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Shvydanenko O.*Doctor of Economics,**Professor of the Department of the International Economy,**SHEE «Kiev National Economic University named after Vadym Hetman», Ukraine;**e-mail: o.shvidanenko@gmail.com; ORCID ID: 0000-0002-5021-0271***Duginets G.***Doctor of Economics,**Head of the Department of World Economy,**Kyiv National University of Trade and Economics, Ukraine;**e-mail: g.duginets@knu.edu.ua; ORCID ID: 0000-0003-3708-3666***Tkachenko O.***Ph. D. in Economics,**Professor of the Department of Economic Theory,**SHEE «Kiev National Economic University named after Vadym Hetman», Ukraine;**e-mail: olena.vadumivna@ukr.net; ORCID ID: 0000-0003-2923-7186***Kotenok A.***Ph. D. in Economics,**Associate Professor of the Department of Economic Theory,**SHEE «Kiev National Economic University named after Vadym Hetman», Ukraine;**e-mail: andrii.kotenok@kneu.ua; ORCID ID: 0000-0001-9262-5865***Busarieva T.***Doctor of Economics,**Associate Professor of the Department of World Economy,**Kyiv National University of Trade and Economics, Ukraine;**e-mail: sutner@ukr.net, ORCID ID: 0000-0001-9563-8120***ANALYSIS OF CRISIS STRATEGIES IN THE CONDITIONS OF MODERN HYBRID WAR**

Abstract. The totality of modern geopolitical challenges and threats in the new information reality can be characterized as hybrid warfare, which includes a wide range of actions aimed at destruction of all spheres of social life of the rival state. Hybrid wars are now becoming the main instrument of geopolitical confrontation, which actualizes the search for counteraction to such threats. The widespread use of asymmetric crisis management has become an integral part of the practice of diplomacy, the basis for the effective implementation of the national security strategy of any sovereign state. The relevance of the article is due to the fact that hybrid wars today have become an integral part of new geopolitical realities. Asymmetric strategies, together with preventive diplomacy, are extremely relevant instruments of world politics. However, the theory and practice of an asymmetric approach in international relations, despite its relevance, has been developed rather fragmentarily, especially in matters of classification of asymmetric strategies. The main aim of the article is the analysis the role of strategies in the conditions of the modern hybrid war and to figure out the role of knowledge component in the formation of the world competitive leaders. The methodological basis of the article is the methods and forms of scientific knowledge adopted in domestic science, such as system approaches, comparative and synthesis methods, methods of abstract logical evaluation, methods of detailing, groupings and generalizations, experts' evaluations. The results: the reasons of the hybrid war were revealed, the specific features of crisis strategies were presented, the influence of the knowledge component on the competitiveness of the countries was proved, disruptive technologies on the competitiveness of the national economies were proved, the specific features of the disruptive technologies were presented, the effective asymmetric strategies were underlined.

Keywords: hybrid war, strategies, knowledge economy, competition, global development, matrix of initial data.

JEL Classification D83, J24, O30

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Швиданенко О. А.

доктор економічних наук, професор кафедри міжнародної економіки,
ДВНЗ «Київський національний економічний університет імені Вадима Гетьмана», Україна;
e-mail: o.shvidanenko@gmail.com; ORCID ID: 0000-0002-5021-0271.

Дугінець Г. В.

доктор економічних наук, завідувач кафедри світової економіки,
Київський національний торговельно-економічний університет, Україна;
e-mail: g.duginets@knute.edu.ua; ORCID ID: 0000-0003-3708-3666

Ткаченко О. В.

кандидат економічних наук, професор кафедри економічної теорії,
ДВНЗ «Київський національний економічний університет імені Вадима Гетьмана», Україна;
e-mail: olena.vadumivna@ukr.net; ORCID ID: 0000-0003-2923-7186

Котенок А. Г.

кандидат економічних наук, доцент кафедри економічної теорії,
ДВНЗ «Київський національний економічний університет імені Вадима Гетьмана», Україна;
e-mail: andrii.kotenok@kneu.ua; ORCID ID: 0000-0001-9262-5865

Бусарєва Т. Г.

доктор економічних наук, доцент кафедри світової економіки,
Київський національний торговельно-економічний університет, Україна;
e-mail: sutner@ukr.net; ORCID ID: 0000-0001-9563-8120

АНАЛІЗ КРИЗОВИХ СТРАТЕГІЙ В УМОВАХ СУЧАСНОЇ ГІБРИДНОЇ ВІЙНИ

Анотація. Сукупність сучасних геополітичних викликів і загроз у новій інформаційній реальності можна охарактеризувати як гібридну війну, яка включає широкий спектр дій, спрямованих на знищення всіх сфер суспільного життя держави-суперниці. Гібридні війни зараз стають основним інструментом геополітичного протистояння, що актуалізує пошук протидії таким загрозам. Широке використання асиметричного кризового управління стало невід'ємною частиною практики дипломатії, основою ефективного впровадження стратегії національної безпеки будь-якої суверенної держави. Актуальність статті пояснюється тим, що гібридні війни сьогодні стали невід'ємною частиною нових геополітичних реалій. Асиметричні стратегії разом із превентивною дипломатією є надзвичайно актуальними інструментами світової політики. Однак теорія і практика асиметричного підходу в міжнародних відносинах, попри свою актуальність, була розроблена досить фрагментарно, особливо в питаннях класифікації асиметричних стратегій. Основною метою статті є аналіз ролі стратегій в умовах сучасної гібридної війни і з'ясування ролі компонента знань у формуванні світових конкурентних лідерів. Методологічною основою статті є методи і форми наукових знань, прийняті у вітчизняній науці, такі як системні підходи, методи порівняння і синтезу, методи абстрактного логічного оцінювання, методи деталізації, групування та узагальнення, оцінки експертів. Результати: виявлено причини гібридної війни, представлено особливості кризових стратегій, доведено вплив компонента знань на конкурентоспроможність країн, доведено руйнівні технології на конкурентоспроможність національних економік, специфіку, були представлені особливості руйнівних технологій, підкреслено ефективні асиметричні стратегії.

Ключові слова: гібридна війна, стратегії, економіка знань, конкуренція, глобальний розвиток, матриця вихідних даних.

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Introduction. The decisive influence on the development of the military-political situation in the world is exerted by the desire of the United States to prevent the loss of global leadership, to preserve the unipolar world by any means, including the military. Not all states unconditionally accept attempts to impose the dictate of a single superpower on the whole world, which led to a sharp intensification of interstate confrontation, the basis of which is non-military measures: political, economic, information. The confrontation, covering many other aspects of the activities of

modern society — diplomatic, scientific, sports, cultural, has actually become total. Under these conditions, the attention of military researchers is increasingly attracted by the phenomenon of hybrid war as a latent conflict with a complex internal structure and proceeding in the form of an integrated military-political, financial-economic, informational and cultural-ideological confrontation that does not have a definite status. The essence of a hybrid war, like any other war, consists in the redistribution of the roles of the subjects of the political process at the global or regional level. However, it is carried out mainly by non-military means, without the occupation of the defeated country, the destruction of its infrastructure and mass death of the population. Information and communication technologies make it possible to achieve the transfer of the country under external control with a minimum level of military violence, due to the concentrated pressure in the financial, economical, informative and psychological spheres and the use of cyber weapons. The purpose of the article is to evaluate and critically access the role of crises strategies in the conditions of the modern hybrid war.

Literature review. Among scientific researches in the field of the importance of the development of the hybrid war, the hybridization of the international economy and the analyses of crisis strategies in the conditions of hybrid war presented a number of theoretical, methodological and methodical approaches by foreign and domestic scientists such as B. Milner, I. Nonaka and X. Takeuchi, P. Senge, V. Bukovich, K. Viig, D. Ye. O’Leary, D. Snowden, Y. Vovk, M. Martynenko, A. Degtyar and M. Bublik, A. Nalyvayko, N. Butenko, N. Smolinska and I. Hrybyk, S. Leonov and other scientists. At the same time, it is important to note that at the beginning of the XXI century, the understanding of the importance of the knowledge component in the formation of the crises strategies are necessary in the context of their further development.

Unsolved aspects of the problem. It is necessary to mention that the content of hybrid warfare boils down to an all-round competition for the role of a leader and expanding access to resources. The winner is the state or coalition that managed to impose on the enemy their own vision of the picture of the world, values, interests and an understanding of the «fair» distribution of resources corresponding to their world outlook. At the same time, in modern conditions, war should not necessarily be associated with the outbreak of hostilities — the continuation of a policy can be carried out by force, not only by military, but also by non-military means. The list of factors determining the evolution of military affairs has changed over the centuries. Today, the processes of globalization, information and communication revolutions, which form new mechanisms of interaction and interdependence on a global and regional scale, have the most profound and comprehensive influence on the development of strategies for modern military conflicts, changing their nature and content. Covering the world economy, politics, military affairs, communications, sports, science and culture, these highly contradictory and dynamic processes affect all the most important spheres of modern society. Therefore, unsolved remain the problems concerning the determination of the crisis strategies in the process of formation of hybrid war and the impact of knowledge component.

The purpose of the article. To analyze the specific features of the crisis strategies in the conditions of modern war based on the hypothesis of the influence of the components of knowledge economy.

Research results. Interest in asymmetry as a strategic concept first appeared after the end of the Cold War in the connection with the restructuring of the entire system of international stability and security, the emergence of fundamentally new, asymmetric in nature challenges and threats. The bipolar symmetry of the balance of power of the Cold War era largely dictated the dominance of the corresponding symmetrical national strategies. The defining concept of this period was the concept of Mutual Assured Destruction (MAD), which was fundamentally symmetrical for both sides and, despite all its shortcomings, ensured a stable balancing act on the brink of war for almost 40 years [14].

Bipolar symmetry began to change only with the emergence of the concepts of strategic defense in space and national strategic defense of a territory (Strategic Defense Initiative, R. Reagan, 1983). The end of the bipolar world and the end of the Cold War era, together with the emergence of fundamentally new threats and challenges, objectively stimulated interest

in understanding the role and place of asymmetry in the structures of global and national security, the system of international relations as a whole. Asymmetry has been and remains an important component of strategic thinking.

At the same time, an extremely important element is the question of what character this asymmetry has — deliberate or due to circumstances (deliberate or default). In most cases, both in the past and today, the asymmetry of strategies was primarily due to external factors independent of the players — natural, technical, historical, economic, ideological, etc. The deliberate use of asymmetry as a means of gaining a strategic advantage is already aerobatics performed by prominent military or political figures for centuries [2].

In the late 1990s and early 2000s, numerous definitions of asymmetry in politics and strategy appeared, which basically boiled down to the ability to act «differently from the opponent» or «to fight by non-standard means» — not according to the rules (not fighting fair) [15].

Today, asymmetric strategies are widely used by many states across the entire spectrum of international relations, especially in the context of the so-called hybrid wars. An asymmetric approach is an integral part of the practice of diplomacy and the effective implementation of the national security strategy of any sovereign state, and Russia will have to seriously think about improving and using the best examples of preventive asymmetric strategies to protect its national interests, especially in relations with the West. So, A. A. Kokoshin notes: «National security policy is, among other things, measures to create symmetric and asymmetric problems for the “opponent” from whom threats (challenges) to a given state come» [3].

In general, asymmetry in international relations can be defined as «the lack of identity between the subjects, their statuses, material and intangible resources, tactics and strategies of international behavior» [7]. The most adequate today, in our opinion, is the definition given in one of the works of the US Institute for Strategic Studies: «Asymmetry in the military sphere and in the sphere of national security is the ability to act, organize one’s activities and think differently from opponents in order to maximize one’s own advantages and exploitation of the opponent’s vulnerabilities, seizing the initiative or providing space for maneuvering» [4].

Despite all the shortcomings and a certain triviality of existing definitions, it is important to focus on non-standard, revolutionary thinking, the use of non-traditional approaches, operational and technical solutions, innovative advances in technology and technology, unexpectedness and organizational sophistication of actions. In parallel with the development of conceptual comprehension of asymmetry, attempts were made to systematize and classify various types and types of asymmetries, asymmetric strategies and areas of their possible application. Noticeable successes, however, have not been achieved in this area. Primitive dichotomous approaches of polar separation of obvious asymmetry factors prevail [13].

During the analyses it became obvious that the world leaders nowadays are the countries, that are competitive using innovations, disruptive technologies, knowledge component, nano and bio technologies etc. On our opinion, it can be argued about the direct impact of the knowledge economy on the competitiveness of the world. To study the impact of knowledge economy components on the competitiveness of the world’s top 20 countries in the global competitiveness ranking (GCI), the most significant factors X_1 (R&D) X_2 (Global Innovation Index), X_3 (Human Development Index). According to the results of calculations, the multiple regression equation was obtained: Y (global competitiveness index) = $1.9887 + 0.1061X_1 + 0.9004X_2 + 20.2582X_3$ (Table 1).

Table 1

Matrix of initial data for determination of influence of components of knowledge economy on competitiveness of the countries of the world on a rating of a global estimation of competitiveness

Top 20 countries in the world in the ranking of Global Competitiveness	R&D (X_1)	Global index of innovation (X_2)	Human Development Index (X_3)	GCI 2017–2020 (Y)
United States	96,1	61,40	0,924	85,6
Singapore	70,9	58,69	0,932	83,5
Germany	99,0	58,39	0,936	82,8
Switzerland	82,6	67,69	0,944	82,6

Table 1 (continued)

Top 20 countries in the world in the ranking of Global Competitiveness	R&D (X_1)	Global index of innovation (X_2)	Human Development Index (X_3)	GCI 2017—2020 (Y)
Japan	100,0	54,72	0,909	82,5
Netherlands	75,9	63,36	0,931	82,4
Hong Kong SAR	49,2	53,88	0,933	82,3
United Kingdom	85,4	60,89	0,922	82,0
Sweden	81,2	63,82	0,933	81,7
Denmark	77,7	58,70	0,929	80,6
Finland	77,0	58,49	0,92	80,3
Canada	80,3	53,65	0,926	79,9
Taiwan, China	84,2	52,54	0,502	79,3
Australia	78,8	51,87	0,939	78,9
Korea, Rep.	91,0	57,70	0,903	78,8
Norway	65,5	53,14	0,953	78,2
France	91,5	54,18	0,901	78,0
New Zealand	53,1	52,87	0,917	77,5
Luxembourg	51,3	56,40	0,904	76,6
Israel	76,7	53,88	0,903	76,6

Source: created by authors based on [1; 12].

Thus, the multiple regression equation is obtained:

$$Y = 1,9887 + 0,1061X_1 + 0,9004X_2 + 20,2582X_3.$$

Economic interpretation of model parameters:

increase X_1 by 1 unit the measurement leads to an increase in Y by an average of 0.106 units of measurement;

increase X_2 by 1 unit measurement leads to an increase in Y by an average of 0.9 units of measurement;

increase X_3 by 1 unit measurement leads to an increase in Y by an average of 20,258 units of measurement.

According to the maximum coefficient $\beta_2 = 0.653$, we conclude that the factor X_2 has the greatest influence on the result Y . That is, the level of competitiveness of the 20 leading countries in the world in the context of the paradigm of the impact of the knowledge economy depends largely on innovation, the implementation of which determines their leading position in the relevant global ranking.

That is, the level of competitiveness of the 20 leading countries in the world in the context of the paradigm of the impact of the knowledge economy depends largely on innovation, the implementation of which determines their leading position in the relevant global ranking [13] (Table 2).

The positive but not significant impact of R&D expenditures is significant, as financial support for the development of the knowledge economy in the studied countries is practically subject to the theory of marginal utility, ie each additional unit of investment does not significantly increase competitiveness. At the same time, a significant return on investment in general human development is a direct proof of the importance of spending on education and science, a common factor in shaping the culture of the knowledge economy. The statistical significance of the equation is verified using the coefficient of determination and Fisher's test. It is established that in the studied situation 97% of the total variability Y is explained by the change of factors X_j . The lack of complete data that would coincide in time on the values of the Global Competitiveness Index (Y) and the Knowledge Economy Index (X) makes it impossible to study their interdependence.

Table 2

**The matrix of initial data to determine the impact of the Knowledge Economy Index
on the competitiveness index of the world**

Top-20	(KEI) 2015 p. (X)	GKI 2017—2020 pp. (Y)
United States	8,77	85,6
Singapore	8,26	83,5
Germany	8,9	82,8
Switzerland	8,87	82,6
Japan	8,28	82,5
Netherlands	9,11	82,4
Hong Kong SAR	8,52	82,3
United Kingdom	8,76	82
Sweden	9,43	81,7
Denmark	9,16	80,6
Finland	9,33	80,3
Canada	8,92	79,9
Taiwan, China	8,77	79,3
Australia	8,88	78,9
Korea, Rep.	7,97	78,8
Norway	9,11	78,2
France	8,21	78
New Zealand	8,97	77,5
Luxembourg	8,37	76,6
Israel	8,14	76,6

Source: created by authors based on [2; 11].

The pairwise correlation of Y values according to the data of 2017—2018 and X for 2012 made it possible to obtain the equation: $Y = 76.9764 - 0.03859X_1$, i.e. an increase of X_1 by 1 unit of measurement may result in an insignificant but decrease in Y by an average of 0.0386 units of measurement (Table 3).

Table 3

**Matrix of initial data for determining the impact of the knowledge economy
on the competitiveness of the world according to KEI according to the EBRD 2020 Europe**

Top-20	GCI (Y)	KEI, 2018 (X)
Azerbaijan	4,69	4,56
Armenia	4,15	4,51
Bulgaria	4,46	5,18
Croatia	4,19	5,62
Cyprus	4,3	5,82
Estonia	4,85	6,82
Georgia	4,28	4,97
Greece	4,02	5,25
Hungary	4,33	5,33
Kazakhstan	4,35	4,85
Latvia	4,4	5,88
Lithuania	4,58	6,03
Montenegro	4,15	5,04
Poland	4,59	5,63
Romania	4,28	5,01
Russia	4,64	4,93
Serbia	4,14	5,13
Slovak Republic	4,33	5,4
Slovenia	4,48	6,65
Turkey	4,42	4,6

Source: created by author based on [5; 10].

The following results were obtained during the study of direct and inverse dependences (pairwise linear regression). Economic interpretation of the parameters of the model — the competitiveness of the studied countries, depends on the development of their knowledge economy

as follows: increase KEI by 1 unit of measurement leads to an increase in Y by an average of 0.739 units measurement. At the same time, there is also an inverse dependence, i.e. the development of the knowledge economy, on the level of competitiveness of the country, in particular the increase in GCI by 1 unit measurement leads to an increase in KEI by an average of 1,199 units [6].

It can be argued that the active development and dissemination of new forms of business and various structures — network, virtual, global — naturally transform the content of the competition process, increase the dependence of competitiveness of countries on the ability to use knowledge resources. Factors to ensure the competitiveness of countries are increasingly not tangible assets, and people as carriers of competencies (knowledge, ideas) and organizations as carriers of competencies (organizational structures, dynamic capabilities, management systems). The role of the actual operating activities as a factor of competitiveness is decreasing (including in terms of geographical components), more important are organizational, financial, marketing aspects, communications, information interaction, logistics [7]. The current process of development of the country is closely related to knowledge, and to assess economic growth only from the standpoint of the contribution of value-added industries would be wrong. In modern society, knowledge is not a separate resource and a separately created good. They are embedded in a single multidimensional economic system of economic relations for the production, dissemination and use of knowledge, they should be considered as part of a more complex and general system of social relations in general[9].

Conclusion. To conclude all the mentioned above it is important to mention that the effective asymmetric strategies should:

- 1) be unusual and unpredictable at its core, be innovative, overlook and undermine well-established strategic, tactical, organizational and operational foundations and principles;
- 2) be aimed at the most vulnerable spots and objects of the opponent, which are difficult or impossible to protect, use methods and tools of influence that are difficult to predict or impossible to neutralize;
- 3) be creative, and most importantly — perceive the uncertainty and unpredictability of the opponent's actions as an integral characteristic reality, to be guided by a highly intelligent opponent who is tuned in to use asymmetry for his own purposes;
- 4) be optimally balanced in terms of the complex use of positive and negative elements of asymmetry;
- 5) be based on sophisticated intelligence systems and information and analytical support, be focused not on the current moment in time (especially not on the past), but on the future,
- 6) carry threats and challenges of the most unknown and indefinite type for the enemy, which would contribute to his complete disorientation;
- 7) be unexpected for the adversary, reliably protected (classified) at the stage of development and implementation, maximally contribute to an increase in the level of uncertainty when making decisions by the adversary.

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