

# THE POSSIBILITIES OF THE IMPROVEMENT IN THE STUDY OF THE LOGISTICS OF THE ARMED FORCES OPERATIONS

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The lack of willingness to engage in the decision-making process is considered one of the greatest difficulties in making decisions about career. This paper discusses the possibility of the influence of cyberspace on the decision-making about career advancement because it has become a part of everyday living environment. The objective of this paper is to define on the basis of the results of the research described in literature, the possibility of performing friendly impact operations from cyberspace, based on psychological theories, in order to influence the decision-making about career advancement. The paper confirms the existence of theoretical foundations and results of practical research that indicate possible ways to perform impact operation from cyberspace to make a decision about career advancement. Given that, the definition of friendly impact operation from cyberspace has been proposed. The importance of the term cyber-personality in the process of selecting the target group of cyberspace impact operation and its role in creating conditions for performing cyberspace impact operation for the needs of hybrid warfare has been pointed out.

Key words: *cyberspace, decision-making, career advancement, impact operation, hybrid warfare*

## Introduction

The development of an organization is conditioned by factors related to the external and internal environment in which it is located. The external environment is defined by the condition of economy or market as a whole, if it is an economic

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organization, or the condition of factors that affect the work of an organization, and which it cannot directly affect by its organizational measures. The internal environment can be described by a set of organizational and personnel solutions that affect the organization's behaviour in the external environment. The successful survival of every organization is conditioned by resources at its disposal and the way they are used in the external environment in accordance with the relations in its internal environment. Human resources play an important role in the life cycle of each organization and in its interaction with the external environment. The disadvantages and advantages of the internal environment are mostly manifested through the part of human resources that directly affects the behaviour of an organization. Such a part is human resources. In the formal organizational sense, these are human resources that are in managerial positions. However, human resources are also parts of human resources that do not formally occupy managerial positions in an organization, but their capabilities can directly contribute to its better functioning in relation to the external environment, and indirectly to the improvement of the internal environment.

In the last ten years, the modern living and working environment has inevitably met with cyberspace. The most significant and influential forms of cyberspace in real life are the Internet, social networks and mobile phones. Mobile phones provide their users with access to the Internet anywhere and anytime, while the Internet provides access to social networks. The average cyberspace user has access to a great amount of data and information that can hinder or slow him down in making decisions, even those about career advancement. The users of social networks have the opportunity to be informed about important events in the environment, in real time, with the activities and reactions of important people who may have an impact on their behaviour. Therefore, the paper analyzes the possibility of the influence of cyberspace on making decisions about career advancement. The analysis includes the psychological theories of decision-making and their implementation in cyberspace and career advancement. Furthermore, the possibility of implementing the influence of cyberspace on career advancement as a part of hybrid warfare has been analyzed.

## The psychological theories of decision-making and career advancement

Career development is "a continuous lifelong process that focuses on seeking, collecting and processing information about one's own capabilities and possibilities of education and employment..."<sup>1</sup> Constant and rapid technological progress, frequent occurrence of the need for new and the disappearance of the need for existing occupations, with a significant increase in information about changes that are happening in a

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<sup>1</sup> Hansen, L. Sunny, „Career Development Education: Humanizing Focus for Educators“, *Journal of Career Development*, Vol. 3, 1976, pp. 42-48.

work environment, have called into question the so-called rational model of the career decision-making. An individual faced with a great number of career choices, as well as a large amount of information about potential opportunities or shortcomings in career choices, becomes limited in rational judgement due to limited cognitive capabilities. As a result, there are difficulties in making a decision on career advancement, which are classified in literature into the four most important groups:

1) Difficulties due to the existence of negative career thoughts

Negative career thoughts are recognized as an important factor in the career decision-making process.<sup>2</sup> They refer to prejudices or distorted beliefs, unreasonable expectations, various career myths, negative assessments regarding actions and professions of an individual, which affect ambitions and actions of each individual. Such negative thoughts complicate the decision-making process and force a person to avoid them altogether or shift the responsibility of choice to other important people, thus threatening the overall career development.

2) Difficulties due to the lack of information

The lack of information on steps in the career decision-making, career advancement opportunities, chances and ways to obtain information, as well as the lack of reliable information, represent difficulties that affect the career decision-making process.<sup>3</sup> Often, new information can change individual career advancement decisions.

3) Difficulties due to the existence of internal and external conflicts

In many cases, the efforts of a person to make a career advancement decision are interrupted by internal conflicts caused either by individual factors or pressure from third parties, or even external conflicts - conflicts that arise from involving the opinion of other important individuals in the career advancement decision-making process.

4) Difficulties due to the lack of self-confidence (self-efficacy)

Self-efficacy is a subjective assessment of an individual in terms of their capability to succeed in an activity or face a situation.<sup>4</sup> Thus, self-efficacy does not refer to a person's objective ability or inability, but to their personal beliefs as to whether they have necessary skills to do something in different circumstances. According to this theory, a person's subjective assessment of skills has a decisive role in their professional behaviour.<sup>5</sup>

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<sup>2</sup> Kirk Austin, Dennis Dahl and Bruce Wagner, „Reducing negative career thoughts in adults”, *International Journal of Disability Community and Rehabilitation*, Vol. 2(2), 2003.

<sup>3</sup> Germeijs Veerle & Paul De Boeck, „Career indecision: Three factors from decision theory”, *Journal of Vocational Behavior*, Vol. 62(1), 2003, pp. 11-25.

<sup>4</sup> Albert Bandura, *Self-Efficacy: The Exercise of Control*, New York: W.H. Freeman & Company, 1997.

<sup>5</sup> Ibid.

## Behavioral prediction theories

Behavioral prediction theories are considered to be an upgrade of the decision-making theory, so in that sense they can also be considered an upgrade of the theories of the career development decision-making. While the theories of the career decision-making indicate what is important to individuals in the career development decision-making process, behavioral prediction theories point to elements that influence specific decision-making. A significant place in literature is occupied by the Theory of Reasoned Action and the Theory of Planned Behaviour.

The Theory of Reasoned Action (TRA, Figure 1) is based on the belief that a direct indicator of person's behaviour is their intention to behave.<sup>6</sup> According to this theory, behaviour is the result of an intention that depends on attitudes towards such behaviour and person's subjective norms, while situational and personal variables can influence behaviour beyond intention.<sup>7</sup>

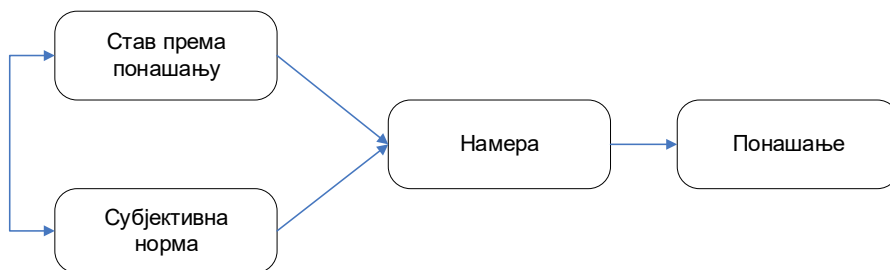


Figure 1 – *The Theory of Reasoned Action*

A person's attitude towards behaviour and evaluation of subjective norms influences the intention to behave. Subjective norms refer to social pressure towards people to behave in a certain way and motivation to adhere to the wishes of others.

The Theory of Planned Behaviour (TPB) is an upgrade of TRA by arguing that the strength of the intention to commit behaviour depends on attitude towards behaviour, subjective norms of behaviour and perceived behavioral control (Figure 2).<sup>8</sup> The execution of intended behaviour depends on a high degree of control over such behaviour that a person has in favourable environment. That is, the fulfillment of the intention is conditioned by possibilities to execute certain behaviour and the existence of socio-demographic variables that influence the establishment of beliefs.<sup>9</sup>

<sup>6</sup> Icek Ajzen & Fishbein Martin, „The prediction of behavior from attitudinal and normative variables”, *Journal of experimental social psychology*, Vol. 6(4), 1970, pp. 466-487.

<sup>7</sup> Bora Kuzmanović i Nebojša Petrović, „Ciljevi i očekivanja kao činioci stavova prema političkim strankama”, *Sociološki pregled*, Vol. 44, no. 3, 2010, pp. 453-470.

<sup>8</sup> Icek Ajzen, „Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior”, *Journal of Applied Social Psychology*, Vol. 32, 2002, pp. 665–683.

<sup>9</sup> Ibid.

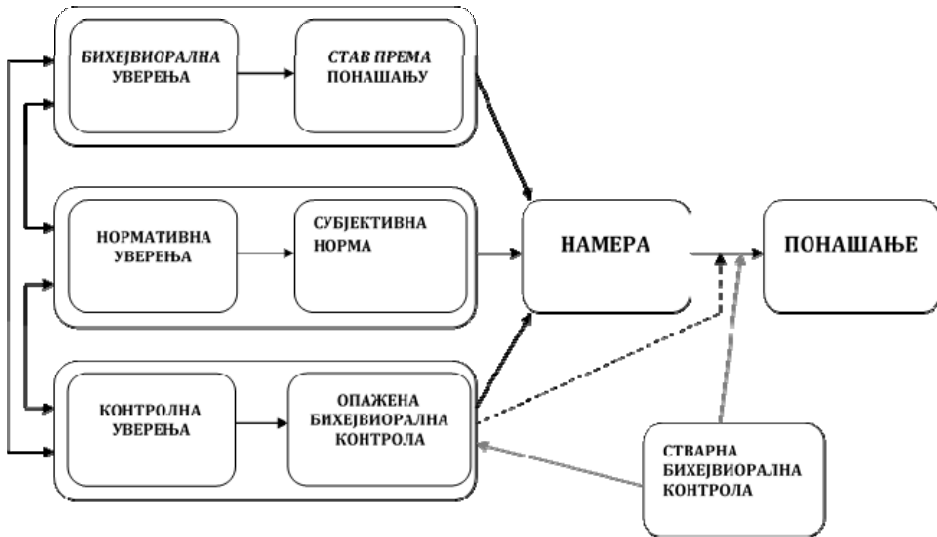


Figure 2 – The Theory of Planned Behaviour

The Theory of Planned Behaviour explains that attitudes about behaviour play an important role in explaining human behaviour, and that attitudes towards specific behaviour are established from prominent beliefs about such behaviour.<sup>10</sup> Moreover, TPB suggests that influencing behaviour (and its change) can be done through changes in attitudes, subjective norms and perceived behavioral control. The consequence of exposing entities to new information and experiences that can lead to changes in their (behaviour relevant) beliefs is to influence their intention, that is, to influence their behaviour.<sup>11</sup>

## The prevalence and possibility of the influence of cyberspace on decision-making

Cyberspace has become a conventional means of describing everything related to the Internet and different Internet cultures.<sup>12</sup> On the basis of the existing definitions in contemporary literature, “cyberspace” can be interpreted as “a global network of interdependent infrastructure of information technology, telecommunications

<sup>10</sup> Icek Ajzen, Summary of Theory of Planned Behavior, 2017, [http://www.valuebasedmanagement.net/methods\\_ajzen\\_theory\\_planned\\_behaviour.html](http://www.valuebasedmanagement.net/methods_ajzen_theory_planned_behaviour.html), 25/08/2020.

<sup>11</sup> Ibid.

<sup>12</sup> Wikipedia.

networks and computer systems.<sup>13</sup> Cyberspace represents computer-based channels, computer networks and virtual reality”, that is “anything connected to the Internet”, and even mobile phones.

### *The prevalence of cyberspace*

On the basis of the data shown in Figure 3, in April 2020 almost 60 percent of the world population used the Internet, almost 70 percent had a mobile phone and almost half of the world population accessed social networks on the Internet.<sup>14</sup> At the same time, every second the number of users accessing social networks on the Internet via mobile devices increases by twelve new ones. “A mobile phone, as a highly personalized device, is becoming the main means of accessing the Internet, while social networks are increasingly shaping the views and attitudes of their users through the contents that they make available to them”.<sup>15</sup> Social networks and cyberspace have influenced users to change the existing patterns of behaviour and to turn from “consumers” and passive users of information into their producers and active researchers.



Figure 3 – Digital media users in 2020

A part of cyberspace and the most important modern “Internet cultures” are the so-called social networks. “Social networks are electronic media based on software that runs on the Internet platform and serves to collect, store, consolidate, share,

<sup>13</sup> Maja Živko, „Psychological Aspects of Cyberspace”. In: *3rd International Conference The Future of Information Sciences*, <http://darhiv.ffzg.unizg.hr/id/eprint/8206/1/1-11%20Zivko%2C%20Psychological%20Aspects%20of%20Cyberspace.pdf>, 22/08/2020.

<sup>14</sup> Source: <https://datareportal.com/reports/digital-2020-global-digital-overview>

<sup>15</sup> „Social media as a tool of hybrid warfare”, NATO Strategic Communications Centre of Excellence, May 2016.

process, discuss or deliver user-created or general media content that may affect knowledge and perception and thus directly or indirectly encourage behaviour as a result of social interaction within networks”.

Over the past ten years, the number of users of these networks has increased almost four times – from 0.97 billion in 2010 to more than 3.8 billion in 2020.<sup>16</sup> Due to low access costs, high diversity of users, global distribution and high speed of information flow, social networks have a great impact on the behaviour of their users.

The growth of cyberspace users, primarily social networks and mobile phones for the Internet access and social networks in the Republic of Serbia is in line with global trend, which can be seen in Figure 4 and 5.<sup>17</sup>

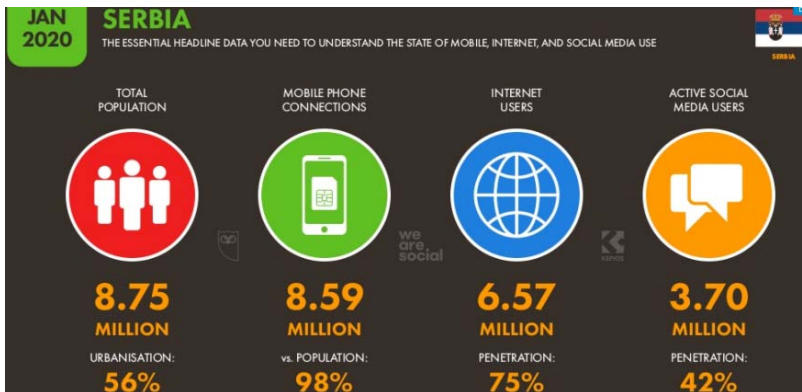


Figure 4 – Digital media users in the Republic of Serbia in January 2020

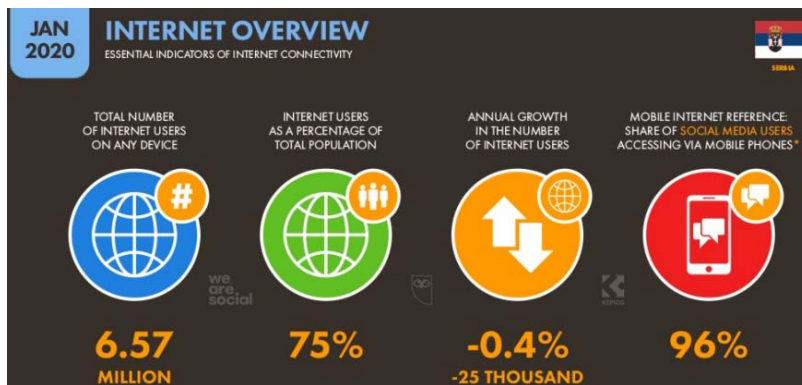


Figure 5 – Internet users in the Republic of Serbia in January 2020

<sup>16</sup> Source: <https://datareportal.com/reports/digital-2020-global-digital-overview>.

<sup>17</sup> Ibid.

## *The relationship between behavioral prediction theories and cyberspace*

The original Theory of Planned Behaviour does not assume the influence from cyberspace on implementation of various types of behaviour and does not include variables such as personality traits, intelligence, demographic variables, values... However, the theoretical basis for the implementation of TPB to make an impact from cyberspace can be found in the research which confirms that influencing attitudes, intention and behaviour can be done in three primary ways: the control of critical resources (coercion), deception and social influence.<sup>18</sup> Social influence is defined as “any noncoercive technique, procedure or manipulation that relies on the socio-psychological nature of human beings as a means of creating or changing belief or behaviour of a target”.<sup>19</sup> According to the previous definitions, cyberspace can influence attitudes, intention and behaviour of users in at least two ways:

- the control of critical resources, that is, the control of information that is made available to user because information is one of the critical resources in the modern digital age in which we live;
- influence through social networks on the Internet.

Owing to social networks and other Internet services (e-mail, e-newspapers, websites...), Internet users have an opportunity to be informed about important events from the surroundings, in real time, with reactions of people who may influence their behaviour. Therefore, by changing their status on social networks, publicly commenting on certain phenomena and events, they can act in accordance with “the expectations” of important people, and thus express their intentions about future behaviour in real life. Behaving in accordance with “the expectations” of important people can be on the Internet – by aligning comments with comments and views of those people, and also in real life – by imitating and supporting their attitudes and activities.

The contacts made through social networks can be a source of social support and influence the choice of opportunities, that is, the career decision-making, and thus the prediction of subjective career success.<sup>20</sup>

The research on the impact of social networks on the Internet on the behaviour of the voters in the United States during the congressional elections held in 2010 has unequivocally shown that the impact of social networks and the Internet can be measurable and provable.<sup>21</sup> Literature cites one of the best examples of influencing

<sup>18</sup> Hansen G. William, „Influence: Theory and practice”, *Master of science in defense analysis*, Naval Postgraduate School USA, 2013.

<sup>19</sup> Anthony R. Pratkanis, „Winning Hearts and Minds: A Social Influence Analysis”, *Information Strategy and Warfare* ed. John Arquilla and Douglas A. Borer, New York: Routledge, 2007.

<sup>20</sup> Thomas W. H. Ng, Daniel C. Feldman, „Subjective Career Success: A Meta-Analytic Review”, *Journal of Vocational Behavior*, Vol. 85(2), 2014. pp. 169-179.

<sup>21</sup> Robert M. Bond, Christopher J. Fariss, Jason J. Jones, Adam D. I. Kramer, Cameron Marlow, Jaime E. Settle, James H. Fowler, „A 61-million-person experiment in social influence and political mobilization”, *Nature*, Vol. 489, 2012, pp. 295–298, <https://doi.org/10.1038/nature11421>, 19/08/2020.



real-life behaviour through social media. More than 60 million eligible voters took part in the research related to this example, who, on November 2, 2010, at the time of the elections, accessed the Facebook website. Respondents were randomly divided into three groups. The first group received “a simple” informative message via Facebook with an invitation and instruction on where to vote. The second group received “a social message”, that is, a message with an invitation to vote and additional information on who has already voted. Additional information contained an image of a person who is familiar to a respondent and who may be important to them. The third group was a control group of respondents who did not receive any message on their Facebook page. The messages on the Facebook page of the respondents of the first and second group are shown in Figure 6.<sup>22</sup>

### a) Informational message



### b) Social message



Figure 6 – *The Facebook page of the respondents of the first (a) and second (b) group*

The results of the mentioned research showed that the message in the first group of respondents directly influenced the increase in the turnout by about 60,000 voters. Indirectly, through social influence, the turnout of the second group of respondents

<sup>22</sup> Ibid.

was increased by additional 280,000 voters. It has been shown that a message via a social network can increase the turnout by at least 340,000 additional voters.

The mentioned research confirmed the existence of social influence on behaviour change, especially the importance of the influence of close friends - they had almost four times greater influence on the total number of mobilized voters than a simple informative message.

The development of mobile technology has greatly affected the speed and amount of information that is exchanged. It has also enabled direct influence on individuals and indirect on groups (through viral dissemination of information from target individuals to their respective counterparts in network). Owing to mobile phones, which provide uninterrupted availability of their owners, the influence in cyberspace can be exercised continuously. The technology implemented in mobile devices and mobile phones provides a precise geographical location, which means the possibility of exerting influence in a precisely defined geographical area.

In the last two decades, mobile devices have become an integral part of the life of almost every family. In 2020, 66 percent of the total population had a mobile phone (Figure 4), and last year their number in the world increased by 10 million per month.<sup>23</sup> At the beginning of 2020, the number of different mobile users in the Republic of Serbia was almost equal to the number of citizens (Figure 5), and over 96 percent used mobile phones to access social networks on the Internet.

Taking into account the mentioned results of the research, it can be concluded that cyberspace is an almost perfect platform for influencing decision-making.

## Making an impact in cyberspace

In contemporary literature, two different approaches are most often mentioned in the study of making an impact in cyberspace – cyber-psychology and cyber-personality. Making an impact in cyberspace is conditioned by understanding how people present themselves as psychological entities in it because cyberspace is psychological space. Cyberspace is "...an extension of our individual and collective mind. It is space "beyond this one", where one's thoughts converge with the thoughts of others".<sup>24</sup> To create the preconditions for a better understanding of the relationship of psychological entities with cyberspace, John Suler has proposed eight dimensions of cyber-psychology for understanding and predicting behaviour of individuals in cyberspace. These are: 1) the identity dimension, 2) the social dimension, 3) the interactive dimension, 4) the textual dimension, 5) the emotional dimension, 6) the reality dimension, 7) the temporal dimension and 8) the physical

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<sup>23</sup> Source: <https://datareportal.com/reports/digital-2020-global-digital-overview>

<sup>24</sup> John R. Suler, „Psychology of the digital age: Humans become electric“, UK: Cambridge University Press, 2015.

dimension.<sup>25</sup> Each of the dimensions of cyber-psychology represents a work environment in which there is enough information about a person or the opportunity to communicate with them in cyberspace.

In 2016, the group of authors led by Miika Sartonen, defined cyber-personality - an abstract entity whose physical identity may not be known, but whose patterns of behaviour can be recognized in cyber environment<sup>26</sup>. Cyber-personality is an abstract whole that consists of a set of all interconnected information in five layers of cyberspace. Cyber-personalities form and share their interpretation of reality, as well as carefully planned narratives in a digital environment. Owing to the existence of common features, individuals or groups of cyber identities can be singled out that can be acted upon in cyberspace and influence the change in the behaviour of their owners in real life; when it comes to humans, cyber-personality is a digital representation of human being. The communication between cyber-personality and cyberspace is shown in Figure 7.<sup>27</sup>

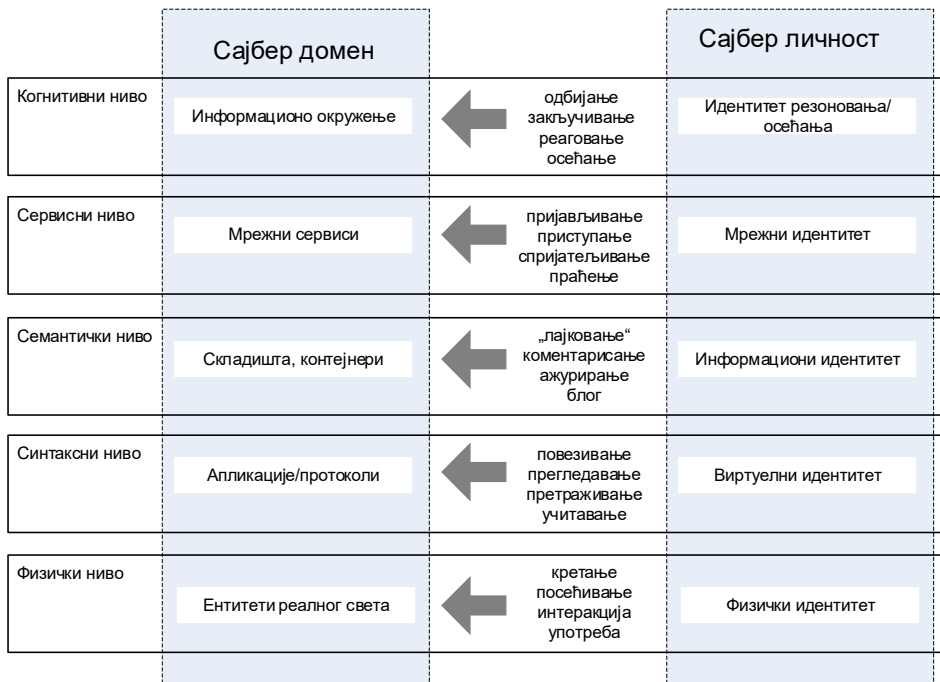


Figure 7 – *The way of communication between cyber-personality and cyberspace*

<sup>25</sup> Ibid.

<sup>26</sup> Miika Sartonen, Aki-Mauri Huhtinen, Martti Lehto, „Rhizomatic Target Audiences of the Cyber Domain”, *Journal of Information Warfare*, Vol. 15(4), 2016, pp. 1-13.

<sup>27</sup> Ibid.

Its cognitive layer is the most important and suitable for making an impact in cyberspace. The cognitive layer of cyberspace consists of rational and emotional human processes that direct the flow of information through all layers of cyberspace. Literature deals with successful attempts to influence the change in behaviour in this layer that have led to the change in behaviour that has been registered through the change in behaviour in other layers of cyberspace. Although the cognitive layer communicates with cyber-personalities, digital representations of real people on the Internet, behind every account on social networks in the vast majority of cases there is a person from real world.<sup>28</sup> This person communicates with other entities in real world, both in the physical world and in cyberspace. It has a unique personality trait, motivation and desires that guide its behaviour and interaction with others. The results of several modern studies on the relationship between personality characteristics and "online" behaviour in cyberspace indicate that psychological personality characteristics play an important role in the use of social networks and media.<sup>29</sup> Personality influences attitude towards the Internet and motivation to visit certain Internet sites.<sup>30</sup> More specific results on the relationships between online behaviour and the possibility to predict personality behaviour, described in literature, have shown that the possibility to predict personality traits is between 23.2 and 41.8 percent, based on the data on their activities on social networks, as well as that 45.1 percent is successful in recommending commercial products according to personality traits.<sup>31</sup>

Determining personality traits creates the possibility of implementing psychological theories in the process of making an impact on behaviour change. For example, if we identify individuals as extroverts, we can use methods of influence that use the principles of liking, reciprocity, social proof and fear of "not missing a chance".<sup>32</sup> The results of the research have shown that conscientious people can be influenced by using the methods of reciprocity, authority, commitment and consistency, while extroverts can use the methods of influence that use the principles of liking, reciprocity, social proof and fear of "not missing a chance".<sup>33</sup> It has also been shown

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<sup>28</sup> A bot is an abbreviated name for a software robot - an intelligent software agent, which often includes the elements of artificial intelligence. It can browse the Internet on its own, create fake user accounts, send emails, use chat, moderate the content of a site, hack an attack on a site and many other things, depending on the purpose, that is, how it is programmed (Wikipedia).

<sup>29</sup> Ha Sung Hwang, „The Influence of personality traits on the Facebook Addiction”, *Transactions on Internet and Information Systems*, Vol. 11 (2), 2017, pp. 1032-1042.

<sup>30</sup> Costinel Dobre, Anca Maria Milovan, „Personality influences on online stores customers behavior”, *ECOFORUM*, Vol. 4, Issue 1 (6), 2015, pp. 69-76.

<sup>31</sup> Ricardo Buettner, „Predicting user behavior in electronic markets based on personality-mining in large online social networks”, <http://onlinedatingsoundbarrier.blogspot.rs/2016/07/paper-predicting-user-behavior-in.html>, 14/08/2020.

<sup>32</sup> Alkış Nurcan & Tugba Taskaya Temizel, „The impact of individual differences on influence strategies”, *Personality and Individual Differences*, Vol. 87, 2015, pp. 147-152.

<sup>33</sup> Ibid.

that demographic and geographical data on individuals, which can be obtained from cyberspace, can contribute to the process of choosing methods of influence.<sup>34</sup> In a similar way, owing to modern software tools, data on various objects (persons) of interest can be collected from each of the described layers of cyberspace. This means that for each cyber-personality, or a group with common characteristics of cyber-personality, data can be collected on geographical location of a real person, on the manner of behaviour and conditions in which such behaviour is registered in cyberspace. Individuals or groups that would like to be influenced can be precisely identified and, in accordance with their characteristics, informative content can be created that will give the best results in the process of making an impact. Messages and information sent to individuals can be personalized, timely and sent from a reliable source. In such a sense, on the Internet and in cyberspace, the influence is most often exerted by expressing information power: by spreading information. In this way, change in attitudes can be influenced, and it can lead to changes in behaviour.<sup>35</sup>

## The influence of cyberspace on the career advancement decision-making

The described difficulties in making a decision on career advancement can be overcome by the influence from cyberspace in accordance with the Theory of Planned Behaviour, to their disappearance or minimization. The influence can be exerted on the cognitive level of the subject which information is placed to by the most represented means of cyberspace – social networks and mobile phones.

The consequence of exposing subjects to new information and experiences that can lead to changes in their (behaviour relevant) beliefs is to influence their intention, i.e. their behaviour.<sup>36</sup>

### *The influence from cyberspace - impact operations/psychological operations*

The proposed steps to influence behaviour of subjects correspond to goals of impact operations: the goal of impact operations is to achieve power by influencing behaviour of target audience – “the ability of subject A to influence subject B in order

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<sup>34</sup> Rita Orji, „Persuasion and culture: Individualism-collectivism and susceptibility to influence strategies”, [https://www.researchgate.net/publication/301778891\\_Persuasion\\_and\\_Culture\\_Individualism-Collectivism\\_and\\_Susceptibility\\_to\\_Influence\\_Strategies](https://www.researchgate.net/publication/301778891_Persuasion_and_Culture_Individualism-Collectivism_and_Susceptibility_to_Influence_Strategies), 17/08/2020.

<sup>35</sup> Lior Tabansky, „Cybered influence operations: towards a scientific research agenda”, The Norwegian Atlantic Committee, Oslo, 2017, pp. 6-12.

<sup>36</sup> In this case, the subjects can be individuals - candidates that an organization has recognized the potential for career advancement, i.e. target groups of impact operations – author’s comment.

to B do something that would not otherwise do”.<sup>37</sup> This description of the influence does not explicitly define whether “something” that “subject B” will do is good for them or not. Therefore, the author of this paper interprets the definition in both ways - that it can be both, that is, something that is good, and also something that is bad for “subject B”. In such a sense, he proposes another definition of impact operation as: “activities of individuals or organizations consciously aimed at trying to change attitudes and behaviour of individuals, smaller or larger groups of people”. Such a definition would include the already existing interpretation of the term “impact operation”, which is close to the term “psychological operation”, and is related to the negative context of “subject B”, but would also add the positive context, which would imply that “subject B”, doing something under the influence of “subject A”, has done something positive for themselves. A typical case to clarify this definition would be impact operation that a work organization would undertake on its employee (or group of employees) to persuade them to take career advancement activities that they have not been prepared for before. Cyberspace enables selection and targeting of intervention by software tools for precise definition of the target group of impact operation. The term “target group” means a person, a smaller or larger group of persons and a smaller or larger community.<sup>38</sup>

### *Impact operations from cyberspace on the career advancement decision-making*

Impact operation from cyberspace to make a decision on career advancement implies influencing attitudes, intention and behaviour of users by implementing information and communication technology available in cyberspace.

The success of such operations depends on the correct and precise selection of the target group, as well as the quality of personalized content in electronic form making an impact.

Given that members of the target group are employed in a work organization and that a work organization knows their official e-mails, impact can be exerted by controlling information, as a critical resource. In this case, successful control of information can be done by delivering personalized content by e-mail to the target group, which explains in detail activities in the process of professional advancement, all kinds of personal and family benefits that can be achieved through professional advancement, as well as personal and professional qualities to make a decision about professional advancement. This type of impact greatly reduces difficulties in making a decision on career advancement.

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<sup>37</sup> Robert A. Dahl, „The concept of Power“, *Behavioural Science*, Vol. 2:3, 1957, <https://doi.org/10.1002/bs.3830020303>, 22/08/2020.

<sup>38</sup> Gordan Akrap, *Special War*, <https://www.scribd.com/doc/242697026/Gordan-Akrap-Special-War-Book-I>, 14/08/2020. Gordan Akrap, *Specijalni rat*, <https://www.scribd.com/doc/242697026/Gordan-Akrap-Specijalni-Rat-Knjiga-I>, 14/08/2020.

The target group can be directly and indirectly influenced through social networks on the Internet – by directly addressing through social media channels and indirectly through important people, who can influence intentions and decisions of the target group. Defining people who are important to members of the target group can be done by analyzing their behaviour in cyberspace through cyber-personality. The possible layout of informative message on the official website of a work organization for the call to make a decision on career advancement is shown in Figure 8.

## Могућност за напредовање

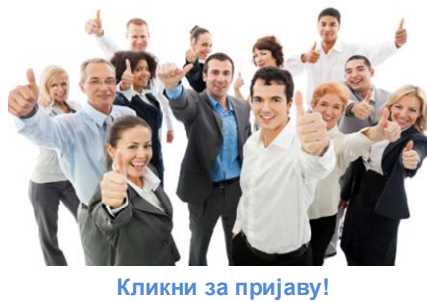


Figure 8 – Informative message on the official website of a work organization

Figure 9 shows the possible layout of a personalized social message for inviting decision-making on career advancement. In comparison to the previous figure, this one also includes information about friends from cyberspace, who have decided on career advancement, with their photos. For each specific person who accesses the official website of a work organization in real time, a display of their friends from social networks that they are active on, who have decided to advance in their career, is dynamically generated. Data on friends from social networks (from cyberspace) are generated on the basis of data on cyber-personality for the employee in a work organization and for their friends on social networks.

## Могућност за напредовање

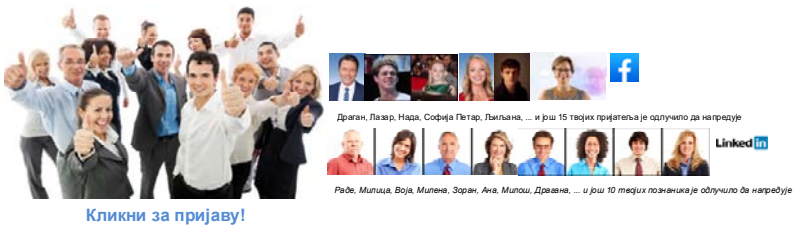


Figure 9 – Personalized “social” message on the official website of a work organization

These activities from cyberspace can be described as “friendly impact operations from cyberspace” because they are consciously aimed at trying to change attitudes and behaviour of individuals, small or large groups of people, for their well-being or improvement of their working and/or living environment.

## *Conclusion*

The spread of cyberspace in 2020, primarily in the form of the Internet and social networks on the Internet, covers almost 60 percent of the total population in the world. Mobile phones, which provide access to the Internet in each place and at every time, have greatly contributed to the increase in the number of Internet and social network users. Owing to mobile technology and mobile devices, Internet users are not the only ones who would like and perform communication in cyberspace. The communication between cyberspace and users has become two-way – cyberspace, via the Internet and mobile phones, makes highly personalized contacts with users, regardless of whether they consciously want it or not.

The importance of mobile phones and social networks and the possibility of influencing views and attitudes of their users were recognized by the most important and strongest international organization NATO in 2016, which is described in the report open to the public<sup>39</sup>. It explicitly describes social networks as a tool for conducting hybrid warfare, which confirms their power to influence intentions and behaviour of target groups. This paper confirms that in a similar way cyberspace can be used to influence the career advancement decision-making by performing friendly impact operations based on psychological theories of decision-making and influence.

Friendly cyberspace impact operations can be defined as the activities of individuals or organizations in cyberspace consciously aimed at trying to change attitudes and behaviour of individuals, small or large groups of people for their well-being or the improvement of their working and/or living environment. The Theory of Planned Behaviour has been proposed as a theoretical basis for conducting friendly impact operation.<sup>40</sup>

As the most appropriate ways to approach the target group of impact operation of decision-making on career advancement in cyberspace, the paper has proposed e-mail, for submitting personalized affirmative material on career advancement in electronic form and sending informative and the so-called social messages via social networks. E-mail and informative message are planned to directly influence intentions and behaviour of the target group. Social messages are intended to indirectly exert influence.

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<sup>39</sup> „Social media as a tool of hybrid warfare”, NATO Strategic Communications Centre of Excellence May 2016.

<sup>40</sup> Robert M. Bond, Christopher J. Fariss, Jason J. Jones, Adam D. I. Kramer, Cameron Marlow, Jaime E. Settle, James H. Fowler, „A 61-million-person experiment in social influence and political mobilization”, *Nature*, Vol. 489, 2012, pp. 295–298, <https://doi.org/10.1038/nature11421>, 19/08/2020.



E-mails can be used in friendly impact operation because the executors of this type of impact operation know e-mails of target groups.<sup>41</sup> However, impact operations in cyberspace can be performed precisely and personally on the basis of the data on cyber-personalities - abstract entities, whose physical identity may not be known, but whose patterns of behaviour can be recognized in cyber environment. In such a case, they can be directed against the target group, i.e. attempts to change their attitudes and behaviour that would be contrary to the interests of their working and living environment. Such implemented impact operations in cyberspace can be directed towards any target group of interest and can be used in hybrid warfare. In short, hybrid warfare can be defined as "a combination of military and non-military actions, which include the use of special forces, paramilitary troops, organized criminal groups, cyber attacks, economic pressure, diplomatic activities, terrorist actions, psychological operations and media disinformation".<sup>42</sup> Although impact operations in cyberspace can be directed towards any target group, the most lucrative target groups for hybrid warfare are those whose members participate in decision-making for the functioning of the most important institutions of a country. Such an institution is the military organization. Through the career advancement of the military organization members and the continuous and sustainable (non)creation of high-quality commanding and management staff, its operational and functional capabilities can be greatly affected. Impact operations in cyberspace can positively and negatively affect the development of the commanding staff of the military organization. Depending on the executor of this type of operation according to the military organization, they can be friendly or a part of hybrid warfare.

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<sup>41</sup>The executors of friendly impact operations in cyberspace are work organizations, and target groups are their employees, who need to be encouraged to make a decision on career advancement.

<sup>42</sup> Definition taken from <http://balkans.aljazeera.net/vijesti/preuzima-li-rusija-primat-u-hibridnom-ratovanju>.

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## Могућност утицаја сајбер простора на доношење одлука о каријерном напредовању

Људски ресурси заузимају важну улогу у животном циклусу сваке организације и у њеној интеракцији са спољашњим окружењем. Недостаци и предности унутрашњег окружења највише се испољавају преко оног дела људских ресурса који директно утиче на понашање организације. Правилан избор особља и управљање каријером директно утичу на организацију, њено унутрашње окружење и позицију у спољашњем окружењу. Управљање каријером запослених такође значи стварање окружења у којем појединци доносе одлуке о напредовању у каријери. Недостатак воље за ангажовање у процесу доношења одлука сматра се једном од најзначајнијих потешкоћа у доношењу одлука о каријери.

У последњих десет година савремено окружење за живот и рад је неминовно напало на сајбер простор. Најзначајнији и најутицајнији облици сајбер простора у стварном животу су интернет, друштвене мреже и мобилни телефони. Мобилни телефони омогућавају корисницима приступ интернету било где и било када, док интернет омогућава приступ друштвеним мрежама. Просечан корисник сајбер простора има приступ великој количини података и информација које га могу пореметити или успорити у доношењу одлука, па чак и у процесу одлучивања о каријери. Корисници друштвених мрежа имају прилику да се у реалном времену информишу о важним догађајима у окружењу, као и о активностима и реакцијама важних људи који могу утицати на њихово понашање. Предмет овог рада је могућност утицаја сајбер простора на доношење одлука о каријери јер је сајбер простор постао део свакодневног животног простора.

Циљ рада јесте да се, на основу резултата истраживања описаних у литератури, утврди могућност извођења пријатељских операција утицаја из сајбер простора, заснованих на психолошким теоријама, ради утицаја на доношење одлука о каријерном напредовању. У раду се потврђује да се сајбер простор може користити за утицај на доношење одлука о каријери извођењем пријатељских операција утицаја на основу психолошких теорија одлучивања и утицаја.

Пријатељске операције утицаја у сајбер простору дефинишу се као активности појединаца или организација у сајбер простору свесно усмерене на покушај промене ставова и понашања појединаца, малих или великих група људи у циљу постизања свог благостања или благостања у радном и/или животном окружењу. Теорија планираног понашања је предложена као теоријска основа за постизање пријатељске операције утицаја.

Као најприкладнији начин приближавања циљној групи операције утицаја на доношење одлука о каријери у сајбер простору, у раду је предложена електронска пошта за достављање персонализованог афирмативног материјала о напредовању у каријери у електронском облику и слање информативних и тзв. друштвених порука путем друштвених мрежа.

Указује се на значај појма сајбер личност у процесу одабира циљне групе операција утицаја у сајбер простору и његову улогу у стварању услова за извођење операција утицаја у сајбер простору за потребе хибридног ратовања.

Кључне речи: *сајбер простор, доношење одлука, каријерно напредовање, операција утицаја, хибридно ратовање*