Cyber Security and Civil Engagement: Case of Lithuanian Virtual Community Projects

Aelita Skaržauskienė, Agnė Tvaronavičienė and Gintarė Paražinskaitė
Mykolas Romeris University, Vilnius, Lithuania
aelita@mruni.eu
a.tvaronavciene@mruni.eu
giparaz@mruni.eu

Abstract: Lithuania, like other European countries is constantly faced with low civil engagement, for example, involvement in decision making processes, the electoral process, volunteering, etc. Despite the various policies and strategies of European Union and the state level to grant the priority of interactions of governance and inhabitants, the situation remains the same. In order to reveal the main reasons for general low participation, many scientific researches covering different aspects were done. This article focuses on the analysis of the legal concerns constantly raised by scientists and respondents of public opinion survey on what restricts the broad involvement of virtual communities in civil activities. As a result, the main legal risks in this context in Lithuania are identified. For this systematic and comparative analysis, generalization, document analysis were completed and combined with results of quantitative research from Lithuania. Aspects such as privacy, security of personal data, demand for identification, internet censorship are discussed. The results of the research prove that security is among the top 5 reasons that prevent participation in virtual communities. While active users of virtual communication are mostly worried about threats for personal data, for intellectual property and violation of rights and obligations. The topic is related to cyber safety as it identifies the legal risks for the members of virtual communities acting in Internet and must be considered as relevant to the issues of cyber intelligence and security. The value/novelty of the article is to identify the legal threats associated with using such social technologies as virtual communities for promoting the inclusion of society into the decision-making process, taking into account that existing situation and public opinion in Lithuania is not yet analyzed. The methodology and results might be used as a case or part of comparative analysis in other European countries that face the same problems.

Keywords: social technologies, virtual community, collective intelligence, legal issues, privacy, censorship

1. Introduction

Cyber security issues, within the context of civil engagement, are important aspects, which must be analysed and discussed in the field of science and practice. Various social technologies have created possibilities for society members to communicate despite the physical distance, therefore the new opportunities have brought high prospects for more sophisticate crimes and other violations of rights and obligations of users, administrators and states, as regulatory bodies. This article connects several independent fields of research: social technologies, civil engagement, collective intelligence and cyber security in order to reveal the main threats of using social technologies during the process of engaging society into socially responsible activities.

Most people today do not imagine their life without social technologies. We are used to sharing information, communicate, pay taxes, host contests, buy and sell goods on web. Executive Director of Google, Eric Schmidt has stated that technologies are no longer about hardware or software, but "about mining and use of enormous data to make the world a better place" (Morozov, 2013). So the big part of everyday life routine has already been transferred from physical reality to virtual. As the second level of such transformation, is directing new technologies towards creation of greater welfare. Face-to-face interaction is not fading away nor there is increasing isolation of people in front of their computers (Castells, Cardoso 2005). On the contrary, Internet users are more social, have more friends and contacts, and expected to be more socially and politically active than non-users. Especially as the anticipation of the younger groups of the population substantially increase sociability by the new forms of wireless communication (e.g. mobile phone). Communication on the Internet by means of Web 2.0 and social media tools has develop new forms of collaboration, group knowledge, on-line Collective Intelligence (Malone, 2010, Salminen, 2012), social networking (Gunawardena et al., 2005). The process of creating innovative technologies socially oriented goals has become one of the competitive advantages for organisation and communities. This tendency is sensed even from Silicon Valley motto change (from "innovate or die" to "ameliorate or die") where emphasis is on abilities to change things and to get humans to behave in more responsible and sustainable ways in order to maximise efficiency (Morozov, 2013). Previous documented attempts to create better opportunities for greater welfare, and other innovations, are accompanied with many risks. While people act on the web, they

must also preserve their personal data; refrain from certain actions, which may violate rights of other people and so on. Such risks form a big part of the research field of cyber security, which leads to the necessity to explore this question broader and in an interdisciplinary manner.

The present article focuses on the legal issues of cyber security that were identified during the empirical research on the involvement process of virtual communities in different civil activities. Aspects such as privacy, security of personal data, demand for identification, Internet censorship are discussed. The purpose of the article is to analyse the legal concerns, often raised by scientists and respondents of public opinion survey, held in 2013 in Lithuania, on what restricts the broad involvement of virtual communities in civil activities. As a result the main legal risks in this context in Lithuania are identified. For this systematic and comparative analysis, generalization, document analysis were done and combined with results of quantitative research (social opinion survey) from Lithuania.

The legal threats of using social technologies as virtual communities to promote the inclusion of society into decision making, especially with focus on collective intelligence, taking into account existing situation and public opinion in Lithuania, were not yet analysed. The methodology and results might be used as a case or part of comparative analysis in other European countries that face the same problems.

2. Background of the research

2.1 Main concepts of the research: collective intelligence, civil engagement and cyber security

One field where application of innovative technologies builds bridges for new quality of social decision making is activity of virtual communities, which leads to the emergence of collective intelligence. The concept of collective intelligence may be revealed by taking into consideration the few main characteristics: a) it is an activity for a group of people; b) it is an activity which is oriented to create or decide something; c) the results of such activity is more effective than individually proposed decisions (Tvaronavičienė, Paražinskaitė, 2013). In brief, collective intelligence may be defined as the collective, intellectual activity of a group of individuals (Malone, Laubacher, Dellarocas, 2009). Collective intelligence, which emerged in the activities of virtual communities, is a new quality of civil engagement that grants more effectiveness and compliance with societal needs. Civil engagement refers to the ways in which citizens participate in the life of a community in order to improve conditions for others or to help shape the community's future (Adler, Goggin, 2013). The interaction between social technologies and civil engagement creates an environment, where collective intelligence has all opportunities to emerge and be used. Actually, it is one of the most modern examples of social technologies working towards a better future. Of course good intentions of the generators usually build high opportunities, thus the realization and active usage of social-oriented production, as well as other ones in virtual space, have many risks. Most of them are the issues of cyber security, which in a broader sense may be understood as protection against disruption and misuse of Internet facilities (Gradi, Parisi, 2006). Risks and responsibilities in the hyper connected world are among number one topics in the world. The initiatives to make institutions more cyber resilient and creating models for protection from cyber-attacks are becoming less effective despite the efforts (*Chinn, Kaplan, Weinberg 2014). In* concluding the context of this article, it is necessary to state that social technologies as a medium between people and bodies to make decisions, has not only created comfortable platforms for spreading the ideas, but also presented opportunities to evaluate and improve individual ideas and convert them into collective intellectual productions, which due to synergistic effects has undoubtedly new quality and applicability. Thus for broad application of it, attention must be paid towards cyber security issues in order to develop a safe and reliable environment for people, who wish to engage and generate ideas for the greater welfare of society.

2.2 The current state of civil engagement in Lithuania

Lithuania, like other Central and East European countries, is often faced with low civil engagement. According to the results of public opinion survey (Vilmorus, 2013) majority of respondents (Lithuania residents) are not active in participating in activities connected with civil engagement. For example during the last five years, only 12 per cent of respondents have signed petitions or have taken part in commenting on the web some social, political or economic questions, only 9 per cent of respondents were involved in public discussions as well as only 4 to 8 per cent of respondents were involved in other civil activities (protests, demonstrations and etc.). Taking in consideration the participation in activities of various organizations, people are mostly involved in leisure interests groups (about 26 per cents) when compared to 4-13 per cent that are involved in religious,

NGOs and political organizations. Despite the fact that a majority of respondents confirmed that Lithuanians are too passive in the field of civil engagement, experience shows, that these issues are not personal priorities for them, individually.

Bearing in mind such low engagement numbers, it is obvious that society needs encouragement for more active participation. One of the ways to accomplish this is to present more opportunities for engagement in the resolution of civil issues using social technologies. An insufficient usage of social technologies is often identified as one of the main factors, why persons nowadays do not participate in socially oriented activities (Hampton, 2012; Foth et al 2011 and etc.). Social technologies no doubt create easier access for community members to participate in different decision making processes. This issue must be reasonably analysed since the fact, that social technologies are accessible to a majority of the residents. In the third quarter of 2013 more than 75 per cent of Lithuanian residents (age 16-74) were using computers and the Internet, with more than 28 per cent of residents using the Internet from their portable devices such as mobile phones or tablets (Information Society Development Committee under the Ministry of Transport and Communications, 2013). Moreover, Lithuania according to FTTH Council Europe, in 2012 still remains the leading country in Europe with the number of households using fiber-optic Internet. Taking into consideration the factors of low civil engagement and high Internet accessibility, it may be concluded that all opportunities for transferring civil engagement activities do exists. Thus despite this, it is worth to draw attention towards the existing situation in the field of virtual communities and networks in Lithuania. The growth of the number of virtual socially oriented communities is often observed. Therefore most new players that are not connected with government sector or other institutions authorised to make decisions, contributes to the fact, that a larger part of initiatives remain unrealized (Mačiulienė, Leichteris, Mačiulis, 2013). Of course such lack of functionality, leads to declination of trust. The mentioned issues thus provides a basis for exploring the field of virtual civil engagement more, with a focus on the reasons, that discourage individuals to involve themselves in virtual communities for social-oriented activities.

2.3 Opportunities of social technologies application for civil engagement

The above concluded propositions, actually present opportunities but not a guaranteed realization of broad application of social technologies for socially-oriented activities. In Lithuania usage of social technologies has one paradox: residents enjoy using technologies for work, leisure and personal every day needs, but most of them are not active users of various socially oriented platforms. If more than 75 per cents of residents (age 16-74) have access to Internet (IVPK, 2013), why are there 4-12 per cents of population involved in socially oriented activities (Vilmorus, 2012)? The low level of civil engagement in Lithuania has encouraged authors to perform theoretical research, which aims to identify the main risks of developing collective intelligence in network society (Skaržauskienė et al. 2013). The theoretical research showed, that frequent involvement in virtual communities meet risks such as information disclosure, infringement of privacy, threats for personal data, threats for intellectual property, censorship (possibly initiated by administrators or State) and other type of violations of rights and obligations (for example hate crimes, committed in virtual space). Systematic analysis of these five major risks, states that all of them are within the field of investigation of cyber security. According to the results of previous theoretical research, 13 prepositions for public opinion survey are presented (see Table 1).

Table 1: Prepositions for public opinion survey on cyber security related issues

No.	Proposition	Cyber security issue
1.	Participating in virtual communities is fully safe, as participation in social – political activities in real life	All issues
2.	Members of virtual communities should not be afraid of violation of their rights	Other type of violation of rights and obligations
3.	Personal data security is fully ensured during the participation in virtual communities	Threats for personal data
4.	The rights of intellectual property are fully observed taking a part in virtual communities	Threats for intellectual property
5.	The freedom of speech is fully guaranteed acting in virtual communities	Other type of violation of rights and obligations
6.	State controls the content of Internet	Censorship
7.	There is much more intolerance and defamation in virtual space to compare with real life	Other type of violation of rights and obligations

No.	Proposition	Cyber security issue
8.	The possibility to steal your identity exists in virtual reality	Threats for personal data
9.	The activities of virtual communities should be regulated by law in detail	Other type of violation of rights and obligations
10.	The information, provided in web sites of virtual communities may be controlled by administrators of web site	Censorship
11.	The administrators of virtual communities should take the responsibility of the content, which is spread	Other type of violation of rights and obligations
12.	Virtual communities must have strict and trustful system of authorization of members	Information disclosure / Threats for personal data
13.	Strict responsibility of virtual community members for the violation of rights of other individuals must be envisaged	Other type of violation of rights and obligations

3. Methodology and results of the research

3.1 Methodology

In striving to identify the importance of different legal threats of using such social technologies as virtual communities to promote the inclusion of society into decision making, we conducted a quantitative survey. A public opinion and market research company executed the survey in November – December 2013. The main goal of quantitative research was to ascertain the amount and level of involvement and participation of residents in the process of generating collective intelligence. 1022 residents were polled (478 male and 544 female) age 15-74 of all districts (cities and rural areas) of Lithuania, which guarantees a statistically reliable sample (with the confidence level of 95 percent) of the Lithuanian population. Public opinion survey was carried out using the method of direct interview at respondents' houses, using computers. For the households and respondents, random stratified selection was used. Interviewed respondents represented the overall Lithuanian population by the major socio - demographic characteristics (using stratified random sampling, with special reference to the participation in the shaping of collective intelligence factor).

3.2 Results of the research

An original research instrument was designed and included these main sections: I – the level of interest in social technologies; II – the level of knowledge about the virtual community projects tackling societal problems; III – the content of the process of participation in virtual community projects; IV – the level of satisfaction in virtual communication. Results of the survey once again confirmed that active exploitation of Internet resources by the Lithuanian population as 44 percent of respondents use the Internet every day, other 20 percent – at least once a week. On the other hand, it was confirmed that low civil engagement of the majority of those who use Internet (from 59 to 67 percent) for business and private communication, information search, entertainment, financial operations and only 21 percent put some contents for the public (for instance write comments, participate in discussions, create articles and blogs). Those who did not participate in social issues oriented virtually or social networks, justify their passiveness by inadmissibility to this medium of communication (40 percent), lack of interest (36 percent), lack of time (22 percent). Though it was believed that it is a waste of time (9 percent) as is the same important reason for the possible violation of privacy (9 percent of all answers), and almost as important as low level of security (6 percent). The importance of this might be confirmed by the fact, that more than half of the respondents who gave these answers are male and have higher education degree, which means they really understand the essence of risks and their importance. Security is almost an equally important for both users (19 percent) and non users (15 percent) of social initiatives. This contrast might be seen from Figure 1.

An in-depth analysis on the issues related to cyber security was mentioned in previous chapter. To evaluate these issues, respondents were asked to measure on the Likert scale the importance of the mentioned 13 aspects of cyber security as well as averaging of their opinions received. Figure 2, which compares all 13 aspects, shows how, varied the agreements and disagreements with the given statements and the average range of the opinions of respondents. The analysis of the highest four evaluated and four lowest evaluated propositions demonstrates that people are typically worried about threats for personal data and for intellectual property as well as violation of rights and obligations. The significant responsibility of virtual communities' members and virtual communities' administrator (both opinion average 4.1) is highlighted, meaning that any type of actions that strengthens this will have to be taken. Not of less importance is the

instance that users might be scared that their identity might be stolen (opinion average 4.1). Finally censorship is an important, key equal essential for detailed regulation for the risk of intolerance and defamation (all opinion average 4.0).
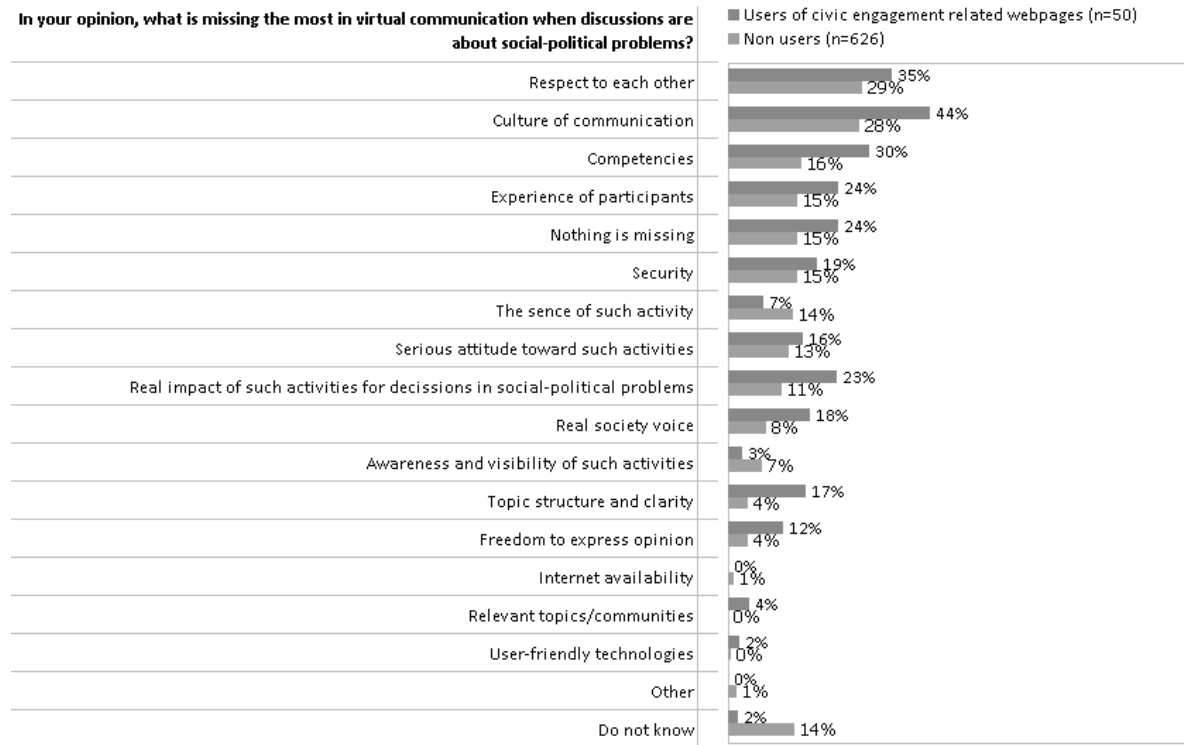

Figure 1: Reasons affecting low participation in virtual communication with purpose to discuss the social - political problems
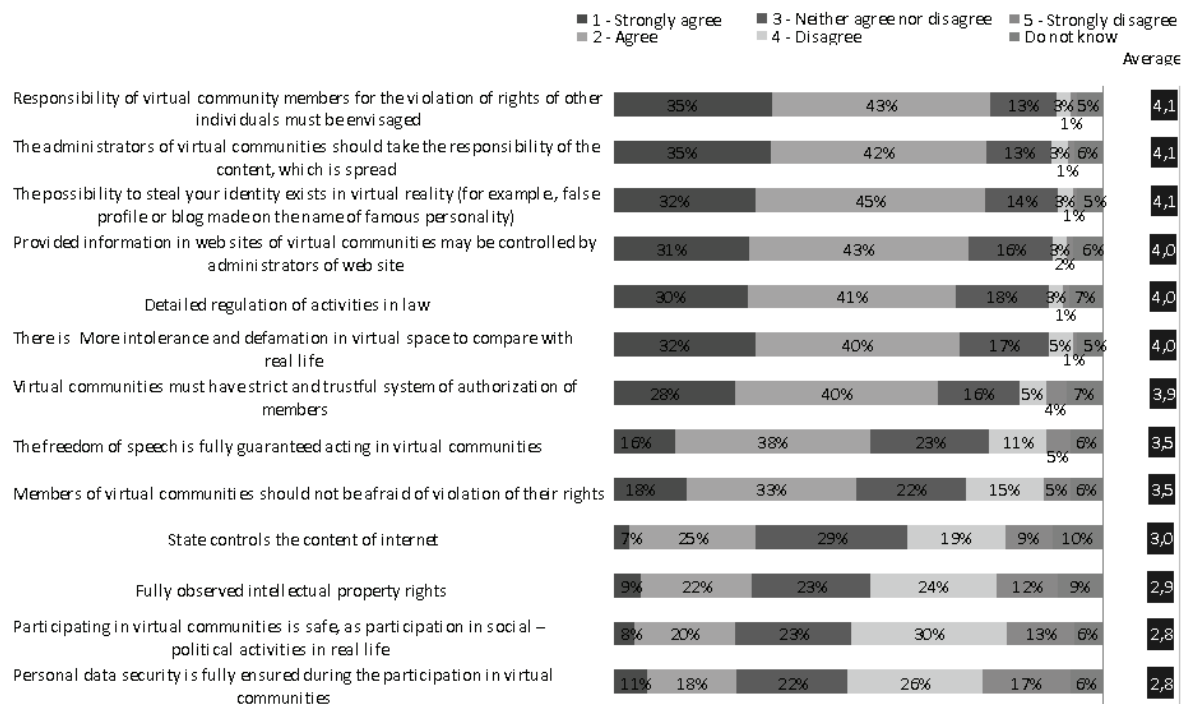

Figure 2: Results from public opinion survey on importance of cyber security related issues

Analysis of the four least evaluated possibilities also draws an interesting picture. The statements that respondents strongly disagree or disagree only shows the importance for State control over Internet content,

the lack of attention toward intellectual property in virtual communities and the fact that neither people feel safe in virtual space nor they think their data is secured. While evaluating the first statement they agreed with importance of these aspects. Where they disagreed was where their opinion was low on development of these aspects in Lithuania.

4. Conclusions

The growth of application of innovative technologies builds new possibilities and better quality social decision-making. Application of social technologies for collective intelligence that emerge in the activities of virtual communities is a new feature of civil engagement, which grants more effectiveness and compliance with society needs.

Even though good intentions build higher prospects, the realization and active use of socially oriented production in virtual space have certain risks. In previous theoretical analysis (Skaržauskienė et al. 2013), among the identified risks observed were cyber security related ones such as false identity issue, intellectual property issues, and censorship. The main legal problem identified was establishing a balance between privacy and the requirements for identification, as well as the positive outcomes between copyright law and the effect of synergy that are used in Collective Intelligence, between the need to control the content of communication in virtual medium in order to avoid the violation of human rights and the freedom of expression, which is the main advantages of virtual life (Skaržauskienė et al. 2013).

Following this analysis, the article focused on the analysis of legal concerns highlighted by scientists that restricts the broad involvement of virtual communities in civil activities. Theoretical analysis assisted in the concluding of propositions and presented opportunities but not a definitive understanding on the broad usage of social technologies for socially oriented activities.

The public opinion survey done for the research , paid close attention to the key aspects of active users of virtual communication or reasons that keep away non-users from using virtual tools for civil engagement. The national context analysis might be useful for answering why initiatives and models for protection from cyber-attacks are becoming less effective despite the efforts made, as well as emphasizing the reasons of low civil engagement via virtual tools. The results demonstrate that respondents are mostly worried about threats for personal data and for intellectual property as well as about violation of rights and obligations. Yet, respondents stated the importance of State control over content of the Internet, the lack of attention toward intellectual property in virtual communities as well as the fact that neither people feel safe in virtual space nor they think their data is secured. So the research provided a better understanding of different aspects that caused paradoxical usage of social technologies for work, leisure and personal daily needs but not for civil engagement.

These answers clearly emphasize that attention must be paid towards cyber security issues in order to develop safe and reliable environment for people, who wish to engage and wish to generate ideas for greater welfare of society. The research results also prove the necessity for a deeper qualitative analysis to identify the actions, possibilities and motives of the other stakeholders (e.g. virtual communities' creators, administrators, active users etc.). These are the essential knowledge needed to minimize cyber security related risks required for fostering engagement of society and monitoring the CI emergence in networked platforms that enables significant changes in civil engagement.

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