Chapter 1

Workforce Assessment in the Jordanian ICT Industry

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ABSTRACT

This paper provides an assessment of workforce need in the Jordanian ICT industry. The results have shown that there is a growing workforce gap in the ICT sector. The technical skills of graduates are not satisfactory, and there is an increasing demand for skilled graduates. In addition to the technical skills required, communication skills, creative thinking, and English language skills were seen as important “soft skill elements” across all job categories and are missing in the current ICT workforce. The skills and competencies identified in this study can be used to motivate a design of an effective, flexible and relevant ICT program that can contribute to building a skillful workforce focusing on specialized and hands-on practices in ICT domains.

1. INTRODUCTION

Emerging global knowledge economies have created a demand for highly skilled ICT workforce in all industries. As a result, ICT labor markets have become highly competitive. With the tremendous wealth recently generated in the Gulf States and subsequent industrial booms, such markets in the region became highly attractive to many Jordanian ICT workers. A large number of experienced ICT professionals leave the country every year. Faced with such conditions, the demand for a highly skilled ICT workforce has increased tremendously. As the result of workforce migration, the ICT workforce in Jordan comprise of graduates who are young and possess little experiences and knowledge.

In Jordan, current trends indicate that the skill set composition of the ICT workforce is changing. With a growing pool of 19,000 ICT related labor force and steadily inflowing 6,000 ICT graduates yearly, Jordan has a potential to become a regional leader in the ICT sector (JIB, 2006). Jordan ranked 14th out of 110 countries for the number of engineers and scientists according to the Global Competitiveness Report 2004-2005 (Porter et al., 2005).
In spite of the growing importance of ICT workforce, very little empirical research has been done to assess quality and relevance in Jordan ICT education. The need for better quality and relevance of workforce skills has been identified by the Information Technology Association of Jordan as one of the challenges facing the ICT sector and affecting its growth, development and effectiveness.

While considerable effort has been made to achieve remarkable growth in the Jordanian ICT sector and to devise improvement directions, the only information available for the ICT industry in Jordan are the statistics of Jordanian IT industry (Int@J, 2007). The available evidence confirms that the current quality of ICT education cannot meet the labor market requirements, neither can it cope with the evolution of ICT technologies. However, in-depth analysis of the sector and scientific evaluation of the workforce gap in Jordan have not yet been adequately dealt with. Meanwhile, available studies on workforce assessment exist for ICT industries elsewhere. Of these studies, reference (Sri Lanka ICT Association, 2007) gives in depth analysis of the IT workforce in Sri Lanka. Reference (Hu et al., 2007) provides an evaluation of issues relating to ICT workforce in Taiwan with focus on planning, supply, and recruitment and retention of ICT skills among multinational companies. In reference by (Holm et al., 2002), the authors present best practices of ICT workforce management in Finland. A framework for Queensland government ICT skills are given in Queensland government office (2009). Reference (Stephen et al., 2009) gives analysis on the ICT skills readiness for the emerging global digital economy in Botswana. These references provide assessment models for ICT workforce skills and productivity under different sets of assumptions and issues. This study uses the references as a guideline for the articulation of ICT curricula design and skill development to enable young Jordanian graduates to compete internationally.

The Jordanian ICT educational institutions fall short of providing levels of the ICT skills required in the job market. Large numbers of ICT graduates have no immediate employment, and would need intensive professional training, often 1-2 years on-job training to successfully compete for jobs. The gap is growing between the ability of the ICT educational systems in Jordan to provide skillful graduates and the requirements of the ICT sector. This gap has grown even wider than ever, and calls for rapid adjustments and improvements in relevant ICT programs offered.

This study has been conducted in collaboration with the USAID/Jordan Economic Growth Program (SABEQ) and European (EU) Commission/TEMPUS with EU funding. The study sought to (1) assess the workforce gap on the basis of competencies required by the Job market; (2) provide a significant contribution to the development of a new vision for ICT education, which is centered, first and foremost, on a commitment to build ICT workforce qualified for the local and regional ICT and knowledge intensive industries; and (3) provide a framework for ICT skills development strategies at the government level that can enable Jordan to participate competitively in the emerging digital economy.

The results of the study which covered 53 ICT companies in Jordan have shown that the dominant educational level of employees (81\%) in the ICT sector is university education. Their technical skills, however, are not satisfactory and there seems to be a huge demand for skillful graduates. The technical competencies and skills mostly needed are on Oracle and MS-SQL in the domain of database systems; creative thinking skills and graphic design in the domain of digital media and animations; Microsoft Engineering in the domain of system administration; system analysis and business analysis in the domain of systems integration; network design and internet security in the domain of system and network administration; .NET programming, C++, system design, and team work skills in the domain of