

WEB 2.0 AS A POTENTIAL FOR DEVELOPMENT OF YOUNG PEOPLE

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Subject review

The research aims to determine how well today's students know and use Web 2.0 architecture, as well as why they use applications based on Web 2.0 architecture. The sample in this study consisted of 103 students of both sexes, aged 20 ÷ 30 on two faculties and two study programs. The research was conducted using questionnaires as a research technique in which Web 2.0 was investigated by the indicators of computer, information and communication aspects. The questionnaire consisted of 23 questions, and was specially created for this research. The survey was conducted between May and July 2012 at the Faculty of Economics and Engineering Management in Novi Sad and the Faculty of Management in Sport in Belgrade.

Keywords: communication, information society, research, students, Web 2.0

Web 2.0 kao potencijal za razvoj mladih

Pregledni članak

Cilj istraživanja je utvrditi koliko današnji studenti dobro poznaju i koriste Web 2.0 arhitekturu, kao i razloge zašto koriste aplikacije temeljene na Web 2.0 arhitekturi. Uzorak ($N = 103$) u ovom istraživanju su činili studenti oba spola, starosti 20 do 30 godina na dva fakulteta i dva studijska programa. Istraživanje je provedeno pomoću upitnika kao istraživačke tehnike u kojem je Web 2.0 ispitivan kroz indikatore računalnih, informacijskih i komunikacijskih aspekata. Upitnik se sastoji od 23 pitanja, specijalno izgrađenim za ovaj istraživački rad. Istraživanje je provedeno u razdoblju od svibnja do srpnja mjeseca 2012. na Fakultetu za ekonomiju i inženjerski menadžment u Novom Sadu i Fakultetu za menadžment u sportu u Beogradu.

Ključne riječi: informacijsko društvo, istraživanje, komunikacija, studenti, Web 2.0

1 Introduction

Information society is a new type of society. Specificity of this kind of society is that the information and communication technologies have a central place in the production, economics and public sector [6]. Information society is a term related to the society in which creation, distribution and manipulation of information is becoming the most important economic and social activity. Machinery and tools of Information Society are computers and telecommunications [11].

The development of information technologies and telecommunications changes our way of life: how we work, how we educate, explore, learn independently, and how we spend free time [9]. Information society is characterized by a high degree of quality and quantity of information in the daily lives of most citizens, in most organizations and workplaces [4]. In the information society, the information and design expertise, production and distribution of information, use of information networks and access to databases [7] are of special significance.

Web 2.0, as the latest technological platform, occupies a central position in information and communication technologies and thus in the information society [17]. Web 2.0 has emerged through the concepts and business models and was visible to end-users only through a series of advantages that it brought. First of all it is interactivity, personalization, and participation in collective discussions. Web 2.0 users are no longer passive information recipients, but participants in its creation, updating, modifying and transmission [12]. Therefore, it is clear that new services like blogs, wikis, forums, podcasts, RSS feeds, etc. occupy special place in the 2.0 world. All of them are based on interactions and everyday gathering and presenting large quantities of information. Users of these services are often not aware

that they daily use the applications based on Web 2.0 [16].

For the purposes of this paper, a research was conducted to determine how well today's students know and use Web 2.0 architecture, as well as why they use applications based on Web 2.0 architecture.

2 Research methodology

The research aims to determine how well today's students know and use Web 2.0 architecture, as well as why they are using applications based on Web 2.0 architecture.

The sample ($N = 103$) in this study consisted of students of both sexes, aged 20-33 on two universities and two research programs. The study was conducted using questionnaires as a research technique in which Web 2.0 was investigated by the indicators of computer, information and communication aspects. The questionnaire consists of 23 questions, and was specially created for this research. The survey was conducted between May and July 2012 at the Faculty of Economics and Engineering Management in Novi Sad and the Faculty of Management in Sport in Belgrade.

3 Results

Tab. 1 shows the structure of the sample by gender.

Table 1 Structure of the sample by gender

	Frequency	%
Male	55	53,4
Femal	48	46,6
Total	103	100,0

As seen from the results, the sample was balanced by gender - the male half of the respondents make 53,4 %, and female respondents 46,6 % of the sample.

Tab. 2 and Fig. 1 show the mean age. The largest number of respondents was between 20 and 21 years of age (71,8 %). The sample is relatively young, which is confirmed by the average age of our respondents, 21,5 years.

Table 2 The average age of respondents

	Valid N (listwise)	Min.	Max.	Mean	Std. Deviation
Age	103	20,00	33,00	21,5146	2,37579

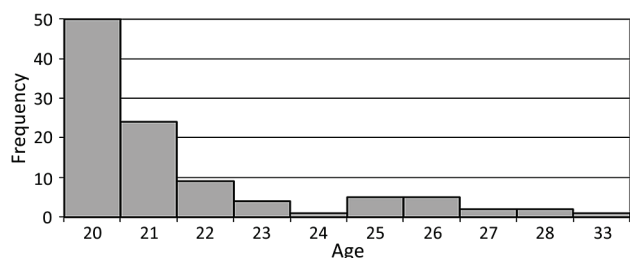


Figure 1 The age of respondents

Possession of computers by students. The first question in the survey asks how many respondents own a computer. Tab. 3 presents the results of obtained data in percentages.

Table 3 How many respondents own a computer?

	Frequency	%
Have a computer	99	96,1
Do Not Have a Computer	4	3,9
Total	103	100,0

Tab. 3 shows that 96,1 % students own a computer and use the Internet, and this data justifies the purpose of this research.

Understanding the concept of Web 1.0 and Web 2.0. The other three questions (2-4) in the survey ask respondents how familiar they are with the concept of Web 1.0 and Web 2.0, as well as with differences between them. For the questions 2-4, respondents were offered a 3-level Likert scale for responses-1) yes, 2) sometimes and 3) no.

Table 4 How many respondents understand the concept of Web?

	Frequency	%
Yes	85	82,5
Sometimes	9	8,7
No	9	8,7
Total	103	100,0

Although there are respondents (17,40 %) who do not understand or do not know the concept of the Web, 82,50 % of them understand the concept of the Web, which indicates that a very high percentage of students are familiar with new Internet technologies.

The next level of students' competence refers to the understanding of the differences between Web 1.0 and Web 2.0 architecture. The results in Tab. 5 show that only 33 % of students know the differences between the architectures of the two webs. A very large number of students, 67 %, do not understand these differences.

Table 5 How many respondents do understand the difference between Web 1.0 and Web 2.0?

	Frequency	%
Yes	34	33,0
Sometimes	29	28,2
No	40	38,8
Total	103	100,0

Respondents were offered a 5-level Likert scale for responses - 1) always, 2) almost always, 3) sometimes, 4) almost never, and 5) never. Tabs. 4, 5 and 6 show the results as a percentage of received data.

Table 6 How do respondents use the Web 2.0 capabilities?

	Frequency	%
Always	11	10,7
Almost Always	19	18,4
Sometimes	42	40,8
Almost Never	12	11,7
Never	19	18,4
Total	103	100,0

According to the respondents in question 3, the results of answering the next question "Do you use all the Web 2.0 capabilities" (Tab. 6) correspond to the results about students' understanding of the difference between web 1.0 and web 2.0 (Tab. 5). As 33 % of young people understand the differences between Web 1.0 and Web 2.0, similar percent (29,1 %) use all the Web 2.0 capabilities. The same situation is with those respondents who don't know the difference between Web 1.0 and Web 2.0 (67 %) – they don't use all possibilities of web 2.0 (70 %). Results show that 4 % of students who understand the differences between Web 1.0 and Web 2.0 don't use all Web 2.0 applications and 3 % of students who use all possibilities of Web 2.0 don't understand the differences between Web 1.0 and Web 2.0 making these data possible directions for further researches.

Usage of online communication in real time. The following two questions (5-6) in the questionnaire examine how respondents use real-time online communication. Respondents were offered a 5-level Likert scale for responses - 1) always, 2) almost always, 3) sometimes, 4) almost never, and 5) never. Tabs. 7 and 8 show the results in percentages.

Table 7 Using the online communication for work

	Frequency	%
Always	36	35,0
Almost Always	30	29,1
Sometimes	27	26,2
Almost Never	6	5,8
Never	4	3,9
Total	103	100,0

As seen in Tab. 8, 64,1 % of the students "always" and "almost always" use online communication for work. This high percentage of usage of online communication is encouraging when one knows that it is a communication in real time. A large number of respondents showed that they mastered the functions of software applications for online communication in real time.

Tab. 8 shows slightly poorer results in terms of students' usage of other Web 2.0 applications (MapQuest, Google Maps, Google Docs, Flickr, etc.). The education

of students about the latest technological changes is not enough due to results of one research showing that 53,4 % of students use some of these applications (Wong at all. 2008).

Table 8 Using the Web 2.0 in everyday life

	Frequency	%
Always	27	26,2
Almost Always	28	27,2
Sometimes	39	37,9
Almost Never	3	2,9
Never	6	5,8
Total	103	100,0

Using Web 2.0 applications in the creation of shared content. The fourth group of 11 questions (7-14, 16-18) in the survey asks how often the respondents use Web 2.0 applications in the creation of common applications. On questions from 7-9 respondents were offered a 3-level Likert scale for responses - 1) yes, 2) sometimes, 3) no. Tabs. 9-24 present the results of descriptive analysis of using Web 2.0 applications in the creation of common content.

Table 9 Knowledge of the Wiki functionalities

	N	Mean	Std. Deviation
Do you know the function of Wikis?	103	1,117	0,84288

The mean of the results in question 7 tells us that the data is grouped around a central value of 1,61, from which we can conclude that the data gathered in this question demonstrate a significant knowledge of the Wiki functionality. Also, the standard deviation found in questions 7 (0,84) tells us that the data obtained in this matter is homogeneous (Tab. 9).

Table 10 Knowledge of the Wiki functionalities

	Frequency	%
Yes	64	62,1
Sometimes	15	14,6
No	24	23,3
Total	103	100,0

On the question 7, "Do you know the functions of Wiki", 62,1 % of students answered positively, while 37,9 % expressed negative knowledge about the functions of Wiki. Results indicate that students are to a large extent familiar with one important Web 2.0 application.

Table 11 Creating Wikipedia content

	N	Mean	Std. Deviation
Did you create content in Wikipedia?	103	2,4563	0,86065

In the 8th question "Have you created the content in Wikipedia," the mean value is 2,45, which indicates that students largely do not know how to create content in Wikipedia. The result of standard deviation 0,86 is small, which indicates that the obtained data is homogeneous (Tab. 11).

The results of responses to question 8 are not encouraging, only 24,3 % of students have created the content in Wikipedia, while 75,7 % have not, but also do

not know how to create it. Such a result indicates that although students in the high percentage know the functions of Wiki, they do not significantly use them (Tab. 12).

Table 12 Creating Wikipedia content

	Frequency	%
Yes	25	24,3
Sometimes	6	5,8
No	72	69,9
Total	103	100,0

The arithmetic mean of the results in question 9 tells us that the data is grouped around a central value of 1,59, from which we can conclude that the gathered data demonstrate a significant knowledge of the blog functionality. The standard deviation of the results is 0,79, which indicates that the data obtained in this matter is homogeneous (Tab. 13).

Table 13 Knowledge of the blog functionality

	N	Mean	Std. Deviation
Do you know the work of the blog?	103	1,5922	0,79751

The results of responses to question 9 are very good, 60,2 % of students are familiar with the way the blog works, while 39,8 % have no knowledge (Tab. 14). Such a good result indicates that students are very familiar with those Web 2.0 applications in which the blog has an important role.

Table 14 Knowledge of the blog functionality

	Frequency	%
Yes	62	60,2
Sometimes	21	20,4
No	20	19,4
Total	103	100,0

As seen from Tab. 15, mean value of 2,37 is very high, which indicates that a very high percentage of students use Facebook and Twitter. The standard deviation of 1,60, indicates the homogeneity of the obtained data.

Table 15 Facebook and Twitter usage

	N	Mean	Std. Deviation
Do you use Facebook and Twitter?	103	2,3786	1,60341

On the question about the usage of Facebook and Twitter, respondents were offered a 5-level Likert scale for responses - 1) always, 2) almost always, 3) sometimes, 4) almost never, and 5) never. Tab. 16 shows the results in percentages.

Table 16 Facebook and Twitter usage

	Frequency	%
Always	48	46,6
Almost Always	16	15,5
Sometimes	14	13,6
Almost Never	2	1,9
Never	23	22,3
Total	103	100,0

We see from Tab. 16 that a very high percentage of students (62,1 %) frequently use Facebook and Twitter applications. That indicates that these two applications are among the most popular applications that students use, when it comes to Web 2.0.

Table 17 YouTube usage

	<i>N</i>	Mean	Std. Deviation
Are you using YouTube?	103	1,4466	0,94691

The next level of students' competence is reflected in the usage of YouTube, where the mean 1,45 indicates excellent knowledge of this Web 2.0 service by students, with a standard deviation of 0,95.

Table 18 YouTube usage

	Frequency	%
Always	78	75,7
Almost Always	12	11,7
Sometimes	9	8,7
Never	4	3,9
Total	103	100,0

The results in Tab. 18 indicate excellent knowledge of functionality and usage of YouTube by the students. As many as 87,4 % of them use this application, and with 8,7 % of those students that temporary use YouTube, we can say with great certainty that students most frequently use and show most knowledge of this Web 2.0 application.

Table 19 Usage of Video Blogging, Flickr, Digg, RSS feed, P2P share and Audio Blog Podcast

	<i>N</i>	Mean	Std. Deviation
Do you use Video Blogging or Vlogging?	103	3,8835	1,29328
Do you use Flickr and Digg community?	103	4,2621	1,01905
Have you participated in a forum?	103	3,3592	1,50720
Use the Audio Blog Podcast?	103	4,0874	1,08562

When it comes to the usage of a Video Blogging, Flickr, Digg, RSS feed, P2P Share and Audio Blog Podcast Web 2.0 applications that are examined in questions 12, 13, 17 and 18, we can conclude that the mean is very high (Tab. 19), indicating a poor understanding and usage of these applications by students.

The results correspond to students' interest in these Web 2.0 applications, but also the fact that not all Web 2.0 applications are designed for students. Here are just some of the results:

1. When asked "Do you use Video Blogging", only 11,7 % answered affirmatively.
2. When asked "Do you use Flickr and Digg", only 5,8 % answered affirmatively.
3. When asked "Do you use RSS feed and P2P share", only 26,2 % answered affirmatively.
4. When asked "Do you use Audio Blog Podcast", only 4,9 % answered affirmatively.

This poor usage of these applications could be due to poor software design, poor marketing or just they are not useful for students. There might be many other reasons to

explain these results and that could be some of the aims to further researches in this area.

Table 20 Participation in the work of forum

	<i>N</i>	Mean	Std. Deviation
Question 14	103	3,8058	1,29144

Respondents were offered a 5-level Likert scale for responses - 1) always, 2) almost always, 3) sometimes, 4) almost never, and 5) never for self evaluation of usage of Forums. A result of high arithmetic mean (3.81) indicates a poor student participation in forums (Tab. 20).

Table 21 Participation in the work of forum

	Frequency	%
Always	8	7,8
Almost Always	6	5,8
Sometimes	31	30,1
Almost Never	11	10,7
Never	47	45,6
Total	103	100,0

Only 13,6 % of students regularly participate in the work of forum, while 30,1 % sometimes participates in the work of this Web 2.0 application (Tab. 21). 46,3 % of students had never participated in the work of any forum. Students were offered whether they create and administrate any Forum – answers were "yes" (1) or "no" (2).

Table 22 Forum creation and administration

	<i>N</i>	Mean	Std. Deviation
Question 16	103	1,8544	0,35446

According to the results of the previous questions, even less students participate in the forum creation and administration. The arithmetic mean of 1,85 indicates a lack of forum administration knowledge. Value of standard deviation (0,35), indicates a high reliability of the results (Tab. 22).

Table 23 Forum creation and administration

	Frequency	%
Yes	15	14,6
No	88	85,4
Total	103	100,0

Only 14,6 % of students created and moderated a forum (Tab. 23).

4 Discussion

A survey was taken between April and July, 2012, in which participated students from two faculties and two cities: college students of the Faculty of Economics and Engineering Management in Novi Sad and the Faculty of Management in Sport in Belgrade. As seen from the results, most respondents were male (53,4 %), and there is slightly less female students (46,6 %).

The research aimed to determine how well today's students know and use Web 2.0 architecture, as well as why they are using applications based on Web 2.0 architecture.

The results show that the vast majority of students (96,1 %) owns a computer and uses the Internet. To recall the number of Internet users in the Republic of Serbia, according to recent Internet World Stats indicators, in Serbia there is 56,2 % of Internet users [15]. We emphasize that majority of this population refers to the very young people, that within this research they show that nearly all of them own a computer and use the Internet, as it is expected.

Although there are respondents (17,40 %) who do not understand or do not know the concept of the Web, 82,50 % of them understand the concept of the Web, which indicates that a very high percentage of students govern new Internet technologies, which is also expected.

The next level of students' competences refers to understanding the differences between Web 1.0 and Web 2.0 architecture. The results show that only 33 % of students know differences between the two web architectures. A very large number of students do not understand these differences, as many as 67 %. The reason for not understanding the differences between the two webs, we can find in giving a low importance of Web 2.0 applications by the education system, but also, by other relevant factors in the IT sector [8]. Only 29,1 % of students use all the capabilities of Web 2.0, which corresponds to the fact that the same number of students have appropriate knowledge about Web 2.0 and its usage in everyday's work. The results of this research show that students don't understand Web 2.0 architecture but do use some of Web 2.0 applications. We emphasize that this fact is concerning, if we know that the concept of Web 2.0 takes hold back in 2005, and in Serbia a Web 2.0 is present from the beginning in the form of a multitude of Internet applications.

The next level of students' competences is their frequency of usage online communication in real time. Even 64,1 % of the students "always" and "almost always" use online communication in real time during their study. Results show that only 53,4 % of students use some of MapQuest, Google Maps, Google Docs, Flickr, etc.

This high percentage of online communication usage is encouraging when one knows that it is a communication in real time, so the respondents indicated that they in great majority govern the functions of this important Web 2.0 application. Online communication in real time (e.g. Skype) is, among others, a very significant in the dimension of increment of student's social interaction [11].

Wiki is another Web 2.0 application students use, 62,1 % of students know the functions of Wiki. When asked about the creation of content in Wikipedia, only 24,3 % of students have created this kind of content. These results imply that understanding of the function of one Web 2.0 application does not mean the usage of the same or similar.

When it comes to the knowledge of the blog, obtained results are pretty good showing that blog has an important place among Web 2.0 application in students' world. Even 60,2 % of students are familiar with how the blog works.

When asked "Do you use Facebook and Twitter?", a very high percentage of students (62,1 %) answered yes,

and even 13,6 % of students sometimes uses Facebook and Twitter applications, which points out that these are the most popular applications among students when it comes to Web 2.0.

The results about students' knowledge of work and usage of Youtube showed - as many as 87,4 % of students uses this application, and 8,7 % of those students only temporary use YouTube. We can say with great certainty that this Web 2.0 application is the one students govern the best and use the most.

Based on these results, we can assume that students use more Web 2.0 applications (Facebook, Twitter, YouTube, blog, Wiki) which are of interest to them and provide more entertainment, interpersonal communication (discussion) and informing.

The next level of students' competences is Usage of Video Blogging, Flickr, Digg, RSS feed, P2P Share and Audio Blog Podcast as Web 2.0 applications. The results correspond to the students' interest in these Web 2.0 applications, but also the fact that not all Web 2.0 applications are designed for students. Only 5,8 % of students are familiar with the usage of Digg and Flickr applications, and only 4,9 % of the students are familiar with Audio Blog Podcast applications. About the same results are shown when it comes to the use of Video Blogging (11,7 %), RSS feed and P2P share (26,2 %) applications.

When asked if they participate in forums, only 13,6 % of students regularly participate in the forum's work, while 30,1 % sometimes participates in the work of this Web 2.0 application. Even 46,3 % of students had never participated in the forum. Concerning the experience in creation or moderation forums, only 14,6 % of students had created or moderated a forum.

This research showed that the understanding and use of these applications can be interpreted on several levels. First, since Flickr and Digg's requires creative thinking and ability to evaluate, we can conclude on the basis of the results that young people do not pay enough attention to the development of creativity, analysis and synthesis of opinion, which probably reflects the specific interests of young people who do not include these aspects.

Second, when it comes to RSS feed share P2P and Audio Blog Podcast, we can assume that the students mentioned concepts less familiar with it say to use less and their functions. Third, little use, opening and running of the forums can be interpreted by students and lack of desire to take on a particular topic discussed, criticized and exposed other people assessed in virtual and / or the real world.

5 Conclusion

It is obvious that the main purpose of education and the role of social networks changed the nature of the relationship of students to information and knowledge [2]. Many theories of learning emphasize human interaction as an essential element in the learning process. Social networks are basically designed as a service to support the maximum interaction between its members [13]. This possibility of interaction makes the social network suitable educational media. Indeed, one could argue that social networks form and support the acquisition of

knowledge which is, in the epistemological principles, very different from formal education and individualized instruction.

The research presented in this paper shows the creative quality of social media applications and how they translate to a more flexible, more mobile and faster way of life for youth [3]. Social networks are associated with an increased tendency of young people to multitask and to rely on the so called "digital multitasking" of daily activities and responsibilities, which is now a necessary condition for survival and development of every individual in the web community [1].

As a conclusion, we state that the presented results of research indicate that there is no systematic students' knowledge, when it comes to Web 2.0 and its applications, that is, there are big differences in the usage of Web 2.0 applications by students in their daily activities. So the students have shown excellent results in knowledge and usage of the following Web 2.0 applications: Facebook, Twitter, YouTube, Blog, Skype, and the results are somewhat inferior in knowledge and usage of forums, MapQuest, Yahoo, Google Maps, Google Docs and Flickr. Finally, the students have shown the best results in knowledge and usage of a Video Blogging, Flickr, Digg, RSS feed, P2P Share and Audio Blog Podcast.

We will very soon be convinced of what the economic potential of Web 2.0 is. Big systems are quickly redesigning their architecture and implementing a new concept of Web 2.0 into their business systems [5]. Just to mention Google Docs & Spreadsheets service, that will offer all the functionality of the classic Office, therefore the possibility of writing and editing text, tables, presentations, etc., and will be free and available to everyone. Even more, it will be always available on the Internet. Of course, each of these documents is protected and only the owner can determine who has access to it. Such service could disrupt the long-term plans for major business systems, possibly including the Microsoft.

Not to mention the popular services offered by Digg, where the users are given the ability to rate and comment links with news. The more votes a link has, the higher is its location on the Digg's list. The users are now in a position to determine which news will be popular or not popular, and that is something that commercial media must take into account and thus enable the end users to change the concept of work of the same media. Also, Flickr, a service for sharing photographs, is slowly creating new stars that are pursued by leading magazines. The potential of YouTube, especially with the announcement of cooperation with leading film and music companies, is immeasurable, as it will significantly affect the popularity and, consequently, scores of films and music releases.

These are just some of the opportunities of development that Web 2.0 offers to its users, and that today's generation of young people and especially students must exploit, in the function of development of its potentials. Primarily, we mean the potential for production and creativity, which will enable their more efficient education. Students, as a young generation, which is a base for the future of a society, must be an intellectual capacity that is ready to adopt new knowledge

and acceptance of technological changes, in order to maximize their potential and willingness for changes.

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