SOCIAL NETWORKS AND INFORMATION SECURITYIN VIRTUAL ENVIRONMENT COMMUNICATION AT THEORGANIZATIONAL LEVEL

Adrian Constantin Manea, ”Transilvania” University ofBraşov

Abstract : Whether we refer to Facebook, Twitter, MySpace, Instagram, Pinterest or LinkedIn, the safety in the social networking concerns both users from all over the world and security software companies, considering that in the recent years the international networks of communication and social networking became virtual ideal "places" for reunion with old friends or opportunities to get to know new friends or people with whom we share the same interests or hobbies and even business environment through the development and promotion of the e-commerce sites. In the context of the revolution into communication, created by the social networking sites in the past 20 years, should not be overlooked or minimized the methods of the cyber criminals to exploit the vulnerabilities of the virtual environment or the innocence of children, who also became victims of socializing online. Started from the technical definitions of malware launched by hackers in the virtual environment, trying to explain the aims of hackers pursued by viruses into computers and networks connected to the Internet, walking on the typologies of the social networks, this study aims to present some methods to improve security in social networks, but also to emphasize the importance of parental control in the online environment, supported by modules of the software for Internet security.

Keywords:social network; antivirus program; security; hacker; viruses.

The Community and Social Networks

Based on the individual's ability and need of socialization, the economist Ludwig von Mises demonstrated that the human individual is born into an organized environment in terms of social, individual living and acting in society, developing and complying to the rules of the community to which s/he adheres in life. The society is nothing more than the combination of individuals for the cooperative effort. Only in that sense can we accept the saying that society is - logically or historically - antecedent to the individual, as in all the other directions this dictum is either empty or meaningless (von Mises, 2002, p.11). Thus, in a community, the individuals are motivated by common interests and goals, they plan common activities and establish, modify or adhere to their own rules and adequate to their own predetermined goals and interests. The circumstances of conducting their community life can be restricted, from the family home or the group of friends that we can call the community core, or may be expanded to the level of village or town, which are complex communities that may include other specific communities, such as the professional bodies or religious communities.

Synonymous in its linguistic approach to the term society in relation to all the people living together, being bound together by certain economic and social relations, the concept of community has seen different definitions assigned to different areas, from the political and public spectrum to the scientific and academic field, from the economic approaches to the technological ones, from the psychological and sociological concepts to the historical ones. In the nineteenth century, *Gemeinschaft und Gesellschaft* in his book *(Community and Society),* the German classical sociologist Ferdinand Tönnies diametrically opposed the notions of community and society, developing *"the community theory"* and respectively, *"the society*

theory", the community and society being, from this perspective, two human associations, two different types of human sociality, which generate the community and social individual, each coexisting in a social group, but being animated in their actions in two typical ways: the community individual is related to a common asset, while the social individual has his/her own assets that is willing to change within social relationships, in order to ensure the creation of the common social asset (Tönnies, 1887).

If in the traditional nineteenth century, in the social, economic and political context, the distinction between community and society is synonymous with private - public distinction, in this century, in the context in which information has become a political, economic and social tool, the distinction between community and society faded, the technological development that has broken geographical barriers in the globalization process contributing to this.

Phil Bartle, Professor of Sociology, defines the community as a sociological construction, a set of interactions, human behaviours with a specific meaning and expectation among members, actions based on expectations, values, beliefs and common understandings between individuals (Bartle, 2009), identifies six dimensions of the community: technological, economic, political, social, value-related aesthetic and the concept of faith, each dimension assuming a system of ideas and learned behaviours. Considered to be the interface between individual and nature, the technological dimension of any community requires all the capital and tools which are available to the community for individuals to relate eith each other and with the environment. From this perspective, the IT and the networking technology of Internet communication, used by some individuals with IT skills and Internet access as tools to relate led to the emergence of virtual communities or social networking, communities where members, located in different geographic regions are linked together informally, without obligation, but usually actively contribute to the collection and dissemination of information of mutual interest between them via the web.

Currently, the individual is dependent on technology and communications, being involved, on the one hand, in their development by identifying advanced technical solutions to social and / or economic needs, on the other hand being the direct beneficiary of the use of these technologies; in order to meet his/her own physiological, social, economic needs.

The historical and social developments, amid the transition from the industrial society to the information society of the XXI century, the concept of community has evolved from the family, public plan to the interpersonal relationships in the virtual environment, a common social value both at society and community level being the information.Thus, without requiring the interaction or geographical location of the members of a virtual community, the interpersonal relationships have evolved from the need to socialize and the real and direct support among the members of a community, manifested publicly, to the virtual relations within the community networks, whose basic unit has became the individual located in an intimate, private space. Transposed into the public-private relationship, the development of interpersonal relationships in virtual communities has been supported by the Internet and the communication networks that made it possible for individuals to interconnect in their private home, retired in their own privacy and geographically separated, in a common yet public environment, accessible to all members alike, through the information travelling and accessible to the members of the respective community.

Finding again the specific elements of the concept of community, and the existence of links, interpersonal relationships, the heterogeneity of members, common interests and goals, the sense of belonging and the community spirit, the social networks defined as networks of people with common goals, common threads (photos, music, movies, games, etc.) acquire a technological dimension by using the Internet,respectively certain web sites on which users can sign up free or by means of recommendation, and interact with other users who are already in the system. Also, combining the sociological dimension with the technological one of the current social networks, we can define the social network as being a sociological structure composed of social objects (people or organizations) arranged similarly to the nodes interconnected in a network via the Internet as a technology, and by common interests and aims, as a psychological binder.

Using Web 2.0 facilities and developing social networks

Also known as social networks, the virtual communities or social media are part of the global phenomenon called Web 2.0 (World Wide Web emerged in 2004-2005), where the content is created and managed exclusively by the users of the platform. Based on specific Web 2.0, namely that the content and information from the web is no longer offered to the visitors only by the media, governments and private companies, but also by individuals, linked together in a virtual community through informal, Internet-based networks and which contribute and participate actively in the provision and dissemination of information across the globe, both of personal information and general interest information. Basically, the community spirit and the sense of belonging to a particular virtual community animates the members of a social network to communicate personal information to the other members, a seemingly harmless gesture and necessary in order for the members to get acquainted, but which can be manipulated by certain people inside or outside a network in order to blackmail, to get different economic advantage or to control the holder of such personal information.

Since 2005, the revolution brought by Web 2.0 has generated the numerical growth and the development of social networks through new web-based applications that allowed ordinary users to participate directly in the web dissemination of information and of their opinions, turning them from "consumers " into " creators "of web pages, an illustrative example in this respect being the blogs.

The development and spread of automated systems management information from a web site called Content Management Systems allows users' data storage, primarily directly in the web (for example, private photographs etc.), unlike previous IT systems in which user data was originally stored on the user's computer from where they were taken, to be published in the web afterwards. Developing a concept of permanent connection

to the Web, the Content Management Systems allows the increasingly frequent access to the web applications by the local programs on the computer network user, certain web search engines being able and even forced to access the user's local data.

The permanent improvement of web applications, both in order to augment the technical performance, but also in order to increase the degree of security, triggers the automatic refresh of many programs of a user, these contacting the author / user's site automatically, sometimes secretly, without alerting the user.

In the permanent connection of the users of a network with the Internet, and thus with the other members of the social network, the browsers' role is becoming increasingly important as with his/her help, highly complex web applications may be implemented (see Dynamic HTML) so practically speaking, the browser becomes the user's most important program.

Given these technological facilities and easy access to IT equipment in recent years and the Internet, rising from the desire of individuals to relate to friends, work colleagues or a group of interests, the social networks have developed through the involvement of members in the communication through networking and attracting and / or adheration of new members, but also because of the social, commercial, political or educational applications use in creating virtual connections between users.

At the end of 2014, globally, the most popular and accessed in different areas of interest to users social networks were: Facebook about 1.4 billion users; Twitter with about 1 billion users with account (a network for spreading short items of news of maximum 140 characters); YouTube - a video sharing network with about 1 billion users; LinkedIn with 300 million users (network for career management and professional relationships); Pinterest with approximately 70 million users (platform for the discovery and management of images and videos); Instagram with about 30 million users (www.statista).

Vulnerabilities in the social networks

Due to the personal information that the members of a social network exchange among themselves and because of the web applications that directly access users' computers, sometimes without their knowledge, all social networks are vulnerable to attacks launched and operated by hackers, be it the connection problems, errors of the "cross-site scripting" type or Java vulnerabilities. Also because of the connections created between the members of the social network, the banners or links on such networks may be the way in which a simple Trojan "dropper" gets from one user to another, installs in the system identified as vulnerable and " steals "passwords, personal information and even identification data of the bank card used for payments online user and stored on his/her computer.

Even though the social networks have their own secure system of "cloud" type for the storage of user data, by selecting / validating certain permissions to network applications, the access of certain external applications unverified to the user's own information on their network account are basically allowed, and even of the information on your own computer. Also, by posting personal information, from different user data to personal photos, they become public information, for which the theft and / or creating parallel credible accounts under another identity have become lately the form of action of the cyber-criminals who exploit such links created in a network and the mutual trust of its members.

Some social networks borne viruses, although detected by the antivirus, manage to prevent the security solutions and to update concomitantly with the improving of antivirus programs. Also, the security vulnerabilities of a social network are speculated employing mobile devices by users in order to log in and access unsecured wireless public networks, accessed by everybody, with intentions more or less honest.

With the development of social networks and the exponential growth in the number of members of each network, the number of viruses propagated through the social networks has

also increased and proportionally, the number of cybercrimes. At the same time, the users have realized the importance of personal safety, but also the need to ensure the network security and the security of their own computer, for the reliability of a network refers to its ability to cope with untargeted attacks (connection errors, design errors), while the security must be addressed individually by each user of a social network, for the user safety covers deliberate and targeted attacks.

The hackers' tactics to exploit the vulnerabilities of the social networks rely both on very good IT knowledge (install viruses on the network or on the user's computers, giving the impression that these are harmless applications of the networks) and also the psychological aspects, such as the exploitation of the mutual trust of the network members, propagating viruses through applications apparently launched by some members of the network which are then accessed (redistributed, comments are applied or are confirmed by like / pin) by other members that deem them as legitimate.

Speculating the human side of each member of a social network, another scam exploited by the hackers on the Facebook network was identified in 2013 as the application "see who has viewed your profile", the users being assured that they will receive information about the people who have pursued their account activity and accessed their account on the network.This new application, based on human curiosity, downgraded applications such as the fraudulent links that try to convince users that they can win different prizes, usually mobile phones or tablets, participating in various surveys or contests, but in fact exposing their own computer to the access of viruses and / or spams hidden behind these links.

We can say that the "success" of these fraudulent applications resulting in the infestation of the network and the computers of the members accessing them, is also based on the strong visual impact on users, speculating the fact that the members of a network not being in direct contact, can not consult with each other, and when they realize this, the applications have already been accessed by a large enough number of members of a network.

Another flaw in ensuring the security of the network users refers to invading the privacy of the members of a network by the subsequent propagation of personal information posted by users without their consent in the dissemination in the network, when other members of the network redistribute it over in their accounts. In this regard,Mark Zuckerberg, founder of Facebook, currently the most popular social network, recognized the risk and the existence of security issues, ensuring their repairing by increasing the network security.

Ensuring information security in a social network

The security begins with the safety of the social networks' users over their own account, so that their account is not accessed by others through cracking the password, or even copying the information and creating a fake account in order to create the impression on the other members of the network that actually their network peer is behind the fake account. Usually neglected or minimized by the users, the use a strong password (a string of special characters, numbers and upper or lower cases) but also changing it regularly is the security guarantee for any user, while hackers speculate the users' naivety and lack of imagination in creating strong passwords using the most trivial combinations such as "password", "123456", and words like "Jesus" and "ninja", the use of birth dates, the maiden name, the pet name or

those of the children, personal information that the users of social network bring into the notice of their partners from the social network when providing data about themselves and do not secure the access to this data to the restricted group of users that they know directly, not only in the virtual environment.

The members of a social network should be trained (most often they warn each other about the hazardous applications) not to access the executable files (with the extension ".exe"), even if they were launched by network friends or are posts of people unknown directly, and which often can take the form of messages or photos that users are asked either to click, or like, for by the execution of such a file, a dangerous software is downloaded in the user's computer, which allows attackers to access and control their information.

And because prevention is most often safer and even more economical, preventing cyber attacks is the solution that all users must turn to, the preventive action starting with becoming aware of the dangers of socialization in a network and the accurate information on the Privacy rules as accompanying measures to the installation of the antivirus, firewall and antispam on the user's own computer.

The activity in a social network tempts the users to make public as much information as possible about them, from personal information, to photos, events in their life and even using the geolocation applications, such information may be exploited by criminals (for example by being localized through the applications in the network provides information regarding the people concerned not being at home, and in conjunction with pictures of the house offer accurate data about the home address). Some of this information may be real, for it turned out that the Internet and socializing in a virtual environment free from personal inhibitions and enhances the desire to be honest and open with other members, but there are cases in which some members are not what they claim to be in the virtual environment, they hide, for various reasons, their qualities or defects, lie or exaggerate their own qualities, so that other preventive measures are discretion and scepticism regarding certain users or unnecessary information. This sceptical approach puts anyone at the shelter, because it turned out that certain under cover users, by exploiting the credulity of the members of a network in the other people's sincerity, as well as the conviction that they shared common interests (eg. dating sites), sheltered by a false identity, offenders or individuals with behavioural problems in everyday life present themselves in the most naive way possible.

Users should avoid downloading digital books, music or films received / given by strangers in a social network or provided on obscure free websites, because this security measure ensures that we do not download in our own computer viruses, Trojans or worms of the malware type.

Another security measure that every user must use in order to protect themselves from phishing attacks is the internet browsing security, for which it is advisable to check the safety of the connection (https) by typing directly the address of the social network, avoiding as much as possible to connect to public Wi-Fi networks, even for financial reasons.

And because the functioning of a social network is based on attracting a large number of users, either directly or based on a recommendation, and on the increasing the number of people that are allowed access to each user's account, another preventive and security measure is accepting or adding to the list of friends only the people who are known directly by the user

and / or restricting the access to the personal account only for the user's friends and acquaintances by using group or private filters.

Conclusion

The current social communities are built mainly on social networks and not physical groups of individuals, the members of social networks interacting and sharing their ideas, knowledge, own information adequate to the predefined common goals, and also trying to expand the virtual socialization framework by attracting new members, mainly among those who are already community members. Unlike the real or territorial communities, virtual communities, inseparable from globalization are inauthentic, the members of a virtual community being able to hide behind a pseudonym or giving false references about them, deliberately misleading other members.

Covering all areas of interest of the users, from photography, music, movies, online games or professional and/or social networking platforms, currently the number of social networks is very high, a user having the possibility to be member of several networks. Although it is considered that social networks are only sites which provide a virtual environment for meeting and discussion among the members of the network, providing direct communication through the accounts created, it must be emphasized that the status of social network users is given by the possibility to create the content of the site through comments, the distribution of certain materials posted or posting their own materials that can subsequently be then redistributed in the network, can be commented or voted on. Through these actions of user engagement, the virtual communication is ensured, the user-receiver's feedback becoming in turn the initial message to the user or to other users-receptors, otherwise being in the presence of a promotion / presentation site, which provides information in a one direction - from the issuer / author of the site to the recipients accessing it.

The social networks have changed and continue to change the approach regarding the social, economic, political, educational life, reducing, on the one hand the communication costs with the development of IT technologies and strengthening the virtual communities, their decision-making capacity and the reaction in society, on the other hand. The effects of the actions initiated within the social networks and their results, amplified by the communication among the members, despite the opposition of certain individuals, interest groups or authorities, are the protests in Egypt that led to the resignation of the President, the protests and the movement of the German citizens against the railway project "Stuttgart 21" and the protest of the Romanian Diaspora on the faulty organization of the presidential elections at the consulates / embassies of Romania in the first round from the fall of 2014. The strength of virtual communication in such networks can cause the direct and physical meeting of the masses of people, convoked in this manner in order to support ideas and protests initially considered insignificant or due to fail by the state authorities.

Before relying on the security of a social network, each user must secure through antivirus and antispam programs his/her own computer, the mobile phone or tablet where they access the Internet from and his/her account in a social network. Because technology advances, the security applications should be updated regularly, either through free or chargeable apps and, updating or using security software must be encouraged by the administrators of social networks themselves, such as the Bitdefender Safego application,

offered for free on Facebook, which protects the network members from the latest computer threats, spam, phishing and malware, also warning about the excessive exposure of personal data.

It is also the responsibility of the administrators of social platforms to warn members of a social network on the risks they run if they do not opt to secure their own account and do not limit the access to their own information using the security settings provided by the network, but also to seek to improve the information security of a network, and especially of the personal data of the users by a clear and accessible privacy definition of the policies offered by the network. In order to avoid accessing the network applications launched by cyber-criminals by avoiding the security barriers, the network administrators need to notify the users via official launches, the real options that the social network offers its members.

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