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KNOWLEDGE SHARING THROUGH PLATFORM SHARING

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ABSTRACT

The article presents a few aspects of the knowledge sharing process, both through conventional means and through those provided by information and communication technology. The first part includes a brief outline regarding knowledge sharing through communities of practice, emphasizing only those that conduct their activity in the online environment, followed by a short description of sharing platforms. Another element approached is an IT app of a demonstrative model of a knowledge bank for the domain of Defense, Public Order and National Security, resulting from my doctoral research. This is accompanied by a pilot study proving the manner in which the usefulness of this bank is perceived with the help of an on-line questionnaire. The research presented is destined to raising awareness in the field of knowledge banks and has the role to formulate conclusions which are going to allow increasing the efficiency in the development of similar platforms.

KEYWORDS:

Community of practice, social media, sharing platform, knowledge sharing, knowledge bank

1. Introduction

Knowledge is a social product, based on the general need of the community nowadays to interact, understand and solve the various situations and problems that might occur.

Human interactions, as well as the concept of social capital, have emerged together with social communities, individuals beginning to interact in order to obtain reciprocity.

The social communities created on the Internet generate, acquire and preserve knowledge by inter-connecting people spread in different locations in order to make an exchange or a rapid and easy transfer of information and knowledge. According to Shang, Li and Hou (2011), with the help of various IT apps of the technological models of web 2.0 services, in the on-line environment, part of tacit knowledge is turned into explicit knowledge, due to these social communities.

Within social communities, the so-called communities of practice appeared, namely groups of individuals with a common interest in an area or domain that were deliberately created in order to obtain knowledge in a certain domain. The members of communities of practice learn from each other and thus also benefit from the opportunity to develop their personal and professional skills according Wenger (2002).

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On the other hand, even with the help of these communities of practice, specialized knowledge can never be fully captured through the various apps and software because of certain tacit elements incorporated within individuals. However, the experts' tacit knowledge provides essential grounds which might be used in order to increase the volume of explicit knowledge. The feedback, information, and knowledge available on the Web regarding different products, services and solving the problems and situations that occur are extremely valuable, and organizations establish certain programs in order to manage these assets, in order to improve strategic resources and minimize potential loss.

2. The process of knowledge sharing

A careful study upon the online communities of practice extended the perspective of sharing knowledge by classifying the different types of knowledge that individuals share. The analysis shows the fact that, in the on-line environment, there are a lot more discussions referring to practical knowledge to the detriment of the cultural ones. According Hara (2009), the communities of practice formed in the online environment do not have the same characteristics as the communities of practice whose members interact in a face-to-face manner. Two of the important characteristics of communities of practice in the online environment are the development of common sense and the development of professional identity. This is demonstrated by the lack of sharing cultural knowledge.

Some researchers state the fact that "*communities of practice are made up of individuals, not computers. The members of a community of practice have to be able to meet face to face, to socialize, to debate the different formulations of common visions that reunite them and to get engaged in concrete collective projects. The instruments of information technology will often have a very useful role within these activities*" (Agre, 1998).

Therefore, the knowledge-based approaches should be implemented as in nowadays' society this active becomes vital for the development of a lasting competitive advantage, the exploration of online platforms being an essential aspect (Lin, Hung & Chen, 2009).

In the same manner as with the notion of social capital, social media is based on connectivity and inter-activity by using information technology within a group of individuals with a common interest. Social media offers a large range of online presences, that are based on involvement as a form of virtual social interaction.

The use of social media to the purpose of knowledge sharing is used on large scale at individual level and at organizational level too. Revolutionizing the method of classical social interaction, social media develops different channels of communication among the users of any domain or industrial sector. Thus, social media has posed important challenges to the classic concept of management of relations between customers and producers. Unlike the traditional "offline" channels, where the client is approached individually and directly, the use of social media is especially focused on extracting the most important elements related to most users in the online environment simultaneously. However, while marketing structures are sending online unidirectional messages, a virtual platform of knowledge sharing offers a competitive advantage and is promoted in the organizational environment (Finkbeiner, 2017).

The end-users (consumers) adopt increasingly active roles in co-creating the marketing content with the respective companies. In turn, companies and organizations seek for programs of online social marketing and campaigns for reaching out to all types of consumers in order to make their profiles. The important elements referring to the users, also called

in specific terminology "client's voice" are afterwards turned by the teams of technical specialists of the company in the engineer's voice or the technical descriptors used for design and produce high quality products and services. However, the challenge faced by many companies is that, despite admitting the need to be active in social media, they do not really understand how to do it in an efficient manner and which performance indicators they should be using (Oanță, Marcu, Pleşanu & Bârsan, 2019).

In contemporary society, starting with Conrad Hilton, the creator of the first luxury brand of international hotels and up to Netflix or Zipcar companies, they all have obtained considerable profits from facilitating the access of individuals to certain shared goods, these businesses being extremely profitable.

Netflix is a sharing type of platform with digital content, founded in the USA in 1997. According to Lisa Gransky, in 2009, the company reported sales amounting to 1.36 billion dollars and a market capitalization of 4,76 billion dollars in 2010. At present, it is the most important entertainment service on a sharing platform in the world, with over 158 million users from over 190 countries that enjoy watching TV series, documentaries and movies in a large variety of genres and languages (Netflix Media Centre). The users of the platform can watch as much as they like, wherever and whenever, on any terminal connected to the internet, be it Smart TV, desktop or laptop, tablet or smartphone or mini-PC, being able to stop and then resume watching from the moment they chose to interrupt it. Netflix entered the Romanian market in 2016.

Zipcar is an American company founded in 2000 in Massachusetts, that does not produce, does not sell and does not repair cars either; it shares them with others through a platform. According to Lisa Gansky, "*the company generated a yearly income of 130 million dollars, growing with over 30 % in just a year, this being one of the fastest growing rates of the decade*" (Gansky, 2011, pp. 11-29).

In a remarkably short interval, Facebook application, based on Web 2.0 instruments, has become the most dominant share-type platform. If in 2010, a little after launching, it had over 400 million users at world level (Gansky, 2011), in 2019 it had over 2.5 billion users (Clement, 2020), of which 10 million only in Romania (*Map of Facebook users in Romania*).

Another successful enterprise was the introduction of Lime electrical scooters in Bucharest where, due to terrible traffic jams at rush hours, their sharing proved to be the optimal solution for the rapid movement on short distances of the users of sharing platform.

Providing a platform for discussions engaging people on different topics is available in different online communities or on various forums. Companies have discovered the fact that the interaction among people who have the same interests can prove extremely significant in the organizational competition. While most of these interactions happen on public sites, between online communities, the idea of reduced communities dedicated to experts and professionals in various fields acquire special importance (Hanna, Rohm & Crittenden, 2011).

3. A demonstrative model of a knowledge bank for the domain of Defense, Public Order and National Security

During my doctoral research, an IT application was designed and constructed destined to the communities of practice within the National System of Defense, Public Order and National Security (N.S.D.P.O.N.S.), with high chances of employment at the level of the whole system, hereafter called a knowledge bank. The knowledge bank is an entity organized on sets of valid, relevant, and sufficient knowledge, according to their level of applicability (Oanță & Pleşanu, 2018).

The platform on which the knowledge bank was created for the field of defense, public order and national security was built on the basis of something that can be used in common within a community of practice, an institution of education within N.S.D.P.O.N.S., or within a valuable chain of knowledge. The internet is used together with the latest generation mobile data networks, corroborated with the various site applications of Web 2.0 platform. With the help of Web 2.0 instruments, the users of the knowledge bank may share their knowledge, opinions, thoughts and experiences acquired that can be shared by the knowledge bank are: lessons learned and good practices, Bachelor degree papers, dissertations, scientific research, doctoral theses, scientific papers published in proceedings of national and international conferences, different (Oanță, 2019b).

The assets publications in the field, course support materials and multimedia materials.

In order to determine significant aspects related to the use of the knowledge bank for the D.P.O.N.S. domain, I have made a small-scale research using the investigation method and, as technique, the on-line questionnaire. In order to design the questionnaire, I made a brief investigation in some of the structures of the Ministry of Internal Affairs, using the interview as a research technique. The contents of interviews are quite varied, touching upon all the aspects related to the stage of knowledge in the field of organizational education (Oanță, 2019a). After prior testing of the questionnaire on approximately 30 subjects within a focus group, it was applied to a number of over 100 subjects of different age, gender, studies and working in different domains within N.S.D.P.O.N.S., the timeframe needed for its completion not being longer than 15 minutes. The complete questionnaire can be consulted on Google Drive account bancadecunostinte@gmail.com, using the password: *banca.de.cunostinte.*

The data resulting from the answers provided by over 100 respondents were exported in a centralized manner and inserted in Microsoft Excel program. They were interpreted, processed and analyzed statistically in IBM SPSS Statistics soft, and the interpretation of results was performed by testing relevant statistical hypotheses according to the tutorials presented by Labăr (2008).

Upon applying One-Way ANOVA method for independent samples, I noticed that there are significant differences regarding the security of data included on the website hosting the knowledge bank platform and the dimensions including the respondents' domains of activity.

On the basis of the results obtained, I noticed the fact that there is significant statistical differences function of the variable "dimension of the domain of activity" with respect to data security.

$$F(2, 103) = 3{,}281,\ p = 0{,}042,\ p<0{,}05.$$

The hypothesis is checked and the chance of error through rejection of zero hypothesis is smaller than 5 %.

Table no. 1

One-Way ANOVA Variance analysis for comparing environments to the data security variable according to the dimension of the domain of activity variable

Source of variance	SS	df	MS	F	p
Inter-groups	2,771	2	1,385	3,281	0,042
Intra-groups	43,494	103	422		
Total	46,264	105			

Where: SS – Sum of Squares, df – degrees of freedom; MS – average of squares, F – value of One-Way ANOVA test, p – significance threshold.

By applying the Levene test of homogeneity of variances, Levene F (2, 103) = 0,218, p=0,805 (p>0,05), we notice that variances are equal while the condition of homogeneity of variances is fulfilled, therefore, in order to check which are the dimensions of the respondents' fields of activity among which there are significant variances, I applied the post hoc *t* Tukey test. The results obtained showed the existence of significant differences among the respondents within the dimension of the *Defense* domain on the one hand and those within the *Intelligence, counterintelligence and security* on the other hand, regarding data security.

In the following lines I am going to determine the effective value of t Tukey test, making the ratio between mean difference (Mean_Difference) and standard error (Std._Error):

$$t_{Tukey} = \frac{Mean\_Difference}{Std.\_Error} \quad (1); \quad t_{Tukey} = \frac{0,445}{0,175} = 2,54$$

Then, I will calculate the size of effect according to the formula:

$$r = \sqrt{\frac{F_{contrast}}{F(df_{int\ ergrup}) + df_{int\ ragrup}}} = \sqrt{\frac{t^2_{contrast}}{F(df_{int\ ergrup}) + df_{int\ ragrup}}} \quad (2)$$

$$r = \frac{2,54}{\sqrt{3,281 * 2 + 103}} = \frac{2,54}{\sqrt{6,562 + 103}} = \frac{2,54}{\sqrt{109,562}} = \frac{2,54}{10,47} = 0,24$$

Thus, respondents within the dimension of *Defense* domain showed interest in data security in a significantly higher measure as compared to respondents within the dimension of *Intelligence, counterintelligence and security* domain (Tukey t = 2,54, p < 0,05, r = 0,24).

By applying One-Way ANOVA method for independent samples, we noticed the fact that there are significant differences regarding the interest in the use of the knowledge bank for improving the training level and the dimensions including the respondents' domains of activity.

On the basis of the results obtained, I noticed that there is statistically significant differences function of the variable „dimension of the field of activity" with respect to the interest in using the knowledge bank.

F(2, 103) = 4,048, p = 0,02, p < 0,05.

The hypothesis checks out and the chance of error by rejection of zero hypotheses is 2 %.

Table no. 2

Analysis of One-Way ANOVA variance for comparing means to the interest in using banks of knowledge variable dimension of the domain of activity

Source of variance	SS	df	MS	F	P
Inter-groups	4,452	2	2,226	4,048	0,020
Intra-groups	56,643	103	0,550		
Total	61,094	105			

When applying the Levene test of homogeneity of variances, Levene F (2, 103) = 0,692, p = 0,503 (p > 0,05), we notice that the variances are equal, while the condition of homogeneity of variances is fulfilled, therefore in order to check which are the dimensions of the respondents' domains of activity between which there are significant differences, we applied the post hoc *t* Tukey test. The results obtained have shown significant differences between respondents within the dimension of the domain *Public order* on the one hand and those within the dimension of the domain *Intelligence, counterintelligence and security* on the other hand with respect to the interest in using the knowledge bank.

In the follwing part we are going to calculate the effective value of t Tukey test by making the ratio between the mean difference (Mean_Difference) and the standard error (Std._Error):

$$t_{Tukey} = \frac{0,533}{0,187} = 2,85$$

Then, we are going to calculate the size of the effect according to the formula:

$$r = \frac{2,85}{\sqrt{4,048 * 2 + 103}} = \frac{2,85}{\sqrt{8,096 + 103}} = \frac{2,85}{\sqrt{111,096}} = \frac{2,85}{10,54} = 0,27$$

Thus, respondents within the dimension of the domain *Public order* have shown interest in the use of the knowledge bank for improving the training level in a considerably higher measure as compared to the respondents within the dimension of the domain *Intelligence, counterintelligence and security* (Tukey t = 2,85, p = 0,015, r = 0,27).

Applying One-Way ANOVA method for independent samples, we noticed the fact that there are significant differences regarding the frequency of using the knowledge bank and the dimensions comprising the respondents' domains of activity.

On the basis of the results obtained, I noticed the fact that there are statistically significant differences according to the variable "dimension of the domain of activity" with respect to the frequency of use of the knowledge bank.

F(2, 102) = 3,111, p = 0,049, p<0,05.

The hypothesis checks out and the chance of error by rejection of the zero hypotheses is smaller than 5 %.

Table no. 3

One-Way ANOVA analysis of variance for comparing means to the frequency of use of the knowledge bank variable function of the dimension of the domain of activity variable

Source of variance	SS	df	MS	F	P
Inter-groups	2,656	2	1,328	3,111	0,049
Intra-groups	43,535	102	0,427		
Total	46,190	104			

Applying Levene test of homogeneity of variance, Levene F (2, 102) = 2,153, p = 0,121 (p > 0,05), we notice the fact that variances are equal, while the condition of homogeneity of variances is fulfilled, therefore in order to check the dimensions

of the domains of activity of variances is fulfilled, therefore in order to check the dimensions of the respondents' domains of activity between which there are significant differences, I applied the post hoc *t* Tukey test. The results obtained have shown the existence of significant differences among respondents within the *Intelligence, counterintelligence and security* on the one hand and those within the dimension of the domain of *Public order* on the other hand with respect to the interest in the use of the bank of knowledge.

In the following lines I am going to calculate the effective value of t Tukey test by making the ratio between the mean difference (Mean_Difference) and the standard error (Std._Error):

$$t_{Tukey} = \frac{0{,}417}{0{,}168} = 2{,}48$$

Then, we are going to calculate the size of the effect according to the formula:

$$r = \frac{2{,}48}{\sqrt{3{,}111 * 2 + 102}} = \frac{2{,}48}{\sqrt{6{,}222 + 102}} = \frac{2{,}48}{\sqrt{108{,}222}} = \frac{2{,}48}{10{,}40} = 0{,}23$$

Thus, the respondents within the dimension of the *Intelligence, counterintelligence and security* domain are going to use the bank of knowledge in a considerably higher measure as compared to respondents within the dimension of the domain of *Public order*. (Tukey t = 2,48, p = 0,038, p < 0,05, r = 0,23).

4. Conclusions and future directions of research

Knowledge sharing among employees, within organizations, leads to their development and to creating innovative knowledge. A very important aspect in the process of knowledge sharing for the communities of practice is the transformation of tacit knowledge into explicit knowledge in high proportion.

The virtual knowledge sharing platforms are promoted in the organizational environment, as they offer a competitive advantage as compared to conventional means.

In nowadays society, due to the information and communication technology, companies that use sharing platform seem to be continuously expanding in comparison to those using classical markets.

Our testing of relevant hypotheses using the One-Way ANOVA method in SPSS soft has led us to the conclusion that the employees within the dimension of the domain of:

– *Public order* – are more interested than those within the dimension of the domain *Intelligence, counterintelligence and security* in using the knowledge bank for improving their level of training;

– *Defense* – have shown interest in data security in a significantly higher measure as compared to those within the dimension of the domain *Intelligence, counterintelligence and security;*

– *Intelligence, counterintelligence and security* are going to use the knowledge bank in a significantly higher measure as compared to those in the dimension of the domain of *Public Order.*

Taking into account the fact that the empirical research upon communities of practice is still relatively reduced, my point of view is that future research should examine the following aspects:

– the perceptions and opinions of members of communities of practice that are conducting their activity only in the online environment, in order to have a more

comprehensive understanding of the motives and barriers in the way of knowledge sharing;

– the manner in which personal traits such as age, level of education, experience accumulated and organizational characteristics, such as the dimension of organizations and their domain of activity, may shape the relations among the motivation factors and the tacit intentions of sharing knowledge by the members of communities of practice in the on-line environment;

– knowledge sharing through cultural exchange;

– mechanisms through which the characteristics of social networks influence knowledge sharing;

– directing individuals and organizations towards using knowledge banks;

– encouraging more and more frequent use of knowledge banks;

– suggesting means through which the knowledge bank is going to be incorporated in the organizational environment;

– the added value brought by the use of knowledge banks at organizational level, especially at the level of N.S.D.P.O.N.S.

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