Chapter IX
Relevance of Computing Programmes to Industry Needs in Jordan's Higher Education Institutes

Ala M. Abu-Samaha
Amman University, Jordan

ABSTRACT

This chapter aims to articulate the concerns and issues surrounding the relevance of computing programmes of higher education institutes in Jordan to market/employer needs. The information technology (IT) industry in Jordan has directed many criticisms to Jordanian institutes of higher education regarding the structure and content of programmes offered by IT faculties and departments, despite relentless effort to fulfilling shortages in the local and regional markets for adequate IT graduates. The chapter presents the findings of a local survey to assess the relevance of computing programmes to market/employer needs in Jordan. The survey identifies many of the skill gaps that exist and in acute need to be covered by a new breed of computing curricula in Jordanian institutes of higher education. Also, the survey emphasises the three most relevant areas of knowledge in computing programmes to industries' needs: (1) systems/software development/engineering and management; (2) electronic business development and management; and (3) system/software development tools and languages.

INTRODUCTION

To be responsive to market needs and changes is a value of great importance for business entities; commercial and noncommercial alike. However, being market led is a great danger to quality of education in institutes of higher education whether on the graduate or undergraduate level. Researching the relationship between market needs and academic excellence, two business models emerge. The first business model is entirely based on the promise that students themselves are the customers. The second business model is based on the employers as the customers and consumers of the end product of such institutes of higher education. Using either business models as an enabler

of program structure and content is capable of producing two divergent products for market consumption. Davis, Siau, and Dhenuvakonda (2003) indicate that "*Universities would benefit by creating courses more relevant to industry and students needs, and industry would benefit from hiring graduates that are more fully prepared to meet their needs.*"

Despite the increasing numbers of IT graduates from the 21 undergraduate universities and two postgraduate universities in Jordan, the Information Technology Association of Jordan (INTAJ) shows that "*Companies are hindered by the quality and variety of skills available in the marketplace*" (REACH1.0, 2000) where "*Computer science graduates are trained only in (dated) programming languages, and lack critically required skills in marketing, technical writing, project management, graphics, creativity, etc*" (REACH1.0, 2000). This misalignment between IT programmes' structure and content and market/industry needs is perceived to be damaging and restraining for local and regional IT firms to fulfil their declared objectives and sought competitive position.

In order to assess the market value of current computing programmes offered by Jordanian institutes of higher education, it is important to analyse Jordan's strategic IT plan. The chapter starts by discussing what is meant by "*relevance to market needs*" and how it can be achieved via universal knowledge areas in contrast to local market needs. This section identifies what is meant by evaluation and the major challenge to any evaluation effort; selecting the "right" indicators of success or failure. Then the chapter describes the Jordanian strategic IT plan (REACH: **R**egulatory framework, **E**nabling environment infrastructure, **A**dvancement of national IT programmes, **C**apital and finance, and **H**uman resource development) as advocated by the IT industry leaders. The main objective of such plan is to transform the local nascent IT industry to an export-oriented software development and IT service industry. The role of the higher education sector in fulfilling the stated aims and objectives of the strategic IT plan is then investigated as professed by the leaders of the local IT industry. The market value of computing/information systems (IS) programmes is then researched locally reflecting on the gap that exists between universal knowledge areas and local market needs and how to bridge such a gap.

PROGRAMME STRUCTURE AND MARKET VALUE

The market value of offered curricula structure and content is a worldwide problem. Many universities face the issue of market needs and its relationship to the offered core knowledge areas of study programmes. In a study carried out in the U.S. to define the market value of e-business programmes of study offered by a number of top institutes of higher education, Davis et al. (2003) identified 391 different e-commerce courses on the undergraduate level and 339 courses on the graduate level; eight career tracks related to e-business professionals. Using job listings in the U.S. as a tool to carry out an extensive content analysis, Davis et al. (2003) carried a fit-gap analysis to identify industry needs that are being met by the e-business curricula and those industry demands that are not covered. The fit-gap analysis led to the conclusion that few academic programmes have addressed the particular needs of the market, as very few courses focus on vertical industry specialisation and the majority has overlooked mobile commerce. Davis et al. (2003) offered a number of actions to bridge such a gap, a summary follows:

1. Increase training in specialised software applications in the areas of supply chain management (SCM), enterprise resource planning (ERP), and enterprise application integration (EAI)