ABSTRACT
The intention of this paper is to understand the employability of IT students with special reference to international students. The emphasis is to identify a model which can be practically applied to harness the skills of the students which can help them find employment. The survey results are to quantify if the required skills were realized and achieved by the IT graduates. The results also analyse if the graduates felt the need for certain skills. The discussion covers the view from the author on how students could be aided to achieve their goal of successful employment.

Categories and Subject Descriptors
K4.2 [Computers and Society]: Social Issues - Employment

Keywords
International students, graduate, employability, workplace competencies, technical skills, soft skills, emotional intelligence, generic skills

1. INTRODUCTION
Education has evolved as an important export industry for New Zealand and is worth $2.5 billion per year to the economy [11]. The figure is expected to double in 2025 [5]. Export education provides 32,000 jobs to the people of New Zealand. The industry has grown and become a crucial part of the economy. International students from various countries come to New Zealand to acquire world-class quality education and consequently expect better job prospects. For most of these students, studying and living in a foreign country is a whole new experience. They are willing to adapt to their host country. Many also desire to work here after they finish their studies. A recent survey by Education NZ [6] of Indian students studying at polytechnics indicated 70% of them intended to stay and work in New Zealand following their graduation.

Employers regard work experience as an important criterion while employing international students. The open work visa policy by Immigration New Zealand has eased the transition for some students. The Education NZ survey identified that graduates faced challenges in getting their first job and 81.8% of the respondents indicated that employers were reluctant to hire international students with no work experience. Thus students need to be aware of employers’ expectations in the job market. What are the various skills they need to pick up while studying?

Getting their first job is equally hard for domestic graduate students [9]. Recruitment agencies prefer candidates with relevant work experience. Most large companies advertise through recruitment agencies in job portals. Hence students are usually discouraged and look for jobs through personal contacts or with the help of the polytechnic. International students face more challenges related to cultural fit, communication skills and blending into the local flavour. Organisations like the Chamber of Commerce have initiated programmes aimed at helping migrants get suitable jobs.

Whitireia Polytechnic’s Auckland campus has delivered the Bachelor of Information Technology for five years from 2007 mainly for international students. Previously the Diploma in Information and Communication Technology Level 5 and 6 was delivered from 2003. Student numbers range from 100 to 160 each year. A substantial number also study the Graduate Diploma in Information Technology. Informal contact with former IT graduates and their friends have indicated that many have gone back to their home country and are in employment there. A few students have enrolled in post-graduate courses in New Zealand and other countries. There are several other graduates living in New Zealand who have got jobs as software developers, programmers, web developers, IT technicians, IT systems support administrators.

The intention of this research is to collate the success stories of these graduates and use their experiences in helping current students get their first job in IT. This will help the researcher to develop a guide and create strategies for current students seeking employment in IT in New Zealand and overseas.

2. LITERATURE REVIEW
Graduates often take the first job they get primarily for financial reasons to pay off their student loan, work and live independently. The first job need not necessarily be their job of choice.

In order to help graduates understand their potential skills and develop them further, Pool and Sewell [10] designed a model of employability to help graduates secure a job of their choice and achieve satisfaction. Figure 1 depicts the five components at the lower tier of the CareerEDGE – the Key to Employability model namely career development learning, experience (work and life), degree subject knowledge, generic skills and emotional intelligence. Students should be aware of these five components and develop these skills in order to reflect, evaluate and progress into the next level of three Ss; which can lead them to successful employment.

IT related jobs are subject-specific and the graduates need to acquire subject-specific knowledge as they study. Generic skills on the other hand are not specific to any discipline of study and are desirable to employer. Similarly, personal skills like emotional intelligence are required workplace competencies.

The model also suggests graduates should be supported with career counseling helping them in CV writing, interviews and job applications.

Graduates with work experience have a greater chance of employment than those without. Graduates could include life...
experience, work-related experience, voluntary work, or any part time work as experience.

Graduate students who were successful in securing a job in their relevant field of study were interviewed.

The survey was sent through email to 162 IT graduates from the last three years (2009 to 2011) and 33 emails were undelivered. Many graduates’ contact details had changed and there was no way of getting the correct email addresses. 25 students responded which is a response rate of 19%. The study was limited with only one major stakeholder being surveyed in one campus.

The initial interviews were conducted with six students. This gave a general understanding of the types of IT jobs the students secured and their process of job hunting and job interviews. Most of the students had been through two or three rounds of job interviews. The job interviews ensured graduates had the technical ability to do the job and the communication skills to work in a team. Some students were asked to complete a task like writing a piece of code, or to explain specific technical terminology.

Although the main participants of the research were graduates, data from other sources was also considered. The Business and IT Advisory Committee meeting in 2011 emphasised soft skill requirements. Graduates lack skills like composing external communications which need to be formal and in a legal context. They also lack problem solving skills.

The employer survey 2011 for Auckland indicated employers were satisfied with the level of knowledge and skills of the graduates. There was emphasis on the need for communication skills among graduates. However this represented the feedback for all students and not just IT graduates.

Informal communication with people working in the IT industry indicated that if the graduate had the right technical skills and attitude they could be easily absorbed in the industry. Fresh graduates should look for entry level roles in order to gain the employer’s confidence to step up into more mature roles.

After drawing inputs from industry, advisory committee members and graduate surveys, the focus was on getting direct inputs from IT graduates for Auckland campus. Through informal communications with graduates, a few success stories were identified. The focus of the survey was to get an unbiased sample data from various graduates of different cultures.

The questionnaire was kept simple for graduates to fill in and was anonymous. Participation was not compulsory. There were options for multiple selections for some questions.

4. FINDINGS
Most of the respondents were in New Zealand and only 12% of the respondents were either in their home country or overseas. 88% of the respondents were in employment and 8% were studying. These percentages cannot be applied to the graduates in general as the response rate was only 19%. However the results for useful papers at work and workplace competencies are significantly important in this research study and may help current students seeking employment.

Seventy six percent of the respondents were Chinese, 20% were Indian. These two ethnic groups form the major student body in the Auckland campus. 12% were female. 72% were in the age group 20-25 and 28% were in the age group 25-30.
All papers taught in the IT programme at Auckland campus were included in the survey for graduates to choose whether they were useful to them in their job. Figure 2 shows the percentage of respondents identifying the relevance of various papers to their employment.

Capstone project, where students experience working with client and in a team, had the highest score at 56% and next most relevant was the project management paper. Both these papers are compulsory papers for the Bachelor’s Degree. However a significant number of respondents (32%) were graduate diploma and the capstone project was not compulsory for them. Most of the respondents (64%) were Bachelor’s graduates and only 4% were level 5 diploma graduates.

At Level 5, communication and networking papers were regarded by many graduates as useful in their jobs. Generally Level 6 and 7 papers were more appreciated than Level 5 papers other than the communication and network papers. Networking papers at Level 5 and 6, programming papers at Level 7, communication papers at Level 5 and 6, database at Level 6 and system analysis and design at Level 7 were regarded as useful by many graduates.

Fifty six percent of the respondents got jobs in the area of networking, 16% of the respondents got jobs as software developer/web developer, 16% of the respondents got non IT jobs, 8% of the respondents were studying higher level qualifications and 4% of the respondents did not answer this question. The preference for networking and programming is justified by the jobs acquired. The graduates regarded communication papers and technical papers as equally important. Employers and industry advisory committee members also emphasised the need for strong communication skills.

Forty percent of the respondents said they had industry certification. Tertiary qualification along with industry certification is likely to improve the confidence of employers while recruiting graduates [8]. As the certifications are global it should satisfy overseas employers. At polytechnics the certification components like CISCO can be covered in appropriate papers.

Seventy two of the respondents said they had no prior work experience. In the same survey 72% suggested previous work experience is very important as shown in figure 3. Students should be encouraged to find suitable jobs while studying to improve their employability upon graduation.

The workplace competency graph (figure 3) shows that critical reasoning, analytical and technical skills, industry knowledge, communication, team skills and work experience were highly rated by the graduates. By contrast academic results were rated low.

5. DISCUSSION

The CareerEDGE – The Key to Employability model was analysed to ensure the graduates have been supported with this model. The students have been supported by the polytechnic to write their CV. Staff from the study skills centre and counsellor have played a major role here. Currently there is no structured way of communicating with the students about any potential job vacancies. The polytechnic has felt the need for a placement officer. Meanwhile the teaching staff have contacted prospective industry employers to understand the requirements for employability of graduates within NZ.

The polytechnic has started putting the success stories of students in a central database. Earlier not enough data was available and such information was captured locally within a faculty programme. The alumni page on Facebook has doubled in membership in the last two years. Access to this website for Chinese graduates from their home country is still problematic.

The results concerning useful papers are strong indications for prospective students to consider. Communications papers were given equal importance to technical papers. Many new students do not understand the importance of communication skills. Capturing and writing business requirements is a very important skill in the IT software development industry.

Work experience is also important to acquire while studying. Students should seek part time positions. The capstone project completed as part of the study should elaborate the project undertaken for the client. It should also include the student role and responsibility in the team. Although only a small proportion of the survey respondents had work experience, it was still regarded as an important workplace competency.

Industry certification improved the employability for some; hence it is desirable to have such certification when seeking relevant IT jobs.
Generic skills like being a team player were considered important by the respondents. The capstone project had given them the practical exposure to work in a team. However some soft skills like emotional intelligence, cultural alignment and leadership were not considered important by respondents. These skills could have enhanced their team spirit.

Employers trading with South East Asian countries like China and Japan regard highly, employees with the knowledge of Asian languages [Crossman & Clarke 2010] as language and culture are hurdles for employers to overcome. International students may have an advantage in such workplaces.

Complementing the efforts from the polytechnic and students, graduate employability can be improved with work-based training [Cranmer, 2006]. Case studies and practical approach were recommended to be incorporated in their studies by the Business and IT Advisory Committee members. When considering IT specific jobs, graduates were advised to consider voluntary work and to look for free internships with IT companies to gain work experience. Job training was considered expensive for employers. Currently IT graduates have the benefit of capstone project to hone their skills. Training and internship from industry could be areas to focus on in future.

6. CONCLUSION
The CareerEDGE employability model was employed in the research and a graduate survey was conducted on key questions to analyse the different aspects of the model. Subject knowledge and generic skills important to graduates were identified. Communication skills were highly regarded by the graduates and hence the importance of teaching communication papers at Levels 5 and 6 should be maintained. Industry certification was attained by a substantial number of the respondents and it helped to strengthen their subject knowledge and increase the employer’s confidence in employing them. Soft skills like cultural alignment and emotional intelligence were not given importance by the respondents. Although group work activities are undertaken by students during their studies with members from different cultures being in a team, in conflicting situations the tutor had to intervene. Students need to understand the importance of group work and team work and to achieve cultural fit in their future workplace.

Work experience is an important skill to attain. Students should gain part time work in the relevant area while studying to improve their prospects of employability. The polytechnic should initiate training and internship projects for students. Additional funding may be needed to aid such initiatives.

In future further studies with different stakeholders will be considered.

7. ACKNOWLEDGEMENTS
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8. REFERENCES
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