

CHAPTER TWO

LITERATURE REVIEW

This chapter presents an overview on graduate marketability, e-portfolio and its usage. The overview about requirement, requirement analysis and user requirements is discussed. Relevant portals aimed towards the marketability of students and graduates are likewise described and the similarity between the portals and the one to be developed in this thesis is examined.

2.1 Introduction

Graduate marketability is the ability of a graduate to be able to obtain and retain job (Kabul et al, 2009; Cheong et al, 2015). Graduate marketability denotes the flexibility of a graduate to be able to select suitable employment opportunities. This is because a highly marketable graduate automatically has more job opportunities than a graduate with low marketability. The challenges facing graduates today have become a global issue which all countries of the world are trying to battle with and find means of reducing it to the minimum. There is a demand to be highly marketable if one wants to have opportunities to contest and get the best jobs available. A marketable graduate should possess different sets of skills which include self-confidence, motivation, flexibility, problem solving, decision making, innovative, decision making and articulate skills (Pandian, 2010; Nor' Aini et al, 2013).

This research focuses on the development of an integrated portal to facilitate graduate marketability. Graduate marketability problems and use of e-portfolio for graduate marketability are discussed in the sections below.

2.2 Problems with Graduate Marketability

Due to the current changing work environment demands, the need for graduates to be able to keep up with these changes is important for them to be able to stay marketable. The inability of graduates to secure employment can also be as a result of their lack of skills such as analytical, interpersonal skills, creativity skills, communication skills, problem solving skills and team working skills (Malhi, 2009; Pandian, 2010; Daud, 2011). The American Sociological Association (n.d.) also discovered the top skills valued by employers which are analytical skills, communicational skills, leadership skills, computer literacy skills, interpersonal skills and research skills. However, graduates might possess these skills but might not have a way of showcasing these skills, hence; employers think they do not possess them. Another research was carried out by Nor'Aini et al (2013) to find out what skills graduates need in order to improve their performance and marketability. Their result indicated that employers conceived that graduates need to improve on some skills such as behavioural and technical skills.

Nor'Aini et al (2013) likewise cited the importance of close co-action between educators, governments and employers in order to help in the development of appropriate training and teaching programs which will help students acquire the knowledge, skills and abilities that will make students more marketable. It is important for educational institutions to have a working relationship with industry to meet the requirements and needs of the employers (Singh & Singh, 2008). Additional knowledge in business and project management are also some of the skills which are desirable for graduates to possess when entering the business world which majority of them do not (Schulz, 2008; Ahmad et al, 2014).

Other graduates are not marketable due to the fact that some fields already have more than enough graduates with the same qualifications (Kabul et al, 2009). As a result, competition is very tight while some other fields such as Sciences and Engineering field are still in demand and so graduates still have the opportunity to be more marketable if they have the right qualifications. However, currently, employers require that graduates possess a lot of skills and knowledge or specific qualifications added to their Bachelor's degree pertaining to their area of concentration in order for them to be marketable and employable (Hager et al, 2002; Kabul et al, 2009).

Another cause of graduate marketability problem is the communication gap between the graduates and the employers is very wide as the universities do not really encourage the employers to work hand in hand with them so as to help in the recruiting of graduates (Eurobarometer, 2010). The Gallup Organization (2010) found out that less than fifty percent of the employers co-operate with the university. Archer & Davison (2008) discovered that there was a need to improve the links between universities and employers in order to improve graduates' marketability. Pandian (2010) and her team conducted a study on employability needs and university curriculum in Malaysia and they also found out that the major reason why there is limited job opportunities for graduate was as a result of lack of soft skills in graduates. Baharun and Suleiman (2009) also mentioned that there is a gap between the knowledge, skills, and qualities possessed by the universities' graduates and the knowledge, skills and qualities required by the graduates' prospective employers. This means that the current graduates do not match the needs of business.

As a result of the problems which affect the marketability of graduates as mentioned above, there arises the need to provide suitable solutions so as to assist in facilitating the marketability of graduates.

2.3 Facilitating Graduate Marketability

In order to facilitate graduate marketability, graduates have to become experts in their fields of study by taking professional courses in courses related to their field, increase their interaction through networking with different groups of people so as to ensure that there will be many individuals who know of their abilities and can attest to their possessed skills (Shen, 2010). Graduates should likewise possess leadership and managerial skills as they are very important skills which are useful in almost every kind of job any applicant wants to apply for and have applied experiences which allow them to identify and utilize the transferable skills they learnt when they were still in school (Shen, 2010). Graduate marketability can be facilitated through training programmes provided by employers which can aid in compensating for the lack of specific attributes in the graduates (Shah, 2008).

Many extant researches (Malhi, 2009; Pandian, 2010; Daud, 2011) show that employers believe that university graduates lack some very important skills needed in the workplace, for example creativity skills, communication skills, problem solving skills and so on. Past researches (Nor'Aini et al, 2013; Gatabazi, 2015) also show that there is a wide gap between the university, employers and graduates which might be contributing to the inability of graduates to market themselves, thereby not having good chances of getting employment. Reardon et al (n.d.) in their study pointed out employers agreed that access to data about students' marketable skills is useful to

them. This further shows the importance of having a very good relationship between the university and the employers.

Hapsah (2012) and Subhan et al (2012) stated that universities should endeavor to provide support for their graduates in becoming resourceful and marketable graduates and assist them in realizing their full potentials because they are accountable for the graduates they produce. The involvement of the lecturers is also an important part of assisting the graduates to improve their marketability as the lecturers are in charge of providing quality education to students when they are still in the university (Subhan et al, 2012) and helping them to obtain the necessary skills required for becoming highly marketable.

Baharun and Suleiman (2009) stated that the university should assist in raising awareness of available job opportunities for their graduates in order to help them to keep up with the occurring changes in the graduate labour market. The university should be involved in providing the needed information about changes that occur in the job market and about the skills their graduates need to possess and how they can showcase these skills to respective employers for them to increase their chances of getting jobs.

The problem of mismatch between the types of graduates that the universities and the type of graduates' employers in the job market seek (Yogeeswaran, 2005; Vijan, 2007; Daud, 2011; Cheong et al, 2015) can be reduced by creating co-operation and collaboration between the employers, university and graduates in order to be able to provide the type of needed graduates in the job markets. Documentation of work-based experiences and work-related experiences can likewise show the employers the evidence of their skills and capabilities (Lowden et al, 2011)

The e-portfolio, also known as the electronic portfolio is an archive of a person's accomplishments which the person can still refer back to when he or she wants to showcase one's work to prospective employers to show his evolution over time (Barrett, 2010; Mohammed et al, 2015). The e-portfolio can be used to showcase the graduates' marketability through videos, audios, word documents and presentations to employers. It can likewise be used as a tool for learning, presentation, orientation and evaluation skills for users (Mohammed et al, 2015). Since there is a need to find ways of helping graduates to facilitate their marketability to employers, it is crucial to discuss about the e-portfolio and provide some background on it.

2.3.1 E-portfolio and its use for graduate marketability

Peacock et al (2010) provided a digital-specific definition of the e-portfolio in their study and described the e-portfolio as an electronic system which eases the aggregation, evolution and direction of resources digitally pulled out from learner's experiences over a period of time. However, Barker (2006) gave a comprehensive definition of the e-portfolio as tools, products and systems that can be used by individuals, educators, employers and entire nations for the purposes of describing, assessing, recognizing and using knowledge and skills acquired through all forms of learning – informal, formal, non-formal, accidental and incidental with evidence that is digitally created, stored and managed through practices that meet standards assure transportability, usability, and security.

The e-portfolio requires a combination of multimedia technologies such as audio recordings, database, spreadsheet, video and others. It is another way of showcasing student's achievement through class assignments, community service, and occupational experience. E-portfolio is as well defined as chosen and organized

groups of information like multimedia components, for example, audio, visual and audio-visual which are collated for a particular reason, which shows one's successes and development, can be stored digitally and can be regained from a website or handed over through a DVD or CD-ROM (Krause, 2006; Barrett, 2011).

The concept of e-portfolios is not new but making use of it for online job recruitment and showcasing achievements to employers opens up a new set of ideas. The use of e-portfolio has increased over the years as one of the common ways of marketing oneself for the job market. E-portfolio can be used to showcase or promote particular assets according to requirements and as a result has been commonly used for recruitment, targeted training, career advancement and in the workplace for work experience recognition and workplace training (Barker, 2006; Mohammed et al, 2015). Chang (2012) stated the importance of have an online presence for giving and receiving information which can be achieved through the use of e-portfolio.

The benefits of e-portfolios over their paper counterparts are centered on the multimedia, hypermedia and communications capabilities of the digital media (Lamont, 2008). The ease of storage and accessibility allows for possible continuous documentation of lifelong learning and demonstration of growth over time. Its multimedia abilities permit graduates to show their skills and knowledge in a creative way. Chang (2008) asserted that it helps to distinguish graduates' possessed skills, discover the needs specifically related to each of them and improve their motivation. Bollinger and Shepherd (2010) stated that e-portfolios allow students to create and store documents for long term projects, motivating students to gain technology, reflection, and content specific skills.

E- portfolios are one of the best ways for graduates to communicate their knowledge and expertise related to their use of technology and demonstrates proof of

their technical skills while also Cochrane (2009, p.1) stated that “The need for an integrated student experience has been recognized for some time, along with the need to address the concerns of employers and professional associations regarding the adequate preparation of graduates for the workplace. E-portfolio provides a tool which supports the integration of the student experience across courses of study and the transition to employment.” As a consequence of increased usage and widespread approval, e-portfolios have started becoming a suitable marketing tool for graduates and recruiting tool for employers to recruit employees.

With the recent rate of unemployment in countries, graduates have the most difficulties in finding employment which might be as a result of the fact that graduates do not possess the needed skills, abilities and qualities required and expected by employers. E-portfolio can be accessed from different places by many people at the same time. It is also easier to convey and its multimedia abilities permit students to show their skills and knowledge in a creative way. As employers are continuously looking for new employees, the e-portfolios can increase the effectiveness and efficiency of the hiring process as it provides more relevant information about the jobseekers and as such, employers are able to determine the specialized and additional competencies of these jobseekers (Barker, 2006).

An e-portfolio being created for marketability should contain specific documents or artifacts present in it (Strohmeier, 2010) and should be targeted to meet employers' needs and designed with employer's view in mind (Webb, 2011). Other contents that can be included are curriculum vitae or resume, graduates accomplishments and different projects that have been worked on throughout their university days. Certain multimedia products such as flash, animation and other media, lesson plans, case studies and artistic performances can likewise be made

available in the e-portfolio. The use of e-portfolio for appending and supporting the making of an individual's resume into a dynamic profile is becoming very important as Zhou and Helms (2015) suggested the use of the e-portfolios to provide access to artifacts that can be valued by potential employers. This is because it allows employers to learn more about a person before he goes through the process of interview. Strohmeier (2010) stated in his work that certificates, letters of applications, owner's photos and statements should be included in the items that should be found in an e-portfolio that is to be used for recruiting.

Webb (2011) conducted a research to determine the use of e-portfolios as hiring tools. Half of the students from his survey said the employers did not ask to see the portfolios. His findings likewise showed that employers do not see the usefulness of the e-portfolio as they are still ignorant about it. Even though there has been an increase in the development of e-portfolios, previous work shows that there really is not any evidence to support the fact that employers are interested in it (Leece, 2005; Ward & Moser, 2008; Webb, 2011). This might be due to the fact that probably most of the information that the employers need to know about the graduates are not available in the e-portfolio. As a result, it is important to enlighten the employers about the e-portfolio and at the same time make use of it or request for it during their recruitment process, as highlighted in the thesis.

2.4 Requirement Analysis

A requirement is a statement about an intended product that specifies what it should do or how to do it (Mifsud, 2013). Requirements can be defined as “what” of a system product. It is what the users and developers must agree upon for a system to be built. Requirements can be categorized into three which are: Business requirements,

User requirements and System requirements. For requirements to be effectively implemented and measured, they must be specific, unambiguous and clear. In order to make use of requirement analysis in the development of the integrated portal prototype, it is important to have an improved understanding about what requirement analysis is. There are several definitions for requirement analysis. This is discussed in the following section.

2.4.1 Definition of Requirement analysis

Requirement analysis is the process of studying and analyzing the needs of the users/stakeholders in order to reach a definition of requirements and determines the expectation of the user for a system. (Thayer & Dorfman, 1997; Mahajan, 2015). Sofia (2010) gave the definition of requirement analysis as the tasks which are used in determining the conditions or the needs that needs to be met for a modified or new product which takes into account the possibility of conflicting requirements of the different stakeholders, for example the recipients of the users. Vannucci (2010) likewise described requirement analysis as a structured approach to translate the needs of users into a technical definition of the system.

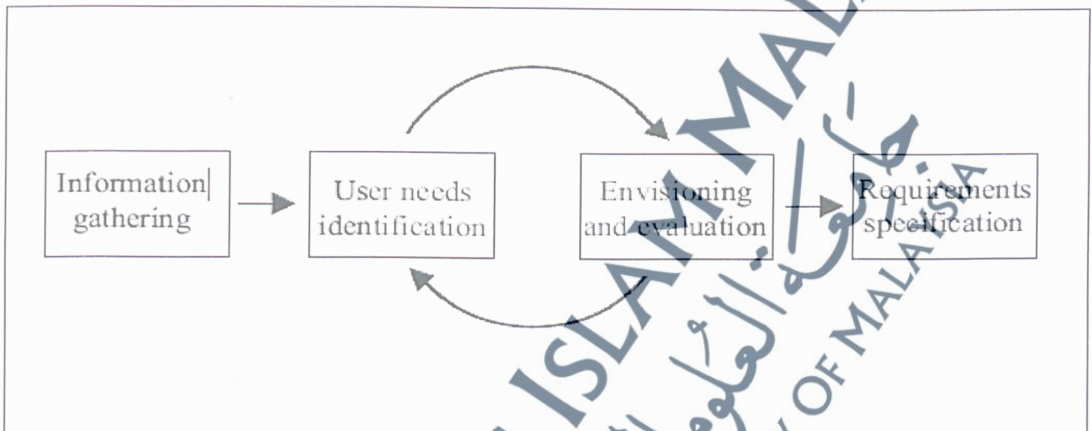
Requirement analysis requires that the users/stakeholders needs and objectives should be defined based on the environments and system characteristics that have been identified. In summary, requirement analysis is carried out in order to discover a user's needs, create system resolutions and allocate functions to system elements. For requirement analysis to be done, the need to involve users/stakeholders is relevant.

2.4.2 User Requirements

Parker (2012) described user requirements as functions, restraints and other attributes that a user must be able to perform with a system and are generally used as

the main input for creating the requirements of a system. Examples of user requirements are user preferences, skills of a user and type of user while a user profile consist of an aggregate attributes for a common user. User requirements are needed to look at the functionality of a system by the views of other users/stakeholders that will make use of the product. The process for user requirement analysis is shown below.

Figure 2.1: User Requirement Analysis Process



Source: Maguire and Bevan, 2002.

2.4.3 User Involvement

Dittrich & Randall (2004) referred to a user as someone who will make use of a system. User involvement is crucial in system development because the users are the ones that will make use of the system. They provide many benefits and improve the quality of the system to be developed through user inputs (Bosch-Sijtsema & Bosch, 2015). User involvement is the evaluation of the contribution of users to the system development process from the period of formation/conceptualization to actualization (Owoseni & Imhanyehor, 2011). The importance of having users involved in the early stages of software development has been identified in previous researches (Kujala, 2007). Bano & Zowghi's (2015) study discovered that user involvement contributes

positively to the success of a system. User involvement is important in requirement analysis because human-computer interaction community is necessary in the design process (Bosch-Sijtsema & Bosch, 2015) and in order to discover the requirements of Information Systems (IS) so as to be able to meet the customers' desires (Kasim & Salim, 2008).

Researchers like (Abelein & Paech, 2015; Bosch-Sijtsema & Bosch, 2015) accept that involvement of potential users in system design helps in achieving usability and that user involvement is very crucial and powerful in the beginning of a system's development. Rotter & Rasche (2007) suggested that project managers should change their current practice and improve the end – user involvement more. In order to increase the utilization of a system and its usability through the understanding of users' demands and anticipations, user involvement is needed (Paggano & Bruegge 2013).

User involvement is categorized into three forms by Kujala (1997) which are: Consultative, Participative and Informative. Consultative involvement does not allow users to have very little control over the output and operation of a system while participative involvement allows users to be at the center of the design process (Owoseni & Imhanyehor, 2011) for example, users have a say in what should be done and how it is to be done. Informative Involvement does not allow users to actively determine the execution of a system and so they are not allowed to take part in how input is processed. User involvement has a lot of benefits to system developers because it assists in reducing the risk of developing an unacceptable functionality and improves project performance. It also improves the ability to settle system design conflicts among other things. Previous findings showed that the involvement of users

in a system's success increased the productivity of the users and sales while user support calls and training cost were reduced (Salihoglu n.d.; Williams et al, 2007).

2.4.4 Requirement Specifications

Requirement specification is an elaborate description of system that can be used as a foundation for a design or execution while derived requirements are requirements that are inculcated from higher-level requirement, for example, requirement for long range can lead to a design requirement that can be used for a low weight (Sofia, 2010). Requirements specifications provides a detailed a solution that can be implemented to meet the identified requirements. User requirement analysis provides the content description, quality and functionality precisely as the prospective users or stakeholders demanded. The users' perspective of the identification of the needs of the users is carried in two ways which are functional requirements and non-functional requirements.

Parker (2012) stated that functional requirement describes the functions that would be supported by the new system, the inputs and outputs into the new system and lastly the data that is important to be managed by the system. Functional requirement refers to the requirements that define all the primary activities of the system. The tasks that the users want to be able to perform with the system and the goals they want to achieve must be determined. Non-functional requirements specification consist of users categorization, characteristics of users and their needs, users' environment description, security and privacy requirements.

2.5 Relevant Works and their differences with the proposed Integrated Portal

There are three existing portals which are being currently being used for graduate employability. They are Ready4work portal (www.ready4work.my, 2016), Centre of Entrepreneurial Development and Graduate Marketability Portal (CEM) (www.cem.upm.edu.my, 2016) and JobCentrum Portal (Tucek & Micheska, 2011). However, there are some limitations in these existing systems, in which the proposed integrated portal will try to address. These relevant portals are discussed below.

2.5.1 Ready4work Portal

Ready4work portal was developed by Talent Corporation Malaysia (TalentCorp) in coaction with ten founding partners which includes Maxis, CIMB, Intel, Motorola, Accenture, Axiata, Pwc, Maybank and EY. Ready4work portal provides different number of services for both graduates and undergraduates such as career advice from employers, job profiling tool, information on graduate programmes and internships for undergraduates and career advice from different employers. The opportunities on the portal are mostly for the Malaysians alone. Their main goal is to assist in preparing both graduates and undergraduate students for the work industry and help them understand the employment needs of Malaysian industries. The Ready4work portal provides services which will assist graduates in preparing students for work industry and not specifically for helping graduates market themselves to employers or assist them in securing jobs on the portal. Also, majority of the opportunities available are for Malaysians only and the portal is not being run by the universities. This implies is that the communication gap between the industry, the university and the graduates is still evident.

2.5.2 Centre of Entrepreneurial Development and Graduate Marketability Portal (CEM)

CEM is concerned with promoting and enhancing graduates' employability and entrepreneurship development in Malaysian Institutes of Higher Learning. They provide career counselling and guidance, high impact trainings which can increase graduate marketability, graduate tracer study, list of companies that offer internship, advertise job vacancies and the job requirements for graduates. The CEM portal offers graduates information on job openings and trainings available. The limitations of the CEM portal include the inability of graduates to post their resumes on the portal or apply for jobs directly on the portal. Employers likewise do not have the opportunity to register or login to the portal to post jobs.

2.5.3 JobCentrum Portal

JobCentrum Portal was developed in order to help in the development of co-operation between students, educational institutions and employers so as to increase the students' marketability when they are still in school and after they are through with school. The portal is specifically created to aid the Tomas Bata University graduates and the employers they are affiliated with are those from Czech firms, companies and Czech companies as a whole. In addition, the portal is made up of a small labour market whose focus is based on a special category of students and graduates (Tucek & Mikeska, 2011). Activities Job Centers are focused on finding and mediation suitable jobs motivated students and graduates, assistance in drafting their resume or cover letter, organizing workshops for students and graduates UTB and organizing a job fair - Business days like. The JobCentrum portal assists graduates in finding job opportunities which they can apply for but does not focus on showcasing

the marketability of the graduates to the employers. The portal is more focused on bringing the employment opportunities to graduates for which they can apply for jobs.

2.5.4 Commercial Job Portals (Jobstreet and Monster)

Jobstreet.com and Monster.com are commercial job portals through which graduates search for jobs and employers look for prospective employees. Their ideas are based on posting of CVs by users which the system makes available for employers in the same industry or business. They offer real-time job postings, resume search and complete company profiles. However, these job portals are operated by private bodies and so do not have much interaction with specific university. Also, there is over saturation of jobseekers as there are many jobseekers vying for a particular job position. One other limitation is the fact that payment is required to perform some operations, for instance, a user has to pay to have better chances of getting his or her resume found by employers. This means that those members who do not upgrade for this plan have lesser chances of their resume being found in time. The following table provides information on some of the services rendered by these portals and their limitations.

Table 2.1: Related Portals and their limitations

	Services	Limitations
Ready4work Portal	– Seminars - Training and workshops -Provide recruiting organization information	- Graduates are not allowed to showcase their achievements to prospective employers or apply for jobs directly. - Stakeholders cannot interact directly with each other on the portal
CEM Portal	- Provides information about job openings available -Seminars, trainings and workshops	- Directly job application from the portal is not available - Showcase of graduates’ e-portfolio to employers is not available - Stakeholders cannot interact directly with each other on the portal
JobCentrum Portal	- On-the-job trainings - Provides job opportunities - Internship opportunities - Career counseling - Trainings and Seminars	- No direct registration for employers in the portal - Showcase of graduates’ e-portfolio to employers is not available
Jobstreet and Monster	- General job portals - Provide job opportunities and requirements - Jobseekers can create resume	- Have no interaction with the university - Too many jobseekers applying for the same jobs - Graduates can basically showcase their resume but not other contents - Payments are required to perform some specific actions on these portals

Due to the limitations identified in the existing portals, the proposed integrated portal will focus on how to facilitate the graduate marketability by creating an online environment with integrated features where graduates can showcase graduates’ contents and resume through the use of e-portfolios to prospective employers, have the ability to view job offers and apply for them through the portal and provide detailed job requirements information for graduates in order to know if they are qualified for the available jobs or not. The portal will also assist the employers in verifying an applicant’s identity through the reference and attestation letters provided and verified by the lecturers of the university for the applicants. It will likewise try to integrate collaboration between the university, the employers and graduates so that they can find ways and methods through which prospective graduates might be able

increase their chances of getting jobs and graduates' marketability through interaction on the portal for example discussion forums, chats and private messaging.

2.6 Conclusion

This chapter deals with the thesis background. Graduate marketability and the problems associated with it are discussed. The concept of e-portfolio and its use for showcasing graduates' artifacts and accomplishments so as to help in boosting their marketability is explained as well. Furthermore, due to the importance of developing an integrated portal that interests and meets the needs of the users, requirement analysis is crucial. Hence, user requirements and requirement analysis are discussed. The chapter also presents the existing portals which are related to the proposed prototype. The limitations and the differences between the portals have been discussed. These portals were described in order to provide an understanding on the different types of portal available which are geared towards facilitating students and graduates marketability. In the next chapter, the research methodology and portal development methodology will be presented.