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Political Technologies
of Information War:
Domestic and World Aspects

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The scientific publication is devoted to the theoretical and applied aspects of information warfare technologies, the origins and peculiarities of the hybrid dimension of the Russian-Ukrainian war, and ways to counter these challenges.
For researchers, students and anyone interested in politics and political science.

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Політичні технології інформаційної війни: внутрішній та світовий аспекти

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Наукове видання присвячене теоретичним і прикладним аспектам технологій інформаційних війн, витокам та особливостям гібридного виміру російсько-української війни, а також шляхам протидії цим викликам.

Для науковців-дослідників, студентів і всіх, хто цікавиться політикою та політологією.

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SOCIAL NETWORKS AS AN INSTRUMENT OF INFORMATION WARFARE

Abstract.
The paper focuses on the study of the role of social networks as an instrument of information warfare. The research relevance lies in the growing role of social media in modern information wars, which made it possible to analyze the possibilities of using social media for propaganda purposes on the example of the russian-Ukrainian war. The aim is to study social media as means of conducting information warfare, to identify key technologies and tools, and to assess the effectiveness of their use by different parties to the war. Methods of analysis, synthesis, comparison for studying the phenomenon of social networks and their role in information wars are applied in the paper.

The authors analyze the dynamics of social networks and their transformation into a popular source of news for millions of users. It is determined that Facebook, YouTube, Instagram, Telegram, and TikTok are the most influential platforms both in the world and in Ukraine. Statistical data on the audience of social networks are analyzed, using media materials and expert opinions. The possibilities of social networks for spreading propaganda, disinformation and manipulation of mass consciousness are investigated. The authors analyze russia's use of social media tools (bots, trolls, fakes) in its hybrid war against Ukraine.

The research reveals the transformation of social networks into a powerful tool for influencing public opinion. The key technologies of information warfare in social networks are identified: the spread of fakes, the work of bots and trolls, and propaganda narratives. The information policy of Ukraine in social networks, aimed at countering russian information attacks, is considered. The key messages and channels for disseminating truthful information are identified.

It is concluded that social networks are effectively used in the information war, despite certain challenges by both sides of the conflict. Recommendations for improving the strategy of Ukraine's information policy in social networks are formulated, taking into account the experience gained.

Keywords: communication, social networks, social media, information warfare, propaganda, astroturfing, information and psychological operations, troll factories, bot farms.

Problem formulation in general and its connection with important scientific or practical tasks. Informatization and rapid penetration of the latest technologies into all life spheres is a distinctive feature of the modern world. Information technologies radically transform the economy, politics, culture, and social interaction (Qiang, Yan et al., 2013). With the help of IT, a global information space is formed, where data is distributed, consumed and exchanged at an exponentially increasing speed. Information and access to it are becoming a key resource and source of power in the 21st century. In these conditions, the effective use of information technologies and the protection of one's own information space acquire strategic importance for the national security and competitiveness of states (Shmalenko et al., 2022). Countries are actively developing information technologies and cyber armies, which are becoming an integral part of modern international relations and geopolitical rivalry. Previously, citizens received news mainly from traditional mass media — newspapers, television and radio. These channels tended to have some level of objectivity and professional standards. Traditional mass media such as newspapers, television and radio have historically played a leading role in shaping the information space and society agenda. They were able to determine which events and topics are the most resonant, and therefore to influence public opinion and political discourse. However, in recent years, the situation has changed dramatically thanks to the rapid development of social networks and online media. They have become no less influential platforms for spreading information and assessing the importance of events (Shmalenko et al., 2021). Moreover, sometimes it is social networks that set the tone and «throw» topics to traditional media. So today we can state the emergence of a fundamentally new information and media landscape, where traditional and new media closely interact, determining the news hierarchy and the priorities of public discourse. Their combined influence on public opinion and decision-making is constantly growing.

Social networks have radically transformed public discourse and led to rapid changes in the media space and communications (Hromko, 2018). The rapid growth of digital platforms and Internet technologies has made it possible for every citizen to express their own opinion, to join the public debate as equals. The development of social networks and the Internet spread using forms a public discourse in which different views collide and the need to express one's opinion appears. The result analysis of annual surveys on the population's attitude to the mass media and the consumption of various types of media make it possible to find out the trends in the distribution of media and to

investigate the level of trust in them. Global trends show that social networks are increasingly becoming the most widespread and popular source of information for the vast majority of people. As of October 2023, the number of people using social media exceeded 4.95 billion worldwide, with the average user visiting 6.7 social media platforms every month (Brian Dean, 2023). Today, the most popular social networks are Facebook, YouTube, Instagram, TikTok, and Telegram (Digital 2024: Global Overview Report).

Figure 1. Most popular social networks worldwide as of January 2024, ranked by number of monthly active users

Platform	Value
FACEBOOK	3,049
YOUTUBE	2,491
INSTAGRAM	2
TIKTOK	1,562
TELEGRAM	0,8

(in millions)
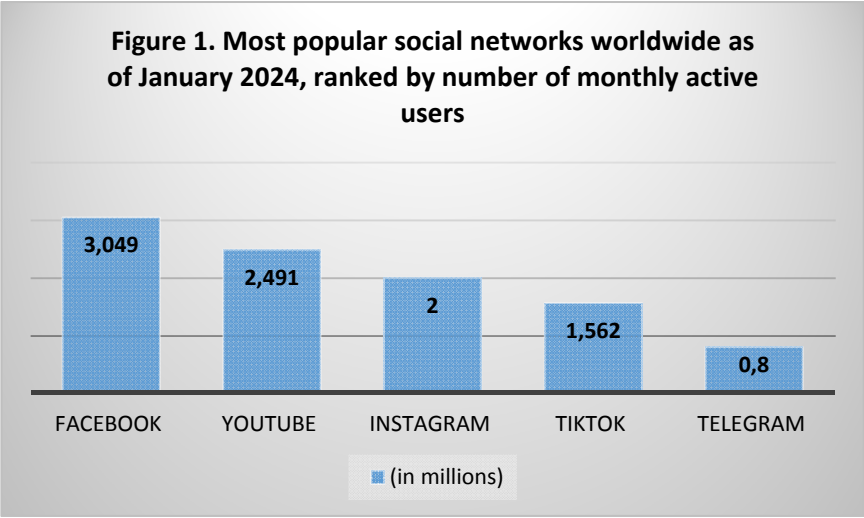
Figure 1. Compiled by the author based on sources 18

The development of social networks has radically transformed modern society and methods of information dissemination. From simple platforms for communication, they have turned into powerful mass media that shape public opinion and the mood of millions of people. This trend has become global. Yes, in the USA already a third of the population gets their news from social networks. Sites such as Facebook or YouTube have become the main source of information about events in the world and in their country for many citizens (Pew Research Center, 2021).

Similar trends can be traced in Ukraine. Ukraine does not lag behind global trends, but has its own regional characteristics. The share of Ukrainians who use social networks to search for news is growing rapidly. This became especially noticeable after the beginning of russian aggression in 2014. Given the information war and propaganda

by the russian Federation, for Ukrainians social networks often became the only available source of true information. The evolution of social networks from entertainment to news media is a reality today both in the West and in Ukraine. And this trend will gain momentum, radically changing the media landscape.

Figure 2. % of U.S. adults who regularly get news on …

Facebook: 66 (Use site), 32 (Regularly get news on site)
YouTube: 77 (Use site), 22 (Regularly get news on site)
Twitter: 23 (Use site), 13 (Regularly get news on site)
Instagram: 41 (Use site), 11 (Regularly get news on site)
TikTok: 21 (Use site), 6 (Regularly get news on site)

■ Use site   ■ Regularly get news on site
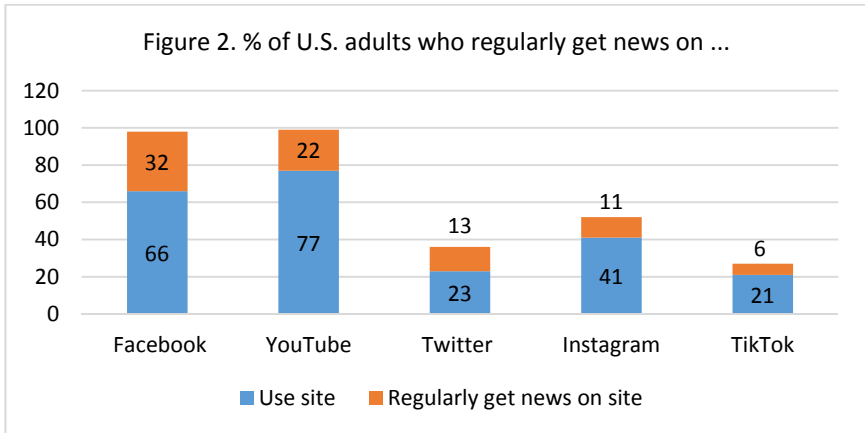
Figure 2. Compiled by the author based on sources 27

Annual sociological surveys demonstrate that social networks are increasingly becoming the main source of news for the vast majority of both ordinary Ukrainians and representatives of political elites, business, and expert circles. Therefore, communications are moving to the plane of ideologies', opinions', worldview clashes. At the beginning of 2022, approximately 82% of surveyed Ukrainians used the Internet at least once a week, of which 78% used it every day or almost every day (KIIS, 2022). 76.6% of Ukrainians received news from social networks (OPORA, 2022). In 2021, the most popular resources for obtaining information in Ukrainian society were: Facebook (43%), YouTube (25%) and Telegram (20%) (USAID, 2021). It is interesting to note that the fourth place both in the world and in Ukraine is occupied by Instagram (12%, 17%), Twitter (11%) is in the fifth place in the world, Viber (13%) in Ukraine (Social network usage for news access worldwide 2019-2023. Statista).

In 2023, the second year of a full-scale war, the trend of switching to messengers and social networks as sources of information that provide the promptest information on social and political events has persisted. In 2023, social networks were the most popular source of

information: 77.9% of Ukrainians used social networks to get news, 62.5% preferred television, 67.7% were Internet users (not including social networks), 33.7% of citizens of Ukraine listened to the radio, and 17.8% of respondents read print media (OPORA, 2023). The results of the Gradus Research company show that 65% of respondents learn about events in messengers, and 61% — in social networks. Whereas in August 2020, the share of messengers was only 41% (Gradus Research, 2023).

Figure 3. Media consumption habits of Ukrainians (2023)

Category	%
SOCIAL MEDIA	77,9
TV	62,5
INTERNET (NOT INCLUDING SOCIAL MEDIA)	67,7
RADIO	33,7
PRINT MASS MEDIA	17,8
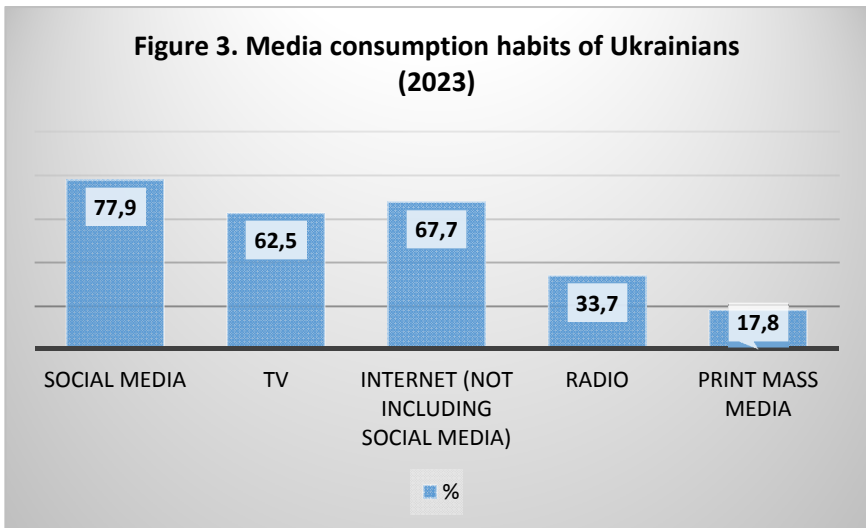
Figure 3. Compiled by the author based on sources 20

Social networks have turned into an important tool for shaping public discourse and influencing public opinion. Unlike traditional mass media, they allow a much wider range of people to join the hot topic's discussion, express their own position or ideas. Social networks allow each user to be not only a consumer, but also an information content creator. Anyone can instantly share their testimony of events, express their own opinion or assessment. This definitely promotes pluralism of viewpoints. However, social networks also create serious challenges. Social networks have gradually transformed from a tool of freedom of speech and free exchange of ideas into a tool of total disinformation and propaganda. This is especially noticeable on the example of russia's hybrid information war against Ukraine, where the kremlin's fakes and lies have become a real threat to national security.

Information wars are a relatively new phenomenon that has gained particular importance in the 21st century with the development of global media and the Internet. The modern information war uses both traditional means of influence (print media, radio) and the latest technologies of television, the Internet, social networks, which has significantly expanded the possibilities for propaganda and manipulation of mass consciousness (Shmalenko, 2022). Missile volleys of fake news, attacks by Internet trolls, use of bots — all these are elements of the kremlin's powerful information and psychological operations against Ukraine in social networks, with the aim of sowing chaos, panic, distrust of the authorities, and splitting society. Despite these threats, the convenience and speed of obtaining information on social networks makes them an increasingly popular source of news among the audience. The media space future largely depends on whether social networks can effectively fight misinformation while maintaining their advantages.

The Internet space and social networks have their own specifics, so classic theories of propaganda need to be rethought, which necessitates comprehensive studies of the laws and mechanisms of modern information warfare using social networks to develop effective methods of countermeasures and protection.

Goals and objectives. The research aim is to analyse the role of social networks as a tool for conducting information warfare using the example of a full-scale russian invasion of Ukraine in 2022; to analyse the development dynamics of social networks in the world and in Ukraine, to determine the most popular platforms; to explore the possibilities of using social networks to spread certain informational narratives, propaganda and fakes; to determine which social media tools were used during the information confrontation between russia and Ukraine; to analyse the information policy of Ukraine in social networks aimed at combating russian propaganda and fakes; to evaluate the effectiveness of using social networks as a tool for spreading true information and combating disinformation during war; to formulate recommendations for improving Ukraine's information war strategy in social networks, taking into account the experience of 2022.

The proposed set of tasks will make it possible to comprehensively investigate the phenomenon of social networks as an effective tool of modern information warfare.

Analysis of recent research and publications. The influence of social networks on political processes is the subject of active scientific discussions at the current stage, which is connected with the growing role of the Internet and social networks in social and political life. Many

researchers are studying the potential of social networks for propaganda and information warfare. Social networks as a new channel for information warfare are studied by B. Kovalevych. A.Onkovych analyses the use of Facebook for information and psychological operations, in particular by russia in the war against Ukraine, focusing on the methods and technologies used in these operations. In particular, the technologies of influence on public opinion, dissemination of disinformation, manipulation of political attitudes of citizens are analysed. Among the well-known theorists who laid the foundations for the study of information wars and propaganda, such scientists as Lasswell, Lippman, McLuhan, Noam Chomsky can be singled out. Their ideas are relevant for understanding the modern information struggle in social networks. A. Pravdiuk considers *Astroturfing* in social networks as a threat to democracy, analysing how artificial creation of public opinion can manipulate public consciousness. N.Dyachenko and A.Voynalovych study the use of trolling in social networks as a tool of information warfare. Adéla Klečková studies the role of «cyber wolves» in the information war against russia, describing their tasks, methods of work and effectiveness.

Other researchers, such as Brian Dean, Clark J., Donath J.S., Pariser E., Romano A., SingerP.W., Snowden Collette, Shmalenko I., Van Slyke analyze the wider use of social media in information warfare — spreading propaganda, filtering information, polarizing society. They explore various aspects of this problem. These and other works form the scientific basis for analyzing the role of social networks in information wars, outlining key tools, methods and threats of their use, which allows us to better understand this phenomenon and look for ways to counter it. Further comprehensive research will make it possible to develop an effective strategy for counteracting negative informational influences and protecting the national information space.

Outlining previously unresolved parts of the general issue that the article is dedicated to. The dynamics of social media development in Ukraine and the world has been extremely rapid in recent years. However, there is a lack of comprehensive research on the most effective methods of using these platforms in information confrontation. In particular, insufficient attention has been paid to the study of the very technologies and social media tools that russia uses in its propaganda activities against Ukraine. The mechanisms of spreading fake news, creating bot farms, organizing information attacks, etc. require additional analysis. The best ways for Ukraine to counter russian disinformation on social media are also not sufficiently studied. It is necessary to analyse the information policy of our country during

the war, to identify its strengths and weaknesses. Finally, the effectiveness of various formats of Ukrainian content to counteract false russian narratives needs to be thoroughly evaluated. It is also necessary to develop a system of criteria for such an assessment. Consequently, there are a number of unresolved issues of social media research in the context of the current russian-Ukrainian war that should be addressed.

Research methods. The methodological basis of the research is general scientific and special methods of scientific analysis. The analysis of statistical data on the dynamics of social media audiences in Ukraine and the world over the past five years made it possible to identify the most popular platforms. The use of content analysis of informational materials in the Ukrainian and russian segments of social networks for the presence of propaganda narratives, fakes, and manipulative techniques; analysis of the functionality of social networks such as bots, communities, etc. in order to identify key tools of information warfare; content analysis of official accounts of authorities and officials of Ukraine in social networks to evaluate the implementation of information policy. Comparative analysis of the effectiveness of various content formats (text, graphics, video, live broadcasts, etc.) in countering disinformation based on audience feedback.

Results and discussion. Social media provide Ukrainian politicians with an effective tool for mobilizing and coordinating citizens around common goals and objectives. Ukrainian politicians have actively utilized these opportunities in their activities. Platforms such as Facebook, Twitter, Telegram, or YouTube have become channels for them to communicate with citizens, mobilize supporters, and promote initiatives. A striking example is the creation of the Maidan Self-Defense community on Facebook during the Revolution of Dignity. This resource united thousands of concerned Ukrainians from all over the country who opposed the arbitrariness of the authorities and defended the right of citizens to protest. With the outbreak of russian aggression in 2014, Maidan Self-Defense transformed into a powerful volunteer platform that coordinated assistance to the Ukrainian military in Donbas. In particular, this community raised funds, food, equipment, and warm clothes for the defenders on the front line. Ukrainian politicians are actively using the potential of social media to consolidate society around key initiatives and tasks.

February 24, 2022 marked the beginning of a new tragic era in the history of Ukraine, when russia launched unprovoked full-scale military aggression. Although there had been localized conflicts in

eastern Ukraine before, it was the invasion of russian regular troops that marked the transition to open hostilities throughout the territory. This war has become the first armed conflict of this magnitude in history to take place in the era of the Internet and social media. Ukrainians are actively documenting every minute of the confrontation, sharing testimonies of the horrors of war, and calling for help and support. Unlike previous conflicts in other parts of the world, the population of Ukraine has much wider access to the Internet, and thus the ability to quickly inform the whole world. Social networks have become the main source of news and the centre of the information war between Ukraine and russia. Through Twitter, Facebook, and Instagram, Ukrainians' messages are instantly spread around the world, attracting the attention of millions of people. On the other hand, russia spreads fake news and propaganda, trying to justify its criminal actions and change the attitude of the international community. The war has dramatically changed the priorities of Ukrainian society. Now everyone is primarily concerned with survival, security, and resistance to the enemy. The Ukrainian government is actively using both traditional media and social media to inform citizens, coordinate actions, and unite the nation in the face of danger. Online communications also make it possible to effectively attract the support of the world community, to call for tough sanctions against the russian federation and the provision of military aid to Ukraine. And although the future of our country is currently shrouded in a fog of uncertainty, Ukrainians continue to fight both at the front and in the information space.

In the face of russian aggression, Ukrainian leaders used social media to attract international support, coordinate volunteerism, and fight enemy propaganda. With the help of social media, politicians inform citizens in a timely manner, explain their positions on key issues, and engage them in various initiatives. Social media has dramatically transformed the interaction between politicians and citizens, providing the former with powerful tools to influence public opinion and decision-making.

Social media has become a powerful tool in the hands of the Ukrainian authorities in the context of a full-scale war with the russian aggressor. Politicians are actively using Twitter, Facebook, and Instagram not only to communicate with citizens and inform the international community, but also to effectively counter the kremlin's hybrid threats.

Since the beginning of the russian invasion, Ukrainian officials have become real influencers on social media. They demonstrate examples of indomitable spirit and patriotism for a nation under fire from the

occupier. And their bright, emotional posts with appeals to partners receive millions of likes and reposts around the world.

When it was discovered that kremlin bots and trolls were being activated to spread lies and propaganda on Twitter, the Ukrainian authorities reacted immediately. Thanks to the support of 2 million followers, official accounts began to effectively combat russian fakes, exposing their essence to a foreign audience (The official Twitter account of Ukraine). However, in the information war it is no less important to keep the blow on the enemy's territory. For Ukraine, social networks have become both a platform for global communication and a powerful weapon in the fight for truth and justice in this war. This helps Ukraine attract the attention of the international community and ensure support in its efforts to preserve territorial integrity and independence.

The kremlin's information war against Ukraine began long before the full-scale invasion in 2022. Already in 2014, after the annexation of Crimea and the occupation of part of Donbas, russia deployed a powerful propaganda machine both in the middle of the russian federation and on the international arena. According to the commander-in-chief of the NATO forces in Europe, General Philip Breedlove, moscow's information attack has become unprecedented in scale and intensity. It was then that social media manipulation was involved, which today has turned into a full-scale cyberwar. After the terrorist attack against MH17, Twitter exploded with conflicting messages and conspiracy theories generated by russian bots and trolls (Snowden, 2022). This misinformed the international community and made it difficult to find those responsible for the plane downing. Unfortunately, the kremlin's lies still poison the information space, making it impossible to establish justice. So, 2014 was the year of the birth of the newest russian propaganda on Twitter and other social networks. And Ukraine still resists this machine of lies and violence against the consciousness of millions.

One of the most active users of social networks among Ukrainian politicians is the President of Ukraine Volodymyr Zelenskyi. During the war, V. Zelensky turned into a real influencer in the online space. His pages on Facebook and Instagram, with audiences of millions, are regularly updated with emotional appeals, photos and videos from the front or the rear. The President's YouTube channel has become a unique online military tribune. It is here that Zelensky reports daily to the nation and the world about the state of affairs, shares tactical plans and strategic perspectives. These broadcasts collect millions of views and approving comments. Volodymyr Zelenskyi actively communicates

with world leaders on Twitter, urging them to support Ukraine. Since the beginning of the full-scale invasion, on the initiative of the President of Ukraine Volodymyr Zelenskyi, the official fundraising platform of Ukraine — UNITED24 — has been created. This charity hub is represented in all popular social networks and has a significant number of followers: Facebook (304 000), Instagram (171 000), YouTube (945 000), Twitter (60 000), Telegram (14 000) (UNITED24). The UNITED24 pages on Facebook, Instagram, YouTube, Twitter, and Telegram inform the international community every day about the needs of the Ukrainian army and the civilian population, and call for support for specific fundraising efforts to help our country. Thanks to effective communications in the online space and the support of international partners, UNITED24 has turned into a powerful tool for consolidating global aid to Ukraine in its fight against the enemy.

When russia unleashed a full-scale war against Ukraine on February 24, the Ministry of Digital Transformation became the epicentre of the information and psychological struggle against the kremlin in cyberspace. The head of the ministry, Mykhailo Fedorov, realizing the threat posed by its powerful propaganda machine, launched a large-scale operation to dismantle putin's false narratives and fakes on social media. From his official Telegram channel, Fedorov addressed the top management of Facebook, Twitter, and YouTube with demands to limit russian propaganda and close down kremlin media outlets. His open letters caused a wide resonance and forced the global IT giants to react (Telegram channel, Mykhailo Fedorov). Mykhailo Fedorov's Twitter conversation with American billionaire Elon Musk about providing Ukraine with access to satellite Internet via Starlink became public (Twitter, Mykhailo Fedorov).

Social networks have turned into the newest «digital battlefield» between Ukraine and the russian aggressor. And in this war for people's minds and hearts, Ukrainian politicians demonstrate great skill and intelligence, skilfully using online tools. First of all, the authorities' and officials' official accounts on Twitter, Facebook, or Telegram serve as a reliable source of true information about events at the front and in the rear (Shmalenko, 2023b). This makes it possible to oppose the false narratives of russian propaganda in social networks and to inform both Ukrainians and the international community.

In addition, online resources are actively used to mobilize public support for the Armed Forces and the volunteer movement. Politicians' calls for fundraising, participation in pro-Ukrainian actions or spreading patriotic slogans instantly spread virally on social networks, uniting millions around a common aim.

Social networks have become a powerful tool for Ukrainian politicians in wartime conditions. Understanding the potential and opportunities, Ukrainian politicians actively use social networks to wage an informational struggle against russia and its propaganda tools. Pages in social networks of Ukrainian politicians and high-ranking officials have become official channels for spreading true information about the situation in Eastern Ukraine and about russian aggression in general. Social networks contribute to the involvement of the public in actions supporting the military and other measures aimed at strengthening the country's defence capabilities.

Effective use of social networks helps to counter disinformation and propaganda, knowing the entire arsenal of «dirty» technologies used by russia in the information war against Ukraine.

Russian propaganda in social networks is an extremely dangerous phenomenon, because it is aimed at manipulating mass consciousness. Unfortunately, in its hybrid war against Ukraine, the kremlin is resorting to a whole arsenal of dirty technologies in the online space. First, this is astroturfing — creating the impression of mass support for a certain idea by making comments on behalf of non-existent persons. Secondly, the active use of so-called «troll factories» and bot farms — hired workers or programs that spread propaganda content around the clock.

Another technique is attempts to discredit Ukrainian politicians through Cancel Culture — imposing a negative image of a person in the eyes of the public.

And, of course, russia actively conducts information and psychological operations (IPSO) with the aim of demoralizing Ukrainians and sowing panic.

So, let's take a closer look at the main types of dirty technologies of russian propaganda in social networks.

Modern political technologists actively use astroturfing to create the impression of mass public support for a certain person or idea, resorting to the creation of artificial groups in social networks, hiring bots, distributing comments to order, etc. Astroturfing is a manipulative technology that disguises as public opinion what is actually the product of a targeted PR campaign or political propaganda. A democratic society should oppose such unethical practices.

Astroturfing (from the English «*astro turf*» — «artificial grass») is a technology for simulating public support for a certain person, idea or product, artificially creating the mass support impression for a certain idea or narrative with the help of comments on behalf of non-existent users. The name comes from AstroTurf, a brand of synthetic turf that

mimics real grass. The term originated in the US political lexicon in the 1970s thanks to Senator Lloyd Bentsen, who described as «artificial grass» the pro-government Republican campaigns initiated by the George W. Bush team (Pravdiuk, 2023). Astroturfing is a technology for creating an artificial illusion of mass public support for certain ideas, persons or products, simulating public demand using various means, a technology for simulating public support for certain ideas or persons for the purpose of manipulating public opinion.

In today's environment, astroturfing is gaining new opportunities and becoming a more visible phenomenon, as the key tool of astroturfing is the use of digital technologies, including bots and bot farms on social media, which allows creating the illusion of mass support or criticism by artificially «inflating» the information occasion. Astroturfing is often used by political strategists and marketers to manipulate public opinion. Online astroturfing technologies are typically used by political technologists and radical groups to strengthen propaganda and foment conflicts in society. At the same time, the media, and opinion leaders may unknowingly disseminate the results of astroturfing as real public initiatives.

Astroturfing has become a powerful industry for manipulating public opinion, closely integrated with the markets of politics, business, and advertising. Leading companies and political players are actively using the technology of artificially «heating up» information occasions. Astroturfing is used to promote business interests, lobby for bills, and build loyalty to politicians. The peculiarity of modern astroturfing is its global scale: information campaigns are typically spread in many countries at once. Researchers warn that the development of artificial intelligence technologies and diplomatic fakes makes it possible to create an extremely realistic imitation of public opinion, which can threaten democracy and national security.

One of the most effective tools of modern online astroturfing is the use of troll factories and bot farms — automated social media accounts that mimic real users and spread propaganda messages, comments, and articles on social media around the clock. Massive «bot farms» allow to amplify information artificially, to spread propaganda messages, to manipulate ratings and statistics.

Information wars have moved from social media to real life and have become a powerful weapon of the 21st century, using not only direct lies and fakes, but also distortions and manipulative presentation of true facts. Information wars of the 21st century is waged not only by states, but also by entire «troll factories» — organizations that specialize in influencing social media using various types of

«information troops»: an army of bots, trolls, and opinion leaders. Bots automatically spread the necessary information, trolls provoke disputes and conflicts in comments, and opinion leaders support and reinforce the desired narratives. Their coordinated activities can manipulate public opinion, incite social conflicts, and influence political processes.

The massive use of bots is a common technology in information warfare. Bots are programs that automatically create fake social media profiles and spread the right information. They are easily distinguished by the date of account registration. An analysis of hundreds of profiles during the Ukrainian elections showed that most bots were created shortly before the vote. This indicates the targeted use of such programs to influence voters. Creating bots is a fairly cheap tool for manipulating social media. They can massively spread any information. That is why it is important to learn how to recognize such artificial profiles and be critical of their messages. This will help protect against information manipulation.

Social media bots have a number of characteristic features. First, they often post identical messages. You can find dozens of profiles with identical text posted at the same time. Secondly, bot avatars usually feature abstract images rather than photos of real people. To recognize a bot, you should check the information through a social media search. If the same message is published in many accounts at the same time, it is most likely the work of bots. This check will help you critically evaluate information and avoid manipulation.

Trolls are real users who specialize in creating and distributing manipulative content on social media. They write provocative posts, comments, and start disputes in order to cause conflicts, insults, and sow distrust and hatred. Trolls can also spread fakes, propaganda slogans, and offensive stereotypes. Unlike bots, trolls are backed by real people with specific goals. They are difficult to recognize because they disguise themselves as ordinary users. But their activity is aimed at dividing society and manipulating it. Therefore, it is worthwhile to be critical of emotional and provocative messages online.

The origin of the term «trolling» is related to sport fishing. The English word «to trawl» means «to catch with a net, to trawl». Hence, the term «trolling for suckers» — «catching fools on a hook» — was appeared. The modern meaning of this phenomenon was formed in Internet conferences in the late 1980s. One of the first researchers of trolling was Judith Donat, a specialist in the psychology of online communication. In her opinion, for a troll, it is a kind of intellectual game aimed at manipulating a group of users. He tries to stir up disputes, turn participants against each other, and provoke aggression

and swearing. At the same time, the troll itself keeps in the shadows, fuelling the conflict from the outside (Donath, 1998).

The essence of Internet trolling is to provoke emotional reactions from users and manipulate their behaviour (Diachenko & Voinalovych, 2023). At the same time, the troll itself tries to remain inconspicuous, shifting the responsibility for inciting passions to other participants.

Trolls have a whole arsenal of proven methods of manipulating public opinion and spreading misinformation. The first way is to pretend to be an expert in a certain field and impose your own point of view as the only correct one. Or create a fake account in the name of a real specialist and spread disinformation, allegedly from his person. Sometimes trolls create «doubles» of real people, i.e. accounts similar to the original ones, with the same photos and data. Then they send friend requests, allegedly due to the loss of the previous profile, and start posting manipulative content on behalf of the real person.

Another common method used by trolls is to play on contrast, where they deliberately create the illusion of conflicting opinions around a certain topic or person. Trolls need several accounts for this. First, they ask seemingly naive or provocative questions on behalf of one user in order to discredit the expert or public figure in the eyes of the audience. Then other fake profiles of their own are connected, starting a whole controversy around the question. They try to depict a dispute between adherents of different views. At the final stage, another troll profile joins the discussion, pretending to be an independent expert or eyewitness to the events. It cites convincing, sometimes fabricated facts in order to finish the reputation of a «victim». This is how trolls create the illusion of public resonance and destroy trust in specific persons. And their false pseudo-arguments are often accepted by the audience as truth.

One of the most sophisticated methods of online manipulators is to draw the audience's attention to their own personality, when trolls pose as experts or public figures, actively engaging in discussions and spreading biased information, trying to create an image of a supposedly authoritative or influential person to gain the trust of followers. Others simply seek attention by stirring up controversy, insulting opponents, or sharing shocking content. The main thing for them is the audience's reaction, because the number of comments, likes, or reposts is exactly what a troll seeks.

Typically, such manipulators deliberately spread fakes, conspiracy theories, and other harmful information. They can cite authoritative sources, falsify evidence and expert opinions. Their main goal is to attract as much attention as possible to their persona and topic, even if it means lying.

You can recognize an Internet troll on social media by a number of signs. Trolls often use newly created empty pages without personal information. However, recently, there have been more and more «legendary» profiles with fabricated data. Another common practice is to pretend to be a patriot or a supporter of a particular ideology. However, a careful analysis of such users' statements in various communities reveals their true, mostly manipulative, intentions. In addition, the activity of many trolls is limited to 8-10 hours a day, which is the approximate working time. With the help of social media search, you can track and link several profiles of one manipulator hiding under «masks».

One of the key elements of information wars on social media is «opinion leaders» (influencers) — bloggers and people with a large audience on social media. Their role is to promote certain narratives and messages commissioned by stakeholders (Kovalevych, 2014). The more followers a blogger has, the more effectively he or she can influence public opinion in the interests of the client. Sometimes, more than 5-10 thousand readers are involved in this process. In addition, there are the so-called «information mammoths» — people whose opinion is authoritative, although they do not have an audience of millions. They are quoted by the media and trusted. Therefore, they can effectively sow certain narratives and frames of perception of events. Manipulators actively involve opinion leaders and influencers in promoting interpretations, fakes, or conspiracy theories that are favourable to them, which is one of the most effective levers of influence on public opinion.

It is extremely difficult to recognize a true thought leader from a hired manipulator. After all, professional trolls create convincing images of ordinary users — with «family» photos, interesting personal content, correct behaviour. However, their ultimate goal is to ignite a dispute, provoke an emotional reaction from the real participants in the discussion, and impose the desired point of view. It is the activity of comments and dissemination of information that is the main KPI for such «leaders».

To expose a troll, you need to carefully monitor his behaviour and the content of his posts. For example, a sudden change of opinion on the eve of an election or the launch of contradictory narratives may indicate that a person works for money. It is difficult to prove it. Identifying «pocket» leaders requires critical thinking and careful analysis of content and behaviour on social networks. This is the only way to understand the true motives and intentions of this or that public figure.

There are a number of useful tools for analysing activity and detecting fake profiles in social networks. For example, Facebook Graph and Stalkscan services provide an opportunity to view information about closed Facebook and Instagram accounts.

The Botsentiel extension will help to track Twitter bots — it marks suspicious automated profiles using its own database. And the Social Bearing tool will analyse the main metrics of the account.

Another useful service is Hoaxy. It demonstrates how certain slogans or messages spread on Twitter and will show the botnets involved in their viral distribution (Ali M. Meligy et al., 2017).

Ukraine also has its own movement of fact-checkers and troll hunters — Cyberelves. These are volunteers united by the common aim of fighting disinformation and propaganda in social networks. They monitor fake profiles and messages on Facebook, find signs of manipulative activity, and send complaints to the administration to block trolls. Work coordination is provided by a special TrolessUA resource. Anyone who cares about the cleanliness of the info field in Ukraine can join here. And to motivate the most active cyber fighters, contests with valuable prizes are regularly held (Klečková, 2022).

The concept of «information and psychological operations» (IPSO) spreading in Ukraine in recent years helped to realize the manipulation scale and forms in the information space. Although misrepresentation and propaganda are not new phenomena, today's digital technologies have greatly increased the possibilities for disinformation to spread. IPSO research has become an important direction for Ukrainian scientists and practitioners in the field of information security. Ukraine, finding itself in the conditions of a complex political and military confrontation with the russian federation, became the sphere of active application of IPSO. The Ukrainian-russian confrontation is a kind of battlefield not only in the physical, but also in the information space, which has turned into the newest virtual battlefield between Ukraine and the russian aggressor. And in this war for the mind and emotions of millions of people, a special place belongs to information and psychological operations. Information and psychological operations are actions aimed at influencing the psychological state of people and population groups, performed using information technologies and media.

The purpose of IPSO is to change the psychological state of the target audience in order to achieve the desired result, which may be political, economic, military or other. IPSOs are used in a variety of areas, including military conflicts, political campaigns, marketing and advertising, and to alter the psychological state of mass audiences for

the purposes of social engineering and manipulation of public opinion. The concept of IPSO entered into active scientific use from the middle of the 20th century, but it gained media popularity in Ukraine only with the beginning of the Ukrainian-russian confrontation (Onkovych, 2021).

Information and psychological operations (IPSO) use various methods and techniques to achieve their goals. It will be about disinformation, the use of false or altered information in order to change people's perceptions, opinions, and beliefs; psychological pressure on people to change their behaviour or beliefs; activities aimed at undermining trust in the government, law enforcement agencies and other institutions; limiting access to information and controlling its distribution to ensure certain influence; the use of psychological technologies to gain an advantage over the enemy; manipulation of mass consciousness; social engineering to change social behaviour and manage people; intimidation, threats, or violence to change people's behaviour (Pariser, 2011). These methods and techniques are used individually or in combination to achieve military and political goals within the IPSO framework. Since they can have a significant impact on the psychological state of the military and the population, it is important to develop effective measures to protect against IPSO (Shmalenko, 2023a).

Information and psychological warfare in social networks is a powerful weapon of the 21st century, which is actively used by the kremlin in its aggression against Ukraine. After all, by controlling the emotions and moods of millions of people, it is possible to achieve the desired political goals without resorting to actual military operations. Information and psychological operations, or IPSO, is one of the most sophisticated and dangerous tools of russia's hybrid war against Ukraine. IPSO can have various goals — influencing public opinion and mood in society by spreading certain narratives through mass media, social networks, online resources, manipulating mass consciousness by spreading specially selected information in the media and social networks, demoralizing society and radicalizing certain groups of the population.

Social networks have turned into an effective tool of information and psychological operations, which russia is actively using in the war against Ukraine. The scale and forms of these IPSOs are impressive. russia uses its entire propaganda apparatus to hold IPSO — from TV channels and online media to social media and bloggers. A vivid example is the full-scale russian invasion, for which the information ground was carefully prepared for many years. The russian media's lies

about «fascists» in Ukraine became an excuse for the bloody invasion. With the help of propaganda and lies, the kremlin formed in the minds of its own citizens distorted ideas about Ukraine as a «failed state» in need of «liberation». These manipulations led to mass support for the war in russia. For example, russia uses them to spread fakes about the «fascist junta» in Ukraine, propagandistic myths about the «defense of Donbas», supporting separatist ideas in Donbas, calling for violence against Ukrainian patriots. Fake «victories» spread on Telegram are supposed to keep putin in power despite the failures of his army.

Russia's information-psychological operations against Ukraine are a real weapon of mass destruction of minds and feelings, the consequences of which kill people, destroy lives, and affect the entire society. The kremlin's manipulation of consciousness leads to real tragedies. On the one hand, the kremlin is trying to convince russians of the «denazification» of Ukraine, spreading outright lies about «Nazis» in Ukraine, fakes about «saving» Donbas, and manipulations about the causes of the war. This is done in order to create a negative image of Ukraine and justify aggression. On the other hand, russia is trying to demoralize Ukrainians by spreading rumours about the surrender of cities, the death of the Ukrainian Armed Forces command, and the military defecting to the enemy. In other words, fakes are being spread to sow panic and distrust in the government, to create the impression that resistance is futile. Examples of fake news using for IPSO include the spread of rumors about military operations in eastern Ukraine that cause panic, or the spread of photo montages and other falsifications on social media aimed at causing negative attitudes towards certain events or political figures. According to research, the spread of fake news has a significant impact on people's moods and beliefs, and can lead to serious consequences, such as political instability and social tension. Therefore, in order to ensure national security, it is important to develop effective strategies to combat this phenomenon, which will include teaching the public critical thinking and developing appropriate technologies to detect and counteract fake news.

For a long time, the kremlin's IPSOs remained an inconspicuous, but extremely dangerous phenomenon (Bäcker, 2023). However, after the beginning of the full-scale invasion of the russian federation, Ukrainians finally realized the perniciousness and destructive power of russian propaganda and informational and psychological manipulations.

The russian side uses various methods and technologies of IPSO aimed at manipulating opinions, distorting facts, creating fake news and spreading propaganda information in order to influence Ukrainian

society and international perception of the conflict. It should be noted that russia has used IPSO for years to hack democracies, meddling in more than 30 national elections from Hungary and Poland to Brexit and the 2016 US presidential race. They floated conspiracy theories that ranged from Q-Anon to lies about the coronavirus vaccine, and provided justifications for russian military action everywhere from Georgia to Syria (Singer, 2022). At the same time, Ukraine is trying to convey to the world the truth about the war and the crimes of the occupiers. The study of IPSOs and protection against them is of crucial importance for the security of Ukraine. Protection against informational and psychological operations of the kremlin is an extremely important task of every Ukrainian in the conditions of war. To recognize fakes and russian propaganda, one should develop critical thinking — the ability to analyze information, not to succumb to emotions. Carefully check news sources, assess their reliability, bearing in mind that the kremlin can distort facts and present them in a way that is beneficial to itself. It is necessary to be aware of the deep reasons of certain moods in society in order to understand whether they are the result of hostile information spillovers. So, whoever owns the information field will have a strategic advantage in this confrontation. Ukraine has every chance to win this war by actively using social networks, to inform citizens, coordinate volunteers and attract support from the world.

Astroturfing and IPSO technologies are increasingly being used to influence public opinion in real life and online. The spread of social networks in recent years has radically changed communication and the formation of public opinion, which has led to the emergence and spread of new sociocultural phenomena, one of which is the «cancel culture», which involves the purposeful creation of a negative image among the general public of a certain politician, public figure or organizations through their public condemnation or boycott for their words, actions or views deemed unacceptable. The Cambridge Dictionary defines cancellation culture as a way of behaving in a society or group, especially on social media, in which it is customary to completely ignore and stop supporting someone because they said or did something that offended you (Cancel culture. Cambridge Dictionary). According to Dictionary.com, cancellation culture refers to the popular practice of ending support (cancelling) of public figures and companies after they have done or said something that is considered reprehensible or offensive. Cancel culture is generally seen as something that plays out on social media in the group shaming form (Lemoine, 2020).

Cancel Culture is a relatively new Internet phenomenon born out of social networks and open discussions. It's about «cancelling» a person,

place, or thing, a socially mediated phenomenon that originated in minority Twitter communities as a way to call attention to discrimination and achieve justice. The term «Cancel Culture» gained popularity with the #MeToo movement, when victims of harassment organized campaigns against showbiz stars, which went «viral» on social networks and in open discussions on the Internet (Shmalenko & Sokol, 2022). Politicians, experts, celebrities, academics, and ordinary people have interpreted «Cancel Culture» as a moral panic close to real harm, adding a neological twist to the practice origins, linking it to an unfounded fear of censorship and default. But «Cancel Culture» should be seen as the last desperate call for justice «reserved» only for stars, brands and other unattainable figures (Meredith, 2020).

«Cancellation culture» is a complex phenomenon. On the one hand, globalization, and the transformation of Ukraine into an information society have expanded the opportunities for citizens to openly discuss socially important issues. On the other hand, the anonymity and emotionality of online discussions often leads to radicalization of views and «witch hunts». Some see the «cancellation culture» as a threat to freedom of speech, as people are persecuted for expressing an unpopular opinion. Others consider it an effective way to draw public attention to serious social problems. People whose thoughts or actions are deemed «unacceptable» may face mass harassment and boycotts on social media. Sometimes «cancellation» goes beyond the virtual world and has real consequences. This calls into question freedom of expression and creates an atmosphere of fear. Therefore, there is a debate in Ukrainian society: whether the «culture of cancellation» is an effective way of combating discrimination, or a threat to pluralism of opinion. On the one hand, it provides an opportunity to hear the voices of marginalized groups and challenge entrenched prejudices. But on the other hand, it carries the risk of radicalization when people are attacked for minor mistakes or jokes. Therefore, a balanced approach is needed so that this trend promotes, and does not harm, justice.

Cancellation culture is a phenomenon when a large number of people, usually united by certain values or features of the worldview, decide to «throw away» a person, company or product from their personal or professional life not to consume, not to speak, not to interact, not to buy (Khoroshchak, 2022). In recent years, Ukrainian society has also seen a trend of «cancellation» — public harassment and pressure on certain individuals because of their statements, views, or actions. This primarily concerns public figures such as politicians, journalists, public figures, and showmen. Most often, they are «cancelled» for manifestations of discrimination, sexism, homophobia,

and racism. Examples include campaigns against MPs or officials for their offensive statements (Oleksiy Arestovych, Olha Bohomolets, Nadiya Savchenko). There are also cases of «cancellation» of Ukrainian and russian performers (Ani Lorak, Regina Todorenko, Natasha Koroleva) for supporting aggression against Ukraine after the outbreak of war and continuing to earn money in russia.

The culture of cancellation is often used for manipulative purposes with the help of technologies such as astroturfing and bot farms. Through coordinated information campaigns on social media and the media, the effect of «public outrage» at certain actions of the authorities or public figures is created. Bots and fake accounts spread outrageous information and fuel the «cancellation» hysteria, thereby creating an artificial «heating» of the scandal around the chosen target. Botfarms can imitate massive outrage on social media, as if millions were demanding someone's cancellation. To ruin a reputation, they purposefully spread false or distorted information on social media. They try to discredit those who are trying to protect the «victim» of the cancellation. They are portrayed as biased, unbiased, etc. Professional propagandists can artificially initiate condemnation of politicians, military officers, representatives of religious denominations, etc. Unlike direct calls for the overthrow of the government, such technologies pretend to be a real civic position, using the right to freedom of speech. However, in reality, their goal is to manipulate public opinion and discredit the objects of criticism, which poses a threat to the information security of the state. Such manipulations are extremely dangerous because they artificially radicalize society. We need to be very attentive to the «trends of cancellation» in social media and check the facts.

Recently, there has been a lot of talk about how the «culture of cancellation» can destroy careers and reputations. However, in practice, there are not many cases of complete and final «cancellation» of public figures. Of course, many public figures and brands have experienced a serious wave of outrage and criticism on social media. Some have been accused of inappropriate language or unethical behaviour, but there have been few real fatal consequences for their careers (Romano, 2019). More often, «cancelled» stars or companies simply disappear from view for a while to wait out the storm. Later, they return, apologize, promise to make amends, their fans accept it. A true and final «cancellation» is the exception rather than the rule, more of a high-profile informational event than the inevitable destruction of reputation.

Conclusions.

The growing popularity of social networks has contributed to the wider spread of misinformation in the information space, which can be explained by several factors. First, it is difficult to trace the original source of information and check the facts in social networks. Secondly, the spread of fakes is facilitated by the emotionality of users and the desire to share sensational news. In the conditions of war or other emergency situation, the issue of freedom of speech acquires special complexity. On the one hand, a democratic society must guarantee citizens the right to free expression of views. On the other hand, the dissemination of certain information can harm the national security and defence capability of the state. Hostile propaganda is often disguised as an «alternative point of view» to avoid legal consequences. However, in reality, it can incite violence, spread misinformation, incite inter-ethnic enmity, etc. In the conditions of a real threat to public safety, the state has the right to limit certain manifestations of freedom of speech. But such restrictions must be clearly regulated by law, comply with the principle of proportionality and be cancelled immediately after the normalization of the situation.

Social networks can be used as a tool of information warfare because they have become powerful means of mass communication that allow easy dissemination of information to a wide range of users. This applies to various aspects, including political propaganda, manipulation of public opinion and disinformation. Here are some aspects that highlight the role of social networks in today's information wars. The misuse of social media for disseminating false or manipulated information to influence public opinion, create a distorted view of events, or exacerbate conflicts; manipulating social network algorithms to direct users to specific information resources, shift their perspective, and create the illusion of a certain public mood; creation of fake accounts, profiles and groups that hide their true nature in order to influence the discussion and opinion of users; abuse of social networks to interfere in election processes by spreading disinformation or supporting specific candidates.

Algorithms of social networks can contribute to the formation of echo chambers, where users surround themselves with information that confirms their own views, reducing the possibility of access to objective information (Clark & Van Slyke, 2010). These challenges require attention and response from both social networks and users, as well as developed regulation and control strategies to effectively counter negative impacts.

Recommendations for improving Ukraine's information war strategy in social networks:

1. To create a single coordination centre under the Council of National Security and Defense of Ukraine, who would be responsible for the development of a state information policy at wartime.

2. Develop a comprehensive communication strategy in social networks aimed at promoting Ukrainian informational narratives and effectively countering russian disinformation.

3. Create a network of bots and volunteers that would constantly monitor social networks, record manifestations of hostile propaganda and promptly respond to them.

4. To use the possibilities of social networks to spread true information about the situation at the front, in the rear, and the activities of authorities.

5. To more actively involve leaders of public opinion, bloggers, and journalists to promote patriotic content in social networks.

6. To strengthen the informing of the international community about the crimes of russia, violations of human rights in the occupied territories.

7. Develop a system of indicators for comprehensive assessment of information campaigns' effectiveness in social networks.

The implementation of such recommendations will contribute to the strengthening of Ukraine's information security and successful resistance to russian hybrid aggression.

In the current media space, it is extremely important to critically evaluate «viral» trends and check them for uniqueness, in order to allow the manipulation of a huge mind to stand up. People who are especially receptive to misinformation are those with unimportant minds when they reject verified information from official sources. To remove anxiety, the stench is expanding sensitively and dubious data from informal channels. Thus, experts speak out on the importance of media awareness for the critical interpretation of content in social networks. It is also necessary to quickly provide verified official information to avoid the proliferation of fakes.

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