

Universiti Teknologi MARA

**Online Skill Based Assessment System in Recruitment
and Selection for UiTM Networking Students in the
Faculty of Information Technology and Quantitative
Sciences (FTMSK) using Object Oriented Hypermedia
Design Method (OOHDM)**

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DECLARATION

I certify that this thesis and the research to which it refers are the product of my own work and that any ideas or quotations from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

NOVEMBER 16, 2006

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I seek His Blessing on His Holy Prophet Muhammad s.a.w.

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ABSTRACT

The web is now a significant component of the recruitment and job search process. This research is conducted with the objectives to design and develop Online Skill Based Assessment System in Recruitment and Selection for UiTM Networking student in FTMSK. This project provides a platform for students who seek for jobs and recruiting companies as well as the contribution by the UiTM as intermediary between them. The design approach used in this research is Object Oriented Hypermedia Development Method (OOHDM). The data are gathered from a survey conducted in FTMSK which involved 55 students in order to capture the user requirements for this project. 83 percent of the survey participations agreed that there is no online jobs applications service available in the UiTM website. Its existence is very essential as agreed by 96 percent of the respondents. These have motivated and act as a drive for the development of Online Skill Based Assessment System which will help UiTM graduates to demonstrate their personal and professional skills to improve their chances of employment success. Besides that, it assists the companies in their recruiting efforts and selection process of hiring graduates by having collaboration with UiTM.

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CHAPTER 1

PROBLEM DESCRIPTION

1.1 Introduction

Few human resource functions have been changed as much by the Internet and information technology as employee recruiting. Internet recruiting involves using the Internet to develop a pool of qualified applicants for employment. Because of its relative low cost, high speed and global access, Internet recruiting has become popular with both job seekers and employers.

This chapter provides the background of the research problem regarding this project. It also discussed the problem statement; objectives of the project; scope of the project; and significance of Online Skill Based Assessment System development that led to this research.

1.2 Background of Research Problem

As global competition persists and industries become more skill intensive, the demand for talent or knowledge based workers with the capacity to be creative and innovative is escalating. The numbers of graduates are increasing greater than current market demand for graduate jobs. Graduates are more diverse in age, social background and motivations, while the labour market which they enter is more complex and volatile.

In the light of this fact, it has become essential for the companies to adopt sophisticated recruitment and selection strategies to get the right employee at the right time. The traditional recruitment procedures are not coping up with the industry requirements especially in selecting the right candidate quicker. The web is a tool that is capable of reaching various segments of the job searching market and has dramatically changed the way job seekers find positions. Eventually, online recruitment emerged as handy and advantageous method over traditional methods (Jansen & Jansen, 2005).

The terms online recruitment, e-recruitment, cyber-recruiting, or Internet recruiting, imply the formal sourcing of job information online. The first references to e-recruitment appear in articles of the mid-1980s (Gentner, 1984), while systematic reference to the e-recruitment in the Human Resources journals begins almost a decade later, in the mid-1990s, when Information Technology (IT) companies and universities begin to use the Internet extensively (Galanaki, 2002).

E-recruitment, as business activity, is fast growing globally and is worth billion of a Ringgits Malaysia annually (Yoon & Sivanand, 2005). Capelli (2001) stated that with the presence of online hiring (e-recruitment) in the internet through powerful search engines, the labour market has become a true market with thousands of resumes being posted daily by job seekers to online hiring sites. Using internet for recruitment has the advantage of faster cycle time, cheaper, and more convenient for both the employers and the job seekers. It is providing a radical change to recruiting process. The change allows the company, employment information to be displayed on the sites for 24 hours a day,

seven days a week. It is easily accessible and provides direct interaction with the company by the interested job seekers (Braunschweig, 2000).

Recognizing the increasing and more diverse traffic on the web, companies are beginning to advertise and post position openings online. Leonard (2000) reported that 75 percent of *Fortune* 5000 companies are posting jobs to their corporate sites, and less than a year later, Capelli (2001) reported that 90 percent of large United States companies are using the web for recruiting. In addition, more than 75 percent of human resource professionals are now using web job boards to supplement traditional recruiting methods (HR Focus, 2000). It is evident that web based recruiting and job search is now a major trend, reflecting the growing use of the web for commercial purposes (Lawrence and Giles, 1999; Spink & Jansen, 2004; Spink et al., 2002).

In addition, globalization and the information technology (IT) revolution are changing the global economic landscape, including that of Malaysia. The transformation of our economy from one that is production-based to one that is knowledge-based is leading not only to changes in the type of jobs being created but also to different methods of working and living. The significant demographic changes taking place will also influence the spectrum of jobs required in the future. Several factors are, thus, making prediction of future skill requirements in the medium-to-long term.

The government is certainly aware of this situation and empathizes with the problems faced by many young graduates who remain unemployed despite graduating with diplomas and degrees. There is a wide mismatch between the skills of our graduates

compared to those required and expected by the industry (Fong, 2005). Knowledge and skills are likely to affect a student's ability to eventually succeed in the labour market. The ability of students to succeed is determined, not only by the degrees they earn, but also by the quality and relevance of what they learn to the labour market.

When hiring, employers generally value good evidence of the ability to cope with uncertainty; ability to work under pressure; action-planning skills; communication skills; IT skills; proficiency in networking and team working; readiness to explore and create opportunities; self-confidence; self-management skills; and willingness to learn (Knight, 2005). There is a growing need for talents and professionals in non-traditional industries – Information and Communication Technology (ICT), bio-technology and service-bases sectors etc. Young graduates must be able to respond to these changes by acquiring knowledge in new ways of doing thing (Fong, 2005). The challenge for the university is how to enable each student to attain his or her own individual balance between the qualities of having technical competence and personal skills, while the challenge for the industry is its readiness to provide adequate training to optimize these qualities. These challenges need to be successfully met (Malaysian Institute of Economic Research, 2005). Therefore, skill based assessment system in recruitment and selection is beneficial to graduates, who need to look at their own skills and improve their employability.

1.3 Problem Statement

The goal of human resource development stipulated in the Eighth Malaysia Plan (MP-8: 2001-2005) is to transform Malaysia into a knowledge-based economy and develop

human resources to produce a pool of highly-skilled knowledge workers. There is an increasing body of evidence to demonstrate the importance of investment in human capital for economic development (Jansen & Jansen, 2005). Although most businesses rely on recruiting channels such as newspaper advertisements, online job exchange services, trade fairs, co-worker recommendations and human resources advisers, online recruitment is increasingly used with cost cutting results and efficacy (Galanaki, 2002). The recruitment websites act as mediums that connect the companies who offer job vacancy with potential applicants who seek for jobs. However, there is no direct access for the companies to hire the right people and university graduates to get employed ahead of the competition, due to the absence of recruitment channel provided by the university.

Based on a survey that has been done in FTMSK, it is found that 85 percent of the students agreed that only job advertisements are posted by the companies on the UiTM websites organized by the Career & Employers Relation Department of UiTM, but there is no online job application available. Due to the limited service to apply for the advertised jobs, UiTM students have to make the job application themselves by sending their resumes by post or e-mails.

From the same survey, the researcher found that 70 percent of the students chose career and recruitment web portals as the vacancy source that they will use to look for jobs after they graduated. This is because these websites are the best platform for them to search for jobs besides browsing newspapers' recruitment pages, companies and industries websites as well as get information from friends and relatives. However, it is found that local e-recruiter such as Jobstreet.com and JobsDB.com charge their services

to the graduates when they have successfully hired by the company by making salary deduction (Yoon & Sivanand, 2005).

The researcher also found that employers recently have been facing difficulties in recruiting 'work-ready' individuals. Whereas employability chances for graduates are low due to the lack of experience, the awareness of skills required by employers and also competition with graduates from other public or private universities (Raybould and Sheedy, 2005). Many companies noted that the education and training systems were not providing graduates with the technical skills appropriate to industry innovation needs. For example, a number of companies noted that university engineering graduates were not skilled in simulation techniques that were being increasingly used throughout business (Maiden & Kerr, 2006). Among the problems of unemployed graduates were the wrong choice of courses, personality problem and lack of communication skills (Datuk Seri Najib Tun Razak, 2006).

Major concerns about recruitment and selection applied in traditional approach included the insufficient guidance and training for recruiting manager, difficulties regarding the efficiency and speed of the recruitments process and insufficient guidance on the composition and operation of interview panels. Concerns were also expressed about lack of information given to candidates in advance of selection, too much reliance placed on interviews as a selection tool and weak monitoring of equal opportunities (Farnham, 2000).

To realize or enhance the potential of graduates, there is a need to focus and have collaboration amongst organizations such as university and companies. Industries should work in consonance with universities by formulating their own master plans, which could go a long way toward helping the latter churn out graduates needed by them (Malaysian Institute of Economic Research, 2005). Faculties need to be changed to make their graduates relevant to, and therefore successful in, a competitive market environment. The employability of graduates concerns not only the university but also employers, and the necessary interaction between the two must be complementary so that industry must be ready to develop what the university initiates and vice-versa.

Hence, it is important to have a platform for UiTM graduates to seek for jobs and companies to recruit as well as UiTM to provide this service in order to facilitate these processes. By having this online system, UiTM graduates can make job application by sending their resumes online to the companies and as for the companies; they can post their job vacancy advertisements directly and effectively. In addition, use of the university web page as a source of recruitment information was not negatively correlated with satisfaction with the university (Lievens & Harris, 2003).

Thus for graduates to be attractive to employers it is important that they are able to show evidence of having the skills. Another term used is “competence” which is referring to skill and ability needed to do a particular job. An operational definition of competence is provided by Roberts (1997) who describes it as all work related personal attributes, knowledge, experience and skills and values that a person draws on to perform their work well. Adopting a skill-based approach to recruitment and selection permits

more objective assessment of job candidates, because it uses clear job profiles and the same criteria for selection in each job interview (Farnham, 2000).

1.4 Objectives

The objectives of this thesis are:

- i. To identify the user requirements for recruitment and selection based on job requirements in networking.
- ii. To design the online skill based assessment system for recruitment and selection using the Object Oriented Hypermedia Design Method (OOHDM).
- iii. To develop the online skill based assessment system for recruitment and selection for UiTM networking students.
- iv. To analyze the data transfer efficiency and duration for the process of downloading files from SBA system on Windows 2003 server.
- v. To analyze the data transfer efficiency and duration of web pages in SBA on Windows 2003 server.

1.5 Scope of the Research

The scope for this project would be for the students of Data Communications and Networking of FTMSK in UiTM, Shah Alam. The user of this system are networking students who are seeking for jobs, lectures who are the coordinator and administrator of

the system and also the companies doing recruitment. The user requirements for this system are based on the current networking job requirements according to the job specifications set by the companies. In terms of the scoring criteria and the evaluation for the skill based assessment, it would be the responsibility of the companies. The set of questions and answers schemes that given by the companies are only be known by them and reside within their databases and server systems. It is beyond the project scope because this project only provides platforms between the companies and the students as well as the lecturers.

1.6 Significance of the Research

1.6.1 UiTM

By implementing the skill based assessment system in recruitment and selection would make a significant contribution by UiTM to the operation and management of the entire recruitment and selection process at an institutional level as well as striving towards becoming a world-class university. This online skill based assessment system creates organizational linkages between UiTM and companies as well as intermediary between industry and students. It provides a platform that acts as an instrument of career progression with which students, lecturers and companies can all engage. It serves extensive roles and responsibilities of UiTM to the students by giving golden opportunities to build up their career after they have graduated.

1.6.2 UiTM Lecturers

UiTM lectures can become more aware of the current industry requirements in terms of skills, knowledge and ability that must be possessed by students when they have completed their studies. Lecturers can be the best referee for the students in developing their skills in the area of study that really suits their personal interests. By having connections with the companies, lecturers can exchange up-to-date information with them regarding career prospects for the students. Therefore, with this valuable knowledge, the lecturers can improve the standards of learning provided by the faculty. For example, they can review and enhance the syllabus contents of the courses offered that would run in parallel with the industry's needs.

1.6.3 UiTM Students and Graduates

UiTM students can demonstrate their personal and professional skills relevant for the world of work to improve their chances of employment success. With the direct access to the companies, graduates will be given valuable advice from employees, on what is expected from a graduate level employee. Employers and students may interact by using forum that will be one of the features of this system. This system would allow the students to see the value of learning through the eyes of the employees. In addition, this would be an opportunity for them to improve their commercial awareness and develop their personal transferable skills (Raybould and Sheedy, 2005). Moreover, they would no longer have problems of lacking of information given in advance in the

selection process by companies. As applicants, they would be treated equally and consistently as the short listing process is justified.

1.6.4 Industry

The industry can take account of their organization's business needs and use more objectives and effective measurements and management of recruitment and selection. They can overcome the difficulties regarding efficiency and speed of recruitment process as well as too much reliance placed on interview as selection tool (Farnham, 2000). By implementing this system, they can reduce the time and cost consumed on many stages of interviews that must be conducted on normal basis. The existing job description and person specifications that are archaic and rigid as well as too general application forms can be enhanced for better use. They will benefit from actively looking for available assistance in the area of learning and development, and also initiatives by this system that will try to deliver an integral part of the support needed by them.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter compiles all the literature studies that have been used throughout the research project. It will explain in depth on Skill Based Assessment, e-Recruitment System, Internet Recruitment and Testing, Data Communications and Networking Program Descriptions, The Object-Oriented Hypermedia Design Method and related work regarding the development of this project.

2.2 Skill Based Assessment

One of the ways in which organizations are applying Internet technology and particularly World Wide Web (WWW) technology is as a platform for recruiting and testing applicants (Baron & Austin, 2000; Brooks, 2000; C.I. Greenberg, 1999; Harris, 2000). In fact, the use of the Internet for recruitment and testing has grown very rapidly in recent years (Cappelli, 2001). Skill based assessment is designed to measure the knowledge, skills and judgment required for competency in a given domain. It does not replace knowledge based test but assess aspects of competence that knowledge based test cannot assess (Smee, 2003).