

## Chapter XV

# Tomorrow's Workforce Today: What is Required by Information Systems Graduates to Work in a Collaborative Information Systems Workplace?

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### ABSTRACT

*Over the last 100 years, technological advances have changed our lives in our homes and society and have continually impacted on the way we work, where we work, how we work, and with whom we work. Our work and workplace is changing through the use and reliance of information systems. It is therefore critical to develop information systems (IS) professionals who can manage the change but also have the skills to adapt to the changes. Within the IS development domain, the changing environment is driven by two key factors; collaboration and technology. An IS professional is one who designs, develops, and implements services and products for an organisation, and for the dissemination of information. Today the design and development of IS not only relies on the technical skills of the individual, but relies heavily on effective teams. The personal and interpersonal skills of people in the team have become just as important (and in some cases, more important) as the development of the IS. These personal and interpersonal skills are what is commonly coined the "nondiscipline skills," "soft skills," and in some arenas "emotional intelligence." The research reported in this chapter identified the needs of today's IS workforce in terms of the nondiscipline skills required to work effectively in collaborative teams. The outcome of the research is a list of collaborative skills, identified from the literature and extended and confirmed by key IT industry professionals. The research identified that there are two sets of skills, individual skills and group skills that are important for our IS graduates to have obtained to work effectively in today's information technology (IT) workforce. These results suggest that curriculum developers need to carefully consider how such skills can be taught to properly equip our graduates for tomorrow's workforce.*

## INTRODUCTION

In an ever-changing workplace the skills of workers must also change. The work, workers, and place of work are altering, as are the interactions between the workers and the technology used to conduct their work (Bijker & Law, 1997; Castells, 2001; Wajcman, 2004). Work is shifting from the individual worker in the office to a change in the location of its workers, the type of work conducted, the way the work is done, the tools used to engage in communication, and the work itself. These changes are occurring rapidly and extensively in the IT workplace. For many workers, going to the same office the same time every day, working with the same colleagues, and working in the same time zone (temporal space) is coming to an end. One of the responsibilities of educationalists is to prepare the next generation with the skills to be an effective member of these new workforces. To do this, there needs to be a close examination of what skills will be required to ensure graduates are appropriately equipped.

IS practitioners recognise the need for continual review of the education of its workforce, specifically in updating the skills and knowledge required to perform the job at hand. Educationalists responsible for preparing undergraduates for the professional workforce need to closely examine and address what we are teaching in terms of meeting the current needs of industry and society and to ensure that this is aligned with the rapid advances in technology.

## STUDY MOTIVATION AND BACKGROUND

The catalyst for the study discussed in this chapter was anecdotal evidence from IT professionals working with IS graduates, who found that the new recruits do not know how, nor have the skills to work collaboratively on projects. Similar issues have been reported in the literature by researchers

such as Trauth, Farwell, and Lee (1993). Evidence from the literature indicates that recruits have some of the skills, but they are unable to participate fully in their work environment through inexperience, lack of confidence, and more importantly, a lack of an understanding of the skills required for working effectively in a team. Given the importance of effective teamwork, a major issue is therefore, that new IT graduates are not ready to engage in the workplace of the 21<sup>st</sup> century.

With the advancement of technology comes the expectation that IT professionals are proficient, adaptable, and amenable to using new technologies not only in their domain but in the way they work in teams. Educators need to equip beginning IT professionals with these skills to enable them to be effective in the new workplace. Universities have a responsibility to the development of employable IT professionals.

The soft skills that are actually taught and learned in undergraduate programs often do not include all of the skills that are encompassed by the three areas—employability, graduate, and the discipline-specific skills. Studies (for example, Bailey & Stefaniak, 1999; Hurst et al., 2001; Lidtke, Stokes, Haines, & Mulder, 1999; Toleman, Roberts, & Ryan, 2004; Wong, Von Hellens, & Orr, 2000) have shown that IT practitioners are not satisfied with current IT graduates; the graduates are seen to be lacking the aptitude and skills to work effectively in collaborative teams. Other studies such as that conducted by Turner and Lowry (1999) explored the fit between university study and professional practise of IS practitioners, with respect to technical knowledge, academic knowledge, and personal attributes. However, there have been few studies that have explored the issues relating to soft skills in so much as how to work collaboratively in a team, or even studies that have identified what those skills are.

The focus of this study was primarily on preparing the (IS) undergraduate for a place in the IT workforce. The IS profession is a subset of the larger IT community and has a focus on

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