Key Attributes for Success within the ICT Job Market: A Case Study of ICT Students' View

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Keywords

ICT Education, ICT Sector's Required Attributes, ICT Students' Perception of Key Attributes

Abstract

This paper elaborates on attributes that are seen as being critical to success within the ICT sector roles. The required attributes as identified by a study of 205 randomly selected ICT roles have been compared with students' perception (based on the preliminary results of a study of one student focus group). Overall, there were difficulties in drawing clear conclusions from the outcome of one case study only. However, we were able to identify some key issues in both agreements and mismatches on winning attributes for future studies.

1 Introduction

Within the past decade, we have witnessed rapid advancements in Information Communications and Technology (ICT) solutions. The most significant technological advancement of the recent years has been that of Web technologies and the Internet.

Today, most organizations deal with complex information and sophisticated information management approaches and systems on a daily basis. What's more, the business environment has become globalized which has in turn increased complexity and competitiveness. This has meant that organizations are driven into the digital world. That is to say, to deliver products and/or services in a timely and cost effective manner (and remain competitive), firms have had to increasingly streamline business processes by the application of advanced ICT and Web-based solutions.

As the application of ICT enabled tools and web technologies in organizations accelerate, there is a growing need for ICT knowledgeable workforce. Organizations need skilled information analysts, information mangers, designers and developers of information management solutions. Overall, skilled ICT workers play a significant role in the day-to-day management of businesses. However, over the past few years, there has been much debate over whether or not technical skills are sufficient to guarantee success within the ICT sector. More specifically, numerous ICT sector strategists, planners and recruitment experts argue that skills are not sufficient to secure success in employment. A review of a number of recent cases of recruiting ICT workers, suggests that there is an increasing expectation that ICT workers possess certain personal attributes to complement their technical expertise.

In early 2006 a project was initiated (as an industry project to be carried out by a Graduate Diploma in ICT candidate) to investigate key issues that concern effectiveness (developing work-ready graduates) of ICT education within New Zealand. The preliminary results of this study identified key skills and personal attributes (amongst other parameters) as evident from the ICT sector's employment needs. Furthermore, the project involved a pilot study (case study) of a focus group of graduating students (35) of two ICT tertiary qualifications (a Bachelor of ICT program and a Graduate Diploma in ICT program). The study of the focus group aimed at validating research questions, clarifying key issues/trends and fine tuning methodology and/or research questions for future investigations.

The key research question for the case study (mentioned above) is as follows:

"*To what extent, graduating ICT students' view of crucial attributes for ICT roles matches ICT sector employers' view of winning attributes for ICT workers?*"

This paper discusses the results of the pilot study (case study) that was mentioned above. Some of the key issues that are addressed include:

- ICT sector's view of needed attributes
- Students' view of critical attributes for ICT jobs

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- Students' view of key attributes that help study ICTs successfully
- Students' perception of the personal attributes they possessed and that if there have been improvements on personal attributes.
- A comparison between students' views and actual ICT sector employment needs.

2 Methodology

This paper discusses the results of a preliminary study of key attributes within the ICT job sector compared with a study (case study) of a focus group of students. The preliminary results discussed in this paper are based on data collected from three various sources:

- A review of some of previously published investigations discussing key issues about learning, ICT education, general developments, recent trends and perceived ICT sector's needs for information age workers (Asgarkhani 2003, Burns and Dick 2001, Evans 2003, Gregorian 2002, Kozma 2005 and ICT Skills Foresighting Group 2006).
- The key attributes as seen critical by the ICT sector - identified by evaluation and analysis of 205 randomly chosen job/role descriptions within the ICT job market.
- Attributes identified by students as being critical – identified through a study of a focus group of students. More specifically, a focus group of 47 Bachelor of ICT and Graduate Diploma in ICT students was formed. These students were asked to participate in an online survey. Only 35 students responded.

3 Analysis of the Results of the Case Study

In this section of the paper, we discuss the preliminary results of this case study. Columns two to five in Table 1 relate to the outcome of the case study. Column one in Table 1 is a summary of the results from the study of the ICT job sector (skills and attributes requirements).

Table 1. Top 10 Attributes as ranked (chosen more frequently) by industry (workplace) and students

Ranking	(1) Industry's view of required attributes for the ICT sector	(2) Students' view of attributes for being a successful ICT worker	(3) Students' perception of their own currently possessed attributes	(4) Students' view of attributes that can help achieve success in studies	(5) Students' view of attributes they developed or improved on during the course of studies
1	communication skills	problem solving	communication skills	communication skills	communication skills
2	people relations	communication skills	self motivated	self motivated	problem solving
3	team worker	attention to details	team worker	quick learner	handle pressure
4	leadership	Organization	problem solving	can-do attitude	team worker
5	can-do attitude	people relations	can-do attitude	problem solving	multi-tasking
6	self-motivated	team worker	quick learner	team worker	strategic thinker
7	attention to details	can-do attitude	attention to details	attention to details	attention to details
8	organization	quick learner	creative	organization	leadership
9	mentor	commercial awareness	strong ethic	handle pressure	organization
10	customer focus	self motivated	handle pressure	leadership	quick learner

Table 1 shows the top 10 attributes ranked by industry and 35 students in the focus group.

Column one demonstrates the top 10 attributes required in ICT job market - as determined by evaluating 205 (randomly selected) jobs/roles within the ICT sector.

Column two illustrates students' view of the attributes that are required to be a successful ICT worker. Column three outlines students' perception of attributes they possessed at the time of the study. Column four demonstrates students' view of attributes that facilitate successful ICT studies within the tertiary sector. Finally, Column five illustrates attributes that have either been further developed or improved on during (as a result of) the course of studies (students' views).

Next, we compare students' view with that of the industry.

By comparing columns one and two, we can see that students' view of "*attributes that help to be a better ICT*

worker" and achieve a better result in their future workplace (column two), mostly match the attributes required in ICT job market (column one). However, some mismatch also exists. For example, *problem solving* is seen by students as the most important attributes to be a successful ICT worker – where it is not included in the top 10 attributes as evaluated by the industry. It is surprising that attributes of *being a quick learner* and being *commercially aware* are not seen as being crucial by the job market while students rate them as being amongst the top 10. This may indicate that students are aware that ongoing learning and the ability to provide ICT solutions for businesses are critical to their future success.

At this point in time, it is difficult to say why this "match and mismatch" exists – as these results are from studying one focus group only. Some of the reasons can include (but not yet investigated) communication of key job market issues to students by teaching staff; students' awareness of key attributes through self-learning (such as general readings, industry reports and job advertisements); students confusing requirements for academic studies with what is needed in reality within the job market.

By comparing columns one and three we could possibly say this focus group may not be seen as a group that is '*work ready*'. Five of the top 10 attributes that students claim they possess (*problem solving, quick learner, creative, strong ethic* and *handle pressure*) are not seen as being amongst top 10 attributes by the job market.

By comparing columns one and five, we can see that the attributes that students think they have improved on (or developed) during the course of their studies are still not consistent with the attributes needed by employers. More specifically, five of the improved attributes (*problem solving, handling pressure, multi-tasking, strategic thinker* and *quick learner*) are not seen as being the top 10 attributes by the job market. One might argue that the case study indicates that academic studies have not helped in improving (or developing) students' attributes that meet the industry needs. However, this is the outcome of one case study only and cannot be generalized.

Finally, this study highlights some of the issues that may be worthwhile studying (investigating) further. These could include:

- To what extent the tertiary sector is aware of ICT sector needs (skills and attributes).
- Are tertiary institutions providing right training to their students?
- Should tertiary institutions provide not only skill training but also methods of improving job market related attributes?

On a different note, it is fairly easy to understand why *handling pressure* and *multi-tasking* have been improved on. It could be a result of students doing three or four papers at the same time. It is also interesting to see that *strategic thinker* is identified as improved attributes. This could indicate that the focus group of students involved may have recently completed a course in ICT management.

By comparing columns two (students' view of required attributes for success as an ICT worker) and four (students' view of attributes that help success in studies) we can observe little inconsistency (only 2). More specifically *handling pressure* and *leadership* are seen as attributes needed for studies while *people relations* and *commercial awareness* are seen as attributes that are needed to be a successful ICT worker. This may indicate that students see attributes needed for studies are not necessarily different from attributes needed for workplace. However, it is interesting to note that students see *leadership* as an attributes that can lead to success in their studies.

Students note *handling pressure* as being critical to success in studies. Once again, this could be due to students having to study three or 4 papers and complete the required assessments at the same time (that may be seen as having to handle pressure).

Looking at the results that are outlined in all five columns, we can see that *communication, being a team worker* and *attention to details* appeared in all columns (selected as top 10 attributes). *Communication* was rated as top attribute in four of five columns (column two in disagreement). What's more, *attention to details* is ranked seventh (from top) in four of five columns – once again, column two being an exception. On the other hand, *being a mentor* and *customer focus* are only seen as relevant by ICT employers – as students make no mention of them. This may indicate lack of job market maturity in the focus group that was studied.

Overall, in this case study, despite some mismatches, the students' view of winning attributes that lead to success in the industry are mostly in agreement with what ICT job market views as being key attributes.

4 Summary and Conclusions

The ever-increasing need within organizations' for skilled ICT workers has recently caused ongoing debate if skills are enough for employees to be effective workers. What's more, personal attributes have been capturing increasing attention by employers in the ICT job market. Today, a competitive ICT worker needs to not only possess technical skills but also demonstrate certain attributes - to be successful within the workplace.

The results of the first study (analysis of skills and attribute needs within the ICT sector) are not yet final - only 205 ICT roles have been analysed to date. However, the top 10 winning attributes as identified and a comparison with the outcome of the study of our focus group, can explain (to some extent) why employers are reluctant to employ some potential ICT workers (who may seem to lack certain attributes) - despite a clear shortage in the marketplace.

By comparing the five columns in table 1, we discussed the match and mismatch between the industry view for attributes and students' perception.

Students' selection of top 10 attributes that "*help to be a better ICT worker*" demonstrates how much students (in this focus group) understand the job market needs. Students' perception of attributes they already possessed can potentially demonstrate if they are currently "*work-ready*". The top 10 attributes that students think they have developed (or improved on) during the course of studies, implied little change in bringing them closer to be work-ready.

The results of the comparison of attributes rated by students as "*helping success in studies*" and "*helping success as an ICT worker*", show that students see little difference between attributes that lead to success in studies and those that result in success at workplace.

As this case study is focused on a small one focus group only (one tertiary institution) the results cannot be generalized. What's more, due to the fact that students in this focus group were at the last year of their studies (at the time when the survey was conducted), the results may be slightly biased – as it may reflect the attributes that are associated with their particular course of study at that time (such as *handle pressure*, *multi-tasking*, and *strategic thinking*). However, the outcome of this study may help identify potential future studies in order to further clarify some of the issues that have been discussed earlier – such as:

- Validating the trends in this case study by increasing the number of focus groups (from different educational institutions) that have been studies.
- Investigating the reasons for inconsistencies between students' and industry's view. This could enable us to recommend changes in the ways in which we help students to have a realistic view of the job market needs.
- How much confidence students develop (for entering the job market) after completing the course of studies?
- The reality of to what extent perceived winning attributes (by both students and industry) actually help students being successful in the job market after completing studies.
- To what extent the perceived winning attributes for education help students to be successful in completing studies.

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