resources has been, at the very least, challenging. A major virus attack early in 1997 was especially difficult as several strains of the Macro virus surfaced simultaneously. Within one week, *all computers and diskettes were disinfected and certified clean, but not before the virus had destroyed many hours of hard work.* The source of the problem was traced to the following scenario. A number of staff type their documents at home. Sometimes, however, the computer systems at home are *already infected by viruses, which are then transferred to the college computers.*

The college had allocated approximately RM25,000.00 to purchase the McAfee Anti-virus software in 1998. However, the IT budget was cut and only the most critical expenses were allowed. As a result, the college resorted to downloading evaluation copies from the McAfee homepage. This worked well

but they were valid for only one month. The 1999 budget has provisions for anti-virus software, although the sum is less as another IT vendor is offering the Vet Anti-virus software at less than RM5,000.00.

#### 4.3.2 Software Licensing

Another issue is the licensing of software. Currently, KDU maintains several versions of Microsoft Office and Microsoft Word. These are shown in Table 1.

These licenses are classified as academic licenses and they cannot be upgraded to newer versions. A single CD-ROM of the software is delivered with a letter stating the number of licenses that can be legally installed in KDU. The unit price of each license is also extremely cost-efficient at RM295.00 per license of MS-Office 97 as compared with RM1,195.00 per license at corporate rates. Unfortunately, this academic pricing model may be discontinued with the launch of subsequent releases of MS-Office in the future (conversation with IT vendor).

Software	Number of Copies
Microsoft Word 6.0	20
Microsoft Office 4.2	20
Microsoft Office 4.3	20
Microsoft Office 95	21
Microsoft Office 97	300

Table 1. Total copies of Microsoft Office and Word software  
(ISD records, KDU, 1998).

The main issue of maintaining so many versions is compatibility. The documents that are created with the lower version of MS-Office are totally compatible with the higher version applications. However, the reverse is not true. This forces the users of the higher versions to include an extra step in saving their documents in a lower version so that their colleagues can read them. Often however, they forget to do so and more time is wasted in

returning these documents to the original users to carry out the all-important extra step.

#### **4.3.3 Hardware Upgrades**

The upgrading of hardware is also another difficult issue to resolve. The decision to purchase new computers as compared with upgrading certain computer parts has been argued for some time. The current practice is to upgrade the memory as the cost of memory (RM100.00 for 16MB RAM) is low. However, the labour costs involved have not been included and this may increase the overall cost significantly. Therefore, simple component upgrades may not be so straightforward after all.

#### **4.3.4 Contingency Planning**

The set of databases that are centrally located in the administrative network are backed up once a week on high-capacity diskettes that can accommodate 120 Megabytes (MB) of data per diskette. Currently, only one diskette is needed as the data is compressed and a maximum of 240 MB of data may be stored per diskette. The diskette is then placed in the safe in the Examination Unit that occupies the room adjoining the Information Systems Department. While it is advisable to transfer the diskettes off-site, this has not been carried out.

At the moment, KDU has close relationships with computer vendors K.U. Sistem, Computer Systems Advisers and Dell Asia. However, the college has not entered into any long-term maintenance contract to provide stand-by computer equipment should a disaster occur.

### **4.4 IS Staffing Management**

Three of the permanent IT staff joined KDU PJ so as to take advantage of the 30% fee discount applied to the MSc in IT programme. This is one of the more attractive incentives that are offered to the college staff. Moreover, of the nine

permanent staff, seven are former KDU graduates (see Table 2). One of them had returned from UK after completing his MSc. in IT and is currently stationed in Penang, his hometown. The part-time staff in KDU PJ are help desk personnel stationed in the Computer Centre, while the Sibul campus employs a lecturer who oversees the laboratory operations on a part-time basis.

Campus	Permanent	Part-Time
Petaling Jaya	7	5
Penang	2	0
Sibu	0	1
Total number of staff	9	6

Table 2. Distribution of permanent and part-time IT staff  
(ISD records, KDU, 1998).

In addition, these staff are young, with fewer than three years experience, and they perceive training and the opportunity to experience leading-edge IT as very important. Although remuneration is also important, they are willing to devote their energies toward learning new networking and application technologies on their own. They are also very eager to share their knowledge with their manager (the author) as they would like to implement such technologies in the workplace. The staff derive immense satisfaction upon their subsequent successful implementations.

However, their remuneration is low compared with that of their peers in the IT industry. It is highly likely that they will eventually leave for greener pastures when their two-year MSc. in IT programme concludes. It remains to be seen whether the college, currently undergoing its own "3+0" crisis, will be able to offer them improved remuneration and relevant training in the more exciting areas of JAVA programming and other web-based application development as well as upgrading their IT infrastructure (e.g. networking) know-how.

#### **4.5 Management Challenges**

In highlighting these issues, it can be seen that the college management is faced with significant challenges to its business objective of attaining a sustainable competitive advantage. On one hand, it is important to align IS functions to the business plan, to the senior management's strategic business plans and to the Standard Operating Procedures (SOPs) of the business. After all, technology is supposed to be the servant of the organisation. On the other hand, these business plans, senior managers and SOPs may very well be outdated or incompatible with the capabilities of the technology (Laudon & Laudon, 1996, p.104). In such instances, the manner in which the college runs its business may need to be modified in order to exploit the perceived benefits of certain technologies. However, the college management would need to evaluate the appropriateness of the available technological alternatives before deciding on the direction in which to proceed.