

Ukrainian war of intellects.

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1. Preamble. From SMB to innovation and technology business (SMITB).

There is a bloody, cruel, destructive war in Ukraine. More and more people understand that simultaneously with the merciless war of people using military art, there is a war of intellect embodied in highly intelligent new weapons and other military equipment, new explosives, new military strategies and tactics, new logistics. Already in Ukraine, new drones were used, a sapper robot was used on a tank chassis, in which the layout of the vehicle was seriously changed in comparison with the tank in order to give the best mine clearance capabilities. The possibility of electromagnetic influence on mines noticeably distinguishes it from foreign samples. The Proryv-1 robotic complex was created on the basis of the SMP-3MA armored demining vehicle. There are enough highly intelligent solutions in the work of this sapper. Trawls are installed in front of unified mounts and are replaced relatively quickly. A typical trawl - for example TMT-S, is equipped with an EMT electromagnetic attachment, designed to activate mines that are guided by a magnetic field. The impact on anti-aircraft anti-tank mines ensures their detonation at a distance of up to 100 meters. Use blocks of dynamic armor. How many lives of sappers will be saved by such highly intelligent equipment... And now a robot-machine gunner has been developed, innovative high-speed military vehicles are made by craftsmen almost through the knee... Soon Ukrainian digitalizers will join the war of intellects. And then scientists of all ranks will think. But the article is not about this, but about the fact that we have to start the revival of the country not tomorrow after the end, at least, of the active phase of the war with the aggressor, but already today,

Of the two inextricably synergetic wars in the war of intellects, the authorities of Ukraine had and still have to often turn for help and attract the intellect of the peoples of friendly countries. This somehow does not really fit in with the ideology of independence adopted by Ukraine, but without intellectual assistance to it difficultwin. But it is not clear when and why the country, always famous for its intellect, developed industry, constant work on the development and improvement of technology, managed to lose its intellect. Why did deindustrialization take place, as a result of which the famous military factories and industries were stopped and during this cruel war, or they produce kitchen pots and stools. The shelves of all hardware stores are already filled with pots, and where are Antonov planes, Dnieper rockets, Kharkov tanks, Nikolaev ships. Why do many Ukrainian scientists and professionals work in Japan, China, the USA, Germany at military enterprises. Perhaps they did not take the technical documentation with them, but their intellect left the country with them and now does not always work for the victory of Ukraine.

Honor and praise to the Ukrainian government that it has managed to literally raise the whole world to its feet, and they have supported and continue to support it with intellectually rich military equipment, ammunition and financial resources. It is a pity that Ukrainian science, including academic, higher education, and, most importantly, a whole army of remarkable specialists, is not active enough in solving military problems.

Of serious concern is the fact that, unfortunately, the de-intellectualization of the country began long ago and is now successfully continuing. If the reverse process of re-intellectualization is not started and successfully carried out, it will be quite difficult to ensure the revival of the country and its sustainable further development.

The resuscitation of the real economy of the country will have to begin now, when a complete victory in this cruel war has not yet come. The reindustrialization of a huge country is also a battle, and it also needs to start with the development of an optimal strategy and tactics. To the credit of the Ukrainian authorities, without waiting for the end of the war, they began planning the country's exit from the current state and its further sustainable development. Recently, Prime Minister D.A. Shmygal introduced the participants of the International Economic Forum in Davos. [development plan of Ukraine](#), which provides for such steps as: economic and political integration with the European Union; liberalization, deregulation and digitalization of the economy; partnership between the state and business in various areas, primarily in infrastructure and energy; investments in gas production, development of green energy, as well as in the development of the military-industrial complex; working with partners to ensure that they guarantee credit funds for investments. So far, this is not yet a program and far from being a strategy and tactics for the country. Perhaps the issue of their development should be brought up for public discussion. Maybe then our published and unpublished proposals on the strategy and tactics of Ukraine's development will not be superfluous. Here are some of them:

1. Implementation of the decisions of the UN Conference on the Concept of Sustainable Development and the Environment (CSD), held in Rio de Janeiro in 1992.
2. The main basic, theoretical foundations for the implementation of CSD are a synergistic approach, system analysis, project management and modern information technologies.
3. The revival of the country and its further sustainable development is possible through the technological transformation of its economy through a comprehensive solution of environmental, economic and social problems by focusing on the development of commodity-producing medium and small businesses.
4. Orientation to the revival of Ukraine as an industrial - agrarian state.
5. Further decentralization of the country's economy with the transfer of its management to the communities.
6. **Development planning and industry management through communities** based on the principles of system analysis, synergy, while ensuring compliance with the principles of a market economy.

The implementation of these proposals requires special attention to addressing the issues of using intellectual property already created in Ukraine and abroad and, no less important, creating a new one.

Unfortunately, the Concept of sustainable development, adopted and implemented by almost 200 countries of the world, has not yet received recognition in Ukraine. Maybe because it puts social and environmental problems on a par with the economy. But the experience of all countries of the world has confirmed that this cluster is synergistically united and it is impossible to break it. Orientation towards small and medium business (SMB) is confirmed by the experience of many countries, based on the intelligence of the nation, does not depend on the "wants" of foreign investors, is easily corrected in the direction necessary for the development of the country by the authorities, primarily not by coercion, but through a policy of stimulation and encouragement. The high innovative potential of SMEs is essential for its success, it relies on the intelligence of entrepreneurs, developers and other cluster members, and without it the business will be inefficient, namely, market mechanisms of management stimulate the use of the most effective start-ups in SMEs. And, finally, such tactics require special attention to addressing the issues of using intellectual property already created in Ukraine and abroad and, no less important, creating innovations for enterprises of medium and small technological innovation business (SMITB).

2. Ukrainian intellectual property for SMITB.

Two more adjectives "technological" and "innovative" have to be added to the familiar name of medium and small businesses, and, therefore, the letters "T" and "I" in the abbreviation SMTB. There is an urgent need for this, since business is often considered a chokh, but there are many types of business and each of them operates according to different laws and rules. It is clear that there are three main types of business: trade and commercial activities, the provision of services and the creation of products. We will not touch on the first two types of business, at least in this article - they have their own problems and ways to solve them. These are more dynamic species that have received very rapid development in the post-Soviet countries (remember the crowds of "shuttle traders" with "kravchuchkas" at border checkpoints, an abundance of tent markets, and now, an abundance of pharmacies, "helpful" enterprises that flooded the cities. And the headache of the country's lawyers is connected precisely with these types of business, the most dynamic, fast-acting, which do not require serious, deep professional training for their implementation. And let's focus on the third, more efficient (with the right organization), more necessary for the restoration of the country's business - production, or, according to our interpretation, the technology business.

SMTB is a kind of microcopy of a conventional manufacturing enterprise, where there are a huge number of private tasks that need to be solved to ensure work, and this requires the work of many professionals (or entire management units) to solve them. In SMTB, this is done by the main entrepreneur himself and, possibly, a minimum number of assistants. Management laws and governing bodies governing large enterprises do not work for SMTB. A different management system is needed, and for entrepreneurs who manage SMTB, there are completely different knowledge and skills.

In fact, one of the main reasons for the collapse of the real industrial economy of Ukraine, apparently, is not only a long war with the Russian aggressor and not even its current active period, but also the preservation of the sectoral system of national economy management adopted in the former USSR, in which all issues from planning and financing to logistics tried to implement by the Cabinet of Ministers through line ministries. Such a system, judging by the published materials, the government wants to implement even now when reforming the country's economy.

Meanwhile, one of the few successful reforms carried out in recent years in the country is the decentralization of many spheres of life. Decentralization did not destroy large enterprises, many of which were denationalized, but, one way or another, fell into the hands of the oligarchs. After that, the state had to weaken its usual functions of influencing these enterprises on issues of planning and monitoring their activities. However, it was often not possible to ensure the interaction of large private enterprises with industrial medium and small businesses (SMTB), which, of course, could not compete with the giants. That is why, in order to start reforming the country, it is necessary to resolve management issues, in particular, the issues of decentralization of power in relation to the ideology of deoligarchization and management of industrial SMTB.

One of the possible management options could be the complete transfer of management of enterprises of all forms of ownership to local authorities and communities. Instead of most sectoral ministries, which have now weakened their control levers, it may be worth leaving one strategic management body, something like the State Planning Commission, which can be called the Ministry of Synergetics, which provides strategic planning issues and, importantly, synergistic communication between enterprises of different sizes and directions. The operational functions of management, which were previously performed by ministries, can be performed by strictly narrow-profile associations such as head offices. Professionally trained organizers of production (and why not former narrow-profile oligarchs) can lead such central offices.

The foregoing is only one of the possible forms of reform, but the question remains not only of the organization of SMTB enterprises (this process can be activated using incentive factors, specialized clusters, etc.), but also the formation of their topics, the creation or selection of start-ups for them, and here the right attitude to development (or the choice of intellectual property objects) can help. After all, it is known that SMTB without an innovative component cannot be highly effective.

SMITTB is also needed because without it we will not be able to win the war of intellects. By themselves, such companies will not arise and will not develop. They need help at least in the first period of formation. If former oligarchs or Western big businessmen return to the country and start building or reviving their enterprises, then these will not be enterprises that have absorbed the best achievements of recent years. Somehow this is not accepted in a market economy. It's too expensive for them. These will be, most often, obsolete productions based on the use of patents that have expired. It is easier to do this when developing SMTB if you choose an object with innovative content as the initial startup.

It is possible to offer a reasonable version of the "road map" for the creation of SMTB, an important point of which is to increase the professional level of the entrepreneur. Unfortunately, here again we have to complain about the fact that, due to a number of reasons noted above, the country is becoming de-intellectualized. The higher school, even if it seriously takes up the improvement of the educational process, and not the deepening of the clerical Bologna system, will not be able to overcome this negative trend. The experience of the most successful countries shows that it is expedient to use the experience of previous generations and seriously carry out its continuity (with all due respect to the talents and energy of the younger generation that has come to power). But, most importantly, it is necessary to make a qualitative breakthrough in the professional training of SMTB entrepreneurs. In particular, very quickly organize their training by higher education and retraining by modern means of mass education (trainings, coaching, seminars, thematic schools, etc.). In this situation, self-education of an entrepreneur can help, of course, combined with other forms of improving his qualifications. It is for this purpose that one of the authors of this article created the scientific and educational portal "Innovative Technological Business" (www.invest.ho.ua), which many entrepreneurs do not even know about, although it contains information on almost everything necessary for the creation and successful operation of SMTB. I recall the words of a great friend of Ukraine, President of the Center for Economic Initiatives of the United States, Leland Coule, who once complained in an article that only because of the dense ignorance of Ukrainian SMB leaders, he became poorer by several million US dollars.

In confirmation of the importance of the quality of professional training of SMTB specialists, we present a list of those areas of knowledge that are most important for their training: innovations, new methods of invention, modern innovation-investment and project management, and, finally, as the top of this entire pyramid of entrepreneurial knowledge, the foundations of innovation-technological business. Such an experience has been quite successfully implemented by one of the major departments of the Ukrainian Technical University for many years, but, unfortunately, it was not noticed by the authorities.

It is necessary to help an entrepreneur to choose a suitable innovative start-up that corresponds to the concept of sustainable development, the country's development program, the personal preferences of the SMTB initiator, find suitable investors, and create a positive investment climate. The tasks are difficult, but quite feasible. When choosing startups, competent patent and scientific and technical reviews on the chosen topic would greatly help. Let's remember how many descriptions of inventions and patents of talented Ukrainian inventors, created back in the time of the common state, gather dust on the shelves of the patent office now in the invader country. How many of them can and should be used in the creation or modernization of modern military equipment, as well as in those promising scientific areas that have not lost their relevance even today,

After all, in order to revive the almost completely destroyed real economy, Ukraine will have to not only recreate the production facilities that already existed, but use the new solutions that humanity has come to in the years when everything that was created in Ukraine during the years of industrialization was so successfully destroyed, and, of course, look for new effective innovative solutions. Otherwise, the revived production simply will not be competitive in a market economy. At the same time, the analysis of patent statistics shows that the active support and promotion of inventive activity contributes to the rapid development of the country's economic well-being and allows it to quickly overcome the economic crisis, as it creates significant competitive advantages, including in international markets. Unfortunately,

Even an educated businessman who has found a startup for himself will not quickly succeed in business alone. One of the possible promising forms of communication between entrepreneurs and

enterprises, in our opinion, is the formation of clusters at two levels - central and local. You can read about the cluster approach, which has proven itself in the successful solution of a number of major national economic problems during post-war industrialization, in the restructuring of the national economy of the country, not only in numerous publications by S.I. Sokolenko, but also in a series of articles by one of the authors, in particular, in the article "Cluster approach to the restructuring of the country's economy" (<https://blog.liga.net/user/vzadorskiy/article/31099>). It should be noted that our specialists do not pay enough attention to clustering issues and therefore we have to develop the theoretical foundations of a systematic approach to the synthesis of cluster systems, formulate the basics of connecting and combining modules, develop a theory of combining technological processes and creating flexible systems not only in management, but also understand the effects of emergence and interactivity and their use in various block-modular systems, which allows us to formulate the foundations of the theory of flexibility and adaptability of modular (cluster) objects and propose methods for optimizing objects with combined technological processes based on system analysis. Already this list of scientific problems of clustering shows that this is not a simple connection of subjects, but rather a difficult task.

All the more interesting is the role of the authorities in the formation of clusters. It turned out that it does not consist in the very creation of clusters for budget money, but in formulating a task and initiating the emergence of clusters, creating incentives and mechanisms, facilitating the creation of a breeding ground and legislative support for the process, as well as in incentives for obtaining positive results.

The cluster approach is especially successful if, simultaneously with the formation of the cluster, it is possible to find a start-up investor. It can be if we manage to provide a favorable investment climate for a startup. This can be facilitated by a competent business - a plan, in the appearance of which a potential investor is interested, initiating and paying for it.

After these stages, the work of the cluster members on innovative engineering and startup optimization begins. As our experience shows, it is advisable to use a new method of synergetic optimization and invention, information about which can be obtained on the scientific and educational portal, which appeared on the initiative and with the active participation of the authors www.invest.ho.ua. Only after all this work can one begin the stage of a directly innovative technology business, in which the entrepreneur also needs to know a lot. It is clear that entrepreneurs in the field of innovative technological business are not born, but become them as a result of training and, above all, self-training.

3. Reindustrialization. Cadres decide everything. Volunteers of the intellect

A nation that has been fighting for its independence for decades cannot but support the new idea of the authors of this article - intellectual volunteering. This project, if developed, may weaken the negative impact on the country's reindustrialization, an extremely dangerous trend towards the deindustrialization of the country's population. A country that was considered one of the most educated, intellectually developed, creative. Well, deintellectualization - and okay, war, after all. Well, borrowed intelligence - your own, apparently, is not enough. But, after all, the result is important, everyone is very much hoping for a close complete victory over the insidious and cruel enemy. But the war of intellects, unfortunately, will not end simultaneously with the war on the battlefields. The point is that, whether we want it or not, the country will not be able to turn into an agricultural prosperous state. Historically, it emerged and grew as a powerful industrial power with a highly developed intellect of the population, for which until recently it was famous all over the world. And agriculture has always developed and, apparently, will continue to develop in this state, primarily through synergistic relations with the industry that provides it with equipment, polymers, fertilizers, fuel, and energy resources. technologies, and finally, logistics. Such interaction is synergetics, and for

some reason this science is still rarely studied in Ukrainian schools and universities. As, however, and system analysis, and the concept of sustainable development. Apparently, this is why today there are almost no personnel in the country who could ensure victory in this continuation of the war of intellects, and a new wave of hired intellectuals in the form of visiting guitarists and other Varangians,

Ukraine will have not only reindustrialization, but also the revival of war-torn cities and other villages, the entire infrastructure. The cadres who previously did it so quickly and effectively that they shocked the whole world are already far away or removed from active participation, and the young cadres who replaced them are completing their studies in other countries and raising their economies and it seems that a lot of effort needs to be made, to bring them back to their homeland. The young guys still at home, not only badly or, in general, not taught anything, turned out to be unnecessary, rolling on bicycles with yellow boxes behind their backs, satisfying the needs of more successful members of society for food, drinks and some intimate means. And all because the industry does not work, there is no other work, and big tips attract them ... Okay, let's not talk about sad things ... Or rather, we will,

Our higher education today does not provide the country with the necessary qualifications. This is due to many reasons: the education system did not take into account the country's transition from a planned economy to a market economy; direct teacher-student communication disappeared and was replaced by formal numerous forms of knowledge control, rating cards, multi-page curricula, tests, e-mail communication instead of direct communication, etc. In addition, the triangle has been destroyed: education - science - production, which, due to synergetics, contributed not only to obtaining theoretical knowledge, but also to good practical training of specialists. The situation was aggravated by the fact that the institute of industrial practice was actually destroyed, since most of the industrial companies stopped working. But, the main thing is that today, due to the collapse of university science, higher education has turned out to be unable not only to provide knowledge and skills to its students, but also to develop their creative abilities, to teach them to think. The education system is still more concerned with memory training than with the development of thinking. It does not seem that the new approaches to education, which have already been developed in European universities, will also come to our institutions and ensure the training of professionals who meet the requirements of the time. Other ways to optimize the educational process are the creation of a business incubator (greenhouses) at the graduating department, dual education, real course and diploma design, the creation of a school for teaching new effective copyright technology of invention (<http://invest.ho.ua/Txt/algorithm.pdf>), internship, delayed issuance of diplomas after 1-2 years of work - study at the workplace and defense of a real diploma project, etc. Unfortunately, despite the positive results, so far these mostly successful attempts have not been developed. Due to the lack of prospects for rapid changes in the education system and the relevance of this task, some other possibilities for solving the problem of improving education should be discussed, taking into account the experience already accumulated in the country.

In the current acute period of the protracted war, volunteering plays and has already played an important role as a method of activating the entire population of the country. According to Wikipedia. volunteering, (from the Latin *Voluntarius* - voluntary) or volunteerism, volunteering, not only in resolving issues of providing soldiers with everything necessary, and the civilian population with means of survival, but can be used for a much wider range of activities, including traditional forms of mutual assistance and self-help, official provision of services and other forms of civic participation that is carried out voluntarily for the benefit of the general public without the expectation of monetary remuneration. This nationwide movement covered a huge number of areas of military life (from household to weapons) and proved its effectiveness.

But the volunteers have not yet paid attention to the problem of training personnel, their own, not borrowed, who could solve not only the military, but also the problems of the revival and further sustainable development of the country. So far, very little information has been received about the participation of university science in solving military tasks and problems associated with the destruction of the country, not only its industrial facilities and infrastructure, but also housing. Meanwhile, there is a lot of work done by scientists from different universities to improve military equipment. Perhaps this is due to the fact that there are not enough specialists left to solve the personnel problem in higher education in connection with the rejuvenation campaign, but those who remain also need a serious improvement in their qualifications. The circle of personnel problems has closed, and some new forms of management are needed to activate it.

Perhaps, in order to solve the problems of advanced training, it is worth adopting the experience of a successful volunteer movement in the country, using it in solving the problem of training personnel for the revival of the country. For example, in many volunteer organizations, a kind of cluster regime has taken root, the specific management of which is caused not so much by the originality of its objects, but by the unanimous desire of all volunteers to win, regardless of faith, language of communication, level of professionalism. At the same time, not only the already developed financial and logistical volunteering is of interest, but also intellectual scientific and educational volunteering, which will be discussed further. As an example of such an approach, we invite the reader to pay attention to our attempt to use the wonderful possibilities of the modern Internet for the development of this and similar projects.

We believe that with The secret of a successful business is its innovative startup. You can develop your creative thinking to create it, gain unique experience and knowledge and become a successful innovative entrepreneur on your own with unobtrusive volunteer help, master modern methods of innovative engineering to create highly effective products and business-technological models and learn how to effectively manage projects and teams by creating your own own company, startup, managing projects and your team or introducing new ideas into an existing business!

The authors invite aspiring entrepreneurs to a free new course on technological invention and creative business, which combines theory and numerous practical examples presented in our monographs and articles and is posted on two Internet publications - on our completely open, the only non-advertising, but scientific- educational - portal "Innovative technological business" (www.invest.ho.ua) and in blog posts by the initiator and author of the course on the site (<https://blog.liga.net/user/vzadorskiy/article/50119>). The methodology of system-synergetic invention has been successfully applied to develop a number of innovative technologies and inventions implemented at industrial enterprises in Ukraine and abroad, and the authors of the course and this article are confident that entrepreneurs will receive unique experience and knowledge necessary for successful innovative entrepreneurship using modern methods and means of innovative engineering and technology business, providing high efficiency and patent protection of the results of work.

The authors do not hide their expectations that this volunteer course can attract the attention of entrepreneurs to other business projects of our portal (organization of technological business incubators, holding technology business start-up fairs on anti-war topics, corporate and simple trainings on innovative engineering and technology business and others). When using the well-established volunteer approach, without waiting for active actions by the authorities, it is advisable to use the remaining intellectual potential of the people to create large volunteer educational organizations, organizing a kind of individual intellectual scientific and educational volunteering, which can become the basis of a future self-organizing educational system. That is, without waiting for decisions of high authorities, it is worth trying to throw a grain of knowledge, skills, and creative abilities into the wonderful black soil of the Ukrainian national mentality. A nation that has been fighting for its independence for decades cannot but support educational volunteering as a method of activity, a method of management that allows one to awaken creativity, efficiency,

Where can I get the staff of volunteers themselves for this new wave of volunteer movement? Here we can and should recall two methods that worked perfectly not so long ago: organizing the succession of generations and mentoring. We completely forgot about the continuity of generations, not only when solving some everyday issues, but also global issues, first of all, the revival of the country's real economy / So, there was actually a natural process of generational change - instead of the generation of those who managed to raise war-torn country and carry out its powerful industrialization, to power and. In general, a new young generation has come into life. As always, this revolutionary generation strives for the best. But the denial of the principle of continuity of generations manifested itself especially negatively in higher educational institutions. At first, scientists of the older age group, not on very legal grounds, were offered to choose one thing - a salary or a scientific pension. At the same time, they did not take into account that the salary of scientists in Ukraine has become one of the lowest in the world for a very long time. Scientists were offended, chose a pension, left universities, and when the law was quickly canceled, they did not return to their native team, apparently, they got a job at SMB enterprises. In universities, many scientific and pedagogical teams collapsed, many scientific areas disappeared, lectures began to be read by young lecturers who had never visited a working enterprise in the profile of the department. This did not end there, in

some places zealous young academic administrators even forbade suspicious, touchy pensioners from entering the university building. Generational change is a natural process and it is useless to fight it. But we must remember, firstly, you need to know about the guys from the square that older people most often die not from age-related diseases, but from idleness, lack of demand, longing from the fact that much of what has been done will go away with you. Apparently, many mayors do not know about this. Including, in the city where one of the authors lives, where several good projects for pensioners have been implemented. Here is the acquisition of a new profession (and what to do with the old?) And the project, according to which sometimes pensioners are taken out in large groups to sanatoriums, where they are taken care of for several days - they are given water, food, they are taught to walk with the help of ski poles, grow flowers, embroider with a Bulgarian cross, knit, etc. And they don't know that among the project participants there are a lot of veterans of machine-building, chemical, metallurgical and other plants, mines, etc., who could perform the functions of volunteers and help the younger generation become professionals. And it's not even necessary to pay them a lot for this, moral incentives or symbolic rewards are enough. However, a number of older people are still able to work on the implementation of specific startups for a specific salary or engage in the highest form of consulting - mentoring, for which you need to pay for industrial training. Of course, there should not be random volunteers, but volunteering is a self-organized process. Here the participants themselves do not allow punctures. You should not expect that intellectual volunteers will build specific installations, start up real production. They have other tasks - to choose the topics of future startups that correspond to the CSD, the national idea of the people, the adopted strategy, economically justified.

Particularly promising is the participation of students in such volunteering - it will not only help to grow a highly professional specialist, but will also become an element of education.

With this in mind, volunteers should develop and implement online distance education systems to teach innovative engineering and technology business to young people, including current students. Intellectual volunteers should also be used to help the authorities fulfill one of the most important responsibilities for regional leaders - promoting the creation of SMB enterprises, in particular, through the development and implementation of domestic effective innovative start-ups. As a constructive proposal for cooperation, we provide information about our work to help volunteers:

1. Create an Internet blog at <https://blog.liga.net/user/vzadorskiy/profile>, which appeared more than 10 years ago and where almost all are about 400 articles, starting with the first "[Power over power is a condition for the renewal of Ukraine](#)", are devoted to the strategy and tactics of implementing the concept of the country's revival.

2. The multilingual scientific and educational Internet portal "Innovative and technological business" (<http://invest.ho.ua>), which has been operating for 7 years, is apparently the only one in Ukraine, in which, as far as possible, in a popular style materials on the theory and practice, strategy and tactics of real promising Ukrainian projects of innovative technology business are given, where there are many monographs and scientific articles on the strategy and tactics of finding innovative solutions, as well as the results of their implementation and commercialization.

3. Cabinet on [Portal of Distance Education of UGKhTU](#), kindly preserved by the university management, which for the time being can be freely entered as a guest and get acquainted with both several basic distance learning courses and a new course of study on the method of synergetic invention, primarily of interest to the future of mechanical specialists. In addition, you can go to the electronic resources of the Department of Innovative Engineering and take distance learning in two special courses - "Innovative Engineering" and "Engineering and Technology Business".

To confirm the importance of professional training of specialists for SMTB, we present a list of those areas of knowledge that are most important for the implementation of the concept of sustainable development with its 17 indicators: the theory of technical systems and engineering methods for their optimization, tools and methods of innovative engineering, including methods for finding non-standard effective solutions and new methods of invention, modern innovation-investment and project management, and, finally, as the top of this entire modern pyramid of entrepreneurial knowledge, the foundations of innovation-technological business. Intellectual volunteering can help implement this or

a similar set of knowledge and skills in the main departments of Ukrainian universities, already taking into account the peculiarities of non-university education.

4. Is it necessary to start the restoration of Ukraine? In a dream and in reality.

This article of ours is unscheduled. Several publications and speeches by experts on television attracted attention at once. First of all, this is an article by Heorhiy Zubko, Advisor to the Minister for Strategic Industries "Where to start the restoration of Ukraine?", which talks about priority measures to restore and modernize the country's infrastructure. The article is based on an analysis of the Plan for the Recovery of Ukraine, which was presented by the Government, which includes a list of key areas and the necessary amounts of funding for the recovery of the country.

We note right away that so far we have not been able to get acquainted with the Plan for the Restoration of Ukraine, we are forced to look at it as if through the eyes of an adviser to the minister. Of course, there are no guarantees that G. Zubko looked where he needed to and saw what he needed. But still, the position of adviser to the Minister for Strategic Industries makes us think that a discussion with him on certain issues is advisable.

We can agree with the minister's adviser that the Plan should unite all interested parties for a quick, efficient, innovative reconstruction of the country after the war. But the term "modernization" included by the author in the list of tasks raises doubts. As you know (Wikipedia), modernization (from the English modern - modern, advanced, updated) is the process of updating an object, bringing it into line with new requirements and norms. The still ongoing war was not only brutal and ruthless, but also totally destructive. As the author rightly noted, the damage caused amounts to hundreds of billions of dollars, and the social infrastructure in the Donetsk, Luhansk, Kherson, Nikolaev, Chernihiv and Zaporozhye regions suffered the most from the actions of the aggressor. And in this case, it's more correct to talk not about modernization (and sometimes they write "update") - most often there is no longer a subject for updating, there is nothing to update. Therefore, it would be more correct to use the term "revival".

But our article is not about that. In it, we emphasize, the Advisor to the Minister for Strategic Industries, unfortunately, it talks mainly about housing and infrastructure, and most importantly, about financing the revival of our country. At the same time, speaking about approaches to the restoration and modernization of the country, the author does not offer anything, except for the continuation of the policy of using borrowed intelligence and begging that began even before the active phase of the war. And if you do not follow this path, then, they say, it will take at least 50-70 years, and "the officially announced estimate of the need for UAH 750 billion for the restoration of the country is only the starting point due to the continuation of hostilities."

And I would like to ask the author one more question, to catch up with what "lost level and pace of the country's development" he would like. After all, it is no secret to anyone that the destruction of the real economy of Ukraine occurred even before the start of the active phase of the war, and even then the country became one of the weakest former Soviet republics. Perhaps this was the impetus for the start of the war, and also the inconsistency of the surviving Soviet planned system of state and local government with the characteristics of a market economy, and in this country it was already necessary not to develop, but to survive.

In addition, there was a serious lag in higher education, which stopped teaching students to think, look for non-standard creative solutions, and retained only the only task - to teach them to memorize already known solutions found by someone earlier. Yes, and the secondary school did not lag behind it much - it practically stopped raising children, extended the period of study until the very beginning of their childbearing period, did not raise active citizens, patriots of their country, did not fight with their consumer inclinations. Perhaps, it was with this in mind that the adviser to the minister made a sad conclusion - under such conditions, we cannot remain face to face with the restoration of a destroyed country. Such a reconstruction option, they say, will be slow, expensive and threatens to lead to the loss of the country.

According to the author, the broad international support and strong financial leverage offered by the Plan will allow not only to restore, but also modernize Ukraine over the next 7-10 years, which will allow it to become a full member of the European Union. Full membership in the EU is very important and necessary for the country, but it is even more important that it becomes a means of ensuring its

sustainable development. This is one of the reasons why this article is titled "War of the Intellectuals". It is hard to hope for the same powerful help from the EU, the US, Britain and other countries to revive the country, as it is now happening for military assistance. Other countries have many of their own problems, many of which, by the way, appeared as a result of the criminal war unleashed by Russia. Since the main challenge at the stage of the country's reconstruction, according to the adviser, will be the availability of sufficient funding and access to the necessary technologies (this is where intelligence is borrowed!), Therefore, we are talking about the creation of a national structural fund for the reconstruction of the country, with vague functions - it, they say, will accumulate resources, prioritize their use and monitor the effectiveness and transparency of their use." And then we have to give a long quote that: "The financial basis of such a national structural fund for the reconstruction and modernization of the country should be diversified sources and financial instruments: multilateral non-repayable financial assistance, multilateral concessional loans, business support programs, trust funds, programs of international financial organizations (IMF, How many financial and intellectual investors need to be convinced, and donors of financial income need to be attracted, in order to win this new phase of the war for the rebirth of the country? But for some reason, in the adviser's article there is not even a hint of the need to restore and develop the real economy of the country, its industry for this, and what role this can play in replenishing the budget when using the funds received as a result of industry for the sustainable development of the country. Here, after all, one cannot do without a subtle, complex war of financial, industrial, scientific intellectuals, the success of which will largely determine the success of the country's revival process. If we seem to have enough financial professionals, then the situation with the staff of scientific and industrial professionals is much worse. Increasingly, the media are talking about 5 million unemployed due to the shutdown and destruction of enterprises in the real economy; in fact, a personnel crisis has already begun, which is becoming critical due to the lack of qualified personnel capable of carrying out the next industrialization of the country. This problem of personnel crisis is aggravated every day. In their articles, the authors wrote many times about the strategy and tactics of restoring and developing the real economy of the country and about ways out of its personnel crisis. As one of the main aspects of the task, they always noted only the synergistic connection between the revival of the country and overcoming the personnel crisis. As is known, science, education and the real economy are closely synergistically linked with each other by direct and feedback links, and cannot exist and develop separately. Unfortunately, in Ukraine there has been an extremely serious violation of this requirement of synergetics. This is due to the country's transition to market conditions of life with the preservation of the planned economy and its management by autonomous bureaucratic systems - sectoral ministries. In the absence of links between ministries in the country, By ignoring the current Concept of Sustainable Development, the sectoral Ministries are trying to manage their industries. But with the private ownership of most large enterprises in a market economy, when what is more profitable, and not what is needed, is produced, it is increasingly difficult to manage enterprises.

In the constructive part of this article, we would like to write what we would like to read about in the article of the minister's adviser. First of all, we were waiting for information, something clear and understandable about the strategy and tactics of restoring and ensuring the further sustainable development of the country. The strategy and tactics of the country's development is also a war of intellect, and here it is time for Ukraine to use not only borrowed intellect, but to turn on the intellect of its until recently highly intelligent people.

Already many agree that the strategy in this case is the implementation. the concept of sustainable development (most likely, this is the national idea) and its technological transformation into a real economy. And tactics, apparently, involve providing a comprehensive solution to environmental, economic and social problems not only at the expense of large enterprises of various forms of ownership, but (and, perhaps, primarily) by focusing on the development of medium and small businesses, creating a favorable investment climate, using high intellectual and innovative potential of the people, market mechanisms of management based on synergistic approaches, system analysis, project management and modern information technologies. I wonder if the adviser to the minister agrees with this?

Maybe use another tactic to implement this strategy: create as many state-level clusters as needed, and dissolve the industrial ministries without severance pay, leaving at least one new one in the real economy - the Ministry of Synergetics. Well, you can also add "and system analysis." However, you can not add, and so it is clear.

Or maybe use corruption not as an object to intimidate overweight officials, but as one of the tactics. After all, corruption is a fairly progressive form of business management, a management method adopted in many developed countries. Fighting her seems to be useless. No country other than

Singapore has managed to overcome it. It is easier to use it, impose high taxes on corrupt agreements, and for all accomplices, strictly monitor their implementation, and everything will fall into place.

It would be strange if we did not mention today's deoligarchization. There are many oligarchs in the country. A tough (not cruel!) fight has now begun with them. But they are the most talented, purposeful, professional specialists. Of course, the oligarchs must work for the country, and not just for their own pockets. Therefore, it is possible to introduce deoligarchization into a legal field and replace it with the creation of a positive investment climate for external investors and domestic oligarchs, combined with the cluster construction of production and the level of clusters. The upper level of sectoral clustering is something like central administrations or associations in the USSR. Such clusters could be well managed by qualified oligarchs if transparency and control of their activities are ensured. The lower level of clusters is smaller, regional. For them, Ministries are not needed - they are immune to synergistic rules. Corrupt officials of various levels could manage regional clusters. Imagine: a corrupt official of the first or second level is the head of the cluster of the corresponding level. Or the General Oligarch - the head of the national cluster, for example, engineering. Clusters of the upper state level can only be headed by a proven professional specialist, a Ukrainian profiled oligarch with the rights of a minister (perhaps, as suggested above, a former Ukrainian oligarch). For example, D. Firtash - inorganic chemical industry and fertilizers, Pinchuk - metallurgy, P. Poroshenko - food industry, etc. Each cluster includes all production facilities of one line of business, regardless of the form of ownership,

Clusters at the regional level could be headed by professionally trained certified (certified) entrepreneurs or corrupt officials of one rank or another and include innovative specialists or scientific departments, engineering staff and performers, investors, financial workers. serve a specific top-level cluster. An example is an Indian SMB-type enterprise for the production of carbon-silver electrical contacts for all clusters that require them, or small-scale production of innovative microcircuits in China, or manufacturers of individual components for smartphones and other modern consumer electronics, chemical and pharmaceutical mini-factories, interdisciplinary enterprises of industrial-agrarian symbiosis.

An important corner in the considered synergetic triangle is a flexible education system. Namely, the system: • preschool education, • a professionally oriented school, for example, a polytechnic, • the first stage of higher education (bachelor's degree) in one of the higher education institutions of the upper level clusters, • master's, residency, internship, postgraduate studies in parallel with work on the chosen profile in the or another level using the methods of dual, distance, independent education. Preferably, certification at the end of the second stage of education should be mandatory and carried out jointly by clusters and educational organizations. When reforming education, it is very important, in our opinion, to take into account the need for a transition to problematic education that develops consciousness, as well as the elimination of discrimination against the most qualified older generation and the use of the concept of generational heredity instead of eliminating the work of aksakals, as well as mentoring in educational centers and outside them. As for the Ministry of Education, it would be good for it to leave one task - to ensure and control the high quality of this education.

It is high time to return to earth the sphere of life most alienated from earthly affairs - science.

WithoutThe intelligence of scientists will not be able to successfully operate either clusters of the upper or regional levels, because, as you know, any type of business cannot be successful without science, and science should be the most active participant in the technology business. This is also true for industry, academic and university science, regardless of the form of ownership of organizations.

And, finally, in managing the revival and development of the real economy, it would be advisable for state authorities to leave the functions of financial and strategic planning, stimulating, if necessary, financial and anti-corruption control by the National Bank through the financial divisions of clusters that ensure anti-corruption security, transparency and legality of all. financial. operations. Perhaps, only the Central Power can and should provide a synergistic connection between the production clusters of the highest level, as well as a connection with non-production systems of activity, with strict observance of the principle of democracy over power.

If only everything that was written above would become not a dream, but a reality, or at least be read by the authorities.

5. Re-industrialization of Ukraine on the basis of SMB - there is no alternative

The Ukrainian government has slightly revealed the content of the program it is preparing for the post-war reconstruction of Ukraine. Believe me, the contents of this program already made public require serious discussion. Take, for example, the staffing issue. It becomes more and more relevant every day of the war. The most qualified professionals have been abroad for a long time, universities today do not train specialists capable of reindustrializing the country because they orient students to memorizing long-known information, and not to search for new solutions and information. In the world today, there are completely different requirements for specialists than those who are still working in our country today. Their key and cross-cutting competencies should be not only fluency in the state language, mathematical, general cultural, environmental and economic competencies, but also entrepreneurship, innovation, ingenuity, critical and systemic thinking, the ability to take risks, make decisions, solve problems. In order to revive the country, it will first be necessary to create and implement a system of continuous education capable of training such specialists, because it is high time for Ukraine to move from using borrowed intelligence to using its own intelligence (at least in the field of military equipment and technology).

There is another serious issue related to the task of reviving Ukraine. This is the question of the need to reindustrialize Ukraine, which has turned from an industrialized country into an agrarian state as a result of mismanagement and then a war. It is unlikely that it will be possible to quickly restore the industry, focusing on investment (if only because the investment climate in the devastated regions is not the same), or involving our oligarchs in the reindustrialization due to the active campaign of deoligarchization. And world experience suggests a completely different path - the dynamic development of medium and small businesses. This direction in Ukraine was going to be developed quite a long time ago, more than 20 years ago. At that time, a very friendly businessman from the United States worked very actively in Ukraine, who was guided by other principles of organizing the real economy, than it was adopted by the countries of the former Union. It was the President of the American Center for Economic Initiatives Leland M. Cole, who created on his own initiative an Internet portal www.ukrainebiz.com. It was not a front portal with bright illustrations and brilliant design, but there were many useful sites and web pages. And one of the authors of this article, on a voluntary basis, maintained his site "Technical proposals" there, where he gave many detailed presentations of start-ups prepared by him for SMB enterprises, not only his own or others, proposed in Ukraine, but also abroad, the content of which would make it possible to facilitate the search for partners for business and organize, for example, clusters for various startups. Sometimes he also prepared presentation web pages on promising Ukrainian SMB enterprises.

But the unexpected happened. The author never personally met or even talked on the phone with Leland Cole, but, unexpectedly for himself, found himself learning from him, and quite diligently. He became a kind of coach for him, and the author was in the process of coaching. The teacher often worked according to the principle: it is better to do it once than to hear a hundred times about what needs to be done. He was great at it. As it became clear later, he spent money not so much state money as his own, and he had an idea in all his undertakings - at least in one city (it was Kharkov) to achieve the flourishing of a real commodity-producing economy (not commerce and not services) at the expense of SMB enterprises. So he demanded that the author not even include information about large enterprises in his "Technical proposals" database, so as not to get involved with startups for large businesses at all. Already at the beginning of his activity, he came to the same conclusion that the Ukrainian leaders came to quite recently, when it was already too late. Conclusion - today everyone is on the hearing - personnel decide everything. And he did not just come to a conclusion, but changed the direction and methods of his work in Ukraine, concentrated his efforts on training professional entrepreneurs due to the very low initial level of professional training of children, their lack of elementary knowledge in physics and mathematics in many areas, which can be would benefit from further training. And yet, he was very outraged by his complete ignorance and misunderstanding by entrepreneurs of the provisions of business ethics. He even asked for help to finalize and publish his article about this difficult period of his almost hopeless project. His request was fulfilled and a translation of his long article appeared in the "Capital News", which compared many aspects of business in the USA and in Ukraine, and argued that only because of the lack of professional skills among entrepreneurs and their low level of knowledge of the basics of business ethics, they already

lost over a million dollars. To be honest, unfortunately, in Ukraine, his educational methods for training future entrepreneurs were not studied much, but we remember that he set the following goals: that just because of the entrepreneurs' lack of professional skills and low level of knowledge of the basics of business ethics, he has already lost more than a million dollars. To be honest, unfortunately, in Ukraine, his educational methods for training future entrepreneurs were not studied much, but we remember that he set the following goals: that just because of the entrepreneurs' lack of professional skills and low level of knowledge of the basics of business ethics, he has already lost more than a million dollars. To be honest, unfortunately, in Ukraine, his educational methods for training future entrepreneurs were not studied much, but we remember that he set the following goals:

- increase the productivity and competitiveness of the production of goods and services for both the domestic and export markets.

- encourage the transfer of technical know-how and train in its use.

- encourage foreign investment and other business ties.

- Organize "study trips" to the United States, during which entrepreneurs could learn firsthand world-class management, manufacturing and marketing skills for their respective industries, as well as establish contacts for potential joint ventures and other business partnerships.

- support trade, investment and other forms of economic ties between US firms and companies in Ukraine.

- to support the exchange of American experts in various fields of knowledge.

- Transfer technology and provide training to specific industries and individuals.

- facilitate the transfer of American technological know-how and other business information.

His American center planned to provide entrepreneurs, primarily in the Kharkiv region, with technical information received from American firms. Among the information provided free of charge were books on technologies and management methods used in the United States, phone numbers and addresses of companies, samples of parts and goods. Unfortunately, he sent requests for finding partners to create joint ventures and obtain licenses and contracts for consideration by the consulting service "CEI Consulting, LLC", and in it such requests were paid. In addition, in 1998 The American non-governmental organization "Center for Economic Initiatives", in which he was President, organized the Business Internship Program in the USA.

Unfortunately, he did not have time to rejoice at his success and be convinced of the correctness of the chosen direction of work, but many in Ukraine know that Kharkiv has become not only a city of science and a real economy, but also has the most developed SMB. Only memories remain about the work of the American millionaire in the development of the Ukrainian SMB, and about the wonderful portal www.ukrainebiz.com, unfortunately, only a small entry remains, which can be seen here: <https://www.booked.net/ukrainebiz.html>. New leaders came to the leadership of the Center for Economic Initiatives, who, unfortunately, left the Ukrainian SMB to their fate. And Ukrainian leaders began to mention less and less about the need to develop SMEs for the revival and further sustainable development of the real economy, and, therefore, of the entire country, and increasingly give preference to its digitalization, forgetting that the latter itself is an applied, servicing branch of knowledge. to the concrete real sphere of commodity production.

Now I already understand that the main drawback of this wonderful project was that all its main stages were not connected with each other. At that time, little was known about synergetics, this term appeared quite recently. For example, study tours. It is right that people come to understand the market economy best when they see with their own eyes what, where and how it works. Study trips introduced businessmen in specific industries to modern methods and techniques of production, technology and marketing. But all this in general, without reference to their personal projects, personal startups. It was wrong not to use the opportunity that the mentioned site

"*Technical Proposals*", which was created specifically for this project www.ukrainebiz.com. The long experience of such cooperation with the American partner convincingly indicates that the latter was not mistaken in recommending the development of SMEs as the main direction for the development of the real economy of Ukraine, and that the main obstacle to the development of SMEs in the country is the poor professional training of entrepreneurs and managers to work in the production of the real economy.

Unfortunately, attempts to take over the baton of SME development from an American businessman were unsuccessful, although the Ukrainian author of this article had incomparably more opportunities for this in those years. Even without the help of the authorities, he collaborated not only with NATO scientific programs, but also with the institutions of Great Britain, Poland, Bulgaria, Germany, and tried to ensure that the topics of the work were consistent with the topics of the country's development tasks, which had already been formed by that time.

It has already become clear that, thanks to the knowledge gained, self-study, Mr. Cole's methods of work can be significantly improved, given the achievements of such sciences and branches of knowledge that have now developed, such as synergetics (a monograph on synergetics in the chemical industry was already written by the Ukrainian author of this articles and published in Germany, as there have always been problems with publishing houses of technical literature in Ukraine), innovation and investment management, innovative engineering, innovative technology business. Fortunately, in all these areas, the same author developed scientific and methodological literature, and for a number of years the corresponding special courses for future engineers have already been read. The most important thing was that as a result it was possible to offer a system of continuous education,

The main idea of this program was formulated quite a long time ago as follows: all activities should contribute to the implementation of the concept of sustainable development of the country and the technological transformation of its economy through a comprehensive solution of environmental, economic and social problems by focusing on the development of small and medium businesses, using the high innovative potential of managing the basis of synergetic approaches, system analysis, project management and modern information technologies.

In practice, this formula is not only a proposed algorithm of actions, if you like, a roadmap for reindustrialization, but also a list of those areas of knowledge that those involved in the revival of the country must possess. Much has been written about this by the authors of this article. Hyperlinks and brief annotations can be found at least here: <http://blog.liga.net/user/vzadorskiy/profile>. And in this article, instead of the usual constructive part in our articles at the end, I will limit myself to a brief memo to entrepreneurs who are going to participate in the revival of Ukraine:

1. The concept of sustainable development. It needs to start with. It is accepted in almost all countries of the world, and they are guided by it in their practical activities. In practice, it has become a national idea for many states. In Ukraine, it is, unfortunately, not yet popular.

2. Cadres decide everything. We need to change the concept of education. Now you need not so much to know something (because most knowledge is quickly forgotten), but to understand what you need to know to solve a particular problem, be able to find solutions using creativity or the ability to independently search for the necessary information using information technology. To train such professionals in accordance with the requirements of synergetics and a systematic approach, completely different ways of working in higher education are needed.

3. Real medium and small businesses without innovative content are inefficient and do not contribute to the technological re-equipment of our economy; close synergistic interaction between education, science and enterprises of the real economy is necessary.

4. **Modern technology business in a market economy must be innovative**, otherwise it cannot be developed and successful. To ensure it, it is necessary to actually implement the cluster approach that is so popular in the world today in the technology business. Entrepreneurs who are not very

professionally trained will not be able to implement innovative start-ups on their own without active assistance.

5. The authorities are not obliged to interfere or help SMB businessmen, but are obliged to be, especially at the initial stage, an active participant in the SMB cluster, which includes the real economy, ecology, education and, of course, modern innovation and investment management. This will drive out corruption at least at the regional level.

6. In order to implement the principle of continuity of generations accepted throughout the world, it is advisable to embody the idea of intellectual volunteering (volunteering). Volunteering on Wikipedia is a wide range of activities, including traditional forms of mutual aid and self-help, [fundraising](#), official provision of services and other forms of civic participation that is carried out voluntarily for the benefit of the general public without the expectation of monetary compensation (but not without it). Volunteers have not yet paid attention to the problem of training their own, not borrowed personnel, who could solve not only the military, but also the problems of the revival and further sustainable development of the country.

7. To ensure the effective operation of the higher education system and the training of professionals whose qualifications meet the requirements of the economy of a developing country, close synergistic interaction between education, science and the real economy is also needed. In fact, this is the implementation of the cluster approach in the technology business that is so popular today in the world.

8. It is necessary to create in the country, in parallel with the system of higher education, a system of training and retraining of industrially oriented personnel with working specialties. Maybe by reorienting secondary educational institutions to polytechnic schools, creating certified training centers with the predominant introduction of training through coaching (Wikipedia: Coaching is a method of learning in which a person called a "coach" helps the student achieve a certain [vital](#) or professional individual specific purpose. Unlike [mentoring](#), coaching is focused on achieving well-defined goals instead of general development... Professional coaching includes techniques such as suggestive paraphrasing, listening, asking questions, clarification, which help the client change perspective and see new approaches to achieving the desired goal.

9. Taking into account the transition from the planned Soviet system of managing the real economy, when reforming higher education, one should be guided by the creation of technological business incubators at the main departments and opportunities for real participation of students in promising innovative start-ups through the implementation of real course and diploma projects.

10. In developing the idea of a cluster approach to training specialists, it is advisable to use the issuance of a double diploma in engineering universities or the issuance of inserts in a regular diploma of a specialist, reflecting his training specifically in market areas. Employers will be much more willing to hire such specialists, even if they received not a second diploma or an insert into a regular one, but a certificate of additional education in a business incubator, a school for creative development and training in invention, and even in a training center.

11. The more active part of society involved in IT technology and digitalization should be introduced to the real economy, which these professionals in all countries are intended to serve. On their own, apart from real production or management organizations, they will not create any surplus value and will not ensure the revival of the country.

12. As a priority, it is necessary to ensure the development of the intellectual and creative capabilities of young people. Reorient the education system, restore the appropriate orientation of the media, art, children's and youth schools, clubs, houses, the Internet and its various forms of activity. Promote the creation of schools for the development of creative abilities at educational institutions with the study of modern methods of creativity, in particular, the developed Ukrainian methodology of synergetic invention. Teach technology business, such areas of knowledge as system analysis, synergetics, logic, dialectics, many traditional and new methods of external influence, etc.). All developed

countries are engaged in the creation and widespread implementation of such methods in practice - for example.

There are many more suggestions like those in this memo in this article. All of them must be implemented or at least tested locally. The results of many specific proposals are given in ours, so far the only one in Ukraine. [Scientific and Educational Portal of the Association of Innovation and Technology Business.](#)

6. Secrets of an innovative technology business

Since the time when the authors began to work on the problem of the role of intelligence in the sustainable development of states, in particular, Ukraine, many events have taken place, a fierce war has been going on, as a result of decentralization, the central government has lost a significant part of its powers, transferring them to the regional authorities, who gladly accepted financial concerns about the good, no, no, not of the country, but only of the regions, but they are in no hurry to exercise their powers (and, consequently, responsibility) in the real economy justified. Until he is ready for this and we have. But there are very few discussions about the problems of managing the national economy, regions, enterprises, business and the role of the people, and, perhaps, the war of intellects, which we wrote about,

Algorithm of revival and sustainable development (CSD). Many already agree that CSD is today a strategy, a national idea of the country. And the tactics provide for the provision of a comprehensive solution to environmental, economic and social problems not only through large enterprises of different forms of ownership, but (and, perhaps, primarily) through a synergistic energy-industrial-agrarian symbiosis, focus on the development of small and medium businesses, the creation a favorable investment climate, the use of the high intellectual and innovative potential of the people, market mechanisms for managing the economy based on synergistic approaches, the use of system analysis, innovative engineering, project management, digitalization and modern information technologies. Well,

Secret 1. A startup leader must have a sustainable development strategy and tactical methods for implementing this strategy. We foresee the indignation of the reader. Fair indignation, because this set of tactical means and methods for implementing a sustainable development strategy in Ukraine has not been studied anywhere. The recruitment of several specialists who know certain individual tactical methods is not always suitable for relatively small SMB enterprises. There is only one way left - to give additional knowledge and skills to future specialists of the nearest profile or specialty. For example, there was such a specialty as a mechanical engineer. It was because it is not known why (apparently, the effect of deception worked) the proud name of the specialty "engineer" was replaced by the European "bachelor" or even worse "master". At the same time, the content of training most often almost did not change. The bachelor was taught a year less than the engineer, almost without changing the curricula, and the master was most often taught the elements of pedagogy. Who needed both in an era when there were almost no working enterprises left, scientific institutions, too, was of no interest to anyone. But it is interesting that the curricula of all three categories contain a fairly large part of the knowledge necessary for the development of CSD, and without much effort and change in workload, it is possible to provide training in this concept for future specialists. We will have to add small special courses, reorient something in others, and this would make it possible to implement a new system of training mechanics with an entrepreneurial bent, including such large special courses as "Technical Systems Theory", "Engineering Technology Optimization", "Innovative Engineering", " At the next meeting of scientists in Budapest, we very carefully discussed the results of our activities, generally approved them and recommended them for implementation in other countries, and the report was even included in the collection of NATO works. It is a pity that for a number of objective and subjective reasons this project ended, as, unfortunately, often happens, with nothing.

And in secondary school it would be time to remember that in it, along with general education, one should also engage in professional education and already orient the high school student to the choice of one or another direction of further development. In the meantime, extra-curricular work with schoolchildren, work on their career guidance has stalled in many schools. Unfortunately, at the same time, radio and television programs stopped organizing programs for children and youth. Finished publishing children's and youth developing printed editions. Parents, due to military circumstances, are often deprived of the opportunity to give their children as much attention as was paid in peacetime. The results of all this are already visible today and will be felt in the near future, when the next generational change begins.

Secret 2. A successful startup should be implemented not only as a task that is important for an entrepreneur (for example, enrichment, the realization of some personal ambitions, increasing his authority, prestige, etc.), but also as a social task. For this, for example, 17 indicators of sustainable development have been adopted in the world - there is plenty to choose from for a task for any SMB enterprise. Now, during the bloody war between Russia and our country, there are a lot of tasks that are within the power of SMB enterprises or even single entrepreneurs. Perhaps the advice of an experienced teacher or an intellectual volunteer will help the children find themselves and be able to use their professionalism in the current difficult conditions. I would like to draw your attention to the fact that the aforementioned scientific and educational portal "Innovative Technological Business" is now actively working on the Internet. It is also designed for immigrants, children who did not have time to get an education, demobilized soldiers. This portal has a list of "Anti-war Smart Startups for Tech SME Entrepreneurs". It contains paragraph 14 "Industrial plants for the complex processing of plant materials for the production of bioactive food products (pectin pumpkin nectar, medicinal tinctures and dietary supplements, etc.)", which proposes to obtain from pumpkin pulp a fairly simple technological process, the so-called pectin, which is an indispensable excellent sorbent for radioactive isotopes that have entered the human body. It is even easier to get pectin from apple pulp. We can help Ukraine prepare for a possible next disaster, which we are threatened by completely brutal rashists - the use of nuclear weapons against the army, and even the civilian population. You can very quickly establish the production of pectin from apple pulp after squeezing the juice. It will not be as expensive as the one that is now produced in Europe from citrus fruits (from the white layer under the skin). The example can be continued for our unemployed, who are many today in wartime. We went with a local businessman along the Dnieper to a cannery on one business project. The road ran along a large field of gourds. The field was driven by a tractor with an attached wagon. A colorful man sat on it and picked up huge ripe pumpkins from the ground, carefully cut them with some kind of cunning ax, after which he selected pumpkin seeds from each pumpkin with a gloved hand and threw it into a rubber bag, and the halves of each pumpkin he casually dropped to the ground. There were already many such bags of seeds on the cart. They asked him why such an amazing business. These are not fodder pumpkins, but very healthy and tasty. The man replied that they were supplying the seeds under an American agreement for the extraction of medicinal pumpkin oil from them, and there was nothing about pumpkin pulp in the agreement with the Americans. They asked him why his employer doesn't bring the pumpkin to the city to the market, because it is very close, and the price of pumpkin mass on the market is very high. I received response information that this business is not for them, there are, they say, more interesting cases. The most interesting thing was at the end of the road (after 5-6 km). It turned out that a rather large, well-equipped cannery, where there is all the equipment necessary for processing pumpkins into pectin nectar from it, idle due to lack of ... raw materials (usually berries, apples, pears were processed on it). I am sure that everyone can give many such examples, there are many reserves for the development of SMEs in Ukraine. It is a pity that we do not use them and do not implement this second secret.

Secret 3 is that the synergy of startups is one of the main signs of a successful business. Indeed, what prevents the two entrepreneurs from agreeing on the integrated use of grown pumpkins. Indeed, in addition to sending seeds to the Americans, there are simple technologies for the production of pectin nectar from pumpkin pulp, which is so necessary now during the war, which is about to be made nuclear, one glass of which gives a person the necessary 4 grams. pectin, and even get free pectin, which is necessary for our cooks. Who prevents the use of haulm for the preparation of feed for livestock or pellets?

For many years experts have been surprised by the fact that for many years, due to the lack of synergistic interaction between individual SMB enterprises, the problem of using millions of tons of spent activated sludge from treatment facilities has not been solved. From time immemorial, this

sludge was taken to the fields as an excellent organic fertilizer, but now, due to the pollution of water, air and food, without which we cannot live, after cleaning domestic wastewater, all pollution remains in the waste sludge. But there are scientists' proposals to use biological cleaning of fields, removing activated sludge on them, and sowing on them a kind of biological pump - alfalfa, which sucks out all the pollution from the soil, and is extremely necessary for our farmers not only as a wonderful fodder, but also as a source of vegetable protein. , which is needed by livestock breeders and owners of poultry farms. It turned out, that there is already a simple technology for cleaning waste activated sludge by growing a well-known fodder plant, alfalfa, on fields fertilized with it. It is only necessary to agree on a joint project for farmers, water treatment specialists and technologists for the processing of agricultural products. It turned out that it is much more difficult to agree on a joint business project in Ukraine than to solve this difficult technological problem.

The synergy in this story is just an example that confirms the correctness of the Secret 4 we proposed, which can be called energy-industrial-agrarian symbiosis.

In this article, we already talked about the fact that in the city of Kalundberg (Denmark), young guys in this resort town, surrounded by several environmentally harmful enterprises, looped them in such a way that the emissions of some enterprises became raw materials for others. They did the same with energy flows. Everything worked out well for them, and when one of the authors came to them for the second time at the European Symposium on the Exchange of Experience, he did not see a single pipe from which smoke would come. The European Institute of Industrial Symbiosis was opened in this city - that is how they called their project. We thought that our Ukraine is now an agrarian country, but until recently it was (and, God willing, will become again) industrial. In addition, we had powerful energy. We also decided to work out the possibility of their symbiosis. The war got in the way, but there is hope

That's just how it will be with 5 secrets, closely related to all 4 previous ones. This secret is simple and familiar to everyone since Soviet times. "Cadres decide everything," one of our leaders often said.

Our most qualified middle-aged professionals have been abroad for a long time, our universities today do not train specialists capable of reindustrializing the country because they orient students towards memorizing known information, and not towards finding and creating new solutions. In order to revive the country, it will first be necessary to create and implement a system of continuous education capable of training such specialists. Unfortunately, proposals on how to create such a system have so far not generated much interest from the public. All hope is for the government, which has shown its good capabilities in solving the problems of digitalization in our country. If only the authorities would take up the solution of the problem of de-intellectualization of our population. After all, this is an equally important problem, which, by the way, is closely synergistically related to the problem of digitalization. But unfortunately,

Secret 6- power over power, it is written about him at the very beginning of this article. It is not worth writing again about the problems of sustainable development, about ways to restore the real economy, about the complete collapse of university, industrial and academic sciences, about corruption and deoligarchization, about the imperfection of the country's governance system and its inconsistency with the laws of a market economy, for which we were completely unprepared ...

Secret 7. The institute of volunteering for the purpose of education, called "intellectual volunteering" - this is the 7 secret of successful entrepreneurship.

Secret 8. Finally, the 8 secret of successful entrepreneurship is "The future starts today". Here, because of this 8 secret, we wrote this article.