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## Digital Addictive Technologies and State Security

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**Abstract:**

**Purpose:** The study aimed to identify the phenomenon of dependence on available digital technology devices, which may pose a potential threat to state security and adversely affect the health of society.

**Design/Methodology/Approach:** A literature analysis and own statistical research were used as a research method to identify the problem of dependence on technology, the reasons for its creation, and the impact of this dependence on state security.

**Findings:** It was found that every person in the study group uses the Internet and the Internet every day. The most numerous group are people who spend about 3 hours, including using the network on the phone. The minimum use of the network is 1 hour (about 10% of respondents), and the maximum is 24 hours. This indicates an emerging addiction, and thus the risk of implementing content affecting the state's security.

**Practical implications:** The study should raise concerns about the potential for addicts to consume undesirable content and indicate a need for regulatory changes. Research has shown the need for further searches to estimate possible losses and risks resulting from unlimited access to content that affects state security.

**Originality/Value:** the survey is original; so far, it has not been conducted in this form; it provides knowledge about the risk of addiction to electronic technologies and its possible consequences.

**Keywords:** State security, addictive technologies, threats, IT impact.

**JEL:** D83, D91, F52, O33.

**Paper type:** Research article.

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## **1. Introduction**

Society's dependence on information and communication technologies (ICTs), including the Internet, has been made on a wave of great optimism and belief in making life easier, providing unlimited access to knowledge and information. The recognition of the Internet as a tool to equalize development opportunities of backward regions, as an opportunity to exchange ideas, and increase democratic processes. The assessment of these processes and the technology itself is not unambiguous due to its availability, as differences in civilizational development make many areas of the world beyond the reach of the network. Modern applications do not undergo Technology Assessment (TA); they are tested directly on a social "living organism."

Even without social legitimacy, further updates are made. Nobody asks if this is necessary and what are the consequences? The goal is a functionality under which further user data is collected. The data provided becomes a specific fee for using many portals and applications that use psychological mechanisms and persuasive technologies to extend the time. This makes it possible to monetize the time spent on the Internet as part of the so-called economy of attention (Mistewicz, 2016). Internet corporations belonging to the GAFAM are Google, Amazon, Facebook, Apple, Microsoft, which dominate cyberspace and impose solutions, accused of causing addictions. Which of these solutions is the result of their evolution, which were created for market or political manipulation? - these are questions about the future of the Internet.

Ubiquitous mobile technologies have made us networked all the time. The smartphone has become the operating system of our life. The fact that there is no escape from technology is confirmed by the latest research on social expectations (Life in 2030 Report, 2019) of future technologies, which are primarily based on digital technologies and Artificial Intelligence (AI) algorithms, reveals that consumers expect the cities of the future to be "smart," i.e., filled with technology that will improve quality of life and provide social benefits. Moreover, the states also link the social and economic development with technical and technological (Potential of Growing The ICT Sector In Poland in perspective to 10 years Ministry of Economy Report, 2019) progress, as evidenced by the results of digital technology adaptation and the political solutions undertaken by many governments, including the Polish government. A significant problem is an influence of cyberbullying on the state's security (national), on the identity important for the geographical place. We do not know the long-term effects of digital addiction. We can only conclude studies that have already been carried out. However, they are fragmentary, they give a tiny picture, and at the same time, they are very briefly kept up to date.

The problem of distant effects of the impact of ICT, both direct and indirect, should be the focus of attention, whose main objective is to identify mental and social risks in the long term. The research perspective is to treat society's technological

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dependence as a threat to national security, as some technologies allow to influence decision making and by changing human judgment can lead to state instability.

Based on the assumption that people, society is the most crucial resource globally, research is being conducted into the impact of new technologies on people and society, explaining the problems of the increasing appearance of so-called e-dependence. This addiction can take various forms, e.g., online shopping, computer games, or online gambling. At the same time, it should be noted that technology improves the quality of life by making it easier to deal with many administrative matters, it is inclusive of people who are excluded, it improves access to medical services.

Contemporary e-dependencies, apart from the innate propensity of a particular group of users, result directly from the use of so-called Digital Addictive Technologies (CTU), which are especially (though not always created with such an intention), have designed configurations of informational stimuli that form habits of repetitive, compulsive use of specific network services. The task of the CTU is, in particular, to keep the user in front of the screen for as long as possible and to induce him/her to reuse a given service.

## **2. Literature Review**

Dependence on technology is an impulse control disorder associated with obsessive use of mobile devices, the Internet, or video games, despite the negative consequences for the user of these technologies. This disorder may also be called digital addiction or Internet addiction. Although technology addiction is not yet included as a disease syndrome in psychiatric and psychology diagnostic and statistical textbooks, its symptoms resemble the behavior of compulsive gamblers. As with other impulse-control disorders, people addicted to digital technologies may experience short periods when symptoms disappear and more extended periods when symptoms intensify. This concept is controversial between experts in two fields: pedagogy and medicine in the context of not fully explored mechanisms. It seems appropriate to acknowledge the position of the medical world, which has been confirmed by the World Health Organization, which has included addiction to video and computer games in the new list of the International Classification of Diseases and Health Problems (ICD-11).

The WHO's International Statistical Classification of Diseases and Health Problems ICD-10 is currently in force in Poland. It is expected that the next revision of the ICD classification, ICD-11, planned for publication in 2021, will already contain clearly defined provisions on IT addiction. According to the adopted principles, it is intended to improve psychiatric diagnostics, which is changing very dynamically in connection with new areas of civilization's threats resulting from the development of technology and technology. The "entry" of digital addiction on the list will result in it being treated like other behavioral addictions such as gambling. Behavioral addictions related to new technologies and the virtual world concern addictions to games (computer, video, online), the Internet, the telephone, and social networks. The presence in the virtual

world is also linked to other behaviors, such as e-gambling, cybersex, and e-commerce.

Dependence on the Internet has negative psychological, physical, and family consequences. An addicted person spends more time in front of the computer than with his/her own family and friends. He or she does not perform his or her daily duties. He neglects personal hygiene. Learning efficiency is reduced. In these people, a decrease in incompetence, loss of interest, neglect of loved ones is observed (Pospieszyl, 2009). There are several other disadvantages of surfing the web; Internet crime is developing, including hacking, copyright infringement piracy, theft of credit card numbers, pedophilia. Thanks to relative anonymity, social norms are relaxed, aggression and violence among children and adolescents, resulting from the destructive action of computer programs and games with a high degree of violence, are increasing. The literature points to an unnoticed so-called "thread - bond" connecting man with modern digital devices. The "thread - bond" is strong enough to "force" him to resign from other activities or delay and postpone them indefinitely. It is known that the algorithms used by social media are based on the recognition of the stimuli provided by the user, but the mechanism of how they can influence human decisions and behavior is not fully recognized. This knowledge is extracted from many recorded personal data and traces that users leave on the Internet. The data resources are analyzed and used to design increasingly sophisticated algorithms that make it easier for the user to make money on the amount of time spent on a website or game through advertising or other ways, such as trading someone else's identity and user preferences.

We can formulate several important theses, showing the context of the problem and the key risk factors and protective factors. The main theses relating to the relationship between man and digital technology are:

- The Internet is morbidly attractive to those who do not enjoy real life;
- Nihilism is a hidden form of the virtual world;
- Internet portals are a form of virtual world paradox;
- The syndrome of addiction mainly concerns the virtual world of computer games and mainly affects children and young people;
- Addicts separate themselves from their social environment (family, friends). Their willingness to make intensive efforts at school and at work is reduced;
- Children and adolescents are affected not only by the Internet through its global ubiquity, but also by the computer itself;
- Addiction to computer games has similar symptoms to other types of addiction such as alcohol, drugs, nicotine;
- Addiction to FOMO social media;
- In a virtual world, there is a risk of an escalation of cyberbullying;

The age of the users is not insignificant. The most vulnerable to Internet addiction are young people - pupils, students, and people living alone, unhappy. In numerous

scientific items, we will also find broader justifications or references to the issues discussed here. For example, Aaron Ben-Ze'ev, referring to the problem of excessive Internet use in the context of solid emotional influences and toxic love, writes as follows: We should be aware of the drawbacks of online relationships - especially the risk of becoming addicted to cyberspace in the way people become addicted to drugs. There is the artificial stimulation of the pleasure center in both cases, and the difference between reality and illusion becomes blurred. Online relationships also involve the danger of contact with unscrupulous people and the experience of disappointment, which can destroy the dreams of the people involved (Ben-Ze'ev, 2005). Graduation of dependence on technology is presented in Table 1.

**Table 1.** Graduation of dependence on technology

| <b>Degree of addiction</b>         | <b>Description</b>   |
|------------------------------------|--|
| <b>Excessive use of technology</b> | This stage can be treated as an escape mechanism and a way of avoiding unpleasant life situations or alleviating boredom. Unpredictable immersion in the digital world may be accompanied by an impaired sense of time and neglect of basic needs such as hunger or sleep. |
| <b>Negative effects</b>            | Addictive behaviours persist despite experiencing adverse consequences, such as social isolation, family quarrels, fatigue, problems at school or work, lack of achievement or lies.   |
| <b>Symptoms of rejection</b>       | A full picture of addiction. An addict may experience feelings of anxiety, sudden mood swings, depression or irritability when trying to reduce the use of technology.   |

*Source:* Own study.

The abuse of the Internet leading directly to addiction is the result of many factors acting simultaneously. As in other addictions (classic ones such as gambling or alcoholism), Internet use is often caused by personal factors, lack of alternatives, loneliness in the family, or social isolation. A worrying discovery is that addiction can be caused primarily by mechanisms built into the software, which is designed to hold the user as long as possible for a given activity. Motivations on the part of the user that make it easy to seduce them with algorithms are those that satisfy their need for affiliation and affiliation, grouping, fun and entertainment, personalization, uniqueness, and social comparison, as well as sharing suggestive pictures, the need to accept and stand out. These features have been highlighted with the adaptation of mobile technologies and their applications.

### 3. Research Methodology

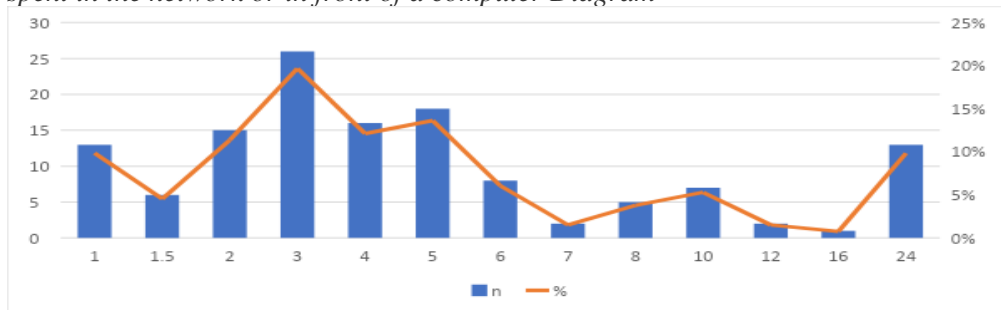
Types of abuse accumulate in the types of activities undertaken in the network, which becomes the cause of problems and dysfunctional existence (Nathan *et al.*, 2018). Activities associated with abuse bordering on addiction include, among others, computer addiction, being online, online games, information overload, hacking, social networking, pornography, copying of films and music, Internet commerce

(manifesting itself as shop holism), software replenishment. The specificity of Internet involvement allows identifying addiction treated as an abuse of boarding house and network. The amount of time spent online or at a computer is treated as an addiction by some researchers. Using the Internet every day and more than once a day is a characteristic behavior of people at risk of e-dependence (Stysko-Kunkowska and Wąsowicz, 2014).

In the light of the previously mentioned considerations, in which there is no unambiguity as to the definition of addiction, the author came up with an idea to conduct his own quick and short study. The research on absorbing the user's attention by applications installed on the phone or computer was carried out using the auditory method on a sample of N=132 people. The research group consisted of students of the War Studies University, students of the psychology of threats. The study also included in-depth individual interviews (IDI). The inquiry aimed to examine the relationship between the number of hours spent on the Internet and the types of activities undertaken and to identify the consequences of negligence resulting from excessive Internet use. The research on identifying the amount of time that respondents spend daily in front of a computer or on the Internet brought the following information. The Internet and the network are used daily by each person in the study group. The most numerous group is made up of people who spend about 3 hours, including using the network via telephone. The minimum network use is 1 hour (about 10% of respondents), and the maximum is 24 hours.

It should be noted here that the respondents who stressed that they "immerse themselves in the network" for 24 hours do so only when they have time off (e.g., during the weekend); more often than not, men did so when spending time playing online. The average time for the group was: 7.65, standard deviation: 7.0. This way of functioning seems to be a characteristic feature of the current young generation of people in the 21-23 age range. The distribution of obtained answers is presented in Figure 1.

**Figure 1.** Graphical representation of the answer to a question about the total time spent in the network or in front of a computer Diagram



Source: Own study.

To check what Internet users do online, respondents were asked about their activities when they use it. Respondents were ranked in activities. Hence the percentages do not add up to 100. Respondents reported that they combine activities and switch from one activity to another, performing tasks simultaneously (multitasking problem presented above). The result is presented in Table 2.

**Table 2.** *Activities undertaken by respondents in the network*

| Variable name  | Number of people | Percentage of sample size (%) |
|--|------------------|-------------------------------|
| searching for content necessary for studying   | 107              | 81%                           |
| search for other information, e.g., news from the country, the world, your interests | 68               | 52%                           |
| computer games   | 44               | 33%                           |
| social media   | 112              | 85%                           |
| e-commerce   | 45               | 34%                           |
| programming  | 8                | 6%                            |
| watching movies, listening to music  | 118              | 89%                           |
| copying movies or music  | 41               | 31%                           |
| the computer just has to be on (I have to be online)                                 | 5                | 4%                            |

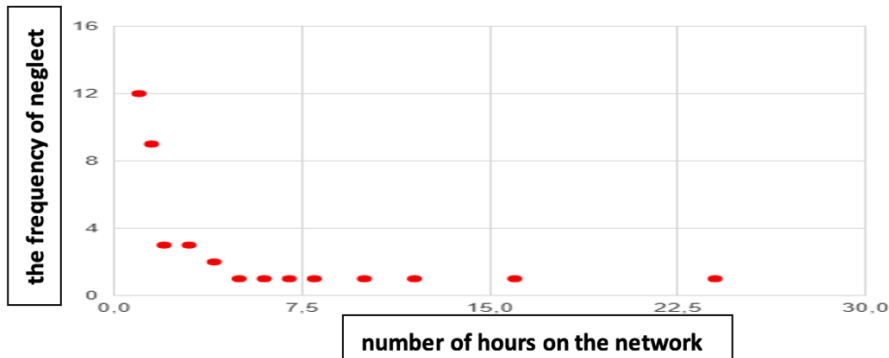
**Source:** *Own study.*

The most frequently chosen option of activity carried out on the Internet by the respondents is watching movies and listening to music (89%); another choice was social networking sites (85%) - the respondents emphasized that they combine these activities. Additionally, they claimed that they most often still learn by searching for content necessary for learning (81%). Even in isolation from the threat of e-dependence, these figures sound alarming when one considers the long-term consequences of multitasking, i.e., simultaneous learning and receiving notifications, resulting in distraction and difficulty in concentration. Another threat is to remain immobile in one position, leading to health problems (sight problems, posture defects, lack of fitness).

The vast majority are people who functionally use the Internet but often switch to the activities they perform. The attention is drawn by a small number of respondents who declare the need, necessity, compulsion to be online. This group constitutes only 4% of respondents. More than half, i.e., 51%, search the web for information about news from the country and the world, as well as about their interests. 34% of the respondents point to e-shopping, and 33% of the research group directs their activity to computer games. 31% of people devote time to copying films and music. Only 6% of the respondents devote their time to using the network to content concerning programming problems. This is not a result that would be surprising, as the study field is studied in the social sciences. The survey provides for the selection of other options. As part of the selection of other activities, smartphone applications, newsgroups, website creation, computer animations and graphics, and reading books were indicated. In all cases of the mentioned activities, it constitutes only 1 percent of the surveyed group.

The affirmative answer to the question about the neglect of duties due to the use of a network or computer was given by 38 people, which accounts for 29% of the surveyed group, and 94 respondents gave the negative answer, i.e., 71% of the respondents. Justifying the affirmative answer, the respondents specified the frequency of neglecting other obligations. The relation between the number of hours spent in the network and the frequency of neglecting other duties was measured using the Pearson's linear correlation coefficient (R), which is  $R=-0.53$ , which means a moderate correlation and a significant relation at  $\alpha=0.05$ . The increase in the value of one trait is accompanied by a decrease in the average value of the other trait - neglecting duties is accompanied by an increase in the number of hours spent in the network. The obtained correlations are presented in Figure 2.

*Figure 2. Relationship between the frequency of neglect of other duties and the number of hours spent in the network*



*Source: Own study.*

Those who chose the answer no (neglect of duties) - constituted 71% of the research group. These respondents reported activities they took up by giving up their activities on the Internet or in the network. Noteworthy is the result of 33% of respondents' conversion of e-meetings to meetings with friends and acquaintances in "face to face." Activities performed outside the network include listening to music (concerts 26%), reading books 25% (libraries, reading rooms), and 20% of the respondents declare time for practicing sports, and the same group plays online. The activities are varied. Notably, the respondents do not feel addicted. They have clearly defined goals, for the achievement of which they have to limit their online presence. In-depth interviews, more learning was indicated as the dominant reason for limiting the use of the game.

There were also opinions about boredom with playing, preferences for spending time with friends (as confirmed by the above chart), friends or partners, or an alternative way of spending time, e.g., reading books, in the gym, and eye problems. A small group of respondents - 4% - indicated that games are very addictive and that the new developments on the computer game market cause them an interest that they cannot resist, with unlimited access to computers, networks, and games. Their overwhelming



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need to play games often borders gambling because they immediately receive gratuities, which causes them to want to continue playing.

#### **4. Discussion**

CTU dependency is linked to motivational, behavioral, welfare, and demographic factors. A review of the literature on the subject, including items from the fields of psychology, pedagogy, safety, and new technologies, indicates that the current understanding of the phenomenon of CTU dependence is far too narrow. It is mainly associated with the different tendencies of some people. It turns out that modern addiction is mainly a result of the influence of the environment (digital era environment, cyberspace) and circumstances (conditions of using Facebook, Instagram, or other social networking sites). Technologies have made digital addiction commonplace, as everyone can be addicted - it depends only on circumstances.

Addictive technologies are part of our everyday life, which practically excludes the possibility of functioning without them. The difficulty lies in the ability to separate addictive behavior from rational use. The use of mechanisms of mental stimulation of the so-called persuasive technology and social influence based on, e.g., social proof of rightness, the rule of inaccessibility, the social power of authority, or the effect of context in the algorithms on which the operation of modern technologies is based has allowed, firstly, for further improvements in the forms of communication (which increases involvement by minimizing user frustration) and, secondly, for monetizing users' time thanks to the economy of attention.

It should be noted that the risk of addiction is most significant in the group of teenagers. Adults are less likely to become addicted, especially when they do not experience addictions in their early youth (Alter, 2018). The personalization of services used is the next step to design an individual-specific addiction profile. The Cyber World is governed by the GAFSA corporation (Google, Amazon, Facebook, and Apple). Unfortunately, the corporation's intentions as to the future are unknown, as are the goals and visions. Scott Galloway calls these super concerns "The Four Riders of the Apocalypse" (Galloway, 2018). The technological infrastructure is designed to generate digital data that algorithms can read (Diakopoulos, 2013).

The more users and the more intensive the consumption of media and digital content (both passive and active), the more the technology market has developed, and the changes in the whole media ecosystem have occurred. Phenomena include data surveillance, surveillance capitalism, the economics of attention, controlled propaganda, and fake news. Factors that have been used to design addictive technologies are based on recognized "defects" of the human brain, habits acquired in a society often conditioned by culture. The most crucial factor in stimulation is the learning process. In this context, a study conducted on almost 700 thousand Facebook users is fascinating; the results showed that users are willing to communicate both positive and negative emotions depending on the information presented in the media.

Users posted positive or negative posts - depending on what they received in their message streams during that week. When positive information was limited in the message stream, users posted positive posts less frequently while more often hostile. The study indicates that emotions expressed on Facebook influence the mood of other users (Kramer *et al.*, 2014). The analysis of available literature provides knowledge to qualify and define what addictions and knowledge of what social and economic effects are caused by, e.g., breakdown of family ties, distraction, aggression, or deterioration of health. We know how addiction can be used for digital identity formation, and this, combined with the mechanisms of exerting an influence (Cialdini, 2003, 2004) on societies, can eventually weaken it.

Due to the rapid development of technologies, the results of the research are quickly becoming obsolete; however, conducted in many countries around the world (and referred to in the analyses) indicate that there is great diversity in models of using new technologies in both young and older people. Users claim that they can perform many tasks simultaneously, which, of course, in light of the quoted studies, is an unfounded claim. In Poland, young people avoid active and creative use of the Internet and limit themselves to receiving content (NASK Report, 2021). Unfortunately, we do not know the long-term effects on national security; it can only predict in a limited way.

It seems that the main message, especially for the sake of future state security, is to call for "humanitarian," human design standards, policies, and business models that are more in line with our human nature and how we want to live. Thus, they seem to be a guarantee of security. The dependence of state security on behavioral dependencies is shown in Table 3.

**Table 3.** Behavioral dependencies and state security

| Potential for danger  | The civilizational dimension of addiction  | National security (state)  |
|---|--|--|
| Asymmetry of Social Impact<br>Technology Resources<br>(GAFAM) | Digital colonialism - Cyber colonialism<br>Technology dependency of developing countries (free Internet - promoting content in line with business strategy) "donor".   | Maintaining economic and political dependence;<br>Threat to sovereignty, social dependence, change of perception of tradition, culture;<br>Promoting culturally alien patterns.  |
| Digital identity formation                                    | The existing cultural mechanism based on interpersonal interactions - replaced by "value-building" applications, e.g., applications that rebuild the perception of self-esteem (e.g., wristbands monitoring weight or any achievements, parental applications - managing children's home duties. | Loss of national identity, lack of national pride, national values.<br>Indifference, loss of empathy.<br>Homogenization of culture - sterilization, macdonaldization.<br>Superficiality and shallow identity.<br>Promoting selected content of websites and services is a powerful tool to influence moods and lifestyles. |

|   |   |  |
|---|---|--|
| Addiction<br>FOMO - the fear of disconnection;<br>The anxiety of being overlooked | Influencing the psyche of both selected individuals and social groups of the entire population.<br>Weakening and breaking down family ties.<br>Threats resulting from this for people working in positions requiring constant attention (e.g., inspectors). | Rebuilding the social structure.<br>Change of social relations and bonds.<br>New model of society?<br>Costs of employers - use in the workplace, inattention.  |
| Multitasking  | Distraction, addictive feedback loops.  | Reducing employee efficiency.<br>Lack of focus on the sentence performed - extension of the task completion time.  |
| Loyalty building techniques   | Transferring interest and loyalty from the real world to digital constructions.<br>Creating enclaves of interest (informational bans),<br>Cultural fluidity. Identity wills.  | Loss of influence of public policies proper for the common good, indifference to threats of own culture, own state, nation.<br>Unification of the identity of the young generation of teenagers - shaped by popular culture and ideology of consumption. |
| Manipulation;<br>Continuous stimulation with new stimuli                          | Promoting selected content (sites, services) can be a powerful tool to influence moods and lifestyle,<br>Radicalization of public opinion.  | A distorted perception of threats, radicalization of beliefs leading to anarchy, radicalization of public opinion, distorting public discourse, deepening differences and fueling conflicts.<br>Threat to choices.                                       |
| Gambling mechanisms   | Sex-robots - deformations of social relations, gambling addiction.  | Losses in human and social capital.  |

*Source: Own study.*

## 5. Conclusions

What future awaits technology-dependent societies? New communication infrastructure is already emerging - the Internet of Things. The Internet of Technology, which seems to change the notion of media and make supervision capitalism real (Turow and Couldry, 2018). The possibility of more and more accurate personalization will allow for perfect optimization of companies' profits (there is already a phenomenon of diversification of prices of offers displayed to users depending on the identified device and data about the behavior of a person). There is a growing field of possibilities to manipulate the content provided by external entities:

- The critical problem for state security results from the inability to influence the actions taken by these entities on the broadly understood Internet.
- Activities that affect essential values from the perspective of preserving national identity, culture, customs. Created by a group of ideas, beliefs, views, specific customs and customs, and a given axiological and normative system.

- The phenomenon of their slow suppression by content, often culturally alien, shaped by the mentioned external entities are observed, and these entities may be involved ideologically, politically and represent conflicting interests. These facts have a direct impact on state security.
- When a society is dependent on digital technologies, then the content presented goes on fertile ground, ensuring the control of that society at the level of perception.

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