The author describes a comprehensive strategy for Ukraine till 2030 that includes both short- and long-term priorities. In the shorter term, Ukraine's defense sector needs reorganization and modernization in a number of areas from mobilization to production of drones, along with urgent reforms in other sectors aimed at economic revival, effective state budget planning, and modernization of education. In the longer term, extensive reforms are required to make Ukraine a sustainable, prosperous, and well-defended nation. Economic growth based on Ukraine's traditionally strong sectors (IT and agriculture), revived defense industry, innovations, structural reforms, upgraded infrastructure, and energy independence should help attract investment, which is a prerequisite for creation of new jobs. Revival of Ukraine’s labor market, along with effective anti-corruption and demographic policies and education reform, are required to retain people in Ukraine and provide an incentive for refugees to come back. As for Ukraine’s Euro-Atlantic integration, there is a need for substantial discussion, work of diplomats, military agencies, experts, civil society, etc., as well as much closer coordination between the Defense and Security Sector and other parts of the government of Ukraine. Ukraine has strategic international importance for global stability, food and energy security. Ukraine needs assistance with bringing aggressors to responsibility. Support of Ukraine by our allies is in the interest of both sides in order to strengthen our collective defense and deterrence.

Keywords: Ukraine, economy, defense, security, high-tech innovation, recovery

Ukraine 2030 Strategy was proposed in the author’s book “2030: Lessons for Ukraine”[1], a comprehensive strategy for Ukraine’s economy, defense and security. The author presented it at several venues, in particular as the invited expert at the High-level Conference “Winning Ukraine’s Future: A Transparent and Accountable Recovery” (organized by the USAID and the Government of Ukraine) and as the keynote speaker at the International Conference “Rebuilding
Ukraine. 75 years after Marshall Plan” (organized by the Kyiv National University).

The strategy includes both short- and long-term priorities. In the shorter term, Ukraine’s defense sector needs reorganization and modernization in a number of areas from mobilization to production of drones, along with urgent reforms in other sectors aimed at economic revival, effective state budget planning, and modernization of education. In the longer term, extensive reforms are required to make Ukraine a sustainable, prosperous, and well-defended nation. Economic growth based on Ukraine’s traditionally strong sectors (IT and agriculture), revived defense industry, innovations, structural reforms, upgraded infrastructure, and energy independence should help attract investment, which is a prerequisite for creation of new jobs. Revival of Ukraine’s labor market, along with effective anti-corruption and demographic policies and education reform, are required to retain people in Ukraine and provide an incentive for refugees to come back.

Ukraine has been involved in a unique hybrid/mosaic war, with extensive use of multi-domain operations, economic warfare, psyops, AI, cyber warfare, and other high technologies, while the “traditional” soldiers and weapons still play a major role and should not be underestimated. During a very short period, AFU have evolved into a modern army, which continues to develop and effectively addresses various issues, helped by extensive popular support and will to defend Ukraine’s freedom. Unprecedented support of Ukraine by NATO is vital for both sides.

Based on our experience in 2022, not only Ukraine but also all other countries will revise all parameters of their defense doctrines, including the general state of management and combat readiness at all levels, weapons stocks, the availability of modern technologies, the state of such areas as communication and IT, intelligence, coordination, strategic and tactical planning, etc. In a longer term, systemic work is required on improving Ukraine’s security and defense capabilities. This includes not only the military aspects, but also many other areas such as general country development strategy, economy, energy, and other fields. The country’s security is based not only on its security and defense sector per se but also on good governance and sound policies in such areas as food, environment, information, cyberspace, border, nuclear energy, etc. NATO has an effective mechanism of defense planning, which includes defining the functions and tasks of all components that are part of the security and defense sector. It is supplemented by detailed NATO standards. But special emphasis is now placed on the importance of training, as highly educated professionals are needed for all areas of national security. This applies both to the purely military sphere (for example, modern computer modeling of options for countering an aggressor increases their effectiveness by an order of magnitude), and to other components of security, first of all the economy, because without an effective modern innovation-driven economy, the country will not be able to fight effectively. This experience is vital for Ukraine.

Ukraine’s military forces need reorganization in order to improve readiness, flexibility, rapid response, and coordination. Modernization of the defense sector is also required to neutralize Russia’s current and future threats and introduce training that would foster effective leadership and combat readiness.

Much closer coordination is necessary between the Defense and Security Sector and other parts of the government of Ukraine, both central and local, with a mechanism to overcome any bureaucratic gridlock without a long procedure. This also concerns the needs in weapons, drones, etc. A need for new leadership approaches in order to save maximum lives. (A law should be adopted on) special procedures during the war for legitimate suspension of certain bureaucratic procedures, e.g. the rule that blood transfusion should be done only by doctors may be suspended if there is a paramedic with appropriate skills who can save a life, which may be lost before doctors arrive.

Clear lines of command and delineation of responsibilities are needed, though this may be a tricky task as modern war brings complex relationships between different domains etc. Plus, during battles the units should not be micromanaged by the generals from the HQ, and politics should be kept away from the army. There are many politicians, activists, etc. who help the army and want some PR. This may be acceptable, but problems arise if certain units feel like they are more subordinate to these people than to the CinC/General Staff.
Ukraine is strong in cybersecurity, use of IT, AI, and other high-tech but there are issues to be resolved. At the same time, there are many experienced people within the AFU or those willing to help Ukraine’s defense, and they can be used more efficiently. There is an urgent need to improve training of newly mobilized service members, in particular by using proper training methods and sharing the experience of their colleagues with battle experience in various fields. Substantial Western aid is also required here. New ways are needed to promote and increase interest in army service, e.g. targeted awareness campaigns that emphasize personal growth and skills development.

Ukraine learns much from the NATO experience but NATO allies will also definitely learn much from Ukraine’s war exercise. The transition to the next techno-economic era (and, accordingly, the new defense and security paradigm) is already underway. Innovation and high technologies are important in enhancing Ukraine’s defense capabilities. The use of unmanned systems (such as unmanned aerial, ground, and maritime vehicles), is substantially improving Ukraine’s defense. Strong cybersecurity is vital for protecting critical infrastructure and securing sensitive data. AI and machine learning algorithms can help in analyzing vast amounts of data, improving decision-making processes, and identifying patterns or anomalies. For situational awareness, Ukraine can deploy advanced surveillance technologies that would allow Ukrainian forces to respond quickly and effectively to any aggression.

Western-made aircraft, on which our military is now learning to fly, will play an increasingly important role. UkraineIS was one of the first organizations that paved the way for the training of our pilots in the West since the visit of the Canadian leadership to Ukraine in 2016 when the first inter-college agreement was signed. Ukrainian pilots learn quickly, and in 2022 a transition from old Soviet equipment to Western aircraft and drones started. This transition is unique in terms of speed and scale.

25 years ago I emphasized the need for an innovation-driven economic development and proper management of innovations and investments in my book “Investments in Ukraine” [2]. This book became the basis of many state strategies of investment and innovative development for decades to come but now the ideas from this book require urgent implementation. Success on the battlefield, as the recent evidence shows, depends on which of the adversaries has more advanced technologies. The technologies of future warfare (both autonomous and semi-autonomous) are very diverse, ranging from AI to drones, but they are often developed separately, while a broader analysis shows the advantages of their joint application, as well as hybrid solutions using traditional and new technologies.

Emergence of future technologies also creates completely unexpected problems, and we will illustrate that with the example of defense solutions. Artificial intelligence reduces the time it takes to react to an attack, so it’s tempting to let AI decide if and when to attack back. But if a human is excluded from the chain of decisions, it will be impossible to apply “common sense”, while historically it happened more than once when an officer did not launch a nuclear response in a situation of received signals about the use of nuclear weapons (and indeed, these signals later turned out to be false). An automatic system would have triggered the response, and then our civilization would no longer exist. In addition, the cost of high-tech weapons is falling, so many small states and even non-state actors can afford fairly inexpensive means of terrorizing their neighbors. All of this looks even more dangerous given the all-time high of hatred and mistrust between rival states and blocs. However, the world is still moving towards automatic decision-making, taking into account the development of quantum computers, as this can bring a competitive advantage. Conventional equipment is also getting upgraded, and in addition to physical space, an advantage is necessary in cyberspace and information wars. This also increases the level of requirements for specialists who maintain, assemble, repair the military equipment and are responsible for its safety and efficiency.

There are many challenges for new approaches to defense and security. The enemy expects a certain behavior from Ukrainian forces, so it is necessary to reduce such predictability. We have a lot of data, but it is necessary to analyze it more intelligently. There are new technologies (such as femtotechnologies and anti-fragility) known only by selected professionals. Moreover, the effect of technologies can be combined but
the complexity of these systems is often so challenging that only few people understand it.

This also creates the urgent need to modernize education because quick action requires quick thinking and quick reaction. Unfortunately, many people have become accustomed to the need to move quickly without proper thinking, which leads to a large number of wrong decisions and mistakes.

In particular, Ukrainian cybersecurity experts are among the best in the world, which is one of the reasons Ukraine’s computer systems have shown high resilience since the start of the full-scale war. However, the number of attacks is significant. Several Ukrainian universities have started training cyber security specialists, but their shortage remains high. In addition, it is often heard that these specialists lack practical experience, and that teaching should be more oriented to modern cyber security challenges. After the adoption by the Ministry of Education and Science of the Cyber Security graduate program (Standard 125), the author met with the leaders of the best cyber security programs of Western universities, including the first such program in the world, which was launched back in 2005 in Abertay University (Scotland). Their experience is now used in Ukraine.

As for Ukraine’s Euro-Atlantic integration, there is a need for substantial discussion, work of diplomats, military agencies, experts, civil society, etc. Ukraine has strategic international importance for global stability, food and energy security. Support of Ukraine by our allies is in the interest of both sides in order to strengthen our collective defense and deterrence. Failure to support Ukraine would compromise the credibility of NATO and lead to the demolition of a rules-based international system if the Russian regime is allowed to continue its practices of military aggression, election interference, extraterrestrial assassinations, etc. With the current Russian regime, no one in the world is safe. In order to avoid a new world war, NATO should provide Ukraine with all combat aircraft, advanced battle tanks, air defense systems, long-range missiles, and other weapons needed for faster victory.

Ukraine also needs ongoing assistance with sanctions against the aggressors and international prosecution that will bring them to account for all their war crimes and atrocities. In particular, at the high-level Slynn Foundation Forum in London with participation of the Prosecutors General of the UK and Ukraine and the President of Ukraine’s Supreme Court (co-organized by the author) the participants emphasized that the International Center for Prosecution of Crimes of Aggression against Ukraine in Hague will work to develop effective mechanisms for bringing the aggressors to justice. In addition, the assets of Russia and its oligarchs should be used for Ukraine’s reconstruction. And what is most important, the allies must provide Ukraine with effective security guarantees of its safety in the future.

To meet the above challenges, new types of research centers are needed, and the author is working with the UACU on establishing a center to facilitate analysis and research of these challenges in order to find effective solutions for the policy makers.

References:

Довгострокова безпека і оборона України на основі високотехнологічного та інноваційного відродження економіки

Автор описує комплексну стратегію для України до 2030 року, яка включає як короткострокові, так і довгострокові приоритети. У короткостроковій перспективі оборонний сектор України потребує реорганізації та модернізації в низці напрямків від мобілізації до виробництва безпілотників, а також невідкладних реформ в інших секторах, спрямованих на економічне відродження, ефективне планування державного бюджету та модернізацію освіти. У довгостроковій перспективі необхідні масштабні реформи, щоб зробити Україну стійкою, процвітаючою та добре захищеною країною. Економічне зростання на базі традиційно сильних галузей України (ІТ та сільське господарство), відродженої оборонної промисловості, інновацій, структурних реформ, оновленої інфраструктури та енергетичної незалежності має сприяти залученню інвестицій, що є передумовою для створення нових робочих місць. Відродження ринку праці в Україні разом із дієвою антикорупційною та демографічною політикою та реформою освіти необхідні, щоб утримати людей в Україні та створити стимул для біженців повернутися. Що стосується євroatлантичної інтеграції України, то тут потрібна серйозна дискусія, робота дипломатів, військових відомств, експертів, громадянського суспільства тощо, а також набагато тісніша координація між Сектором оборони та безпеки та іншими частинами уряду України. Україна має стратегічне міжнародне значення для глобальної стабільності, продовольчої та енергетичної безпеки. Україні потрібна допомога з притягненням агресорів до відповідальності. Підтримка України союзниками відповідає інтересам обох сторін для зміцнення спільної колективної оборони та стримування.

Ключові слова: Україна, економіка, оборона, безпека, хай-тэк, інновації, відродження