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Original scientific paper

The Official Presence of Croatian Higher Education Institutions on Social Networks

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Summary

New trends constantly emerging on the Internet bring new ways of communication and dissemination of information. Social networks, which have been present on the Internet for more than 15 years, have lately become a topic of every day conversation, not only among individual users but also institutions. The spread of new technologies affecting even higher education institutions is witnessed by a considerable number of researches, papers and discussions about the use of social networks for educational purposes. The key focus of this paper official presence of Croatian higher education institutions, both publicly and privately funded, on social networks. The presence of RSS feeds on web pages of academic institutions was also analysed. RSS was part of this research due to fact that it can be rather easily converted to content on social networks. This paper does not aim to analyse the use of social networks as educational tools. It rather focuses on the ways in which social networks can be used to upgrade the current means of communication within an academic community and between the general public and the academic community. The total of 170 intuitions was researched for the purpose of this paper. The gathering of data was conducted in two sessions. The first session was during the academic year of 2009/10 and the second session during the academic year of 2010/11. A comparison of these two data sets shows certain trends in the acceptance of social networks among the monitored intuitions. Additionally, a comparison of the adoption levels of social networks between publicly and privately funded institutions is given.

Key words: Croatian higher education, social networks, Facebook, LinkedIn, Twitter, RSS

Introduction

Internet based social networks[1] have been around for quite some time now. According to Wikipedia[2] social networks began emerging on the web in the mid 1990s and have become an everyday topic in the last couple of years.

The spread of new technologies affecting even higher education institutions is witnessed by a considerable number of researches, papers and discussions about the use of social networks for educational purposes. Certain topics of academic research are oriented towards the usage of social networks in one aspect of education[3], while others are focused on the usage habits among students and academic staff.[4] This paper, however, does not deal with that aspect of social networks. It rather focuses on the use of social networks as a means of communication between higher education institutions and their students, academic and non-academic staff and other interested parties.

Behling and Klingner say that "Facebook, LinkedIn and Twitter are ways in which people can connect with one another based on similar interests and networks. Facebook started as a way for college students to connect with one another, but has expanded tremendously.

LinkedIn is a more of a professional social networking site allowing connections to be made and professional job histories and consulting to be shared. Twitter is a micro-blogging service that requires users to share their thoughts in 140 characters or less per tweet... But Twitter's global impact has often been underestimated as well as its academic potential".[5]

They also give a few examples how social networks could be used in academic environment:

- Facebook could be used for discussions among students
- LinkedIn could be used for connecting with Alumni
- Twitter could be used for sending announcements[6]

[1] In this paper the term "social network" is used to denote Internet based social networks.

[2] Social networking service. 20 June 2011. http://en.wikipedia.org/wiki/Social_network_service (retrieval date 24 June 2011)

[3] Liccardi, I. The role of social networks in students' learning experiences. ACM SIGCSE Bulletin, 39,4 (2007), pp. 224-237.

[4] Matešić, Marija; Vučković, Kristina; Dovedan, Zdravko. Social Software: Teaching Tool or Not? // 2. International Conference The future of information sciences : INFuture2009 / Stančić, H. et. al. (eds). Zagreb : Department of Information Sciences, Faculty of Humanities and Social Sciences, University of Zagreb, 2009. pp. 443-442. http://infuture.ffzg.hr/2009/ papers/5-07%20Matesic,%20Vuckovic,%20Dovedan,%20Social%20software.pdf (retrieval date 28 August 2011)

[5] Behling, Michelle Pulaski, Klingner, Beth Gordon. The Technological Age of Teaching // Teaching Inclusively in Higher Education / Susan C. Brown, Moira A. Fallon (eds). Charlotte : Information Age Publishing, 2010, p. 162.

[6] Ibid.

Social networks can also be used as a means of communication with future students not only in a phase when high school graduates have to decide which college or university to enrol into but it can be also used as a "medium for students to interact before arriving at university".[7] Use of social networks can be also of interest to academic libraries to reach their users. As Gibbons notices, "With 60%, 75%, or perhaps even more of our students using this social networking services as a communication venue, we just cannot ignore them".[8]

Social networks can also be used for communication among scientists. There are even specialised social networks[9] for scientists such as ResearchGate[10] that was created to "promote knowledge sharing between scientists all over the world and is based on the idea that communication between scientists will accelerate the creation and distribution of new knowledge and assure research quality".[11]

As has already been shown, academic institutions can follow different scenarios for usage of social networks. They can also benefit from large marketing potential that lies in them.[12]

Application of communication strategies created for strictly profit oriented industries to academic institutions might seem illogical and impossible if we think of academic institutions strictly as non-profit organizations. However, with new academic institutions, both profit and non-profit, emerging every year the need for their better self-presentation and communication with the public, that is, all those interested in getting information about universities, is on the increase. A larger number of overlapping activities and services also means that the inter-institutional battle to attract students, staff and funds is likely to become fierce. In this context some communication strategies from profit oriented industries can and should be introduced into the academic world. As Brown states "Ultimately, the choice for organizations is a simple one: they either take part in this

[7] Griffiths, Philip; Wall, Anthony. Social Media Use by Enrolment Management // Higher Education Administration with Social Media Including Applications in Student Affairs, Enrollment Management, Alumni Relations, and Career Centers / Laura A. Wankel, Charles Wankel (eds). Bingley : Emerald Group Publishing, 2011, p. 50

[8] Gibbons, Susan. The Academic Library and the Net Gen Student: Making the Connections. Chicago: American Library Association, 2007, p. 89

[9] A comprehensive list of such networks can be found in Apendix 1 of "Social Web: Web 2.0 Technologies to Enhance Knowledge Communities". Eric Pardede (ed). New York : Springer, 2011.

[10] ResearchGate is located at URL http://www.researchgate.net/.

[11] Ayanso, Anteneh; Herath, Tejaswini; Lertwachara, Kaveepan. Social Web: Web 2.0 Technologies to Enhance Knowledge Communities. // Community-Built Databases: Research and Development / Eric Pardede (ed). New York : Springer, 2011., p. 11

[12] Zarrella, Dan. The Social Media Marketing Book. Sebastopol: O'Reilly, 2010

conversation or they don't. What they have to realize though is that if they don't participate in these conversations they simply won't go away. The dialog will go on without them".[13] Academic institutions can utilize social networks as one of their public relations channels. With this type of communication channel a very wide range of users can be targeted. It is Rutledge's opinion that "...the world of social networking is wide and diverse. Although early adopters of social networking skew to the young, the trend has now moved into the mainstream with sites for all ages, backgrounds, and interests".[14]

Publicly funded institutions have a larger base of stakeholders[15] than privately founded ones. In the case of publicly funded institution all tax payers can be considered as fund providers and therefore should have easy access to information about the institutions and their work. Perhaps the easiest and fastest way to inform the public today is over the Internet. It is impossible to know the exact number of Internet users in Croatia or anywhere else in the world for that matter. According to the 2009 GfK report 49% of Croatian population older than 15 uses the Internet. Half of those Internet users use social network websites.[16] The International Telecommunication Union (ITU) data [17] on the number of Internet users in Croatia are given in Table 1.

Table 1 Estimated number of Internet users in Croatia according to ITU

Year	Estimated number of Internet users (%)
2000	6,64
2001	11,56
2002	17,76
2003	22,75
2004	30,91
2005	33,14
2006	37,98
2007	41,44
2008	44,24
2009	50,58

Source:http://www.itu.int/ITU-D/ict/statistics/material/excel/EstimatedInternetUsers00-09.xls (retrieval date 24 Jun 2011)

[13] Brown, Rob. Public Relations and the Social Web: How to Use Social Media and Web 2.0 in Communications. London, Philadelphia: Kogan Page, 2009, p. 18.

[14] Rutledge, Patrice-Anne. The Truth About Profiting from Social Networking. Upper Saddle River: FT Press, 2008, p. 2.

[15] In this paper the term "stakeholder" is used to denote students, academic and non-academic staff and fund providers

[16] Gdje smo danas u informatičkoj pismenosti? 17 February 2010. http://www.gfk.hr/public_relations/press/press_articles/005364/index.hr.html (retrieval date 25 June 2011)

[17] Estimated Internet users. http://www.itu.int/ITU-D/ict/statistics/material/excel/EstimatedInternetUsers00-09.xls (retrieval date 24 June 2011)

Similarly to the number of Internet users, it is also impossible to certainly determine how many users use a particular social network. The list of the most popular social networks published on Wikipedia has around 200 entries and contains an estimated number of users for some of the networks. The three networks that are listed among the ten biggest social networks on the Wikipedia list[18], namely Facebook, Twitter and LinkedIn will be the focus of this paper.

Among the three mentioned networks Facebook is the only one to offer a possibility for obtaining an estimated number of users through an advertising planning tool. On 11 June 2011, an estimated number of Facebook users from Croatia was 1 405 800[19]. Since there is no means of verification that could guarantee accuracy of user data in the process of account creation it is possible to create multiple user accounts without providing true information. Therefore, the previously mentioned number of Facebook users from Croatia should be taken only as a rough approximation. Despite this fact it is safe to assume that Facebook is the most popular social network in Croatia. Consequently, this paper focuses mainly on the use of Facebook among higher education institutions in Croatia. Twitter and LinkedIn are mentioned but not to such an extent.

Given the numbers mentioned above it seems logical to assume that higher education institutions in Croatia can benefit from their presence on social network web sites. It is up to each institution to decide what kind of content would be published and what kind of communication strategies would be used.

However, it should be stressed that the mere presence on social networks is not enough. If social networks are taken to be a new communication channel for public relations some changes have to be made in existing communication strategies. According to Green "Social media are more about personal relationships and one-to-one dialogue, whereas traditional public relations, and particularly media relations, are generally about broadcasting to a wide audience. Social media make communication much more personal and direct".[20] Therefore, setting up a communication strategy is a prerequisite for a presence on social networks. Access to content that is published on certain social networks can have many forms and can be limited to members of that social network or can be accessible to all Internet users. It often depends on the generator of content to decide whether membership to a particular social network or group of people is necessary or not.

[18] List of social networking websites. 15 June 2011. http://en.wikipedia.org/wiki/List_of_social_networking_websites (retrieval date 24 June 2011)

[19] The stated number of users resulted from the query that was retrieved from "Facebook advertising planning tool" at URL http://www.facebook.com/ads/create/. Query was formulated so that all users from Croatia are counted i.e. no age restriction was set.

[20] Green, Andy. Creativity in Public Relations. London, Philadelphia: Kogan Page, 2010, p, 135.

Research

The goal of this research was to see how many Croatian academic institutions have some kind of official presence on social networks. In addition to social networks, RSS (Really Simple Syndication) usage was also a subject of this research as it is a method of information dissemination which is effective and rather easy to implement.

The term "official presence" is used in this paper for those forms of presence on social networks which can be found or accessed through the official web sites of the researched institutions. This criterion was introduced in order to rule out possible cyber-squatting scenarios. However, the downside of such an approach is that some institutions that established a legitimate presence on social networks but contain no links on their official web sites were omitted from this research.

Each social network has certain characteristics that make them more or less suitable for certain usage scenarios. On Facebook there are three forms of representation: pages, groups and profiles. Each of the representation forms has it strengths and weaknesses. According to Zarrella and Zarrella, "Groups are often faster and easier to set up than Pages. They also offer a more personalized and controlled atmosphere for conversation".[21] The authors furthermore stress that "Groups also offer more control over who is allowed in or out, while Pages are open to everyone. A Group can be open just to a particular school or work network, or to all of Facebook. You can also require permission for joining a Group so that everyone must be approved by an admin (but can see some Group content before requesting to join), or you can make the Group completely secret and visible only to those you invite".[22] Smith and Treadaway say that "fan pages allow the same type of interaction as groups but with many more options for customization and personalization".[23] They also say that "because of the flexibility of using HTML code, fan pages can be customized to look similar to a website".[24] It is clear that Facebook pages and Facebook groups are both a good and legitimate way to represent institutions on Facebook. There is no reason why institution could not use both forms of presence on Facebook. Pages can be used to reach a largest possible number of users, and groups can be used for communication among smaller or larger groups of people (e.g. alumni group or project based group).

[21] Zarrella, Alison; Zarrella, Dan. The Facebook Marketing Book. Sebastopol: O'Reilly Media, 2011, p. 75.

[22] Ibid.

[23] Smith, Mari; Treadaway, Chris. Facebook Marketing: An Hour a Day. Indianapolis: Wiley Publishing, 2010, p. 101.

[24] Ibid.

The situation with Facebook profiles is, on the other hand, not so clear and straightforward. As Carlos states in his article "many companies have created an institutional or product presence on Facebook using Facebook profiles… Facebook insists that profiles represent real individuals, not couples, groups, nor companies and their products or services… For its part, Facebook has turned a blind eye, deleting company profiles mostly upon receiving complaints.".[25]
The proof of Facebook's awareness of these issues is the provision of the option that allows conversion of a Facebook profile to a Facebook page. More details about the conversion process can be found at the Facebook help page "Converting your profile into a Page"[26]. It is, therefore, recommended to institutions that are currently using Facebook profiles to switch to Facebook pages.
User accounts and their corresponding timelines on Twitter can be public or private. If someone wants to follow an activity of a user or institution with a private profile, they first need to get authorization for access to a timeline.
According to Rutledge LinkedIn is different from other social networks based on the fact "that its audience is almost exclusively professionals looking to achieve professional goals, such as finding a new job, recruiting employees, generating new business, or locating potential business partners.".[27] This statement shows the potential of LinkedIn which can be explored by institutions, students and employees. LinkedIn gives institutions opportunities to both promote themselves and find new opportunities for their further growth and development. Students that are connected with institutions over LinkedIn can be more easily found by head hunters.
Although it may seem at first that RSS has no relevance in relation to social networks this cannot be further from the truth. The first argument in favour of RSS is that it is used to distribute content across the Internet. The second argument is that RSS can be easily used to automate publishing of content on social networks either through mechanisms that are already part of the social networks or with the help of specialized software or web site services[28]. Additionally, if a social network allows inclusion of HTML content RSS feed can be converted into HTML with the help of web based tools and services[29]. This way they

[25] Carlos, Sean. Dear company, it's time to convert your Facebook profile into a page before it's too late. 18.04.2011. http://antezeta.com/news/convert-facebook-profile-to-page (retrieval date 15 May 2011)

[26] Converting your profile into a Page. https://www.facebook.com/help/?page=18918 (retrieval date 24 June2011)

[27] Rutledge, Patrice-Anne. The Truth About Profiting from Social Networking. Upper Saddle River: FT Press, 2008, p. 24.

[28] One of such web based services is Twitterfeed located at URL http://twitterfeed.com/.

[29] Some of those web services and tools are listed in article "RSS To HTML - How To Convert RSS Feeds Into Published Web Pages - A Mini-Guide" at URL http://www.masternewmedia.

would gain another channel for dissemination of information. It is important to stress that if content is only converted from RSS feeds to social networks, without any additional actions such as setting of communication strategy, this would form a one way communication channel. It should be mentioned that a reverse process is also possible; that is, to create a RSS feed from the data published on social networks. Therefore RSS is also a topic of interest in this research.
The conducted research consisted of data gathering from web pages of Croatian academic institutions. A list of institutions researched for the purpose of this paper was created from the data obtained from the web site of the state Agency for Science and Higher Education (ASHE). In June 2010, a set of three documents was downloaded from the ASHE web site[30]:

- list of Universities in Croatia
- list of Polytechnics in Croatia
- list of Colleges in Croatia

The web site addresses of all the institutions listed in the documents were obtained through Google search. Since university constituents, such as faculties, art academies, departments and university centres were not included in the published documents, they were collected from the web sites of the researched universities.
Web addresses for the total of 172 institutions[31] were gathered in June 2010. 125 out of 172 institutions are publicly funded while 31 are privately funded. More detailed information on funding sources is given in table 2.

Table 2 Classification of institutions according to the sources of funding (data from 2010)

	Publicly funded	**Privately funded**
Universities with their constituents	125	5
Polytechnics	13	2
Colleges	3	24
TOTAL	141	31

As it is shown in Table 2, publicly funded institutions make 82% of all the institutions included in the research.
The total of 172 institutions was examined for the purpose of this paper. The gathering of data was conducted in two sessions. The first session occurred

org/content_delivery_and_distibution/RSS-to-HTML/RSS-to-HTML-conversion-tools/2007-03-30.htm.

[30] This set of documents was retrieved from URL http://www.azvo.hr/Default.aspx?sec=219 which seized to exist with redesign of ASHE web site in 2011. Updated data from those documents can now be found at URL http://www.azvo.hr/hr/visoko-obrazovanje/visoka-uilita.

[31] In the context of this paper the term "institution" refers to universities together with their faculties, academies of arts, departments and university centres, and to polytechnics and colleges.

during the academic year of 2009/10 and the second session during the academic year of 2010/11.

In the period between June and September 2010, the research of 172 institutional web sites involved an analysis of the following features of their home pages[32]:

- presence of a link to Facebook
- presence of a link to LinkedIn
- presence of a link to Twitter
- presence of a RSS feed or a link to RSS feed

The web site of each institution was opened in a web browser[33] and its home page was inspected for the presence of the links listed above. No automation methods, such as the usage of scripts for HTML analyses, were used in search for the links. This approach was chosen because it seemed to the author to be congruent with the ways regular users use the links according to their visibility on web pages. There are cases when a link placed within a web page is not visible to users either due to an improper HTML code, some other syntax errors within the web page or due to poor design, e.g. if a link and background colours are to similar, one may not see it.

Additional data gathering during this research session was the reason for a rather long time span of the first session. Due to their irrelevance to this particular topic, these data are not presented in the paper.

The same method was applied again in the second session during May 2011. Web pages from two institutions could not be accessed for the second data gathering session. Those two pages belonged to two publicly funded constituents of the University of Dubrovnik. During the 2010 research session those two pages did not have any elements that were in focus of this research so it is considered that their absence from the second session does not have any strong impact on the results of this research. Consequently, the second session included 170 analysed websites. In the cases when web site addresses of some institutions changed, new pages were visited and analysed and the data compared with those from 2010.

Findings

In the period between the two data gathering sessions, the University of Dubrovnik redesigned its web site. On the new web site, at the footer of every department's web page there is a link to the University of Dubrovnik Facebook profile although the departments have no individual Facebook profile, page or group. The Zagreb School of Management is now part of the VERN Group so

[32] The term "home page" refers to the first page of web site that was analyzed

[33] Mozilla Firefox 3.6 was used in the 2010 research session, while Firefox 4 was used in the 2011 session

they also share the same Facebook page. Due to the fact that some constituencies of the universities have a joint profile, there is a difference between the total number of links and the number of profiles on Facebook. Table 3 shows comparison of the results for the presence on social networks.

Table 3 Comparison of the results gathered in 2010 and 2011

	Number of links (2010)	**Number of links (2011)**
Facebook presence	14	32 (26 individual)
LinkedIn presence	0	2
Twitter presence	2	5

When taking into consideration the total number of found links in contrast to the number of individual links the following results can be discerned.
Twenty-six institutions had presence only on Facebook, 16 of them were publicly funded and 10 of them were privately funded. All institutions that had presence on Twitter or LinkedIn also had presence on Facebook. Only a few institutions had presence on more than one social network:

- only one institution had presence on Facebook, LinkedIn and Twitter at the same time; this institution is publicly funded
- only one institution had presence on Facebook and LinkedIn at same time; this institution is publicly funded
- four institutions had presence on Facebook and Twitter at same time; three of those institutions are publicly funded

As it was stated earlier, the number of publicly funded institutions included into this research decreased from 141 in 2010 to 139 in 2011. The number of privately funded institutions remained the same, 31 of them in both sessions.
When looking at relative numbers, the privately funded institutions have more presence on social networks than the publicly funded institutions. Eleven privately funded institutions out of 31 had some kind of presence on social networks; this makes 35 percent of privately funded institutions. Out of 139 publicly funded institutions 21 had some kind of presence on social networks; this makes 15 percent of such institutions.
From these data it is clear that social networks have a greater acceptance level among privately funded institutions than among publicly funded ones.
By analysing forms of presence, based on data from 2011, Facebook shows three forms of representation:

- Facebook pages - 19 institutions use this form of presence
- Facebook groups - 4 institutions use this form of presence
- Facebook profiles - 9 institutions use this form of presence

In total 21 out of 32 institutions that have official presence on Facebook are publicly funded.

According to the 2011 research five institutions that are present on Twitter use public profiles and, therefore, their timelines are accessible to all Internet users. Four out of five institutions that are present on Twitter are publicly funded.
The same research shows that only two institutions had presence on LinkedIn. Both of them use public groups as their form of presence on LinkedIn and they are both publicly funded.
In the case of RSS feeds two sets of gathered data were analysed, one referring to the existence of RSS feed and the other referring to a number of RSS feeds. In 2010, 35 web pages featured an RSS feed or a link to RSS. In 2011 the number of web pages containing a RSS feed or a link to RSS increased to 45. Some pages had several different forms of RSS feeds[34] or they had more RSS feeds with different content. Data for RSS feeds a presented in Table 4.

Table 4 Number of institutions using RSS feeds

Number of found RSS feeds or forms of RSS feeds	Number of institutions (2010)	Number of institutions (2011)
1	14	16
2	16	20
3	1	2
4	5	5
5	1	1
6	0	1

In total, 38 out of 45 institutions that use RSS are publicly founded.
It is evident that the number of institutions using RSS is significantly larger than the number of institutions that established any form of presence on social networks. The gathered data also reveal only a small number of institutions using both RSS and social networks at same time. It is also interesting to notice that the acceptance level of RSS among publicly and privately funded institutions, 27 and 23 percent respectively, is much more balanced than the one for social networks,

Table 5 Number of institution that use both RSS and social networks

	2010 research	2011 research
Both RSS and Facebook presence	5	10
Both RSS and LinkedIn presence	0	1
Both RSS and Twitter presence	1	3

Table 5 shows that there are institutions that could use some methods of content conversions from RSS to social networks that were mentioned earlier in this paper.

[34] These different forms include, but are not limited to, RSS in different versions (0.91, 1.0, 2.0), ATOM, and OPML.

According to the 2011 data set only one institution had presence on all three earlier mentioned social networks as well as RSS feed. Two institutions had presence on Facebook and Twitter and RSS feed at same time. Seven institutions had a combination of Facebook presence and RSS feed. An exclusive use of LinekdIn and RSS feed was not noted during this research.

Conclusion

The results of the research lead to the conclusion that the use of social networks among Croatian higher education institutions is not widespread. Comparison of the data gathered in 2010 and 2011 shows that there is an increase in the number of institutions that have presence on social networks. There is still a lot of potential for the researched institutions of higher education to increase their presence on social networks on the Internet and it is reasonable to expect it. In order to see if the trend of growth will continue new data sets should be gathered according to the same methodology in the following years. If necessary, the emergence and acceptance level of new social networks should also be monitored and included in future data gathering sessions. Among the three monitored social networks Facebook is the most represented one. Given the number of Internet users in Croatia and the number of Facebook users from Croatia this result is expected. It can therefore be expected that Facebook will keep the leading position in the following years despite the fact that social networks are emerging on a daily basis.

Depending on their interests and wishes, institutions using RSS could rather easy establish their presence on social networks. Conversion of RSS content into a form appropriate for social networks is not a complicated task. However, it should be borne in mind that if conversion of content is the only thing performed on the site, with no desire to engage into communication with social network users, an important component of social networks will be left out. It is advisable not to enter the world of social networking sites if there is no clear communication strategy. By engaging into the world of social networks institutions should be more open to possible public criticism. Such criticism could lead to problems if no clear guidelines are given on how to handle such situations. One should also bear in mind that positive sides of opening towards online users outweighs possible negative sides. If a critical group of users demanding presence of certain institutions on social networks does not exist, the launching of such a project should be carefully considered and its cost-benefit analysis certainly carried out beforehand.

Future research should also include a focused survey of institutions that already use social networks or are planning to use them in order to examine their users' opinions. It also remains to be seen what the cause of greater acceptance of social networks is among privately funded institutions compared with publicly funded ones. The data that are publicized on their social networks should also be the subject of a content analysis. Based on that information, presence guide-

lines could be created for the institutions that are about to establish their presence on social networks and thus help them avoid potential pitfalls.

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