

## Chapter 3

# IT Professionals: An Iberian Snapshot

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### ABSTRACT

*Nowadays, Universities and other Training Institutions need to clearly identify the Information Technology (IT) skills that companies demand from IT practitioners. This is essential not only for offering appropriate and reliable university degrees, but also to help future IT professionals on where to focus in order to achieve better job positions. In an attempt to address this issue, this study rely on 102 Chief Information Officers, from Iberian large companies, to characterize current IT professionals and what is expected from future hirings. Results revealed that IT Technicians and Senior Analysts are the predominant positions and also that future hiring will request candidates with at least two to five years of work experience. The two most important skills found were core functions at the IT department: business knowledge and user support. In contrast, traditional competences such as web development and management of emerging technologies were less demanded.*

### INTRODUCTION

Information Technology (IT) professionals, such as programmers, analysts, database administrators, network specialists, etc., constitute a critical group of knowledge workers in modern organizations

(McMurtrey, Downey, Zeltmann, & Friedman, 2008) which is expected to grow in the near future. According to the “Tomorrow’s Jobs” section of the 2008-2009 Occupational Outlook Handbook, two IT related professions, namely “network systems and data communications analysts” and “computer

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software engineers”, occupy the first and fourth places respectively in the list of the top twelve jobs projected to grow faster between 2006 and 2016 (U.S. Department of Labor, 2009).

IT professionals need to possess various skills to perform adequately in their job. They need to have technical skills to work with computers, business skills to apply their technical knowledge to solve business problems, as well as managerial skills and soft skills to be able to work effectively with computer users. IT professionals, therefore, need to be trained in different skills as employers are keen to recruit employees who possess technical as well as non-technical skills (Lee, 2006).

As technology advances and the business environment continues to evolve, organizations and training institutions face a key challenge: to identify critical skill sets for current and future IT practitioners. In an attempt to address this issue, this study surveyed 102 Chief Information Officers (CIOs), from Portuguese and Spanish large companies, to characterize present and future IT professionals. In this sense, this study empirically investigates which skills are most important for current and future IT personnel based on the perceptions of Iberian CIOs. The results offer a comprehensive and updated set of IT professionals skills that will be useful to both public and private organizations, Universities and Technical Institutes, as well as to IT professionals.

To analyze the essential skills for current and future IT professionals, the organizations selected for the study are large companies. This particular audience was preferred because large organizations are generally leaders in technology use and application (Li, McLeod, & Rogers, 2001; Liu & Arnett, 2000; McLeod, 1995) and need to have a well-structured IT department to manage the overall information system architecture.

Considering the above-mentioned points, the key research questions that motivate our work are:

- What characteristics have actual IT professionals employed in large companies?

- What are the most important skills of actual IT professionals employed in large companies?
- What skills will be important for future IT personnel?

The paper is structured as follows: The next section presents the literature review; Following that, the methodology used for sample selection and data collection is discussed; Then, data analysis and results are examined; Finally, the paper ends with limitations and conclusions.

## **LITERATURE REVIEW AND CURRENT STATUS**

In an IT department of a company we can find various types of professionals. Among others, we have, developers with different levels of experience (junior and senior), analysts (junior and senior), computer technicians and trainees.

The large amount of studies that since the 1980s have been conducted regarding IT workforce issues and IT professionals, confirm the relevance of these topics (Goles, Hawk, & Kaiser, 2008). Among these topics, the characterization of IT skill requirements for professionals is recognized as one of the main areas of research (Ang & Slaughter, 2000).

Prior research in this area has resulted in two broad categories of skills, technical and non-technical (Goles, Hawk, & Kaiser, 2008). Technical skills basically consist of those skills specific to the IT field, including but not limited to knowledge and competencies associated with hardware, systems and application software, and telecommunications (Cash, Yoong, & Huff, 2004). Non-technical skills generally include: business skills, such as knowledge of the organization's structure, strategy, processes and culture and the ability to understand the business environment; management skills as planning, leading, organizing and controlling; and soft skills, which refer

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