

INFORMATION TECHNOLOGY & ACCOUNTING

Noor Azizi Ismail

EDUCATION: Issues and Challenges

Introduction

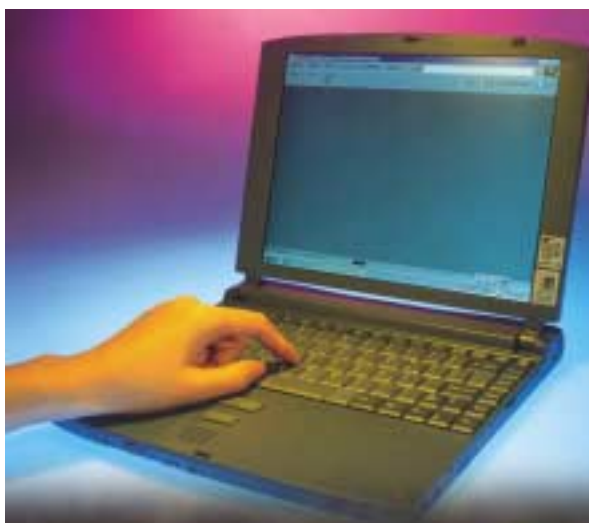
A number of developments are now in train, which will have significant impact on the future role of accounting professionals. Important economic issues such as the explosion of Information and Communication Technology (ICT) and increasing levels of competition, globalisation, and more recently legal liability, all have significant implications for both account-

ing educators and accounting professionals. Accounting education in the 21st Century thus faces a very significant challenge on how to educate accountants in a complex and rapidly changing environment. Ignoring these changes is like pushing the accounting profession to the sidelines or perhaps even replaced by a profession that has yet to emerge. This article focuses primarily on the issue of integrating IT knowledge and skills in the accounting curriculum. However, it should be noted that IT is only one of the forces affecting accounting education and therefore it is not isolated in its impact.

“... the survival of the accounting profession rests with its ability to integrate new and sophisticated IT into accounting practices”

A Brief History of IT and Accounting

Accounting and IT are very much related. In fact, the term ‘accounting system’ had been used before the introduction of the computer. In the early 1950s and 1960s, known as the ‘machine accounting’ era, IT was mainly implemented to support the clerical aspects of accounting functions such as payroll, accounts receivable and accounts payable. At that time, only accountants had the knowledge and privilege to use the technology. Accounting information system (AIS) courses were offered in most universities in the US



(McMickle, 1989). However, as accountants were busy with the technical accounting issues such as the format of financial statements, they started to hire technical assistants, known at that time as ‘machine accountants’ to operate the technology.

As computer technology further developed, this group of machine accountants began to distance themselves from the accounting profession. From then on, machine accountants were given full responsibility to develop and maintain the organisation’s accounting systems. Other terms that refer to this group, i.e. Electronic Data Processing (EDP), Automated Data Processing (ADP), Computer Information Systems (CIS) and Management Information Systems (MIS) also began to emerge.

IT was then used to experiment with providing other useful information outside the traditional scope of accounting, which had significant implications on the architecture of the financial accounting system. Accounting professionals however had further distanced themselves from the new demands, and AIS courses were eventually dropped from the accounting curriculum in most universities. During the 1970s, the gap between IT and accounting deepened both professionally and academically, which resulted in a poorly coordinated and segmented use of IT application architecture.

In the late 1980s, began the IT technological advancements, which enabled the implementation of a new accounting model, called ‘resources-events-agents’ (REA). The organisations began to rethink the way they used IT to provide information and support decision-making. This meant the way to develop applications that gathered detailed business data and applied rules that governed the execution of business activities in real-time. The accounting profession began to realise that IT development resulted in them losing control over information and information systems. At the same time, the new devel-

opments offered opportunities for accounting academics and professionals to develop new ways of looking at the roles of accounting in the information age.

IT and Accounting Education

In a famous article in *Accounting Horizons*, Bob Elliot made the point that “IT changes everything”. He insisted that the survival of the accounting profession rests with its ability to integrate new and sophisticated IT into accounting practices. Increased availability of IT has in fact increased the pressure on the accounting

“Trends of accounting education in Malaysia however indicate that we are not moving aggressively enough to develop pre-qualification competencies in IT”.



profession to do things differently.

Recognising the importance of IT to the accounting profession, the International Federation of Accountants (IFAC) Education Committee issued a guideline “*Information Technology in the Accounting Curriculum*” (IEG11) in 1995, which was later revised in June 1998. Other accounting and IT-related publications by IFAC include *Integrating Information Technology Across the Accounting Curriculum: The Experience of the Certified General Accountants’ Association of Canada* (1995), *Implementing International Education Guideline 11: Strate-*

gies of the American Institute of Certified Public Accountants (1996), *The Accounting Curriculum and IT* by Boritz (1999), and more recently *Information Technology for Professional Accountants* (2001).

CPA Australia has also conducted an exhaustive survey among members of the society to address the issues of IT and accounting, and published a booklet *Information Technology and Accounting Graduate* in 1995 to be used as a benchmark by accounting educators. In Malaysia, the majority of accountants and accounting educators are also presumably well aware of these changes that are taking place. However, while members of the regulatory and professional accounting bodies and academic accountants are still debating the curriculum changes, a proper guideline of integrating IT in the accounting curriculum has yet to be seen.

Challenges in Implementing IEG11

IEG11 outlined a modest set of IT requirements for professional accountants. Included in the guideline are lists of general IT education requirements, user role requirements, and designer, manager and evaluator requirements. Boritz (1999) insists that professional accounting bodies and academic accounting programmes must ensure that students go beyond the user role to embrace one of the other three roles identified in the guideline : designer, manager and evaluator.

Trends of accounting education in Malaysia however indicate that we are not moving aggressively enough to develop pre-qualification competencies in IT.

One obvious problem that should be noted in most academic and professional accounting programmes is that IT is not considered a core knowledge area like financial and management accounting, auditing or taxation. Therefore, an initial step to integrate IT in the accounting curriculum may be by formally defining IT to be part of their core program (Boritz, 1999). Of course, one cannot simply add additional IT courses without sacrificing existing elements of the

current accounting curriculum. This raises the following fundamental yet significant questions : How many IT-related courses are needed to adequately prepare accounting graduates with IT knowledge and skills? And what courses should be dropped to make room for these IT-related courses? The issue is that a majority of individuals, either accounting professionals or academic accountants in each area of expertise are reluctant to reduce and in many cases in fact want to increase its syllabus to accommodate recent business developments.

In the past, accountants are often associated with the 'bean counter' image, as they have been trained to record financial transactions and produce historical financial statements, and usually not taught to interpret that information. New generation accountants however will need the knowledge and ability to analyse not only financial but also non-financial information, using the appropriate technology, and convert those results into predictive tools. Therefore, one may argue that the more technical accounting courses need to be reduced to make room for accounting-IT related courses. The reason is that lower level data manipulation can be performed by the new technology and need not be an important part of accounting education.

Another argument is that many academic accounting programmes are reluctant to change their existing curriculum in fear that the respective bodies, either regulatory or professional do not want to recognise the changes. Eventually, most if not all academic accounting programmes in Malaysia are still offering one or two IT-related courses, which obviously are not enough to incorporate even the minimum requirements outlined in the IEG11.

It is also arguable that academic accounting programmes are able to deliver even the minimum degree of IT education to their students. There is a significant shortage of trained academics with both accounting and IT interests and skills to make significant improvements in the accounting curriculum. Ideally, IT knowledge and skills development should be integrated into all areas of accounting education, i.e. financial and management accounting, auditing and taxation. To achieve this would require concerted efforts from all individuals in all ar-

“I sincerely believe that more than two-thirds of the activities of all accountants, financial analysts and financial managers in the vast majority of firms are essentially worthless in terms of creating or sustaining competitive advantage”.

Richard Kaplan, US academic

reas of accounting. Unfortunately, in reality the responsibility to integrate IT in the accounting curriculum often rests on the shoulders of a small group of junior AIS instructors. Therefore, the notion of integrating IT knowledge and skills into all areas of accounting remains a big question mark.

Another common argument is that accountants should concentrate on the “information” (I) part, i.e. accounting information, which they are best at, and leaving the “technological” (T) aspect of the “IT” to IT professionals. One might also fear that blending accounting education with IT knowledge would eventually produce “half-baked, half-cake” accounting graduates, to quote the argument of one senior member of a professional body.

To tackle the issue, one should clearly note that the aim of integrating IT in the accounting curriculum is not to produce technically minded boffins who have personal love affairs with the computer. The goal is to produce “hybrid” accountants, who are capable of evaluating IT issues in some depth and thereby presumably bridging the “information-technology gap” for themselves. Therefore, IT knowledge and skills development approaches only need to focus on key topics, their business objectives and their business impacts.

Further, being “information-oriented” professionals, accountants need to have a good understanding of both information processing requirements and information processing capabilities of information systems to create and sustain the competitive advantage of the organisation they work with. As Brecht and Martin (1996) noted, the accounting profession needs to expand their reporting function beyond the scope of traditional accounting systems with added emphasis on the economies of business operations, strategic management and information systems development. Finally, it is worth to note what Richard Kaplan, a

well-established US academic had previously written, “I sincerely believe that more than two-thirds of the activities of all accountants, financial analysts and financial managers in the vast majority of firms are essentially worthless in terms of creating or sustaining competitive advantage”.

Conclusion

The objective of this article is not to provide solutions but to give an insight into the issues of IT and accounting education. Concerted efforts from all relevant parties are essential to fully integrate the IT knowledge and skills into the existing accounting curriculum. The Malaysian Institute of Accountants (MIA) as a regulatory body, the Malaysian Institute of Certified Public Accountants (MICPA) as a professional body, accounting professionals and accounting educators must adopt an appropriate vision for the future and take a leadership role in their areas, assess the current state of affairs, help to develop a plan to address the problems and obstacles to implementing IEG11, and a monitoring programme to encourage progress. **AN**

REFERENCES

- Albert, W.S. and Sack, R.J. (2000), “Accounting Education : Charting the Course Through a Perilous Future”, *Accounting Education Series No. 16*, Sarasota, Florida : American Accounting Association.
- Boritz, J.E. (1999), *The Accounting Curriculum and IT*, International Federation of Accountants.
- Brecht, H.D. & Martin, M.P. (1996), “Accounting Information Systems : The Challenge of Extending their Scope to Business and Information Strategy”, *Accounting Horizons*, 10(4), p. 16-22.

For more information on reference materials please contact the writer at N.A.Ismail@lboro.ac.uk.

.....
Note : The writer is a lecturer at the School of Accountancy, University Utara Malaysia. He is currently pursuing his PhD in the area of accounting and information systems at The Business School, Loughborough University, Leicestershire LE11 3TU, UK.