

CYBERSPACE – THE NEW DIMENSION OF HUMAN INTERACTION

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ABSTRACT

The twentieth century end created the premises for the emergence of a new global space for interaction. The development and normalization of cyberspace enabled redefining the norms of human cohabitation. In the first phase of development, this concept of social interaction has favoured for the first time in history the possibility for people to document and express themselves freely. This could be done under the protection of anonymity without them being afraid of any possible consequences. The subsequent evolution has invalidated the enthusiasm of the “founding fathers” regarding these ideas, but has contributed significantly to the development of trade and technological innovation.

KEYWORDS:

Cyberspace, google, World Wide Web, security, internet

1. Introduction

Information as a source of power was for many generations of politicians and economic or financial actors, an important goal. Lack of appropriate technical means has made its circulation in the global space to be difficult and very expensive. Except states, very few transnational actors could afford its purchasing costs. The information revolution, the third stage of the industrial revolution, created the necessary environment for its spread in an unprecedented historic amount, and with extremely low costs. The new problem that appeared with this flow of information in the global communication space is the effective access to the necessary information for each user. Many websites contain redundant materials or

ambiguously made up, which creates additional difficulties for users. The element whose importance has increased compared to the previous period is attention, as “*information revolution has made the attention a rare resource*” (Varian, 1995, p. 200). Robert Keohane and Joseph S. Nye make a number of relevant questions to describe the current global informational space. They consider that before that moment “*we used to ask: who has the ability to transmit information*”. The answer to this question is very simple: “*anyone connected to the internet*”. The new issue to be raised now is “*who has the ability to draw attention to the information that he transmits?*” (Keohane & Nye, 2009, p. 279).

2. The emergence and development of cyberspace

The technological evolution enabled individuals and states the access to the necessary means to significantly improve lifestyle. Currently it is estimated that globally there are no less than 10 billions devices connected to Internet, a figure which will rise further reaching about 50 billions in 2020 (Kissinger, 2015, p. 23). This will help automatization of most of the utilities that global society uses. The level of interconnectivity is also increasing, “huge farms of servers” are serving at the moment all these devices contributing to a better management of useful information.

Unfortunately, progress in this area was very quickly implemented in the military field, too. With all the power that this phenomena has managed to generate, mankind has always had an element to which it could relate. The invention of tanks and their use as impact forces on the battlefield could be considered a continuation of the tradition established over centuries of cavalry troops, bombing aviation could have a correspondent in the artillery, warships have always existed and small improvements have coincided with changes in military tactics. The end of the twentieth century surprised but in a unique way humanity by the emergence of cyberspace that shortly after has imposed as a theater of development, including military operations. This is the first time in history when such an invention in technology can not be assimilated, from a functional perspective, to a military tool. Unlike previous cases, the emergence of virtual battle space has created a new situation in which even the most careful observers have not managed to find another correspondent in the entire military history of the planet (Keohane & Nye, 2009, p. 275).

Cyberspace, a concept invented in the 80's of last century, can be considered a functional domain defined by the use of electronics in order to exploit the information by means of interconnected systems and the infrastructure associated

with it (Kuehl, 2009, p. 26). The development of this area was so fast and so deep that it was able to produce a significant change in our lifestyle in an unprecedented historical way. Throughout only two decades many of the activities that the individual developed in locations which belong to what we call “real world” moved into cyberspace, a new territory that early adopters imagined as a space of total freedom. A pioneer of the development of this space, the lyricist of the rock band Grateful Dead John Perry Barlow stated that the new environment of interaction between individuals is a free space of all people, where rules of the national governments are not welcome: “*Governments of the Industrial World, you boring giants of flesh and steel, I come from Virtual Reality, the new home of Mind. I ask you of the past, leave us alone. You are not welcome among us!*” (Micklethwait & Wooldridge, 2015, p. 150).

The development of this new concept began in the 50s of the last century in Stanford university laboratories of the US state California. In the context of escalating arms race within the bipolar confrontation of the Cold War, the US directly supported the development of this project which was funded with just over one billion dollars between 1958-1974 (Micklethwait & Wooldridge, 2015, p. 151). Since the 70s the financial backing of the development of this sector overwhelmingly passes in the private sector. Due to the large number of electronics companies which opened their premises in California in January 1971, the journalist of Electronic News, Don Hoefler, gave this technological development pole the suggestive title of “Silicon Valley” (Gromov, 2010).

The documentation on drawing up scientific papers and not only (written press almost disappeared giving way to the news posted on information portals) has moved from libraries' rooms in front of the computers. Trade is another area that has seen a major redesign, of convenience or attracted by the low prices, many people

prefer to purchase their goods from online stores.

Scientific research, education, financial activities (including the promotion of virtual money) and even connectivity with others (the emergence of social networks) have been moved into this new space of social interaction (Kissinger, 2015, p. 276). All these changes have a major impact on the lifestyle of the individual, including the ability to continue to exploit the knowledge on which they could earn a living. There are many voices which blame the effects that digitization produces in the social space, contributing decisively to replace people working in the computer services sector. The same situation was created by the first phase of the Industrial Revolution of the early nineteenth century when many people lost their jobs due to the introduction of machinery in factories. In 1811, the Luditi movement advocated for the removal of these machines and reintroducing people back into factories (<http://www.history.com>, 2017). That was not economically feasible and has been chosen the path of creating new jobs in the next higher grade. The situation of those affected by the introduction of mechanization in the industry was saved by the creation of an increasing number of jobs in so-called service sector, favoring the emergence of the middle class, characterized by a superior level of education to those from the first industrial era. The emergence of computers and the Internet brings again into discussion the possibility of making redundant large masses of individuals whose jobs may be taken over at much lower costs by computers. The inhabitants' jobs distribution of the developed countries in various fields today is as follows: about 1 % are involved in agriculture, manufacturing accounts for a segment ranging from 15 to 40 % of the total number of employees, and the remaining approximately 60-80 % (Wallerstein, Collins, Mann, Derluguian & Calhoun, 2015, p. 61) are involved in the service sector. The list of the that should replace people with

computers is very long and includes areas such as trade, journalism, the outsourcing services and even the software IT sector (Wallerstein, Collins, Mann, Derluguian, & Calhoun, 2015, p. 62). Given the huge percentage of people employed in these fields, we realize that a very quick transition to a totally computerized society may not be possible with reduced social costs.

3. The principles of functioning of the new global interaction environment

Promoting people's identity in virtual space through social networks or simply by creating a user profile based on search results places the big companies that create databases long before many states with active information services and classical structures of Information gathering. Whatever the constraints through which totalitarian states might have tried to limit access to information for their own citizens, this has become virtually impossible. Cyberspace has become over time a space of total freedom in which any person in front of the computer can put the powerful states in difficulty. The liberal states understood first that such limitations cannot bring any added value to the societies they manage and have reconsidered their policy towards this new field. This unusual situation has led many powerful states to set up active IT structures to manage the leak of information and put pressure on other states and multinational competitors to achieve real political advantages (Kissinger, 2015, p. 277).

The State as the main actor of the security environment dominates the vast majority of the legal issues related to the regulation of this sector. Starting from this idea, the US attempted to develop a new component in the late 1960s designed to facilitate communication between key sectors with responsibilities in the national defense sector. The emergence of the Internet itself is the product of an initiative of the US Department of Defense, which in 1969 made a first connection between several computers, called ARPANET, which later

evolved to a network where users could be identified as a result of a system of domains of addresses, system set up in 1983. From this moment on, the evolution of this sector is explosive, but slowly and surely this area gets out of the direct control of the state. In 1989, the concept of World Wide Web appears, and then, following a strictly private initiative, Google (1998) becomes the model for search engines and Wikipedia (2001), the world's largest virtual encyclopedia (Nye, 2012, p. 142). Towards the end of the 90's, the number of companies involved in this industry grew significantly reaching absolute maximum in terms of turnover and number of employees. Only in California there were companies that employed about 1.35 million people at that time and were running over \$ 20 billion (Micklethwait & Wooldridge, 2015, p. 152). The very rapid expansion of this new space led to the end of 2016 that approximately 3.5 billion people, representing 45% of the planet's population, were connected to the Internet (<http://www.worldometers.info/ro/>, 2017).

By taking over the initiative of developing the Internet in the private sector, multinational corporations have been able to obtain the right to regulate the operational aspects of the new communications environment. The World Wide Web is a non-governmental consortium that develops standards for cyberspace through the Internet Corporation for Assigned Names and Numbers. The scope of this concept is not limited to the simple use of computers and the Internet, it encompasses the entire spectrum of communications including mobile networks, satellite communications, and even the intranet, internal communications networks of large corporations or secure government structures (Nye, 2012, p. 143).

Territoriality, a justifiable concept for legitimizing the power capacity available to a state actor, is no longer fully justified in the online environment. Even if some of the domains in the virtual space are wearing the seal of the state actor, accessing them does

not guarantee that the persons using that information have residence in that state. Moreover, many corporations choose to use neutral domains whose semantics do not fit to the profile of any state (org., Com., Edu.) (Keohane & Nye, 2009, p. 275).

The on-line environment is a hybrid space where national legislation is complemented by international regulations. The physical infrastructure associated with it operates according to the national regulations of each state, but the informational level is subject to the regime on free access to information. The perspective of using this space by a wide range of actors with extremely low costs creates additional difficulties for states to directly control their work. In most cases, the activity of the participants damages the economic or political interest of the state actor by launching devastating attacks on the physical infrastructure, causing huge material and financial losses. This type of action has been called suggestively called cyber war. This aggression act implies that a certain actor present in this space is able to exploit existing vulnerabilities to affect the functionality of the system as a whole, even producing where possible huge material losses. A very clear example of this type of behavior is considered to be the cyber attack on 23 December 2015 by a group of hackers on the electricity transmission and distribution infrastructure of the western region of Ukraine. For a few hours, the entire region has been paralyzed by this energy collapse (<https://125.agerpres.ro>, 2017)

Avoiding such situations is particularly difficult because many of the aspects of regulating the behavior of different users in the online space are still insufficiently regulated internationally, many of the world's states having great reservations about regulating this field. In order to be sheltered from this kind of destruction, national states and other stakeholders with online interests spend significant amounts of money to create vital information protection capabilities for their operation.

This type of activity is known as cyber security.

Specialists in protecting this space have created a set of rules through which they want to control the impact of cyber attacks on different entities. They start from the principle that the integrity of individuals and their personal data is the fundamental element of the functioning of this space. The rights of individuals to safely use this space are protected against any kind of abuse, an element written in the bill of the Cyber Security Act (Securitatea cibernetică, 2016).

They therefore recommend full understanding of the principles of the on-line environment and strict observance of information protection rules and measures.

It is also recommended that backups of data held on a particular device be made at regular intervals. Of a paramount importance is also the type of behavior adopted by the individual in this space, and they recommend to users the maximum prudence and formality in communication.

4. Conclusion

The concept of cyberspace tends to be perceived as a shared space, a public good, accessible without many limits to any member of the international community be they individual, non-governmental organization or structure belonging to a national government. This view is shared by Nobel laureate for Economics in 2009, professor of political science and Nobel Laureate for Economics, Elinor Ostrom, who defined cyberspace as a “*common resource*”, “*excluding access to it being difficult to achieve, and its exploitation by part of the international community can decrease the participation of other members*” (Ostrom, 2007, p. 137).

Cyberspace impact on the *modus vivendi* of individuals at the moment is already extremely strong and continues to grow with the increasing public interest in products and services that this new space gives generously. Search engines are already preset to provide additional information to that pursued directly. It was observed that any search on engine Google generates a series of complementary messages, “vacation” may result in bids for accommodation, insurance, transportation or other specific products.

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