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**THEORETICAL ASPECTS OF THE RESEARCH ON INFORMATION
WARFARE AS A NEW PHENOMENON ON A GLOBAL WORLD
ORDER SCALE**

Abstract. The modern dynamic development of mankind stimulates the rise of new methods of influence on the sociosystems. Information warfare is just one of such options. Today it has entered almost every industry on a global scale. Attention to the information policy in general and to the information warfare in particular involves mostly the role of information in the modern world order. Intensive and rapid information exchange creates new contexts for the development of the sociosystems. The delayed reaction of the authorities makes it weak in contrast to more information-active players. Therefore, Ukraine needs to understand its place on the scale of the world's sociosystem and to create its own effective strategy of the information warfare. In the article the author tries to outline the main development stages of the theoretical advances in the field of the information wars and to determine the ways of increasing the information defense potential of Ukraine. In the article, each stage of the information warfare concept development is described step by step.

Keywords: information warfare, historical background, Ukraine, Russia, communication theory

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Introduction. The information warfare has become today one of the most dangerous weapons. The use of the compromising materials, dirty laundry, false stories, and shenanigans aided by information has become a sense of life for many. Information affects the masses. Successfully manipulating the consciousness of the masses, you can achieve almost any goal – destroy your opponent, put the competitors out of the way or start a war. The identification of the public relations with the "dirty" methods of the influence on public opinion causes many questions and indignation among the marketing specialists. Though, the information-technical confrontation is an important aspect of activity in any market. Under current conditions, a rapid growth of the development rates not only of mass media and communication, but also of the computer technology, automated control systems, electronic means of information exchange, including the international worldwide information network of the Internet, gives rise to essentially new techniques and methods of the information delivery. In view of this, the study of methods and techniques used to hold PR-companies and to conduct information warfare assumes such prominence today.

The purpose of this article is to highlight the main development stages of the theoretical research in the field of the information warfare of the new and modern stage of the development of mankind.

Literature review and the problem statement. A large number of works have been devoted to the research on the information warfare

phenomenon, but we would like to highlight the achievements of such scientists as: O.V. Kurban, A.N. Chumikov, S. Black, T.V. Abankina, A.A. Kalmykova, M. Gorkin, etc. There are also many works on the manipulation of consciousness written by such scientists as G. Pocheptsov, I. Zavadsky, V. Lisichkin, L. Shelepin, I. Chornous, V. Ostroukhov. But this topic requires further consideration taking into account the development of the information technologies, the transformation of goals and methods of the information confrontation and, in particular, the prospect of Ukraine's integration into Euroatlantic structures. The problem of the affinity between the means and methods of conducting unfair competition and information wars wasn't paid sufficient attention.

Research results. One of the main components of the hybrid war is the information warfare. In order to clearly understand the wide range of components of this concept, we should note that this phenomenon can be classified as "information warfare" or as "semantic warfare". The information warfare functions in the information space and the semantic warfare – in the cognitive. In the first case, the variable is information, and in the second case it is knowledge. The semantic warfare is aimed at influencing the remote structures of the human consciousness. The information warfare is more tenuous.

It is noteworthy that the science of information warfare has gone through several stages of the development: the first one can be characterized by use of the spiritual component in order to weaken the enemy. "Historically, that was the first form of information and psychological support for military operations. The main carrier and means of information was a person at the first verbal stage and the object of influence was the human psyche, which determined the motives of the behavior" [Walker 1998; Magda 2015]. The main feature of the first stage was the use of religion as a weapon for mass impact. In ancient times the church performed almost all functions in the state.

The second stage starts with the increasing literacy, in the 15th century, when it became possible to distribute printed materials. The first printing machines were used to print books, posters, newspapers and leaflets, which become one of the main elements of propaganda and information warfare;

The third stage can be associated with the advent of photography, then radio and telephone, and finally television and cinema. Each following invention increased the influence of information on society, the effectiveness of this influence and the dependence of the masses on it [Nemeth 2002].

The fourth stage can be connected with the invention of the Internet, and the transition to the concept of the information society. This stage lasts till now. It enabled a subtle influence on the user of the personal computer [Magda 2015].

We believe that the development of study of the information warfare begins at the third stage, along with the advent of the technological mass media (MM). Information operations or so called psychological operations root at the beginning of the twentieth century. Actually during this period there is the first generation of the information warfare breaks out. This generation was marked by: neutralization or complete destruction (during a military conflict) of the infrastructure facilities; electronic warfare; receipt of the information by intercepting and decoding messages; falsification or abduction of the information resources; disinformation of the enemy through his own channels of communication; obtaining information from the open sources.

The first display of such a war was propaganda. But over time it lost its

effectiveness due to a large number of faulty and false postulates. The First World War became a starting point for the use of propaganda [Hoffman 2009; Huber 2006]. The English Lord Northcliffe, who was responsible for the propaganda in Great Britain during the First World War, distinguished the following principles of the effective propaganda: propaganda shall be truthful, but not necessarily authentic. Information shall contain both true and false statements, which hyperbolize the events; propaganda shall be comprehensive and powerful, using all available means of communication; propaganda shall be proactive; propaganda shall be aided by the patriotic forces of the enemy. The main goal is to demotivate the enemy's army and the population of the enemy's country.

Propaganda has a large number of methodological developments that can influence mass consciousness. These methods differ from the aspects of scientific communication or mass culture. Scientists J. Jowett and V. O'Donnell studied two models of propaganda, as influence technologies. These are the change model and the source legitimization model [Jovett 2012]. In the change model, the message is placed and transferred to the recipient from another source.

The legitimization model means that the message is placed in a source legitimate for the audience. It can be used at any time, like a borrowed message, which has a context useful to the propagandist [Jovett 2012].

Pocheptsov G. adds the third model of the message influence increase. He describes it as a model in which a propagandist borrows a message from another source, but focuses much more attention on it [Pocheptsov 2015].

Jowett J. and V. O'Donnell also proposed their classification of the characteristics for the propaganda analysis: the ideological foundations and a goal of propaganda; the content of propaganda; the structure of propaganda organization; the target audience of propaganda; mass influence techniques; special manipulating technologies; the audience response to propaganda; counterpropaganda; the results of propaganda and their evaluation [Jovett 2012].

Having compiled this list, the scientists noted the following: "We are talking about the objectification of the propaganda influence process, which is necessary both for the analysis and development of the effective propaganda messages" [Jovett 2012]. Although the term "propaganda" is not widely used today, the studies of this phenomenon remain relevant by acquiring new qualitative forms.

As a communicative phenomenon, propaganda has its own hidden goals and sources of messages. In this case, the standard communication scheme undergoes certain changes. Scientist J. Brown claims that propaganda is never completely truthful and open. The propagandist always hides something advantageous. The tasks which the propagandist faces during the psychological operations can be demonstrated using the example of the common communication model [Brown 1963].

At the same time, the propaganda tasks partially change the common communication model. And this situation may have the following solutions: the change of the source. By the change of the source, we mean the situation where one source is changed by another. For example, the Russian press writes an article about a negative attitude toward the Russian language for the Ukrainian newspaper and the Russian media, citing this source, writes a material about radical nationalism in Ukraine; the change of the channel. The change of the message channels from official to informal (rumors, messages); the change of

the addressee. Reception of the information due to its leak – a person “accidentally” receives information which is supposed to be confidential; the change of the message. The change model can be different. It may be the change of the focus on the coverage of the event, or the complete change of the event status. The noise changes. The role of noise can increase dramatically, in contrast to the common situation where noise only interferes. For example, some experts say that during the hostage taking, one can use the voices of the terrorists’ family members. In this case, noise becomes a part of the information tactics [Kluban, Kurban, Lyubovec 2016].

The above mentioned techniques are used to enhance the effect of the propaganda messages. The counterpropaganda has a converse task. It aims at leveling the effectiveness of propaganda messages. These techniques involve the following: jamming of the television and radio signals. In this case, the enemy's messages do not reach the target groups; accumulation of a large number of messages of a different content, which in general neutralize the effect of other messages; more important information for the society; the replacement method involves focusing on another component of the communication – not on the meaning of the message and on the sender of the signal.

The work in the alternative communicative environment is an important aspect of the psychological operations. Whether the communicative environment of the country has an alternative depends on the political system of the state. Democratic countries have such an alternative and there is none in the totalitarian states. In case of the alternative communication environment, the most popular messages will be those which stand first for some indicators. For example, a celebrity comments on an event for the first time and so on.

Pocheptsov G. describes the concept of an aggressive communicative environment, as being typical for the influence situation. The scientist explains this by the fact that the corresponding communicative variable of the available ideas is protected by someone else. Common messages can be ineffective. That is why communicators develop characteristics to support their messages. These characteristics include: focus on the identity of interests and views. The communicator's task is to achieve the maximum psychological approach to the audience. If the speaker and the audience have a good contact, this is transferred to the audience; the use of an authoritative source. It can be a person or an authoritative channel. As an example, the messages from such newspapers as The New York Times or The Washington Post can be cited; the opinion of the majority. The information message is communicated as the opinion of the majority, while the opinion of the enemy is presented as a minority opinion; the innovation of the solution. Presenting the idea as innovative and leveling the opponent's ideas as an outdated approach to solving the problem; the repositioning of the disputes to the negative meaning regarding the enemy and highlighting of the enemy's negative qualities.

The Soviet approach to conducting military operations had its own dualism. On the one hand, it was in the form of the direct military operations, and on the other hand, its military-political component was aimed at destroying the enemy's information, political, economic and military environment. The main goal was to build a solid background for intervention. They used propaganda, agitation, disinformation of the enemy, sponsored various organizations which mostly had leftist views. The climax of the information confrontation is considered to be the Cold War, which ended in the collapse of the Soviet Union. Due to the Cold War there was held a deeper study of the methods of the

information confrontation.

Regarding the influence on public opinion, researchers identify the existence of three spaces where the society can be influenced: physical, information and virtual. If earlier states tried to seize the physical space, now the situation has dramatically changed. The information and virtual space became much more important. [Pocheptsov 2015]. The notions of information warfare, information warfare and psychological operation have emerged. By the way, the information weapons loom large pushing back the direct aggression.

According to W. Schwartz, the main goal of the state is the creation of an effective information policy. He points out the following levels among the possible goals of the information weapons: personal information warfare, which includes various types of manipulation of the personal information; corporate information warfare, which involves attacks of the company's information systems; global information warfare, where information is taken as a target for hunting in other countries [Schwartz 1997; Lind, Nightengale, Keith 1989].

It should be noted that the classification is given by the levels of influence on the object of information attack, whether this is a person or the whole state. The types of information presentation also play a great role: form changes and paralyzation. In the first case a so-called maneuvering is used to mislead the enemy, while in the second case they try to paralyze the enemy's control center. The second option is possible only due to the interfering the enemy's information system [Vickers 1997]. Pocheptsov G. states that the entry to the decision-making system will be the main goal of the future information wars [Pocheptsov 2015].

The current military doctrine is no longer aimed at aggressive military actions. It is a war of knowledge, since the main goal is the substitution of knowledge which is the decision-making basis. The development of a negative information background is the main threat for the countries subject to aggression. During the Cold War in the US there arose even a special profession – a spin doctor. The main task of the spin doctor is to correct the situation in the communication media environment. In fact, the spin doctor adjusts the situation to make it favorable for the client.

The scientist D. Watts classifies the spin-doctor tactics into five types: fore-spin – preparations before the event; after-spin – embellishment and exaggeration of the events; tornado-spin – distraction by another event or redirection of attention to something that is not really interesting; crisis control – management of an event that may get out of control; loss reduction – management of an event that is already out of control in order to minimize the consequences [Watts 1997].

The asymmetric actions in response to information aggression are more likely to succeed. G. Pocheptsov writes on this subject: "asymmetry is the only variant to win in case of a strong opponent. This becomes the norm for a psychological warfare, because in this case we are talking about a communicative message as a "lone wolf" which speaks against the propagandistic army of the enemy" [Pocheptsov 2015].

Demonstrations and manifestations are also the variants of the asymmetric response to the information aggression. As a rule, they are used for political pressure on the authorities. As an example, we can provide a hunger strike. Ukrainian politicians often go on it. The asymmetric response may be a strange behavior of a politician during a public event, or a journalist's comment on a story about the politician.

In the second half of the 20th century the scientists began to study the communicative component in the information operations more thoroughly. Since the initial researches did not bring the desired effect and because the focus of the influence on the internal audience changed, the advanced countries of that time (the USA, the USSR) began to act on the external audience.

In this context, we can draw attention to two components of the information action: the introduction and replacement of the characteristics. The introduction of the characteristics is a simplified process. It involves a conditional free field in the mass consciousness that needs to be filled with information. The replacement of the characteristics is a complex process, since the communicative task here is to displace certain information from the communicative field and replace it with a one useful for the propagandist [Pocheptsov 2015].

The types of the characteristics play an important role. They can be classified in three directions: a key message; the target audience; a communication channel. At the same time, according to G. Pocheptsov, it is important to put in the list such a component as "a key communicator" or "a leader of opinions" [Pocheptsov 2015]. The most attention in the planning of an information operation shall be paid to the choice of a communication channel, through which the main communicative messages will be transmitted. Note that even a crowd or a certain part of it can serve as an effective communication channel.

The scientists paid much attention to the methodical aspects of the restructuring of the communicative space. The essence of this method is that during information operations, first of all, the existing information space is used. The experts build their strategy of influence on the basis of the existing communication flows. These flows can be corrected by changing the set of messages or changing the organizational aspect of the information space. The best example of the message change can be the content analysis, which we see if compare the printed press of the Soviet times during the perestroika and during the times of independence. Another example is when one negative message is sent together with others. Thus, the negative reaction is minimized.

Coming to the contemporary stage of the development of the information wars, we shall note that they refer to the second generation of the information conflicts. This generation can be characterized by: the creation of a soullessness system, immorality and a nihilistic attitude to the culture and traditions of the enemy; the manipulation of the population aimed at social destruction; the political destabilization, which can be manifested in conflicts between parties and movements, presented in the form of repression and civil wars; the stimulation of a destructive communicative process in the state bodies of the enemy; the disinformation of the population concerning the work of the state authorities and government (dissemination of information on total corruption and treachery); spoiling the international image of the state and its population in the eyes of the world community; the impeding progress in political, economic, defense and energy spheres. The main means of influence at this stage are on-line technologies. The scientist A. Kurban, while studying the phenomenon of the information online warfare (IOW), states the following: "IOW involves three key technological aspects: high-tech, high-hume and high-sensor. Each of these aspects has its own technologies, which form the main directions of the research and practical work" [Kluban, Kurban, Lyubovec 2016] (Fig. 1).

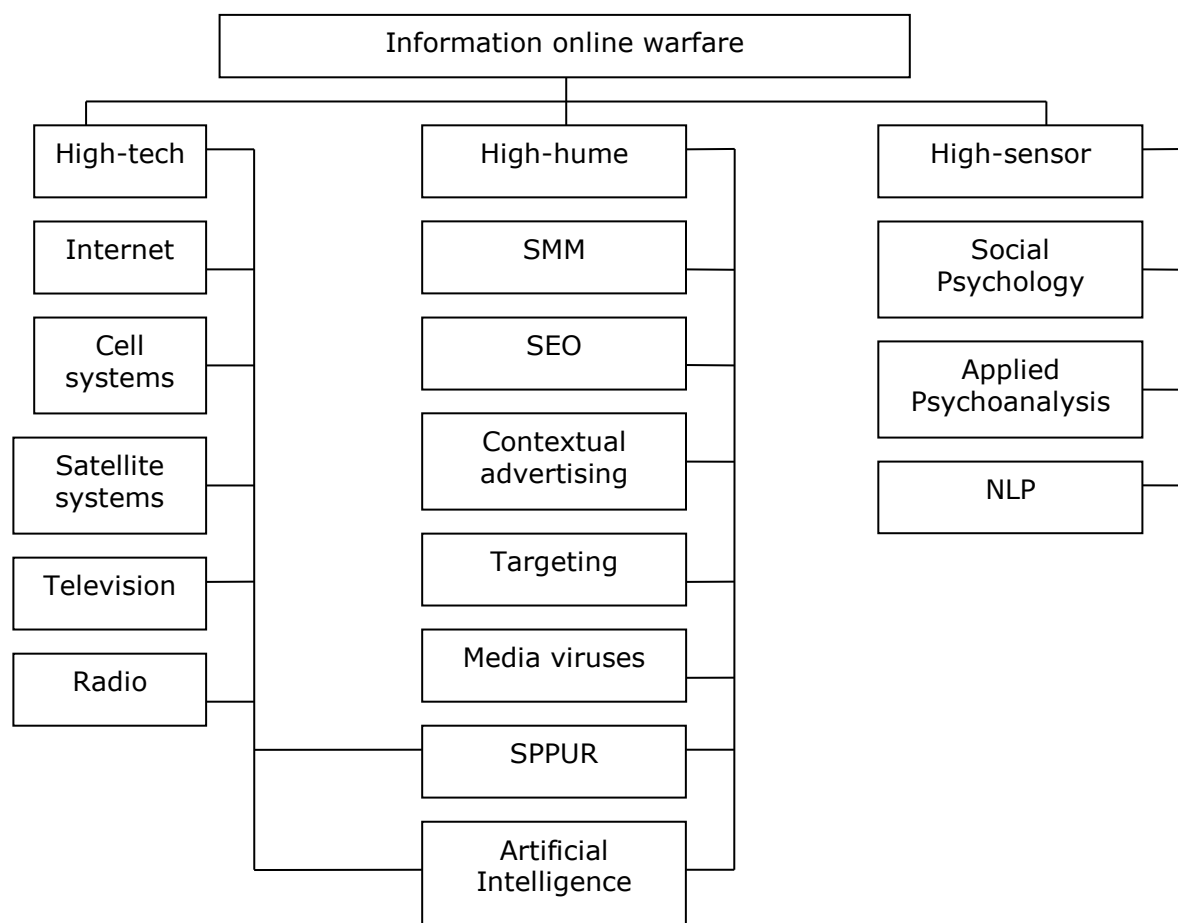


Figure 1 – Key technological aspects of informational warfare

Source: [Kluban, Kurban, Lyubovec 2016]

The scientist gives the following definition for Hi-tech in IOW: this is a modern form of communication, which uses the digital technologies, and includes all types of mass media including satellite communication. The communication is based on the technological devices of everyday use: computers, tablet PCs, telephones and other communication devices [Kluban, Kurban, Lyubovec 2016].

Television (TV) is a classic tool of high-tech communication. TV is a combination of the image and sound broadcasting technology. It functions by coding the signal and transmitting it either in air or digital formats.

Radio is the first technological transmission facility. It operates on two stations (AM, FM). There is still a digital radio broadcasting option that works with the help of electromagnetic waves.

The Internet is the most global source of information nowadays. The lion's share of all information impacts is carried out through the Internet. The Internet is a system of networks, integrated into a single global system, through which the data is transferred. The "New Media", which exist on the basis of the Internet, center around the influence on people's minds. The Internet today partially replaces all other mass media due to its multi-functionality. It enables a person to listen to radio, watch television, conduct two-way communication, etc.

In this context O. Kurban points out that "the Internet television is defined as an on-line TV – a system based on two-way digital transmission of a television signal through the Internet connection using the broadband connection" [Jovett 2012]. Step by step, this type of television replaces the classical TV. It is already a mainstream in many highly developed countries.

The Internet has also become a platform for the Internet radio. The Internet radio works by broadcasting audio data via the Internet. New media use various programs for two-way communication. They also work through the Internet and are able to transmit audio, visual and combined audiovisual signals as well as to transmit data in the text format. Such "new media technologies" involve: Instagram, Viber, V Kontakte, Facebook, WhatsApp, Skype, Telegram, Snapchat and ICQ [Kluban, Kurban, Lyubovec 2016].

Mobile communication is another way to transfer data. Its main feature is the ability to separate the coverage areas into cells, which are defined as the coverage areas of the individual base stations. Ideally, the radius of one station describes a circle. When they're all united, they resemble combs.

Satellite communication is "one of the types of the space radio communication, based on the use of artificial satellites on which the transponders are installed. This connection is performed between the earth stations, which can be either stationary or mobile". Putting the transponder to a high altitude, it, by definition, serves as an extension to the radio link communication.

High-hume technologies are the technologies of creation, storage, distribution and retrieval of information. They involve the contextual advertising, SMM, SEO, targeting, micro-targeting, media viruses and so on.

Contextual advertising is a way of the data submission which is placed on the Internet as a banner or a text message.

SEO are the activities that aimed at optimizing the site on the network in order to convey the information needed for the communicator. SEO optimization is reached by increasing the network traffic.

SMM are activities aimed at increasing the traffic and attention to a particular brand or product through various social platforms. At the same time SMM uses a wide range of means to promote its own brand or information advantageous for the communicator through social media.

Media viruses. A. Kurban believes that these are "the information carriers (events, scandals, rumors, activities of the organizations and individuals), which carry implicitly the veiled ideas and messages" [Kluban, Kurban, Lyubovec 2016]. Turning to another definition, we can say that this is information that is not useful, but attracts the attention of the audience [Watts 1997]. Combining these two definitions, let's say that this is any information placed on the Internet in order to impose its position or misinformation.

Targeting is an advertising tool, which enables to select from a whole target audience only a certain part of it that corresponds to the criteria set by the communicator and shows exactly his advertising message [Kluban, Kurban, Lyubovec 2016]. The derivative form of the targeting is a micro-targeting. Unlike the first one, the micro-targeting uses information about the selector, synthesizing it with the consumer information. This helps to summarize the information about each individual person and to determine the main means and methods of influence and the content of messages.

High-sensor is the high-quality psycho technologies that allow for influencing and partially managing the social-communication processes on a scale of social groups and individuals. Such technologies include psychoanalysis, social psychology, neuro-linguistic programming (NLP) [Kluban, Kurban, Lyubovec 2016].

Psychoanalysis is a branch of psychology. It allows us to use the ideas and concepts oriented towards a deep understanding of the aspects of human nature, culture and society. It is mostly used in studies on history, literature,

religion and mythology.

Social psychology is "a division, a branch of psychology, which deals with the study of the principles of human activity in conditions of the interaction within social groups. The main problems of social psychology are the following: the principles of people's communication and interaction, the activities of large (nation, class) and small social groups, the socialization of the individual and the development of social attitudes". Social psychology is often used to predict the behavior of social groups.

Neuro-linguistic programming is a direction in the psychotherapy and practical psychology, studying the principles of people's subjective experience through the discovery of mechanisms and ways of the behavior modeling and transfer of identified models to other people [Kluban&Kurban&Lyubovec:2016]. NLP is an important element of the modern information warfare. The direct task of NLP specialists is to pick up, and provide the information to the masses so that it has influence on them.

Kurban O. underlines that different components may coexist in the structure of the presented model. For example, the system of managerial decision-making (SPPUR) and the system of artificial intelligence have the features of both high-tech and high-hume systems [Kluban&Kurban&Lyubovec:2016].

Referring to the methods of the network confrontation, we can say that modern information wars are based on manipulation. This is a set of psychological tools and techniques used to implicitly affect an individual, a group or a whole mass of people and aimed at infusion of one's own beliefs, values and guidelines in order to gain one's own benefit. Manipulation of the human psyche is partially the control over a person [Final report 2010].

The main channels of communication are media, which act as retransmitters of suggestive messages coming from the communicant to the recipient of the message. The media can be viewed as channels for the transmission, storage and presentation of information. The scientist O. Kurban talks about some differences in the notions of media and mass media. According to him, the mass media can be defined as technologies and means of retransmission of information, which comes from a source and is sent to a mass audience. The only restriction is the information field within which these mass media operate. The scientist proposes the following classification of the mass media: printed press (newspapers, magazines, etc.); audiovisual (television, radio, the Internet); information services (press relation services, hotlines); advertising media (outdoor advertising, ambient advertising); means of mass culture (cinema, theaters, museums, exhibitions) [Jovett:2012]. The mass media can be also classified by the geographical principle: global (international); national (within the country); regional (within a certain region); local (usually their influence is very insignificant, within the city, district or village).

Conclusion. Information warfare affects all the spheres of public life but most of all this influence extends to the economic, political, financial, military and diplomatic spheres. Depending on the type of the warfare (informational, hybrid, psychological or cyberwar), it can have the following objectives: eliminating the possibility of a military conflict; influence on the moral and psychological state of the enemy's military forces; formation of the enemy's image in the minds of its citizens or citizens of another country; creation of a favorable information position; suppression of patriotism and national sentiment; information destruction of the society regarding the socially important topics for the

population; exaggeration of one's own strength (military, geopolitical, economic).

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