Staying Up to Date with Changes in IT

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INTRODUCTION

Information and communications technology (ICT) has been changing rapidly over a long period and this rate of change is likely to continue or increase (Benamati & Lederer, 2001a; Lee & Xia, 2005). This rapid rate of change has produced many opportunities for organizations, but has also brought with it many challenges (Benamati & Lederer, 2001b). Among these challenges is the struggle for organizations to obtain personnel with the appropriate information technology (IT) knowledge and skills in order to meet their ICT needs (Byrd & Turner, 2001; Doke, 1999; Standbridge & Autrey, 2001). This is mirrored by the continual requirement for IT professionals to keep up to date with the skills required by organizations (Benamati et al., 2001a; Klobas & McGill, 1993; Moore, 2000).

Previous research has investigated the importance employers place on various skills and perceived deficiencies in these skills (e.g., Doke, 1999; Leitheiser, 1992; Nelson, 1991; Prabhakar, Litecky, & Arnett, 2005). While the call for improved communication and social skills has been consistent, the technical skills in demand have varied dramatically over time (Prabhakar et al., 2005; Van Slyke, Kittner, & Cheney, 1998). Less has been written about students' perceptions of the importance of various ICT skills, though this was addressed in a study that compared Australian and American students' perceptions of ICT job skills (von Hellens, Van Slyke, & Kittner, 2000). This article provides an overview of a project that investigated the channels of information that ICT students use to keep up to date with employers' needs.

BACKGROUND

Given that the skills required by IT professionals change over time, IT professionals need effective methods to keep up to date. The methods used by IT professionals to keep up to date were studied by Klobas et al. (1993). They identified the existence of a variety of information gathering strategies and noted that while IT professionals tended to be diligent in their efforts to keep up to date, a majority found it difficult to do so. In a more recent study, Benamati et al. (2001a) investigated the coping mechanisms adopted by IT professionals and noted that many mechanisms were not successful.

If it is difficult for experienced IT professionals to keep up to date, it is likely that it is even more difficult for ICT students to do so. New graduates require marketable IT skills in order to gain good employment, but the skills most in demand change regularly. Little is known about how ICT students keep informed of employers' requirements or about how they ensure that they can meet these requirements. Yet this knowledge would be of use to both educational institutions aiming to facilitate this process and to potential employers hoping to recruit students with the required skills.

Information about ICT skill requirements is available from a variety of sources in a variety of formats. Information sources include ICT suppliers, publishing companies, and universities. Formats include different types of publications, presentations, and personal contacts. The term "information channel" can be used to describe the various combinations of sources and formats of information.

HOW DO STUDENTS KEEP UP TO DATE?

Eighty-five information technology students at an Australian university were surveyed to investigate the channels of information that they use to keep up to date with employers' needs. Participants were recruited during class and completed a questionnaire on the spot.

The questionnaire listed information channels that may be used to keep up to date and asked participants firstly whether they had used each channel within the last three months, and also to rate the importance of each channel to them as a means of knowing what skills are in demand. Importance was measured on a 5 point scale ranging from (1) "Not important" to (5) "Vital." The initial list of channels of information was drawn from Klobas et al. (1993) report of the methods used by IT professionals to keep up to date with developments in ICT. Several additional channels were included after consultation with industry contacts. Table 1 lists the information channels included in the questionnaire.

Overall, the students appeared to be diligent in their efforts to keep up to date with employers' skill requirements. The average number of channels used by the students during the previous three months was 3.8 (and the most common number used was 5). Thirteen students (15.3%) had not made any attempt to keep up to date during this period and four (4.7%) had made use of all nine listed channels.

The information channels are ranked by frequency of use in Table 1. The most frequently consulted channels were newspaper employment and IT sections and Internet sources. University instructors had been consulted by about half of the participants during the previous three months. Other students had also been used as a source of information by quite a few students (40%). This high level of use of other students to provide information about employers' skill requirements is understandable given the easy accessibility of other students (Klobas et al., 1993). Work colleagues were ranked 7th overall, but as only around a third of the participants had ICT work experience this means that most of those with prior experience had consulted their colleagues (75% of those with prior ICT work experience had consulted their colleagues). The least used channels were books and vendor presentations. It is likely that students were conscious that information about employer skill requirements derived from books was not going to be sufficiently up to date to meet their needs.

Table 2 shows the importance rankings of the individual information channels. The most highly ranked information channel was Internet sources such as the Cisco and Lucent sites. As well as being frequently used, newspaper ICT sections and employment pages were also considered very important (ranked two and three). University instructors were ranked 4th in importance, which was consistent with their frequency of consultation by students. Although other students were consulted by many students they were not considered as an important channel of information (ranked 7th). This suggests that students recognize that although other students are an easily accessible source of information, they are not necessarily an accurate or reliable source. Both books and vendor presentations were considered of low importance. In future research, it would be interesting to determine how well student perceptions match those of employers.

In addition to the items about methods used to keep up to date, participants were also asked several questions that addressed whether they believed they were in fact obtaining the skills employers required. A majority of participants believed that their degree would provide the skills employers require (67.1% "yes," 5.9% "no," and 27.1% "not sure"). This high level of confidence suggests that although only around 50% of students had consulted their instructors about employer skill requirements during the previous three months (and instructors were only given a medium ranking of importance), students do implicitly accept that instructors know what skills students require. Industry certification was also seen as a very important means to ensure that students obtain the necessary skills (mean importance score was 4.18/5 for those students not yet working in the ICT industry). This is consistent with the results of a recent study on IT certification which found that students undertaking certification believe that the most important benefit of certification is that it provides "real world" experience (McGill & Dixon, 2005).

Are There Demographic Differences in Use and Importance?

Patterns of use and perceptions of importance were further examined to determine whether gender, level of study, or previous ICT work experience had an influence. Differences in use were explored using χ^2 tests and differences in importance were explored using independent sample t-tests. These factors had surprisingly little influence on patterns of use and perceived importance of information channels.

Table 1. Information channels ranked by frequency of use

Rank	Information channel	Number	Percentage
1	Newspaper employment pages	56	65.9
2	Newspaper ICT sections	52	61.2
3	Internet sources (e.g., Cisco, Lucent)	47	55.3
4	University instructors	43	50.6
5	Other students	34	40.0
6	ICT magazines (e.g., Packet Magazine)	29	34.1
7	Work colleagues	24	28.2
8	Books	20	23.5
9	Vendor presentations	17	20.0