How Web 2.0 Technologies Affect Business? - Attitudes of Top and Middle Managers in BiH Companies

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Abstract

The paper presents the results of empirical research on the impact of Web 2.0 technologies on a company's business. The research was conducted among top and middle managers in companies in Bosnia and Herzegovina. The results show that, although all respondents do not use the aforementioned technologies, they have a relatively positive opinion on the application of Web 2.0 technologies in business. According to their opinion, Web 2.0 technologies make the most important contribution to sharing of data and information in company and have a significant impact on the quality of communication, both internal and external. These results encourage further research on the application of Web 2.0 technologies in business and the use of all the advantages and benefits they can provide to someone actively using them.

Keywords: Web 2.0, Web 2.0 technology, management, business, business process
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Introduction

For Web 2.0 is usually said to be a philosophy of mutually increasing collective intelligence and added value for each participant by dynamic information creation and sharing (Batinić&Pandur, 2009). In a dynamic environment like this, users control their online experience and at the same time influence experiences of other users, achieving a number of benefits. Web 2.0 means a set of technologies applicable in different fields, mainly in education, but its application for business purposes is becoming significantly stronger since companies achieve and maintain success through a number of positive aspects of their application.

Advantages and benefits of using Web 2.0 technologies in business, most often mentioned in literature, are the following (Pauker Kreitzberg, 2009; Panian, 2013; Kiryakova et al., 2011; Stenmark, 2008):

- encouraging and strengthening collaboration both within and outside the organization and changes in the way of interaction between all stakeholders,
- increasing the visibility and influence of the company,
- expanding the range of users of existing business applications of the company,
- flexible networking and simpler administration,
- help with data search,
- higher and better level of information.

Based on the described benefits and positive aspects associated with Web 2.0 technologies in literature, it was decided to investigate what top and middle managers think about the impact of Web 2.0 technologies on business operations. The objective of the research was set accordingly: to investigate the views of

managers of companies in Bosnia-Herzegovina on positive aspects of the application of Web 2.0 technologies in everyday business.

Methodology

The empirical research was conducted in companies and institutions in Bosnia and Herzegovina during May and June 2015. The sample consisted of 127 top and middle managers in BiH companies. The study used an online questionnaire consisting of two parts.

The first part of the questionnaire consisted of basic information on respondents (managers) and the companies in which they worked - gender, age, professional qualifications, daily use of the Internet, self-assessment of IT knowledge, use of Web 2.0 technologies in private life, workplace, company size, primary activity, the degree of formalization and application of Web 2.0 technologies in daily business operations. These questions were designed in the form of closed questions.

The second part of the questionnaire contained a set of 22 statements (Table 1) on the contribution of Web 2.0 technologies to daily operations of companies and the ways in which they affect internal and external operations.The statements were rated on a scale from 1 to 5 (strongly disagree (1) ... (5) strongly agree).

Table 1
Statements on the contribution of Web 2.0 technologies to company operations

Code	Statement - Application of Web 2.0 technologies in the company
S1	... contributes to the company's performance
S2	... improves staff efficiency
S3	... facilitates project management
S4	... facilitates decision-making
S5	... facilitates task completion control
S6	... provides better communication within the company
S7	... provides better communication with partners and stakeholders
S8	... shortens the communication chain
S9	... reduces conflicts within the organization
S10	... facilitates communication between the organizational structures
S11	... facilitates information sharing
S12	... allows better information management
S13	... can shorten information exchange paths
S14	... facilitates staff training
S15	... improves the level of information
S16	... helps reduce communication costs
S17	... helps reduce costs generally
S18	... can reduce and improve the organizational structure of the company
S19	... improves the organization's visibility
S20	... helps provide user support
S21	... improves the image of the organization

Source: Author's preparation

In the beginning of the questionnaire it was shortly described what is meant by Web 2.0 technologies and what kinds there are.

In total, 135 questionnaires were collected, and after a logical and technical analysis, 127 of them were accepted for further analysis. The collected data were subjected to descriptive statistical analysis using the program Microsoft Office Excel

2007. Results are presented through absolute (f) and relative frequencies (%),mode (D),mean (M), standard deviation (SD) and coefficient of variation (CV).

Results and Discussion

The results show that men account 69.3% of the sample.Almost 80% of the respondents are younger than 45 years (18.9% are younger than 30 years). The respondents are relatively well educated: 63% have a university degree, and 22.0% have a MSc or PhD degree. Slightly less than half of the respondents (47.2%) reported using the Internet up to one hour a day for leisure activities, while almost ¾ use the Internet up to two hours a day. As for the use of the Internet for business purposes, the results show that 51.2% of the respondents spend almost a third of their daily work time on the Internet.Slightly less than ¾ of respondents use Web 2.0 technologies in private life. For their IT knowledge, most of the respondents gave themselves ratings 3 (39.4%) and 4 (44.1%) - the mean was 3.75 (range 1-5, SD=0.723, CV=19.28%).

As for the distribution by workplace, 63.8% are heads of departments, offices or sectors, 25.3% of them identified themselves as managers, and 11.0% are owners.

According to company size, approximately ¼ of them come from each small and medium enterprises, 39.4% from large enterprises and 11.0% from micro-enterprises. Analysis of primary activities showed that 61.4% of the respondents come from service companies, 23.6% from manufacturing companies, and the rest from companies that are equally engaged in production and sale. Almost ¾ of the respondents stated that their company has partial formalization, i.e. employees have partial freedom in solving tasks.Of the remaining respondents, 18.1% stated that their companies operate with full formalization, i.e. employees do not have freedom in solving tasks, while other 11.8% reported working without any formalization, i.e. there is a full freedom in solving business tasks.

As for the application of Web 2.0 technologies in daily business operations, it was established that 58 out of the 127 respondents (45.7%) reported some of the Web 2.0 technologies being used in their companies.These respondents also answered the question which Web 2.0. technologies these were, and business social networks were found to be relatively well represented (60.3%).They are followed by collaborative activities (24.1%), blogs for employees (20.7%), blogs for partners and associates (15.5%) and virtual worlds, Wikis and RSS (12.1% each), with significantly lower percentages. Mash-up is used least (1.7%), while none of the respondents reported using workspaces.

Results of the analysis of ratings assigned to statements on the contribution of Web 2.0 technologies to company operations are shown in Table 2.

Table 2
Descriptive analysis of statements on the contribution of Web 2.0 technologies to company operations

Code	Min-Max	D	M±SD	CV(%)	% (n=127)		
					NA	NO	A
S1	1-5	4	3.945±0.911	23.098	5.5	25.2	69.3
S2	1-5	4	3.740±0.928	24.802	7.1	30.7	62.2
S3	1-5	4	4.134±0.894	21.629	3.9	19.7	76.4
S4	1-5	4	3.890±0.911	23.408	6.3	23.6	70.1
S5	1-5	4	3.937±0.889	22.571	3.9	26.0	70.1
S6	1-5	4	4.102±0.862	21.017	2.4	20.5	77.2
S7	1-5	4	4.039±0.858	21.246	4.7	15.7	79.5
S8	1-5	4	3.772±1.085	28.772	12.6	22.8	64.6
S9	1-5	4	3.378±1.054	31.189	19.7	32.3	48.0
S10	1-5	4	3.827±0.918	23.990	6.3	28.3	65.4
S11	1-5	4	4.244±0.804	18.942	2.4	13.4	84.3
S12	1-5	4	4.087±0.864	21.141	3.9	18.9	77.2
S13	1-5	4	4.047±0.862	21.309	5.5	15.7	78.7
S14	1-5	4	3.756±0.998	26.565	10.2	29.1	60.6
S15	1-5	4	4.189±0.804	19.195	1.6	17.3	81.1
S16	1-5	4	4.110±0.884	21.507	3.1	19.7	77.2
S17	1-5	4	3.850±1.009	26.193	7.9	26.0	66.1
S18	1-5	4	3.811±0.932	24.457	6.3	28.3	65.4
S19	1-5	4	3.945±0.902	22.876	3.9	24.4	71.7
S20	1-5	4	3.969±0.854	21.517	3.1	26.0	70.9
S21	1-5	4	4.118±0.878	21.331	3.1	18.9	78.0

Note: D – mode; M – mean; SD – standard deviation; CV - coefficient of variation NA – not agree (marks 1 and 2); NO – no opinion (mark 3); A – agree (marks 4 and 5)
Source: Author's calculation

The presented results show that the respondents, or managers and heads of different organizationallevels, have a relatively positive attitude toward the application of Web 2.0 technologies in business operations. According to calculated means (M±SD), all respondents most strongly agree that Web 2.0 technologies facilitate information sharing (S11) and, consequently, arguably improve the level of information (S15) - means are 4.24 and 4.19, respectively. The above statements also have the highest percentage of agreement among respondents - 84.3% and 81.1% of the respondents rated them 4 and 5. Apart from these statements, an additional number of statements have the mean higher than 4, which indicates that respondents believe that Web 2.0 technologies provide better communication within the company, but also with partners and stakeholders, and offer better information management while reducing information exchange pathways. The mentioned advantages result in reduced communication costs, which the respondents emphasized as one of the most significant benefits of doing business with the help of Web 2.0 technologies.

As for the said advantages for the communication process, it should be noted that they apply not only to everyday communication, but also to specific "forms", i.e. improvements in communication lead to easier management of projects involving different people. This is also very logical because projects can be implemented by project teams formed by different departments from a single location area as well as by people from similar departments that are geographically rather far apart. It is

much easier to implement a project in these situations, in particular its initial phases of analysis and planning, because when using Web 2.0 technologies, participants are not required to be at the same time in the same place, which often requires additional expenses. Similarly, work on the same documents is much easier without unnecessary complication and duplication of various documents. Besides, it should be noted that,in past, teleworking and performing tasks without physical presence of involved parties very often required expensive equipment which is used to establish a video conference, while today for such a type of interconnecting it is enough to have a personal computer and appropriate applications from the Web 2.0 spectrum installed on it.

Another mean greater than 4 is noted in the statement that the application of Web 2.0 technologies in business improves the image of the organization (S21). This is understandable because a high-quality organization and a well-organized both internal and external communication present the company in a good light, which creates a positive reaction in clients and future partners.

Other statements, except the statement S9: "*The application of Web 2.0 technologies in the company reduces conflicts within the organization*" have an mean between 3.5 and 4, while agreements of respondents range between 60% and 70%. These results indicate that the positive aspects of the application of Web 2.0 technologies in business operations are relatively well recognized among the respondents. Here, it should be noted that the rest of the respondents, who disagreed with certain statements, consists of two groups of respondents: the respondents who really disagree with the statements and the respondents who do not have an opinion, or those who gave statements the rating 3, which does not reflect either an increased agreement or increased disagreement. A more detailed inspection of results of these respondents established that their disagreement is around 10%, except in the case of the statement S8, for which it was found that 12.6% of the respondents believe that Web 2.0 technologies do not lead to shorter communication channels. Although respondents believe that Web 2.0 technologies in companies will facilitate internal and external communication and improve the level of information, they do not believe that these technologies will lead to a shorter chain of communication. This indicates that respondents still do not think about collaboration in a way that right from the start they are all simultaneously involved in considering and solving the set tasks, and that is exactly what Web 2.0 technologies can provide.

The rest of the respondents do not have either a positive or negative opinion prevailing.Based on the assumption that, after experiencing the use of Web 2.0 technologies in their work, their opinion would change to positive, we would get a considerable degree of agreement, which means that positive aspects of Web 2.0 technologies overcome everything negative that some see in them. Certainly, it should be emphasized that these relatively positive results, as well as the expected positive results, can be due to positive experiences with ICT in general and the positive personal experience in the use of Web 2.0 technologies in private life, and future research should pay particular attention to this aspect in order to obtain a true picture of the perception of benefits of Web 2.0 technologies in business. The latter is stated because it should be kept in mind that slightly less than half of the respondents said that Web 2.0 technologies are used in their companies. Namely, a comparison of these results reveals a small inconsistency: although the respondents have a positive opinion on the benefits of Web 2.0 technologies in business, their use is not intensive.

Conclusion

At first sight, the presented results may seem confusing. Namely, less than half of the respondents reported using Web 2.0 technologies in their business, while most of them have relatively positive attitudes on the benefits that they can provide for everyday business. Nevertheless, with due respect to the part of the respondents with negative attitudes, it could be very simply and concisely concluded that the respondents generally have a positive opinion on Web 2.0 technologies.As the results show respondents believe that Web 2.0 technologies make the most important contribution to sharing of data and information in company and have a significant impact on the quality of communication, both internal and external. Level of information, collaboration and teamwork in the company are accordingly improved, and so is the image of the organization.

These results encourage further research on the application of Web 2.0 technologies in business and the use of all the advantages and benefits they can provide to someone actively using them. Further research should primarily contrast the views of respondents who already use Web 2.0 technologies in their business with those who still do not use them. In addition, it would be important to explore the reasons why some companies still do not use these technologies and address the factors determining the extent of their application. Knowledge of all these differences, reasons and factors, would provide a true picture of the state of application of Web 2.0 technologies in business operations, which would be a starting point for appropriate action to encourage more intensive use of Web 2.0 technologies in business and make use of all the benefits that they bring along.

References

1. Batinić, N., Pandur, M. (2009), "Web 2.0", Sveučilište u Zagrebu, Fakultet elektrotehnike i računarstva, available at: https://www.fer.hr/_download/repository/Web_2.0.pdf (23/06/2015)
2. Kiryakova, G., Yordanova, L., Angelova, N. (2011), "Web 2.0 in Business", Trakia Journal of Sciences, Vol. 9, Suppl. 3, pp 169-177.
3. Panian, Ž. (2013), "Elektroničko poslovanje druge generacije" ("Second Generation E-Business"), Faculty of Economics, Zagreb
4. Pauker Kreitzberg, A. (2009), "Building a Web 2.0-friendly culture: success on the Web is about people, not technology", People and Strategy, Vol. 32, No. 2, pp. 40-45.
5. Stenmark, D. (2008), "WEB 2.0 in the Business Environment: The new Intranet or a Passing Hype?" Proceedings of the 16th European Conference on Information Systems, Galway, Ireland, June 9-11, 2008.

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