Chapter II
Informing Industry via Academic Research in ICT Skill and Capability Development

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ABSTRACT

In recent years significant changes have occurred in the skill sets underpinning the undergraduate information systems and information technology curricula. It is imperative that educators comprehend the needs and demands of the industry where their graduates are going to need to apply their acquired knowledge and skills. It may be argued that employers and job recruiters also need to be aware of what skill sets and capabilities new graduates may be expected to come equipped with, in order to develop successful strategies for retaining and growing staff in an environment where the demand for professionals in information and communications technologies (ICT) exceeds the supply. In this chapter, a research framework representing the dynamics of the ICT profession supply and demand of graduates with relevant skills and capabilities is used to facilitate the initiation of a dialogue between industry and academia with the objective to identify issues raised from the lack of alignment between the two and to suggest a way of using academic research results to address these issues. The discussion is supported by the findings of two relevant case studies.
INTRODUCTION

The umbrella term information and communication technologies (ICT) is commonly used to cover a broad spectrum of disciplines starting from computer engineering, to computer science (CS), software engineering (SE), information systems (IS), information technology (IT), and e-business. A fast growing process of technological convergence has contributed to the renewal of the debate about the relevance of the academic curriculum to the needs of the ICT industry. In line with the industry trend, the IS/IT academic curriculum has become more inclusive and most undergraduate programs are positioned along the above continuum of discipline groupings (Petrova & Medlin, 2006).

Historically, two types of skill sets have underpinned the undergraduate IS and IT curricula. Engineering and science programs have primarily been aimed at the development of technical and technological capabilities (“hard” skills), such as programming and systems development. While IT and IS programs have placed sufficient emphasis on hard skills, they have also recognized the importance of and need to produce graduates who understand business processes, and possess the much-demanded “soft” skills, including interpersonal and communication skills (Litecky, Arnett, & Prabhakar, 2004).

Therefore, it is imperative that educators comprehend the needs and demands of the industry where their graduates are going to need to demonstrate their capabilities and apply both their knowledge and skills as acquired throughout the university experience. It may be argued that employers and job recruiters also need to be aware of what skill sets and capabilities new graduates may be expected to come equipped with, in order to develop successful strategies for retaining and growing staff in an environment where the ever-increasing demand for ICT professionals exceeds the supply. In fact, and according to the results of a study of the IT workforce trends for the period 2005-2008 (commissioned by the Society for Information Management), most companies will need to increase their number of full-time IT staff through 2008 (SIM Advocacy Research Team, 2006).

Demand: The Changing Nature of the Job Market

As previously mentioned, the IS/IT curriculum development is driven by the need to meet changing job market requirements and employer demands. However, academic response to changes in the work environment has not always been either quick or adequate. The traditional academic conservatism, and to some extent, a certain lack of intrinsic motivation (Chandra, March, Mukherjee, Pape, Ramesh, Rao, & Waddoups, 2000; Davis, Siau, & Dhenuvakonda, 2003), have contributed to the creation of a gap between academia and industry in relationship to the identified and necessary skill set a graduate must possess. A second factor supporting the existence of the gap may be that significant operational difficulties and academic resources are needed for effective curriculum adjustment or change.

However one more factor may be contributing to the gap between ICT curriculum and the demands of the ICT industry: The ongoing process of the redefinition of job requirements as posited in the job advertising space. Clearly the roles and job descriptions of ICT professionals reflect ICT progress and emerging trends that will continue to evolve and grow. Similarly, the outcomes of IS/IT education will need to be better aligned with the evolving definition of the ICT profession and the expectations of industries that employ ICT professionals in order to meet the demands of new job opportunities (Gallivan, Truex, & Kvasny, 2004; Lee, Trauth, & Farwell, 1995; Lee, 2002).
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