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Using ICT to Support Alumni Data Collection in Higher Education

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Abstract

Getting feedback from external stakeholders, especially alumni and employers, is a challenging task for higher education institutions. It is important for many reasons, such as providing information to policy makers, assessing quality of academic programmes, adapting academic programmes to labour market needs, and marketing purposes. Alumni and employer surveys are usually used as methods for collecting data from stakeholders. Research suggests that major problems in data collection are related to efficiency and effectiveness of data collection process. This paper presents a different method of data collection supported by ICT. A specially designed web portal equipped with advanced alumni tracking and communication features was developed and used for alumni data collection. The web portal was evaluated after a period of real operation by analyzing collected data and conducting an online survey. The evaluation results showed that the web portal could be used as effective, efficient, and useful tool for alumni data collection and communication between alumni and higher education institutions.

Key words: *academic quality; employment rate; feedback; graduate tracking; web portal.*

Introduction

Feedback from higher education institution (HEI) stakeholders, particularly alumni and employers, is considered important for the institution and could be used for many purposes. Collection of feedback from external stakeholders is a challenging task for HEIs (Oliver, Tucker, Jones, & Ferns, 2007). In many countries, graduate tracking systems were established at national or sub-national levels to provide information

on graduates and their career paths. In a recent study, graduate tracking systems in 10 countries have been analyzed in terms of their authors, purposes, scopes and methods (Usher & Marcucci, 2011). Some of the identified purposes were providing information to policy makers, faculty and administrators, as well as to prospective and current students. Graduate tracking systems were also used for assessing institutional performance and institutional benchmarking. Previous research identified additional reasons for tracking graduates and their careers, such as: investigating graduate satisfaction with quality of academic programmes and their usefulness for work (Oliver, Tucker, Jones, & Ferns, 2007; Oliver et al., 2010; Storen & Aamodt, 2010), assessing graduate learning outcomes and employment outcomes (Oliver et al., 2010), and graduate involvement in enhancing student learning (Tyran & Garcia, 2005; Gannod, Bachman, & Troy, 2010; Frasquet, Calderon, & Cervera, 2012). Alumni stakeholder group is one of the most significant resources that HEIs have because of the potential value they can add to HEIs (Barnard, 2007). The added value is not just a financial value gained through donations, partnerships and sponsorships, but also through increased social interaction, networking and knowledge sharing, promotion of HEIs and participation in strategic development of HEIs.

Traditionally, most graduates in Bosnia and Herzegovina (B&H) and other Western Balkan countries do not have many contacts with their alma mater after graduation. HEIs in B&H do not have information on where their alumni are, how they perform at work, or what kind of employment, if any, they get after graduation. There is no institution at national or sub-national level in B&H that is responsible for tracking information on graduates and providing this information to policy makers or HEIs. With recent introduction of quality standards for higher education in B&H, connections to alumni and work field have become one of the accreditation requirements that will probably motivate most HEIs to find their own solution to fulfil the requirement.

The aim of this research was to investigate how information and communication technologies (ICTs) could be used to establish effective, efficient, and permanent communication channel between HEIs and their stakeholders, with primary focus on alumni stakeholder group. We also tried to get some answers about the possible collection of alumni personal and employment information by using ICT, and to investigate their motivation for providing data and staying in touch with HEIs. The research methodology was based on the development of web portal that should solve some of the problems related to alumni data collection, putting the web portal into real operation, and on evaluation of the web portal after a period of use. We argue that it is possible to collect required information from alumni more effectively and efficiently by using ICT in an appropriate way. While previous research indicates prevalent use of alumni surveys for retrieving personal and employment information from alumni, we try to get most of this information through a specially designed web portal having advanced alumni tracking and communication features, where all users will have their

profiles and keep them updated. This kind of data collection is not usually seen in graduate tracking systems in other countries. The web portal is also integrated with popular social networking sites and email providers (Facebook, Google, and Windows Live) in order to increase amount of information and to facilitate its use.

Literature Review

A significant body of research is concerned with various aspects of using alumni feedback in higher education. The methods of getting alumni feedback are mainly based on periodical alumni surveys conducted several years after graduation. Some institutions use contact information from alumni databases or university career services for sending surveys to participants. When this information is out-of-date, or where alumni databases and career services do not exist, various methods are used for collecting alumni contact information, ranging from manual search for names on search engines (Daniel, Brooks, & Waterbor, 2011), to harvesting LinkedIn alumni profiles (Case, Gardiner, Rutner, & Dyer, 2011). Based on the surveyed literature, major problems in data collection are related to efficiency and effectiveness, especially in getting accurate alumni contact and employment information.

Research literature indicates that different graduate tracking systems exist in different countries, in terms of their owners, objectives, methodology, scope, and usage of data collected with them. In a recent study conducted by Usher and Marcucci (2011), graduate tracking systems (GTSs) have been analyzed in 10 countries around the world. In terms of their objectives, all GTSs at national level are aimed to "provide information to policy makers and work force planners for use in shaping future education policy", while almost all of them are also used for providing information to universities for the improvement of academic programmes and institutional development. In terms of methodology, most GTSs use paper-based or electronic surveys for surveying all students who graduated in a specific year. Larger differences exist regarding the timing and participants of surveys. Some surveys are conducted on the same cohort in different years after graduation, while others are conducted annually on every new cohort.

The largest body of research is concerned with assessment and evaluation of institutions, academic programmes, and graduate learning outcomes based on alumni and employer feedback (Hoey & Gardner, 1999; Gayle, Inpornjivit, & Sellers, 2004; Borden, 2005; Bosshart, Wentz, & Heller, 2009). Methods mostly used for collecting feedback from these stakeholders were alumni and employer surveys. In some cases, additional stakeholders were included as survey participants. Oliver et al. (2010) reported on the development of a suite of surveys for graduates, employers, and teaching staff, aimed at providing their perceptions about the extent of achievement and importance of graduate capabilities for getting employment, readiness for work, and professional success. The results of the surveys were used for redesigning and improving curricula.

Alumni role in improving student learning experience was also investigated in the literature. Gannod, Bachman and Troy (2010) tried to increase alumni engagement in capstone projects at Miami University in order to enhance learning experience of students, and to promote lifelong learning of alumni. Alumni were engaged as advisors in student capstone teams while working on projects that had a positive impact on society. In this way, partnerships were created between students, faculty, and alumni, resulting in better experiences for all. More examples of alumni involvement in mentorship programmes were presented by Sharp (2004), and Tyran and Garcia (2005).

A relatively small amount of research is concerned with ICT-supported means for establishing and maintaining relationships with alumni and employers. Barnard (2007) elaborated on the value of alumni networking for the South African higher education sector, and described functionalities and benefits of online community portals for enhanced alumni networking. Barnard and Rensleigh (2008) suggested that online community portals can provide significant benefits in building and maintaining relationships with alumni. They presented a rich set of functionalities of GradNet web portal and outlined its benefits for facilitating communication between alumni, and between alumni and institutions.

Oliver et al. (2007) reported on the use of existing university system of teaching and learning evaluation, and the extension of its functionalities to capture feedback from graduates and employers. The feedback from these stakeholders was used to assess graduate learning outcomes and perform comprehensive course review. Alumni contact emails were used from the alumni database, while employer contacts were gathered from the staff teaching the course. Graduates were also asked to forward the invitation email to their employers. Email invitations were sent to 9526 alumni email addresses, of which only 636 responded. The authors stated that it was "... impossible to calculate a response rate to this survey since the number of 'dead' email addresses in the database is unknown". Employer survey was sent to 59 employers, of which 33 responded.

Daniel, Brooks and Waterbor (2011) described evaluation approaches for longitudinal tracking of graduates in the cancer research training programme at the University of Alabama, Birmingham. The aims of study were to locate all the previous programme participants, to update their contact information, and to update their current activities regarding employment and further education in relation to the programme. The authors used various methods for collecting contact and employment information, and evaluated their effectiveness. Some of the methods used were: existing alumni records, alumni institution websites, social networking sites, personal contacts, and search engines. Most of the presented methods were time-consuming or returned moderately useful results.

Case et al. (2011) collected information on 175 graduates by harvesting their LinkedIn profiles. The aim of the study was "... to examine the extent to which

LinkedIn profiles are able to provide a more realistic picture of entry-level jobs held by program alumni and subsequent career progress". Results of the study suggested that LinkedIn information on graduates could be used for this and other purposes (including programme assessment, creation of mentorship programmes), but with some limitations regarding the completeness and richness of LinkedIn profiles. Besides, the method of establishing connections to alumni by searching their names on LinkedIn was time-consuming.

Most of the foregoing studies were concerned with how data collected from stakeholders could be used for the improvement of academic programmes and institutions. Some of them were concerned with how data could be collected. The main data collection instruments were alumni and employer surveys. However, many problems have been identified in data collection process, mostly related to the availability and accuracy of contact information of potential survey participants, as well as to the efficiency and effectiveness of the process itself. Most presented methods for collecting graduate employment information lacked efficiency and effectiveness. This research suggests that some of these problems could be alleviated by establishing and maintaining permanent communication channels between institutions and their stakeholders. HEIs could keep in touch with their graduates by ICT-supported tools like alumni web portals and social networking tools, and provide mechanisms to regularly maintain and update contact and employment information before connections are lost.

Method

The research methodology was based on the development of alumni web portal, putting the web portal into real operation at one higher education institution, and its evaluation after a period of use. The evaluation included analysis of data collected via the web portal and online survey conducted by the specific module built in the web portal. The survey was conducted in order to provide insights into alumni perceptions about using the web portal, their interest to keep in touch with the institution, and to participate in the institution activities. Survey items were rated on a Likert scale, ranging from 1 ('Strongly disagree') to 5 ('Strongly agree') agreement levels. Survey items were multiple-choice to enable the selection of possible types of cooperation between alumni and the institution. An additional field for recording open-ended answers was also available for qualitative feedback from alumni. Survey results were analyzed by using the built-in survey module. The results were also exported to SPSS software package for additional descriptive statistical analysis.

Research Context and Participants

The research was conducted at the Faculty of Electrical Engineering East Sarajevo (FEE). The FEE is an organizational unit of the University of East Sarajevo, which is one of the eight public universities in B&H. More than 3800 students graduated from

the FEE in almost last 50 years, beginning from 1965 and up to 2011. Participants in the research graduated from the FEE after 1996 (N=311, 82 female, 229 male). The graduates were invited to register on the web portal. Invitations were sent to 251 known email addresses via mass-email function of the web portal. The invitation was also available on the web portal and the FEE official web site, and the graduates were also asked to forward it to their colleagues. Additionally, a small number of graduates (N=19), who graduated before 1992, participated in the online survey that was conducted as a part of the research. These graduates did not receive the email invitation since their email addresses were not known. They got registered after having found information on the web portal by using the Internet search engines.

Research Instrument

The alumni web portal was used as a main research instrument. We refer to the web portal as 'ALTRIS'. It is available at http://alumni.etf.unssa.rs.ba. ALTRIS was developed by using open source technologies and following the MVC (Model-View-Controller) programming pattern. It was implemented on a LAMP platform (Linux, Apache, MySQL, and PHP). The initial design of ALTRIS was presented in Mijic & Jankovic (2012). It was subsequently enhanced with additional features for getting feedback from alumni and employers, as well as with features for getting integrated into existing university information systems and social networking sites.

Main functions of ALTRIS are collection of alumni contact data, collection and analysis of employment data (e.g. employment ratio, average time of waiting for the first employment), collection of feedback from alumni via the built-in survey module and its analysis, and provision of efficient means of communication between alumni and HEIs.

Alumni contact and employment data are stored in alumni profiles. They contain personal information, contact information, education and employment information for each graduate. Alumni profiles could be generated in two ways. One way is to use existing data from the university information system and to automatically populate them with personal and information on education. The other way is to create alumni profile manually during the alumni registration process. After initial creation of alumni profile, alumni are regularly reminded to update their contact and employment information. An example of user interface for recording employment information is shown in Figure 1.

Based on the collected personal and employment data, ALTRIS provides a number of reports. Some of them are available to public, like alumni and job directories in textual and graphical form (e.g. Google Maps), while others are available only to registered users (e.g. employment statistics). An example of graphical representation of alumni directory using Google Maps is shown in Figure 2.

Collection of additional feedback from alumni is performed by the built-in survey module. This module enables users to easily create custom survey, distribute invitation

to participants, collect, present and optionally export results of the survey for later use or analysis in other software (e.g. Excel or SPSS). A number of options is available for creating surveys, such as defining questions of different types, defining custom answering scales, setting date and time limits, security options, etc.

Figure 1. User interface for recording employment information

Figure 2. Graphical representation of alumni directory using Google Maps

Results

Registered Graduates

ALTRIS has been in operation at the FEE since June 2011. To date, the FEE alumni database contains 3808 alumni records for the graduates who graduated between 1965 and 2011. Initial alumni profiles were imported from the FEE student information system with accurate information at the time of their graduation. In the first two days after sending email invitations and publishing invitation on the FEE web site more than 70 graduates got registered. In the first two weeks this number increased to more than 150 registered graduates. To date, the total number of registered graduates is 214. From the target group of 311 graduates, 195 (62.7%) got registered on the web portal. Additionally, 19 of 'older' graduates, that graduated more than 20 years ago, were registered on the web portal and included as participants of online survey. The total number of graduates and that of registered and employed graduates per graduation year is shown in Figure 3.

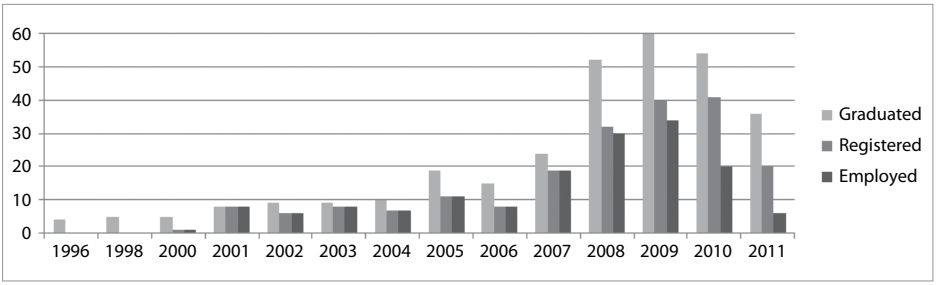

Figure 3. Number of graduated students, registered and employed graduates by graduation year

Personal Information

Registered graduates have a possibility to enter some personal information into their profiles, apart from the already existing information from university records. This information includes married last name, place of residence, home address, email, contact phone and monthly income. Email address is mandatory, but other fields were left optional. Number of graduates who did not enter place of residence is 18 (8.4%), 61 (28.5%) did not enter home address, 63 (29.4%) did not enter contact phone, and 133 (62.1%) did not enter monthly income. Number of graduates who entered married last name is 12 (5.6%). Within each alumni profile, it is possible to set communication preferences for receiving information from ALTRIS. Only three (1.4%) graduates indicated that they did not want to receive information from ALTRIS.

Employment Information

Based on the graduate employment records, ALTRIS generates detailed employment statistics. Employment ratio of all registered graduates is 80.4%. Number of unemployed graduates is 42 (19.6%). Total number of registered jobs is 170, with 106

currently active jobs. In total, average time of waiting for the first employment is 1.41 months for 77 graduates. To compute this indicator, it is required to register the first employment in the alumni profile. Almost a half of registered employed graduates did not enter this data into their profiles. The top three sectors by number of active jobs are: power sector (33.02%), public administration (21.7%), and education sector (21.7%). A total of 70 (66.04%) of active jobs are registered as jobs in the field of study. Number of active jobs in the private sector is 17 (16.04%).

Survey Results

A total number of respondents to the survey is 90 (42%). Results of the survey are presented in Table 1 and Table 2.

Table 1

Descriptive statistics for survey items rated on a scale of 1 to 5

Survey item	N	Mean	St. dev.	Var.
I am interested in maintaining contacts and cooperation with the FEE	90	4.69	0.612	0.374
I want to help the FEE in improving the quality of academic programmes and designing curriculum	86	4.56	0.729	0.532
The FEE graduates should have more intensive social activities and cooperation	88	4.53	0.710	0.505
I am interested in becoming a member of the FEE alumni association	89	4.64	0.727	0.528
I am interested in participation in the social events organized by the FEE alumni association	88	4.35	0.845	0.714
Alumni portal is a useful tool for maintaining connections between the FEE, alumni and employers	89	4.24	0.812	0.660
User interface of the alumni portal is simple and intuitive	88	4.10	0.817	0.668
Updating personal contact and employment information once per year is not a problem for me	89	4.62	0.731	0.534
I do not want to enter my personal contact and employment information because my privacy could be compromised	88	2.36	1.186	1.406
It requires entering too much information and I do not want to spend my free time on that	88	1.92	0.985	0.971
It is needed to introduce more options for controlling access to contact and employment information	86	3.24	1.051	1.104
I find useful the information about my colleagues and their employers that could be found on the alumni portal	88	4.18	0.736	0.541
I would recommend to all the FEE graduates to register on the FEE alumni portal	89	4.55	0.798	0.637

Table 2
Possible areas of cooperation selected by graduates

If you are interested in cooperation with the FEE, please select items that are acceptable for you (N=88)	Responses
Participation in surveys periodically conducted by the FEE	68 (77.3%)
Participation in design of academic programmes and curricula	43 (48.9%)
Providing internships for the FEE students in my institution	22 (25%)
Participation in joint research projects	57 (64.8%)
Using the FEE laboratory resources	42 (47.7%)
Using the FEE online libraries	56 (63.6%)
Providing sponsorships for conferences and events organized by the FEE	11 (12.5%)

There were several comments and suggestions from the survey participants regarding introduction of the alumni portal and intensifying social activities among alumni and between the FEE and alumni. Some of the comments are:

I think this portal should be much more active and should help graduates to establish contacts for finding potential employers. It could also be a possible mediator in finding employment.

I hope the ideas presented with the introduction of this portal will be realized in the near future.

I support the idea of establishing the alumni portal. I think this is a very useful tool for establishing communication between experts. I hope that this will contribute to the development of the FEE as it is an obligation of all of us. Great YES for a good idea.

All forms of communication are desirable and good, so this one is too.

I think that FEE graduates do not show enough interest in the alumni web portal and do not understand the purpose of this portal. I also think they should be more active in order to achieve better mutual cooperation for benefits of other colleagues and the FEE as an institution.

Discussion

The aim of this research was to investigate how ICT could be used to establish an effective and efficient communication channel between HEIs and their alumni, as well as how it could be used to collect information from alumni, especially employment and personal information. We found that, by using a specially designed web portal, connections to alumni could be successfully established and important information could be collected. Although alumni web portals are not new and they are widely used by alumni associations and HEIs in many countries, their use mainly refers to alumni networking and fund raising. Apart from alumni networking and other common features of alumni web portals, the web portal presented in this paper has additional features for facilitating communication and collection of data from alumni. Some of these features are integration into social networking sites, possibility to import data

from existing university information systems, simplified administration of surveys, and different approach to collecting employment information. The most distinctive feature is collection of alumni employment information and extraction of statistical data that could be directly used by quality assurance staff and academic programme administrators, as well as by other stakeholders such as policy makers, work force planners, and prospective students.

It is important to note that this research was conducted in B&H, a country where connections between HEIs and alumni do not have a tradition and still do not exist at most HEIs. However, the results showed that this situation could be easily improved by applying ICT. Moreover, we suggest that the presented methods for collecting alumni related information could also be used in other contexts with the aim of improving the efficiency and effectiveness of data collection.

Results showed that about 63% of graduates who graduated in the last 16 years got registered on the web portal. Most of them updated their personal information in alumni profiles. More than 90% of graduates provided their places of residence, while about 70% provided contact addresses and phone numbers. More than half of them (62.1%) did not specify their monthly income. Email address is mandatory during the registration process, so this piece of contact information is available for all registered graduates. In our opinion, contact information collected in this way is sufficient for further communication since communication will be performed mostly in electronic form. In our case, additional contact information, such as place of residence or home address, is useful for the visualization of alumni residences on Google Maps and for tracking the migration of graduates, but it is not crucial for further communication. In some other GTSs, it is required to have complete contact addresses for sending paper-based survey questionnaires. GTSs which use online surveys also need an up-to-date list of email addresses. This could be a problem in cases when there has been no communication with graduates for several years. In our approach, alumni profiles should be created immediately after graduation and automatically populated with up-to-date information. After that, graduates are regularly reminded to update their contact information, which improves the availability and accuracy of contact information.

Graduate employment rates are based on the number of registered graduates. Within the alumni profiles, registered graduates can indicate if they are currently employed or not. In this way, it is possible to always have approximate information on employment rates, even if graduates do not register their actual jobs. For calculation of time of waiting for the first employment, it is required to register the first job within alumni profile, which was done by 77 graduates (44% of all employed). For a more precise calculation of this indicator, it would be useful to have more graduates who registered their first job. Many graduates, who graduated more than five years ago, registered only their current job or even did not register jobs at all. Regarding the field of work and job positions, they are recorded for each job that is registered within alumni

profiles. Number of jobs by fields of work, as well as individual job position listings, are available in statistical reports provided by ALTRIS. In order to keep data updated, email reminders are sent annually to registered graduates to update their profiles. Reminder message contains current contact information, status of employment and full employment history. If the current information is up to date, it is enough to click a link in the reminder message to confirm it. If the information is out of date, graduates are asked to go to their profiles and update information. In this way, we try to collect information incrementally, without overwhelming graduates with too many questions. Since the system was introduced for the first time, we had to ask all graduates to register their complete employment history because we had no previous data. This could be problematic for older graduates who did not want to register all their jobs, but for more recent graduates it is not too much work. In later phases, older graduates should only update their current employment information, and new graduates should register their first employment. We find this an advantage when compared to other GTSs. Other GTSs usually collect employment information through alumni surveys which are conducted one to five years after graduation. Between the first and the fifth year, and after that time, they do not provide up-to-date information on graduates. Moreover, some other systems still use paper-based surveys, which leads to reducing effectiveness and efficiency of the process, and introduces other costs. We claim that our approach to collecting graduate employment information is more efficient and more effective. This approach is also useful in a situation when there is no other source of information on graduate employment, like it is the case in B&H.

The survey results indicate that most of the graduates are interested to keep in touch with the FEE. Most of them are also willing to help with the design of curriculum and improvement of academic programmes. The most interesting area of cooperation with the FEE was survey participation, but the least interesting were providing sponsorships and internships. Open-ended comments showed mostly positive attitude regarding introduction of the web portal and suggested that graduates should be more active in order to achieve better cooperation and provide benefits to all stakeholders. Although it is not a tradition and common practice at most HEIs in B&H and Western Balkan countries, the FEE graduates indicated that they would like to stay in touch with their alma mater. This interest should be recognized by the FEE and appropriate measures should be undertaken to strengthen connections and improve cooperation in the future.

Conclusion

Based on the presented results and foregoing discussion, we conclude that ICT could be successfully used for connecting to alumni, and getting valuable information from them. This information could be used by different users for different purposes, including, but not limited to, assessment and improvement of quality of academic programmes, enhancing student learning experiences, increasing learning outcomes,

assessment of institutional performance, and providing information to policy makers and prospective students. Due to the appropriate use of ICT, involvement of alumni could be made easier, more effective, and more efficient. In our experience with establishing connections to alumni via the web portal, significant results were achieved in a short time with minimal human and material resources. No special benefits were provided to graduates by the FEE for their participation in surveys or for providing employment information. It seems that sufficient motivation for most graduates is a possibility to find where their colleagues are and what they do. The results could be probably improved by additionally motivating graduates to participate in these activities, for example by providing them with various benefits like it is the practice at HEIs in other countries.

Additional functionalities of ALTRIS are foreseen in the future work to extend the involvement of other stakeholders, especially employers. Other stakeholder groups will also be taken into account and provided with adequate functionalities in accordance with their needs. For example, relevant ministries of education are interested in graduate employment rates and labour market demands as input data for defining admission policies. On the other hand, prospective students and their parents are interested in similar information, but from the other perspective, when deciding which academic programme or discipline to choose. In countries like B&H, where the number of higher education institutions has dramatically increased in the last fifteen years, it is hard to make a decision on which institution to choose or to compare their quality. The quality of higher education and competition between public and private universities in developing countries is a serious issue and it was often investigated in the literature (Wilkinson & Yussof, 2005; Oketch, 2009; Alemu, 2010). If employability of graduates is "regarded as an aspect of quality of higher education" (Storen & Aamodt, 2010), then employment information provided by systems like ALTRIS could be used by various stakeholders to help them in making right decisions.

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Upotreba IKT s ciljem pružanja potpore prikupljanju podataka o bivšim studentima u visokom obrazovanju

Sažetak

Dobiti povratne informacije iz vanjskih izvora, osobito od diplomiranih studenata i poslodavaca, predstavlja izazov za visokoškolske institucije. Povratne su informacije korisne zbog nekoliko razloga, kao što su informiranje kreatora politike, vrednovanje kvalitete studijskih programa, prilagođavanje studijskih programa potrebama tržišta rada, marketing. Obično se bivši studenti i poslodavci anketiraju radi prikupljanja podataka. Iz istraživanja proizlazi da se glavni problemi u vezi s prikupljanjem podataka odnose na učinkovitost i djelotvornost procesa prikupljanja. Ovaj rad predstavlja drugačiju metodu prikupljanja podataka uz pomoć IKT jer je u njemu korišten posebno programiran web portal s mogućnostima naprednog praćenja bivših studenata i komunikacije. Web portal je vrednovan nakon određenog razdoblja primjene tako što su analizirani prikupljeni podaci i provedena internetska anketa. Rezultati vrednovanja pokazali su da se web portal može koristiti kao učinkovit i koristan alat za prikupljanje podataka o bivšim studentima i komunikaciju između njih i visokoškolskih institucija.

Ključne riječi: *kvaliteta nastave; povratna informacija; prikupljanje podataka o bivšim studentima; stopa zapošljavanja; web-portal.*

Uvod

Povratna se informacija od raznih sudionika, osobito studenata i poslodavaca, smatra važnom za visokoškolsku instituciju i mogla bi se koristiti u različite svrhe. Prikupljanje povratnih informacija iz vanjskih izvora predstavlja izazov za institucije u sustavu visokog obrazovanja (Oliver, Tucker, Jones i Ferns, 2007). U mnogim su zemljama ustrojeni sustavi za prikupljanje informacija o bivšim studentima i njihovom profesionalnom razvoju na državnoj ili nižoj razini kako bi se omogućila njihova dostupnost. U jednom su nedavnom istraživanju analizirani spomenuti sustavi u 10 zemalja s obzirom na njihove autore, ciljeve, djelokrug i korištene metode (Usher i Marcucci, 2011). Neki su se od utvrđenih ciljeva odnosili na informiranje kreatora politike, fakulteta i administratora, a obuhvaćali su buduće i sadašnje studente. Osim

toga, isti se sustavi koriste za vrednovanje institucionalnih postignuća i institucionalno pozicioniranje. Prijašnja su istraživanja utvrdila dodatne razloge za praćenje bivših studenata i njihovih karijera, kao što su: istraživanje zadovoljstva bivših studenata kvalitetom studijskih programa i njihovim prednostima u radu (Oliver, Tucker, Jones i Ferns, 2007; Oliver i sur., 2010; Storen i Aamodt, 2010), vrednovanje ishoda učenja i stope zaposlenosti bivših studenata (Oliver i sur., 2010), zatim sudjelovanje bivših studenata u poboljšanju nastavnih uvjeta sadašnjih studenata (Tyran i Garcia, 2005; Gannod, Bachman i Troy, 2010; Frasquet, Calderon i Cervera, 2012). Skupina bivših studenata jedan je od najvažnijih resursa što ih visokoškolske institucije imaju zbog njihove potencijalne vrijednosti (Barnard, 2007). Dodana vrijednost nije samo financijska vrijednost stečena donacijama, partnerstvima i sponzorstvima, već i snažnijom društvenom interakcijom, umrežavanjem i razmjenom znanja, promidžbom visokoškolskih institucija i sudjelovanjem u njihovu strateškom razvoju.

Većina bivših studenata u Bosni i Hercegovini (BiH) i ostalim zemljama zapadnog Balkana tradicionalno nema mnogo kontakta s matičnim institucijama nakon što diplomira. Visokoškolske institucije u BiH ne raspolažu podacima o tome gdje su njihovi bivši studenti, kako obavljaju svoje radne zadatke, koju vrstu zaposlenja dobivaju, ako su uopće zaposleni. U BiH ne postoji institucija na državnoj ili regionalnoj razini koja je odgovorna za prikupljanje podataka o bivšim studentima i njihovo upućivanje kreatorima politike ili visokoškolskim institucijama. Nakon što su nedavno uvedeni standardi kvalitete za visokoškolske institucije u BiH, uspostava kontakata s bivšim studentima i stjecanje uvida u područja njihova rada jedan je od uvjeta za akreditaciju, što će vjerojatno motivirati većinu visokoškolskih institucija za pronalazak vlastitih rješenja kako bi zadovoljili taj uvjet.

Cilj ovog istraživanja bio je utvrditi kako bi se informacijsko-komunikacijske tehnologije (IKT) mogle primijeniti na uspostavu učinkovitih i stalnih kanala za komunikaciju između visokoškolskih institucija i njihovih subjekata, ponajprije bivših studenata. Nastojali smo također dobiti neke odgovore u vezi s mogućnošću prikupljanja osobnih podataka i podataka o zaposlenju bivših studenata s pomoću IKT, zatim istražiti njihovu motivaciju za pružanje takvih podataka i kontaktiranje s visokoškolskim institucijama. Metodologija istraživanja temeljila se na izradi web-portala koji bi trebao riješiti neke probleme u vezi s prikupljanjem podataka, njegovim stvarnim funkcioniranjem i vrednovanjem nakon određenog razdoblja. Smatramo da se traženi podaci mogu prikupljati od studenata učinkovitije uz pomoć odgovarajuće IKT. Dok prijašnja istraživanja ukazuju na prevladavajuću zastupljenost anketiranja studenata s ciljem prikupljanja podataka o njima osobno ili njihovu zaposlenju, mi nastojimo doći do većine potrebnih podataka uz pomoć specijalno programiranog web-portala koji bi pružao bolje mogućnosti za praćenje bivših studenata i komunikaciju, na kojemu će svi korisnici imati svoje profile i stalno ih obnavljati novim podacima. Taj se način prikupljanja informacija obično ne nalazi u sustavima za praćenje bivših studenata u drugim zemljama. Osim toga, web-portal

je povezan s popularnim društvenim mrežama i pružateljima usluga elektroničke pošte (Facebook, Google i Windows Live) kako bi se povećao pristup informacijama i pojednostavila njihova uporaba.

Pregled literature

Veliki dio istraživanja odnosi se na razne vidove korištenja povratnih informacija o bivšim studentima u visokom obrazovanju. Metode prikupljanja podataka uglavnom se zasnivaju na periodičnom anketiranju bivših studenata nekoliko godina nakon što diplomiraju. Neke institucije za potrebe kontakta koriste podatke iz studentskih datoteka ili ih dobivaju od ureda za profesionalno savjetovanje na sveučilišnoj razini. U slučaju kada podaci nisu ažurirani ili ne postoje spomenute datoteke/uredi, primjenjuju se različite metode za njihovo prikupljanje, od ručne potrage za imenima uz pomoć pretraživača (Daniel, Brooks i Waterbor, 2011) do pretraživanja profila studenata na Linkedin-u (Case, Gardiner, Rutner i Dyer, 2011). Polazeći od analizirane literature, glavni se problemi u prikupljanju podataka odnose na učinkovitost i djelotvornost te osobito dobivanje točne informacije o kontaktu i zaposlenju bivšeg studenta.

Pregled istraživanja u literaturi pokazuje da se u različitim zemljama postojeći sustavi za praćenje bivših studenata razlikuju prema vlasnicima, ciljevima, metodologiji, djelokrugu i korištenju podataka prikupljenih na taj način. U jednom istraživanju novijeg datuma, što su ga proveli Usher i Marcucci (2011), sustavi za prikupljanje informacija o bivšim studentima (SPIBS) analizirani su u 10 svjetskih zemalja. Svi su ti sustavi na državnoj razini usmjereni „pružanju informacija onima koji kreiraju politiku i onima koji planiraju zapošljavanje radi određivanja buduće obrazovne politike", ali se gotovo svi sustavi također koriste za informiranje visokih učilišta s ciljem poboljšanja studijskih programa i njihova institucionalnog razvoja. U smislu metodologije, većina sustava koristi se anketom u tiskanom ili elektroničkom obliku radi anketiranja svih studenata koji su diplomirali u određenoj godini. Postoje veće razlike pri utvrđivanju vremenske provedbe i sudionika. Neke se ankete provode na istom uzorku u različitim godinama nakon diplomiranja, a druge se provode svake godine na novom uzorku.

Najbrojnija se istraživanja bave evaluacijom i procjenom institucija, studijskih programa i ishoda učenja na temelju informacija prikupljenih od bivših studenata i poslodavaca (Hoey i Gardner, 1999; Gayle, Inpornjivit i Sellers, 2004; Borden, 2005; Bosshart, Wentz i Heller, 2009). Najčešće korištene metode za spomenuto prikupljanje podataka bile su ankete. U nekim su slučajevima ankete obuhvaćale i druge sudionike. Oliver i sur. (2010) izvješćuju o nizu anketa za bivše studente, poslodavce i nastavnike koje su provođene s ciljem stjecanja uvida u njihovu percepciju o razini postignuća i važnosti usvojenih kompetencija pri zaposlenju, spremnosti za obavljanje radnih zadataka i postizanju profesionalnog uspjeha. Njihovi su rezultati korišteni za doradu i daljnje poboljšanje kurikula.

U literaturi se također istraživala uloga bivših studenata u stjecanju boljih nastavnih iskustava među sadašnjim studentima. Gannod, Bachman i Troy (2010) nastojali

su intenzivirati sudjelovanje bivših studenata u vrhunskim projektima Sveučilišta u Miamiju kako bi poboljšali učenje sadašnjih studenata i promicali cjeloživotno učenje bivših studenata. Bivši su studenti bili također angažirani kao savjetnici u studentskim timovima dok su radili na projektima koji su imali pozitivan društveni učinak. Na taj su se način stvarala partnerstva između sadašnjih studenata, fakulteta i bivših studenata, što ih je sve dovelo do boljih iskustava. Dodatne primjere uključenosti bivših studenata u mentorske programe predstavili su Sharp (2004), Tyran i Garcia (2005).

Relativno se malen broj istraživanja bavi IKT alatima za uspostavu i održavanje kontakta s bivšim studentima i poslodavcima. Barnard (2007) objašnjava vrijednost umrežavanja bivših studenata za sektor visokog obrazovanja u Južnoj Africi i opisuje funkcionalnost i prednosti internetskih *community* portala za njihovo bolje umrežavanje. Barnard i Rensleigh (2008) navode korisnost takvih portala pri uspostavi i održavanju odnosa s bivšim studentima. Predstavljaju čitav niz funkcija web-portala GradNet i njegovih prednosti za lakšu komunikaciju između bivših studenata i institucije.

Oliver i sur. (2007) spominju korištenje postojećeg sveučilišnog sustava za evaluaciju nastave i proširenje njegovih funkcionalnih vrijednosti na prikupljanje povratnih informacija od bivših studenata i poslodavaca. Ista se povratna informacija koristila za procjenu ishoda učenja diplomiranih studenata i za cjelovit pregled kolegija. Podaci o elektroničkim adresama bivših studenata korišteni su iz njihovih datoteka, a do adresa poslodavaca došlo se zahvaljujući nastavnicima. Od bivših se studenata također tražilo da proslijede elektronički poziv svojim poslodavcima. Poslano je 9526 takvih poziva, a odgovor je stigao na njih samo 636. Autori su tvrdili da je bilo „… nemoguće izračunati postotak odgovora jer nije poznat broj „zamrlih" elektroničkih adresa u bazi podataka". Anketa za poslodavce poslana je na adrese 59 poslodavaca, a s njih 33 primljeni su odgovori.

Daniel, Brooks i Waterbor (2011) opisuju evaluacijske pristupe u kontekstu longitudinalnog prikupljanja podataka o bivšim studentima u sklopu programa koji se bavi istraživanjem tumora na Sveučilištu u Alabami u Birminghamu. Ciljevi istraživanja bili su locirati sve prijašnje sudionike programa, ažurirati podatke potrebne za kontakt s njima, utvrditi njihove trenutne aktivnosti u vezi sa zaposlenjem i daljnjim obrazovanjem u odnosu na program. Autori su primijenili razne metode prikupljanja podataka o kontaktu i zaposlenju bivših studenata i vrednovali njihovu učinkovitost. Neke od tih metoda obuhvaćale su: postojeće datoteke bivših studenata, mrežne stranice institucije koje su se odnosile na njih, društvene mreže, podatke za osobni kontakt i pretraživače. Za većinu predstavljenih metoda bilo je potrebno vrijeme ili su pak dali umjereno korisne rezultate.

Case i sur. (2011) prikupili su podatke o 175 bivših studenata s pomoću njihovih profila na Linkedin-u. Cilj istraživanja bio je „ ... utvrditi do koje mjere profili na Linkedin-u mogu dati realniju sliku o prvim radnim mjestima sudionika programa

i njihovu naknadnom kretanju u službi." Rezultati su pokazali da se podaci o bivšim studentima na Linkedin-u mogu koristiti za spomenuti i druge ciljeve (uključujući vrednovanje programa, kreiranje mentorskih programa), ali uz određena ograničenja s obzirom na to koliko su takvi profili potpuni i bogati podacima. Osim toga, metoda pretraživanja imena bivših studenata na Linkedin-u radi uspostave kontakata s njima vremenski je zahtjevna.

Većina spomenutih istraživanja bila je usmjerena na to kako se podaci prikupljeni od sudionika mogu koristiti s ciljem unapređivanja studijskih programa i institucija, dok su se neka bavila načinima prikupljanja podataka. Glavni instrumenti za prikupljanje podataka bile su ankete provedene na uzorku bivših studenata i poslodavaca. Međutim, utvrđeni su brojni problemi u procesu prikupljanja podataka, uglavnom u vezi s dostupnošću i točnošću podataka za uspostavu kontakta s potencijalnim sudionicima ankete te učinkovitošću i djelotvornošću procesa. Većini opisanih metoda za prikupljanje podataka o zaposlenju bivših studenata nedostajalo je učinkovitosti i djelotvornosti. Istraživanje pokazuje da se neki od tih problema mogu ublažiti tako što će se uspostaviti i redovito održavati kanal za komunikaciju između institucija i njihovih subjekata. Visoka učilišta mogla bi biti u kontaktu s bivšim studentima uz pomoć alata koji se temelje na IKT, kao što su web-portali bivših studenata i društvene mreže te omogućiti mehanizme za redovito održavanje i obnavljanje osobnih podataka i podataka o zaposlenju prije nego se ti kontakti izgube.

Metoda

Metodologija istraživanja temeljila se na razvoju web-portala za bivše studente tako što je on stavljen u funkciju na jednoj visokoškolskoj instituciji, a nakon određenog vremena vrednovan. Vrednovanje je obuhvaćalo analizu podataka prikupljenih s pomoću web-portala i internetskog anketiranja u modulu za anketiranje. Anketiranje je provedeno da bi se utvrdila percepcija bivših studenata o upotrebi web-portala, njihovu zanimanju za kontakt s institucijom i sudjelovanju u aktivnostima institucije. Anketna su pitanja bila poredana na Likertovoj ljestvici od 1 do 5, u rasponu od „uopće se ne slažem" do „veoma se slažem". Svako je pitanje sadržavalo tri odgovora za odabir moguće suradnje između bivših studenata i institucije. Bila je također osigurana posebna rubrika za pitanja otvorenog tipa kako bi se od anketiranih dobili kvalitativni podaci. Rezultati su analizirani uz pomoć specijalnog modula ugrađenog u web-portal, a također su statistički obrađeni primjenom deskriptivne statistike (SPSS programski paket).

Kontekst istraživanja i sudionici

Istraživanje je provedeno na Elektrotehničkom fakultetu u Istočnom Sarajevu (ETF). ETF je organizacijska jedinica Sveučilišta u Istočnom Sarajevu, jednog od osam sveučilišta s pravom javnosti u BiH. Više od 3800 studenata diplomiralo je na ETF-u proteklih gotovo 50 godina, od 1965. do 2011. U istraživanju je sudjelovalo 311

studenata koji su diplomirali poslije 1996. god. (82 ispitanice, 229 ispitanika). Pozvani su da se registriraju na web-portal. Pozivi su poslani na 251 poznatu elektroničku adresu s pomoću *mass-email* funkcije web-portala. Poziv je također objavljen na web-portalu i na službenim mrežnim stranicama Fakulteta, a bivši su studenti još zamoljeni da kolegama proslijede poziv. Osim toga, malen je broj studenata (19), koji su diplomirali prije 1992. godine, sudjelovao u internetskoj anketi u sklopu ovog istraživanja. Spomenuti studenti nisu primili poziv putem elektroničke pošte jer su njihove adrese bile nepoznate. Registrirali su se nakon što su pronašli informaciju na web-portalu uz pomoć internetskog pretraživača.

Instrument

Kao glavni instrument u istraživanju upotrijebljen je web-portal bivših studenata. Nazvat ćemo ga ALTRIS. Dostupan je na: http://alumni.etf.unssa.rs.ba. ALTRIS je razvijen s pomoću tehnologija otvorenog izvora i obrasca za programiranje MVC (*Model-View-Controller*). Postavljen je na platformu LAMP (Linux, Apache, MySQL i PHP). Njegov je prvotni dizajn predstavljen u Mijic i Jankovic (2012). Ubrzo je poboljšan dodatnim mogućnostima za prikupljanje informacija od bivših studenata i poslodavaca, kao i za povezivanje s postojećim informacijskim sustavima na razini sveučilišta i na društvenim mrežama.

Glavne su funkcije ALTRIS-a sljedeće: prikupljanje podataka za kontakt s bivšim studentima, prikupljanje podataka od poslodavaca i njihova analiza (npr. stopa zaposlenosti, prosječan rok čekanja prvog zaposlenja), prikupljanje podataka od bivših studenata i njihova analiza uz pomoć ugrađenog modula za anketiranje i pružanje učinkovitog načina komunikacije između bivših studenata i visokoškolskih institucija.

Podaci o kontaktu i zaposlenju spremaju se u profile koji sadrže osobne podatke i podatke o kontaktu, obrazovanju i zaposlenju za svakog od bivših studenata. Mogu se upotrebljavati na dva načina. Prvo, koristeći se postojećim podacima u sveučilišnom informacijskom sustavu i automatski dopunjavajući profile osobnim podacima i podacima o obrazovanju. Drugo, kreirajući profil ručno tijekom procesa registracije. Nakon što je profil kreiran, bivši se studenti redovito podsjećaju na obvezu ažuriranja podataka o kontaktu i zaposlenju. Primjer korisničkog sučelja za unos informacija o zaposlenju prikazan je na Slici 1.

Polazeći od prikupljenih osobnih i podataka o zaposlenju, ALTRIS omogućuje izradu određenog broja izvještaja. Neki su od njih dostupni javnosti, kao što su direktoriji bivših studenata i poslova, u tekstnom i grafičkom obliku (npr. Google Maps), a ostala su dostupni samo registriranim korisnicima (npr. statistika o zaposlenju). Primjer grafičkog predstavljanja direktorija bivših studenata kojim se koristi Google Maps prikazan je na Slici 2.

Prikupljanje dodatnih podataka od bivših studenata obavlja se uz pomoću modula ugrađenog za potrebe anketiranja. On korisnicima omogućuje jednostavnu izradu odgovarajuće ankete, distribuciju poziva, prikupljanje, prikaz i potencijalnu isporuku

rezultata ankete u drugim programima (npr. Excel ili SPSS) radi daljnje upotrebe ili analize. Dostupan je određeni broj mogućnosti za izradu anketa, kao što su definiranje pitanja različitog tipa, kreiranje uobičajenih ljestvica s odgovorima, određivanje datuma i vremenskog ograničenja, sigurnosne mogućnosti itd.

Slika 1. i 2.

Rezultati

Registrirani bivši studenti

ALTRIS se primjenjuje na ETF-u od lipnja 2011. Do danas baza podataka o bivšim studentima ETF-a sadrži 3808 unosa za studente koji su diplomirali između 1965. i 2011. Početni su profili bivših studenata bili preneseni iz informacijskog sustava Fakulteta s podacima koji su vrijedili u vrijeme kada su diplomirali. U prva dva dana nakon slanja elektroničkih poziva i objavljivanja poziva na mrežnim stranicama ETF-a registriralo se više od 70 bivših studenata. U prva dva tjedna taj se broj povećao na više od 150. Do danas ukupan broj registriranih bivših studenata iznosi 214. Iz ciljne skupine od 311 bivših studenata njih 195 (62.7%) registriralo se na web-portalu. Osim toga, 19 „starijih" studenata, koji su diplomirali prije više od 20 godina, registriralo se na web-portalu i obuhvaćeno je internetskim anketiranjem. Ukupan broj bivših studenata, kao i broj registriranih i zaposlenih bivših studenata prikazan je po godinama diplomiranja na Slici 3.

Slika 3.

Osobni podaci

Registrirani diplomirani studenti imaju mogućnost unijeti neke osobne podatke u svoje profile, osim onih koji već postoje u sveučilišnim bazama. Odnose se na prezime (nakon udaje), prebivalište, kućnu adresu, elektroničku adresu, broj telefona i mjesečna primanja. Elektronička adresa je obvezna, a ostalo nije. Broj bivših studenata koji nisu unijeli podatak o prebivalištu iznosi 18 (8.4%), 61 (28.5%) nije navelo kućnu adresu, 63 (29.4%) nije unijelo broj telefona, a 133 (62.1%) nije navelo mjesečna primanja. Broj diplomiranih studentica koje su unijele prezime (nakon udaje) iznosi 12 (5.6%). Unutar individualnog profila moguće je namjestiti opciju za primanje informacija iz ALTRIS-a. Samo su tri (1.4%) bivša studenta navela da ne žele takvu komunikacijsku opciju.

Podaci o zaposlenju

Polazeći od podataka o zaposlenju, ALTRIS je omogućio temeljitu statističku sliku kada je riječ o tome parametru. Stopa zaposlenosti svih registriranih iznosi 80.4%, a broj nezaposlenih koji su diplomirali je 42 (19.6%). Ukupno je registrirano 170 poslova, od kojih je njih 106 trenutno aktivnih. U slučaju 77 studenata, prosječno vrijeme čekanja prvog zaposlenja je 1.41 mjesec. Da bi se računalnim putem došlo do

toga pokazatelja, potrebno je registrirati prvo zaposlenje. Gotovo polovina registriranih koji su zaposleni nije unijela taj podatak u svoj profil. Tri najzastupljenija sektora prema broju aktivnih radnih mjesta jesu: energetika (33.02%), javna uprava (21.7%) i obrazovanje (21.7%). Ukupno je 70 (66.04%) aktivnih poslova koji su registrirani kao poslovi u studijskom području. U privatnom je sektoru zabilježeno 17 (16.04%) aktivnih poslova.

Rezultati ankete

Ukupno je na anketu odgovorilo 90 (42%) ispitanika. Rezultati ankete prikazani su u Tablici 1 i Tablici 2.

Tablica 1. i 2.

Bilo je nekoliko komentara i prijedloga anketiranih u vezi s uvođenjem portala bivših studenata i jačanjem društvenih aktivnosti među bivšim učenicima, kao i između njih i ETF-a. Neki od komentara su sljedeći:

Mislim da ovaj portal treba biti mnogo aktivniji i pomoći bivšim studentima da uspostave kontakte kako bi pronašli potencijalne poslodavce. Mogao bi također posredovati pri pronalasku zaposlenja.

Nadam se da će zamisli predstavljene uvođenjem portala biti realizirane u skoroj budućnosti.

Podržavam zamisao o pokretanju portala diplomiranih studenata. Smatram da je to vrlo koristan alat za uspostavu komunikacije među stručnjacima. Nadam se da će pridonijeti razvoju ETF-a jer je to obveza sviju nas. Veliko DA za jednu dobru zamisao.

Svi su oblici komunikacije poželjni i dobri, pa tako i ovaj.

Mislim da diplomirani studenti ETF-a ne pokazuju dovoljno zanimanja za web-portal i ne razumiju svrhu tog portala. Mislim također da bi trebali biti aktivniji na uspostavi bolje međusobne suradnje na korist ostalim kolegama i ETF-u kao instituciji.

Rasprava

Cilj ovog istraživanja bio je utvrditi kako se IKT može primijeniti na uspostavu učinkovitog komunikacijskog kanala između visokoškolskih institucija i njihovih bivših studenata, kao i na izravno prikupljanje podataka o njima i njihovu zaposlenju. Otkrili smo da se, s pomoću posebno programiranog web-portala, mogu uspješno uspostaviti kontakti s bivšim studentima, a važni podaci prikupiti. Premda takvi portali nisu novost i njima se uvelike koriste udruge bivših studenata i visokoškolske institucije u brojnim zemljama, njihova se upotreba uglavnom povezuje s umrežavanjem bivših studenata i prikupljanjem novčanih sredstava. Osim spomenutog umrežavanja i ostalih uobičajenih obilježja takvih web-portala, onaj opisan u radu pruža dodatne mogućnosti u smislu pojednostavljivanja komunikacije i prikupljanja podataka od

bivših studenata. Neke od njih obuhvaćaju integraciju s društvenim mrežama, prihvat podataka iz postojećih sveučilišnih informacijskih sustava, lakšu provedbu postupka anketiranja i drugačiji pristup prikupljanju podataka o zaposlenju. Najupečatljivija je značajka prikupljanje podataka o zaposlenju i raspolaganje statističkim podacima koji bi mogli izravno koristiti uredu za kvalitetu i uredu za studijske programe, ali i ostalim subjektima kao što su strukture koje kreiraju politiku, one koje planiraju radna mjesta i budućim studentima.

Važno je napomenuti da je istraživanje provedeno u BiH, zemlji u kojoj povezanost visokoškolskih institucija s bivšim studentima nema tradiciju, a u većini slučajeva i ne postoji. Ipak, rezultati pokazuju da bi se takva situacija mogla poboljšati upotrebom IKT. Predlažemo, štoviše, upotrebu opisanih metoda informiranja o bivšim studentima u drugim kontekstima s ciljem učinkovitijeg i djelotvornijeg prikupljanja podataka.

Rezultati su pokazali da se 63% studenata koji su diplomirali posljednjih 16 godina registriralo na web-portalu. Mnogi su od njih ažurirali osobne podatke u svojim profilima. Više od 90% navelo je prebivalište, a oko 70% adresu i broj telefona. Više od polovine (62.1%) nije navelo mjesečna primanja. Elektronička adresa je obvezna pri registraciji, pa je taj podatak dostupan za sve one koji su se registrirali. Smatramo kako je podatak o adresi prikupljen na taj način dovoljan za daljnju komunikaciju jer će se komunikacija ostvarivati uglavnom u elektroničkom obliku. U našem slučaju, dodatne pojedinosti kao što su prebivalište ili kućna adresa korisne su za vizualni prikaz mjesta stanovanja na *Google Maps* i za uvid u kretanje bivših studenata, ali nisu ključne za nastavak komunikacije. U nekim drugim sustavima toga tipa potrebno je navesti kompletnu adresu radi slanja anketnih upitnika u tiskanom obliku. Sustavi koji se koriste internetskim anketiranjem također zahtijevaju ažurirani popis elektroničkih adresa, što može biti problem kada nekoliko godina izostane komunikacija s bivšim studentima. Polazeći od našeg pristupa, potrebno je kreirati profile studenata odmah nakon što diplomiraju i automatski ih ažurirati novim podacima. Poslije ih se redovito podsjeća na ažuriranje, što pridonosi dostupnosti i točnosti podataka potrebnih za kontakt.

Stope zapošljavanja izračunavaju se na temelju broja registriranih bivših studenata. Oni koji su registrirani mogu navesti u svojim profilima jesu li trenutno zaposleni ili nisu. Na taj je način moguće uvijek imati približnu informaciju o stopama zapošljavanja, čak i kada studenti ne registriraju konkretni posao. Da bi se izračunalo koliko dugo čekaju prvo zaposlenje, trebaju se registrirati u svom profilu, što je učinilo njih 77 (44% od ukupnog broja zaposlenih). Da bi se taj pokazatelj preciznije odredio, bilo bi korisno imati više studenata koji su registrirali svoje prvo zaposlenje. Mnogi studenti koji su diplomirali prije više od pet godina registrirali su samo posao koji trenutno obavljaju ili nisu uopće registrirali poslove. Za svaki posao registriran u profilima evidentirani su područje rada i pozicije. Broj poslova po područjima i popis individualnih pozicija dostupni su u statističkim izvještajima koji su na raspolaganju zahvaljujući ALTRIS-u. Da bi se podaci redovito ažurirali, bivši registrirani studenti

podsjećaju se na to elektroničkim putem svake godine. Poruke sadrže najnovije podatke potrebne za kontakt, status zaposlenja i kompletnu povijest zaposlenja. Ako je trenutni podatak ažuriran, dovoljno je kliknuti na poveznicu u poruci radi njegove potvrde. Ako je zastario, studenti se zamole da odu na svoj profil i da ga ažuriraju. Na taj način nastojimo prikupiti što više podataka a da pritom bivše studente ne opterećujemo s previše pitanja. Budući da je sustav uveden prvi put, morali smo zamoliti sve bivše studente da unesu kompletnu povijest zaposlenja jer takve podatke prije nismo imali. To bi moglo predstavljati problem starijim bivšim studentima koji nisu htjeli registrirati svako zaposlenje, ali novijoj skupini to ne predstavlja preveliko opterećenje. U kasnijim bi razdobljima starija skupina trebala samo ažurirati podatke o najnovijem zaposlenju, a nova bi skupina trebala registrirati svoje prvo zaposlenje. U tome vidimo prednost u usporedbi s ostalim sustavima, koji obično prikupljaju podatke o zaposlenju putem anketa koje se provode od godinu dana do pet godina nakon što studenti diplomiraju. Između prve i pete godine, zatim poslije tog razdoblja, oni ne daju ažurirane podatke o bivšim studentima. Štoviše, neki drugi sustavi još uvijek se koriste tiskanim anketama, što dovodi do smanjene učinkovitosti procesa, a stvara i dodatne troškove. Smatramo da je naš pristup prikupljanju podataka o zaposlenju djelotvorniji. Koristan je također u situaciji kada ne postoji neki drugi izvor spomenutih podataka, kao što je to slučaj u BiH.

Rezultati ankete pokazuju da je većina bivših studenata zainteresirana za kontakt s ETF-om. Najveći je broj njih također spreman pomoći pri izradi kurikula i poboljšanju studijskih programa. Najzanimljivije područje za suradnju s ETF-om bilo je sudjelovanje u anketama, a najmanje zanimljivo sponzoriranje i stažiranje. Otvoreni komentari pokazali su uglavnom pozitivan stav o uvođenju web-portala i potrebu za snažnijom aktivnošću bivših studenata radi bolje suradnje i koristi za sve sudionike. Iako to nije tradicija, a ni uobičajena praksa u većini visokoškolskih institucija u BiH i u zemljama zapadnog Balkana, studenti koji su diplomirali na ETF-u pokazali su da žele ostati u kontaktu s matičnom institucijom. To bi zanimanje trebali prepoznati na ETF-u te poduzeti odgovarajuće mjere radi snažnije povezanosti i bolje suradnje u budućnosti.

Zaključak

Polazeći od rezultata i rasprave, zaključujemo da bi se IKT mogla uspješno primjenjivati za kontakt s bivšim studentima i prikupljanje dragocjenih informacija od njih, koje bi mogle biti dostupne raznim korisnicima i služiti za razne ciljeve, a što bi obuhvaćalo vrednovanje i unapređenje kvalitete studijskih programa, poboljšanje nastavnih iskustava, povećanje broja ishoda učenja, vrednovanje postignuća na razini institucije te pružanje informacija kreatorima politike i budućim studentima. Odgovarajućom primjenom IKT sudjelovanje bivših studenata moglo bi biti jednostavnije i djelotvornije. Naše iskustvo s uspostavom kontakata s bivšim studentima putem web-portala ukazalo je na značajne rezultate u kratkom roku uz

korištenje minimalnih ljudskih i materijalnih resursa. Bivšim studentima ETF-a nisu ponuđene nikakve posebne pogodnosti za sudjelovanje u anketi ili davanje podataka o zaposlenju. Čini se kako motiviranost za većinu njih podrazumijeva mogućnost da saznaju gdje su im kolege i čime se bave. Rezultati bi vjerojatno mogli biti bolji ako bi ih se dodatno motiviralo za sudjelovanje u tim aktivnostima, primjerice ako bi im se ponudile razne pogodnosti, poput prakse na visokim učilištima u drugim zemljama.

Očekuje se da će u budućnosti ALTRIS dobiti novu funkcionalnu vrijednost usmjerenu na uključivanje ostalih subjekata, osobito poslodavaca. Uzet će se u obzir i druge skupine kojima će se pružiti ostale funkcionalne mogućnosti u skladu s njihovim potrebama. Primjerice, relevantna ministarstva obrazovanja pokazuju zanimanje za stope zaposlenja diplomiranih studenata i potrebe tržišta rada kao polazište u određivanju politike upisa. S druge strane, budući studenti i njihovi roditelji zainteresirani su za slične podatke kada odlučuju o tome koje studijske programe ili discipline odabrati. U zemljama kao što je BiH, u kojoj je dramatično porastao broj visokoškolskih institucija u posljednjih petnaest godina, teško je donijeti odluku o tome koju instituciju odabrati ili kako usporediti njihovu kvalitetu. Kvaliteta visokog školstva i konkurencija između javnih i privatnih sveučilišta u zemljama u razvoju predstavlja ozbiljno pitanje, često istraživano u literaturi (Wilkinson i Yussof, 2005; Oketch, 2009; Alemu, 2010). Ako se mogućnost zaposlenja diplomiranih studenata „smatra jednim vidom kvalitete visokog školstva" (Storen i Aamodt, 2010), onda različiti subjekti mogu koristiti podatke o zaposlenju prikupljene uz pomoć sustava kao što je ALTRIS kako bi im pomogli u donošenju pravilne odluke.