Chapter IX

Information Technology Professional Career Development:
A Progression of Skills

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ABSTRACT

No industry seems to change as much or as quickly as the information technology (IT) marketplace. The skills necessary to be a successful professional in this industry change as the technology changes and as one advances through a career. The results of prior research are used to develop a field study of IT professionals' skill sets throughout their careers. Our findings suggest that IT professionals need to have different technical skills as their careers progress, and that; in fact, they do have different technical skills at different stages in their careers.

INTRODUCTION

Continuous professional development is an indispensable component of any job in today's business environment. This is especially true for IT professionals in the Web-based, Internet-driven e-commerce era. Changes in the market, technology, and work

processes reduce and may even eliminate the need for old skills and demand the development of new ones. Performance standards are becoming more complex and demanding (Ilgen & Pulakos, 1997). To remain competitive and advance in their careers, IT professionals should identify skills gaps, recognize areas to improve current performance, keep up with advances in their profession, and try to anticipate how changes throughout their organizations and their industries affect work demands and skills requirements (Carnevale & Desrochers, 1999; London & Smither, 1999). In fact, some research has suggested that IT professionals who aspire to the CIO (chief information officer) position must have more than technical and interpersonal expertise to be effective (Kwak, 2001).

It is becoming more difficult to specify and prepare for the skill demands of professional positions prior to beginning work activities (Barley & Orr, 1997; Mirvis & Hall, 1996). Web-based applications that support e-commerce throughout the value chain require different technical skills than those that some experienced IT professionals possess. Not only are these new skills required, but also the rate of skill and technology change is continuously increasing. Also, the number of factors influencing these changes is constantly increasing (Howard, 1995; Weick, 1990). Given these dynamic work environments, contemporary work roles require a significant amount of activity that is contingent and hard to predict (Darrah, 1994). As a result, skill deficiency in IT professionals has been found in various areas (Lee et al., 1995; Nelson, 1991; Trauth et al., 1993). To address this deficiency, IT professionals are continuously adding, replacing, and retrofitting their skill set to ensure an adequate stock of knowledge and expertise to perform their jobs (Alder, 1992; Carnevale et al., 1994). It should be noted that most of these issues and phenomena were observed prior to the push for Internet and Web-based applications. These technologies and enterprise systems, mobile communication, new security concerns, and the emphasis on global management and outsourcing only add to the changes and diversity in technical skills required by IT professionals. Combine these ever-shifting technical requirements with the notion that most professions require different skills sets as individuals advance in their careers, and you have a very demanding learning requirement for IT professionals to be successful.

This chapter presents an investigation into the technical skills *required* by organizations for the IT professionals they employ as these professionals move through different stages of their careers. Also, the technical skills that these IT professionals actually *possess* in these career stages are investigated. Obviously, as IT professionals progress through their careers, the jobs and responsibilities allocated to them change. It is to be expected that the roles and responsibilities of IT professionals at later stages in their careers demand different technical skills than those who are at the entry-level or in the middle stage of their careers. It also seems reasonable that as technology and the general business environment changes in response to the e-commerce era, so will the demands on IT professionals and their skill sets. The study undertaken provides some new knowledge with regard to the technical skills required and those currently possessed by IT professionals.

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