Science and Mathematics Education Centre

The Use of Internet Applications for the Dissemination of Knowledge for Career Management

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DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of my knowledge and belief, this thesis contains no material previously published by any person except where due acknowledgement has been made.

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ABSTRACT

This research investigates the interaction between Internet based communication, knowledge management in a virtual environment and career management in the Internet environment. The aim was to combine the students' need for good career information with the technology used in multiplayer interactive 3D gaming environments, which the Internet generation find so engaging, supplemented by artificial intelligent "bots".

The literature indicates that while the professionals within career management are apprehensive about the effect the use of the Internet and technologies will have on their position within the workforce, they are in fact, adapting by refocusing and redefining their roles. The tools which are available are varied, meaning that some at least could prove useful in this area. The research already completed in the fields of both career management and the development of the tools was examined.

In order to explore how these tools and the Internet are currently used, a cross section of employers was interviewed. A questionnaire was developed and distributed to a group of 128 students from different subject majors within a polytechnic. These were also followed by short interviews where the student had indicated a willingness to do this. In all cases, the use of the newer technologies such as 3D worlds and simulations was discussed to assess the openness of the participants on both sides to their use.

The data from the questionnaires were coded and SPSS was used to analyse all but the open-ended questions. The open-ended questions and the qualitative data from the interviews were analysed with the help of NVivo.

The more adventurous students would use the newer technologies, but almost all of them said they would use the Internet to look for, and possibly, apply for positions. The employers all used the Internet to advertise positions, with most of them using such tools as video conferencing for interviews. There was a mix of opinions in the area of whether they would still need to meet the person before employing them. The general feeling regarding the newer technologies was that if they reached a point

where they were easy to access and use, and made the job of recruitment easier, they would use them.

The fact that the younger generation use the Internet and the applications currently available not only for entertainment and work, but for all aspects of their lives including socialising, means that the use of similar tools and technologies would attract more interest and involvement from this group.

Globalisation means that all aspects of our lives are becoming intertwined with differing countries and cultures and career management is no exception. The pool of potential positions is greater, as is the pool of potential employees. This means that any development which makes the matching of the two has to be good. This research explored the perceptions and openness of all roles within this area to the use of the technologies. The development of tools which are not acceptable or useful to all parties is a waste of time and money.

This research has shown that there are no perceived barriers which cannot be overcome, and while the developments in these areas are likely to progress at a pace which could be uncomfortable for some, the participants in this research can see no reason why the Internet and its surrounding technologies cannot be very useful in the processes involved with ensuring suitable career options.

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CHAPTER 1

INTRODUCTION

To effectively communicate, we must realize that we are all different in the way we perceive the world and use this understanding as a guide to our communication with others.

-Anthony Robbins

1.1 BACKGROUND AND CONTEXT

This thesis discusses the interaction between Internet-based communication, knowledge management in a virtual environment and career management in the Internet environment. The aim of this research is to combine the students' need for good career information with the technology used in modern multiplayer interactive gaming environments, such as 3D worlds and simulations, which the Internet generation find so engaging.

The foundations for this work came from my master's research into the recruitment of new graduates, and my observations within the institute in which I work, regarding the misapprehension of some students about the course content and employer requirements (Lloyd, 2003).

The onset of the popularity of the Internet has permeated through every aspect of our lives as such places as government agencies, banks and the like make full use of it. This enables people to get answers to straightforward questions immediately, and allows them to get any relevant paperwork (Millar-Jacobs, 2003). According to Millan, Patterson, and Costanzo (2000) many people use the Internet solely for the purpose of browsing and observing with only a few actively interacting with other parties using the tools available. As these tools are becoming more widely accessible and easy to use this does not necessarily have to be the case.

1.1.1 Career Management

Career management currently depends on individual knowledge, or the results of psychological testing similar to those outlined by Anastasi and Urbina (1997). The young people with whom we are most concerned tend to avoid this type of action in favour of the more "exciting" game type interfaces which can be mimicked by such tools as 3D worlds and simulation. There is proof according to Csikszentmihalyi (1997) in his work on flow, that as a species, humans are happier when they are completely absorbed in something. Modern technology using multiple stimuli means that this is more achievable for a greater number of people.

The familiarity with the Internet exhibited by students, particularly within Information Technology (IT) leads to a natural progression into using this medium to search for jobs. *Topjobs.co.uk* (2003) state that 26% of all graduates prefer to look online, whereas *Online Recruitment* (2003) says 94% of respondents to their survey of graduates felt that Internet job sites were useful, while others also used the Internet to search corporate sites for both job opportunities and details on firms. Millar (2000) cites a report from the *Association of Graduate Recruiter* (AGR) stating that nine out of ten college leavers surf the net for their first job. This indicates that more employers are using the net to attract prospective employees. Although there are a number of web recruitment sites currently available, these sites do not use the newer tools and technologies available such as 3D worlds and simulations.

Quite a lot of research has been carried out into workplace competencies by Coll, Zegwaard, and Hodges (2002) to try and rank or classify the competencies which individual graduates bring to a workplace. I have had the opportunity to meet with these authors on a few occasions to discuss their findings which differentiate between "hard" or technical skills and "soft" or interpersonal skills. Their focus was on the more conventional sciences such as chemistry, but could be adjusted to accommodate the IT area. Lankard (1999) cites the *National Alliance of Business* (1998) in saying that jobs in the 21st century will require more education. The infiltration of computers and accompanying IT requirements support this, and is particularly relevant to the area on which this study is focused. Smith (2000) reports that one employer which she interviewed indicated that in her opinion IT employees

need to possess not only the general IT skills, which are currently required for the job, but the ability to acquire the wider higher level skills essential to cope with the convergence of information and communication technologies.

Lifelong learning is fast becoming essential in order to stay current with up-to-date technology. This means that quite a number of graduates are retraining from other careers, the ideal situation would be to harness the skills which they already possess and utilise them in their new career. Smith (2000) discusses the problems caused by a changing IT industry, leading to confusion of employers caused by the numerous qualifications offered in this area. Smith asked ten employees and twelve employers to rank the importance of certain skills, the results were that IT skills ranked first with employees and second with employers while client-based (soft skills) were the reverse. This indicates that both these sets of skills play an important part in the workplace. I feel that using modern technology to combine these two important aspects could be beneficial to all parties and attract suitable candidates.

My previous research (Lloyd, 2003) raised a number of issues regarding the perception of the usefulness to all parties of the skills gained by following certain pathways in the education system. The feeling is that presenting the information in multiple ways will help clarify some of these issues by allowing more access and detail. It is an area that needs to be investigated further.

1.1.2 Communication

The work done by Rheingold (2003) in the area of smart mobs emphasizes the trends toward using new technology for communication especially within the younger generation who make up a large part of the target participants. This group appears to respond well to the presentation of information in this modern interactive form.

The need for encompassing a huge range of academic disciplines when designing user interfaces is emphasised by Rogers, Sharp, and Preece (2002) along with some of the problems encountered when attempting to combine this variety of disciplines, due to the variability of focus each discipline has. However, if these problems are viewed as challenges, they could in effect enhance the final product and combine to

give a useful and pleasant experience when interacting with the technology. This relates with Shneiderman and Plaisants' ideas when they say:

> Effective interfaces generate positive feelings of success, competence, mastery and clarity in the user community (2004, p. 12).

Shneiderman and Plaisant (2004) also acknowledge the need to understand the physical, intellectual and personality differences between the various users.

Both society and technology are changing and their interrelationship leads to drastic evolution in the way technology is used to communicate. Csikszentmihalyi (1993) discusses types of personality and the ways in which society evolves by using memes which impact on this development. As members of the educational fraternity we need to be aware of these changes and adapt our presentation styles to make the best use of the tools and methods available.

As IT professionals we have to be aware of the wishes of the people who are going to use the tools we create, as failure to investigate the wishes of the target users often leads to disappointment with the tools developed failing to meet the user's expectations, even after intensive training, in the tool (Sahoo, 2005).

1.2 RELEVANCE

1.2.1 New Zealand and Australia

The geographical position of New Zealand and Australia means that they are distant from any other continent and population base. This combined with their relatively small populations mean that often, in order to attract suitable applicants, employers need to recruit from overseas.

This presents the problem that the cost of recruitment of people from other geographical areas can be high both in financial implications and time. Another issue is that often it is hard to assess the qualifications presented within an application for suitability. Language is often a barrier to employment within other countries, as are the cultural differences.

Research done by the New Zealand Department of Labour indicates that New Zealand is still a popular choice with immigrants, largely because they are attracted by the lifestyle (International Migration, 2008/9). This combined with the relatively high migration from New Zealand by young people wishing to explore other countries and higher paying opportunities in such places as Australia means that quite a lot of recruitment is aimed at overseas as well as at domestic prospective employees.

Research done by Workforce 2020, a subset of the Australian Department of Labour, raises concerns regarding the level of wages and appropriate skills in a global workforce scenario (Swaim, 2007). The research however indicated that wages in partner countries, such as China, have risen and the skill set has also improved in those countries, while maintaining income level with Australia and improving the skill level due to the wider pool of applicants.

New Zealand does not have a federal system of government which means that all legislation is made at the national level. In an attempt to tailor this to a more local level, schemes have been developed to attract suitable immigrant workers to fill individual local demands (Spoonley & Bedford, 2008). For example, in areas where a lot of fruit picking is required, schemes have been developed which allow migrant workers from the Pacific islands, such as Tonga to come to New Zealand for a short time, usually a few months. This allows them to earn good money relative to their own country while providing the necessary workforce for the growers. The grower provides accommodation including meals, and the scheme is tightly controlled to prevent over-stayers and to ensure the welfare of the workers.

1.2.2 Internet and Globalisation

The use of the Internet, together with the new technologies available for use over the Internet can help both employees and employers assess some of the characteristics required for potential employment.

McDowell (1997) reflects that the role of technology in the areas of global and local production and exchange is becoming less distinct, and the use of communication

technology for the centralising, or de-centralising, of existing political and social life is producing significantly different communities. The declining cost of technology together with the constant invention of new uses is generating communities which have a totally different structure to the traditional community based on geographic proximity or shared language, culture and values.

Fountain (2005) presents a slightly different view in the conclusion to her paper, indicating that though the Internet has changed the way we do such things as communicating, buying, selling, finding employment and even, finding a partner, this change is in form rather than in structure. There is still a need for good information, which, although the Internet provides new ways to collect this information the main problem of evaluating it to acquire a good match is still the prerogative of individuals, or groups of individuals. In fact, the abundance of information present on the Internet can actually be more of a hindrance than a benefit.

Even in ancient history the Greeks and the Delphic priests viewed newcomers as an asset rather than a liability, as they would add to their wealth by working and paying taxes (Dowty, 1991). By the 1920s passports were used widely and immigration controls were tightened in an attempt to regulate the movement of the workforce. The rise of international travel and the abundance of international media have opened up a multitude of options, which the Internet has made more accessible. Nowadays people are far more open to living and working in a different geographic location to that where they were born and raised.

1.3 RESEARCH DESIGN

1.3.1 Aim and Research Questions

The aim of this research was to investigate some of the new tools available for use in an Internet environment to disseminate information, particularly in relation to career management. This involved first an in-depth investigation of the tools and methods available, taking into account the philosophy behind their success and the psychology incorporated in their use. In order to focus the research, the area of career

management was chosen, as there is currently little experimentation in the use of modern tools to present the options which are available. The situation is no longer that a person works for an employer in the same geographic area for most, if not all of their working life. The opportunities now are more varied and numerous due to the easy access to travel and information. The danger is that there is a lot of data, but relatively little useful information, to help people make the best choices for their particular situation.

Initially, this research was to examine the current situation, including the perception of the various players. Each role in this area has a different focus. The employer is looking for someone who will be reliable and competent, and who will be an asset to the firm. The employee will be looking for a position which fulfils his/her needs financially as well as provide a pleasant working environment with possible potential for future personal growth.

In order for the use of the Internet for this purpose to be successful, all parties have to accept the newer technologies and begin to use them, otherwise the necessary connections will not be achieved. While the technologies are used in a limited way with parts of the career management industry and the processes necessary to form the connections, there is currently no research on how successful this approach is, or on the evaluation of the potential of an integrated set of tools.

This research examines the current level of acceptance. This is done for potential employees by using the results from a survey of students who are currently or, will be in the near future, looking for work. A cross section of employers was also interviewed in depth to assess the current use of technology, and the openness to the use of future developments in the area of career management.

A survey was administered to the student population at a small polytechnic within New Zealand to evaluate the current factors which contribute to the uptake of the use of the Internet to search for, and obtain employment. Polytechnics within the New Zealand education system were originally set up to provide practical based education, but due to the fact that a lot of the employment which used to require a lower level of academic knowledge, now require a lot more, partly due to the adoption of technology in a lot of areas. The polytechnics had to evolve and began to offer degrees and post graduate qualifications. A broad spectrum of types of students

was surveyed including those with a strong technological background and those whose study is less focused on technology. The Statistical Package for the Social Sciences (Norusis, 2008) was used for the analysis of the data collected.

The research questions that were derived from the aim and to which answers were hoped to be gained were:

1. How do the different forms of interaction between students, employees and employers affect the way newer technologies are currently perceived?
2. Explore any barriers to using the newer technologies, for example, virtual environments?
3. Explore tools or methods which will help make these technologies more acceptable?

To answer these questions, the research method was divided into two distinct phases. These phases are described in more detail in Chapter Four.

1.3.2 Investigation of Current Tools

Phase one was of an investigative nature where the tools and methods available for the development of Internet applications were considered, including the communication theories they each use to achieve their aim and the philosophical and psychological rationale behind them. The purpose was to discover and review relevant published material in the appropriate area to evaluate the various methods of communication used for interaction between students, employers and employees. At the same time, a review was conducted of research that demonstrates the relationships between the various types of participants and interactive environments, and attempts to find ways to facilitate increased participation levels. Hands-on experience was obtained with a number of the available tools through downloading sample versions, and personally evaluating those using set criteria.

1.3.3 Evaluation of possible use and uptake of tools

Phase two involved collecting data from both prospective employees and also employers. This was done using a survey containing a mixture of Likert items, demographic and open-ended questions. The results were then analysed using SPSS to ascertain if there were any correlations and significant differences between the different demographic groups. To do this, both individual questions and items grouped into categories were used. The open-ended questions were analysed using NVivo (QSR International, 2010) which is a software package developed to help in the analysis of such data.

The survey was distributed to students at the polytechnic participating in courses in Business, Information Technology, Arts and Nursing. This provided a broad range of comfort and skill levels with respect to the various technologies. After preliminary analysis was carried out on the survey data a small number of interviews were then undertaken with both prospective employees and employers, with the intention of exploring any other relevant information. NVivo was used to aid the interpretation and analysis of these interviews.

1.3.4 Assumptions about Research

There are a few basic assumptions, which need to be made about any research.

One is in the definition of the aspect being investigated, is it part of a person's external habitat, or unique to that individual's perception. According to Anderson (1998) these are ontological assumptions. Epistemological assumptions deal with the very nature of knowledge, how it is, objective and acquired, or more subjective and experienced.

The perception of an individual regarding the environment in which they are working tends to be unique. When the environment is virtual and thus able to be more easily manipulated, this perception can also be crucial in making the full use of the tools and opportunities available. The research gathered data on factors which could

possibly affect an individual's perception of a certain environment, and included such things as: familiarity with the use of current tools in use and openness to the future use of tools not normally used for the purpose of career management.

How the researcher perceived relationships, both between people, and between people and their environment, was another factor to be considered.

Normative research tends to the assumption that there are universal laws, where knowledge is acquired. Interpretive research tends to take the opposite view. Critical approach deals more with inequalities, so is useful when dealing with trends. According to Denzin and Lincoln (2000) evaluating interpretive work does not fit easily into a strict normative framework. Guba and Lincoln (1989) view evaluation research not as an exact science but as a process that is evolving with results which are well recorded and open to question. This fits very well with this study, as the tools available are changing continually and consequently any findings could be successfully challenged, as new options emerge. One of the aims of this research is to overcome some of the inequalities experienced by different personalities by providing alternative methods of communication which may be more suitable, for example, envisioning a workplace as a 3D representation possibly using video and sound, allowing the application to give instructions by sound instead of having to be read, and allow reply by voice rather than keyboard. As everyone is different, the aim was to identify trends rather than specific criteria.

1.4 ETHICS

Students were involved with the second phase of this study. This participation was on a voluntary basis and the anonymity of the individuals preserved. The purpose for the students' involvement was explained to them from the beginning and, although the evaluation was part of the course as would evaluation of any Internet application, it was given as an example to comment on but not incur any grading.

All participants were informed of the privacy issues and given the agreement found in Appendix A before participation; they were able to withdraw from participating at any time.

It was at the discretion of the student whether they gave their name or other details. If names were given they were only used to allow for further discussion and were not entered into any final results. Any discussion which occurred was in the presence of at least one other person.

The interviews were recorded with the permission of the participant, but the original files were not made public and only the relevant information was used. As with the survey data the information was used in such a way as to protect the anonymity of the participant. A guide to the questions asked may be found in Appendix B.

Ethical approval was sought and approved in principle from the institute which the students attend, and also from Curtin University.

The data were stored on computer until such time as the study and thesis was completed. The files will be kept for five years on CD in a secure place at Curtin University after which they will then be destroyed. The forms used will be stored in archived storage for a period of five years after which they will be destroyed.

1.5 MY BACKGROUND AS A RESEARCHER

As a point of contact for both students and employers in the area of finding employees/employment during the last six years of my previous place of employment, I became aware that both sides were struggling to reach suitable partners and were more than appreciative of any help offered. As a teacher, I found it very satisfying bringing the two sides together for their mutual benefit, however one or more persons, relying on contacts and, to a large extent, luck could not solve all the problems. There needs to be some form of research into the processes involved and possibly tools and procedures developed to help more people. The methods used currently tend to be *ad hoc* and very much dependant on the personal contacts and enthusiasm of the staff within the various institutes. This leads to very inconsistent methods which do not give any impression of professionalism at all within the industry. There was a private training establishment within Information Technology who advertised that they would guarantee a job for anyone who completed their qualification. I notice that recently this claim has been removed from their

advertising. In my opinion, this would be impossible to do unless there was some pre-screening, and basically the job was obtained prior to the students beginning the course. The reputation of a particular institute with regards to this issue does however have an influence on students when they are deciding where to study, so any move to consolidate this aspect would be an advantage to the institute.

I have also been involved with the industry projects which our students undertake during their final semester. These projects are capstone projects and involve the students completing a project for an industry partner, and can vary from developing software, web applications to designing and implementing wireless networks. The last few years I have been the project coordinator for these projects, which means I am the person who contacts the industry partners and attempts to find suitable projects. This means that I have the opportunity to have informal discussions about the employment situation in various industries with potential employers.

My interest in this area coupled with my background and experience within the Information Technology Industry, together with teaching software and Internet development made the topic of this research a natural extension.

"Theory should not precede research but follow it" (Cohen, Manion, & Keith, 2001, p. 23). I had to be careful when gathering my data that my own views did not influence my results, although the very fact that I chose this area in which to do my research confirmed my interest and in some cases my opinions.

1.6 SIGNIFICANCE

The sign of a successful learning institute is to provide employer with prospective employees who are useful and productive soon after commencing employment. This study focuses on the area of developing a variety of relationships through multiple communications channels offering opportunities for both formal and informal communications between students, employers and academic staff, knowledge building, knowledge transfer and knowledge management are thus reinforced. The role of interpersonal communication in building trusting relationships becomes vitally important. By using both formal and informal methods of communication

there is a greater likelihood of reaching all interested parties at the level at which they are most receptive.

Anderson says that relevance and the ability to sustain the interest of the researcher are important when formulating a research question (1998). There needs to be some form of research into the processes involved and possibly tools and procedures developed to help more people. This led to the investigation of current tools and methods, with a view to finding a way to incorporate the modern ideas and technologies into the field of career management. The aim of this research is to investigate the tools which are currently available and highlight appropriate tools and methods which will be not only attractive to the modern generation but will be easy to use and useful to the more mature players in the field.

This is an exciting time where neither employers nor employees are limited by geographical location. It is no longer unusual for an employee to retrain into a number of different positions during their working life. We are living in an era where lifetime learning is not only acceptable but tends to be the norm. In order to accommodate this new regime, learning institutes at all levels have to also adapt and be more flexible in the way they provide the skills and knowledge necessary. Although this research uses career management to investigate the impact of the Internet and globalisation, a lot of the findings will be useful to learning institutes in their search for ways to accommodate these factors both in the content of their courses and their method of delivery.

1.7 SUMMARY

This chapter has outlined the motivation which led to the development of this thesis together with the objectives and a very brief background. The process which was undertaken to complete the research and a brief description of the participants together with reasons for their selection were also included.

During the journey of this thesis, the rationale and development of the various parts will hopefully become apparent, leading to what is hoped to be a body of work which

will help future generations to utilise the use of the Internet and its evolving tools to best advantage, particularly in the area of career management.

Chapter Two includes an investigation of current practices in career management, highlighting any perceived gaps which could be filled by using the new technology, along with how the use of the Internet has affected the processes and practices within this area of business.

Chapter Three concentrates on the tools which are available, including those which are currently being used in this area, along with possible extensions and new initiatives which could benefit the employers, career consultants, and prospective employees. There is some evaluation of the current Internet tools and possible future trends.

Chapter Four highlights the design of the research together with an explanation of the reasons for various aspects of the design. It also explains how the survey was developed and how the questions for the interviews were compiled taking into consideration the results of the surveys.

The statistical evaluation of the data is the basis for Chapter Five, where the results are documented for both the quantitative and qualitative data collected. These results were analysed using SPSS for the quantitative data from the survey and NVivo for the qualitative data both from the surveys and the interviews which were conducted with the employees. In each case, possible reasons for the results are presented.

Interviews were conducted with potential employers to explore their perception of how the use of technology impacts of their process of finding and selecting employees. The analysis, together with some statements made by these employers is the basis for Chapter Six.

Finally, in Chapter Seven, an overall view of past, present and possible future of the use of technology in this area is presented together with the limitations and implications of the study. The research questions are also re-examined, and the results of the research incorporated into answers.

CHAPTER 2

CAREER MANAGEMENT

> *It does not seem to be true that work necessarily needs to be unpleasant. It may always have to be hard, or at least harder than doing nothing at all. But there is ample evidence that work can be enjoyable, and that indeed, it is often the most enjoyable part of life.*
>
> *-Mihaly Csikszentmihalyi, Flow: The Psychology of Optimal Experience, 1990*

2.1 INTRODUCTION

More firms now are using the Internet to accept applications for positions and to screen applicants for vacancies. One reason for this is the fact that employers have a wider pool of potential applicants from a larger geographical area, partially due to the Internet and a global market place.

With the onset of the "global company" often prospective employees reside outside the local area of the position for which they are applying. Psychological tests administered online could help with the initial selection of possible candidates; however, they should not be the sole reason for employing a particular person. According to Schwartz:

> A good test score is an indicator that an applicant has the skills, aptitude and personality characteristics required for the job, but test results need to be combined with other factors – interviews, background checks, reference checks and so forth (2004, p. 1).

Topjobs.co.uk (2003) state that only 17% of all graduates use the traditional way of searching through newspapers to find jobs. There is a variety of digital tools available to enable people who are separated physically in time and space to communicate and collaborate (McCarthy & Boyd, 2005).

2.2 OVERVIEW

Psychologists are in some disagreement about the factors which determine behaviour, with the behaviour analysts believing that behaviour is governed solely by external causes, and cognitive analysts maintaining that internal causes have a marked influence (Carlson & Buskit, 1998). Whichever of these conflicting points of view is close to the actual case, the onset of the Internet is going to have some impact. People often have feelings and perceptions in regard to the new technology as well as the obvious impact it has on the way we do things. How we progress through our careers both determines our future pathways in relation to our sense of being, as well as economic considerations. How we interact and perceive the onset of technology and the globalisation of various aspects of our lives will inevitably affect the pathway we chose to take in both our work and personal lives.

This chapter attempts to investigate the possible impact of emerging technology and trend towards globalisation in the area of career management. The literature is reviewed and examined in the areas of current practices, including career counselling, followed by the impact which the development of the Internet has had in facilitating globalisation and expanding the options for both employees and employers. Before this can be achieved some understanding is necessary of the changes the onset of the Internet has had in the way we communicate. This chapter also attempts to look into the future direction of this area to speculate on where career management may be able to take advantage of the new environment.

2.3 CURRENT PRACTICES

Computers have been used for career guidance since the 1960s and research has shown that the use of computers, especially with the Internet, has helped to increase self-knowledge, occupational knowledge, awareness of the need to plan and career decision making (Harris-Bowisbey & Sampson, 2005). This will have a great impact on how future generations will approach the issue of career management, and, as educators we will have to prepare the students for this use of technology.

According to the Pew Internet Project in July 2002, 52 million Americans have used the Internet to search for employment. This is a 60% jump from March 2000. Internet Business Network states that 77 % of the people who use the Internet for other activities also use it to search for jobs (Anonymous, 2002). This shows that the use of the Internet for career management is growing at a rapid pace. Although there are a number of web recruitment sites currently available, often they are not tailored to suit graduates (Lloyd, 2003).

2.3.1 Career Counselling

Currently career counselling or mentoring as part of career management can be on an individual basis, or as part of a group, either through professional bodies, or within a workplace using senior members to mentor their more junior counterparts. The Internet has allowed these methods to expand giving more access to a greater variety of information than was previously possible, together with a degree of anonymity which protects a person's privacy (Knouse, 2001).

The chance to relate to or work with people from various backgrounds widens the boundaries of a prospective employee, giving them a fresh outlook and perspective (Juhdi, Pa'Wan, Othman, & Moksin, 2010). This indicates that it is not altogether a bad thing to change jobs and, or, countries during a person's working life.

Career counsellors currently use a method called Career Style Interviews (CSI) to build a picture of a client. These focus on such things as role models, hobbies and favourite books to build a life story. They then use a seven-step process to analyse these responses to attempt to assess their vocational personality, style and preferred occupational environments (Taber, Hartung, Briddick, Briddick, & Rehfuss, 2011). Anastasi and Urbina (1997) state that some kind of psychological testing has proved helpful in career management but it needs to be used as an adjunct to skilful interviewing.

O'Halloran, Fahr, and Keller (2002) propose a series of highway road signs as a guide to using the Internet for career counselling. These include a pedestrian crossing which highlights the need to identify the sites which are both credible and usable,

and a Construction zone which discusses online assessments, and yield, which advocates extra support through phone contact or video conferencing.

Lewis and Coursol (2007) in their research into the receptiveness of career counsellors to the use of online technology as a medium for delivery of their services found that 83% of counsellor education professionals were open to this style of interaction within their career. This has provided the impetus for the professional bodies of career counsellors to develop guidelines for online counselling.

There are many considerations when deciding on the mix of technology and human contact within career management. The balance between selecting the right tools and the use of resources is a challenge (Venable, 2010).

2.4 INTERNET IMPACT

Employees are no longer restricted to prospective employment within their local geographical area. The Internet allows their search to widen to other districts and countries. E-recruiting is one of the most successful applications used by business, to enable them to quickly access a larger group of job seekers. This gives savings in cost, increased efficiency and convenience to both the job seeker and the recruiters (Lee, 2007a). The options for selecting suitable employment are varied, often prospective employees spend hours, maybe even days sitting tests and interacting with current employees. Phone interviews used to be the main option for distant applicants to allow the two sides to discuss crucial aspects of the job, another alternative is video conferencing so that each side could see the other. McDowell (1997) states that the decreased cost and increased accessibility of telecommunication and computer technology have prompted a change in social interactions. Technology has progressed to the point where a combination of the tools available could enhance this experience by the use of voice, video and online interaction.

Workers and employers have to navigate a trade-off between the quantity of information and its quality, whereas advertisements can generate large amounts of low quality information, personal contact gives a relatively small amount of high

quality information (Fountain, 2005). According to Kirk (2000) while the Internet provides easy access to numerous suitable positions for the candidate, it is so big that it could be intimidating to novice users, and a lot of time could be spent going through all the options in order to filter out possible job prospects. He sees these problems as an opportunity for career counsellors to adapt into using the new technologies to their advantage, by helping candidates focus on only prospects which fit with their requirements.

Social networks, which were originally developed to help people to keep in touch with each other, have inadvertently become a method for job seeking. LinkedIn profiles often include details of experience and expertise and have indicated that they wish to be contacted for various aspects of career advancement as shown in Figure 2.1. These people are representative of "passive " job seekers, or those people who are currently in a position not actively seeking work, but just looking to see what is available. They will possibly apply for a job which is perceived to be more attractive than their current position (DeKay, 2009).

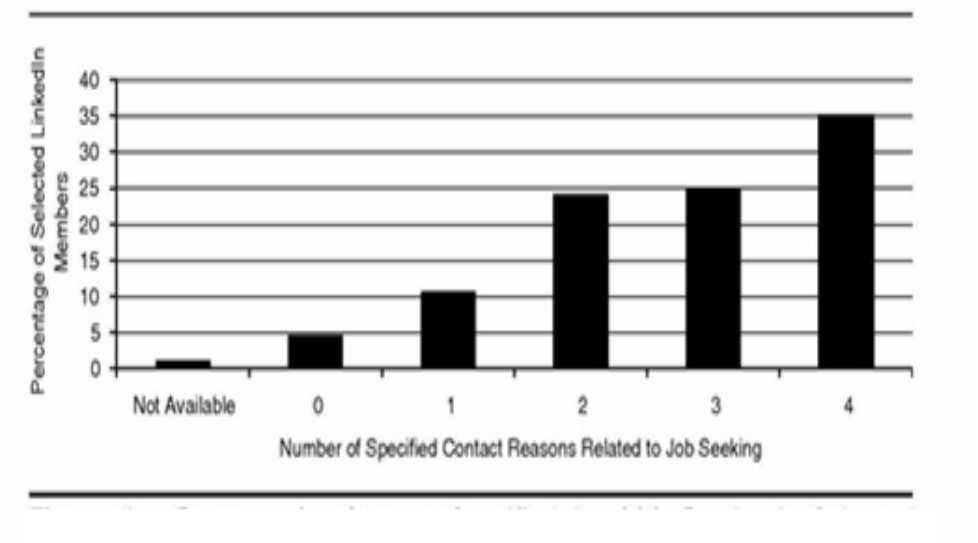

Figure 2.1. Reasons for contact specified by 200 randomly selected LinkedIn members (DeKay, 2009, p. 102).

Employers are also using social networking sites to gain an insight into the background and suitability of prospective employees. This means that people should be careful about the material which they post on such sites. Sites such as Facebook are constantly upgrading their security options to allow for both public and private

space, but if a potential employer asks for full access they could gain access to material which could harm their chances of obtaining the position.

Although the Internet is used productively in the area of career management, with some sites including some of the more modern tools such as chat and video conferencing, there are still some possibilities for further development in order to reach a wider audience. If the available visual and audio tools were enhanced using the tools which are currently under development, then a more holistic experience could be achieved. These tools would need to be used appropriately, and if so, could give both sides of the employee/employer connection a better understanding of the requirements and availability of careers (Lloyd, 2005).

2.4.1 Communication Technology

Computer-mediated communication (CMC) has become part of everyday life. The impact of this on social cues is dependent on the form of CMC but there is little doubt that they become more dependent on the group rather than the individual. This means that when using CMC, attention must also be given to the wider social context (Tanis & Postmes, 2003). Generalisations with respect to particular groups could influence a person's chance of obtaining a particular position. The long-held belief is that personal communication is best, as it almost always includes other visual clues. This is backed up by research done on the channels used for communication (Westmyer, DiCioccio, & Rubin, 1998). The results indicate that given the choice people tend to prefer oral communication over written communication. Initially, CMC was in the form of written, but as development occurred, this has widened to include oral as well as visual.

According to Fogg (2003) computers were not originally created to persuade, but as they developed, they became part of everyday life. They went from a research tool in a laboratory to being embedded in household appliances, and into handheld, or smaller devices. This opens up the opportunity for them to be used to influence our choices in a number of areas including our career choices.

Snowden (2002) explained the evolution of understanding knowledge as its growth from a thing to a flow, and states that, to understand this growth we need to focus more on context and narrative than content. This growth has largely been enabled by the advances in technology. One aspect of knowledge which tended to be lost in transition is initially the historical aspect, but companies seem to be a lot wiser now in preserving this.

The continued growth of interactions online depends on websites and the like understanding, gaining and maintaining the trust of the people who are currently non-users (Boyd, 2003). The expectations of the Heuristic-Systematic Model (HSM) (Trumbo, 2002) that the more stable and enduring judgements are arrived at systematically rather than heuristically could be a good omen for computer mediated communication, as computers tend to work on a very systematic premise.

2.4.2 Online assessments

The term Psychological test has been adopted as a description of any test which is given to a person to evaluate either their suitability for a particular role, or their ability to perform set tasks. According to Anastasi and Urbina (1997), a psychological test is a scientific test to measure a sample of behaviour.

Types of tests include tests for cognitive ability, personality and assessment of "on the job" skills. Care must be taken to ensure that any test administered must not differentiate between cultures or ethnic groups. There is a danger that participants may attempt to influence the outcome by giving answers which they perceive to be "correct" for the situation rather than those which are truthful. This can be overcome to some extent by asking for the same of similar information in a number of different ways, making the test longer and more complicated (Lloyd, 2007). This is particularly important when administering these tests over the Internet as the differences in ethnic groups and cultures are more likely to be wider. Tooher declares that personality testing may be risky as it is "not terribly predictive of success on the job" (2006, p. 1). Who owns, administers and interprets any tests can

have a bearing on the validity of the results, as well as the privacy of the person sitting the test.

The measurement of organisational culture or climate is not as widespread or as formal as Psychological testing but there are instruments available to assess this. These tend to be long and not as straightforward as the tools used for psychological testing. The research indicates that the evaluation seems to be far more subjective, putting a lot of emphasis on the employee's perception of aspects of their work environment at a particular time. "Colloquially, organisational climate is how it feels to work in a particular environment and for a particular boss" (Watkin & Hubbard, 2003, p. 380). The growth of large companies with numerous employers, supervised by different managers means that these tests may remove some of the subjectivity from employee selection by setting measurable criteria. The tests should however be reputable and validated.

"According to the most recent study by the Society for Human Resources Management, more than 40 % of Fortune 100 companies include some form of psychological testing in their employment selection systems for frontline workers to chief executive officers" (Erickson, 2004, p. 1). The effect the Internet has on the reliance of these tests could see this number grow enormously as the pool of prospective applicants for a particular position increases due to the globalisation of the workforce.

2.4.3 Globalisation

The role of telecommunications has had a great influence in the reorganisation of both global and local industry, information is becoming more of a commodity, as now it is easily stored and transmitted (McDowell, 1997). This includes the way which employment is viewed and gained, as more information is now readily available about both people and companies. Not only has the workforce taken on a global aspect but so have work places, with businesses expanding into the international marketplace. In order to accommodate this expansion, businesses have had to develop different strategies to those previously used in a more localised

environment. Companies now need to be more flexible when hiring new staff to allow for the impact of technology and cross-national resources such as new markets and talent pool (Wittig-Berman & Beutel, 2009).

One aspect of taking a position abroad, either as a temporary international assignment or a more permanent role is to further an individual's network of contacts and relationships, with a view to further their career (Cerdin & Pargneux, 2009). Often overseas experience is perceived as critical for a position, and in some cases it is critical for all employees where the job descriptions are upgraded to include this requirement (Wittig-Berman & Beutel, 2009).

This increased globalisation allows employers' access to suitable candidates who are willing and able to manage and expand business in foreign countries. (Wittig-Berman & Beutel, 2009).

2.5 FUTURE

The difference in the way we communicate through technology is an interesting and exciting challenge, which could open up whole new frontiers. Career management currently depends on individual knowledge, or the results of psychological testing similar to those outlined by Anastasi and Urbina (1997). When someone initially applies for a job, they usually fill in an application form, or send in a CV. This indicates to the prospective employer the skill of the applicant in each of these tasks, neither of which may be the most crucial skill necessary to do the job. What is required is alternative ways to allow applicants who may not be particularly skilled in these areas to get past the first screening by providing different ways of communicating, for example, speech or something which relies on interaction. The new generation tend to avoid static form filling in favour of the more "exciting" game type interfaces, which can be mimicked by such tools as 3D worlds and simulations. There is proof according to Csikszentmihalyi (1997) in his work on flow that as a species, humans are happier when they are completely absorbed in something. Modern technology using multiple stimuli means that this is more achievable for a greater number of people (Lloyd, 2005).

The main current advances which could be useful in the field of career management are the advances in 3D worlds, such as Second Life or Wonderland, and simulation software such as that used for pilot training. Using environments which include those similar to these could enable an employer to represent both the working environment and the tasks required for a particular position in a more appropriate and accurate way than those which are currently adopted.

The three things which are the important drivers to the supply and demand of the labour force in the USA are: demographics, technology and globalisation according to Karoly and Panis (2004). These, together with the integration of the USA with the rest of the world is an extension of the same forces which had an impact during the twentieth century. The Internet is a crucial factor in the ability to make the best use of these drivers.

Lum (2005) developed a system whereby potential employees were invited to a centre, where actors took part in role plays involving the potential employee, and which were tailored towards a particular job. After discussion with Lum in 2007 on the prospect of expanding this concept to be used over the Internet, his belief was that it was not practical, however, after further research, it became obvious that at least parts of his concept are in actual fact already available in a remote environment using the Internet and current and technology. The belief is that this could be expanded further.

> Online recruiting has revolutionized the way businesses worldwide hire employees. The next step is to seamlessly integrate existing systems to create a comprehensive—and complex—corporate career centre (Lee, 2007a, p. 81).

Lee (2007a) advocates an holistic recruiting system with tools such as an applicant tracking, job requisition, job agent and pre-screening /self assessment and candidate relationship management subsystems. While such as system could be expensive and not necessarily the best choice for small or medium sized companies, it could be useful to larger businesses, although its success would be dependent on such things as the IT infrastructure, number of job openings and location of the company.

2.6 SUMMARY

There is no longer an expectation that a person will stay at the same job, or even in the same career for the whole of their working life. Maltz and Grahn (2003) in their planning guide suggest a road map is used to plan a career. This indicates that career management is more important than ever.

There is evidence that the people who are concerned with career management such as career coaches and counsellors initially felt threatened by the new technology, but the majority have realised that the abundance of information which is available under the new regime can be as much a burden as a gift. They seem to have subsequently adapted their roles to embrace the new opportunities by using the tools available to their advantage. A lot of work has been carried out to develop tools and retrain these professionals, to empower them to use the new technology to the best of their advantage, while maintaining certain vital parts of the career, for example the personal contact, to help both sides of the employment equation to get the best results.

The Internet and its ability to enable globalisation, together with the rapid development of computer-aided communication, has opened up a large pool of resources to both prospective employers and employees. There is recognition of the benefits which exposure to different environments can bring to a business.

This research investigates the current situation with regards to the career management and in particular the use of technology within this area. The following chapter looks at the tools which are currently available with a view to the possibility of their use in this area. The surveys and interviews which were undertaken examines the openness of both prospective employees and employers to the use of technology when either looking for a position, or attempting to recruit a suitable person.

CHAPTER 3

INTERNET TOOLS

If the automobile had followed the same development cycle as the computer, a Rolls-Royce would today cost $100, get a million miles per gallon, and explode once a year, killing everyone inside.

-Robert X. Cringely, InfoWorld magazine

3.1 INTRODUCTION

Emergence is the sense of much coming from little, as in our genes, or a game such as chess (Holland, 1998). Movies began at the end of the nineteenth century while 3D worlds and games are currently freely available (Gauthier, 2005). The Internet has allowed the knowledge which was previously the domain of highly specialised professionals to become available to the majority. Along with this comes the thirst for more, as well as the potential for misuse. The Internet has permeated through all facets of our life, children stay indoors playing video games rather than physical games outdoors and the onset of social networks coupled with mobile technology has meant that even our social lives have gone on-line (Lloyd, 2005).

The way software is developed has also changed to be more inclusive of the wishes of the user, by including them at every stage of the development. The way in which the technology is used has expanded while requiring more integration, TVs are now Internet browsers and phones are now computers and cameras.

Expectations have grown, no longer is monochrome acceptable, or the low resolution video of early years, graphics have to be smooth and as realistic as possible. Some of these changes are made possible by the evolution of the hardware, making it more powerful and cheaper, but also the tools used to develop the systems have become more user friendly and powerful, making them more accessible to a greater range of people.

This chapter gives a brief history of these developments as well as highlighting some of the more popular uses of the technology. As gaming is an area which attracts the majority of people, initially this is touched on, but the tools used to develop some of the more popular games are investigated further.

3.2 HISTORY OF THE INTERNET

In 1962 a "Galactic Network" was proposed by JCR Licklider, who was the first head of computer research for the Defence Advanced Research Agency (DARPA) this idea developed into "ARPANET" which is acknowledged as the precursor to the Internet as we know it and was implemented in 1971-72. It was originally a "host to host" network where you had to know where each computer was, and how it communicated in order to connect. A standard communication protocol was developed in the early to mid-1980s which dispensed with the need to know "how" a computer communicated and allowed the World Wide Web to emerge. As User interfaces became more intuitive and communication between computers became easier, more people wanted to use the service, which in turn led to the adoption of. a Domain Naming System (DNS) to allow a wider community to access this new tool (Leiner, Cerf, Clark, Kahn, Klienrock, Lynch, Postel, Roberts, & Wolff, 2005).

The Internet today is viewed as an indispensable tool used by all levels of education and business as well as for social contact and entertainment. With the ongoing development of technology it is no longer limited to a stationary computer, but may be accessed using a Personal Digital Assistant (PDA) or phone (Lloyd, 2005).

Work by Howard (Rheingold, 2003) in the area of smart mobs, or the use of technology in social networks, emphasizes the trends towards using new technology for communication especially within the younger generation, who make up a large part of our students. This group appears to respond well to the presentation of information in this modern interactive form. New terminology has evolved, words such as cyberspace and to "Google" something as well as to "surf the net". Social networks such as Facebook and Twitter have become a normal mode of communication. The current uprising in the Middle East has been largely organised through text messaging and the other social network tools.

The Internet is often used by the media as an alternative tool to disseminate news or opinions along with print, television and radio. This allows interested parties to keep in touch in real time. The major disasters receive publicity over a wide range of media for example the Christchurch and Japan earthquakes. During World War1 and World WarII news took weeks to filter through to the general public, and it was usually produced in print, or maybe the radio. Current wars are shown graphically using video footage nightly on the news, or screened as they happen on dedicated television channels and Internet sites. This means that the general public is far more aware and involved in these events, the commentary often influences their point of view, and media bias often contribute to public opinion. Governments are aware of this, and in some cases use it to their advantage (Lloyd, 2005).

3.3 CURRENT TOOLS AVAILABLE

One of the most important developments within the area of computers is the development of the graphical user interface, as this is one of the factors which made computers accessible to everyone instead of only very specialised professionals. This development began in 1973 with the Alto developed by Xerox and included the use of a mouse. In 1983 Apple developed Lisa with pull down menus and menu bars. Microsoft released its first Windows program in 1985 a year after Apple released the Macintosh, and Commodore released the 64 and the Amiga. Colour arrived in 1987 with the new versions of Macintosh and Windows (Lineback, 2005).

Figure 3.1 shows one of the first graphical user interfaces, which, while looking and feeling primitive by today's standards, was revolutionary in its time. It was a first attempt at making the use of computers user friendly and, thus available to the majority of the population.

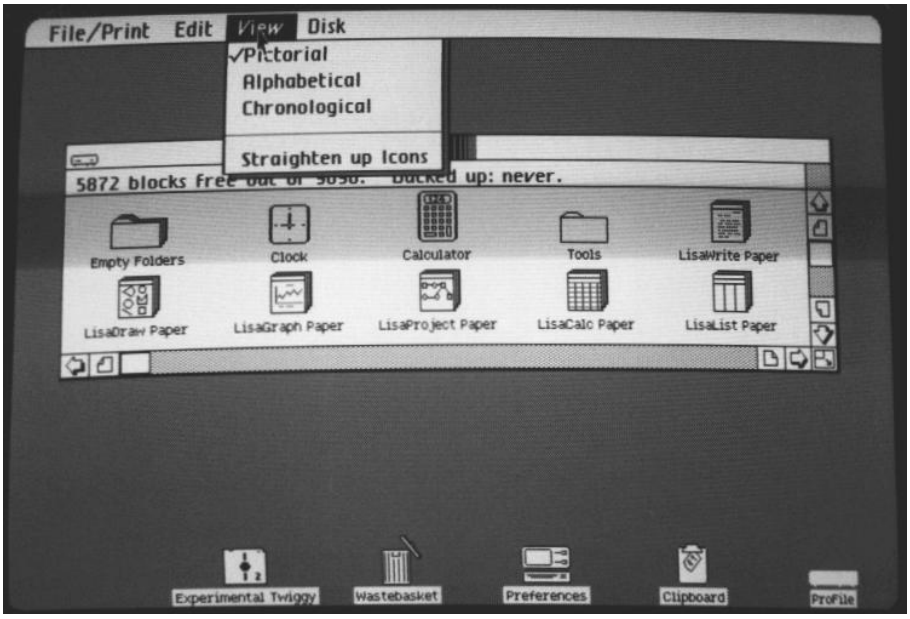

*Figure 3.1.*An early graphical interface from Apple (Lineback, 2005).

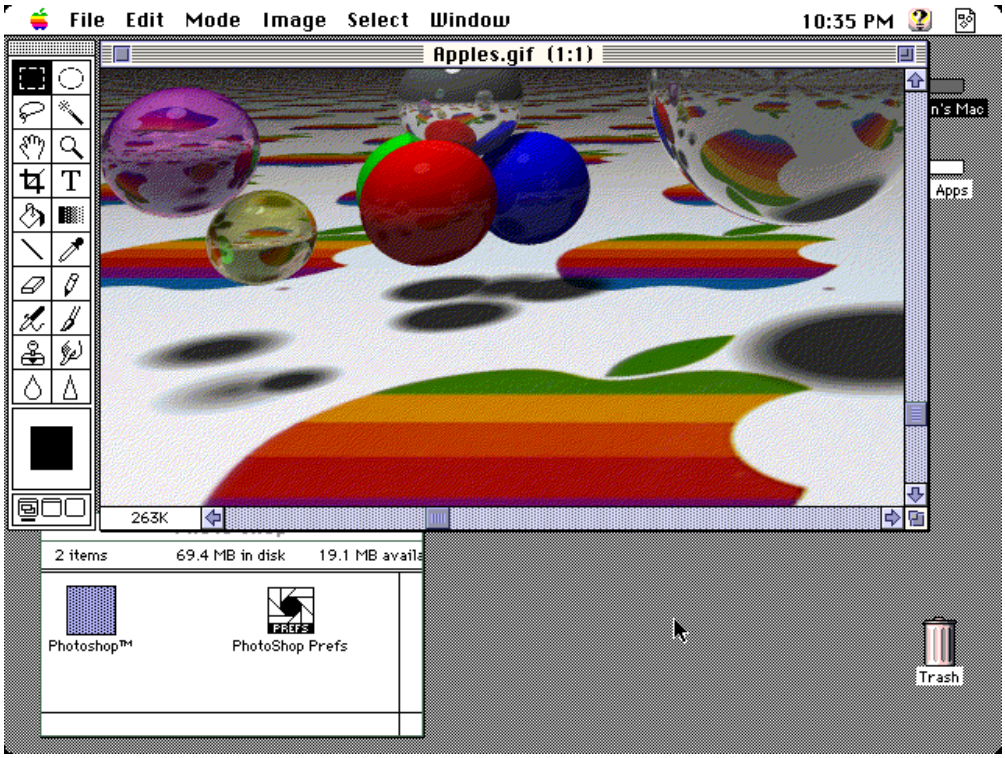

Figure 3.2. An example of a coloured graphical interface (Lineback, 2005).

Figure 3.2 is a screen shot of a much later version of the Apple interface. This indicates a lot better use of colour, and, includes the ability for a user to manipulate and build images.

As the types of user became more diverse, the development of software also had to change to include the area of usability. In the past the only people who used computers were computer professionals who knew how to "make it work". The release of the personal computer and the development of the graphical user interface meant that using computers became more attractive and accessible to a wider range of people. This meant that making too many assumptions about the user's expectations and competence levels could get developers into trouble (Sahoo, 2005). There were cases of a lot of money being spent on software which was never used as it was not intuitive to the user. Neilsen (2000) observes that users experience the usability of a web site before they commit to using it. Past choices together with social information processing perspective influence a person's choice providing the motivation to use a particular technology (Hirt & Limayem, 2000).

Other tools which are used particularly to help people who are separated by time and space are online chat, group messaging (McCarthy & Boyd, 2005), social networking sites such as Facebook and free Internet phone tools such as Skype. Most of these tools are also available using current mobile technology on such devices as the iPhone, Smartphones, Tablets, and Netbooks. These use either the proliferation of wi-fi or wireless networks or the mobile telephone systems.

Virtual reality is an attempt to make the user feel as though they are part of the environment, be it within a game, or for a more serious application, such as in outer space. One application is to use it to control robots over the Internet as described by Yang and Chen (2004) who advocate robotic teleoperation systems for remote manipulation and navigation, entertainment, and training.

The way systems are developed currently is vastly different to the era of the mainframe, where systems were developed from specifications written by an analyst, often without input from the user. The development tools have progressed to allow developers to "prototype' quickly so that the user can be shown a mock up of the system quickly and thus make any changes before too much time and money has been spent.

3.3.1 3D Worlds

3D digital graphics allow artists to express themselves using animations. One area of this is virtual worlds, which has become very popular, giving rise to a large number of applications such as Maya or Cinema 4D (Danaher, 2005). There are two main styles of 3D environments, those which adhere faithfully to natural phenomena, and those which do not; Second Life is an example of the latter. There are now blended environments which incorporate multi-media with communication tools such as chat to give an overall immersive experience (Chard, 2006).

A virtual world is a computer-based simulated environment which allows users to inhabit and interact with each other (Kumar, Chhugani, Kim, Kim, Nguyen, Dubey, Bienia, & Kim, 2008). The most famous example is Second Life where people can join the community and even invest real money, which is then converted into the currency used within the virtual world. It is a totally fabricated world and allows its members to represent themselves using a software agent (bot) or graphical agent commonly known as an avatar. This has led to a number of people becoming totally immersed in this world and have replaced their day to day work with work within this virtual environment, some becoming financially successful due to the facility to allow trading to take place. Some use Second Life to help with teaching using it as an integrated virtual world within their courses to allow international guest speakers, and off-site students to take part (Dreher, Reiners, Dreher, & Dreher, 2009).

Figure 3.3 is an example of a Second Life scene; the avatar is in the front. Chat allows for communication, and the application runs as a client within an Internet browser connected to a main server which managers the interactions between participants as well as the views downloaded to the browsers.

Figure 3.3. Within Second Life (Linden, 2011).

Sometimes virtual worlds are used for more serious applications, such as a training, where the students need to gain a certain level of skill prior to being allowed to use real equipment, such as aeroplanes or heavy machinery, or to prevent disasters, for example medical or space personal (Dolezalek & Stokes, 2007). By far the most popular use of this medium is in gaming, with "World of Warfare" (WOW) being among the most popular within this subset. This is a game which allows multiple players from anywhere in the world to play against each other, either individually or within teams. There are multiple games and multiple ways of viewing a scene. Figure 3.4 is a view from above and Figure 3.5 is a view at ground level.

Figure 3.4. WOW aerial view (Blizzard, 2011).

Figure 3.5. WOW ground view (Blizzard, 2011).

Shrine Educational Experience (SEE) is another, more serious use of 3D worlds. It is shared over the Internet , and allows students from all over the world to meet, play and view each other's cultures and treasures, allowing artefacts from museums, which are physically in different countries to be shared (Di Blas, Paolini, & Poggi, 2005).

Industry has also embraced the use of this medium by importing the data and modelling the real life processes used in a chocolate factory to create a "virtual factory" (Back, Childs, Dunnigan, Foote, Gattepally, Liew, Shingu, & Vaughan, 2010). Figure 3.6 and Figure 3.7 give an indication as to how this works, with Figure 3.6 showing the virtual factory, and Figure 3.7 the real life factory.

Figure 3.6. An avatar in the virtual factory (Back, et al., 2010).

Figure 3.7. The real factory floor (Back, et al., 2010).

3.3.1.1 Avatars

Avatars are a virtual representation of the users or players within a virtual environment. Some people use these to portray the image which they wish to project within such environments. Often these projections are nothing like the actual person which they represent. There have been some studies undertaken on the effect the selection of avatars within these environments have on the social interactions within the worlds. One such study was undertaken by Ionian University (Banakou, Chorianopoulos, & Anagnostou, 2009) which concluded that users with more elaborate avatars were more successful socially than the less elaborate default avatars. The fact that this social interaction exists means that the education system should evolve to take into account the impact such influences have on their students (Winkler & Herczeg, 2004). Historically, social behaviour was developed by interaction between real, live individuals, but now more and more the influence of games and technology is playing a greater part in the lives of particularly the younger generation, who are going to form our future society. In a relatively short period of time into the future, people will spend at least as much time in virtual worlds as an avatar as they do in the real one (Macedonia, 2007).

Sometimes people try to transcend the divide between 3D worlds and the real world, such as the woman who filed for divorce as her husband's avatar was overly affectionate with another avatar (Tennesen, 2009).

3.3.2 Simulation

Simulation is one of the tools used for gaming, and as a training tool in a number of areas such as operating machinery, flying planes and driving. An example of this can be seen in Figure 3.8 which is a simulator for training truck drivers.

Figure 3.8. Truck driving simulators (Anonymous, 2011).

The use of simulation software has been in use for a number of years to model projects where it is either too expensive or inconvenient to build physical models. Computer simulation began during World War 11 with the continuous Monte Carlo Models which produced graphs from data. Discrete simulation probably began in the late 1940s (Nance & Sargent, 2002). According to James Swain (2009) the sky is not the limit for simulation as for over 50 years it has been used to explore strange

new worlds. The time taken to model projects on a computer is also usually a lot shorter than the time needed to build accurate physical models. The improvement in processing power coupled with the decrease in the cost of hardware has made the use of simulations more attractive for smaller projects too. The personal computers and workstations today are far more powerful than the mainframes of the past. They are also inexpensive, which means that there is a large potential for simulation which remains untapped (Paul, 1991). A number of different methods used in simulations has emerged, one of which is structure modelling used by the Internet-based Machine tool Structural Modeler (IMSM) to increase the responsiveness of machine tools to the required production volume and product variety (Yoonho, Dong-Pyo, Insu, Taioun, Donmok, & Gyu-Bong, 2005).

The use of simulation allowed gaming to become more realistic, by placing the player in charge of aspects of life never before encountered. Artificial Intelligence (AI) allowed decision rules to be incorporated into the simulations (O'Keefe & Roach, 1987). One of the more popular games initially in this area was Sim City (see Figure 3.9 for an example of the initial screen from one of its games).

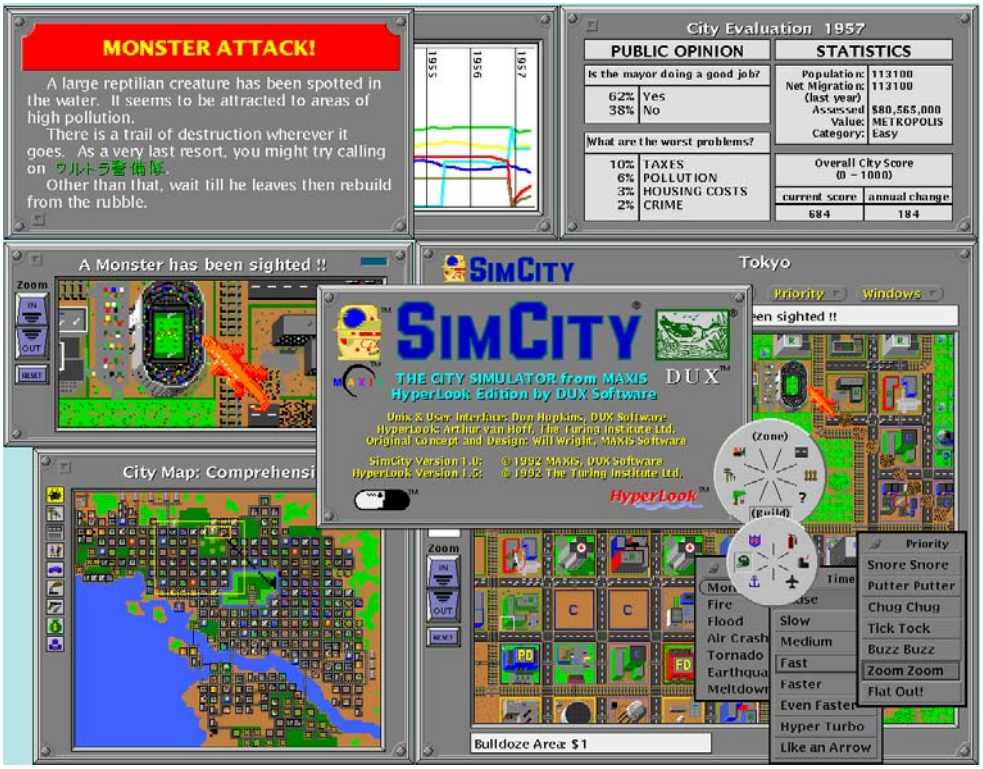

Figure 3.9. Sim City (Chachi, 2011).

Sim City is a game which allows the player to build cities, including designing all the infra-structure (Chachi, 2011). This along with other games in this area is goal oriented and promotes reasoning and intelligent behaviour, which fits with the AI perception of simulation (O'Keefe & Roach, 1987). Gamers tend to prefer games which are most relevant to the attainment of goals (Clarke & Duimering, 2006).

There are also simulations which attempt to represent social theory, for example the impact of passing certain legislation. However, games which allow players to combine with other players to produce outcomes which differ depending on who else is present and how they behave could give some insight into social processes (Feld, 1997).

The proliferation of tools available, and environments consisting of well-integrated software tools, means that there is a lot of optimism within the simulation practitioners (Henriksen, 1983). One such environment is the Simulation Model Development Environment (SMDE) explained by Balci and Nance (1987) which is an attempt to provide an integrated and comprehensive collection of computer-based tools which are cost effective and efficient.

In 2009, the Institute of Operations Research and Management Sciences undertook a survey of simulation software. The products they were interested in should be able to run on personal computers and to perform discrete-event simulations. There were 48 products from 26 vendors (Swain, 2009). This gives some indication of the proliferation of such software.

Analytical models often lack realism while simulation models attempt to portray as much realism as possible, therefore the ideal scenario would be to combine the two (Shanthikumar & Sargent, 1983). Parallel processing and parallel programming are now more common, allowing for multi-tasking and multi-processing which increases the potential for simulation (Paul, 1991). There is a feeling that simulations can help to persuade people to change in their attitudes and behaviours, as they are able to see immediately the link between cause and effect (Fogg, 2003).

Currently however, there is one drawback notably in the area of collaborative simulations. This is network lag which adversely affects collaboration, especially

when the users are required to collaborate in real time (Diabi, Shirmonhammadi, Gillmore, Lacome, & Olivera, 2006).

In a study where students were given simulation software instead of actual software for laboratory courses, it indicated that the students perceived the software as fake and thus not as beneficial, whereas the professionals found that the simulations perfectly replaced the "real" system (Srinivasan, Pérez, Palmer, Brooks, Wilson, & Fowler, 2006).

Over a great number of years, simulation has developed from partial simulation on a single platform to a multi-platform, multi-user and distributed system. This means that it has developed into its own separate discipline (Sun & Wang, 2008). There are some instances of simulation which are augmented by technology rather than becoming completely immersed in it. One example is the Assessment Centres operated by Lum (2005) in which technology in the form of cameras and microphones are used in a dedicated physical space but not the Internet. On discussion with the developer of this system with a view to expanding it to be used over the Internet, it became obvious that he was not interested in pursuing this path. Some simulations are still viewed as being incomplete which means that they are sometimes referred to as being wrong, when in fact just like the dwellers in Plato's cave the advocates of this view know the reality within the shadows (Turkle, 2009).

3.4 POSSIBLE FUTURE APPLICATIONS

There is a lot of research currently being undertaken by various institutes, one is the Modelling, Virtual Environments and Simulations (MOVES), whose focus is on 3D visual simulation and networked virtual environments among others (Zyda, 2004). The main aim of these research groups seems to be to bring all the available ideas and tools together to provide a rich and user friendly system in as many areas as possible. The future looks very exciting, and if the speed of the past developments is anything to go by, these ideas will permeate through all aspects of our lives.

Memories are what define us and plays a large part in making us who we are. Technology is very useful in helping us store such things as photographs, video and

other objects. There is however a system HyperMem which uses a generic hypermedia model to store and replay events using virtual worlds as well as the physical world (Correia, Alves, Sa, Santiago, & Romero, 2005). Think of some of the futuristic television programs such as Star Trek or movies such as the Matrix series, how far are we from realising the tools available within them?

With respect to the use of technology within the area of psychological testing Matarazzo (1992) predicts that data from a variety of sources such as education, past history in all areas and even biological will be combined using the available technology to form a meaningful profile of a person.

3.5 CONCLUSION

The Internet has drastically changed the way we communicate, whether this is a positive or negative change is dependent on the view and experiences of the individual. Together with other technological media such as mobile phones, television, Twitter and Facebook, it has meant access to an enormous amount of up to date information. The information provided may not always be accurate, which means that to use the Internet effectively the sites must be chosen with care (Lloyd, 2005). There is evidence that the Internet is becoming part of the social and communication fabric and a new media supplement rather than replacing all the old communication channels (Matel & Ball-Rokeach, 2003).

The Internet has developed into one of the principle research communication tools of our time and its future is reasonably predictable with more bandwidth and better graphics allowing for fast video image transfer combined with text and voice, which allows for in home video conferencing (Stolov, 1995). Currently, this is possible using Skype and online chat systems.

Although the Internet is used productively in the area of career management, with some sites including some of the more modern tools, such as chat and video conferencing, there is still the possibility to reach a wider audience if some of the visual and audio tools, which are currently under development, were incorporated. These would need to be used appropriately, and could give both sides of the

employee/employer connection a better understanding of the requirements and availability of careers. It will be sometime in the future before the Internet is used as the main environment for career management, as the older generation is not yet as totally absorbed, or reliant on the Internet for all aspects of their life as the younger generation. There will also be pockets of the population who either will not or cannot embrace this new technology. While high speed Internet is becoming more common, it is far from being available in all parts of the world.

Figure 3.10 is a Venn Diagram showing how the various parts of these technologies overlap.

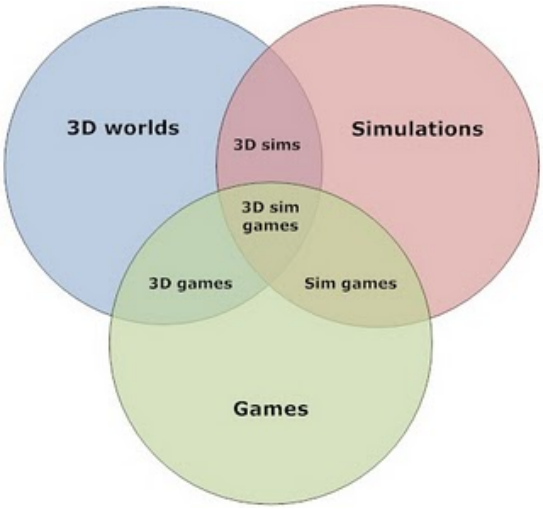

Figure 3.10. Overlapping technologies (Shepherd, 2007).

The differences between the three terms are that a 3D world is a graphical environment where the player can become completely immersed, yet does not have to bear any resemblance to reality, simulation is an attempt to mimic reality and a game is more of an activity with set goals and rules (Shepherd, 2007).

There is a gap between the current situation and the future possibilities, research still needs to be undertaken to find the best way to fill this gap. There is no point in developing methods or tools to aid the use of technology in the field of career management, unless they are likely to be adopted by the majority of the people they were designed to help. This research is an attempt to find out which aspects would be

acceptable to all parties and to suggest the tools which either are, or, could be incorporated into the everyday operation of the industry.

No matter how sophisticated the technology and its uses become, the fact still remains that technology will only perform as instructed, and if the instructions given are incorrect the output is also incorrect. “Rubbish in, rubbish out”. Imagine if a heart rate monitor indicated the user’s heart was beating at 10 times a minute, or a typist’s speed was reported at more than 500 words per minute (Fogg, 2003). There are still elements of error within each system, computer systems are no exception.

CHAPTER 4

RESEARCH DESIGN

There is no promised road leading to definite results. What's important is how to keep open as many options as possible.

– Makoto Kobayashi, co-winner of the Nobel Prize in Physics 2008

4.1 INTRODUCTION

This research was initiated for the reasons discussed in Chapter One with the questions which were to be considered in this research being:

1. How do the different forms of interaction between students, employees and employers affect the way newer technologies are currently perceived?
2. Are there any barriers to using the newer technologies, for example, virtual environments?
3. Are there any other tools or methods which will help make these technologies more acceptable?

The overall aim of this research was to try and discover if there are barriers to using the Internet in the area of career management, and to explore the use of current or possible future developments and tools to improve this use.

The first step in this research, as with any other, was to examine the literature pertinent to the area of interest. This was divided into two areas with career management making up Chapter Two and the Internet, and the tools which are available on it, in Chapter Three. The reason for this split was to allow an in-depth examination of the current practices within the area of career management and explore the opportunities for and barriers to the use of the Internet in this field, while also allowing the opportunity to explore the tools available independently, as often these have been developed and used for a broad range of applications. The final part of Chapter Three also contains an assessment of the potential use of current leading

edge technology in the field of career management. This could not be undertaken until Chapter Two had been completed.

As with most interpersonal interaction, perception plays a very important and integral part, hence the first question, as the Internet sometimes limits the interpersonal nuances which are present in face-to-face contact. This fact can cause barriers, or damage to the trust relationships between the various roles and consequently impact on the potential outcomes. The needs of each of the players are also different, and the various aspects of the processes within career management can either enhance or damage the chances of a positive outcome. Students and employees are both included in this question as students were used as participants in the survey, but quite a few of them would not, at the time of completing the survey, have had the experience of trying to obtain work. There were also other instances where potential employees were interviewed who were not currently students.

The exploration of tools available on the Internet with a view to their application in the field of career management is the basis for the last two questions. Virtual environments are used in quite a lot of the online games played by the younger generation. This raises the possibility that if similar environments are used for other activities then, maybe, some of the enthusiasm exhibited within the gaming community could be transferred.

History proves that technologies advance at a great pace. This research was undertaken over a number of years, during which time there is a very good chance that technologies and methodologies have progressed to include ideas which were not present at the beginning. The last question allows an opportunity to include these new ideas and technologies.

4.2 RESEARCH METHODS

There are a few basic assumptions, which need to be made about any research.

One is in the definition of the aspect being investigated, is it part of a person's external habitat, or unique to that individual's perception. According to Anderson (1998) these are ontological assumptions. Epistemological assumptions deal with the

very nature of knowledge, whether it is objective and acquired, or more subjective and experienced.

How the researcher perceives relationships, both between people, and between a person and his/her environment, is another factor to be considered. Researchers cannot escape their own values which means that their paradigmatic standpoint will always play a role (De Loo & Lowe, 2011).

Normative research tends towards the assumption that there are universal laws, where knowledge is acquired, whereas interpretive research tends to take the opposite view. A critical approach deals more with inequalities so is useful when dealing with trends.

When using normative research it is assumed that the way in which the data are collected is appropriate, and measures the aspects which are relevant to the research topic. The researcher has a clear understanding of the aspect, which they are trying to measure, enabling them to eliminate most if not all, extraneous factors. There are no other possible influences, which could jeopardise the integrity of the results.

The interpretive researcher works with experience and understanding of individuals and attempts to build a theory from that. The data are glossed with the meanings and purposes of these individuals, giving theories as diverse as the individuals (Cohen, et al., 2001). The results may also vary between different times and places.

This research combines the quantitative aspect of the surveys with the qualitative data from the open-ended questions and the interviews to provide triangulation. This also combines both the normative and interpretive approach to research as described above. According to Denzin and Lincoln "Qualitative research is a situated activity that locates the observer in the world" (2000, p. 3), which in part contradicts the scientific view that only methods devoid of human bias are valid (Denzin & Lincoln, 2000). However, to enable a more complete picture to be formed in this particular research both aspects are used.

In the research methodology used in this case, there are two distinct views to be taken into consideration, how do prospective employees use the Internet to further their careers and how does an employer use the technology to recruit suitable employees. Questionnaires provided the data on how a student uses the Internet

together with their current skills and openness to future development. This is objective on behalf of the researcher but could be subjective on the part of the student, as some of the questions asked for opinions, which if the student chose to record would be subjective in their nature.

It was decided to use a questionnaire first, as more data are collected more economically. The analysis of the results from this would hopefully indicate some areas where further, more detailed investigation is required. Thus, interviews were then used to expand some of the ideas presented in the questionnaire, especially when the results were inconclusive. This would satisfy the need for persistent observation as identified by Guba and Lincoln (1989).

4.2.1 Questionnaires

Questionnaires may be completed at any time, thus giving more flexibility to the time frame requirements of other types of research. The data collected from student surveys could be largely quantitative, and so could be analysed using statistical methods. There is also the advantage that a member of teaching staff administered the survey in all cases.

> Having the instructor as the administrator of the questionnaire allows some rapport to be established between the researcher and the students when the researcher is able to explain the purpose of the research and to clarify items. This method of data collection is efficient with respect to time and expense. Often a high proportion of usable responses are collected (Pribyl, 1994, p. 2).

Questionnaires are very efficient for the collection of large amounts of data with limited options, which can then be analysed using statistical methods. They can be distributed in a number of ways such as by mail, electronically, or by hand to a large number of people possibly from a large geographical area.

When developing the questionnaire, work undertaken by Cook (2005) and Janes (2001) was taken into consideration. These included careful framing of the questions and the number of questions, as it should not be too long, in order to keep the interest

of the participant. The advice given by Janes (2001) " do not put a question into a questionnaire unless the answer is necessary for the research" was also followed. The other main consideration is to remember that the purpose of a questionnaire is to provide data for analysis at a later stage. This means that the questions which need to be answered during analysis need to be at the fore when designing the survey. Cook (2005) advocates a 70/30 split in favour of closed and open questions, the questionnaire used in this research had more like a 7/1 split.

The questionnaire for this research was based partially on a five point Likert scale which according to Likert (1948) is the basis for a valuable scientific tool for the social sciences. These were made up of two positive responses, two negative and one neutral. There were 40 questions divided into seven sections as described in Table 4.1.

Table 4.1

Description of Each Section in the Questionnaire.

Section	Description
1. Personal Details	Including gender, age, nationality, contact with other countries.
2. Computer Use	Including Internet, email, chat, video conferencing, IP phone.
3.Career Evaluation	Including personality, employment evaluation and psychological tests and searching for jobs.
4.Applying for Jobs	Including filling in application forms, submitting a CV and geographic distance of job.
5. Interviewing	Including telephone, video conferencing, chat, completing tasks and role play.
6. Future Technology	Trying to assess comfort level of use of new technology such as simulation or 3D worlds.
7. Open Ended comments	Advantages and disadvantaged of using Internet for career management

Sections three to six were based on the Likert scale: Very Likely, Likely, Neutral, Unlikely, and Very Unlikely. Section two was also a five point scale based on the participant's frequency of use: Daily, Once a Week, Once a Month, Less that Once a Month, and Never.

Section one provides demographic information on gender, age, nationality and contact with other countries. This was to enable analysis on the differences in this demographic information, for example, to answer questions, such as does the fact that a participant has lived and worked overseas mean that they are more likely to use the Internet for career management? The age ranges were under 25, for those who grew up with the Internet and computers, 25 to 40, those people who may have or may not have had access to the technology and over 40, those who probably did not have access to the technology until they were adults.

Section two was an attempt to determine how the participants currently used computers, with questions on the frequency which they used such aspects as Email, Chat, IPphone and video conferencing, as well as more general technology such as a computer, web cam and the Internet.

Section three began the investigation of the Internet for career management with questions about evaluation of career options, including the use of psychological tests online, and the confidence in their results. The final question in this section is to determine if they would use the Internet to search for jobs.

Section four was about the act of applying for jobs including the how, CV submission and application forms; and the geographical including both within New Zealand and overseas.

Section five focused on the use of the Internet for interviewing with an attempt at assessing the comfort levels of the various tools currently available in this area, such as video conference, chat and role play, together with the common form of initial interview, the phone interview. There were also a couple of questions on completing set tasks, as one of the options to be considered for the use of the technology is the use of simulations.

Section six was included as an attempt to ascertain acceptance of the newer technologies such as 3D worlds and simulations. The questions in this section

concentrated on the comfort level of the participant in a number of scenarios such as using these technological environments to gain employment or learn new skills, or for taking part in role plays and exhibiting current skills within these environments.

Section seven was a series of four open-ended questions to allow for comments on any advantages, disadvantages or suggestions for improving the use of the Internet for career management. There was also an option to show willingness to undertake a follow-up interview and space to leave contact details. A copy of the Questionnaire can be found in Appendix C.

4.2.1.1. Validation

In order to validate the questionnaire, it was initially discussed with colleagues before sending for approval by my supervisor. The students who were currently undertaking their final projects prior to leaving and entering industry were also asked to test the questionnaire as a pilot. This process caused a few changes to be made, mainly in the format, and the inclusion of points of clarification around terminology, in particular the future technologies especially, as not all the participants were envisaged to be computer specialists. Originally, the questions were not divided into the blocks, this was done to help with the analysis later. There were also a couple of questions which needed to be re-worded to take out negatives so as not to cause any confusion when using the Likert scale, and to give a more uniform and standard feel.

4.2.1.2. Participants

The participants were selected from a cross section of students within one particular institute. The particular students selected were drawn from groups to which either myself or another member of staff had access, and were willing to administer the questionnaire. The time frame was over two years as various new students came into the institute. In the first year, the questionnaire was administered to all academic years within the faculties and new students were added in the following year. These new students were not all new to study as the institute runs a graduate diploma program for those who have qualifications in another discipline. Overall 128 students were surveyed.

The proportion of males to females is indicated in Figure 4.1 and shows that the proportions are fairly even overall.

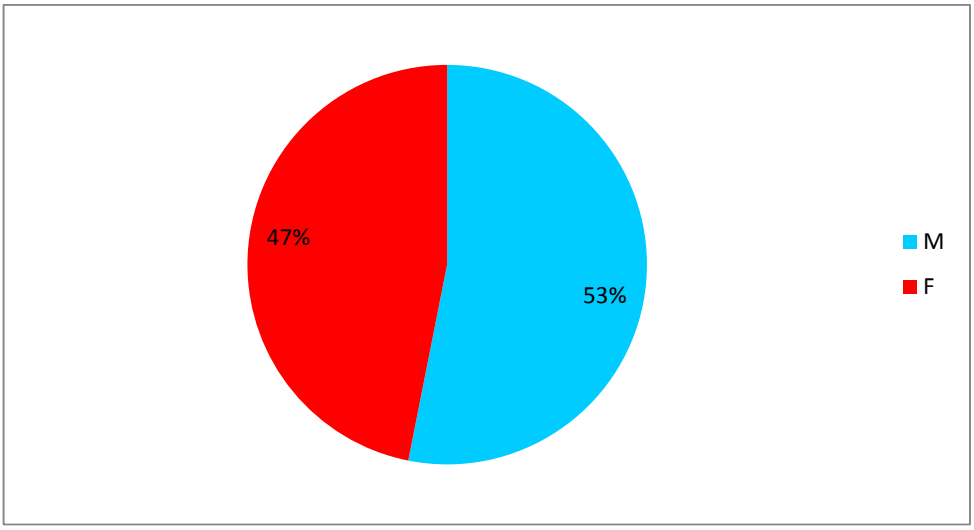

Figure 4.1. Overall proportions of male to female participants.

When the gender differences within each discipline are examined, as in Figure 4.2', it shows markedly more males within the technology discipline, and no males in the nursing discipline.

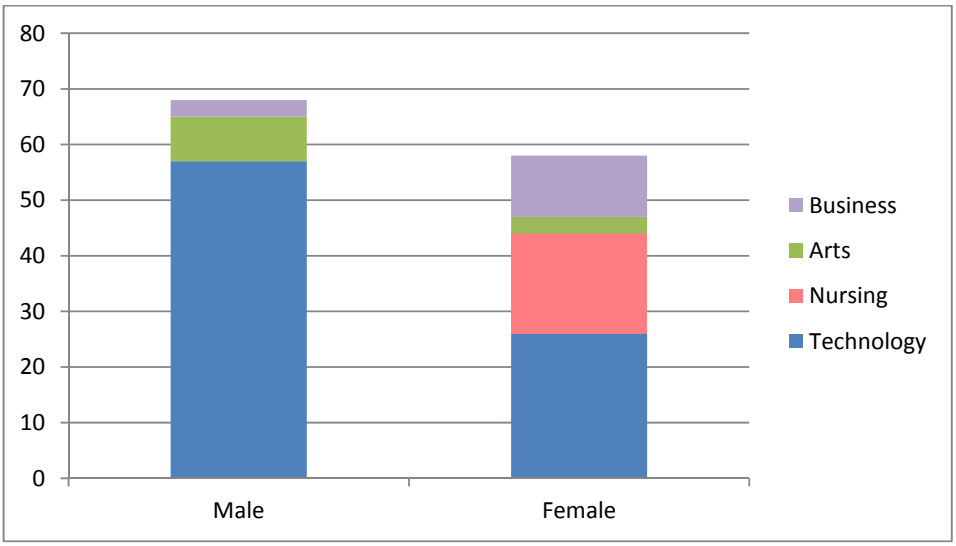

Figure 4.2. Gender differences within each discipline.

The data were then entered into a spread-sheet in Excel after being coded to preserve anonymity. This coding also included information as to which area of the institute the students came from. For example, the first record from a technology student was coded T1, whereas from a business student it was B1, to allow for analysis on the type of student. The coded data is presented in Appendix D. Parts of this spread-sheet were imported into SPSS (M J Norusis, 2008) for the quantitative analysis and NVivo (QSR International, 2010) for the qualitative analysis. Decisions on grouping were made before administering the survey, as indicated by the way the questionnaire was formatted and to adhere to the suggestions made by Pribyl (1994).

The usefulness of the survey is dependent on the honesty and knowledge of the participants (Reeves, 1996). There is, in this questionnaire, a certain amount of evaluation of the perception of the participants, as it asks if they would use the Internet for certain processes for career management. Furthermore, as some of the students have not yet applied for positions anywhere, it really would be an evaluation of their feelings at the time they took the survey, not something in the future.

Those participants who had indicated their willingness to partake in a follow-up interview were contacted and six interviews plus a number of informal discussions were undertaken.

4.2.1.2 Analysis

The analysis of the quantitative part of the survey was undertaken using SPSS. The means and standard deviations of the individual questions and the groups were examined to check that they conformed to an approximate normal distribution by checking the values for skewness and kurtosis.

Correlations between the groups were calculated to see which correlations, if any were significant using Pearson's correlation coefficient to check for the strength of these correlations (Field, 2009). For example, this was to determine whether there was any correlation between the familiarity of the user with the use of computers in everyday processes such as mail, chat and video conferencing and the use of computers for the various aspects of career management.

As the sample included different groups of people based on the demographic data given in the first section of the survey, one way ANOVAs were used to see if there were any significant differences between these various demographic groups by examining the F-statistic produced (Field, 2009) for each of the sections three to six of the questionnaire.

4.2.2 Interviews

Careful consideration was essential for the interview part of this research, in order to clarify the goals and set up the methods. The validation of the data collected in this way was less obvious and harder to do. Factors, which could affect this, are such things as the subjectivity of the researcher and non-verbal interaction with the participants. Qualitative research seeks to acquire in-depth understanding of a smaller sample of the population rather than a large representative sample of the entire population. It focuses more on how and why people behave or think as they do (Ambert, 1995).

In addition to discovering the current practices of the participants with reference to both job searching and employee searching, the interview hopefully could indicate possible areas of future development. The background of the participants was also explored to assess if this could have had any impact on their answers.

Data gathered by a questionnaire has to be taken on face value, as the lack of other factors, such as body language, make it virtually impossible to ascertain the honesty or understanding of the subjects. Interviewing allows some of these factors to be observed, thus giving a better idea of how a person feels about certain issues. Sometimes however, especially when the subject has pre-conceived ideas on the appropriateness of a certain response, they may try to give a socially acceptable response, or one which they think would endear them to the interviewer. The interviewer taking the time to research the subject, and putting in place procedures to make them feel safe, may avert this, meaning that a full and detailed interview plan is essential to ensure consistency of the data collection. Furthermore, the length of each

interview may vary depending on the participants willingness to expound more than others (Burke, 2001).

Face-to-face interviews provide the opportunity to delve deeper into a subject's thoughts on certain relevant topics. However, this means that the sample size tends to be smaller, and subjects carefully chosen to provide the optimal data necessary to fulfil the objectives of the research. The skill of the interviewer is more crucial, as often the questions used are more open-ended making the gleaning of relevant data more difficult, while allowing a more complete picture to emerge. The interviewer should be friendly, courteous and unbiased without showing surprise or disapproval of any answers which the participants' responses (Burke, 2001).

In this study, there were two aspects where interviews were used. The first was where the participants who had indicated on the questionnaire that they would be agreeable to having further discussion about the research. This group made up the large part of the employee side of the interviewing with one marked exception of a person who had found all of her positions online over a period of years. This person was not a student, and this interview was recorded, as it was more formal and longer than the others.

The second involved the employers in a formal process that also was recorded. The people interviewed tended to be the managers or directors in the small companies, the human resource people or department managers in the large companies. The makeup of the large companies was one Information Technology company and an international bank based in England. The smaller companies consisted of a web development company, a non Information Technology business and an international event organisation.

Anderson (1998) quoted as some of his reasons for using evaluation research was to improve practices and performance, to adjust specific techniques, and to determine if stated objectives are being met. Previous research (Lloyd, 2003) indicates that the main method of how students find jobs is through personal contact. This is at best inefficient and at worst means that the match is definitely not the best. This research is an attempt to improve this situation by investigating current practices, and also attempting to discover if the new technologies could be used to improve this situation.

The full set of questions used in the interviews may be found in Appendix B. A document which was given out to the participants provided an overview of the research and can be found in Appendix A. The questions were tailored to the aspect of the research which was relevant to each interviewee and contained general questions about makeup of firm and experience in IT, plus questions on how they used the Internet for advertising/ finding jobs, the recruitment and interviewing processes, and finally with an attempt to assess their familiarity and openness to the use of the newer technologies such as 3D worlds and simulations. The general areas of questions for the both sets of interviews are given in Table 4.2.

Table 4.2

Description of Areas of Questioning in the Interviews.

Areas	Employee questions	Employer questions
General	Do you have training in IT? Do you use video conferencing facilities?	Do you do any of your business online? I.e. selling/ purchasing etc? If so what? Do you have a specialist IT person/dept? Do you have video conferencing facilities?
Advertising	Do you use an agency for recruitment? Where do you look for positions?	Do you use an agency for recruitment? Do you advertise online for recruitment? If so where? How?
Recruitment	Do you participate in electronic submission of applications for jobs? For example CV's Application forms Would you consider applying to another country? Do you do tests online?	Do you accept electronic submission of applications for jobs? For example CV's, Application forms Would you consider applicants from say another country? Do you , or your agency administer tests online
Interviews	How would you interview? Phone, Teleconference, Video Conference If you use any of the above would you still expect to meet the potential employer in person before making a final decision?	How would you interview? Phone, Teleconference, Video Conference If you use any of the above would you still expect to meet the potential employee in person before making a final decision?
Developments	(explore possible uses of) Remote access 3D worlds Simulations	

The short interviews undertaken in connection to the surveys were on the whole, not recorded, whereas the one where the employee had obtained most of her positions through the Internet was. Most of the employer interviews were recorded, there was one instance where contact was made with a person on a train and took the form of an informal conversation rather than a formal interview. This person gave her contact details where details could be confirmed and notes were made at the time. As she was the Head of Human Resources in a major bank in the UK, the opportunity was too good to miss.

The interviews were then transcribed and NVivo (QSR International, 2010) was used to analyse them, whereas the notes taken from interviews which were not recorded were entered into a word document which was also then analysed using NVivo. As is true with any software, NVivo is only a tool to aid in the analysis of qualitative data (Denzin & Lincoln, 2000). The data need to be coded and prepared prior to importing it into the software. The aim of this part of the research was to expand on the quantitative data by examining the different ways in which the Internet could be used for career management and ascertain if there were any barriers to its use for this purpose.

4.3 ETHICAL CONSIDERATIONS

Ethical approval for this research was applied for and obtained from both the institute where the questionnaire was administered, and the institute in which the researcher was studying.

There are a number of general ethical issues within any research project. These are around such things as privacy of the participants, the voluntary nature of participants which involves gaining consent beforehand. How the data collected are used and their potential impact on the participant, as well as the behaviour and objectivity of the researcher together with the interaction between the researcher and the participants (Saunders, Lewis, & Thornhill, 2009).

There are a number of ethical issues connected with interviewing, especially when the topic is as open as the one described. Bouma (2000) suggests that researchers put themselves into the position of the interviewee, and then asks how they would feel if they were treated the way in which the interviewee was treated. This is a good starting point but it has a few flaws, as not everyone has the same feelings about certain treatment. To safeguard both parties, it is advisable to have a code of ethics, and to get all aspects of the research checked by a body such as a research ethics committee. This was done both at Curtin and at the polytechnic where the students attended.

Ethical considerations also needed to apply to the questionnaire part of this research. The participants must be assured that their identity remains anonymous in order to obtain truthful answers. The formations of the questions have to take into account the requirement that a person cannot be identified by their answers, also they need to be written in such a way so as not to offend the participants in any way.

Careful consideration was essential for the evaluation part of this research in order to clarify the goals and set up the methods. Different prospective employers will have different needs and expectations, to enable the research to identify any common factors these diverse needs and expectations will need to be evaluated individually, and hopefully a common set of factors will emerge. This can only be achieved by analysing the responses given within the quantitative part of the research.

4.4 SUMMARY

This chapter outlines the methodologies used within this research together with the rationale and the reasons for choosing them. The analysis was explained, and the results from this are presented in the following two chapters, Chapter Five providing the results from the prospective employee perspective, and Chapter Six from the perspective of the employer via interview. As discussed at the beginning of this chapter, these perspectives could be different, while the aim for each is probably the same, which is to match the best person with the best position for that person.

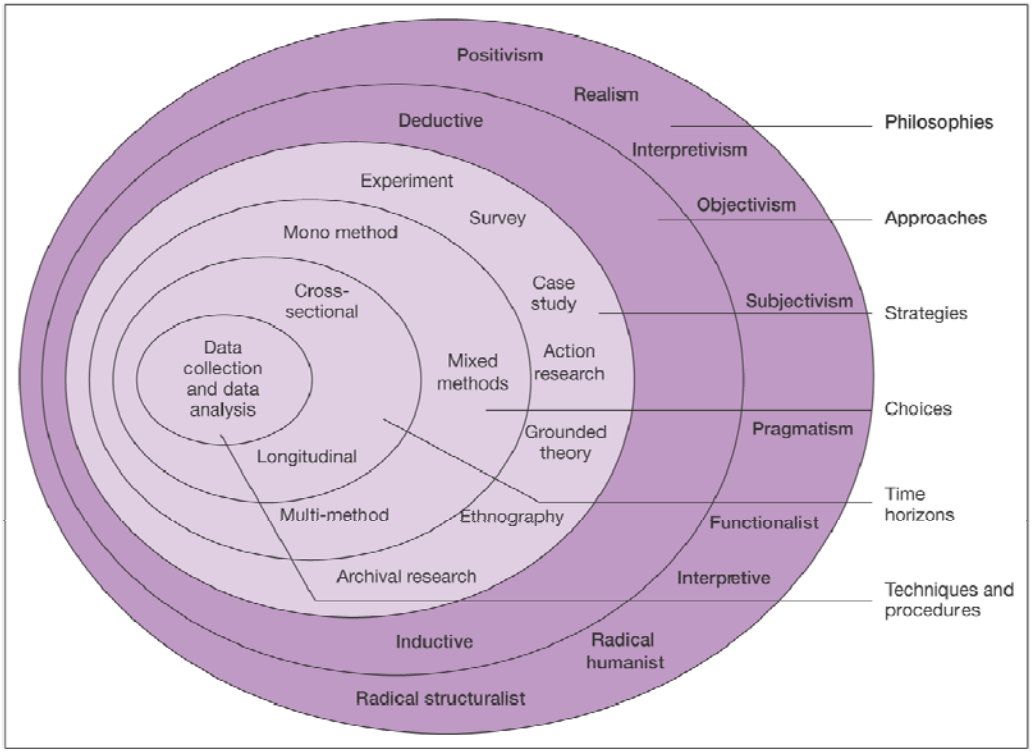

Figure 4.3 .The Research Onion (Saunders, Lewis, & Thornhill, 2006, p. 83)

Figure 4.3 is a diagram of the research onion which divides the research into various levels or layers in an onion. The philosophies used in this research covered most of these apart from the radical humanist or radical structuralist. The objective nature is present in the tools and parts of the Internet, while the subjective covers the perception aspect which was discussed earlier in this chapter. Positivism works with the theories which were the preconceived ideas present at the beginning of the research and which are further discussed in the next two chapters which look at the actual results. The progress of the Internet and its uses is an ongoing unknown which satisfies the realism philosophy, and is very appropriate in this case.

The choices made around the strategies were to use mixed method, beginning with archival by exploring the literature, followed by survey using the questionnaire, ending with multiple case studies in the form of interviews. Saunders, Lewis and Thornhill (2009) state that mixed method research is when both quantitative research and qualitative research are undertaken either at the same time or after each other but are analysed in a way appropriate to each and not combined. As one of the aims of

this research is to attempt to improve the area of career management by the use of technology Anderson's (1998) description of grounded theory as "emergent themes are identified, interpreted, compared and refined" to help develop new constructs and theories is also applicable.

This research is cross-sectional as it was carried out in a relatively short time-frame, it also encompassed both sides of the same equation for example both the employee's perspective as well as the employer's.

Chapter Five will outline the results from the employee focus including the quantitative analysis of the data collected from the surveys and the qualitative analysis of the answers to the open questions and the interviews both from the students and the external person.

Chapter Six will concentrate on the interviews with employers by analysing the qualitative data from the notes and transcripts using NVivo. There are also direct quotations from these sources.

Chapter Seven combines the findings of all parts of the research into a final conclusion, together with answers to the research questions.

CHAPTER 5

RESULTS FROM THE EMPLOYEE PERSPECTIVE

A world community can exist only with world communication, which means something more than extensive shortwave facilities scattered about the globe. It means common understanding, a common tradition, common ideas, and common ideals.

-Robert Maynard Hutchins

5.1 INTRODUCTION

This chapter represents the statistical analysis of the data collected from the students within the various areas of a polytechnic within New Zealand. Analysis was undertaken both for the complete set of surveys and then for individual groups divided by the demographic data. The quantitative data were analysed using SPSS, while the qualitative data were analysed using NVivo.

To make the results more compact while still retaining the essence of the survey, the scores for each block were combined and then checked to see how normalised the distribution was. Correlation analysis was performed on each pair of values using SPSS (Norusis, 1993).

The z-score for skewness was not significant in any case but the Applying for jobs section, which indicated a positive skew, yet the results for the individual questions in that block were not particularly skewed.

Tests were carried out for correlation between the different sections and analysis of variance was undertaken to determine if there was any significance between the different sections due to age difference, whether they were technology students or not, and if they had any connection with overseas due to family or previous work experience.

5.2 OVERVIEW

There are two aspects of this research, one is from the prospective employee's point of view, and the other is from the prospective employer's. The survey is the basis for the analysis of the prospective employee responses, supplemented by an interview with a person who has obtained almost all of her employment via the Internet, as she is in the field of event management, particularly sporting events. This chapter focuses on the research undertaken to evaluate the results from the point of view of prospective employees, the next chapter will focus on the comments made by prospective employers gathered through an interviewing process.

5.3 SURVEY

As described in Chapter Four a questionnaire was developed which had seven sections as shown in Table 5.1:

Table 5.1

Description of Each Section in the Survey

Section	Description
Personal Details	Including gender, age, Nationality, contact with other countries.
Computer Use	Including Internet, Email, chat, video conferencing, IP phone.
Career Evaluation	Including personality, employment evaluation and psychological tests and searching for jobs.
Applying for Jobs	Including filling in application forms, submitting a CV and geographic distance of job.
Interviewing	Including telephone, video conferencing, chat, completing tasks and role play.
Future Technology	Trying to assess comfort level of use of new technology such as simulation or 3D worlds.
Open ended Comments	Advantages and disadvantaged of using Internet for career management

Sections three to six were based on a five point Likert scale measuring the likelihood of performing the tasks or interpreting the results of tests. Each section contained

seven items giving a scoring range of 7 to 35. In the Computer Use section, the score was 5 for Daily down to 1 for Never. For the other four sections it was 5 for Very Likely down to 1 for Very Unlikely.

Sections one and two were straight answers to questions and the last section was a "catch all" for comments.

These questionnaires were distributed to students from the Information Technology, Business, Nursing and Art classes. This spread was aimed at giving a broad spectrum of technical knowledge and familiarity with the current tools, with the intention of having the ability to compare the technical savvy Information Technology students with the less savvy business, nursing and art students.

5.3.1 Actual Results for Quantitative data

The data from the questionnaires were entered into an Excel spread-sheet where it was divided into the first six sections omitting the last section which was the open ended comment questions. The demographic questions were coded into a numerical format with male coded as 1 and female coded as 2 for the question on gender. The age group question was coded as 1 for the under 25, 2 for the 25 to 40, and 3 for the over 40. Nationality was given a 1 for New Zealand and 2 for other. For the questions 'Worked outside NZ?' and 'Family overseas? ', Yes was coded as a 1 and No as a 2. A copy of the spread-sheet containing the coded data can be found in Appendix D. This is divided into two parts to enable easier access. The first spread-sheet is data collected from the Likert scales, while the second spread-sheet is a combination of the demographic data together with the answers to the open ended questions from the survey. Both spread-sheets contain the identifying code numbers.

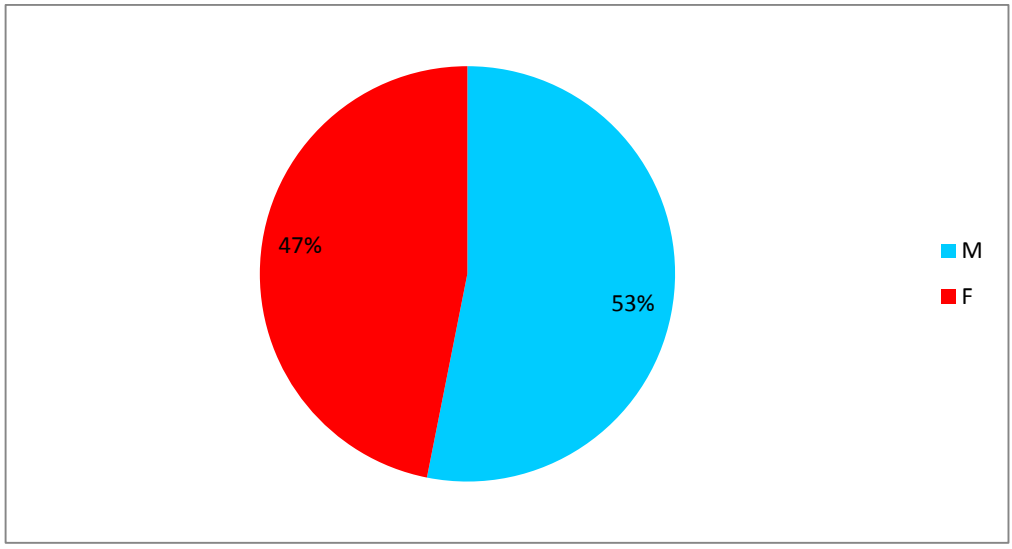

Figure 5.1. Overall proportions of male to female participants.

Figure 5.1 shows that the proportions due to gender overall are very similar, although the differences are greater between the genders in the various disciplines as shown in Figure 5.2.

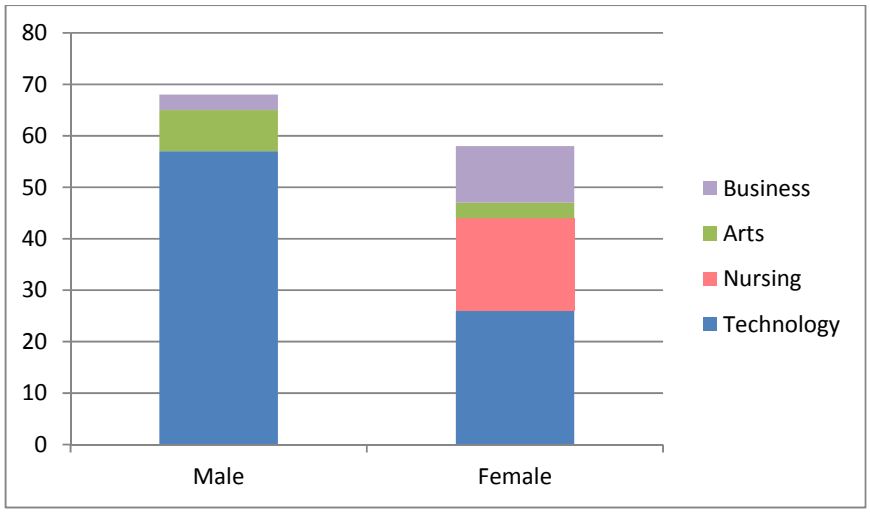

Figure 5.2. Gender differences within each discipline.

Figure 5.2 shows that there are more males than females in the technology sample but no males at all in the nursing sample. This fits with the general perception of these two industries, so are similar to what was expected. Business and arts have a slightly uneven split between the genders which reflects the population within the particular institute for these areas.

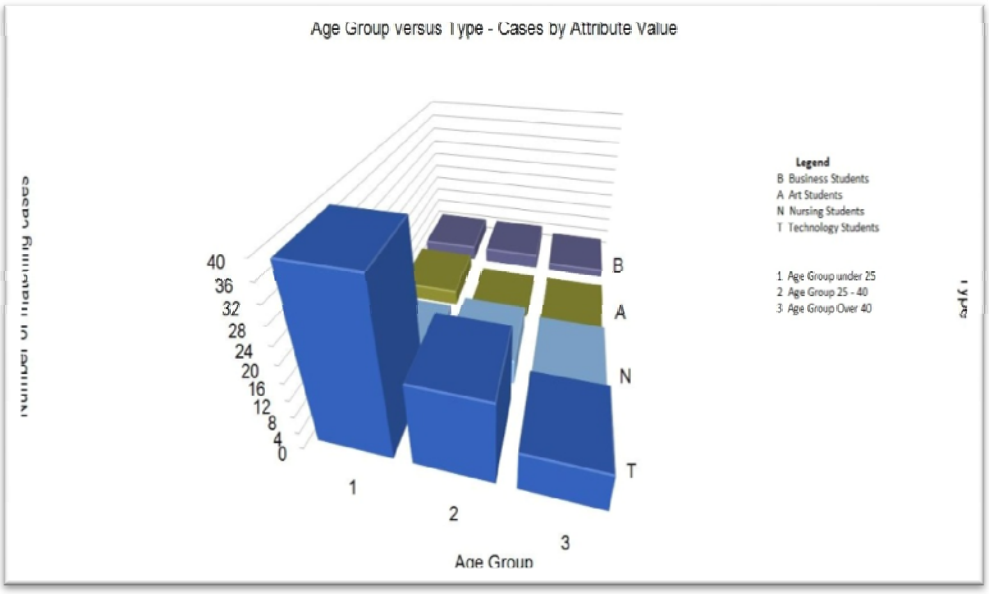

Figure 5.3. Age group versus type

Figure 5.3 shows the spread of the different age groups with respect to type and was generated by NVivo. As can be seen the technology group have a majority of younger students, which is what is expected as technology tends to attract the younger generation.

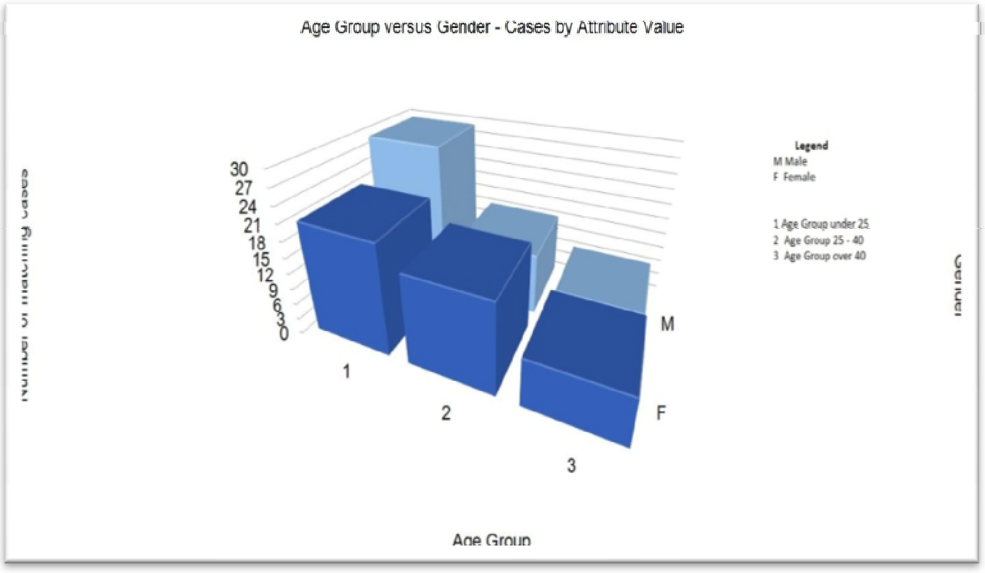

Figure 5.4. Age group versus gender

As can be seen in the Figure 5.4 there are more younger males than any other group, although in the age group 25 to 40 there are more females. This is probably because males are still regarded as the main provider in a lot of cultures; therefore it is important for them to continue with their education, whereas females sometimes put their education on hold for a while, and enter education at a later stage in their life. The older students are about equal between genders.

The means and standard deviations were examined using SPSS and boxplots were plotted for each of the sections. The means and standard deviations for each section are shown in Table 5.2.

Table 5.2

Means and Standard Deviations for Each Section

Section	Mean	Standard Deviation
Computer Use	24.43	4.48
Career Evaluation	21.25	5.97
Applying for jobs	26.23	7.17
Interviewing	21.15	5.38
Future Technology	24.28	5.91

As can be seen in Table 5.2, the Interviewing and Career Evaluation sections have means which are close to the mid-point of the range. Computer Use is a little high, which was expected as all the participants used computers to some extent. The Future Technology section also had a higher mean which could reflect the innovative nature of the participants.

The section that refers to the use of technology and the Internet to apply for jobs had a relatively high standard deviation. This is also the section which showed significance in the tests used to determine skewness. Further examination of this section using the individual questions was undertaken. The mean and standard deviation for each question within the section concerned with applying for jobs is given in Table 5.3

Table 5.3

Means and Standard Deviations for Each Question in the Section on Applying for Jobs

Question	Mean	Std. Deviation
Apply for a job on the Internet	4.11	.99
Apply for a job in another area within NZ	3.09	1.29
Apply for a job in another country	2.80	1.42
Send a CV over the Internet using email	4.10	1.11
Submit a CV form over the Internet	3.89	1.20
Fill in an application form over the Internet	4.02	1.04
Fill in an application form in a word processor and send it using email	3.92	1.09

Table 5.3 shows that the means for the questions concerning applying for a job by sending a CV and filling in an application form is high but this is now the more usual way of applying for a position so this is no surprise. The standard deviations for each question are not abnormally high, although the standard deviation for this section as a whole is. The conclusion is that there must be a wider spread in the combination of answers to these questions.

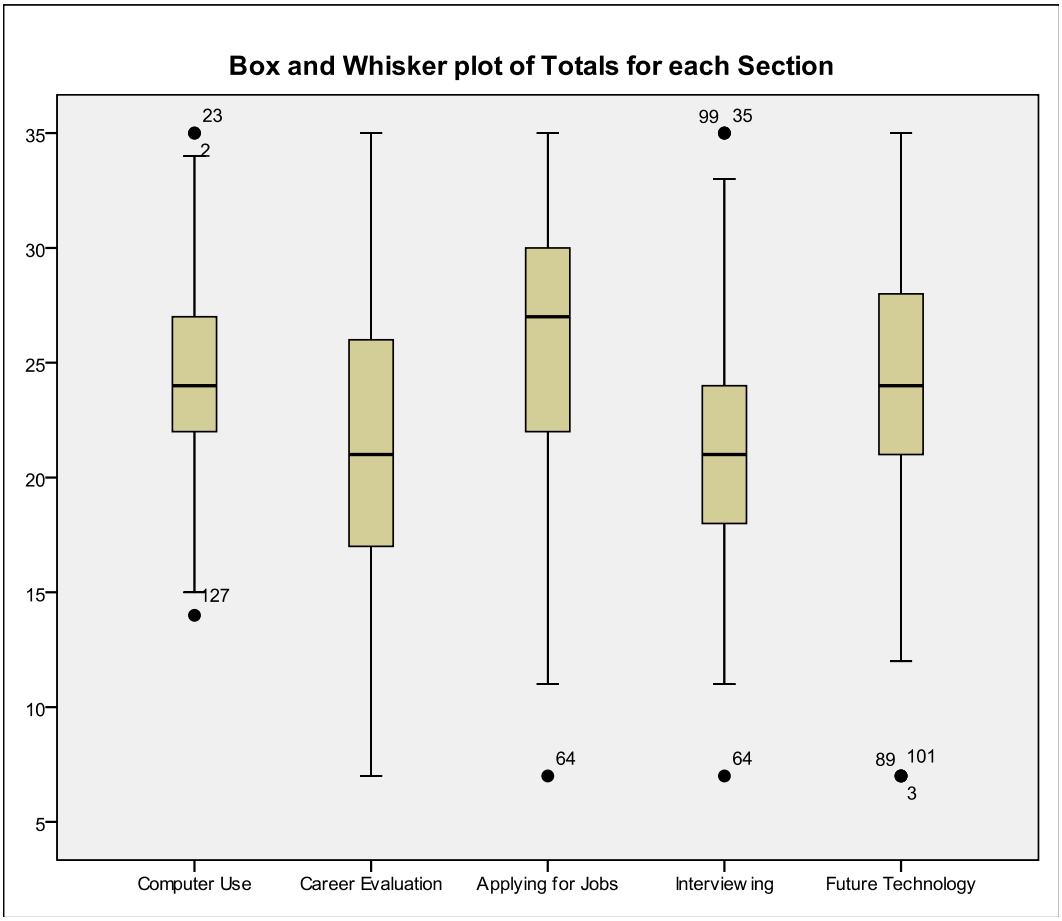

Figure 5.5. Box plots for the different sections.

Figure 5.5 shows box and whisker plots for each individual section. Computer Use has a small range at the higher end of the scale, while the use of the Internet for Career Evaluation has a larger range with no outliers and an even distribution. The Applying for Jobs section, as discussed previously, looks slightly skewed and has a longer tail at the lower end of the scale. The Interviewing section is in the centre of the range and appears to have an even distribution, while the Future Technology section has a number of outliers at the bottom end of the range, indicating that there were three people who did not answer all the questions within that section.

5.3.1.1 Correlations

Pearson's correlation coefficient was used to examine the likelihood of any correlation between the various sections. The correlation between the individual sections and significance levels are given in Table 5.4.

Table 5.4

Correlation Matrix Showing the Significance of the Correlations Between the Different Sections

Section	Computer Use	Career Evaluation	Applying for Jobs	Interviewing	Future Technologies
Computer Use	1.00	0.14	0.09	0.30***	0.18*
Career Evaluation	0.14	1.00	0.44***	0.30***	0.09
Applying for Jobs	0.09	0.44***	1.00	0.31***	0.13
Interviewing	0.30***	0.30***	0.31***	1	0.44***
Future Technologies	0.18*	0.09	0.13	0.44***	1.00

*n=128 * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ All significance tests were two tailed*

There were five strong positive correlations and one weaker positive correlation in all. The strong were in the area of Interviewing with Computer Use, Career Evaluation, Applying for Jobs and acceptance of the Future Technologies. There was also a strong correlation between looking for jobs on-line and applying for them. The weaker correlation was between using computers and the acceptance of the newer technologies such as 3D worlds and simulations.

As expected, there was a positive correlation between computer use and likelihood level of interviewing on-line as well as the future usage of the Internet. This shows that the greater the computer use, the more likely a person is to be comfortable with use the Internet for interviews, and is also open to the use of the newer tools such as 3D worlds and simulation as part of this process. This trend is supported by Harris-Bowisbey and Sampson (2005) who in their paper stated that by the use of new technologies and databases of occupational and educational requirements will enhance the decision making capabilities of both the employer and the employee.

As can be seen the strongest correlation is between those people who are comfortable with interviewing on line and those who would also be happy within the newer more futuristic applications, this is reasonable as this group would be the more adventurous.

The biggest surprise was that the correlation between computer use and the career evaluation or the job application group was not significant. When the mean of the computer use group of questions is noted it is over 4, bearing in mind that the scale is from 1 to 5, this is exceptionally high, indicating that the majority of the participants are familiar and comfortable with the use of computers, as compared with the other blocks where the means are a lot lower and nearer to the midpoint of the scale. Another factor which could influence this result could be due to the fact that students either have not reached the stage of actually looking for jobs, or that they look for jobs online whether they are heavy computer users or not, hence the computer use block has less influence on the results.

5.3.1.2. ANOVA (Analysis of Variance)

An analysis of variance was undertaken to examine the effect that different demographics impact on the results, by looking at the differences in the means and standard deviations of each group and the F-ratio to assess how a regression model will fit the data (Field, 2009). The expectation was that the technology students would show a marked difference in the way they use computers for everything, when compared to the less technical nursing, arts and business students. There is a perception that a person's age should also influence the way in which they used the technology, as the younger students would most likely have been exposed to the newer technology earlier in their life and education, while the older students would not have had as much exposure. If a student has already experienced life outside New Zealand, yet has come to New Zealand to study, it seems highly likely that they would be used to using the Internet for communication home as well as finding out about the opportunities available to study in another country.

5.3.1.2.1. Results of Analysis for various demographic factors

The first factor which was examined to ascertain if there were any differences, were the types of students who were surveyed. The assumption was that those students taking a course which involved the use of computers such as Information Technology students should be more likely to use the technology for career management than those students who were taking courses where computer technology was not such a major factor. These included students from Nursing, Arts and Business.

The students who participated were from various disciplines in the proportions indicated by the pie chart in Figure 5.6.

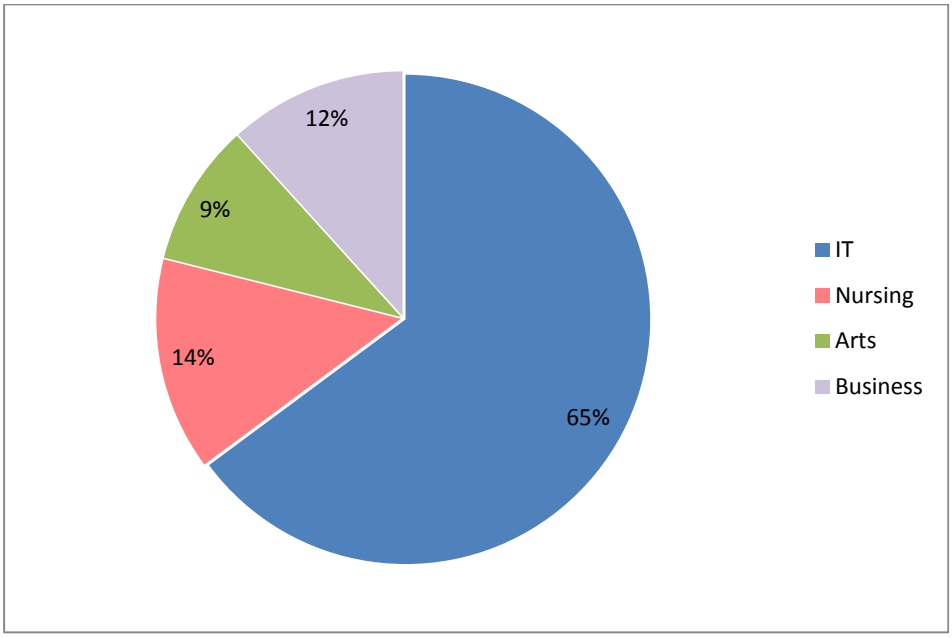

Figure 5.6. Proportions of students in each discipline.

An Analysis of variance (ANOVA) was performed using SPSS to determine if there was any difference between technology and non technology students for each of the scales within the survey using a two tailed test. The non technology students comprised of nursing, arts and business, while the technology students were those who were studying information technology The results are given in Table 5.5.

Table 5.5

Analysis of Variance for the Differences Between Technology and Non Technology Students

Scale	Type	Means	Sd's	F-value
Computer Use	Technology	24.50	4.35	.09
	Non Technology	24.25	4.68	
Career Evaluation	Technology	21.57	5.93	.03
	Non Technology	21.39	5.99	
Applying for Jobs	Technology	24.98	5.97	7.87**
	Non Technology	28.63	8.44	
Interviewing	Technology	21.43	5.55	.11
	Non Technology	21.09	5.15	
Future Technology	Technology	25.57	5.60	10.10**
	Non Technology	22.19	5.78	

*** p < 0.01 n=128. All significance tests were two tailed*

As can be seen from Table 5.5, the F-value for all but the Applying for Jobs and the Future Technology scales was low. In these two scales, the F-value was high and therefore there is a difference between the two groups of students for these particular scales.

The figures show that the student's access and frequency of use of a computer is not significantly different for everyday things such as chat, mail, searching for jobs and taking tests, such as those used within career evaluation. The differences appear when it comes to actually applying for jobs and, especially when using the new, leading edge technology. In both these cases, the technology students seem to be more adventurous.

A common belief is that younger people are more adventurous, including in the use of technology, while people over the age of 40 have probably not been exposed to technology within their school years. To see if this belief is true in the sample used for the survey, the various scales were tested to see if there are any significant differences within the various age groups. The results produced by SPSS are shown in Table 5.6.

Table 5.6

Analysis of Variance for Students From Different Age Groups

Scale	Type	Means	Sd's	F-value
Computer Use	Under 25	24.76	4.33	0.41
	25-40	25.23	8.03	
	Over 40	23.69	4.62	
Career Evaluation	Under 25	21.19	5.22	2.13
	25-40	25.03	16.45	
	Over 40	20.56	5.25	
Applying for Jobs	Under 25	25.92	8.00	1.34
	25-40	30.49	22.84	
	Over 40	26.56	5.05	
Interviewing	Under 25	21.05	5.59	1.31
	25-40	26.70	31.39	
	Over 40	22.13	5.19	
Future Technology	Under 25	23.66	5.41	1.78
	25-40	31.84	38.89	
	Over 40	*25.80*	*6.58*	

N=128. All significance tests were two tailed

While there is no evidence of any differences between the groups, the standard deviations are rather large in the 25 to 40 age group, which is the age group influenced by the introduction of technology into schools. The opportunity these people would have had to experience the new technologies would have depended on their circumstances and the approach of the education system where they attended school. According to Sutton (1991), a majority of secondary schools in the USA

owned at least one computer by 1981 which is 30 years ago, thus putting the children who were going through the education system within the group of 25 - 40 year olds. In New Zealand, the introduction was a little later but still within the same age bracket.

In an attempt to discover if the experience of working outside New Zealand had any effect on the results for the various scales the participants were asked if this was the case. The results of the ANOVA is shown in Table 5.7.

Table 5.7

*Analysis of Variance for Students Who have Worked Outside New Ze*aland or Not

Scale	Type	Means	Sd's	F-value
Computer Use	Y	25.25	4.89	1.93
	N	24.07	4.21	
Career Evaluation	Y	22.97	5.72	3.46
	N	20.86	5.97	
Applying for Jobs	Y	29.45	8.06	11.86***
	N	24.87	6.20	
Interviewing	Y	23.26	4.61	7.39**
	N	20.50	5.54	
Future Technology	Y	25.22	5.82	0.88
	N	24.14	5.89	

*** p < 0.01 *** p < 0.001 n=128 All significance tests were two tailed*

As can be seen the F-value for the scale which was concerned with applying for jobs was high, giving a low value in the significance column. This indicates that there was in fact a significant difference between those students who had worked outside New Zealand and those who had not.

To a slightly lesser extent, but still significant at the 0.007 level was the group of questions regarding the use of technology for the interviewing process.

These results were reinforced by the interviews conducted with people who had used the Internet to obtain jobs. One interviewee mentioned that one of the reasons she did not get a lot of the jobs she applied for online was because she did not have the appropriate visas to allow her to work in the country to which she was applying. The

same person also highlighted the progression of the use of technology in interviewing; with her first interview being just a telephone interview and progressing through to a video conference with a full interview panel.

When people leave their family in another country it seemed logical that they would either have used the Internet to make the move, or would be likely to use the Internet to return. Using this presumption, tests were performed with regards to the question "Have you family in another country". The results are given in the Table 5.8.

Table 5.8

Analysis of Variance for Students Who have Family Outside New Zealand or Not

Scale	Type	Means	Sd's	F-value
Computer Use	Y	24.74	4.73	1.48
	N	23.59	3.39	
Career Evaluation	Y	21.80	5.87	0.49
	N	20.93	5.99	
Applying for jobs	Y	26.76	7.38	1.74
	N	24.76	6.21	
Interviewing	Y	21.22	5.38	0.19
	N	21.72	5.64	
Future Technology	Y	24.43	6.13	0.00
	N	24.41	5.00	

n = 128. All significance tests were two tailed

The results showed no significant differences between the groups who answered yes to the above question and those who answered no. This was particularly obvious in the area of the use of future technology. There were a number of overseas students in the group of participants who had come to New Zealand to study. From informal conversations with these students, quite a lot seemed to want to stay in New Zealand and work after completion of their studies. This being the case they would then be looking for work locally and not overseas, thus negating the assumption made prior to the study.

5.3.2 Results for qualitative data

The last section in the survey was a collection of open-ended questions which were analysed using NVivo (QSR International, 2010). The individual answers were loaded into the software and each question was then coded to give an overall view of the comments. The demographic information was also loaded.

When asked for reasons for using the Internet for career management some of the replies were:

> *Availability of information, because those requiring the information ie prospective employers may want the information from me in a format accessible over the Internet*
>
> Interviewee J

> *Internet is the easiest way to find jobs. Because with the help of Internet anyone can find jobs in the field they are interested in. They can search for jobs using the Internet*
>
> Interviewee L

There were 84 responses to the question "What are the advantages of using the Internet in career management?". The over-riding opinion in the area of why use the Internet for career management was that it was "fast" and "easy" with 32 students considering time as an advantage, and 24 believing that ease of use was important. Other advantages highlighted were the ability to research companies, with one person saying "Ability to check out company websites to find out more about a company (company blogs), Access to international jobs". One person stated:

> *information availability, ease of information access for those who will read information provided by me*
>
> Interviewee J

Another interviewee highlighted cost and use of skills:

> *Greater access to job opportunities. Showing future employers what skills you have. Reducing cost with video conferencing*
>
> Interviewee B

Other surprising comments were that the first contact with a prospective employer was without the face-to-face contact, giving the impression that they would have a chance to sell themselves before meeting. Two people included anonymity in their answer, while another two remarked on the advantage of not being judged by your looks. These comments could stem from the perception that they would be judged on some aspects of their appearance and thus were worried about discrimination. Others commented on the research aspect of using the Internet in comments such as: "gaining knowledge about my personal attributes; gaining knowledge about my working attributes; and finding which areas would I need to work on (attributes)".

The availability of information and the ability to compare jobs were just two of the comments made in answer to the question "Give reasons for using the Internet as a tool for career management?" where there were 86 responses, most of which highlighted the speed and ease of use identified in the previous question.

The opposite point of view included comments about the security of the Internet, with some showing a lack of trust and the ability to get help if required. There were 67 answers to the question regarding the disadvantages of using the Internet, 27 of which expressed concern with technical and security issues. These included such things as lack of access for some people, the Internet speed in some areas, as well as, concern over privacy and the use to which their information may be put to. Thirteen students expressed lack of personal contact as an issue, opposing the opinion about face-to-face contact, saying that the lack of this was a negative, as not all interpersonal communication could be used, for example, body language. There were two people who questioned the validity or completeness of the information presented on the Internet with one saying "Maybe false information or deceiving individuals". Knowing where to aim as far as the types of jobs being a problem:

You can't always ask questions. Salary often is not given in first advertising post (i.e., are you wasting your time applying, i.e., job too high up, or too lowly paid – i.e., you're over or under qualified.

Interviewee R

There was very little response to the question about how could the use of the Internet be improved in this area. There were only 28 replies, 19 of which were that they could not come up with any suggestions. There was one suggestion asking for more comparative information about salaries and this comment: "Integration of Facebook, E-Resume, LinkedIn and other contact, experience available for all employers to see" which is beginning to happen already as discussed in chapter Two.

The interview with Employee "C", who had gained almost all of her positions through the Internet, highlighted the evolution of the processes used and how the technologies have developed. The first interviews were by telephone; these were then augmented by using video conferencing between two people and progressing to full panel interviews via teleconferencing. Searching for positions has also evolved with more places using the Internet to advertise job opportunities, this has grown so large that according to Interviewee C you need to know which sites to go to "like those which are very specific to your career field". The larger sites have filters which allow you to narrow the search field. Initially, there was still a need to meet in person and often it was the employer who travelled to meet a number of prospective employees at a base. As the use of technology progressed, this became less crucial and the latest position required no face-to-face meeting. Interviewee C has attended four interviews by video conferencing, the first of these in 2006. Some had a panel and to quote, "the setup is quite intimidating but I think you get used to it the more you practise". When asked what happens if you do not have video conferencing facilities the answer was:

They booked a room for me ... and paid for it. I just showed up at the room and sat down and the video popped up basically.

Interviewee C

We also explored the fact that some people are intimidated by the use of technology. The general feeling was that the current generation use the technology personally as well as professionally so it is a normal part of our lives, whereas:

For example my parents would probably feel quite intimidated if they were to show up and do an interview via video conference.

Interviewee C

5.4 CONCLUSION

The results indicate that those who were comfortable with interviewing on-line were also more adventurous when it came to exploring the new technologies. This makes sense, as comfort with the prospect of interviewing on-line indicates a level of familiarity and acceptance of the technologies, which is likely to expand into other possible future applications of technology. Regardless of the career choice of an individual in today's environment a certain level of IT skills is almost always going to be expected (Lawson & De Matos, 2000). The use of technology is becoming part of every aspect of life, with the younger generation growing up with the use of cell phones and other mobile technologies.

Over recent years, the use of video conferencing has increased as the technologies have improved to provide better quality in the areas of communication speed. This means that as people use this medium for meetings and other business activities, they will become more accepting of its use in the area of career management. Another factor is that, often, the positions which are attractive and available are in a geographical area different to the one where the prospective employee currently lives. With the globalisation of companies due to merger or expansion, even if a position arises within the company where the employee works there is a strong possibility that it could be in a different geographical location. Businesses now need to compete in the global environment, as do the people who wish to work for them (Wittig-Berman & Beutel, 2009).

This research has shown that acceptance of the newer technology with those who are more confident in the use of the Internet for interviewing are also those who are willing to use the Internet to apply for positions and use the newer technologies.

The students who were more technological showed a significant difference in the ANOVA to those who were not so skilled in the use of technology in the willingness to apply for jobs over the Internet, this implies that the confidence necessary to

actually apply for positions rather than just look is present in those people, as is the willingness to explore the use of the newer tools such as 3D worlds and simulations for a more serious function than as a gaming tool.

If a person has had the experience of working outside New Zealand they are more likely to apply for positions using the Internet, as well as using the Internet for interviewing according to the results from the ANOVA in this research. Having experienced the impact of globalization once, these students appear to be willing to make use of the tools available to embrace it.

When the topic of using something similar to the assessment centre which observes potential employees in a number of different scenarios using actors and role play (Lum, 2005). Interviewee C remarked that she had heard of similar things taking place online but as they were used to test peoples problem solving abilities:

> *Unless you were able to monitor someone over the Internet to see that process happening. I'm not sure how useful it would be.*
>
> Interviewee C

The time when this could be achieved is here, using the high speed connections available and video and sound capabilities already freely available. Using the Simulation and 3D world tools could also mimic the workplace environment as long as there was enough processing power and fast enough connection to enable a realistic real time interaction.

Overall, there was nothing in these results which indicate that the Internet could not be used as an effective tool for career management from the point of view of the employee. The only criteria which would affect the use of the Internet would be lack of access to a reasonable connection to the Internet, and the technologies necessary to enable the use of it. The sample used in this research was in an environment where there were no such barriers.

The results contained within this chapter indicate that there is beginning to be a growing acceptance of the use of the Internet for career management from the perspective of the employee. The next chapter will explore the current level of acceptance from the perspective of the employer.

CHAPTER 6

EMPLOYER INPUT

The world judge of men by their ability in their profession, and we judge of ourselves by the same test: for it is on that on which our success in life depends.

-*William Hazlitt*

6.1 INTRODUCTION

Employers are no longer restricted to the prospective employees within their local geographical area. The Internet allows their search to widen to other districts and countries. The options for selecting suitable employees are varied, often prospective employees spend hours, maybe even days sitting tests and interacting with current employees. Phone interviews used to be the main option for distant applicants to allow the two sides to discuss crucial aspects of the job. Another alternative was video conferencing so that each side could see the other. Technology has progressed to the point where a combination of the tools available could enhance this experience by the use of voice, video and online interaction.

In order to assess how widespread the use of technology is, and to ascertain the employer's point of view, a number of employers were interviewed. These interviews were conducted in person, with people who were at least partially responsible for employing staff, using the questions in the following section as a guide. Most of the interviews were recorded with the permission of all parties. A cross section of types of businesses was used including both large and small firms who were a mixture of technology focused and non technology focused.

All the employer interviews were recorded, with the exception of one where contact was made with the person on a train and took the form of an informal conversation rather than a formal interview. This person gave her contact details where details could be confirmed and notes were made at the time, as she was the Head of Human

Resources in a major bank in the UK, the opportunity was too good to miss. The notes made after this discussion were then sent to her via email for confirmation.

6.2 METHOD

Employers approach the recruitment of staff in what seems to be totally different ways, but in actual fact the aim is the same in all cases, to obtain the most suitable candidate for the available position. The onset of the globalisation of both businesses and prospective candidates has had a profound influence on the pool of candidates available. In order to explore the impact of these phenomena, as well as to gather information about how the technologies are used from the employer's perspective, a number of interviews were undertaken. Interviews were chosen as they provide a more in-depth view than the questionnaires, which were used as the primary tool in the previous chapter, and considered the employee point of view. The pool of potential employers was also smaller which made the interview a more suitable tool. The results from these interviews were of a qualitative nature rather than quantitative. This aligns well with the statement:

> Instead of drawing from a large, representative sample of an entire population of interest, qualitative researchers seek to acquire in-depth and intimate information about a smaller group of persons (Ambert, 1995, p. 880).

Another reason for using interviews is to enhance the validity of the research findings by using multiple methods and data sources giving triangulation to the study (Mathison, 1988).

The people who were interviewed were from a cross section of the types of business as well as their sizes. There was a Project Manager from a large IT multinational firm, an Operations Director from a small IT firm, an owner of a small non-IT firm in England, a Human Resource Manager from a large banking group also based in the United Kingdom and a Group Manager from a small event firm.

The questions asked are listed in Table 6.1. Most of the interviews were recorded. In the cases where this was not possible, the notes taken were sent to the participants to check for validity.

Table 6.1

Description of Areas of Questioning in the Interviews.

Areas	Questions
General	Do you do any of your business online? I.e. selling/ purchasing etc? If so what?
	Do you have a specialist IT person/dept?
	Do you have video conferencing facilities?
Advertising	Do you use an agency for recruitment?
	Do you advertise online for recruitment? If so where? How?
Recruitment	Do you accept electronic submission of applications for jobs? E.g. CV's, Application forms
	Would you consider applicants from say another country?
	Do you , or your agency administer tests online
Interviews	How would you interview? Phone, Teleconference, Video Conference
	If you use any of the above would you still expect to meet the potential employee in person before making a final decision?
Developments	(explore possible uses of)
	Remote access
	3D worlds
	Simulations

The first group of questions was to enable the interviewer to find out about the makeup of the company, including the level of technical expertise and equipment, which would allow them to make use of technology for career management.

The remainder of the questions were aimed at exploring the current level of the use of technology for the purposes of recruitment, with the exception of the last group of questions regarding developments, which was more of a discussion to try to assess their openness to the use of newer tools for this purpose in the future.

The questions listed were used as a guide, with further discussion and supplementary questions added where appropriate to gain as much information as possible.

6.3 RESULTS

The transcripts of the interviews together with the notes from the train conversation were imported into NVivo for analysis. These were coded to allow the answers to the questions above to be retrieved.

All of the firms had a presence online, with the larger firms having a specialised IT department. The way in which video conferencing was used varied between the firms. The small IT firm said it did not use video conferencing as such because:

> *We've tried in the past and it's always been a trouble with bandwidth. The systems are so annoying to work with that we find that it's more trouble than they're worth.*
>
> Interviewee G

While the opposite view came from the large IT firm who use a video conference room:

> *I have done interviews of people on the video-conferencing. The system we have is very good, the sound quality is instant, there's no delay on the time, you see the person on a big wide screen, so it's a pretty good way to do it.*
>
> Interviewee E

This shows that there are still a wide number of ways in which video conferencing is used. The small firm actually uses Skype to talk to its overseas customers and say they will convert to video conferencing when it becomes more reliable and cheaper.

As for the use of recruitment agencies, every one of the firms interviewed either used them as their main avenue for recruitment or as a way to supplement their recruitment. For example, if they cannot recruit within their organisation or from their website they use agencies. The rationale for this was given by one of the smaller firms as:

> *That's essentially why we use an agency. We didn't for a while and so much time goes into separating them out.*
>
> Interviewee G

Clearly, it takes a lot of time to go through all the applicants and filter out the possible suitable employees. As for where the jobs are advertised, in the larger firms with a Human Resource (HR) department, they usually advertise on the HR part of their website, whereas smaller firms, who do not have enough staff to support a separate HR department, rely on agencies a lot more. Within New Zealand, SEEK (Seek, 2011b) was mentioned as a site where both the agencies and individual firms advertise for employees. The reason for this was indicated as follows: if the candidates look on SEEK then they obviously know how to use a computer.

When asked about how they use the technology for recruitment, all the firms I interviewed would accept CVs online, with the larger ones also having their own application forms. In the larger firms, either the HR department or the agency employed by them, administered formal tests. The small IT firm gave the applicant a task to perform, after which they were interviewed again to check that they did know what they were doing and had not got someone else to do the task, the explanation of this interviewee was:

> *If you answered this question like this, we ask why they went that way. The questions are not 'yes-no' kind of questions. They are checking their understanding of html, checking their understanding of things they say they know.*
>
> Interviewee G

The larger IT firm approached the problem of validity differently. They were a multinational firm so relied on their offices in other parts of the country, or even the world to overcome the problem of whether the applicant did the task or not. The potential employee would go to their nearest office and access their system under the supervision of security.

> *You would interview for compatibility first and then you would set them up on a system. It would have to be at an ... office. So you'd have to have a ... connector, a person at the other end to say that he's got this person to a room and knows who they are and is going to watch them.*
>
> Interviewee E

One of the other firms gave the applicant a problem after which they had to present the solution to a panel and answer questions.

> *"develop an online strategy for the ..... . During the interview, half of it is to introduce the strategy to the panel and explain to them what they had chosen and why".*

Interviewee C

Most of the firms said they would consider potential employees from another country, although in the majority of cases it depended very much on the position, as they did not consider it worthwhile to bring someone in from overseas for a lower level position:

> *You'll probably only hire someone offshore for a pretty high job. You wouldn't hire a programmer because you could just find a suitable local programmer. A risk manager or a diploma manager maybe*

Interviewee G

The general feeling was that if a suitable person could be found locally then hire them, if not look further afield either within New Zealand or overseas.

At the interview stage of the recruitment process, the usual face-to-face interviews were still the most preferred method when there was the opportunity to do this. From conversations within the IT industry within New Zealand, there is a practice that they invite a potential employee to spend an extended amount of time within the workplace. This is to ensure that the person will assimilate well into the team, and often involves asking them to carry out tasks and observe their interaction under different aspects of the work flow. Phone interviews are also a standard method of first contact with a person, if that goes well, then employers tend to go onto another method, which is usually either video conferencing or face to face. The size of the organisation and the proximity of the place where the person currently lives seem to have some bearing as to which of these alternatives are the next stage in the recruitment process:

> *You need someone who specialises in ... transport for example. You're going to have someone in Canada, someone in the UK, someone in Australia, someone*

in Dubai…if they all have the right skills and experiences, there's no way you're going to fly them into New Zealand for the interview process.

Interviewee C

The quality of the video conferencing facilities is also a factor. There were two opposing views on this within the firms interviewed. The smaller company did not use video conference facilities, but instead used Skype (Skype, 2011) due to the poor quality of the facilities they currently have, while the large multinational company used these facilities extensively for a number of tasks within their business operations. This difference could be due to the fact that the larger company has offices all over the world and does a lot of their business collaboratively with other countries, they actually have a way of doing business called "bestshoring" where they use countries where wages and overheads are lower for certain types of work, and also it makes use of the different time zones, so there is no downtime. This means that they have probably spent a lot of time and money on the facilities necessary to communicate over large distances. The evolution of the Internet to enable the support of such things as video conferencing has also had an influence on its use for these activities; the cost of the equipment has come down while at the same time the Internet speed has increased.

The discussion about the use of 3D worlds and simulation within the interviews was very positive but with a few reservations. Interviewee E commented on not being that sophisticated when the option of simulating tasks using role play was discussed, he also commented on the cost factor. This was from the person from the large multinational IT company. Other factors which seem to be barriers are time and the number of people involved for each scenario with Interviewee G from a small IT company saying:

I think it would take too much time. One of the things is that you often have five or six people to interview or test, and that's a time demand on your employees. To be doing a 3D world simulation you'd need someone to be there when you're interacting with them.

Interviewee G

The general feeling from this person was that if it was felt that the position warranted the time and resources to be spent, then it would definitely be a possibility. Another comment was:

> *Possibly in the future if it makes recruitment easier.*
>
> Interviewee L

This came from a large non-IT firm HR manager indicating that if the use of the modern technology in this way was presented in a way which was easy to use, then uptake of it could progress at a reasonable rate. One of the small non-IT company interviewees did not see the point of using this technology if the position was not IT related stating:

> *…and I think it depends on the environment you're encouraging people to work within. If the use of IT within your job is not relevant, then why would you assess on those criteria during a job interview? For convenience sake it definitely has benefits, but you have to sacrifice the benefits of what you get face-to-face when you use the technology. So it depends on what role you're recruiting for.*
>
> Interviewee C

The limitation of using the Internet for recruitment, due to the fact that not all parts of all countries have access to a suitable Internet connection to facilitate the use of even the more basic tools, was also discussed. This in effect limits the pool of prospective employees, if the expectation is that a lot of the recruitment procedures are to be done online. There was however one aspect of this problem which was highlighted very appropriately by the person from the large multinational IT company:

> *Well, my business is an IT business, so if they're not online, it's an indicator isn't it!*
>
> Interviewee E

The subject of accommodating the different cultural backgrounds which occur between the countries around the world was also discussed, with the major IT

company representative commenting that as they take advantage of "follow the sun" way of working, which is that they move their operation around the world at various times of the day, allowing for a 24-hour operation without the need of people working throughout the night:

> *There may be cultural issues with a Western person operating here with an Indian team over there…there may be issues that come up.*
>
> Interviewee E

This is because India is one country which has a good reputation within IT and is at the other side of the world. The solution they adopted to overcome the cultural differences was to:

> *get an Indian person to come here, and that acts as the direct interface, and then they work with their folks at home so they know how to*
>
> Interviewee E

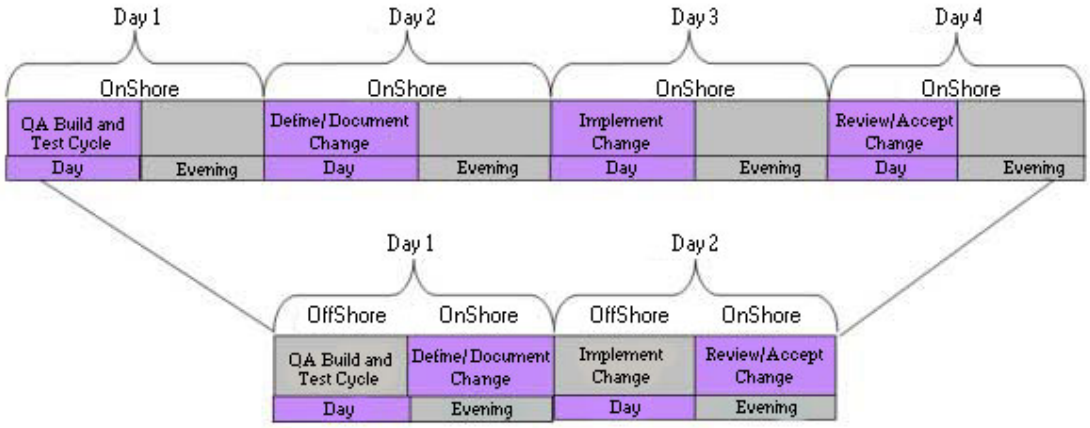

*Figure 6.1.*Business Model for Follow the Sun (RSB, 2011).

Figure 6.1 shows a model used within businesses who use international operations to save time. The top line is the traditional way, where work is only completed in one time zone (onshore) whereas the bottom line indicates how the time taken to complete a job can be halved using a combination of time zones. This method of

working is made possible by utilising the Internet with the communication systems within it to allow the data and other relevant information to be transferred at a rate which makes this viable.

6.4 INTERPRETATION

The discussions with employers seem to indicate that in some areas employers are happy to use the technology to expand their geographic search for potential employees. It allows access to an international market for candidates, and if an apparently suitable applicant is from a distant geographical area, it allows first interviews to be conducted without the expense of travel. The general opinion is still that before a person is employed by a firm a visit to the place of work is arranged for that person. This could take place at either the actual place of work where the employee will be based or, in the case of larger firms, in the office closest to the current geographical location of the prospective employee. There is some doubt that this will ever change for all employers or employees unless the initial idea of working from a distance is adopted. Working from home was one of the visions which the onset of the Internet was set to envelop, to help in travel and family issues. So far it has not been embraced by many firms, although one of the companies which were interviewed as part of previous research was a Web Development firm without a physical office and where all staff worked from home with any meetings held in a room specifically rented for that purpose, when and if required (Lloyd, 2003).

There are a multitude of Internet sites which encourage the use of the Internet for career management. One of the more common sites within New Zealand is SEEK which advertises jobs within New Zealand, Australia and the United Kingdom

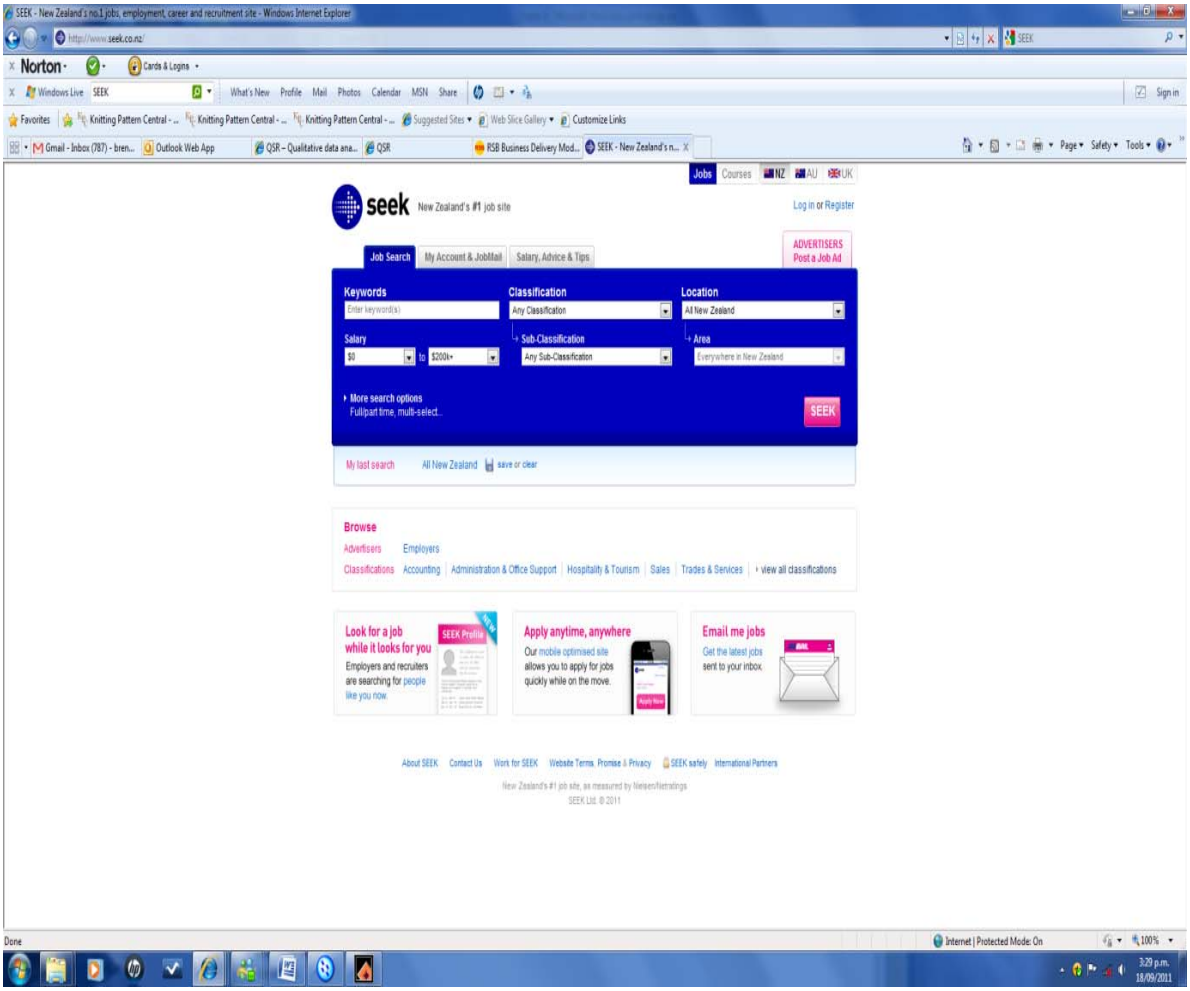

Figure 6.2. SEEK screen (Seek, 2011a).

Figure 6.2 shows a screen shot of the entry page for SEEK. This site allows filters for geographical location, area of expertise and type of employment, such as part time, full time or contract. It also allows the employee to develop a profile, which is then used to enable email alerts to be sent to them if a suitable position is added to the site.

Career decisions are being made with the prospect of overseas assignments having an influence, allowing prospective employees the chance to work overseas as a consideration when applying (Wittig-Berman & Beutel, 2009).

From the employer perspective, the corporate web sites are crucial in attracting the right person to apply for any vacant positions. This means that corporate career

websites are among the most widely deployed part of the on-line business applications (Lee, Dehkordi-Vakil, & Kaul, 2008). This has encouraged career counsellors to also embrace the current technologies with the majority of the educational professionals within this area (83%) open to using the Internet as a tool for their business (Lewis & Coursol, 2007). However, there is still a fear that the upsurge of the use of this medium will decrease the need for career councellors (Kirk, 2000).

From the research undertaken in this study, the general consensus seems to be that the use of the Internet is becoming the norm in the modern age for the initial stages within the recruitment process. The use of the more advanced tools such as simulation and 3D worlds, while nice to have, could prove too expensive and time consuming, for all but the more specialised, or senior of positions. This however could change in the future, just as the use of the personal computer has altered the way computers are used, because of the decrease in cost and increase in power and accessibility. So could the future developments of modern tools increase their potential use for a number of areas, including career management? In the future, a position will not only be advertised and interviewed for on-line but other types of evaluation would be undertaken. The suitability of the applicant could be tested on-line by some form of simulation of the necessary tasks for the position. This could be undertaken in real time within a virtual environment.

The younger generation already live a lot of their social lives within virtual spaces such as Facebook, You-tube and Twitter, they appear to have no problems with the use of the technologies for these activities. It is therefore not inconceivable that the transfer of these skills could be made to their choice of how to assess career options, and advance their aspirations using the new technologies.

From personal experiences within the IT industry, more firms are taking advantage of the ‘follow the sun’ way of working. As some businesses are expected to provide 24/7 support, this is becoming a viable alternative to shift work. ‘Bestshoring’, using cheaper overseas labour for certain tasks is also becoming more popular. How often have you phoned a call centre and been answered by a person living and working in another country?

Usually, the employers are primarily concerned with the financial benefits of using these tools. If it can be shown, therefore, that the benefits outweigh the costs of the uptake of such tools, they will surely embrace the technologies too. This is likely to occur, as it did with the onset of the digital age.

6.5 SUMMARY

The results from these interviews confirm the indications from the exploration of the current literature given within Chapters Two and Three. The results from the potential employees also show that there is openness to the use of the current technology for career management. The perceptions of all parties is that technology is here to stay, and the uptake by the current generation of job seekers within other aspects of their life indicates that it makes sense to use it for the purpose of career management.

The barriers to adopting the leading edge tools, such as virtual environments, were in the areas of cost, both in time and money, not in the influence they may have on the perceptions of the individuals involved. As these costs decrease, they will become less of a barrier. The initial cost of setting up these systems will always be present, but the cost of running them will decrease as people become more familiar with the concepts.

The sample size of the employers interviewed was relatively small due to access and time constraints. However, the participants were chosen to provide a cross section of small and large companies, as well as IT and non-IT as it was felt that IT companies would be more familiar with the technologies.

The final chapter expands on the significance of this study, as well as offering recommendations and possible areas for future study.

CHAPTER 7

CONCLUSIONS AND IMPLICATIONS

It's tough to make predictions, especially about the future.
-Yogi Berra

7.1 INTRODUCTION

This research was undertaken to examine the possibility of using the Internet, together with the current tools available in the area of career management. While some tools such as chat, video conferencing and the taking of tests online is already widely accepted, the environments which are used by the younger generation for such things as gaming are currently not.

In order to focus the area of research more clearly, three research questions were developed which were:

1. How do the different forms of interaction between students, employees and employers affect the way newer technologies are currently perceived?
2. Explore barriers to using the newer technologies, for example, virtual environments?
3. Explore tools or methods which will help make these technologies more acceptable?

The first research question was aimed at looking at the perceptions which currently exist between the various stakeholders. The technologies which were currently available and their current use were highlighted. This was examined from the student and potential employee focus by analysing the responses to the questionnaire distributed to the students from a variety of courses within a polytechnic in New Zealand. The more in-depth interviews which were conducted with the employers explored their perceptions.

The last two sections of the questionnaire which were the Likert scale answers around the acceptability of virtual environments, and the more open-ended general

questions, together with the interviews, specifically addressed the area highlighted within the second research question. The aim was to assess any barriers to the use of the newer technologies.

The third research question was more open to allow for lateral thinking if possible around the first two questions, and so was an opportunity for discussion with all of the stakeholders. This was mainly in the form of interviews with both employees and employers, as well as open-ended questions within the questionnaire. It also allowed for the inclusion of any current progress in the area of newer technologies and methodologies.

In all cases, the participant's familiarity with computers, the Internet and other technologies was assessed as it was felt that this would influence later responses. This was achieved by analysing the responses to the second section of the questionnaire, which asked about their current technology usage, and within the interviews, in the first few questions aimed at finding out their personal experiences as well as the policies within the company.

7.2 ANSWERS TO RESEARCH QUESTIONS

The results of the surveys were analysed using SPSS for the quantitative data and NVivo for the qualitative. This mix of methods was used to enable triangulation in order to help validate the findings in each area (Mathison, 1988). The views of one group of participants could be supported by the other. By the use of a combination of questionnaires, where there was easy access to a relatively large number of possible participants, together with a selection of interviews across a cross section of interested parties, led to a acceptable and valid result.

In the area of career management, the perception of the interactions between employees and employers is often different because of the different roles. There are a number of factors which play a part in these interactions; familiarity with the tools which are being used is one of these. The questions around the current use of the Internet and computers within the survey were directly linked to this factor.

Correlations were used to assess if the familiarity with the equipment and the Internet had any influence on their use in the area of career management.

The results showed a strong positive correlation between the level of computer use and the more critical act of interviewing online. There was a weaker but still positive correlation between computer use and the use of the future tools such as 3D worlds and simulations for the purpose of career management. There were also strong positive correlations between evaluating, applying for jobs and interviewing online. This indicates that those people who look for jobs online are also likely to complete the process online by applying for jobs and interviewing using some form of online communication tool. To quote one of the comments from an employee interview:

> *Whereas, for example, my parents would probably feel quite intimidated if they were to show up and do an interview via video conference. A, probably because they're not sure how to use the technology but B, because they're not used to that type of interaction. For people of my generation, it's just a normal tool that we use.*
>
> Interviewee C

This highlighted another factor involved with people's perceptions of each other, that of age. The survey provided demographic data on three age groups: those under 25 who had most probably grown up with the use of the Internet and technology; those over the age of 40 who were at the other end of the spectrum and came into contact with the newer technologies later in life, after they had left school; and those in the middle who fell into the age group where there was a large variation in their probable contact with the technologies. In order to examine if there was any differences between the age groups, an analysis of variance was performed for each of the sections within the questionnaire. The result of this was that there was no difference. There were opposite sides of the same view given by students when asked what the advantages were of using the Internet, the comment "no face-to-face contact" was given as a positive and a negative remark. This indicates that perception is very important. Those participants who described it as a positive were less confident that initial contact was better if they could not be seen, or in some cases heard. The opposite view from those participants who gave it as a negative, also qualified their

remarks by indicating that non-verbal communication could not be transmitted or received indicating that this was to their disadvantage.

The cross section of potential employers who were interviewed gave predictably varied answers to their current usage of the technology, with the IT firms more likely to use it for all aspects in the process of hiring staff. In all cases, however, positions were advertised using the Internet and applications accepted. There was, however, a belief that depending on the position, personal contact was a necessity before hiring, stemming from the belief that the best way to assess a person's suitability to assimilate into a team was to introduce them to the team in person. The person from a major IT firm however seemed to think that the technology has reached the stage where this is not necessarily so, saying:

> *It's close! It's not exactly the same, but with the quality of the system we have, you can read body language and you can hear voice in what they say and how they say it. So the sound quality is perfect.*
>
> Interviewee E

This addresses the second research question regarding the tools or methods which help in the accuracy of people's perceptions. As far as the employers are concerned, the amount of money and time available to invest in these tools has an influence on their current suitability to address the differences between technological contact with that of face to face. The smaller companies with less disposable income to spend in this area were the ones who criticised the performance the most. From the employee perspective, the ability to interact online seemed to enhance their perception that they could obtain a position, due to the fact that the opportunities were greater. As for the use of technology to process their application, the fact that most of the people questioned were familiar with the use of technology meant they were not intimidated by its use. This was evident in a comment from an interview with a prospective employee:

> *But I don't think knowing that there would be a video-conference interview would put me off a job, if that's what you're asking.*
>
> Interviewee C

The third and last of the research questions, which focused more on the newer tools, for example, virtual environments, was explored both within the questionnaires and the interviews. Within the questionnaire there was a section on the participants' acceptance of these technologies and their attitudes to them. There was a strong positive correlation between the use of the Internet for interviewing and the acceptance of these newer tools, which indicated that the more adventurous of the participants were more open. All of the employers had the attitude, that if it helped with the recruitment process they would adopt it, although cost was a factor in some cases. This cost included time, money and personnel.

> *I think it would take too much time. One of the things is that you often have five or six people to interview or test, and that's a time demand on your employees. To be doing a 3D world simulation you'd need someone to be there when you're interacting with them.*
>
> Interviewee G

The one advantage, which was commented on by both potential employees, and employers was that by using a virtual environment it would allow assessment of interactions with clients and colleagues to be assessed. This assessment would be in a limited way using the tools which are currently available, but these tools are almost certain to improve in the near future. This was very much a path to be considered in the future, when the technology and tools are better developed. The question then remains at what point will the uptake of these concepts become commonplace. This will probably differ depending on the needs of the individual businesses.

7.3 RECOMMENDATIONS

There seems to be an overall openness to the use of the Internet as a tool within career management. The possible differences in perception, although they still exist, seem to be diminishing as the uptake of the technologies becomes more mainstream. Career management consultants, while a little wary of the use of technology due to the perception that it will make their position within the industry less necessary, have begun to accept its inevitability and are now looking for ways to adapt their position

to encompass this. The literature examined in Chapter Two highlighted both sides of this discussion in detail (Kirk, 2000).

As with all new inventions, the full impact and possibilities connected with its use will take time to come to fruition, however this research has shown that there is a feeling that any perceived barriers are not insurmountable. The nature of the technologies discussed within Chapter Three in particular indicates that history shows that they are likely to develop at a rapid pace, and not necessarily in the directions expected. While progress can still be made with the use of the current tools in the area of career management, the newer more experimental tools, which are currently being researched, hold a far more exciting future in this area. For example, the use of a Corporate Career centre expounded by Lee (2007b) could be used for either an individual corporation, or an industry. The general industry version could then be accessed by multiple smaller businesses with similar needs within that industry.

One possibility would be to take the philosophy behind Assessment Centres discussed by Alvin Lum (2005) and develop the current centre idea, which is in the form of a purpose-built physical centre where actors, potential employees and assessors gather, into a centre which could be accessed by numerous other parties on the Internet. Some of the technologies to do this already exist in the form of web cameras and video-conferencing facilities. This could also be expanded into such things as the manufacturing environment, which sometimes uses simulation tools to train and test future employees. Most of the virtual environments which currently exist are either developed for a specific purpose or are part of easily accessed worlds, for example Second Life (Linden, 2011). There are also Open Source tools which allow people to host their own 3D worlds. One of these is Open Wonderland (Wikipedia, 2011). These could be used by individual companies to set up their own world showing all aspects of their business, where people can visit and even apply for positions, and display their skills. This could include communication with the managers and colleagues with whom they would potentially be working.

There is still a lot of research to do to make this dream a reality with validity and security of information still being a problem. However, firms are currently changing the way they use technology to do business and are moving away from buying all

their own software and hardware. Instead, they are using specialised server "farms" run by a third party where you only pay for what you use. This makes access to the most up-to-date technology and software easier without the need for specialised staff to maintain it. Also it is more flexible by not having to pay for say, maximum storage all year round, when you only need it for a few months, or even weeks.

7.4 POSSIBLE LIMITATIONS OF RESEARCH

This study provided an examination of the perceptions of both sides of the employment process by surveying students who would be potential employees, if they were not already, and interviewing people who were part of the recruitment process within a number of different companies. While attempts were made to ensure that a cross section of each of the roles was included, there were some limitations, primarily due to sample size and ease of access.

The surveys were given to students within a particular institute, the very fact that the participants are students indicates that they are trying to further their career prospects and also are involved in study. These two factors could produce a bias when discussing the use of computers, as measured in the survey, as they will more than likely need to use computers as part of their courses. This is a limitation as not all potential employees will be at this stage in their career. There will be people who do not have such easy access to the technology, or who have completed their qualifications and are looking to further their career within their chosen industry, where they are currently employed. The fact that the questionnaires were distributed within one particular institute limits the geographical location for this part of the research.

One of the options for age groups was 25 to 40 which, while not a huge age group in its own right, spans a rather crucial timeframe which includes the introduction of computers into the education system in a number of countries. The development of the World Wide Web also occurred within that timeframe. This means that some of the participants within this age group will have been using computers and the Internet in the school environment and others would have not. This "technology gap" is still occurring as some 12 year olds currently have ipads as part of their classroom

whereas others do not even have computers. The familiarity with the use of technology, when introduced at an early age means that the adversity often experienced by people towards technology is not present. The acceptance of the new tools and the technologies needed to run them become part of everyday life. If however a person has not been exposed to the technologies as part of their early education, there is often a reluctance to adopt their use in new areas of their lives.

The length of time taken to complete this research also meant that due to the speed with which the technologies discussed move, the aspects which were considered to be leading edge at the start of the research are now more common. This could have had some effect on the answers given in both the questionnaires and the interviews.

The size of the samples used in this research is also a limitation. In all, 128 participants answered the questionnaire which, while it produced some interesting statistics would have been better if it were larger when the total population size is considered. The employer interviews were chosen for their diversity, but more would have produced even more diversity.

7.5 SIGNIFICANCE

Every generation brings with it new ideas and a different model of how people interact. New inventions often play a part in this, for example, the development of birth control led to a more liberal era in the 60s. Today's new invention is in the area of technology which allows members of the modern generation to live their lives constantly in contact with whoever they want, anywhere. The way they organise their social lives, work and even protests are influenced by this technology. Why should the process of deciding on and following a career be any different? If career management does not embrace the use of these technologies it will do an injustice to itself. If an employer wants a vibrant, young workforce willing to adapt within the industry, the first step is to show that they, as a business, are willing to adapt and take full advantage of the technological opportunities which present themselves. This research has indicated that the employers are willing to take advantage of the tools and technologies available as long as it does not cost too much. They

acknowledge the advantage of larger pool of potential employees, and the benefits of carrying out the preliminary assessments and interviews online.

The trend is towards video games instead of physical games, although a lot of manufacturers of these are now looking towards including a more physical aspect of these, as it has become evident that lack of exercise produces discernible health problems. These games often take the form of simulating the more traditional physical games such as tennis or running. Why not take these ideas into the area of career management? Currently, the feeling among employers is that it is too expensive, but as history has shown, the cost of technology trends downwards at a rapid pace once there is some uptake of the concepts.

One of the outcomes of this study is to assess the readiness of the market, both from the employee and the employer perspective. Admittedly, the potential employees who took part were either from the younger generation, or the older generation who are making the effort to up skill, but these are the very people who are likely to be trying to further their careers, and so use the services available within career development and management. This research has shown that all of the employers, and almost all of the potential employees who participated, are currently using the Internet to explore opportunities within the area of career management.

The other aspect of the need for such a study as this, is the fact that due to such tools as the World Wide Web and ease of travel, the job market has become global. The pool of potential applicants has grown, as has the opportunities for the employees who can now apply for positions in any geographical location they wish. To keep the cost of recruitment down, in these circumstances, the tools need to be available for both parties to be able to assess the potential of a partnership. Some of the participants were from overseas, and had used the Internet to search for, and gain positions within other countries. The general feeling throughout this study was one of excitement about the opportunities which are now available using the tools and technologies currently available, as well as the potential for the future. There was no resistance within the employers who relished the thought of a greater pool of applicants, and the ability to undertake the initial screening without the cost of travel.

This study has confirmed the informal perception which was present, that the Internet is becoming a vital part of business processes, allowing a greater range of

possibilities in the area of future direction and recruiting the right personnel for the positions necessary to make them possible. This could be achieved by using tools such as simulation, 3D worlds, and environments similar to those experiences within the gaming community

7.6 IMPLICATIONS FOR FUTURE RESEARCH

This research examined the perceptions of the various stakeholders in the area of career management to the technologies and tools available. The literature, and the results obtained during this study have indicated that, on the whole, the use of these technologies and tools enables access to greater choice for both employers and employees. Currently, there are a number of tools available to assist in this process, but they are not integrated, or in a form which is necessarily attractive to the generation of gamers which are emerging.

Research is currently being undertaken to use new hardware, in the form of a combination of a laser gun and camera, to document crime scenes into a 3D environment. This is an indication of possible advances which could benefit the ideas explored in this research and is an area which is currently being explored by undergraduate students. This fact indicates that the current graduates are gaining proficiency with these tools, and so are able and willing to transfer this knowledge into other areas of their lives including career management.

The use of social networking within this area needs to be looked at, some research has been undertaken in this area by De Kay (2009) and Gross (2009) but there are still a lot of people who do not realise the impact of a comment placed on one of these networks can have on their prospect of employment. These sites are open to anyone to access and the general rule is that the individual has to set the settings to hide parts which they do not wish to be open to everyone.

There is an enormous amount of data on the Internet, sifting through this to find the relevant information can be a problem for someone who is unsure of what they are looking for, or are just exploring options. While there has been a lot of research undertaken around search engines, most of this requires that you do, in fact, know

what you are looking for. While there is still a need for career counsellors, their job description has changed to include the use of the technologies; this is an area where more research should be undertaken. The different ways of presenting information to achieve the best and most useful outcome is also an area which needs further research. People react to these varying methods of presentation in a variety of ways depending on their personality and life experience. The method of presentation should be tailored to suit the target audience.

The impact of gaming and the use of technologies in everyday life is another area of possible future research. During this study, it was apparent that there is an acceptance that the use of these technologies was a natural progression into all aspects of our lives. The lack of exercise caused by video games is fairly well documented as a possible bad side effect, hence the introduction of more active ingredients into games consoles. The psychological side effects will probably take longer to manifest themselves but could have an impact of a person's ability to function in some way.

7.7 FINAL COMMENT

The globalisation of the workforce is not going to reverse, so the easier and more complete the process of career management can be made to allow applicants from a distance to apply the better the results. This applies to both the employees and the employers, as the aim is still to match the best person with the best job. There are still parts of the world which do not have the facilities which are suitable for this process, but the feeling is that eventually that will be remedied. The current generation tends to live a lot of its life on the Internet both within education and for social activities. Time will tell whether this is a good thing or not, and that aspect is a topic for further research, but the fact remains that this is the current situation and so, it makes sense to engage them in the search for their careers in a medium with which they already are comfortable and are embracing fully. As for the rest of us, we have to adapt to the use of technology in the workplace in order to progress in our own careers, but we do have the knowledge of the factors which are necessary to form a successful relationship within the working environment. Hence, we have to be part of the future development within this area in order to make it work.

As the perception which an individual has of a projection of themselves as well as a particular environment plays a vital part in obtaining a suitable career, it is important for all stakeholders to understand that this is the case. All players need to come to the same conclusion as to the requirements of the position for the relationships to work. Hence, these perceptions need to be compatible with each other.

This thesis has given me the knowledge necessary to explore further the areas of newer technologies. As part of my role as project co-ordinator of industry capstone projects, I have been able to find more projects which are in the area of finding new solutions to common problems. The research which I have undertaken in order to complete this thesis has expanded my horizons. One of the projects is involved with the research highlighted in the above section, using a laser technology to advance the way crime scene material can be represented to a jury.

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APPENDIX A

RESEARCH AGREEMENT HANDOUT

Overview of Research

I am currently enrolled in a PhD at the Science and Mathematics Education Centre (SMEC) at Curtin University of Technology in Perth. The title of my research is "The Use of Internet Applications for the dissemination of knowledge for career management". Whitireia Community Polytechnic has approved my research and has given ethical approval to use students in my study.

The purpose of my study is to investigate how the Internet is currently being used to facilitate career management, and if this can be enhanced with the use of the more modern tools available. I wish to survey students from various backgrounds to ascertain their current involvement in this medium and their openness to new initiatives in this field.

As with any research the privacy and confidentiality of the participants are paramount, and I will ensure that no part of my study will in any way jeopardise those rights. All data collected will be treated as confidential and will be used for statistical purposes only. The results will in no way identify any individual participant.

If you have any queries, or wish to discuss further please contact me on:

Brenda Lloyd

Room E214

FBIT

Whitireia Community Polytechnic

Ph 2373103 Ext 3886

Email Brenda.lloyd@whitireia.ac.nz

Thank you for your cooperation.

APPENDIX B

INTERVIEW QUESTIONS

Guiding Questions for Client Interview

General

Do you do any of your business online? I.e. selling/ purchasing etc?

If so what?

Do you have a specialist IT person/dept?

Do you have video conferencing facilities?

Advertising

Do you use an agency for recruitment?

Do you advertise online for recruitment?

If so where? How?

Recruitment

Do you accept electronic submission of applications for jobs?

CV's

Application forms

Would you consider applicants from say another country?

Do you, or your agency administer tests online

Psychological

Career evaluation

IQ/aptitude

Job specific

Interviews

How would you interview?

Phone

Teleconference

Video Conference

If you use any of the above would you still expect to meet the potential employee in person before making a final decision?

Developments (explore possible uses of)

Remote access

3D worlds

Simulations

Guiding Questions for Employee Interview

General

Do you have training in IT?

Do you use video conferencing facilities?

Advertising

Do you use an agency for recruitment?

Where do you look for positions?

Recruitment

Do you participate in electronic submission of applications for jobs?

- CV's
- Application forms

Would you consider applying to another country?

Do you, or your agency do tests online

- Psychological
- Career evaluation
- IQ/aptitude
- Job specific

Interviews

How would you interview?

- Phone
- Teleconference
- Video Conference

If you use any of the above would you still expect to meet the potential employer in person before making a final decision?

Developments (explore possible uses of)

Remote access

3D worlds

Simulations

APPENDIX C

WEB-BASED CAREER MANAGEMENT INSTRUMENT

Directions for respondents

This survey contains three sections.

Section one, personal details, contains 5 questions and is used for statistical purposes. Participants **cannot be identified** in any way.

At no stage will this information be used for any other purpose. Your answers to the questions will remain confidential and you *cannot be identified* in any way.

Section two, computer use, contains 7 statements asking how often you use certain aspects of a computer system.

Section three, web-based career management, contains statements related to your use, or potential use of the web for career management.

There are no 'right' or 'wrong' answers. Your opinion is what is wanted.

Be sure to give an answer for all items. If you change your mind about an answer, just cross it out and circle another.

Some items in this questionnaire are fairly similar to other items. Don't worry about this. Simply complete all items.

Thank you very much for you cooperation and time.

Personal Details

The personal information requested in this section of the survey is for **statistical purposes only.**

For each statement, please **circle** the answer which best represents your answer.

1. Gender	Male	Female	
2. Age Group	Under 25	25 – 40	Over 40
3. Nationality	NZ	Other	
4. Have you ever worked outside NZ?	Yes	No	
5. Have you family in another country?	Yes	No	

Computer Use

Indicate the extent to which you use each of the following

For each statement, please **circle** the answer which best represents your answer.

	Daily	Once a week	Once a month	Less than once a month	Never
6. Home computer	5	4	3	2	1
7. The Internet	5	4	3	2	1
8. Email	5	4	3	2	1
9. Text chat	5	4	3	2	1
10. A web cam	5	4	3	2	1
11. A voice chat/IP phone	5	4	3	2	1
12. Video conferencing	5	4	3	2	1

Web-Based Career Management

For each statement, please **circle** the answer which best represents your answer.

Think how **likely** you are to use the Internet for each of the situations described.

Draw a circle around

1 If you are **very unlikely** to do the scenario
2 If you are **unlikely** to do the scenario
3 If you are **neutral** or impartial as to whether you would do the scenario
4 If you are **likely** to do the scenario
5 If you are **very likely** to do the scenario

There are no 'right' or wrong answers. Your opinion is what is wanted

Career Evaluation

	Very likely	Likely	Neutral	Unlikely	Very unlikely
13. Fill in a personality test on the Internet	5	4	3	2	1
14. Fill in a employment evaluation test on the Internet	5	4	3	2	1
15. Fill in any psychological test on the Internet	5	4	3	2	1
16. Use a career evaluation site on the Internet	5	4	3	2	1
17. Take the results of career evaluation from an Internet site seriously	5	4	3	2	1
18. Be prepared to apply for jobs as recommended from an Internet career management site	5	4	3	2	1
19. Use the Internet to search for jobs	5	4	3	2	1

Applying for jobs

	Very likely	Likely	Neutral	Unlikely	Very unlikely
20. Apply for a job on the Internet	5	4	3	2	1
21. Apply for a job in another area within NZ	5	4	3	2	1
22. Apply for a job in another country	5	4	3	2	1
23. Send a CV over the Internet using email.	5	4	3	2	1
24. Submit a CV form over the Internet	5	4	3	2	1
25. Fill in an application form over the Internet	5	4	3	2	1
26. Fill in an application form in a word processor and send it using email	5	4	3	2	1

Interviewing

	Very likely	Likely	Neutral	Unlikely	Very unlikely
27. Feel comfortable with a telephone interview	5	4	3	2	1
28. Feel comfortable with a video conference interview	5	4	3	2	1
29. Feel comfortable using text chat for an interview	5	4	3	2	1
30. Be prepared to complete tasks as requested and send results over the Internet	5	4	3	2	1
31. Be prepared to complete tasks as requested within a video conference environment	5	4	3	2	1
32. Be prepared to take part in role play using the Internet	5	4	3	2	1
33. Be prepared to take part in role play using the video conferencing	5	4	3	2	1

Future Technology

	Very likely	Likely	Neutral	Unlikely	Very unlikely
34. Feel comfortable using a 3D environment (*) to help me gain employment	5	4	3	2	1
35. Feel comfortable using a 3D environment(*) to help me learn new skills	5	4	3	2	1
36. Feel comfortable using a 3D environment(*) to show my skills	5	4	3	2	1
37. Feel comfortable using a simulated environment(**) to help me gain employment	5	4	3	2	1
38. Feel comfortable using a simulated environment(**) to help me learn new skills	5	4	3	2	1
39. Feel comfortable using a simulated environment(**)to show my skills	5	4	3	2	1
40. Be prepared to take part in role play using a simulated environment(**)	5	4	3	2	1

* 3D environment – a computer generated world where players can enter and participate in tasks, life , game etc., e.g. Second Life.

****** Simulated environment – an interactive environment where tasks are performed and monitored in as close to a real life situation as possible e.g. flight simulator.

Open Ended Comments

Please write your responses in the spaces provided below. Your comments could provide an explanation of previous responses and/or additional information you may wish to provide.

1. Give reasons for using the Internet as a tool for career management?

_____

_____

_____

_____

2. What are the advantages of using the Internet in career management?

_____

_____

_____

_____

3. What are the disadvantages of using the Internet in career management?

_____

_____

_____

_____

4. Are there any suggestions as to how else the Internet could be used in career management?

_____

_____

_____

_____

5. I would be interested in a follow-up interview.

   ○ No

   ○ Yes I can be contacted on: Phone: (___)_____

   Email: _____

APPENDIX D

CODED DATA

Survey results Questions 6 to 40

No	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
T1	5	5	5	5	5	5	5	5	4	4	4	4	5	4	4	4	3	5	5	4	5	4	5	4	5	4	4	5	5	5	5	4	4	4	
T2	5	5	5	1	1	1	1	4	4	4	4	2	5	5	5	5	5	5	5	5	5	2	1	1	5	1	1	1	1	1	1	1	1	1	
T3	5	5	5	5	4	4	3	5	4	3	2	4	3	4	5	4	1	5	5	5	5	3	4	3	4	4	3	4	5	5	5	4	5	4	
T4	5	5	5	5	2	1	1	5	5	5	5	5	4	4	5	2	2	5	5	5	5	4	4	1	5	5	1	1	1	5	2	2	5	4	
T5	5	5	5	5	2	5	2	3	4	3	3	2	4	5	5	5	5	5	4	5	5	4	4	3	4	3	4	4	5	5	5	5	4	4	
T6	5	5	5	5	4	1	1	3	4	3	4	3	3	5	5	5	5	5	5	4	4	3	3	3	3	2	2	2	3	2	2	4	4	4	2
T7	4	5	5	5	1	1	1	4	4	4	4	4	4	5	5	3	4	5	5	5	5	4	2	5	5	2	1	1	3	3	3	3	3	3	3
T8	5	5	5	5	5	5	4	3	3	3	4	4	3	3	4	4	4	5	4	3	3	4	4	4	5	5	5	5	5	5	5	4	4	5	5
T9	5	5	5	5	1	1	1	1	2	1	2	1	3	5	5	3	5	5	5	5	5	4	1	1	5	2	1	1	3	3	3	3	3	3	3
T10	5	5	5	5	3	5	3	4	4	4	4	4	3	5	5	5	5	5	5	5	5	5	5	3	5	5	5	5	2	2	2	4	4	4	2
T11	5	5	5	5	2	3	1	3	2	3	2	2	2	5	5	2	2	5	5	5	5	5	2	5	3	2	2	2	2	3	5	5	5	5	3
T12	5	5	4	5	1	1	1	2	2	2	3	3	3	5	5	4	5	4	4	5	5	4	3	4	4	3	3	3	4	3	3	3	3	3	3
T13	4	5	2	1	2	2	1	1	5	5	5	3	5	5	5	5	4	4	4	4		3	4	4	4	2	4	4	4	4	5	4	4	5	4
T14	5	5	4	3	4	2	1	2	3	2	4	2	3	5	4	4	3	5	4	4	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4
T15	5	5	5	3	1	1	1	4	4	3	4	4	3	5	4	4	4	4	4	4	4	4	3	4	4	4	3	3	4	4	3	4	4	3	3
T16	5	5	5	1	1	2	1	2	5	4	3	3	5	5	5	5	2	5	5	5	5	3	3	2	3	3	3	3	4	5	4	4	3	3	4
T17	5	5	2	1	1	1	1	1	1	1	4	3	2	4	4	4	4	4	2	3	4	4	3	2	3	4	2	4	3	4	3	5	5	5	5
T18	5	5	5	5	2	2	3	4	2	3	2	1	2	4	2	4	4	2	2	2	4	5	5	3	4	4	4	4	3	4	4	3	4	4	3
T19	5	5	5	4	1	1	1	3	1	1	1	1	1	4	4	4	3	2	2	3	3	3	3	2	3	2	1	1	3	3	3	3	3	3	3
T20	5	5	5	5	2	2	1	3	2	4	2	2	2	4	3	3	2	4	4	4	4	2	2	2	2	2	3	2	3	3	3	3	3	3	3
T21	5	5	5	4	5	4	4	3	3	4	2	3	2	4	4	2	3	4	4	5	4	1	2	2	3	3	3	2	4	4	3	4	4	4	4
T22	5	5	5	5	5	5	5	4	5	4	4	5	5	5	5	5	5	5	5	5	5	4	4	2	5	4	5	5	5	5	5	5	4	5	5
T23	5	5	5	4	3	3	2	1	1	1	1	1	1	3	2	1	2	2	2	1	2	4	3	3	3	3	3	3	4	4	4	4	4	3	3
T24	5	5	4	3	1	1	1	1	1	1	1	1	4	4	4	1	1	3	2	4	4	3	3	2	4	3	4	3	4	3	3	3	3	3	2

Survey results Questions 6 to 40

No	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
T25	5	5	5	1	1	1	1	3	1	4	3	2	2	4	4	2	1	4	3	4	5	3	1	1	2	3	1	1	1	1	2	3	2	2	2
T26	5	5	5	5	4	3	4	1	4	1	4	3	4	5	5	1	3	5	5	5	5	5	5	1	3	2	1	1	5	5	5	5	5	5	5
T27	5	5	5	5	4	4	5	2	1	2	2	2	3	3	2	2	2	3	2	3	3	4	4	2	3	4	2	3	3	3	3	3	3	3	2
T28	5	5	3	5	1	1	1	1	2	3	2	2	2	4	4	3	1	2	2	3	3	5	3	3	4	3	2	2	5	5	5	5	5	5	5
T29	5	5	5	2	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	3	3	3	3	3	3	1
T30	5	5	5	5	2		1	4	2	3	2	2	3	4	4	2	1	3	3	4	3	4	2	3	2	2	1	1	3	3	3	2	4	3	2
T31	5	5	5	4	1	1	1	4	4	3	4	4	4	4	4	4	2			3	4	4	3	5	5	4	4	4	4	5	5	4	5	5	5
T32	5	5	4	4	4	1	1	4	4	5	5	4	5	5	5	1	1	5	5	5	4	5	5	3	4	4	4	4	4	4	5	4	3	5	4	4
T33	5	5	5	5	1	1	1	4	3	2	3	2	3	3	4	4	4	4	4	4	2	2	3	4	4	4	4	4	4	4	4	4	4	4	4
T34	5	5	5	5	2	2	2	3	3	3	3	3	3	4	4	4	4	5	4	4	4	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4
T35	5	5	5	1	1	1	1	1	1	1	1	3	2	2	2	2	1	4	4	4	4	4	4	2	4	2	1	1	2	2	2	2	2	2	2
T36	5	5	5	5	2	4	1	2	3	3	3	3	3	4	4	1	1	5	5	5	5	4	3	1	5	4	3	3	4	4	4	5	5	4	4
T37	5	5	4	5	1	1	1	2	2	1	2	2	2	3	2	1	2	5	3	2	3	2	1	1	3	2	1	1	1	1	2	2	4	4	3
T38	5	5	5	2	1	1	1	1	1	1	1	4	4	5	5	2	2	4	3	4	4	4	4	2	3	2	2	3	4	4	4	3	4	3	3
T39	5	5	5	4	1	2	1	3	3	2	4	3	3	5	4	3	2	5	5	5	4	3	3	3	4	2	3	1	2	5	4	2	3	3	3
T40	5	5	5	5	2	2	1	4	4	3	3	1	2	2	2	3	1	3	1	3	3	5	4	1	3	1	5	2	3	5	5	5	5	4	5
T41	1	2	5	4	2	1	4	4	3	3	3	4	4	4	4	3	4	4	3	4	4	3	3	3	4	4	4	4	3	2	3	2	3	3	4
T42	5	5	2	5	2	1	1	2	2	3	2	3	4	5	5	3	3	3	3	4	4	4	4	4	4	4	3	2	4	4	4	4	4	4	4
T43	5	5	5	5	3	3	1	2	4	3	5	5	5	5	4	4	3	5	5	5	4	4	4	3	4	4	3	3	4	4	4	5	5	5	5
T44	5	5	5	5	4	5	4	4	4	2	4	3	4	5	4	4	1	5	5	4	4	3	2	3	4	2	3	2	4	4	4	3	4	2	3
T45	5	5	4	2	1	1	1	3	5	4	5	2	3	5	5	2	3	5	5	5	5	5	5	1	3	4	4	4	4	4	3	3	4	4	4	4
T46	5	5	4	1	2	1	1	2	3	2	3	3	3	3	3	3	3	4	4	4	4	3	3	4	3	3	3	3	4	4	4	4	4	4	4
T47	5	5	5	5	5		5	5	2	2	2	2	3	5	3	2	1	5	5	5	5	3	5	5	5	5	5	4	3	4	4	4	4	4	4
T48	5	5	5	5	1	1	1	4	2	1	3	3	3	3	4	1	1	2	3	2	1	2	1	1	4	1	1	1	3	3	3	3	3	2	2
T49	5	5	5	5	1	2	1	2	1	1	1	1	2	4	2	1	1	4	4	2	3	2	1	3	3	2	3	3	2	3	2	2	4	3	3
T50	5	5	5	2	1	1	1	4	5	5	5	3	3	4	4	2	1	4	2	2	4	1	3	5	5	5	2	2	4	5	5	2	3	3	3
T51	5	5	5	5	4	5	1	1	1	2	3	2	2	4	4	1	1	4	3	4	3	5	5	5	4	4	4	2	3	4	3	3	3	3	4
T52	5	5	5	1	1	1	1	4	2	3	2	1	5	5	5	1	1	5	1	5	2	4	2	1	4	2	2	1	3	4	4	4	4	4	3
T53	4	5	4	4	2	2	1	2	2	3	3	2	2	5	4	2	1	1	2	4	4	4	4	1	2	2	1	1	2	4	4	4	4	4	2

Survey results Questions 6 to 40

No	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
T54	5	5	4	4	2	2	1	1	1	1	1	1	3	4	2	1	1	2	2	2	2	4	3	3	2	3	2	2	3	3	3	2	3	3	2
T55	5	5	5	5	1	1	1	4	3	3	3	3	3	4	4	1	1	4	4	4	2	1	1	3	4	3	2	2	4	4	4	4	4	4	4
T56	5	5	5	5	1	1	1	4	4	3	4	3	4	5	5	2	1	5	4	4	5	4	2	5	4	2	2	2	4	4	4	4	4	3	2
T57	5	5	5	5	1	5	1	2	3	2	3	3	4	4	3	4	3	3	3	3	3	1	3	1	4	5	1	1	4	4	4	4	4	5	3
T58	3	5	3	5	1	5	1	2	1	1	4	3	2	4	3	2	1	2	2	3	2	3	3	5	1	2	1	1	5	5	5	3	3	3	2
T59	5	5	5	5	2	2	1	1	3	1	1	1	2	5	5	2	2	5	5	5	5	5	4	3	4	3	2	3	4	5	4	5	4	4	4
T60	4	4	3	5	1	1	2	3	4	3	4	4	4	5	4	2	3	4	4	4	4	2	2	4	4	2	4	4	4	4	4	5	3	4	2
T61	5	5	5	2	2	2	1	3	1	3	1	2	2	5	5	3	3	5	5	4	3	2	2	1	4	3	3	2	4	5	5	5	4	5	4
T62	5	5	5	5	4	2	4	3	2	3	3	3	3	3	4	3	3	4	4	4	5	2	2	3	4	4	4	4	4	4	4	4	4	4	4
T63	5	5	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	4	4	4
T64	5	5	5	2	2	2	1	1	1	1	3	3	4	5	5	3	1	5	5	5	5	2	3	3	4	3	3	3	5	5	5	5	5	5	5
T65	5	5	5	4	3	3	2	5	3	3	4	3	4	5	5	2	2	4	4	4	4	3	3	3	3	3	4	3	3	3	3	3	3	3	3
T66	5	5	5	5	3	4	2	4	3	2	3	3	2	4	4	4	5	4	4	3	5	4	2	1	3	2	3	3	3	4	4	3	3	3	3
T67	5	5	5	5	2	2	1	4	2	2	4	4	4	4	4	3	2	4	4	4	4	3	2	2	3	2	3	2	4	4	4	4	4	4	4
T68	5	5	4	5	4	4	2	3	1	3	3	3	3	4	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
T69	5	5	5	5	4	4	4	3	4	3	4	3	4	5	4	3	3	5	5	4	4	2	3	2	3	3	3	3	4	4	4	3	3	3	3
T70	5	5	4	4	1	1	1	2	2	3	2	3	2	4	3	4	3	2	2	3	3	3	2	1	3	3	1	1	2	3	3	3	4	4	3
T71	5	5	5	4	2	1	1	1	3	1	1	1	2	5	4	2	1	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5
T72	5	5	5	5	1	4	1	5	5	5	5	3	5	5	5	3	2	5	5	5	5	4	3	3	5	3	2	2	2	2	2	4	4	4	4
T73	5	5	5	4	1	1	1	3	2	1	3	3	2	3	3	2	1	4	3	3	2	3	2	2	3	3	3	2	4	4	4	4	4	4	4
T74	5	5	5	4	1	1	1	5	4	4	4	5	4	5	5	2	1	5	5	5	5	3	2	2	4	4	4	4	4	4	4	4	4	4	4
T75	5	5	5	4	4	1	1	4	4	4	4	4	4	4	4	4	2	5	5	5	4	3	3	3	4	3	3	3	5	5	5	5	4	4	4
T76	5	5	5	5	1	1	1	5	5	5	4	4	5	5	5	5	5	5	5	5	5	5	4	4	5	4	4	4	5	5	5	5	5	5	5
T77	5	5	5	5	4	5	1	2	2	2	4	2	3	4	2	2	4	4	4	2	4	4	2	4	4	2	2	2	4	4	4	4	4	4	2
T78	5	5	5	4	1	1	2	3	3	3	2	3	4	5	5	5	5	5	5	5	5	4	2	2	4	2	2	2	4	4	4	3	3	3	2
T79	5	5	5	5	4	2	3	3	3	3	4	4	4	5	3	3	3	4	4	4	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
T80	5	5	5	4	1	4	1	1	4	3	3	3	4	5	5	2	3	5	5	5	5	4	1	3	5	3	3	3	4	4	4	4	4	4	4
T81	5	5	5	5	2	2	2	2	4	5	4	2	2	4	3	1	1	3	3	4	3	5	4	2	3	4	3	3	1	3	2	1	3	3	2
T82	4	5	5	5	1	1	1	1	1	1	2	1	1	5	5	2	2	5	5	5	4	5	3	5	5	3	4	2	5	5	5	4	4	4	4

Survey results Questions 6 to 40

No	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
T83	4	5	4	3	2	4	3	4	3	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	2	4	3	3	2	2		3	5
T84	5	5	4	5	2	4	1	2	3	1	2	3	5	5	5	3	1	5	5	5	4	5	3	4	5	3	2	1	3	4	4	4	4	3	3
N1	5	5	5		1	1	1	3	1	4	4	3	4	5	5	5	5	4	44	4	4	5	2	4	4	2	2	2	4	4	4	3	3	4	3
N2	5	5	5	2	1	1	1	4	3	2	3	1	4	4	4	4	4	4	4	4	4	3	4	1	4	3	3	3	2	2	2	3	4	3	3
N3	5	5	5	4	2	3	2	3	3	3	3	3	3	4	4	4	2	3	4	4	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3
N4	5	5	5	5	3	4	2	2	2	3	3	2	2	1	2	3	2	1	1	1	1	3	2	2	3	3	3	3	1	1	1	1	1	1	1
N5	5	5	5	5	5	3	5	5	1	1	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	5	5	5	5	3	3	3	3	4	3	4
N6	5	5	5	5	1	1	1	2	2	2	2	2	4	4	4	5	5	5	5	5	5	5	4	1	5	3	3	2	2	3	3	3	3	3	3
N7	4	4	3	2	1	1	1	2	3	2	2	3	4	5	4	4	4	3	3	3	3	5	2	2	3	2	2	2	3	3	3	4	4	3	3
N8	5	5	5	5	5	3	2	4	3	5	3	3	4	4	5	5	5	5	5	5	5	5	3	1	5	4	4	3	3	3	3	3	3	3	3
N9	5	5	5	5	2	3	1	2	3	2	3	4	4	5	4	2	4	5	3	4	4	3	3	2	4	3	2	2	1	1	1	3	3	3	3
N10	5	5	5	5	4	4	2	3	2	2	4	4	4	5	4	5	5	5	5	5	5	5	4	4	4	5	5	5	5	5	5	5	5	5	5
N11	5	5	5	5	4	4	4	1	1	1	1	1	1	4	4	3	4	2	2	4	2	4	4	2	3	3	3	3	3	3	3	3	3	3	3
N12	5	5	5	5	2	1	1	2	1	2	2	1	3	3	4	4	3	4	3	4	4	3	3	1	3	3	2	3	3	4	3	3	4	3	4
N13	5	5	4	1	1	1	1	2	2	2	3	4	4	4	1	4	3	1	1	1	1	5	5	2	5	3	2	2	1	1	1	3	4	3	4
N14	5	5	4	5	1	5	1	4	3	1	1	1	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4
N15	5	5	5	5	4	4	1	2	4	2	2	2	2	5	5	2	2	4	4	4	4	5	5	2	2	2	2	2	2	4	4	5	5	5	5
N16	5	5	5	5	1	1	1	3	4	3	4	3	4	5	5	1	1	4	4	4	5	4	2	3	3	1	1	1	1	1	1	1	1	1	1
N17	5	5	5	1	1	1	1	5	3	2	4	3	5	5	5	5	5	5	5	5	2	5	3	1	5	4	1	1	1	1	1	4	4	4	1
N18	3	5	4	5	1	3	1	1	1	1	1	1	2	3	3	3	3	4	4	4	4	3	3	2	4	3	4	4	4	4	4	4	4	4	4
A1	5	5	5	5	5	5	1	5	4	4	5	4	4	5	5	4	4	5	4	4	4	2	3	2	3	2	2	2	3	2	3	3	4	2	3
A2	5	5	5	5	1	5	1	2	3	2	2	1	3	5	5	5	3	5	5	4	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
A3	4	3	3	4	3	4	4	2	3	2	1	2	2	1	4	3	3	4	4	3	4	4	3	4	3	3	3	4	4	3	3	3	4	3	4
A4	5	5	5	4	1	1	1	1	3	1	1	1	3	5	5	4	3	5	5	5	5	4	3	3	3	3	2	2	3	3	3	3	3	3	1
A5	5	5	5	5	1	5	1	2	3	2	2	2	3	5	5	5	5	5	5	5	5	3	3	3	3	3	2	2	4	4	4	3	4	3	2
A6	5	5	5	5	4	5	1	4	3	4	4	3	4	4	4	4	5	4	4	5	4	4	3	3	4	3	4	3	3	4	4	3	4	3	3
A7	5	5	4	4	1	5	1	2	4	3	4	3	3	5	5	5	5	5	5	5	5	2	3	2	4	3	3	3	3	4	4	4	4	4	4
A8	5	5	5	5	1	2	1	1	1	1	4	2	3	5	4	2	2	4	3	4	4	3	2	3	3	2	2	2	4	4	3	3	4	3	2

Survey results Questions 6 to 40

No	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A9	5	5	5	5	1	1	1	1	1	1	1	1	2	4	4	3	3	3	3	3	3	4	2	2	3	2	2	2	3	4	3	2	2	2	2
A10	5	5	5	4	1	1	1	1	3	1	2	2	3	4	4	4	4	4	4	4	4	3	2	2	3	2	1	1	4	4	2	2	3	2	2
A11	5	5	5	2	2	1	1	1	3	1	2	1	2	5	5	4	4	4	4	4	4	4	3	2	3	3	1	1	4	4	2	2	3	3	1
A12	5	5	5	1	1	1	1	1	3	1	1	1	1	5	5	3	3	4	4	4	4	3	2	2	3	2	1	1	4	4	3	2	3	2	1
B1	5	5	4	3	3	3	4	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
B2	5	4	5	5	1	2	2	1	4	1	4	4	5	5	5	5	5	5	4	5	5	3	4	1	2	3	1	1	1	4	5	4	4	4	1
B3	5	5	5	1	4	4	1	5	4	1	1	4	5	4	4	3	4	5	5	4	5	3	3	4	5	4	5	4	5	4	4	4	3	4	3
B4	5	5	5	4	2	1	5	5	5	4	4	4	4	4		2	4	3	5	4	4	3	3	3	3	2	2	4	4	4	4	4	4	4	4
B5	5	5	5	1	1	1	3	1	5	1	5	2	5	5	5	3	3	5	5	5	1	5	4	3	5	4	5	4	3	5	3	5	5	4	5
B6	5	5	4	5	4	1	2																												
B7	5	5	5	5	3	4	1	5	3	5	4	4	3	4	5	4	4	5	5	5	5	4	2	5	5	2	5	2	2	5	2			5	5
B8	5	5	5	5	4	1	4	3	1	3	3	3	1	5	5	1	1	5	5	5	5	4	1	5	4	1	1	1	4	4	4	4	4	4	4
B9	5	5	5	5	4	2	1	3	4	4	4	2	5	5	5	2	2	5	5	5	5	4	4	5	5	3	1	1	2	4	2	4	4	3	2
B10	2	5	4	1	1	1	1	2	3	2	1	3	3	4	4	2	3	1	1	3	4	2	1	1	3	1	2	1	2	2	2	4	4	3	2
B11	1	5	5	5	1	1	1	5	5	5	5	5	5	5	5	2	1	5	5	5	5	2	2	2	5	2	4	4	1	1	2	2	2	2	2
B12	1	5	4	1	1	1	1	4	2	4	4	2	4	5	5	5	4	5	5	5	5	2	2	1	5	5	5	5	5	4	5	2	4	4	4
B13	5	5	3	3	5	1	1	4	4	4	4	4	4	4	5	5	5	5	5	5	5	3	3	3	3	3	3	3	4	5	5	4	5	4	4
B14	5	5	5	5	3	1	1	5	5	4	4	3	5	5	5	3	1	5	5	5	5	4	3	2	3	3	3	4	2	3	4	4	4	4	4
B15	1	5	5	1	1	1	1	4	2	2	4	2	4	4	4	4	2	4	2	2	4	1	4	1	2	4	2	4	3	3	3	4	4	4	4

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
T1	T	M	1	2	N	Y	Fast easy	Easy to control			
T2	T	F	1	1,2	N	Y	It's convenient	Convenient, easy, no hassles	No communication	No	N
T3	T	M	2	2	Y	Y	It's convenient	easy, save time	security		Y
T4	T	M	3	1	N	N	Availability of information, because those requiring the information ie prospective employers may want the information from me in a format accessible over the Internet	information availability, ease of information access for those who will read information provided by me	Provision of personal information to relatively unknown and large untrusted sources eg provision of CV over Internet	better structure for jobs advertised, relative salary/wage data from research	Y
T5	T	M	1	2	N	Y	Easy to use				N
T6	T	M	2	2	Y	Y	Looking for a new job	find a new job, fill in application form	none	no	N
T7	T	F	1	1	N	Y	Faster	more faster	less accuracy		N
T8	T	M	1	2	Y	Y	No distance limits can be interviewed for an overseas job	save time and C1	No face to face - makes people feel not true		Y
T9	T	M	1	1	N	Y					
T10	T	M	1	2	Y	Y	There are many jobs and different opinions I can use from the Internet to elp me make decisions				N
T11	T	M	1	1	N	Y	Easy to find jobs. Easy to advertise, communicate with lots of people easily	Not judged by your looks	Hard to do in NZ since the net's so slow		N
T12	T	F	2	1	Y	Y	Because you can compare job app's & see which has the best options. Also has a lot of up to date information to help with management	The Internet is available at anytime and reaches any place			N
T13	T	M	1	2	N	Y	It's a very fast tool to find a job. You don't need to go anywhere				N

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
T14	T	M	2	2	Y	Y	Fast, Wide Easy	Easy to use and find the information. Fast to process	ome files can be trust		Y
T15	T	M	1	1	N	N	Easily accessible	Easily accessible, Access to more information, Anonyminity	Potential lack of privacy, Potential flaws in new technology	No	N
T16	T	F	2	1	N	Y	Faster process of finding a career and have many options to choose from	You get a faster response from the employer or the organisation to send in a CV or come in for a interview	Slow connection to the Internet - such as dial up	I don't know	N
T17	T	F	3	2	N	Y	Job searching, Ability to get a greater range of jobs (compared to newspaper classifieds)	Ability to check out company websites to find out more about a company (company blogs), Access to international jobs	Internet is not accurate , so not necessarily ideal for managing ones career, (Set up false hopes & expectation)	Not at the moment	N
T18	T	F	3	1	Y	Y					N
T19	T	M	2	1	N	N	I don't use the Internet for career management, I use the Internet for research and personal.				N
T20	T	M	1	2	N	Y	Quickly to get or sent message	Saving time	Maybe they do not get your message	No	N
T21	T	M	1	2	N	Y					N
T22	T	M	2	2	Y	Y	Main reason is access to the wide information over the Internet	Wide range, Easy, Cheap	Privacy		Y
T23	T	M	2	2	N	Y					N
T24	T	M	1	2	N	Y					N

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
T25	T	F	2	2	Y	Y					N
T26	T	M	2	1	Y	Y					N
T27	T	M	2	1	Y	Y					
T28	T	M	1	1	N	N					
T29	T						Easy & Efficient	Easy & Efficient	Internet can crash	No	N
T30	T	F	1	1	N	Y	Internet is quick & usually simple to use, but mostly because it is fast at sending information	It's fast, & a smart way of sending information	Computers crashing, trouble managing files sometimes		N
T31	T	M	1	2	Y	Y	Internet is the world largest network. We can learn and share our skills through this network. We can also get jobs through the Internet.	Learning new skills. Can find jobs. Enhance our skills	By sitting a long time in front of computer it affects our eyesight. Bad effects on guys who are under 18		Y
T32	T	F	2	2	N	Y	Internet is the easiest way to find jobs. Because with the help of Internet anyone can find jobs in the field they are interested in. They can search for jobs using the Internet	It's much easy. People can look for career opportunities even by staying home. It's much quicker.	Some times accurate information may not be available. Still I don't feel that there are much disadvantages.		Y
T33	T	F	1	1	N	Y	Fast easy access. The process is not so long	Fast, easy,saves printing and sending costs. Saves telephoning not waiting to get hold of someone	things could not send, ie technical errors.		
T34	T	M	1	2	Y	Y					N
T35	T	M	3	1	Y	Y	Enable the selection of candidates without any type of serious problem. The candidates not meet each other, or know each other gives a more	No personal item envished. Completely anonymous. Get brief replies.	Cannot see candidate. Cannot hear candidate. Talk. Cannot get into detach	To sort out candidate. Cull the number of responses. To select a certain age or ask without consequences	Y

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
							impartial choice.				
T36	T	M	2	1	Y	Y	The Internet has become an increasingly effective tool for career management. So much information is available for use. It's a universally accepted method in many areas.	Working from home to achieve goals. Enquiries can be made without seeing anyone physically, avoiding any uneasyness.	Not all information comes from a credible source. Interpersonal skills are not used to their full capacity.		N
T37	T	F	1	1	N	Y					
T38	T	M	1	2	N	Y					
T39	T	F	1	1	N	Y	The Internet holds information that you can use to develop your skills and find what skill employers are looking for.	Wider range of information and job search opportunities	The websites that you are viewing or gathering information from are not up to date		N
T40	T	M	1	1	N	Y	Search for jobs relating to my chosen career	Wide range of jobs available less time to find a job	Misinterpretation of information on jobs		
T41	T	M	1	1	N	Y					N
T42	T	M	1	1	N	N	Its easily accessable and straightforward to use. Accessed at any time.	easy to keep track of information and access multiple sources quickly	Internet going down. Computer breaking	I am unclear of the term "career management"	N
T43	T	M	2	1	N	Y	it is a lot more convenient and faster to look for a job and usually has a faster response back	*finding out info about the job * reaserching the job company * finding things a lot more easy	*personal info is in their *technology is expensive * hakers		Y

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
T44	T	M	1	1	N	Y	By using the Internet as a tool for career management, it could help determined my key aspects in my advantages & disadvantages within a working environment(Studylink ie)	*Gaining knowledge about my personal attributes *Gaining knowledge about my working attributes *Finding which areas would I need to work on(attributes)	*Finding that I may have chosen to study the wrong area of specialities. In which I need to help persue to gain a career in I would like		
T45	T	M	2	1	Y	Y	*It categorises my options * Its simple and detailed sos * I can spread my name and skills much faster than physically being in their face	You can get noticed and get almost an instant reply with-in a day or so from submitting it.	There are so many people using it that your chance could be in the thousands.		Y
T46	T	M	1		N	Y	You can get tips & find out what other tools there are and how to use them and learn skills	Get tips, find out what other tools there are, study on how to use them, gain skills			
T47	T	M	2	1	N	N	you can get career mamgement skills off the Internet to help you and get tips	there will be heaps career management skills on the Internet.			
T48	T	F	1	2	N	N	job searching... - searching for your career path etc....	you are able to find the kind of job that you were looking for and able to find out more informations about it...	if your not able to find or doesn't understand anything you won't be able to ask for help...		N
T49	T	M	1	2	N	Y	*If you are looking for a job *If you're thinking of doing a course * sending CV's and maybe job applications	You find a lot of information about what you are looking for. The Internet gives you options to look for.	If you do not understand something on the Internet you can't ask queations about it.	The Internet gives you jobs to think about and options about the type of career you are looking for or even a course you may be thinking of doing.	N

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
T50	T	F	2	1	N	N	You need all the avenues you can get and it shows you have basic computer skills	Can be done any time of the day, shows computer skills, gives you more of a chance of getting employment	No face to face contact, email etc can be misinterpreted	Webpages can be used to show the skills you have	Y
T51	T	M	1	1	N	N	There are more opportunities on the Internet, especially using a job search website.	Having so many opportunities in one place	Not seeing people face to face.		N
T52	T	F	1	1	N	Y	It's just another way for looking at a job	More options			N
T53	T	M	1	1	N	N	If you go on the right sites you could see where you re going	You could be sick that week and using the Internet to simulate games would be better than spreading the bug	Anyone could say their from (company)and not be		N
T54	T	M	1	1	N	Y		They have lots of jobs that you can look at and read about			N
T55	T	M	1	1	N	N	lots of information can find lots of different options and ways to go for your career quite easily	canmuch everything gain information on pretty			N
T56	T	F	1	1	N	N	Feel as though its a lot faster and used more	Once again a lot faster	privacy issues	I have no suggestions at this point	N
T57	T	M	3	1	N	Y	You are able to deliver things like CV's and references more readally	It is easier to establish better working relationships with people over distances	You could easily fall victim to scabbers		Y

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
T58	T	F	1	1	N	N	At the moment I haven't applied online for jobs.	Faster, more easier, more interesting. Greater access to job opportunities.	not knowing if your gaurenteed the job		Y
T59	T	F	2	1	N	N	*Give employers a better overview of candidates for job positiions.*larger quatity of job positions available.	Showing future employers what skills you have. Reducing cost with video conferencing	Information can be passed to third parties without users permission		Y
T60	T	M	1	2	N	Y	efficient time, comfortable for some people who live in another country	Very easy, less wastage of time saving time & money.	Less time book selling		N
T61	T	M	2	2	N	Y	fast, efficient, most employment using Internet and prefer that way	It is easy to know all kinds of skillful people all over the world			Y
T62	T	M	1	2	N	Y	efficient time - comfortable for some people who live in other country	easy, it dosen't take much time			N
T63	T	M	2	1	N	Y	easy acess	easy access			N
T64	T	M	3	1	Y	Y	easy and I feel comfident in using the Internet and also convenient	it is a good oppotunity to show my skills in non-stressed environment	no influance of the emotions		N
T65	T	F	1	2	N	Y	It's easy to use & get information	Because we have can get all the information very easily			N
T66	T	M	1	2	N	N	it help us to get information				N
T67	T	F	1	1	N	N	*It is quicker and easier to locate	*It is quicker			N
T68	T	M	1	2	N	Y					N

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
T69	T	M	1	2	N	Y	Easy to reach and can access it from anywhere	safe money - eco friendly	Don't get the feedback at the same time - virus, cookies		N
T70	T	M	1	1	N	Y					N
T71	T	F	3	1	N	Y	Accessibility Handy Sometimes good for practice	More chance for all participants to be chosen. Information Availability	Unreliability Sources. Lack of responses. For purposes of Facebook, globalisation only can't always ask questions.	Tangibility is important in the end in terms of reality	Y
T72	T	F	2	1	Y	N	A huge range of options available at a click	Speed (not having to wait to be sent info), variety of locations.	Salary often not given at first advertising post (ie - are you wasting your time applying ie job too high up, or too lowly paid - ie you're over or under qualified.	no, sorry	Y
T73	T	M	1	1	N	Y					N
T74	T	M	2	1	Y	Y	Endless source of fast, available data and facts. I am able to find knowledge needed on the web.	It is a must in todays world. It is a neccessaty and vital to any career today.	None I know off - Maybe false information or decieving individuals.	Integration of Facebook, E-Resume, Linkdn and other contact, experience available for all employers to see	N
T75	T	M	2	2	N	Y					N
T76	T	F	2	1	N	Y	fast - interactive	fast - interactive	Not face to face		Y
T77	T	M	3	1	Y	Y	To advise employee's about discussion interviews	Have a better chance of getting info through to right people	Lay - net goes down - send to wrong person - or send wrong form	no	Y
T78	T	F	1	2	Y	Y	Easier and quicker	Quicker	No immediate feedback	No	N
T79	T	F	1	2	Y	Y	easy to search a job	Can find many job			N
T80	T	M	1	1	N	Y	because a lot of businesses are advertising jobs on the Internet	Quicker	People could steal your information		N

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
T81	T	M	1	1	N	Y	Can store information and access it remotely	can't think of any	communication is limited		Y
T82	T	M	1	1	N	N	Its easy to access and has a lot of options available	Fast and easy	unsure	Nope	N
T83	T	M	3	2	Y	N	Makes life easier	Faster	Adult Material	Nope	N
T84	T	F	3	2	Y	Y	I can find sources for my assignment and directions for where to go eg a map. Help me with my research for certain topics	It helps enhance your job opportunities. Get to explore more job markets	Other people especially your other party get to know your details and be able to use it.	Make it more realistic	Y
N1	N	F	2	2	N	Y	Jobs, Personal life	Faster Access	Time required		N
N2	N	F	1	2	Y	Y	Reputable websites	More up to date information. Easily accessible			N
N3	N	F	2	2	N	Y		Fast			N
N4	N	F	1	2	N	Y					N
N5	N	F	1	2	N	Y					N
N6	N	F	3	1	Y	Y	It's easily accessible and easy to use. Unlimited information. Communication	Dialogue with international areas. Wider scope of career choice	Unreliable Sources. International privacy abuse. Fraudulent aspects		N
N7	N	F	2	2	N	N	Efficient - effective - quicker to apply for jobs overseas & yet you don't have to be there - until you get an interview	More efficient - less paper work involved	Not many people own computers(accessibility)		N
N8	N	F	2	2	Y	Y	Easy to access. Spread to wide range.		easy to loss privacy under the risk to de cheated. Is affected by the speed of Internet		N

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
N9	N	F	1	1	N	Y		Up to date information, easy to use.	Not all people have the Internet		N
N10	N	F	3	1	N	N	ACCESSIBLE INFORMATIVE CURRENT	AS C1	Some websites are not updated regularly or do not have enough information	No	N
N11	N	F	1	1	N	Y					N
N12	N	F	1	1	N	Y					
N13	N	F	1	1	N	N	To read up about the area of work you want to apply for. To see if positions are available at places I want to work.	You don't have to leave home. You get to see withoout being bombarded with sales (The people who work there trying to sell you their work place)	You don't get to meet the people	No	N
N14	N	F	1	1	N	N					
N15	N	F	3	2	Y	Y	Accessible, quick, cheap	Accessible quick reliable	Leaves out the face to face element and body language	No	N
N16	N	F	2	1	N	Y		More up to date			N
N17	N	F	3	1	N	N	Evidence Based Practice/Research new Technologies Brouchures/Powerpoint presentations	As C1	Spelling mistakes/unreliable information		Y
N18	N	F	2	1	Y						Y
A1	A	F	1	2	N	Y					N
A2	A	M	1	2	N	N					N
A3	A	M	2	1	Y	Y					N
A4	A	M	1	2	N	N					N
A5	A	M	1	2	Y	Y	Unsure not from New Zealand				N
A6	A	F	1	2	Y	Y					N

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
A7	A	M	1	2	N	Y					N
A8	A	F	1	1	N	N	Help me gain more knowledge about my career path. But I would probably not use	Not sure have never used it			N
A9	A	F	1	1	N	N		Knowing that you are heading in the right direction	Unsure if answered questions correctly to get best options		N
A10	A	M	1	2	N	Y					N
A11	A	M	1	2	N	Y	Never Use				N
A12	A	M	2	2	N	Y					N
B1	B	F	1	2	N	Y	Faster. Easy.more informative	more informative			Y
B2	B	F	3	1	N	Y		Easy, no presure			N
B3	B	M	1	2	Y	Y	time - saving	money - saving	someone may not have access to Internet	develop strong internel net	Y
B4	B	F	1	1	N	Y	The Internet is a quick way to find information needed and at most times. It responses are of good quality.	*save time *The information need is likely to be there *Use it daily	*vacancies could be taken quickly. *virus and could crash		N
B5	B	F	1	2	N	Y					
B6	B	F	1	2	Y	N					
B7	B	F	1	2	Y	N					
B8	B	F	2	1	N	Y	Easy to access. Generally easy to use	Quick, easy access	Can't think of any	No	N
B9	B	F	1	1	N	Y	quick & easy	efficient	isn't very personal	nope	N
B10	B	M	1	1	N	Y				N	

Survey results for demographic and open ended questions

No	Type	1	2	3	4	5	C1	C2	C3	C4	C5
B11	B	F	2	1	Y	Y	job search	apply online - more jobs listed on the net than in newspapers	there's no face to face communication	No	N
B12	B	F	2	1	Y	Y	The Internet is the no#1 communication tool used by employers to entice new employees.	You can have the latest information on careers out there, you can get to choose.	*comp could crash * slow to load		N
B13	B	M	1	2	Y	Y					
B14	B	F	2	2	Y	Y	Easy access, doesn't take too much time	Lots of jobs available	jobs advertised on more than 1 site		N
B15	B	F	3	2	Y	Y	You don't have to waste time Quick & fast	Fast	Unsure of self security		