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HYPERBOLIC DISCOUNTING AND ITS CONSEQUENCES: EMPIRICAL ANALYSIS ON THE BASE OF SURVEYS

Introduction. Time preferences have always been in the center of the economists' concerns.

This crucial priority lies in a fact that the idea of time preferences influences not only individuals' well-being, but also a national welfare. It can be one of the explanatory factors of low savings, indexes of health behavior and so on. The concept of time preferences induces the person to choose between costs and benefits at different moments in time. Each decision entails a series of consequences and additional costs.

How people are able to establish priorities or be inclined to resist different kinds of temptations will be reflected in their consumption at the current moment and will have an impact on a future consumption plan, especially in the period after retirement combined with a lower income and sensitivity to savings. Every day we face different situations, which force us to make a choice: buy shoes right now, leave it for later, spend money now or deposit in a bank to earn an interest rate, quit smoking and enjoy it in presence or start thinking about destructive impact of smoking on our health. All this list can be continued for long, situations can be different, the only thing in common is the necessity of self-control. There are different constraints which prevent people from committing wrong choice or from procrastination of making any choice, such as loans, deadlines or simply our inner self-control, which depends on many different subjective factors. The classical economic model does not take into consideration psychological and cultural peculiarities, which have a large impact on the process of decision-making. The absence of these variable leads to misleading results on practice. Even the mood the agent can cause severe deviations in understanding the economic behavior.

In this paper the model with an adjustment for cultural and psychological is introduced. The differences between cultural dimensions and belonging to the group of risk averse individuals and their impact on the setting discount rate are illustrated in a light of this research. Despite the comparative analysis of exponential and hyperbolic discount models, the important drawbacks of the most widespread discount model are determined and several anomalies are discussed. The survey is focused on formalization of time-inconsistent preferences and tendency to procrastinate depending on the structure of costs.

We start from a consideration of a theoretical background of utility model beginning with a classical model and ending with quasi-hyperbolic discount model which combines the features of prior concepts. Also measures against procrastination and different temptations, named as commitment devices, are put forward. The disparity in individuals' behavior is explored from the perspective of awareness of self-control problems by the division of consumers to naïve and sophisticated.

Then we analyze why people differ substantially in consumption plans and levels of savings; different methods are reviewed. The long-term discount rate and the short-term discount rate are compared between each other. We use such instruments as violin plots, regression model and decision trees.

Finally, we describe obtained data through the questionnaire and the results revealed by means of analysis tools. The core of the work lies in the establishment of the relationship between country variable, which contains the information on cultural peculiarities, national welfare and the level of consumption, risk aversion variable, implying that individual tends to skip any risk by sticking with already existent prospect and the subjective discount rate. Then the discussion on the results is conducted, explanations in favor of the extended with psychological forces are outlined and shortcomings of the model and their solutions in order to reduce their effect on occurred bias are described.

Some words about classical model of intertemporal choice. Some people tend to consume more today and suffer from a lack of savings in future. The allocation of income between the current consumption and the future one underlies the concept of intertemporal analysis.

The first author, who contributed to the intertemporal analysis, was Fisher (1930) by proposing in-

different curves, which are used for representing how the rational individual will distribute the consumption between the past and the future. The main assumptions for this model are the absence of uncertainty, consideration of the two periods and the perfect capital market. Each curve supposes two goods and illustrates such combination of present and future consumption that generate the same satisfaction and how the former one can be transformed into the next one by making investments in the real capital projects. The utility is being maximized by moving to the higher indifferent curve. According to the shape of these curves, we are able to identify whether the patient consumer was being examined or an impatient one. The patient consumer tends to save more and in case of the increase in the current consumption he tries to decrease a future consumption by relatively same amount of units in order to save the equal indifferent curve. In light of the patient consumer indifferent curve has a gradual slope, whereas considering the impatient consumer, who in contrast is more likely to spend more right now instead of leaving it for later, we will have a steep slope of the indifference curve. Hence, the shape of the Fisher's indifference curves is crucial in terms of saving and borrowing decisions and depends on the individuals' time preferences and the diminishing marginal utility. The concept of indifference curves has become the main basis for the development of the discounted utility model. Fisher (1930) considered different determinants of the time preferences and formulated them as a combination of objective and personal drivers. The list of personal factors is composed of «foresight», which depicts how well the individual is able to foresee future and «fashion» that has impact both on the interest rate and on the distribution of wealth itself.

Later Paul Samuelson introduced a discounting model for Fisher's indifference curves analysis implying a multiple amount of the time periods as a two-period Fisher's model might be inappropriate on practice for some situations (Samuelson, 1937).

In the classical economic theory, the exponential utility model is a standard framework for examining intertemporal decisions. However, due to the large amount of the empirical researches, comprising of the questions about some hypothetical situations and subsequent individuals' decisions, the validity of this concept is in question. The issue about exponential utility model is that discount rate is unified and constant for any economical agent and does not take into consideration any external factors or psychological motives, which can influence individuals during a process of decision-making.

In order to understand the concept of the exponential utility I need to represent the list of the important assumptions, which underpin this model.

First of all, people's time preferences are positive, which means that people prefer to receive goods as soon as possible and the subjective discount rate takes values less than 1.

Secondly, preferences are considered to be time-consistent, which implies the constant discount rate as it was already mentioned above. The ratio of the discount function in any period to the prior period is equal to the discount factor.

Thirdly, the utility in any period does not depend on the utility in any other period. The same thing can be said in terms of the consumption independence.

Additionally, the utility function is stationary and continuous, which indicates that individuals do not change their preferences over time.

However, all the theoretical assumptions which underlie the exponential utility model couldn't find a wide application in practice and also exponential model used to face different kinds of anomalies which will be discussed later during this work. Considering the field of the intertemporal choice and discounted utility model it is crucial to mention the key axiom about how individuals evaluate their consumption plan. This axiom presumes that integrating new alternatives to the already existing plan can be accomplished only by regarding accumulated consumption in the previous periods and the influence of the new alternative on the consumption in the future periods. Despite the fact that in theory these assumptions seem to be normatively compelling it is hardly can be found in the real life. Usually people are not fully aware of their future plans or they can evaluate their optimal plan by being too self-confident or being conscious about chance to fail (optimism and pessimism cognitive biases). Evidently, classical model ignores the problem of uncertainty stressed by Heteredox Economics, especially by Post Keynesian approach (Davidson, 1972; Carvalho, 1992).

The desire to go to the Italian or Vietnamese restaurant is undoubtedly influenced by the previous experience, which challenges the question about consumption independence.

Also exponential model was unable to explain why gain are discounted according to the higher subjective discount rate than losses are.

The crucial point in studying exponential discounted utility model lies in the time-inconsistency, which wasn't taken into consideration, but was often observed during lots of empirical researches. The idea of time-consistent preferences defines that if person prefers 1000 dollars now over 1500 dollars in one week, he will still have same preferences if will be asked about one year and one year and half. Hence time preferences remain constant whereas time horizon becomes wider.

Let assume that we have an individual that has three years till retirement left and he is about to distribute his income and expenses in the most sufficient way. Time-inconsistent preferences imply that when we observe high discount rate between utility in the period t and utility in the period t+1 and relatively low rate between t+1 and t+2 whereas when the period t+1 actually comes, discount rate between t+1 and t+2 is way higher

than it was initially expected so the individual will carry out the different consumption plan. Time consistent preferences suppose that optimal consumer plan remains the same through time.

However, in practice it can be easily demonstrated that time preferences are influenced by many different factors both objective and personal, which make them unstable over a time period.

Some researchers argue that time-inconsistent preferences are often hard to be evaluated as the person changes his attitude at different times. This problem eliminated in some papers (Goldman, 1979; Laibson, 1996; 1997) by using Pareto criteria, which states that one alternative prevails over another one, when the person considers this alternative the most attractive among the whole range of perspectives. However, Pareto criteria turns out to be too weak for any assumptions when one outcome certainly generates a greater utility than another one.

All the points mentioned during this chapter lead to the necessity of the utility model to be further expanded by including the careful analyses of all gaps and anomalies occurred in practice and the emergence of such modifications as «hyperbolic» and «quasi-hyperbolic» discounting.

Some words about hyperbolic discounting. The concept of the constant rate failed on practice as a wide range of laboratory studies revealed that discount rates in the short-run use to predominate over the discount rates in the long-run. This discrepancy is hold in the hyperbolic discount function, which implies a diminishing discount rate.

Every individual faces the daily situation whether to consume the good now or save it for later. The hyperbolic discounting model gives an explanation for the question why do people tend to overweight present to future, why do they are most likely to have the low level of savings after the retirement and why do they tend to frequently borrow in the credit market. When people are about to plan their future consumption they are willing to meet deadlines, give up on bad habits and start saving in advance in order not to suffer from the lack of money after the retirement. When the moment of the retirement actually comes, our real income is lower than we expected. This gap between long-run intentions and real short-run actions shows the contradiction between peoples' short-term preferences and long-term desires.

In the economic literature the first one who made researches in the field of time-inconsistent individuals was Strotz (1955). He proposed two strategies that might be employed by a person who foresees how her preferences will change over time: the "strategy of precommitment" (wherein she commits to some plan of action) and the "strategy of consistent planning." (wherein she chooses her behavior ignoring plans that she knows her future selves will not carry out) (Frederick et al, 2002).

The thing is that hyperbolic discounting is taken into consideration mostly in terms of explanation of time-inconsistency. However, hyperbolic discounting appears to be valid enough merely when not only time-consistency is violated, but also stationarity is not hold. Violations of both assumptions cause certain choice reversals, which can be explained by the concept of hyperbolic discounting, but again, only in case when they both are not adhered. Time-inconsistency occurs when the person is asked in a zero period whether to get 100$ in a month or 110$ in two months and he is willing to wait for a higher reward one extra month. When it gets closer to the end of the first month, he exhibits the choice reversal, which means that he is becoming less patient and more excited about a sooner, but smaller reward rather than a larger gratification that implies additional month of waiting. In general terms the concept of time-inconsistent preferences describes the contradiction in preferences between long-term plans and short-term decisions. Being asked far in advance the individual is ready to act relatively patient whereas the closer he gets to the lower reward the more he is willing to opt for it instead of choosing the more beneficial alternative.

The individual violates the term of stationarity if he prefers 100$ tomorrow to 110$ in a month, but rather have 110$ in two months than 100$ in a month. When we analyze the violation of stationarity, the time period doesn't change like it does in a light of time-inconsistency. Individual is being asked in a zero period about two possible outcomes, which can be obtained in different time periods, the similarity is that the time difference between two offered prospects is the same whenever he is proposed to get them. In the example above the time-difference between 100 and 110$ is one month and according to stationarity axiom individual is obliged to choose the same reward no matter which time frames are stated. There is one more explanation for choice reversals, which is called time invariance (Halevy, 2015). It refers to the marginal rate of substitution, meaning that 100$ today is equal to 110$ in any moment asked. However, this kind of difference in a consumption can be estimated due to some changes in economic wealth, which do not depend on consumers' decisions. If time invariance is not satisfied, it could be a mistake to identify hyperbolic discounting. Unfortunately, designing experiments that will observe time invariance requires large costs and long process during which the experimental methodology loses its power. So, Krupka and Stephens (2013) analyzed time-variance and received outcomes that presumed time instability to be not a random variable, considering different economic factors.

Janssens et al (2017) designed an important experiment, through which they examined the effects of violations of all three assumptions in order to make conclusions about low savings. They claim that in some cases violations of time invariance emerge due to the liquidity

constraints so that consumers have less access to informal credit and tend to lose more wealth over time. That is why, not only hyperbolic discounting should be measured as a driver for choice reversals, but also liquidity constraints should be analyzed. In order to examine the influence of liquidity constraints they conducted an experiment among the participants, who suffer from a lack access to credit and savings and possess highly volatile income (Janssens et al, 2017). These findings represent a strong importance for design of commitment saving devices. Also for the targeted group of participants, who operate under the imperfect financial market, the liquidity constraints imposed by the government policy might be too strong and harmful.

Under the concept of the hyperbolic discounting two types of consumers are highlighted: naive and sophisticated. The way how the individuals are going to behave depends on the degree how they are aware of their time-inconsistency. Naive consumers do not recognize the issue of the time-inconsistency so they do not foresee that their future selves will differ from the current ones and strongly believe that their initial plan will be carried out in the future. Sophisticated consumers, in contrast, do realize that this problem exists and use a commitment as a tool how to fight with their self-control issues. Commitment is a promise made by individuals in order to follow their current plans in future. There are different examples of the commitments, such as deadlines, which drive people to finish work on time, loans that play role of a special constraint on the overconsumption as the individual becomes limited in their spending and even marriages can be viewed as a commitment tool because it restricts persons when it comes to different kind of temptations or hot states. Focus on self-control problems also takes place when it comes to information-acquisition decisions. Standard economic models accept that priority be given to acquiring any free information as it results in more profitable decisions. You can ask for advice of your friend when it comes to the decision about potential investments or take your time, processing information and examining investment strategies. Self-control problems can lead to ignorance of information due to the increased likelihood of a possible misbehavior as a consequence. Nowadays, in terms of the information abundance the chance of bias caused by obtaining not valid information leading to a future misbehavior is extremely high, which implies the necessity of careful, selective information gathering.

In terms of the sophisticated consumers further issues such as impatience or procrastination can be accurately considered. If both outcomes are viewed from the long-term perspective, individuals are able to act relatively patient. Far in advance they are ready to wait for a more beneficial alternative, however, when the moment actually comes, people fail to wait one extra day so they prefer an immediate gratification. For example, assume that you can have a thirty-minute break in 102 days or go for a twenty-minute break in 101 days. If you consider both opportunities today, the chance of having a longer break and one day of waiting sound way more reasonable. But when the date of the twenty-minute break comes the preferences face a reverse, which is called “magnet effect”, and bring out the impatience to prefer an immediate reward instead of waiting. Also there is a term or partial naivety formulated by O’Donoghue and Rabin (2003), when the person is aware of the time-inconsistent preferences, but underestimate their influence. This approach sounds way more realistic among the other, whereas the standard economical model assumes that consumers are fully sophisticated and able to foresee their behavior.

Procrastination. An often used implication of time-inconsistent preferences is procrastination. All people use to procrastinate during their life period. Some of them leave their unpleasant duties for later quite regular and some of them try to solve this problem using some commitment devices such as deadlines. Procrastination is based on two important questions – which task to perform and when. When we are about to start the project we consider long-term benefits, whereas our decision to put off something is based on the immediate effort.

Procrastination does not necessary mean that people spend lots of time to persuade themselves to actually start doing the task. Procrastination can also occur during the mid-term stages, when, for example, the person has started the project, but was not willing to finish some mid-term tasks, so he procrastinated the end of the plan. It often happens, when the beginning does not demand many efforts and the vast amount of efforts should be implemented in the middle of the project or in the end. Hence, the type of procrastination strongly depends on the cost structure. Also according to the intuition of economic researchers O’Donoghue and Rabin (2003), who have conducted various experiments in a field of the behavioral economics and procrastination, in particular, the expansion of the proposed alternatives can cause procrastination more probably. This can be explained by the evidence, that new options can be potentially more beneficial for the individual, but include higher costs, which will result in a systematic delay (O’Donoghue and Rabin, 2003).

How it was already mentioned before, consumers can be divided in several categories depending on the degree of their understanding about time-inconsistent preferences. Awareness about time-inconsistent preferences and self-controls problem is extremely significant in terms of procrastination due to the natural application of procrastination for self-control problems. Naive consumers formulate their future plans and the way how they are going to accomplish their performance target and when the period of carrying out their plans arrive, their preferences face the reversal and they fail to meet their initial assumptions and hopes and end

up not completing the long-term task at all. Each type of procrastination implies inevitable losses or foregone opportunities. If the person has started the project, but wasn't able to finish it, he didn't only lose the potential benefits which could possibly arise by the end of his work, but also wasted his effort on the stage of the beginning. In contrast, sophisticated consumers are aware of the self-control problems and they are presumed to foresee their future behavior more accurately. It is clear that naive consumers are more likely to procrastinate than sophisticated consumers. However, the degree of the awareness is often hard to be measured, so anyone can be potentially vulnerable to procrastination. Also the definition of partial naivety exists as a separate category which demonstrate the type of consumers, who understand the core of time-inconsistency problem, but use to underestimate its magnitude. The concept of procrastination is under attention in terms of the hyperbolic discounting as the desire to put off is connected with immediate costs, contradicting their long-term plans, which is similar to the desire to get a sooner gratification rather than waiting for a more pleasant alternative. Needless to say, that procrastination takes place only when the project is worth of starting. Otherwise, procrastination is not meant to arise. O'Donoghue and Rabin (2002) examined the question of procrastination with exogenous costs by applying a two-parameter model originally developed by Phelps and Pollak (1968), which has the following look:

$$U^t(u_t, u_{t+1}, ..., u_T) \equiv \delta^t u_t + \beta \sum_{\tau=t+1}^{T} \delta^\tau u_\tau.$$

This model consists of two important variables, such as b, which represents standard "time-consistent" impatience, whereas the parameter beta illustrates a time-inconsistent preference for immediate gratification. For beta equal to 1, these preferences are time-consistent. But for beta less than 1, at any given moment the person has an extra bias for preferring now over the future. Beta is basically an error which describes «self-control» issues due to the contradictions it causes, expressed as a prevalence of the current well-being over the future one at any period of time (O'Donoghue and Rabin, 2002). More and more economists have been including lately the psychological factor of self-control problems in their analyses in order to compute the discount function for intertemporal choice. Needless to say, that self-awareness doesn't matter and doesn't presume to be relevant in terms of the sequences of outcomes or long-term commitments. Sequence of outcomes implies that person doesn't need to choose, whether to have a dessert today night or not, but commits to the series of deserts, which can be consumed or not during next three months, which implies long-term decisions. Under these circumstances, barely could the person accomplish the most appropriate for him choice so the role awareness is not valid enough. Also if the consequences of one decision do not have an impact on other decision's payoff, those two are considered to be disconnected, which again decrease the influence of self-awareness on decision-making process. Self-control problem reflects an important magnitude on people's behavior as it leads to people not behaving in their own interests and, as a result, harming themselves. In some cases, the size of the harm is not large, but systematical harm emerged during the range of decisions possesses a danger for people.

On the other side, if two decisions are connected, the shift in behavior can be explained by self-control problems. The following research was established in terms of two-stages projects in O'Donoghue and Rabin (2002) paper, but can also be applied for multiple period works. On every step the individual faces a choice to accomplish the task or not without any commitment devices available. The chance that self-control problems occurs depends on a fact, if the task suggested is laborious or a pleasant one. The main requirement is that person possesses certain believes about his behavior and that he chooses his actions according to the principles of maximization his utilities and preferences. Immediately the cognitive bias can be considered in a light of this assumption due to the inability of the individual to carry out the strategy, which will satisfy his needs or to analyze which kind of decisions will maximize his well-being. The terms procrastination is used when it is the matter of putting off the tasks repeatedly based on a willingness to work in the near future, but then changing one's mind when that near-future date arrives.

From the first sight it may sound that fully sophisticated person is not prone to procrastinate according to this definition of procrastination. However, he tends to delay as well if the immediate gratification is stronger than the cost structure. Hence, procrastination plays a vital regarding consumers' level of being sophisticated as it appeared to be a sphere, where sophistication might be a misleading factor. Taking all the points above into consideration, it is clearly assumed that person is more likely to procrastinate on the stage, which contains the highest cost comparing to the other phases of the project. Moreover, naives tend to procrastinate way more, than sophisticated consumers do as they strongly believe that they will perform the task in the next period despite the occurred delay. Unlike the naives, sophisticated agents are more willing to carry out the plan on the first stage due to their awareness that in case of the delay they are going to procrastinate the performance for long period of time. It means, that if they decide to procrastinate some task, they are okay with this delay and they have already set up the moment when the task will be actually completed. Many papers include the deadlines as the most important commitment tool, which is used by consumers in order to prevent themselves from the procrastination. One study – by Ariely and Wertenbroch (2002) – proved that people with exogenously imposed deadlines were more likely to perform the project in a sufficient way than the group of people who were pro-

posed to establish deadlines on their own and ended up having a longer delay and less successful grades.

All the discussion above was mainly hold in case of the onerous opportunities, which can cause procrastination to a larger extent. However, another research conducted by O'Donoghue and Rabin (2001) assumes that providing individuals with more extra opportunities, which sometimes bring even more pleasure and increase their well-being, can lead to procrastination as well and procrastination important goals is more serious than procrastination unimportant goals. This can be explained by the following conclusion: «If a new option has a sufficiently high long-run net benefit, the person will plan to do this new option rather than what she would have otherwise done; and if this new option has a sufficiently large cost relative to its immediate benefit, the person now procrastinates» (O'Donoghue and Rabin, 2001).

The second anomaly that people tend to procrastinate more often important tasks rather than unimportant or increasing importance of tasks induces the chance of the emergence of procrastination can be illustrated by a simple example based on a person's saving plan. Let us suppose that the person is determined to save 10,000 euro for retirement 35 years from now. He is earning right now 1% interest rate in his account, but he can easily make a transfer and start getting 5% interest rate instead of the current one. This alternative doesn't imply high costs, can be performed without much effort and is worth of considering. However, the decision about the retirement plan in undoubtedly crucial for many people, which can result in a possibility that the person will spend many years looking for any rate, higher than 5% and meanwhile will procrastinate and lose money in exchange for investing in a potentially profitable plan – 5% rate.

This sub-topic can find a significant practical applicability as it allows to schedule the working process in the most sufficient way so any employee will be capable of accomplishments the parts of the project despite the variations in they disabilities.

The Reference-Point Model. Hyperbolic discounting is not capable of explaining, why gains are discounted with a higher weight than losses are. The main contribution to this anomaly was made by Kahneman and Tversky (1979) in their paper dedicated to the violations of general axioms of expected utility model, who interpreted the overweight values of gains comparing to losses under the concept of risk aversion and developed a prospect theory model. This model evaluates the certainty effect assuming that people tend to assign a greater weight to alternatives, which can happen with a certain guarantee, comparing to less possible one, and explains the concavity of utility function. The person is considered to be risk averse, if he prefers to stick to already existing prospect rather than shift to a risky one. If we consider so-called positive domain implying certain gains and slightly possible larger gains, individual opts for a former one, which reveals risk averse. Therefore, same effect occurs in a negative domain, when seeking for a less probable loss over a certain smaller loss reflects risk seeking. Also, Kahneman and Tversky (1979) emphasize, that during decision-making people disregard a wide range of components, which means that different decompositions lead to different preferences. This anomaly is called the isolation effect. What is more is that people use to evaluate opportunities from a perspective of the final stage. They do not view the prospects as a sequence. Two risky outcomes can be regarded in a standard form whereas the choice between the investment in the risky venture with a particular probability of losing capital if it fails or getting some percentage in case of success and fixed return rate seems more complicated to be measured. If we look at these alternatives on the basis of isolations effect, the certain reward obtained by investing in a secure venture, for example government bonds, appears to be more attractive. However, the results obtained during this pattern can be ambiguous and lead to the contradiction with a standard expected utility model. Usually the decision tree is used as tool to view the outcomes as a sequence and compare risky and riskless prospects. The prospect theory entails two stages in the choice prospect: the editing phase illustrates the basic analysis of the offered opportunities and the second stage implies the estimation of prospects and choice of the prospect with the higher value. The changes in values should not be reviewed just from the preliminary point, both the position that serves as reference point, and the effect of the change (positive or negative) from that reference point have to be considered.

How it was mentioned earlier, the decision is influenced by the people's awareness of their inconsistent preferences. However, at the moment, when they are not capable of identifying the violations their preferences bring, the prospect theory could be a useful tool in measuring those anomalies. This concept possesses a potential significance due to considering the way how the prospects are recognized and how gains, losses and ambiguous outcomes are evaluated under the risk.

On the basis of the prospect theory the Reference-Point Model as a modification of the hyperbolic model was introduced. This model is considered to be crucial in terms of people's attitudes towards risk and explanation why people use to discount losses less intensively than gains. The theory of reference point formation was proposed by Köszegi and Rabin (2006, 2007), who included a psychological factor of gain-loss utility and argued that preferences are reference-dependent and reference point is based on the people's rational anticipations about their behavior. They decomposed the model proving that estimation the probability weights influence the psychological part, but does not have any impact on a consumption utility as it represents a «rational» component of the model. Also the possibility of

including the prospect with an outcome zero as a minimum one into the mix of different prospects was examined. Whereas the standard models are based on summarizing all data or individual estimation, the Reference-Point Model looks for a balance between both of methods in order to obtain more explicit parameter estimates by means of Bayesian analysis.

The model of habit formation. The model of habit formation plays a vital role to the surveys about consumers' utility as it explores the responses of real spending to various shocks. The idea is that consumers' utility partly depends on current consumption relative to past consumption

$$U^t = \frac{1}{(1-\sigma)}\left[\frac{C_t}{C_{t-1}^{\gamma}}\right]^{(1-\sigma)}.$$

In this formula current utility U depends on the consumption in a current period relative to lagged consumption. The parameter y depicts the importance of the reference level relative to current consumption. In terms of habit formation this formula can be rewritten

$$U^t = \frac{1}{(1-\sigma)}\left[\frac{C_t}{C_{t-1}} C_{t-1}^{1-\gamma}\right]^{(1-\sigma)}.$$

Habit-forming consumers are willing to smooth both the level and the change in consumption as they do not like large decreases in their consumption. Habit formation model explains a hump-shaped response by the gradual response of the level and change in the consumption to changes in interest rates or income. That is why, when these consumers agree to hold a risky asset, which threaten the stability of their income, they ask for a higher risk premium. This model also reveals the important dynamic correlations between consumption, output, interest rate and inflation, which were not considered in standard models earlier. The findings acquired by using this model fit the real data in a more sufficient manner due to the implementation of the consumer's incentive to smooth the change and the level of consumption to income shocks and gradual decline in inflation during a disinflation. The main conclusion is that after some financial shocks consumption faces the sluggish adjustment only in the short-term.

Quasi-hyperbolic formulation. Despite the fact that hyperbolic discounting is subject to be a large step in a field of time preferences as it managed to fit a large sample of real data, this concept failed to predict such anomalies as a "sign effect" which implies that people discount gains with a higher value than losses, "magnitude effect' focusing of higher discount rates for a larger reward in contrast to a relatively small. These and other variations were not reflected in a hyperbolic discounting but they triggered another explanatory model called quasi-hyperbolic discounting. The core is that this models still appeals to the same premises as hyperbolic did about individuals' impatience about immediate trade-offs but for the rest of the period hold the discount rate constant. It still shows that individual acts impatiently in terms of today and tomorrow, exhibiting low discount rates as it was stated in hyperbolic discounting, whereas the discount rates from tomorrow onwards remain constant by analogy with exponential discounting model. Therefore, the discount rate is not increasing over time. Basically quasi-hyperbolic discounting represents the combination of both discounting models discussed earlier. Its advantage compared to other lies in a distinctive border between the "short-run" and the "long-run". It was proved that in contrary to hyperbolic discounting quasi-hyperbolic discounting can be applied in analyses including the technique of dynamic programming. Under the infinite horizon using hyperbolic discounting is quite challenging.

Quasi-hyperbolic discounting was first established by Phelps and Pollak (1968) regarding inter-generational preferences. Later it was adopted by Laibson (1997) to carry out survey covering the savings behavior of a consumer with self-control problems who has access to imperfect commitment devices (e.g. illiquid assets). The result of Laibson's research supposes consumers to undersave as a result of the overconsumption during early stages.

Quasi-hyperbolic discounting was implemented in terms of a procrastination (O'Donoghue and Rabin, 1999), retirement decisions (Diamond and Köszegi, 2003), job search (Paserman, 2008), and addiction (Gruber and Koszegi, 2001).

Formally the decision makers' utility has a following definiton:

$$U^t = u(C_t) + \beta\sum_{i=1}^{\infty}\delta^i u(C_{t+i}).$$

Determinants of the subjective discount rate. Subjective discount rate is an important innovation in terms of discounting model and a crucial measure of individuals' impatience. This variable is needed to be considered during the analysis of low savings with an explanation why economic behavior varies depending on situations and different framings.

Usually the subjective rate is evaluated through different hypothetical choices by asking the participants how much they would demand as a compensation or how much they agree to pay in order to delay or speed up gains or losses. Subjective discount rate is inseparable with a mental discounting process, which in turns is based on individual's cognitive ability. Discount rates vary among different groups and categories as no information is to be perceived identically by different people. First of all, as it was discussed earlier people do not necessary prefer to get the whole bunch of information they have been provided with due to the high costs arisen during elaboration of information and collection of it. Even when this preliminary stage of data collection is over, the individual still has to process information

and come to some kind of conclusions and again he is constrained by his cognitive capacity. He might suppose, that he has gathered the all necessary information, while there are still some methods left which he is not aware of. Also he might have framed the strategy which he considers as an optimal one due to the volume of data he perceived, while this strategy can be completely misleading because of the ambiguous sources of information or some irrelevant data. It has been proved, that better financial knowledge generates lower subjective rates. Getting higher education leads to deeper knowledge and enhancement of the ability to gather information and use it in a sufficient way. Anyway there still going to be a cognitive bias due to the extreme importance of some factors in contract to the lack of usefulness of the same variables among different participants according to their personal priorities, experiments, habitats, needs and beliefs. Also gender and age have a certain impact on the formation of the subjective rate.

Subjective discount rates can be also explained by the current economic environment and national welfare, which described by the rate of inflation and the index of well-being. The individual who operates in a relatively stable market and does not face some sharp exogenous shocks, tends to act more patiently than the person who has less access to the commitment devices such as credits and performs in a difficult environment because when individuals face the absence of the commitment devices he is tempted to deviate from the initial plan (Janssens et al, 2017). The subjective rate can be examined in a light of groups with similar strategies. The results obtained during this experiment can differ significantly among the groups due to the different extent to which the subjects include subjective rates in their decision-making.

The better understanding of mental discounting process will allow to fulfill some gaps arisen considering standard economic models.

Some words about the methodology of our empirical research. During the exploratory analysis several technics will be implemented, such as violin diagrams, regression model and decision tree, in order to compare the short-term discount rate and the long one between each other, so that the most reliable discount model will be revealed. One more thing to be examined is the effect of country differentiation on the formation of the subjective discount rate.

Violin plot emerged not lot time ago, it was introduced in the software package NCSS in 1997 and described by Hintze and Nelson (1998).

Violin plot is a useful tool for visualizing the distribution of the data and its probability density. The advantage of this visual is that it provides with a more profound information than box plot does. When the big sample of data is collected it cannot be stated without some valid proof that observations are subject to the normal distribution due to some outliers. Violin are able to fit big amount of data with different categories while the box plot is a limiting visual device. Usually bar plots are used in order to determine the mean value and the standard error and illustrate some summary statistics, such as range and quartiles. Histograms can be applied to multimodal data but at the same can be a misleading method as well and requires much space for many distributions. Violin device is applied to show the shape of the distribution and it is very compact as it doesn't compose a big number of points. Wide parts of violin plot give information about the high probability that the chosen variable will take the certain value, whereas the skinnier parts reflect the low probability. Overlaying the box plot on top of the violin pot will show the information about median and interquartile range.

The research is based on questionnaire which includes such questions that assume two different options. That is why, there is a need to introduce the concept of binary variable. Binary variable is a discrete variable that implies two different alternatives which are often labeled as 1 or 0. For example, binary variable can take values success/failure, male/female, presence of headache/absence etc. This concept is widely used in terms of classification. If the respondent belongs to the certain category, his answer is coded as 1, if no-it is coded as 0.

We suppose that discount rate is normally distributed due to its extensive use in the field of economics and its convenience. It is characterized only by two variables: mean or it is also called expected value and standard deviation, which makes the research less complicated. Mean is basically a computed average value. Standard deviation gives information about the spread of distribution. If data has a small standard deviation, the shape of the curve will be tighter and taller. In contrast, having larger standard deviation leads to getting a flatter and wider curve. The main assumptions are that the curve is symmetric at the center, which means that data is equally spread around the mean value, peak of the curve is represented by the mean of the data and the total square is equal to 1. However, on practice hardly can be this perfectly symmetric curve obtained. So if there is any suspicion that data is normally distributed, it is need to be checked by several statistical tests if this null hypothesis about normality is true. Aim is to transform data that way that it reminds of the shape of the normal distribution. When we talk about normal distribution, we deal with the concept of the confident interval. The confident interval contains a proportion of data which lies between an upper and lower bound of a probability distribution. Usually 95% or 99% are used. The rest percentage includes the information about the tails of distribution. The confidence interval is a measure of uncertainty. The higher confidence level entails the higher proportion of the data is located in the inner part of the curve and guarantee the higher level of certainty. The

normal distribution is a significant tool for calculating probabilities of many real events in different spheres.

In order to illustrate different outcomes obtained during a range of choices the decision tree is generally used. This learning tool is very easy for understanding and predicting the best value of the targeted variable according to costs, benefits and probabilities. A decision tree begins with a single node (also called root node), which is split into different subgroups, which in turn give a rise for more nodes and further outcomes and it can be expanded till the endpoint or till no more alternatives are possible. In this survey the program R studio will be used for constructing the decision tree. This tool represents a possible alternative to a logistic regression and can be implemented in many different fields. Decision tree presents an important advantage in contrast to a logistic regression as it handles nonlinearity and also provides with valid results even if the survey deviates from assumptions. Also it is easy to be performed due to its simplicity and no need for a careful data processing as it works with heterogeneous and missing data.

During the formation of the decision tree researcher is able to identify which kind of outcome each alternative will bring depending on different conditions, compare them in the future and determine which one is considered as an optimal one. Once again-no need for data to follow any precise distribution, which is explained non-parametric framework for a decision tree method. The missing values are taken as in isolated category or the can be combined into some other existing categories. This method is crucial in terms of decision-making as it contains all significant factors for the particular choice. However, if one single variable close to the root node is being modified, it can change the structure of the decision tree dramatically and result in a lack of credibility and loss of its simplicity.

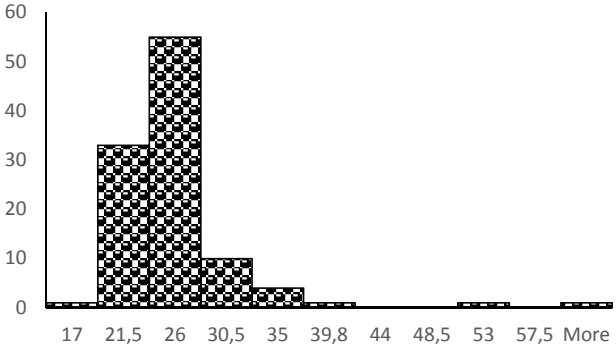
Elements of the model. The main goal in this cross-country analysis is to identify, whether risk-aversion and differentiation between countries influence the subjective discount function or not. Are there some country peculiarities which have a certain impact on a discount rate and is there a difference between the weight which assign risk-averse person to the current and future consumption comparing to risk-seeking individual or the environment in which person operates does not present a great importance.

Also the model will provide a proof that a discount rate tends to diminish as the time period becomes greater, so that hyperbolic discounting model is way more relevant to be applied on practice comparing to an exponential. In order to make the difference between a discount rate for a short-term period and the rate for a long one be evaluated the participants experienced the alternatives at different points in times. The model is based on a questionnaire spread within people from different countries and different ages. The questionnaire consists of 5 questions, which reveal the preferences and discount rates by modelling hypothetical situations in which participants are asked about the amount of compensation that could make them indifferent to an extra period of waiting or in which they are proposed to choose between different alternatives. Components of questionnaire:

1. Age

In some surveys it was proved that age is one of the factors influencing the subjective rate as elder people have more responsibilities and family to care about, so they are more vulnerable than youngers to the present consumption in contrast to future. However, elder people should also take into consideration such distant plans as a retirement plan, savings for children' future, which make them sometimes restrict their current consumption and save for later in order to stick with a plan about their consumption after retirement when they inevitably face a lower income. The question about age seems to be quite ambiguous as the youngers are less patient due to their psychological features of character building and lack of plans for future, but at the same time adults suffer more from negative economic shocks because of the broader range of responsibilities and inability to adapt to changes as fast as youngers do.

In this survey 103 participants took part. The majority of respondents lie in the age group between ages of 21 and 26 and represent students or graduates. People older than 26 refer to specialists. There are some outliners represented by subjects in age of 17 and 53. Hence, the main focus will be on students.



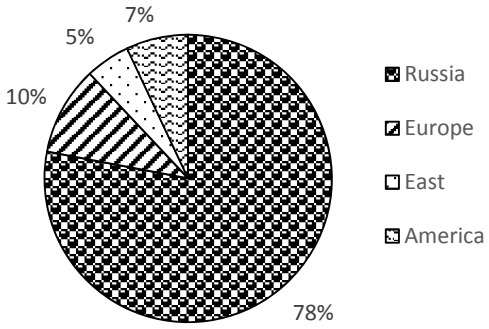
2. Country

This variable implies different economic environments, political systems and cultural routes, which can cause significant variations of time discounting. Normally the effect of culture was not included in standard economic models and did not represent an interest for economists. However, the growing amount of literature has demonstrated that preferences can be endogenous and can be formed with various societal and cultural norms and standards (Bowles, 1998; Eugster et al, 2011; Fehr and Hoff, 2011). Culture has an impact on all spheres of individual's life such as a cognitive ability, personality, economic knowledge and time perception. Also different countries possess different levels of wealth and education. The majority of researchers have

established that wealthier people show the higher degree of patience (Lawrance, 1991; Harrison, et al, 2002; Yesuf and Bluffstone, 2009). Poor household demonstrate relatively short time horizons and more interested in investments which can bring an immediate gratification as they have limited budgets.

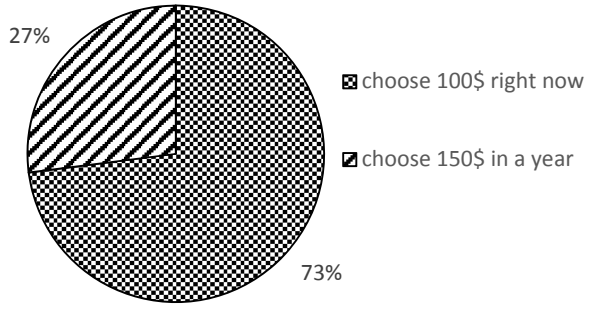
Mei Wang, Marc Oliver Rieger, and Thorsten Hens have introduced a significant survey including 53 countries studying the impact of cultural dimension on time preferences. They examined the waiting tendency across different countries to compute the interest rate and compare it to the annual market rate. They claim that differences in consumption might be explained by the differences in market rates, inflation rates, access for a credit market and the wealth level of country described by log (GDP/capita) (Wang et al, 2016). The different tendencies in cultures such as individualism and collectivism have also been studied. I consider this analysis as one of the crucial in terms of time preferences and empirical evidence of the hyperbolic discounting. That is why, I feel relevant to include the country variable to the regression model and estimate the magnitude of it on a subjective discount rate.

There were distinguished several groups by geography: Russia, America (including Brazil, Mexico and Argentina), Europe and East. The motherland of the majority of respondents is Russia, their share in all sample reached 78 per cent. The second largest share of 10 per cent belongs to European citizens. The remaining percent constitutes respondents from other countries.



3. Short-term discount rate

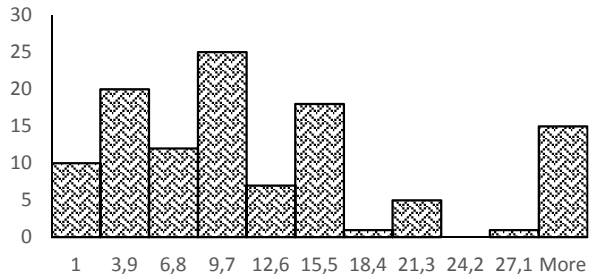
The first question is aimed at revealing the short-term discount rate for individual who is asked to choose between getting 100 dollars immediately and waiting one more year to receive a higher reward equal to 150 dollars. The computed rate will be consequently compared to the discount rate obtained from the question about longer time perspective. This task identifies to which extent is the respondent impatient. According to the pie chart, 73 per cent are willing to get cash right now and only 23 per cent agree to wait. It means, that the overwhelming majority of respondents tend to care more about current well-being and their discount rate exceeds the break-off rate in this case equal to 50 per cent under which the individual is assumed to be indifferent between 100 dollars now and 150 dollars later.



4. Commitment device

The next term is connected with an external force which can prevent individual from procrastination. It is likely, that individual strongly believes the project to be completed in the nearest future, but at the same time keeps delaying a working process when the planned date of completion arrives. As soon as the individual realizes that it is hard for him to stick with his original plan, he has an opportunity to impose himself with some kind of commitment devices which can motivate him to perform the task more effectively.

The participants were asked about the moment when they are willing to start doing the project which takes one day to be accomplished before the deadline equals to one month will be over. The preferable amount of days until the deadline is determined by the respondents themselves depending on their self-awareness of their dynamic inconsistent preferences. The obtained results are depicted on a histogram below.



According to the outcomes, respondents, on average, are more likely to start the project in the second half of the month from 7 till 10 days before the end of the deadline. However, there is a significant portion of people, who are ready to start more in advance-in a first half of the given time frame. The category called "More" is mainly composed of respondents who are committed to start at the time that they receive an assignment. This decision was coded as 30 days which means that they do not hesitate to proceed precisely on a date of launching a project.

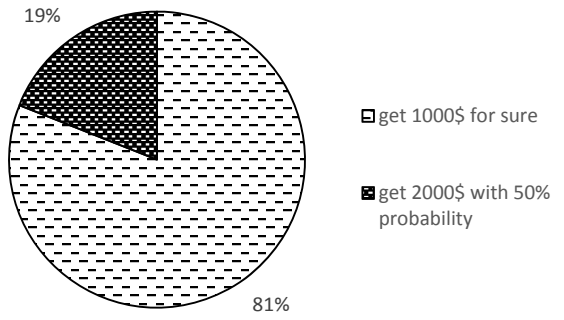
It should be said that some respondents left the notes to their answers, explaining their desire to divide the project performance into several parts so they do not need to perform the whole project in a one day as it was initially set. Nevertheless, there is still a fair share of re-

spondents who tend to start the project close to the completion of the deadline, even in a day before they exceed it.

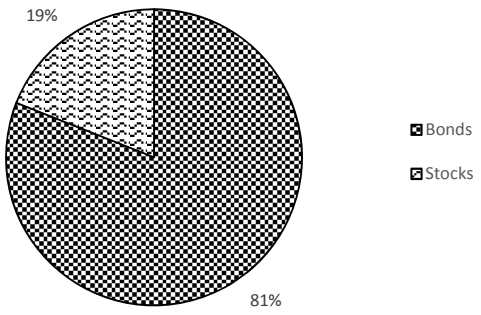
5. Gamble

The goal of this question is to identify whether the person is risk-averse. In order to do that respondents are offered two different alternatives: to get 1000 dollars for sure or take a risk and try to earn 2000 dollars with 50 per cent probability of success. During a process of decision-making each economic agent inevitably deals with uncertainty such as a risk of inflation, risk of a lower income, risk of losing a job. Hence, being risk-averse or loss-averse has a vital impact on individual's preferences. For example, if individual expects his income to decrease he will rather reduce his consumption in the future period than in a current one as he mentally takes savings as losses accompanied by the reduction in his present well-being. The risk evaluation can make a substantial contribution to the discount utility model.

The diagram shows that the vast majority of respondents voted for the guaranteed option of getting 1000 dollars, which means that people in our sample are risk averse.



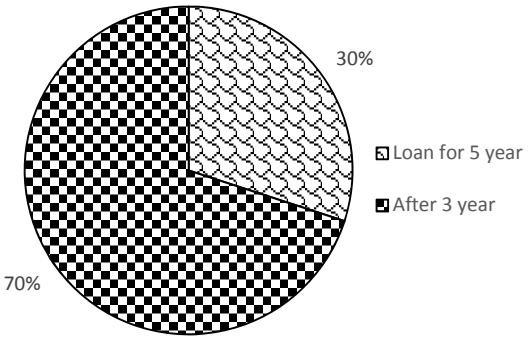
The next question in terms of risk aversion is about options for investment. There are two possibilities: invest in secure, risk-free bonds with assured return equal to 5 per cent, which is smaller than return of 7 per cent obtained by investing in stocks. However, stocks represent a threat due to different risks, volatility and a chance to lose all money in case of bankruptcy.



From the pie chart it is clear that the majority of respondents prefer a secure investment to risky stocks. Only 19% per cent is willing to take a risk and invest in stock associated with a risk of total money loss with 50% probability.

6. Long-term discount rate

It comes to the formation of long-term discount rate which will be compared to the short-term in order to measure the credibility of hyperbolic discount model. There is a question about purchasing of property and two possible how you can do this. Either you are saving for 3 years in order to by apartment on your own money or you are taking a loan for 5 years and immediately moving in. The cost of the flat is 1000000 euros and the payment for a loan is 1500000 euros. The first opportunity demands patience and willing to cut off the current consumption. The second one implies an immediate gratification and higher costs in the end.



The respondents appeared to be more patient during this question as 70 per cent of the total sample are ready to save money and buy the flat in three years. This interim outcome shows that when it comes to more distant future people tend to act relatively more patient than in the closest time periods. It will be explored further by means of violin diagrams, regression model and decision tree.

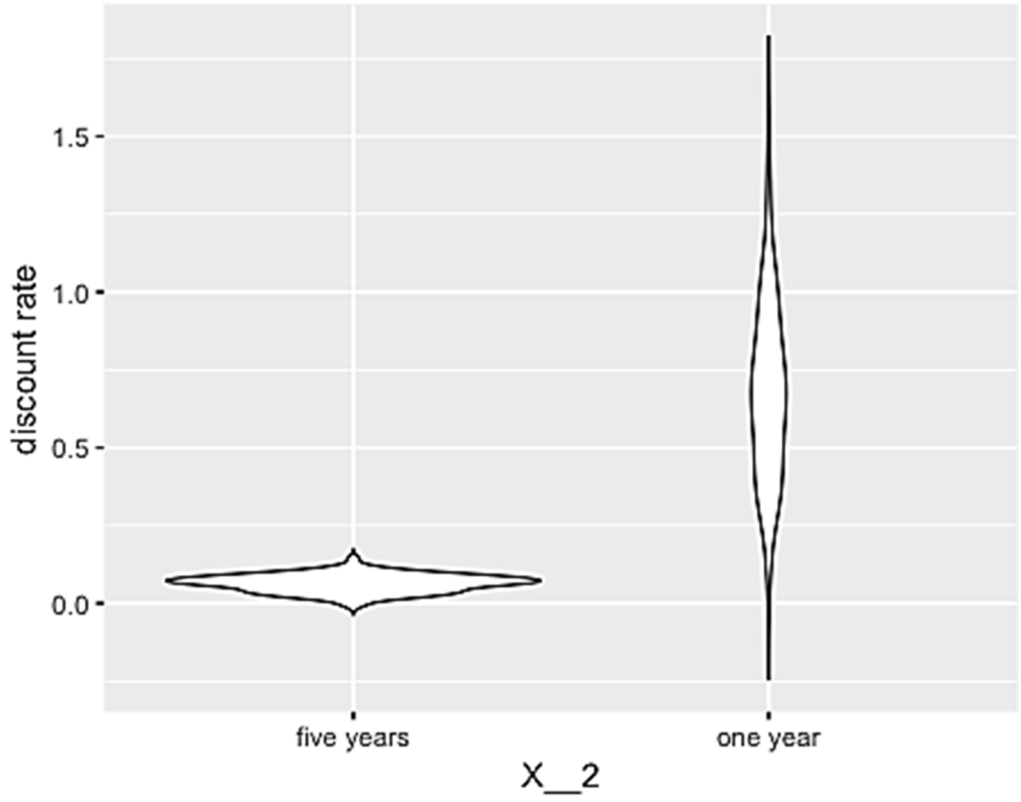
The discount model. Hyperbolic discounting assumes that long-term discount rate differs substantially from a short-term discount rate due to the higher concern about the current well-being and diminishing value. As the hyperbolic discount model is considered as a most reliable on practice, it was implemented in this paper. In order to evaluate the credibility of the hyperbolic model two question about discount rate and different time horizons are included. Two variables are fully examined in the analysis: do respondents prefer 100 now or 150 in one year and do they rather take a loan for buying a flat or take their time and start saving their own money for three years. The rest of the factors played the role of the explanatory variables.

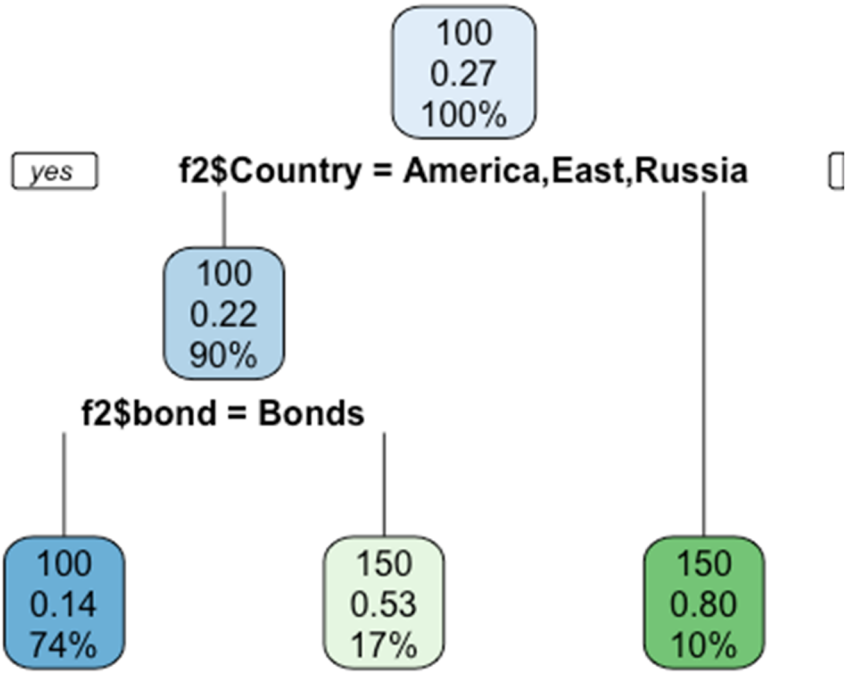
The model emphasizes on the influence of country and risk aversion factors on the subjective discount rate. Through the regression model we obtain the estimated values of discount rates including all variables described

above. The coefficients of all explanatory variables are computed and according to p-values such parameters as European group and risk aversion are considered to be significant. Belonging to American group is taken as a basic feature, so coefficients of the variables illustrating other country groups show the difference of the changes of the short-term discount rate with the switch from America to any other country. The coefficient of European group variable is extremely high, which indicates the decrease in the discount rate and the likelihood of choosing 150 dollars in the future instead of 100 dollars now. This result shows that European people are more patient in contrast to American ones. Same explanation is applied with the variable risk aversion based on the choice between bonds and stocks. Bonds are taken as a basic feature and high coefficient of the model means that the switch to riskier investment is connected with a drop in the discount rate. Hence, risk seeking people demonstrate higher degree of patience.

Then, in order to estimate the long-term discount rate and compare it with a short-term rate the willingness to take the loan is taken as an explained variable and same factors are included as explanatory variables. According to the results, even with a big confident interval, there is no significant connection between discount rate and included indicators. The previous question is based on precise alternatives: 100 dollars now or 150 in one year, which can reveal the subjective discount rate directly, whereas the question about long-term discount rate seems to be ambiguous in a light of the discount rate as it includes not only this parameter, but also the desire and opportunity to take the loan. This question implies some other factors which have impact on respondents' answers.

The violin plots are used to visualize the distributions of both discount rates. The average values for five years and one year are 8 per cent and 60 per cent. We assume that computed average values of discount rates represent the mean values and stimulate the distribution of these values using violin plots. It should be taken into account apart from the calculated values of discount rates that we suppose one per cent or very few people to have zero discount rate, which means that they are completely indifferent to the value of money. This assumption is made according to the necessity of two parameters in terms of the normal distribution-mean and standard deviation. The average value itself doesn't give any statistically significant information. Hence, the normal distribution cannot be plotted only with a help of one point and requires additional value. The shape of plots corresponds to the normal distribution. It becomes evident from the violin plot that discount rate is unstable through time and discount time for the nearest future is extremely higher than for more distant time period. One of the possible explanations could be the use of hyperbolic discounting which rejects the hypothesis about a single discount rate for any time period.





We will start in a root node with a question about a country factor. In every stage depending on factors respondents are divided into two categories and the amount of people, who are willing to make a decision between two outcomes: 100 dollars right now or 150 one year later, is calculated The left branch of the tree displays the positive answer for each choice and the right one-the negative reply. First we allocate respondents according to the question, whether they belong to America, East, Russia or not. According to the division of the sample, 90 per cent of the respondents originate these countries. The rest of the participants come from Europe. In each node there are three numbers: the percentage shows the proportion of respondents who reply positive or negative on each factor variable, decimal fraction illustrates how many people vote for 150 dollars later and the number above means the reward which was preferred by the majority of the respondents in a precise node and stage. The next stage lies in the question about the possibility to invest in secure bonds. The vast majority are likely to choose stocks and among this sample only 14 per cent have chosen 150 dollars later. Among people who prefer risky investments the decision of choosing 150 dollars in one year turned out to be predominant. As a result, the decision tree shows that the amount of patient respondents prevails over the impatient subgroup.

Conclusion. The approach of this paper was to identify, whether there is a certain impact of cultural peculiarities and risk aversion on time preferences and the formation of the subjective rate through the cross-cultural survey. Also during the practical part, the null hypothesis about the diminishing value of the rate was explained by hyperbolic discounting. The effect of uncertainty was carefully examined. The question about an access to the lending and borrowing tool was also included in the survey due to its possible impact on time preferences.

However, it is hard to explain all kind of anomalies only in terms of the hyperbolic model. Firstly, we assume that the respondents evaluate the nearest payoff and more distant one with the same analytical power. In contrary, some papers highlight that people due to some cultural perceptions do not evaluate the future reward as a real one, which leads to overweighting the current reward. There is an example of Latino people, who view time as a circular concept so they tend to orient more on the current well-being (Wang et al, 2016).

It was proved that a significant proportion of respondents demonstrate the impatience when two different time perspectives are compared between each other. The questionnaire consists of single payoffs which results in the decreasing discount rate, which is consistent with the hyperbolic discounting. However, Loewenstein and Prelec (1993) draw attention to the fact, that if people face the sequences of outcomes, they, in contrast to isolated outcomes, prefer an improvement of their utility through time. The explanation might be the adaption for different levels of utility and viewing positive or negative shifts as deviations from the standard of the consumption which is obtained at each level, which allow people to recognize positive changes as the most valuable (Loewenstein and Prelec, 1993). Therefore, impatience is frequently met in a light of single outcomes, whereas the sequence of outcomes entails the desire for improvement of the utility. There is one more difficulty which arises during the holding of an experiment. People while responding do not receive real payoffs so their answers cannot be considered as fully credible due to the lack of powerful incentives. Further-

more, we focus mainly on students as a subsample, but data presents some outliners expressed by some considerably older respondents than the majority of respondents.

Nevertheless, the effect of psychological and social factors: cognitive ability, cultural aspects, visceral influences, temptations on intertemporal analysis is evident. The main goal to illustrate different levels of discount rates among the countries according to the various degree of patience was achieved. There are some possible extensions to this paper, which will lead to more valid results and more complex model. In the future the model can be supplemented by including in questionnaire the part about losses so the difference in discounting gain and losses and preferable time gap can be jointly examined. Also the respondents can be separated according to the certain domains of their behavior. This idea requires complicated observations of the respondents' incomes and educational background in the dynamics so the analysis is carried out on practice. We can assume that people who graduate from the economic universities are more informed about the money value, inflation and discount function than people, who operate in other fields. That is why, it is crucial to divide all obtained data in some homogeneous groups. Anyway, this survey is an important step at establishment the correlation between the subjective discount rate and culture. Despite this observed link, the role of risk aversion with regard to the discount function, is also empirically confirmed. All the factors mentioned in this survey provide a valuable framework for further study of utility model and time preferences.

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Владімірова М. Ю., Розмаїнський І. В. Гіперболічне дисконтування і його наслідки: емпіричний аналіз на основі опитувань

У ході цього крос-культурного дослідження тимчасових переваг перевіряється достовірність моделі гіперболічного дисконтування. У даній статті порівнюються моделі експоненціального дисконтування і гіперболічна модель і пропонуються різні модифікації існуючих концепцій. Згадуються різні види аномалій, які викликають необхідність розширення моделі гіперболічного дисконтування. Ця стаття спрямована на вивчення моделі дисконтування, процесу прийняття рішень і формування суб'єктивної ставки дисконтування індивідів з точки зору поведінкової економіки, шляхом включення в модель таких психологічних чинників, як культурне й економічне середовище, а також несхильність до ризику. Ці доповнення призводять до більш складної і такої моделі дисконтування, що заслуговує довіри. Прокрастинація розглядається як пряма реалізація гіперболічного дисконтування. Крім того, виділено потенційні недоліки, що виникли в ході експериментальної частини, і запропоновано можливі рішення. Емпіричний аналіз заснований на опитуваннях.

Ключові слова: ставка дисконтування, тимчасові переваги, гіперболічне дисконтування, прокрастинація, несхильність до ризику.

Vladimirova M., Rozmainsky I. Hyperbolic Discounting and Its Consequences: Empirical Analysis on the Base of Surveys

During this cross-cultural research regarding time preferences the credibility of hyperbolic discounting model is examined. This paper is based on the comparison between the exponential discounting model and hyperbolic model and proposal of different modifications to the existing concepts. Different kind of anomalies, which bring up the necessity of the extension of the hyperbolic discounting model, are mentioned. This paper is aimed at exploring the discount model, the process of decision-making and the formation of the individuals' subjective discount rate from the standpoint of behavioral economics by including in the model such psychological factors as cultural and economic environment and risk aversion. These supplements lead to more complex and credible discount model. The term of procrastination is considered as a direct implementation of hyperbolic discounting. Furthermore, the potential drawbacks occurred during the experimental part are highlighted and possible solutions are proposed. Empirical analysis is based on the surveys.

Keywords: discount rate, time preferences, hyperbolic discounting, procrastination, risk aversion.

Владимирова М. Ю., Розмаинский И. В. Гиперболическое дисконтирование и его последствия: эмпирический анализ на основе опросов

В ходе этого кросс-культурного исследования временных предпочтений проверяется достоверность модели гиперболического дисконтирования. В данной статье сравниваются модели экспоненциального дисконтирования и гиперболическая модель и предлагаются различные модификации существующих концепций. Упоминаются различные виды аномалий, которые вызывают необходимость расширения модели гиперболического дисконтирования. Эта статья направлена на изучение модели дисконтирования, процесса принятия решений и формирования субъективной ставки дисконтирования индивидов с точки зрения поведенческой экономики, путем включения в модель таких психологических факторов, как культурная и экономическая среда, а также нерасположенность к риску. Эти дополнения приводят к более сложной и заслуживающей доверия модели дисконтирования. Прокрастинация рассматривается как прямая реализация гиперболического дисконтирования. Кроме того, выделены потенциальные недостатки, возникшие в ходе экспериментальной части, и предложены возможные решения. Эмпирический анализ основан на опросах.

Ключевые слова: ставка дисконтирования, временные предпочтения, гиперболическое дисконтирование, прокрастинация, нерасположенность к риску.

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DEVELOPMENT OF THE AGRARIAN SECTOR OF THE UKRAINIAN ECONOMY: FORECASTS AND PROSPECTS

Formulation of the problem. The agrarian sector is one of the most important sectors of the national economy, covering various types of economic activity in the production of agricultural products, foodstuffs, as well as delivery to the final consumer. Processes of institutional change in the agricultural sector of the economy Ukraine is currently one of the most important elements of sustainable development of the country and its regions, enhancing its competitiveness, and strengthening national security. In recent years, the agrarian sector of Ukraine has shown positive dynamics and increased production of agricultural products.

Research of problems and prospects of development of agrarian sector of economy of Ukraine will allow to form sectoral directions of increase of competitiveness in the context of ensuring sustainable economic growth of the agricultural sector on the principles of innovation. At the present stage of development of the agricultural sector of the national economy, the issues of development of agroholdings and their impact on sectoral competitiveness are relevant.

Analysis of recent research. Well-known scientists, such as A. Borodin [1], I. Kirilenko [2], Yu. Lupenko [3], V. Messel-Veselyak [4], P. Sabluck [5] and others. They substantiated the need to create a favorable institutional and market environment in the process of market transformation, determined the appropriate methods, forms and level of state support for agricultural producers, areas of financial and tax and investment policies in the field, etc.

Scientific generalization of problems of state agrarian policy, support of agricultural producers in Ukraine was reflected in the works of T. Zinchuk [6], T. Kalashnikova [7], S. Kvashi [8], O. Popova [9], N. Shibaeva [10] and many others. But changes in the conditions of development of the agrarian sector, its state support, require scientific generalizations that would reflect a scientifically grounded assessment of the current state and identify the main vectors for the necessary transformation of agrarian policy.

The purpose of the article is to determine the prospects for the development of the agricultural sector of the national economy, taking into account the existing risks and possible options for public policy at the current stage of institutional change.

Outline of the main research material. The emergence and development of institutionalism as a direction of the general economic theory was objectively conditioned by the development of productive forces and industrial relations, the division of social labor, and as a result of the development of intra-industry and inter-industry cooperation of agricultural producers, processing industries and supply systems.

Institutional transformations in the agrarian sector of the economy mean a way of removing contradictions between the requirements of the market and the logic of behavior of economic entities, which consists in the implementation of organizational-economic, financial-economic, legal and technical measures aimed at reorganization of enterprises, change of ownership, management, legal form that will contribute to the financial recovery of the economy, increase the volume of competitive products, increase production efficiency [11, p. 10].

This, in turn, leads to the integration of production, the emergence in Ukraine and its regions of not only small and medium-sized enterprises, but also large companies, and not only national, but also transnational scale, market monopolization, development and complication of intra-industry and inter-industry links. of languages and relationships.

The process of agricultural production, from the initial stages to the consumer, must be organized in some space and time. This kind of organization happens through the creation of businesses. Entrepreneurs – natural persons may also satisfy the market needs for these products.

The essence of the enterprise as an organizational form of economic activity is defined by the Economic Code of Ukraine (Article 62): the enterprise is an independent economic entity created by a competent state authority or local self-government body or other entities to meet social and personal needs through systematic production, research, trade, other economic activity in the manner provided by this Code and other laws [13].

According to the current legislation of Ukraine provides for the functioning of state, communal and private property. According to the basic law, depending on the forms of ownership, the Economic Code of Ukraine provides for the functioning of enterprises, incl. and agricultural, the following types:

– a private enterprise operating on the basis of private property of a citizen or business entity (legal entity);

– enterprise operating on the basis of collective ownership;

– communal enterprise operating on the basis of communal property of a territorial community;

– state-owned enterprise operating on the basis of state ownership;

– an enterprise based on a mixed form of ownership (on the basis of combining property of different forms of ownership) [13].

Thus, in the field of agriculture, entrepreneurial structures of all the above types can be created and operated. In turn, economic entities of different organizational and legal forms are constantly created and functioning in the agricultural sector of Ukraine. The general and special conditions for their creation are determined by the legislation. In recent years, the share of agricultural entities in the agricultural sector has been about 4% of the total number of entities, with enterprises accounting for the lion's share. There are four main groups of agricultural producers in Ukrainian agriculture (Fig. 1) [14].

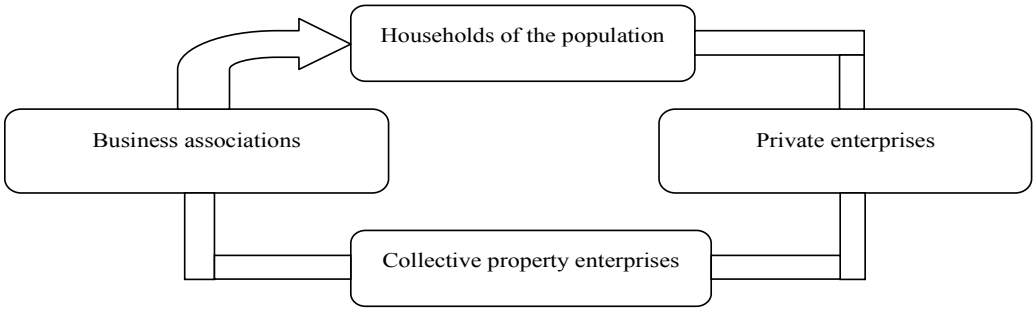

Fig. 1. Groups of agricultural producers [14]

Each group of agricultural producers has its own peculiarities, conditions of operation and prospects for development.

1. Households (including also entrepreneurs) are non-legal entities and grow agricultural products both for their own use and for sale. Such farms specialize in the commercial cultivation of vegetables and other niche crops, which is difficult to grow on an industrial scale because of the need for manual labor.

2. Private enterprises in agriculture are represented by farms and private agricultural enterprises.

Farms can only be created by Ukrainian citizens, and their activities should be based on the work of the family members of the farmer, although employment is permitted. The land can belong to the farmer both on the property and for rent. Farm areas can also vary from a few hectares to five to ten thousand hectares, which is actually a full-fledged medium-sized enterprise. More than 60% of farms have an area of 100 to 2000 thousand hectares.

Private agricultural enterprises are legal entities that operate on the basis of private property and may be founded by citizens of Ukraine, as well as foreigners, stateless persons and legal entities.

They are governed by the general rules of the Civil and Commercial Codes for conducting business.

3. Enterprises of collective ownership, various forms of cooperatives. Cooperatives in Ukraine can be of different types. The most common of these are production and service cooperatives.

Production cooperative – is formed exclusively by natural persons for joint production or other economic activity on the basis of their compulsory labor participation for the purpose of profit.

Serving cooperative – formed by individuals and / or legal entities for the provision of services mainly to members of the cooperative, as well as to other persons for the purpose of conducting their economic activities.

4. Businesses can be either national or foreign or with foreign investment.

In the agricultural sector, business is the most common form of business after farming. They are presented mainly in the form of limited liability companies and joint stock companies.

Limited Liability Company (LLC) is an enterprise created on the basis of an agreement between legal entities and / or citizens by combining their property and business for profit. LLC has a statutory fund divided into shares in the amounts specified in the constituent documents – the charter.

The law does not set a minimum number of LLC members, but the maximum number of participants may not exceed one hundred.

Joint Stock Companies (JSC). The authorized capital of AO is divided into a certain number of shares of equal par value, and the shareholders are liable for the obligations of the company only within the limits of their shares.

The founders of the joint-stock company can be both individuals and legal entities. AOs are divided into two types: open and closed AOs.

Open Joint Stock Company means that its shares can be distributed through open subscription and sale on the exchanges. In Closed JSC, the shares are solely distributed among the founders and cannot be distributed by subscription, bought and sold on the stock exchange. A closed joint stock company may be reorganized into a public limited company by amending the articles of association [13].

Having considered the mentioned organizational and legal forms of agriculture. enterprises, we can conclude that the first three types of organizational forms are more typical for small and medium-sized agricultural producers and are rarely used to attract foreign investment. Limited Liability Companies (LLCs) and Joint Stock Companies (JSCs) are the most common and can be both small and large enterprises and are more convenient and attractive for attracting investment.

The largest agricultural producers choose the holding structure of the organization and place their shares on world stock exchanges [13].

Speaking about the peculiarities of functioning of agrarian entrepreneurship in market conditions, let us pay attention to the analytics, that is, the economy of representation of economic entities of the agrarian profile in the economy of Ukraine. The main economic entities in agriculture are agricultural enterprises, the tendency of which changes during 2013-2017 are shown in Table 1 and Fig. 2.

Table 1

Dynamics of changes in the number of agricultural enterprises in Ukraine during 2012-2018
(developed by the authors based on source [14])

Indicator	Years							Deviation (+;-), 2018/2012
	2012	2013	2014	2015	2016	2017	2018	
Agricultural enterprises, units	48632	49046	46199	45379	47697	45558	49658	+1026
of these are farming farms	33093	34168	33084	32303	33682	34137	37209	+4116

Analyzing the analytical indicators of changes in the number of agricultural enterprises during 2012-2018, it was found that the number of agricultural enterprises in 2017 compared to 2013 decreased by 3488 entities (of which farms decreased by 31 units). However, in comparison with 2016 in 2017, the number of agricultural entities decreased by 2139 units, which in turn is lower than in 2013. However, for 5 years, the number of agricultural enterprises cannot reach 2013 (49046 units). The share of agricultural production in the main categories of farms in Ukraine in 2016 was agricultural enterprises 57.0%, households 43.0%, by region agricultural enterprises produced more than 50% Vinnytsia, Dnipropetrovsk, Zaporizhia, Kyiv, Kirovohrad, Mykolaiv, Odesa, Poltava, Sumy, Ternopil, Kharkiv, Kherson, Khmelnitsky, and Chernihiv and Cherkasy respectively 70,2, 75,9%. However, the Volyn, Lviv, Rivne, Ivano-Frankivsk, Chernivtsi, Transcarpathian regions share of the population is 60.8, 64.1, 66.4, 68.8, respectively. 78.6, 91.0 percent [12, p. 56].

We will carry out a correlation analysis of farms and non-farms for the period from 2012 to 2018. Denote the X – number of farms; Y – number of non-farms. The obtained pairwise regression equation leads us to believe that the relationship between all possible values of X and Y is linear $y = bx + a$. Thus, the dependence of Y on X was studied. In the specification step, a pairwise linear regression was chosen. It estimated its least squares parameters.

Regression equation (empirical regression equation): $y = -0.375 \cdot x + 38996$.

Coefficient of linear paired correlation: $r_{x,y} = -0,322$.

In our example, the relationship between Y and factor X is moderate and inverse. The statistical significance of the equation is verified using the Fisher coefficient and determination. It is established that in the investigated situation only 10.35% of the total variability Y is explained by the change in X. The statistical insignificance of the model is due to the small sample size and the influence of other factors on the resultant factor U.

A possible economic interpretation of the model parameters is an increase of X per 1000 units. leads to a decrease in Y by an average of 375 units. The quality of the regression equation was estimated using the absolute approximation error. The average error of approximation is the average deviation of the calculated values from the actual ones in our task 2.99%. Since the error is less than 7%, this equation can be used as a regression and in economic calculations, for example in forecasting. With a farm average of x = 13460, the number of non-farms (y = 33948) will be in the range of 29450 to 38457 units. 95% will probably not go beyond those limits. The current situation is characterized by a narrowing of the financial base for the development of ag-

ricultural production. There remains a likelihood of diminishing sources of formation of agricultural producers' own financial resources due to unfavorable price conditions for the main types of mineral fertilizers consumed, logistical products, plant protection products and restraining the rise in prices for agricultural products. If prices rise at the level of forecast macroeconomic indicators in 2015, the profitability will be 6.7% (profit of 11.3 billion UAH).

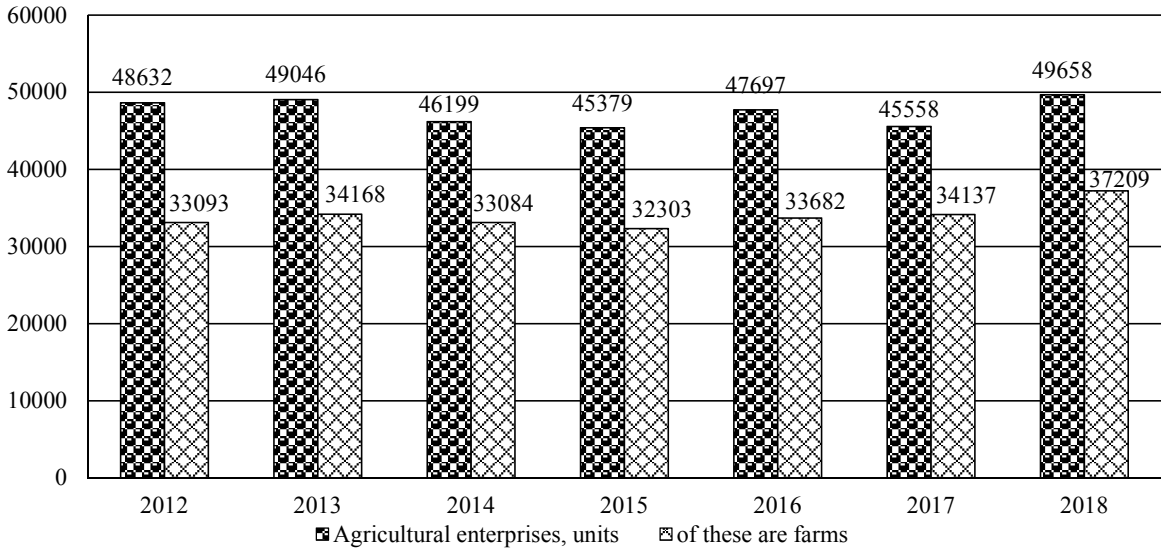

Fig. 2. Dynamics of changes in the number of agricultural enterprises in Ukraine during 2012-2018
(developed by the authors on the basis of source [14])

Therefore, it is projected to reduce the volume of sources of formation of own funds of agricultural enterprises by 20-25%, with their absolute value of 40-50 billion UAH. The volume of receipts for agricultural production of credit resources is projected at the level of 7 billion UAH, and under the optimistic scenario – 8.5 billion UAH. Compared to the previous year, the annual volume of bank loans can decrease by 30.0%. However, if the state targeted financial support program is renewed through a mechanism of cheaper loans of 300 million UAH, agricultural production may additionally attract about 10 billion UAH of credit resources, the cost of which will be reduced by 3-4 percentage points [14].

To increase the volume and efficiency of financial and credit support of agriculture, it is necessary to:

– to form a system of financial and credit servicing of agricultural producers, to expand its infrastructure components;

– to renew the action of state programs to support crediting of agricultural producers;

– improve the micro-credit system, especially for small businesses;

– Expand the system of credit protection insurance.

Minimizing the risk of loss of income is facilitated by the use of agrarian instruments of agricultural insurance. However, due to the lack of a quality system of agricultural insurance and state support, the dynamics of the insurance market may deteriorate: the number of insurance contracts will decrease by 11%, the amount of premiums collected will increase by 12-13%, the level of payments will be at the level of 8-9%. The agricultural insurance market covers only about 5% of agricultural business entities.

In order to maintain the positive trends of agricultural insurance development and to improve the insurance protection of agricultural producers, according to the Agricultural Insurance Reform Roadmap, it is necessary to:

– to create a qualitative system of insurance protection of agricultural producers with the expansion of its institutional components;

– to renew the validity of state programs for partial compensation of insurance premiums for agricultural producers;

– improve the requirements for entry of insurers into profile associations;

– to introduce underwriting, loss settlement and reinsurance under all standard programs with state support;

– Improve the guarantee mechanism for insurers to fulfill their obligations to agricultural producers.

Given the difficult economic and military-political situation, further cuts in budget financing for the development of agro-industrial production are likely, which will not have catastrophic consequences, given the selectivity of this form of support and its low volumes in previous years. Measures of price regulation and credit support (within the framework of forward purchases and granting of a credit subsidy) will have the greatest influence on the development of agro-industrial production.

The amount of budget financing for agro-industrial development programs on an irrevocable basis is envisaged in the amount of UAH 0.47 billion, of which UAH 0.3 billion is planned to be allocated for credit subsidies, over UAH 0.1 billion is for measures on state price regulation of the agrarian market (first of all, the market grain and flour).

Financial support on a rotating basis is envisaged to the amount of UAH 1.43 billion – almost entirely for the formation of the State Intervention Fund and other activities of the Agrarian Fund. This amount of financing will not be sufficient to properly stimulate the processes of satisfying the credit needs of agricultural enterprises and to fulfill the regulatory tasks of the Agrarian Fund.

At the same time, the prospect of termination of the special VAT regime in the future will deprive the livestock industry of nearly 2 billion UAH of additional financial resources, which were formed both directly in processing enterprises and in the special fund of the State Budget of Ukraine. This will have a negative impact on the level of prices for livestock products (primarily milk and cattle) and can lead to a significant decrease in the livestock population, especially in households. Non-reimbursement of value added tax to grain exporters will result in the withdrawal of financial resources from this segment of the agricultural market in the amount of over UAH 10.5 billion. Tax burden will increase by more than 20 times per 1 ha of agricultural land with payment of a single tax by the payers of the fourth group. The issue of levying property tax on agricultural producers remains unsettled - both in the part of the taxation of buildings and structures not directly used in the conduct of agricultural activity, and of land tax for land under administrative buildings. Deprivation of research farms, educational establishments and scientific institutions of privileges for payment of the land tax which rates by the decision of local councils can increase several times against the level of the previous year will have a negative impact. A serious challenge to the sustainability of the industry is the reduction in the number of small (primarily farmers) businesses. The rapid decline in the level of incomes of domestic consumers is holding back the rate of increase in prices in the domestic agri-food markets. At the same time, small agricultural producers are more vulnerable in the conditions of rising prices for the means of production and deteriorating financial support for the industry. Here are some specific ways to develop agrarian entrepreneurship in Ukraine:

– improving the institutional environment of small business forms in order to form a middle class in the countryside and maintain competition in the agricultural and food markets;

– ensuring equal access to resources and state support for all business entities, regardless of ownership and size;

– improvement of crop rotation structure and introduction of the use of organic fertilizers producers;

– solving of personnel problems, increasing the number of highly qualified personnel;

– updating of the material and technical base;

– improvement of the system of management and organization of industrial relations.

Thus, further development of agribusiness in the agricultural sector will contribute to improving the efficiency of agricultural production in the country. State support for agriculture in Ukraine is not only unstable (The expenditures of the State Budget under the Ministry of Agrarian Policy in 2008-2018 are shown in Fig. 3, but are significantly lower than the leading exporters of agricultural products. OECD experts estimate that farmers' support was even negative. In 2015, it accounted for 2.23% of GDP and 9.5% of total agrarian income for the PSE. In the OECD countries, farmers received, on average, 16% of total income in 2014-2016.

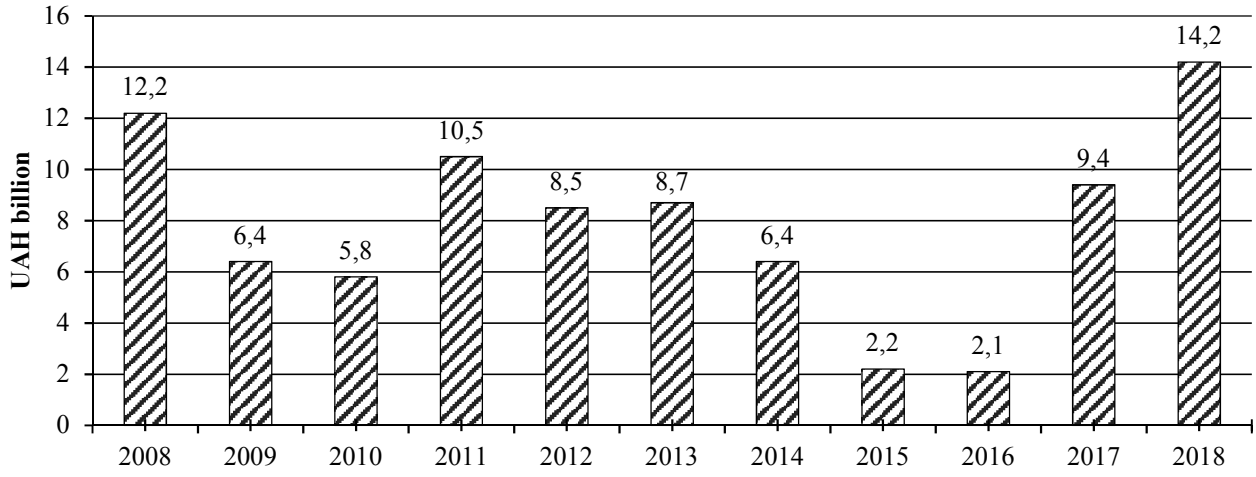

Fig. 3. Planned expenditures of the State Budget of Ukraine for the Ministry of Agrarian Policy of Ukraine, billion UAH (compiled by source [15])

The State Budget of Ukraine for 2018 provides for financial support for agricultural production of UAH 945 million. (Table 2), amounting to EUR 27.8 million, or EUR 1.4 per hectare of agricultural land (for comparison: in EU countries, this support amounts to EUR 200-300 per hectare).

Table 2

Distribution of budget expenditures on the Ministry of Agrarian Policy of Ukraine according to the program classification approved by the Law of Ukraine "On the State Budget of Ukraine for 2018"
(compiled by the authors on the basis of source [15])

Costs	ths.
Ministry of Agrarian Policy and food of Ukraine, everything	14 154 691,7
Financial support for activities in the agro-industrial complex through cheaper loans	66 000,0
Research, applied scientific and technological development in the field of agro-industrial complex	132 644,9
Improvement of qualification of specialists of agro-industrial complex	21 594,1
Financial support for activities in the agro-industrial complex	5 000,0
Financial support for the development of farms	1 000 000,0
Costs of the Agrarian Fund are related to the complex of measures for storage, transportation, processing and export of objects of state price regulation of the state intervention fund	52 200,0
Organization and regulation of activities of institutions in the system of agro-industrial complex and provision of activities of the Agrarian Fund	128 409,0
State support for, and supervision of, horticulture development, planting of young gardens, vineyards and berries	300 000,0
State support for animal husbandry	4 000 000,0
Financial support for agricultural producers	945 000,0

UAH 1 billion is also foreseen. financial support for the development of farms and UAH 4 billion. state support for animal husbandry. In response to this, and in order to determine the current state of affairs in the field, the Association of Cattle Breeders of Ukraine (official site https://usba.com.ua/) conducted a survey of 54 enterprises-producers of livestock products across Ukraine about the amount of funds they need for reconstruction and business expansion. The results of the survey showed that only these 54 enterprises need state funding for a total amount of over UAH 2048250000.

Therefore, modern state support for agricultural producers is not sufficient, consistent, stable, predictable, which significantly reduces the effectiveness of the measures implemented. Given the country's acute budget deficits, its limited amounts are understandable, and in such circumstances, the choice of strategic priorities for state support becomes crucial.

To ensure a rational level of compliance of agricultural producers with agro-technological requirements it is necessary to take a set of measures, in particular:

– to introduce a favorable import regime for imported mineral fertilizers and plant protection products;

– improve the organization of production of mineral fertilizers through fuller use of domestic phosphorites, deposits of which are in Rivne, Volyn, Ternopil, Sumy regions and potash ores of the Carpathian Potash Basin of Lviv and Ivano-Frankivsk regions, which will allow to reduce their prices accordingly;

– increase the volume of application of liquid nitrogen fertilizers (the value of nitrogen in liquid nitrogen fertilizers is 1.2-1.5 times lower than in ammonium nitrate);

– Introduce economic incentives for land owners, land users and land tenants to increase soil fertility and improve their economic condition.

Despite the prospects for the development of the agricultural sector in Ukraine, the reduction in the number of agricultural enterprises is influenced by national conditions. In particular:

– increase in the cost of cultivation of crops (hryvnia devaluation, volatile exchange rate cause fuel, fertilizer, etc.);

– staffing problems (lack of highly qualified personnel, despite the fact that every fifth Ukrainian works in the field of agriculture;

– difficulties with financing;

– degradation of agricultural land (violation of scientifically sound agricultural management systems, monoculture of agriculture) [9].

Also, the decrease in the number of agricultural enterprises is to some extent influenced by the characteristics of agriculture, which are related to the nature of its production, which is based on the ability of plant and animal organisms to natural reproduction, which depends on climate and soil. Particularly important public administration functions in the agrarian sector of the Ukrainian economy are to create conditions that will not only stimulate each producer to respond to consumer requests, but also force them to adapt to effective demand, timely adjust production volumes, improve consumer products.

Achieving this goal should be facilitated by the reform of the price mechanism in agriculture. Prices should reflect the level of public utility of the product,

interact with the system of non-price levers of state support for agriculture. Analysis of the state of food security in Ukraine showed that in recent years the problem of food sufficiency has a structural aspect, and if the production of cereals per person significantly exceeds the rational consumption of bread and bakery products, then the production and consumption of livestock products, in particular meat and dairy, is insufficient. Thus, the production and consumption of milk and milk products per person in the last 10 years does not exceed respectively 260 kg and 225 kg. In 2016, milk was produced 243.3 kg per person, consumed only 209.5 kg, or 55.1% of the rational consumption rate of 380 kg. Meat of all kinds of animals and meat products statistics are as follows: production per person in recent years ranges from 45 kg to 55 kg, consumption – from 50 kg to 54 kg. In 2016, 54.5 kg of meat was produced per person, 51.4 kg of meat and meat products were consumed, or only 62% of the rational science-based norm of 83 kg [14]. In addition to the lack of production of livestock products, a special feature of the industry is the structure of producers.

The lion's share of meat and dairy products is produced by households, which hold mostly up to five heads of livestock. The share of households in production, for example, of milk is almost 74% (or 7.7 million tons of production versus 2.7 million tons of milk produced by agricultural enterprises) (Fig. 4); 36% (or 834,000 tons versus almost 1,490,000 tons) of meat is produced by households, including beef meat 73,6%, pork 46,9%.

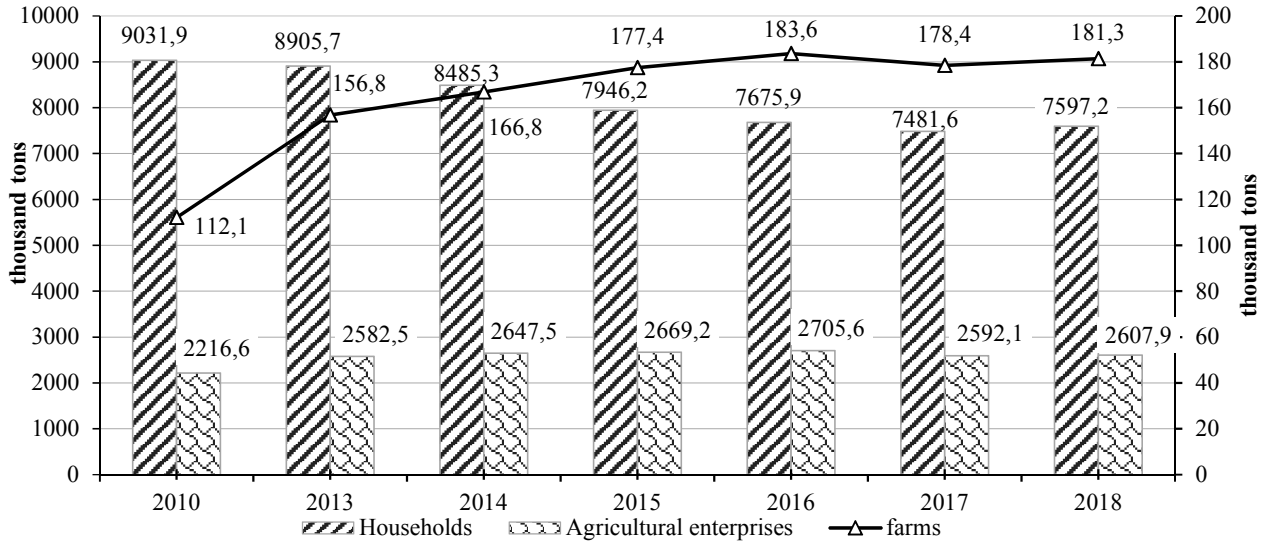

Fig. 4. Milk production in farms of all categories of Ukraine
(developed by the authors based on source [14])

In Ukraine, such households of more than 4 million, which qualify for state registration as legal entities or entrepreneurs, are small, socially disadvantaged, do not have access to state support, which lacks the financial capacity to provide automated production of agricultural products, which also are not able to enter the organized market and sell their products to consumers in a civilized way.

Among the important steps that determine the particularities of the national institutional environment in the agricultural sector are the adoption of the National Target Program for the Development of the Ukrainian Village for the period up to 2015, the Strategy for the Development of the Agricultural Sector for the Period until 2020, the Concepts of Public-Private Partnership Development in Ukraine. 2013-2018 and more. Thus, at this stage of agrarian development the institutional mechanism has come to the final phase of functioning – preparation of the institutional environment for new transformations.

The qualitatively new period of integration of the institutional environment in the agricultural sector of the economy into the international space is extremely important for the development of the institutional environment. On January 1, 2016, the European Union and Ukraine began applying the provisions of the Deep and Comprehensive Free Trade Area. This is a significant step for the development of the agrarian sector, thus, the prospects for further development of the EU countries market by domestic companies, improving the level of quality, environmental characteristics and safety of Ukrainian agricultural products, improving the state of food security of the country.

According to customs statistics, in 2017, the volume of foreign trade in agricultural products in Ukraine amounted to USD 22.2 billion, which increased by 14% compared to the previous year. Imports increased by 10% to USD 4.3 billion. US exports - up 15% to $ 17.9 billion US and exceeded imports by 4 times. Figure 5 presents the dynamics of Ukraine's foreign trade in agricultural products.

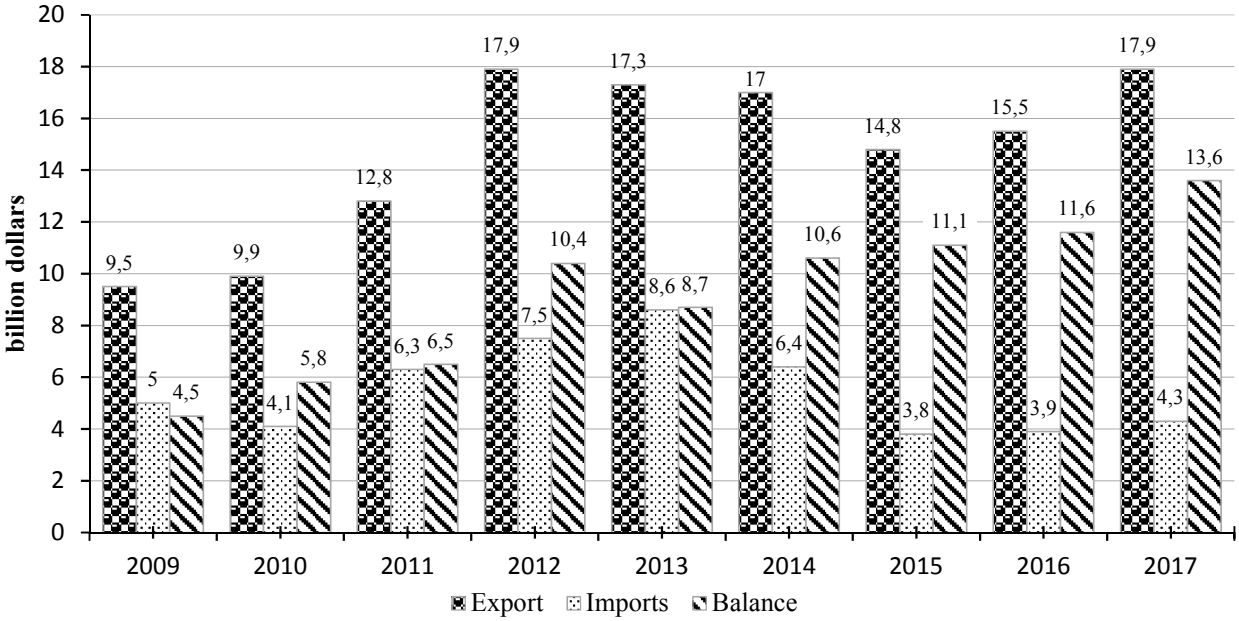

Fig. 5. Dynamics of Ukraine's foreign trade in agricultural products for 2009-2017 [14]

In the course of further development of the agrarian sector there will be organizational and structural changes in the dismantling of some and the acquisition and merger of other farms. At the same time, the types of farms of socio-economic nature will play an important role in determining the effective organizational and economic structure of agricultural enterprises, with the dominant role of private property.

Instead, agroholdings will play a decisive role in shaping this structure and transforming the structure of the agricultural sector of the Ukrainian economy as a whole.

Conclusions. The current stage of agricultural development in Ukraine is accompanied by exacerbation of a number of socio-economic problems.

However, even under adverse conditions, the agrarian sector continues to show acceptable rates of development, which is primarily the result of land and agrarian reforms. In today's context, the institutional matrix of agrarian policy is not formed in Ukraine. Agrarian sector development strategies have been developed and the legislative foundations of agricultural policy are outdated and inconsistent.

The number of regulations envisaging annually a new procedure for allocating budget expenditures to the agricultural sector is not consistent with the strategic priorities of the agricultural sector development, and therefore the effectiveness of such support in solving its current problems is low. At the same time, new challenges require a timely response from the state, agrarian science and practice.

How quickly and effectively the domestic agrarian sector adapts to the new economic conditions depends on its further prospects to occupy a worthy place among the leading producers of agro-food products in the world.

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Колесников С. О., Мішура В. Б. Розвиток аграрного сектору економіки України: прогнози та перспективи

У статті виявлено сучасні проблеми розвитку аграрного сектору економіки України в умовах інституційних змін. Проаналізовано розвиток аграрної сфери країни в контексті інституційних перетворень. Визначено перспективи розвитку аграрного сектору національної економіки з урахуванням наявних ризиків і можливих варіантів державної політики. Проведено кореляційний аналіз фермерських і нефермерських господарств за період з 2012 по 2018 рік. Таким чином, вивчена залежність Y від X. На етапі специфікації була обрана парна лінійна регресія. Оцінено її параметри методом найменших квадратів. Статистична значимість рівняння перевірена за допомогою коефіцієнта детермінації й критерію Фішера. Встановлено, що в досліджуваній ситуації тільки 10.35% загальної варіабельності Y пояснюється зміною X. Статистична значимість моделі обумовлена невеликим обсягом вибірки й впливом інших факторів на результативний фактор U. Доведено, що для забезпечення раціонального рівня дотримання сільгосптоваровиробниками агротехнологічних вимог необхідно вжити комплекс заходів, зокрема: запровадити сприятливий режим ввезення імпортованих мінеральних добрив і засобів за-

хисту рослин; запровадити економічне стимулювання власників землі, землекористувачів та орендарів земельних ділянок за підвищення родючості ґрунтів і поліпшення їх економічного стану.

Ключові слова: аграрна політика, державна підтримка, сільське господарство, тваринництво, бюджетні витрати, фермерські господарства.

Kolesnikov S., Mishura V. Development of the Agrarian Sector of the Ukrainian Economy: Forecasts and Prospects

In the article the modern problems of development of agrarian sector of economy of Ukraine in the conditions of institutional changes are revealed. The development of the agrarian sphere of the country in the context of institutional changes is analyzed. Prospects for the development of the agricultural sector of the national economy have been determined, taking into account the existing risks and possible options for public policy.

The correlation analysis of farms and non-farms for the period from 2012 to 2018 is conducted. Thus, the dependence of Y on X was studied. In the specification step, a pairwise linear regression was chosen. It estimated its least squares parameters. The statistical significance of the equation is verified using the Fisher coefficient and determination. Only 10.35% of the total variability of Y is found to be explained by the change in X. The statistical significance of the model is due to the small sample size and the influence of other factors on the effective factor U. It is proved that to ensure a rational level of compliance of agricultural producers with agro-technological requirements it is necessary to take a set of measures, in particular: to introduce a favorable regime of import of imported mineral fertilizers and means; introduce economic incentives for land owners, land users and land tenants to increase soil fertility and improve their economic condition.

Keywords: agricultural policy, state support, agriculture, animal husbandry, budget expenditures, farms.

Колесников С. А., Мишура В. Б. Развитие аграрного сектора экономики Украины: прогнозы и перспективы

В статье выявлены современные проблемы развития аграрного сектора экономики Украины в условиях институционных изменений. Проанализировано развитие аграрной сферы страны в контексте институционных преобразований. Определены перспективы развития аграрного сектора национальной экономики с учетом имеющихся рисков и возможных вариантов государственной политики. Проведен корреляционный анализ фермерских и нефермерских хозяйств за период с 2012 по 2018 год. Таким образом, изучена зависимость Y от X. На этапе спецификации была избрана парная линейная регрессия. Оценены ее параметры методом наименьших квадратов. Статистическая значимость уравнения проверена с помощью коэффициента детерминации и критерия Фишера. Установлено, что в исследуемой ситуации только 10,35% общей вариабельности Y объясняется изменением X. Статистическая значимость модели обусловлена небольшим объемом выборки и влиянием других факторов на результативный фактор U. Доказано, что для обеспечения рационального уровня соблюдения сельскохозяйственными товаропроизводителями агротехнологических требований необходимо применить комплекс мероприятий, в частности: ввести благоприятный режим ввоза импортированных минеральных удобрений и средств защиты растений; ввести экономическое стимулирование владельцев земли, землепользователей и арендаторов земельных участков за повышение плодородия грунтов и улучшение их экономического состояния.

Ключевые слова: аграрная политика, государственная поддержка, сельское хозяйство, животноводство, бюджетные расходы, фермерские хозяйства.

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NATIONAL BUSINESS CULTURES: RESEARCH METHODOLOGY, CONTENT AND ROLE IN PROVISION OF INTERNATIONAL ENTREPRENEURSHIP

Formulation of the problem. Analysis and systematization of economic facts, phenomena and developmental trends of large organizations (enterprises; institutions; public, religious and political organizations, etc.), individual countries and international institutions gives theoretical and practical reasons to note that many modern economic problems are largely predetermined by the nature and characteristics of national business cultures of various countries.

Thus, the complex interdisciplinary cognitive and applied problem of comparative cross-cultural (intercultural) studies arises, the basis of which is research in the economic sphere – the development of systemic knowledge about the content, forms of manifestation of national business cultures and the use of acquired knowledge in international entrepreneurship.

The basis of such studies is clarification of the methodological aspects of the development of this interdisciplinary problem.

The level of development of the problem and its least investigated aspects. The problem of national business cultures is not sufficiently developed. This is common to all countries however, in particular, this situation is characteristic of Ukraine and other countries of the former USSR: scientific researches on this topic are extremely few. To a certain extent, this originates from the insufficient involvement of business structures in the system of the international division of labor.

Herewith, issues of cross-cultural management are considered to a somewhat greater extent [1; 2; 3]. Valuable significance demonstrates the analysis of ethnomanagement [4]. The first attempts were made to analyze the problems and prospects of joint activities of domestic entrepreneurs together with businessmen from other countries in the markets of third countries [5; 6].

The main disadvantage of domestic studies of this problem, which is also typical for authors of other countries, is the lack of a systematic approach. This is predetermined by insufficient attention to the development of initial methodological aspects. Also, the connection between existing developments and the real business practices of modern business is poorly traced.

The purpose of the article is to analyze and generalize the evolution of the formation of scientific knowledge of national business cultures, the identification of the definition of "national business cultures" and the disclosure of its essential content.

Statement of the main material. At the source of the formation of scientific and practical knowledge of national business cultures was a famous scientist, manager and practitioner from the Netherlands G. Hofstede [7; 8]. In Western science, for his convincing contribution to the development of this problematics, which he began to study in the sixties and seventies of the last century, he is singled out as one of the hundred most outstanding managers. Somewhat later, this kind of scientific and practical development of these issues was carried out by another outstanding representative of the Netherlands – F. Trompenaars [9; 10].

Due to its objective relevance in the eighties and nineties, the studies of this problematics were embodied in rather large-scale developments in various branches of economic science (although the predominant part of them was devoted specifically to managerial aspects). This became the basis for highlighting a new direction in economics – comparative studies.

Economic comparative studies arose as a comparative – cross-cultural management. The followers of G. Hofstede and F. Trompenaars in the study of managerial aspects of national business cultures (they remain the most developed in modern conditions in all countries) are R. Gill and A. Wong, H. Deresky, R. Lessem and F. Neubauer.

In the nineties, systemic developments took place in another area of research on national business cultures – cross-cultural communications. Their purpose was to clarify the peculiarities of communicative behavior and interaction of representatives of different countries and cultures in business and public sectors. The most authoritative representative of cross-cultural communications research is a famous English scientist, practitioner and business trainer R. Lewis [11; 12]. A notable contribution to communication research in the field of international entrepreneurship also made M. Guirdham, M. Limaye and D. Victor.

Especially intensively at the beginning of the XXI century a marketing aspects of national business cultures began to be developed and formed as an independent research area. In economic comparative studies, it can be entitled as cross-cultural marketing. As representatives of this trend can be outlined W. Keegan, J.-C. Usunier, N. Holden. It seems that in the upcoming years cross-cultural marketing will attract more and more attention not only from theoretical scientists, but also from practitioners.

The most productive and original in the marketing approach are the designs of C. Rapaille (French by nationality and American by his current citizenship) [13; 14]. They are based on the analytical psychology of Carl Jung and, in particular, on the psychoanalysis of Sigmund Freud with the subsequent transfer of analysis to the sphere of economic behavior of consumers.

An analysis of the evolution of the emergence and development of the theory of national business cultures leads to the need to identify three major areas within it: managerial, communicative and marketing. Theoretical and practical developments in these areas were carried out and are being carried out in modern conditions (which cannot be noted in relation to Ukraine) quite intensively. Naturally, the identified areas took shape in relatively independent branches of scientific and practical research.

Managerial approach in developing national business cultures took shape as cross-cultural management. Communicative approach – as cross-cultural communication. Marketing approach got materialized as cross-cultural marketing.

Accordingly, independent educational disciplines began to be introduced at leading universities in Europe and the world: “Cross-cultural management”, “Cross-cultural communications”, “Cross-cultural marketing” (very often not only entrepreneurship, but also public sector and non-profit realm becomes the sphere of analysis).

The analysis of the classification of methodological approaches in the study of national business cultures and the characteristics of these approaches on the example of their most authoritative representatives are reflected in Table.

Table

Methodological approaches to the study of national business cultures*

Classification of approaches	Generalized characteristic of approaches
Managerial	Characterization of national business cultures based on the allocation of two-dimensional parameters (“individualism”, “power distance”, “masculinity”, “uncertainty avoidance”, “Confucian dynamism”) with their subsequent consideration within the system “Family - School - Work” (G . Hofstede)
Communicative	Characterization of national business cultures using two types of psychological behavior (introverts – extroverts) and three-dimensional characteristics of entrepreneurial activity (linear activity, reactivity, polyactivity) with the subsequent construction of triangles and placement on its base and legs countries and their groups of 2-4 (R. Lewis)
Marketing	Characterization of national business cultures on the basis of identifying the most typical consumer strata in the frames of individual countries and describing the cultural codes of countries by disclosing the contents of the selected triad “Logical Emotionality” - “Archetype” - “Cultural Code” (C Rapaille)

* Own author's elaboration.

The conducted analysis gives theoretical and practical reasons to identify the definition of “national business cultures” (which researchers do not pay due attention to).

National business cultures are a system of intrinsic, evolutionarily formed and reproduced in space and time basic value orientations of entrepreneurial activity; its behavioral canons, norms and traditions of implementation, as well as stereotypes, attributes and business ethics of doing business that are characteristic of a particular country (groups of countries similar in their respective essential parameters).

The category “national business cultures” reflects the totality of multilevelled nature: phenomena, processes and developmental trends. This is the main essential feature of this definition. It seems appropriate (necessary and sufficient) in the aggregate of phenomena, processes and development trends, reflected by the definition of “national business culture” to identify three areas (levels).

The internal sphere of national business culture, acting as its peculiar core, is a structured system of basic (fundamental) provisions of entrepreneurial activity, laying the essential foundations for the formation and main mechanisms for the implementation of the business culture of a country. This system of basic provisions and the main mechanisms is embodied first in the aggregate of managerial relations, and then in the external forms of their support (in the practical implementation of entrepreneurial activity).

The distinguished internal sphere of national business cultures predetermines their intermediate sphere.

The intermediate sphere of national business culture is the combination of its most characteristic motives and behavioral norms for entrepreneurs of a country in the creation and implementation of a business.

A set of factors of the intermediate environment of national business culture is embodied in varying degrees of technocratism of managers and administrators; their predominant propensity for group initiative; informal procedures; assertiveness in achieving commercial interests of organization and independence of making personal career. In addition, they manifest themselves in varying degrees of adaptation to adverse economic and, in particular, institutional factors; ability to get out of conflict situations and recover from inevitable stressful psychological tensity that accompanies real business activity.

The intermediate sphere of national business cultures, acting as a function of the corresponding internal sphere, in its turn, determines the external sphere.

The external sphere of national business culture is a set of rules-standards of business ethics and business etiquette, characteristic of entrepreneurs of a particular country, norms and canons of cross-cultural communications. They include procedures for the justification and submission of documents on entrepreneurial activities; techniques for the preparation, conduct of commercial negotiations and conclusion of transactions; existing stereotypes and taboos observed in the practical implementation of entrepreneurship in different cultures and countries; tools for the preparation and presentation of presentations. This also includes the dress code of the leading national business structures of a country (if we are not talking about specific strictly defined business structures of a country, such rules and standards are not recorded in documents of a regulatory nature).

The basis of the phenomena and processes reflected in the category of "national business culture" is the economic sphere. The complex of these phenomena and processes, by their internal nature, is a product of the economy as such. This is a combination of managerial relations and relations arising at the meeting point of management with marketing, management with finance, management with the economy, as well as management with public relations. Therefore, national business culture reflects the complex of relations internally inherent in entrepreneurship. This indicates them as economic relations in their essential nature.

At the same time, the formation and, in particular, the external manifestation of these relations, is greatly affected by the totality of the vital factors of modern society: institutional, international, demographic, psychological, and natural (including scientific and technical).

For quantitative analysis and generalized assessments of national business cultures in modern conditions, as a rule, the following parameters are used:

– "Power distance";
– "Individualism";
– "Masculinity";
– "Uncertainty avoidance";
– "Long-term orientation";
– "Indulgence".

These measuring instruments are used in the developments of an authoritative center for the study of national business cultures – Hofstede Insights, licensed by G. Hofstede [15].

These measuring instruments and parameters act as a sort of synthesis (sufficiently reasoned and successful) of the theories of G. Hofstede and F. Trompenaars. At the same time, the parameter estimation toolkit is used, which is typical for the methods of both authors: an assessment of their extreme values from lowest to highest with a quantitative indicator for each country.

Paying respect to the developments of G. Hofstede and F. Trompenaars, as well as their followers, we consider it necessary to note the following.

These developments and assessments are principally based on theoretical studies conducted mainly in the eighties and nineties of the XIX century. Meanwhile, in the late XIX and early XX centuries, numerous dramatic changes took place in the economic, institutional and scientific-technical spheres. First of all, a post-industrial society began to develop on its own. The introduction of information technologies in the production and commercial process and, as a whole, in the life of society became widespread. Further: in the presented studies of national business cultures, the problems of small and medium-sized businesses largely fell out of sight; including – new approaches of the European Union to its regulation.

Conclusions. In national economic science, the problematics of national business cultures has not yet become the subject of systematic theoretical, and even more so, applied practical developments. This objectively influences the effectiveness of international entrepreneurial activity of Ukrainian business structures. In particular, the development of normative legislative acts in the relevant sphere of state regulatory policy.

Prospects for further studies of the analyzed problem. Further studies of national business cultures should be carried out taking into account the complex of economic, natural and institutional changes that are characteristic of modern conditions and projected developmental trends.

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Чеботарьов Є. В. Національні ділові культури: методологія дослідження, зміст і роль в забезпеченні міжнародного підприємництва

Об'єктом аналізу є сукупність методологічних положень економічної компаративістики: дослідження національних ділових культур. Усвідомлюється еволюція менеджерського, комунікативного та маркетингового підходів в їх розгляді. Обґрунтовується дефініція "національні ділові культури" і розкриваються сутнісні явища, процеси і тенденції розвитку, які в ній відображаються.

Ключові слова: економічна компаративістика, національні ділові культури, крос-культурний менеджмент, крос-культурні комунікації, крос-культурний маркетинг.

Chebotarov Ie. National Business Cultures: Research Methodology, Content and Role in Provision of International Entrepreneurship

The object of analysis is a complex of methodological principles of economic comparative studies: the studies of national business cultures. The evolution of managerial, communicative and marketing approaches in their consideration is being comprehended. The definition of "national business cultures" is substantiated and the essential phenomena, processes and developmental trends that are reflected in the definition are revealed.

Keywords: economic comparative studies, national business cultures, cross-cultural management, cross-cultural communications, cross-cultural marketing.

Чеботарев Е. В. Национальные деловые культуры: методология исследования, содержание и роль в обеспечении международного предпринимательства

Объектом анализа является совокупность методологических положений экономической компаративистики: исследование национальных деловых культур. Осознается эволюция менеджерского, коммуникативного и маркетингового подходов в их рассмотрении. Обосновывается дефиниция "национальные деловые культуры" и раскрываются сущностные явления, процессы и тенденции развития, которые в ней отражаются.

Ключевые слова: экономическая компаративистика, национальные деловые культуры, кросс-культурный менеджмент, кросс-культурные коммуникации, кросс-культурный маркетинг.

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SYNCHRO-MINING: THE NEW SIGHT

> Mining is the act, process, or industry of extracting coal, ores, etc., from the earth
>
> *Collins English Dictionary*
>
> Mining: the process or business of working mines
>
> *The dictionary by Merriam-Webster*
>
> Mining is the activity intended to extract minerals from Earth's interior…
>
> *Mining Law of Ukraine*

Mining interpreted by Collins English Dictionary as well as by Mining Law of Ukraine, is extraction of minerals, inclusive of coal, from Earth's interior.

In 2018, amounts of the world coal mining exceeded 8 billion tons [1]. More than 60 countries are engaged in the industrial process; 10 of them mine almost 9/10 of the volume.

Despite the fact that production capacity of any of the 50 national economies, being great in terms of coal mining, is not more than 100 mln tons a year, namely Mining is the key means to satisfy solid fuel and furnace feed demand for coking since coal product stream through international trading floors is not above 15-17% of total production [2].

Coal import is a refuge of predominantly the countries which scaled back their national coal mining. The above concerns especially thermal coal grades.

Japan and such European states as France, Belgium, the Netherlands, and Luxemburg, having eternal mining traditions, have done it relying upon economic reasons. The Great Britain also joined them as well as Germany. Kellingley, the last Britain mine, was closed in 2015. Prosper-Haniel, the last German mine, was closed in 2018. Next in turn is the last Spanish mine was closed in 2019. The same was expected for Ukrainian coal industry: the USSR authorities planned rapid and mass liquidation of Donbas mine stock [3]. In the 1980s, social and political difficulties prevented from doing in such a way as well as dissipation of the Soviet Union.

Processes of active restructuration of mining industries in many countries called into existence Post-Mining idea (i.e. physical closure of an enterprise with "correction" of ecological and social effects of its activities), and a great number of scientific papers, concerning the

issue. Thus, according to Google Scholar data, a paper by a group of Czech authors, concerning the problems of ground and biological restoration of territories after mining and processing were ceased [4], was referenced 262 times starting from the year of 2018; since 2012, a paper by another group of Check scientists [5] has been referenced 95 times in the papers of their followers; since 2014, a paper by such American authors as J. Skousen, and C. E. Zipper [6] has been referenced 35 times etc. The diversified list also involves a paper concerning lung cancer morbidity within Appalachian coal field regions engaged in a Post-Mining stage [7]. Geography of those, processing the topic, comprises Europe, America (as it has already been mentioned), China [8], and Southern Africa [9].

The necessity to support coal mining under the complex Ukrainian mining and geological, and economic conditions motivated scientists and researchers of the National Mining University (National Technical University now) to develop original ideology for solving economic, ecological, and social problems of depressive mining regions entitled as Synchro-Mining [10, 11].

Started in 2010, the research has resulted by 2012 in the concept of strategic development of industrial regions and in the sustainable functioning of mining enterprises on the basis of their synchronous (along with mining diversification projects) implementation of following innovative techniques: chemical processing of coal; deep purification of mine water; methane extraction; underground gasification of non-commercial coal reserves, occurred in thin seams; processing of mine dumps; alternative power industry etc.

Synchro-Mining is notable for aiming to implement completely the key measures, involved traditionally in Post-Mining, at the active stage of a mine functioning rather than post factum (after the enterprise was closed temporary or closed down).

It looks like the idea was in the air: almost synchronously, experts, known in coal industry, published papers in the manner of Synchro-Mining as for the 3-D mine-based industrial parks [12, 13].

It also should be noticed that despite the fact that the Synchro-Mining concept is almost close ideologically to such Policy European Documents as Program Targets of European Network of Mining Regions, Strategy of Development of Mining European Industry, Concept to Form European Technological Platforms, Strategy to Use Natural Resources on the Basis of Sustainable Progress of European Commission, its expansion turned out to be less active as it has been seen and worth.

Since the moment of the declaration paper publication [10], hardly more than two dozen references by the national researches were recorded. As for the foreign authors (if one Russian issue is ignored [14]), scientific sources concerning Synchro-Mining have not been almost unnoted although the texts in English are available within the network [15, 16].

The above mentioned may be explained by poor scientific understanding of Synchro-Mining idea which prevents from consolidation of the national scientists and researchers engaged in the field of mining industry. As to the business structures, low coal mining profitability stipulates high investment risks making implementation of innovative technologies commercially senseless.

The above listed has specified the paper objective to clarify Synchro-Mining matter while bringing to light additional motivations of the new ideology for business structures.

Seeing into the matter has shown that discrepancies, concerning the ideology understanding, emerge from the Mining notion itself.

According to the definitions by the Mining Law of Ukraine and Collins English Dictionary, insisting on the primacy of a mineral mining from the Earth's interior, it is expedient to mention the three stages of a deposit development: Pre-Mining (i.e. exploration, and construction of a mining enterprise); proper Mining (i.e. activities by a mine, open pit, quarry, well etc.); and Post-Mining. Hence, if winning is available then there is Mining; if winning is not available then Post-Mining is meant.

If one proceeds from a mine primacy, predetermined by Merriam-Webster dictionary, then in case of the mine availability, we observe Mining; if a mine is not available, then Post-Mining is meant.

Affinity Mine in Western Virginia (Appalachians, the USA) being potential, shallow, and with great reserves of prime-grade cocking coal, was abandoned for more than quarter of a century before Ukrainian Metinvest Company purchased it in 2009. Collins English Dictionary interprets the situation as Post-Mining and Merriam-Webster Dictionary interprets it as Mining: the mine is not liquidated and its reserves are not exhausted.

Hence, to solve the problem, it is expedient to use a Case Study, i.e. a technique analyzing specific and actual economic, social, and business situations.

Case 1. Power stations on the basis of mines

Power stations on the basis of minesare the alternatives to diversify core activities of a mining enterprise.

In Ukraine, the idea of fuel and energy complexes as thermal power objects started to be developed in the 1990s [17, 18]. Mine peak power stations (i.e. storages of power resources) are more actual currently. Germany develops actively a project to transform a closed Prosper-Hanielmine (i.e. a mine which terminated coal extraction) into 200 MW pumped storage plant [19]. The time has come when the expediency of such structures was explained in 2000 by M.M. Tabachenko, an employee of the National Mining University [20].

The point at issue is that when electric power is critical, it is necessary to bypass water from a surface cunette to underground space through a turbine generating electricity simultaneously; if electric power surplus

takes place, the water should be pumped out from a mine.

Classification nuances are available like in a case with Affinity Mine. Since coal is not mined, the project may be classified as that corresponding to Post-Mining ideology. However, the mine has not been closed; its shafts and mine workings are used for operational procedures. Thus, the above may be considered rationally Synchro-Mining.

Hannelore Kraft, the Minister President of North Rhine-Westphalia, considers it as preservation of the largest centre of national industry as a participant of power market [21].

The same is true for Estonian project in Muuga connected with bypassing of water from neighbouring gulf through hydraulic turbines to the mine workings of the mined out granite quarry [22].

The compressed air energy storages (CAESs) are also potential energy accumulators.

There are two operating gas-turbine power stations with underground pneumatic accumulators in the world. One of them is near German town of Huntorf; another one is in the neighbourhood of American town of McIntosh, Alabama. 290 MW and 110 MW electricity generating parts of the stations are surface-mounted, and high-speed compressed air storages (i.e. natural caverns) are at 600-800 depth.

It is characteristic that the power stations cannot be considered as those belonging to Synchro-Mining category due to the nonavailability of Mining as itself but also nonavailability of a traditional mine. This is not true for RICAS 2020 Project being implemented currently by a consortium of large European companies which budgetary financing is almost € 1.4 mln. The Project is transformation of non-operating Austrian mine into a compressed air storage for a surface power station [23].

Case 2. Coal extraction and preparation

Such two Donbas enterprises as *Pokrovkse* Colliery Group and *Shakhta imeni A.F. Zasiadka* mine metallurgical coal. Their activities differ in the fact that *Pokrovkse* Colliery Group, owned by *Donetskstal* Company, delivers rough coal as a commodity product to a *Sviato-Varvarynska* preparation plant through transport facilities i.e. to another legal entity belonging to *Donetskstal* Company as well. In turn, *Shakhta imeni A.F. Zasiadka* owns and uses the connected mine and *Kyivska* central preparation plant. Coal concentrate is a final product of the enterprise.

In the context of almost similar methods of coal extraction and conversion, mine one implements Mining schedule, and mine two is engaged in Synchro-Mining since coal mining and its preparation are synchronous processes.

Concerning the above, waste treatment aspect is indicative one.

If this is done using “mine and preparation plant” complex, then the development of a circular economy (i.e. decrease in the waste amount and its return to production cycle) then it can be considered as Synchro-Mining. The disposal of high-ash coal materials accumulated in tailings separated from the ore mines [24] is classic Post-Mining, but not Synchro-Mining. Conversely, recycling of high-ash coal materials, accumulated in tailing dumps separated from the mines of preparation plants, [24] is the classic Post-Mining rather than Synchro-Mining.

Case 3. Methane production and utilization

Such leading coal mining countries as the USA, Canada, Australia, and China solve the problem of rock mass degasification by means of preliminary development using surface well drilling before mining starts within the mine field. During 5-8 years, the collieries decrease gas concentration drastically prior to the start of mining owing to the well drilled from the surface before mining; moreover, they have both commercial methane and significant impact. That is the classic methane Mining rather than Synchro-Mining.

However, it takes almost a decade to decrease methane saturation of rock mass by 50% but the available Ukrainian Companies have no time for that. Consequently, to degas effectively coal seams, *Pokrovskoye* Colliery Group combines mining both temporary and spatially with surface well construction. The mine functioning is Synchro-Mining.

Methane obtained either through traditional Mining or while combining drilling and mining operations, and utilized by a cogeneration plant, a mine boiler or a near-mine refueling plant, classifies the complex as Synchro-Mining.

The same is true for underground coal gasification. To adapt the complex to the Synchro-Mining architecture, utilization part is required, which can be either a surface power plant or a chemical plant for further transformation of the synthesis gas. It is the only case when it is possible to speak about synchronous operation of two cross-sectional operations rather than about the traditional Mining of synthesis gas by means of underground coal gasification.

Case 4. Synchro-Mining and Vertical Integration

Theoretically, mine-based fuel and energy technological complexes; syngaspower plants; mine methane cogeneration modules; small and medium-sized coal-fired power plants etc., concentrated in the hands of a single owner, are hierarchical structures on the principles of Synchro-Mining as well as vertically-integrated structures with positive and negative features which Bengt Karlof mentioned as “Advanced vertical integration is a problem that troubles Mikhail Gorbachev in Kremlin as much as Directors of General Motors in Detroit” [25, p. 163].

Under the conditions of low profitability of coal production or even under the conditions of its unprofitability, effectiveness of the technological complex as a whole may turn out to be an unmanageable problem making Synchro-Mining commercially senseless.

As for the propriety factor, the "mine and preparation plant" complexes, mentioned in case two, are vertically integrated structures in the both contexts; however, as it has been shown, only one of them belongs to Synchro-Mining models.

Case 5. Synchro-Mining and industrial parks

Eco-industrial park Red Hills EcoPlex (Choctaw County, Mississippi, USA), involving a mine and 440 MW thermal power plant, is neither an example of Synchro-Mining nor an example of a vertically-integrated structure since neither the company, which operates the TPP, as well as other members of the park, being a brick factory and various agricultural firms, do not synchronize their activities with solid fuel Mining commercially. It is a group of disparate economic agents using their membership right to apply steam, heat, ash, and mine waste [26].

Another matter is an industrial park involving the integrated coal mine and a power plant (using solid fuel or gas fuel stored in underground facilities etc.), belonging to different owners, who act as a technologically connected heterarchical structure.

Heterarchy differs fundamentally from a traditional hierarchical company in the fact that its functioning is managed by two or more equivalent nerve centres.

The advantage of such an industrial-park system is its opportunity to attract investment resources as well as potential synergism demonstrated in the possibility of using power plant ash to backfill mine workings; using mine water to cool down boiler units; using mine methane as an illuminating fuel etc. In this context, the mine itself is a supplier of fuel resources and materials as well as important consumer of electric power and thermal power.

Owing to the opportunities, being typical for network capitalism, heterarchical foundations of the formations, relying upon Synchro-Mining ideology, may generate interest in business structures (for instance, energy corporations) as for their participation in the activities of industrial parks, and essential increase in the potential of unprofitable public sector of the national coal industry [27, 28].

To implement such opportunities, in 2014 Dnipro Polytechnic proposed software product Synchro-Mining on the basis of the open technological platform. The product favours more active development of technoparks and industrial parks.

In 2015, UNO countries adopted the Agenda of the Sustainable Development up to the year of 2030 [29]. The program document involves seventeen goals intended to eliminate the poverty, to save the planet resources, and to ensure well-being for everyone. It is significant that the Synchro-Mining ideology is close to seven (of the seventeen ones) Sustainable Development Goals, namely:

7. Ensure access to affordable, reliable, sustainable and modern energy for all;

8. Promote inclusive and sustainable economic growth, employment, and decent work for all;

9. Build resilient infrastructure, promote sustainable industrialization and foster innovation;

11. Make cities inclusive, safe, resilient and sustainable;

12. Ensure sustainable consumption and production patterns;

15. Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss; and

17. Revitalize the global partnership for sustainable development.

The analysis of Synchro-Mining alternatives, performed by the paper, has shown the multidimensionality being typical for the ideology and even controversy stipulating complexity of its understanding both by experts and scientifically oriented people.

It has been substantiated that it is expedient to base the Synchro-Mining phenomenon on Mining interpretation by Merriam-Webster Dictionary version relying upon the existence primacy of a mining enterprise (i.e. a mine, quarry, open pit, well etc.): Mining exists irrespective of the mineral extraction until the enterprise is liquidated physically.

Hence, Synchro-Mining is diversification of the key activity of a mining enterprise performed in parallel with Mining whether it is coal or ore preparation, generation of electric energy and thermal energy, early Post-Mining measures, commercial extraction of methane, deep treatment of mine water, progress of circular economy etc. not only in the form of vertical integration of various businesses (i.e. hierarchical production method) but also in the form of heterarchies (i.e. network capitalism) or in the form of industrial parks.

Just Synchro-Mining, aimed at the achievement of power autarchy of coal mining enterprises, may become the most topical in the situation of coal extraction unprofitability and systemic payment defaults existing in the public sector of Ukrainian coal industry

The Synchro-Mining ideology in the form of 3-D industrial parks will favour the attraction of investment resources of business structures of the large corporations as participants.

To deepen and expand the Synchro-Mining theory, it is expedient to perform corresponding scientific and research activities in the context of official theme, namely: hold international forums (conferences, panel discussions etc.), publish monographs and complex of papers among them in English.

The obtained results will favour grouping of experts, scientists, and researchers from different countries, representing fields of sectoral, academic, and University science.

To activate attraction of investors (first of all, from among power companies having desire to equip and possess energy storages), it is expedient to support and popularize the software Synchro-Mining platform spread out in Dnipro Polytechnic.

To the effect of self-development of the new paradigm of functioning of mining enterprises, it is practical to establish international scientific-research Synchro-Mining International Institute under the aegis of MES and NAS of Ukraine and auspices of such large national corporations as DTEK, Metinvest, Donetskstal etc. Moreover, it is necessary to approach to the world leading mining corporations with a proposition to support Synchro-Mining movement within different basins on different continents.

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Амоша О. І., Череватський Д. Ю., Півняк Г. Г., Шашенко О. М., Бородай Л. В. Новий погляд на Synchro-Mining

Виконаний у роботі з використанням методу кейсів аналіз варіантів побудови Synchro-Mining показав властиву самій ідеології багатоаспектність, а то й суперечливість, що обумовлює складність її сприйняття не тільки практиками, а й навіть підготовленими вченими.

Обґрунтовано, що в основу феномена Synchro-Mining раціонально покласти тлумачення Mining (Гірництва) у версії словника Merriam-Webster, заснованого на приматі існування гірничодобувного підприємства (шахти, рудника, кар'єру, свердловини тощо): Mining існує незалежно від видобутку корисних копалин до тих пір, поки фізично не ліквідовано саме підприємство.

Таким чином, Synchro-Mining – це диверсифікація основної діяльності гірничодобувного підприємства, яка проводиться синхронно з Mining, будь-то в напрямку збагачення вугілля або руди, виробництва й акумуляції електричної та теплової енергії, заздалегідь проведених заходів Post-Mining, комерційного видобутку метану, глибокого очищення шахтних вод, розвитку циркулярної економіки та ін., як у формі вертикальної інтеграції різнопрофільних бізнесів (ієрархічний спосіб виробництва), так і у вигляді гетерархій (мережевого капіталізму), чи індустріальних парків.

Ключові слова: Synchro-Mining, Mining, диверсифікація, вертикальна интеграція, гетерархія, індустріальний парк.

Amosha O., Cherevatskyi D., Pivnyak G., Shashenko O., Borodai L. Synchro-Mining: the New Sight

The analysis of Synchro-Mining alternatives, performed by the paper, has shown the multidimensionality being typical for the ideology and even controversy stipulating complexity of its understanding both by practices and by qualified scientists.

It has been substantiated that it is expedient to base the Synchro-Mining phenomenon on Mining interpretation by Merriam-Webster Dictionary version relying upon the existence primacy of a mining enterprise (i.e. a mine, quarry, open pit, well etc.): Mining exists irrespective of the mineral extraction until the enterprise is liquidated physically.

Thus, Synchro-Mining is diversification of the key activity of a mining enterprise performed in parallel with Mining whether it is coal or ore preparation, generation of electric energy and thermal energy, early Post-Mining measures, commercial extraction of methane, deep treatment of mine water, progress of circular economy etc. not only in the form of vertical integration of various businesses (i.e. hierarchical production method) but also in the form of heterarchies (i.e. network capitalism) or in the form of industrial parks.

Keywords: Synchro-Mining, Mining, diversification, vertical integration, heterarchies, industrial parks.

Амоша А. И., Череватский Д. Ю., Пивняк Г. Г., Шашенко А. Н., Бородай Л. В. Новый взгляд на Synchro-Mining

Выполненный в работе с использованием метода кейсов анализ вариантов построения Synchro-Mining показал свойственную самой идеологии многоаспектность, а то и противоречивость, что обусловливает сложность ее восприятия не только практиками, но даже подготовленными учеными.

Обосновано, что в основу феномена Synchro-Mining рационально положить толкование Mining (Горное дело) в версии словаря Merriam-Webster, основанного на примате существования горнодобывающего предприятия (шахты, рудника, карьера, скважины и т.д.): Mining существует независимо от добычи полезных ископаемых до тех пор, пока физически не ликвидировано само предприятие.

Таким образом, Synchro-Mining – это диверсификация основной деятельности горнодобывающего предприятия, которая проводится синхронно с Mining, будь то в направлении обогащения угля или руды, производства и аккумуляции электрической и тепловой энергии, заранее проведенных мероприятий Post-Mining, коммерческой добычи метана, глубокой очистки шахтных вод, развития циркулярной экономики и др., как в форме вертикальной интеграции разнопрофильных бизнесов (иерархический способ производства), так и в виде гетерархий (сетевого капитализма), или индустриальных парков.

Ключевые слова: Synchro-Mining, Mining, диверсификация, вертикальная интеграция, гетерархия, индустриальный парк.

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TENDENCIES AND PROSPECTS OF THE UKRAINIAN NUCLEAR INDUSTRY COMPLEX DEVELOPMENT

Under the conditions of transition to the 6th technological structure, helio- and nuclear energy become the leading sources of energy resources [1; 2]. In general, in Ukraine, about 1000 tons of uranium concentrate are produced per year in modern conditions, but real investments are needed not to increase production but to make it. The need to increase uranium production and its further conversion into nuclear fuel has been talked about without exception by the all Ukrainian governments. According to the view of some experts, our country ranks first in Europe by its reserves and is in the top ten in the world. By even the most modest of their estimates, raw materials will last for a hundred years [14].

2,5 thousand tons of uranium concentrate are required annually to support electricity production by operating NPPs. Ten years ago, an ambitious program "Nuclear Fuel of Ukraine" was adopted, with plans to increase uranium concentrate production up to 1880 tons per year, construction of a nuclear fuel plant and production of 270 tons of zirconium per year. But in fact it turned out ... as always. Therefore, modern Ukraine only produces natural uranium concentrate, which is actually a low value-added raw material and is further enriched for the production of uranium dioxide-enriched tablets from which fuel elements are formed. It should be noted that the required amount of uranium enriched in nuclear fuel is purchased by Ukraine only in the Russian Federation. Russia supplies uranium-235 dump after enrichment of at least 0.3%. Similar developments are being made by the US at Westinghouse.

Analysis of recent researches and publications. The study of problems of atomic industrial complex development dedicated their works: A. Nosovsky [4], L. Litvinsky, O. Purtov [5] A. Maksimchuk [6] G. Mohon'ko, K. Tarasenko [7].

Despite the significant attention of scientists, the problem of conditions formation for innovative-oriented development of nuclear-industrial complex requires more study.

The main purpose of the study is to develop the sequence of conditions formation of innovation-oriented development of nuclear-industrial complex in Ukraine on the basis of strategic determinants.

Presentation of the basic material. The development of the economy and the increase in population is one of the reasons for the growth in energy demand in modern conditions. Over the past 20 years, the world population increased by 1.6 billion people, and the total real income of the population and enterprises – by 87%. The consumption of primary energy has increased from 1900 in 22.5 times, and over the last 20 years the volume of world primary energy consumption grew by 45%. Structure of primary energy consumption carriers in separate countries is defined with the natural resources and transport capacities availability, the nature of the internal needs. The increase in world primary energy demand is determined such country and regions as China, India, Brazil and the middle East. Although historically

nuclear energy has risen from its programs to develop nuclear weapons, here, of course, reverse is possible.

Now Ukraine produces about 1,000 tons of uranium concentrate per year. The level of concentrate provision from the beginning of the Millennium has increased only from 32 to 40%. The rest (up to 1500 tons) are annually purchased from Russian, European and Kazakh suppliers. Meanwhile, older fields are depleted and there is very little money to develop new ones. Besides the cost of our uranium by global standards is very high – $105 per kg, which is more than twice higher to the current world quotes. And, of course, around this area there are a bunch of shady semi-criminal schemes.

Geographically, almost all developed (and promising) deposits are concentrated in a small area (size of 80 to 20 km) within Kirovohrad region. The only uranium producer in Ukraine – Eastern mining-processing combine (SkhidHZK) operates there. Its purpose and specialization is mining and processing of uranium ore. SkhidHZK consists of three mines: Inhul′s′ka, Smolins′ka and Novokostyantynivs′ka which develop four deposits. Moreover, the Inhul′s′ka mine runs two of them at the same time. Hydrometallurgical plant SkhidHZK in Zhovti Vody is engaged in the processing of ore into uranium oxide. Then it traditionally goes to the Russian Federation for the enrichment and fabrication of fuel assemblies (FA) in fact, fuel for Ukrainian nuclear power generating stations.

The management structure of the SkhidHZK is part of the state concern created in 2008 "Nuclear fuel" with tasks: creation of a plant for the production of nuclear fuel, the uranium and establish production of zirconium. From all three tasks in fact are performed only extraction of uranium (97% of turnover) and some release of hafnium (up to 12 t. per year).

There are two saved enterprises in Ukraine for extraction and processing of uranium, the existing technology of building electronic components and even a special measuring technique to determine the isotopic composition of nuclear materials. Moreover, reserves of uranium and zirconium in Ukraine, as mentioned above, one of the first in the world.

A unique feature of domestic production is that a considerable part of the ore is extracted directly under the regional centre – the city of Kropivnitsky (before Kirovohrad). On the outskirts of the city is located Inhul′s′ka mine which has created an underground labyrinth in the depths of half a century (from 160 m. till 650 m,). There are only 5 vertical trunks, plus the two uranium deposits – Michurins′kyi ta Tsentral′nyi with an underground tunnel nearly 6 km long, passing under the river Ingul. There will be enough uranium reserves until 2030. And there is a large undeveloped Central (Zakhidne (Western) deposit nearby. However, the uranium deposits there go almost to the center of the city, which for obvious reasons does not cause great enthusiasm among its residents.

Smolins'ka mine, which is located 80 km to the west, has many more problems - it is going to be closed. Since the uranium content is higher, the mine has long been a key to mining and processing plant, giving up to 60% of raw materials. But more intensive testing of the Vatutins`kyi deposit accelerated the depletion of available reserves. Latest commissioned seven years ago, an ore horizon 640 m. only slowed the pace of decline. The plant capacity in recent years has decreased more than twice. Before the accident at the Fukushima Japanese nuclear power plant, during the period of high uranium prices in the world, the option of working out even deeper horizons of the Vatutins`kyi deposit and exploration for exploration of a small neighboring southern deposit was considered. However, the fall in uranium prices made these plans unprofitable. Already in 2016, the Nuclear Fuel Concern has decided that it is inappropriate to continue the operation of the Smolin Mine. In the spring of 2017, there was also an official statement that the residual resource of the mine does not exceed 1.4 thousand tons of uranium, and it will be closed within 3-5 years. At the same time, it is more than a serious blow to the village Smoline, for which the mine is a city-forming enterprise. The village Smoline risks of being left with nothing, since there is no money for the new jobs creation either in the State Mining and Gas Company or in the states.

The main hope associated with the development of neighboring Novokostyantynivs′ka mine. And now the Director of the Smolins'ka mine at the same time controls them both. Previously it was assumed that part of the mine personnel will go to Novokostyantynivs′ka mine, which is in pilot operation (that is in fact still under development). But even if so, not everyone will be able to get a job.

The history of the decommissioning of mines in the town Zhovti Vody that were previously included in the SkhidHZK, also does not add optimism. They flooded, and one of them ("Nova") went under water, having iron ore reserves of almost a billion tons. Now SkhidHZK task is to maintain the existing volume of production at old fields at the level of 650-670 tons/year and commissioning of the startup complex with a capacity of 500-550 tons/year at Novokostyantynivs′ka mine.

The newest mine is talked a lot and often. Total uranium reserves at operating mines – about 110 thousand tons, the lion's share – 92 thousand tons (84%) is exactly resources from Novokostyantynivs′ka. But, unfortunately, much less is being done.

In recent years, construction is funded only by the plant, and even then very little. Thus, in 2016, the total investment of the mining company (SkhidHZK) in support of existing mines, "and further development of the Novokostyantynivs′kyi deposit" was only $4.5 million. At the same time, minimal valuation of the cost of commissioning a start-up complex of this mine with the output for production of 500 thousand tons of ore per year

are at least ten times greater. The projected capacity – 1 500 000 tonnes of uranium ore per year – will require about a quarter of a billion dollars. There is no such money in SkhidHZK. Now, mining is shallow underground, with a horizon of 240–300 m. The main uranium lies deeper (up to 700 m), but there is no money to reach it. On the surface of the mined rock mass is lifted by two very worn trunks. However, everything is not so bad. There is uranium there, and the volumes of its production at this mine have already exceeded the level of the Vatutins`kyi field. And even expensive uranium electricity is clearly cheaper than electricity from Ukrainian coal.

But some technologies for organizing a closed nuclear cycle in Ukraine are still lacking. Only the initial stage of uranium ore enrichment is possible at Ukrainian enterprises. It should be noted that investment is needed due to the lack of technology and production facilities for the construction of high and low power reactors. In Ukraine there is a complete (closed) nuclear fuel cycle. However, there are some of its key elements: the extraction, crushing, and enrichment of uranium ore to produce uranium oxide (U_3O_8); the use of nuclear fuel (energy and research reactors); storage of spent nuclear fuel; transportation of fresh and spent fuel and radioactive waste, storage and disposal of radioactive waste. I.e, the modern nuclear-industrial complex of Ukraine includes: uranium ore production, production of nitrous oxide, production of zirconium concentrate for the production of shells (tubes) for fuel elements (TVELs) and operating NPPs [3].

The composition of the enterprises that are the part of the nuclear industry of Ukraine, which can be represented in the form (Table).

Table

The main enterprises of the nuclear-industrial complex of Ukraine and the profile of their activity

Name of Company	Profile
State concern "Nuclear fuel"	Uranium and zirconium production
Members of the concern:	
SE "Eastern Mining and Processing Plant" (SkhidHZK)	Natural uranium production and production of its oxide concentrate
SE "Smoly"	Production and marketing of ionized materials and their provision in the full volume of uranium production of Ukraine
State Enterprise "Ukrainian Research and Design Intelligence Institute of Industrial Technology"	Project and scientific support of facilities and production of nuclear fuel cycle
Other enterprises serving the leading structural units of nuclear power and the nuclear-industrial complex	

Leading structural units of a nuclear (atomic) energy is a state enterprise "National nuclear energy generating company "Energoatom" and its separate divisions, and the nuclear-industrial complex – the state concern "Nuclear fuel", which is the SE "Eastern mining and processing plant", SE "Resin", SE "Ukrainian scientific research and design-prospecting Institute of industrial technology".

Directly the nuclear-industrial complex, which is the leading element of the nuclear energy complex of Ukraine can be considered a complex sector of the national economy that includes production of uranium, which forms the basis to meet the needs of nuclear power plants in natural uranium in the medium and long term; zirconium production, which includes the establishment of the production of zirconium, which is the main structural material for the fabrication of nuclear fuel, given its unique physical properties of the weak interaction with neutron flux in the reactor core; manufacture of ion-exchange materials and to ensure the full production of uranium of Ukraine; production of fuel assemblies and components as an integral part in the creation of our own nuclear-fuel cycle; scientific, project and informational support of carrying out research and experimental design works for the improvement of mining technologies, processing of uranium raw materials, ensuring radiation protection of personnel and population, conducting environmental impact assessment, technical re-equipment of research institutions and design organizations.

Such elements of the nuclear fuel cycle, like uranium conversion (the translation of the nitrous-oxide of uranium U_3O_8 in uranium hexafluoride UF6 gaseous compound, which is technologically necessary for further enrichment), isotopic enrichment of uranium and its re-conversion (conversion of enriched uranium hexafluoride to uranium oxide), manufacturing fuel pellets of uranium oxide, and fabricating finished fuel assemblies-today in Ukraine does not exist. The country does not have a complete nuclear fuel cycle (NFC) – there is no stages: obtaining uranium hexafluoride; enrichment, conversion and production of fuel tablets, obtaining pipe billets and rolled products; manufacture of components and fuel assemblies. In general, the available scientific potential and experimental base are insufficient for scientific and technical support nuclear cycle in Ukraine. Massive financial problems are a huge obstacle for the realization of such ambitions. After all, the actual funding for most of the existing nuclear cycle programs during the years of independence did not exceed 10 per-

cent of the announced level. According to the IAEA, uranium reserves of Ukraine is about 199.5 thousand tons. In Ukraine are produced only natural uranium concentrate, in fact a low cost raw material, unsuitable for further enrichment and the production of uranium dioxide tablets. It does not allow Ukraine to fully utilize uranium isotopes 235 and 238. Until recently, the required amount of enriched uranium in nuclear fuel was only purchased in the Russian Federation.

Despite the fact that the contribution of the nuclear-industrial complex of Ukraine in the creation of gross domestic product is not significant, but its role is important in ensuring economic security and achieving energy independence. In accordance with the provisions of the sustainable development Strategy of Ukraine until 2030 and the energy strategy of Ukraine for the period up to 2035 the development of nuclear energy is one of the priorities of development of national economic system.

The process of controlling the development of nuclear-industrial complex is a difficult, multifaceted process. Make informed and appropriate management decisions is possible only under the condition that they are based on the results of the objective assessment, which enables to identify the type of development and determine its level, create a basis for identifying determinants of development. The world's leading companies enter into contracts for uranium enrichment under IAEA control with the receipt of a uranium dump -235 is 0.2% or less. This allows to obtain the isotope uranium-235 not 67%, but 80% or more. Ukraine is working in an imperfect legal field. There is no effective state mechanism for regulating the development of the nuclear-industrial complex: it has no instruments or state programs. The following programs exist in Ukraine: State Target Economic Program "Nuclear Fuel of Ukraine", approved by the Cabinet of Ministers of Ukraine from September 23, 2009 No. 1004 for the period 2009-2013, which provides for an increase in the production of natural uranium concentrate; creation of nuclear fuel production, zirconium production, production of accessories; scientific, project and information support of nuclear fuel cycle facilities; The State Program “Nuclear Fuel of Ukraine” was adopted for the period 2009-2013; The Decree of the Cabinet of Ministers of Ukraine of November 9, 2016 No. 943-p approved the Concept of the State Target Economic Program for the Development of the Nuclear Industrial Complex for the Period up to 2020; The concept of the nuclear fuel production and its components organization in Ukraine is based on national resources of natural uranium and zirconium to reduce the dependence on foreign suppliers of nuclear fuel for nuclear power plants.

The next step after approval of the Concept is the development of the draft programme, but as for today, the draft program of the Cabinet of Ministers of Ukraine is not approved. Resolution of the Cabinet of Ministers of Ukraine of 30 September 2009 No. 1029 was approved the State target ecological programme to bring in a safe state of the uranium objects of the production of "Prydniprovs`kyy chemical plant" Association.

The goal of the program is to eliminate negative environmental impacts of industrial Association "Prydniprovs`kyy chemical plant", bringing the dangerous uranium objects which are on the balance of the state enterprise "Barrier" into an environmentally safe condition and providing protection of the environment and population from the harmful effects of ionizing radiation. The term of program implementation 2009-2014, ie the Program requires updating.

The decision of the Dnipropetrovsk regional Council from 21.10.2015 No. 680-34/VI approved of the Dnipropetrovsk regional complex program (strategy) of environmental security and mitigation of climate change for 2016-2025. On October, 21, 2015 Dnipropetrovsk Regional Council Decision approved Dnipropetrovsk Regional complex program (strategy) for environmental safety and the climate change prevention for 2016-2025 (decision № 680-34 / VI). This program is not paid enough attention to the issue of radioactive waste disposal although among the problems include significant man-made load on the environment of giant tailings and sludge collectors in the town Zhovti Vody and the state enterprise "Barrier" (Kam″yans′ke).

Despite the decline in commodity prices in the world. Energy security of the country is one of the national interests of the state.

In Ukraine, on June 21, 2018, Law No. 2469 –VIII “On National Security” was adopted.The Law defines the terms "public security – protection of state sovereignty, territorial integrity and democratic constitutional order and other vital national interests of actual and potential non-military threats", "threats to national security of Ukraine – the phenomenon, trends and factors that make it impossible or difficult or might prevent or hinder the realization of national interests and the preservation of national values of Ukraine, national security – protection of state sovereignty, territorial integrity, democratic constitutional rights and other national interests against real and potential threats and national interests – vital interests of the person, society and state, realization of which ensures the state sovereignty of Ukraine and its progressive democratic development, as well as safe living conditions and the well-being of its citizens". Therefore, on this basis, it is possible to generalize the system of interaction of subjects, objects and components of the influence of national interests. Scientific research and development of the nuclear-industrial complex for the modern developed country is an integral part of the realization and protection of the state national interests, as well as an element of state and national security. The concept of "interests in the development of the nuclear-industrial complex" is formed in the system of national interests. The definition of "interests in the development

of the nuclear-industrial complex" should take into account the following factors: set of economic interests; a set of state energy security goals; set of existing external and internal threats.

The second problem with the production is the necessity of growth of uranium ore production in 2,5-3 times, to 2.6 million tons per year. One of the scientific methods of mining uranium, which it is advisable to use in Ukraine is in-situ leaching (ISL) of uranium on explored sandstone deposits. This method is used by Kazakhstan and Uzbekistan. In these countries, 100% of uranium is mined by ISL method. Ukraine needs to maintain and develop its nuclear energy potential, even in spite of the trend towards a policy of some states' abandonment of nuclear energy. Nuclear power is not just part of the energy industry. It is a reflection of a certain level of economic development, technology, education and even public relations. Nuclear power is an indicator that confirms the technological culture, it demonstrates membership relatively narrow range of countries, the level of development which allows safely and effectively use the latest achievements of engineering thought especially in the conditions of transition to the 6th technological order.

It should be noted that many countries have renounced nuclear energy. But these countries are not energetically isolated, and their energy market is a component and fully integrated part of the EU market, where nuclear generation is present. Among countries such as Germany, which shows a move away from nuclear power, but it is part of a common European energy market, together with France, where nuclear power is dominant. One notable example is the state of California, which decades ago made the decision to decommission nuclear power units located in its territory, but in 2019 has decided to extend their service life. This is against the background of the general rise and development of nuclear power and reactor technology in the United States. There is no doubt that Ukraine, together with Poland, should maintain and develop their own potential in nuclear energy and related industries. In order to preserve and develop Ukrainian nuclear power, it is necessary to fulfill a number of conditions and implement a set of measures.

Nowadays, electricity from Ukrainian nuclear power plants is generally the cheapest in the world. With the current rate of about 2 cents per kilowatt/hour, it is three to four times cheaper than in Europe and 1.5 times than Russian! However, such cheapness does not make it possible to accumulate resources not only for the development but also for the safe decommissioning of the NPP units, followed by bringing the sites where they are located, in a safe condition. To put it bluntly, there is a decline in the cost of renewal and the shifting of problems to future generations.

The most obvious (and sad) scenario: nuclear power plant will modify its resources (most likely, given the multiple extensions) and will be closed. For uranium miners, this means that by 2050, the local uranium consumer will also dry up. But this is a distant problem today. Last year, according to the SE "Eastern Mining and Processing Plant" (SkhidHZK) report, "1240 tonnes of uranium concentrate was sold. Total revenue of $ 4.2 billion was received and nearly $ 1 billion was paid in taxes."

At the same time, it should not be excluded that part of the purchased on the domestic concentrate is also purchased on the foreign market. In fact, one of the shadow schemes, which slowly still came to court [14], was the purchase of a cheap Kazakh concentrate, followed by its sale to the state through the SkhidHZK, but, of course, at higher prices. According to the contract, the state-owned national atomic energy generating company "Energoatom", which operates the NPP in the period 2008–2018 purchases the extracted uranium concentrate (in the SE "Eastern Mining and Processing Plant" (SkhidHZK). And at the prices that ensure the profit of the latter, that is much higher than the current prices in the market.

In 2014–2015, one of the intermediary firms, Austrian Steuermann Investitions, bought 400 tonnes of concentrate in Kazakhstan at $ 95 / kg, then resold it to SkhidHZK, but at $ 129 / kg, and the mining and processing plant resold it; Energoatom; (who is obliged to buy uranium from it) at the same price. Under the 2014–2015 contracts, SkhidHZK had to purchase up to 1000 tonnes of uranium concentrate through the Austrian intermediary (approximately its annual output). Now all these schemes will be dismantled in the courts.

And SkhidHZK, meanwhile, has set "an overriding goal": reducing uranium cost from $ 105 per kilogram in 2017 to $ 80 during 2018-2019. By the way, the second figure, is also higher than world prices, which are expected to grow in 5-7 years. It is not very clear how everything will work out in practice. Uranium waste reserves have already been largely selected. There is no money for digging new horizons. However, it is possible to close down the Smolins`ka mine. But there has already been one strike at the the SE "Eastern Mining and Processing Plant" (SkhidHZK). By the way, during the court cases, an interesting document was lit up against the strikers. The Ingul`ska mine was paid only at 1,000 UAH / kg (less than $ 40).

Development, new technologies and horizons [13]. While operating existing power units, it is extremely important for Ukraine to monitor and directly participate in the development of new technologies and to implement them. Among the main directions are:

Firstly- modern technologies that allow to modernize, increase efficiency, replace already existing power units, including units of small capacity, increase their safety and extend their service life. It is advisable to put this on a domestic engineering base with the use of USA and Canada modern technologies. Such enter-

prises in Ukraine are currently manufacturing separate components for fittings and equipment for nuclear reactors.

A certain group of experts associates the main hope for the increase of Ukrainian uranium production with the Chinese. For the last two years, Chinese delegations regularly visited Novokostyantynivs′ka mine and hydrometallurgical plant (where they want to participate in the construction of a sulfuric acid plant). In August 2017 at the request of the State Development Bank of China; SkhidHZK has ordered an audit of its financial statements for the past three years.

Incidentally, in 2006-2011, Novokostyantynivs′ka mine was already a separate legal entity – at that time it was expected that "Rosatom" would come to it as an investor; (with an expected investment of $ 500 million). What is interesting is that "Rosatom"; could not find any money within his country. Today's expectations are more modest: local authorities say about $ 160 million, Chinese themselves does not comment a process as well as its financial component. SkhidHZK is not a subject to privatization (still a strategic enterprise), but other indirect and relatively temporary forms are possible – rent, long-term concession, joint venture creation, pledge of products and others.

At the same time, there is already a Russian precedent-analogue. In the spring of 2018, the Chinese National Nuclear Corporation (CNNC) signed with "Rosatom" a contract to finance the renewal of the uranium mine in Transbaikalia. A joint venture will be set up in which China's representatives will receive 49% and the right to export half of the uranium produced (that's 600 tonnes / year). A similar option was offered to Ukraine. China has 38 operating nuclear reactors and plans to build another two dozen by 2025. It is actively buying up uranium mining assets in Kazakhstan, Uzbekistan, Niger and even Canada. It is planned that in the future, China will produce one third of uranium domestically, one third – overseas at enterprises with Chinese involvement, the rest will buy the market. A large state reserve of uranium is also created. So, Beijing has an interest.

While the bidding process is ongoing with China, it is said in public that at Novokonstantinovska mine, the the SE "Eastern Mining and Processing Plant" (SkhidHZK) has been fruitfully cooperating with the Chinese Development Bank. As stated, "the Chinese side noted the considerable experience in the development of uranium deposits and emphasized the interest in the implementation of these projects". The Chinese are rather peculiar and tough partners, especially in this field. Beijing has plans to extract uranium at the expense of its investment. Last year China National Nuclear Corporation together with concern "Nuclear fuel" approved a plan of action for joint production of nuclear fuel for VVER-1000 reactors in Ukraine.

In general, the history of the nuclear fuel plant creation is interesting and may reappear. And not only with the Chinese, but also with ourselves. It seems that soon we will hear about Oleksander Dubov as a whole and about the resuscitation of the joint venture structural subdivision UkrTV, in particular. There are other supercritical domestic investors. Last year and beyond last year, the courts of five uranium ore deposits in the Mykolaiv and Dnipropetrovsk regions benefited the recently established Atomic Energy systems of Ukraine, LLC (AESU), which has received a permit for them; geological exploration and development. It concerns the Safonivs`ka area, Mikhailivs`ka and Sadova plots in the Mykolaiv region, as well as the Novogur`evs`ka plot and the Surs`ka square in the Dnipropetrovsk region. NPP offered to grant them special permits for five years without auctions, because before that the firm rented complete property complexes in the contours of these fields. Uranium is going to be extracted by leaching (ie pumping it into an acid solution layer). It is interesting that at the end of the zero years all these deposits were on the list of the most promising, and Safonivs`ke – with 3 thousand tons of reserves and the prospect of extracting 150–300 tons of uranium ore a year – is still included in the Cabinet uranium concept [14].

The second area concerns new reactor technologies. The country's energy strategy indicates the need to identify the next generation of nuclear reactors we plan to operate. Ukraine has a unique opportunity to work with technology companies in the United States to gain leadership in the development of small module reactor technology. This is a new generation of reactor units up to 300 MW, with significantly higher efficiency and security. In addition to using new technologies for our own needs, we can become a regional engineering and technological hub with export technological potential and significant localization of production at domestic machine-building enterprises.

Fuel diversification and expansion of our own base is the third area of concern. Ukraine needs to maintain a policy of fuel diversification and reduce the risks of using fuel supplied by the Russian Federation. At the same time, the mineral and technological base available in Ukraine makes it possible to speak about the possibility and the need to increase the volume of our own uranium production. We also need to consistently move towards establishing our own (or jointly with Poland as an EU Member State) production of nuclear fuel, taking into account the constraints imposed on us by our international obligations. Qualitative development of the nuclear industry is not possible without the same development of a radioactive waste management system and spent nuclear fuel. Today, a number of projects are underway, such as the construction of a centralized spent fuel storage facility, which will allow Ukraine to escape from its dependency and significant financial losses related to spent fuel storage in Russia.

All of the above are possible if one condition is met. A very cautious and balanced approach must be applied to nuclear power when it comes to performing its social functions in electricity supply. Nuclear energy cannot be the sole and main load carrier. Tariff policy

should be economically sound and allow for generating companies maintain the necessary level of security and develop. It is necessary to derive this type of generation from the discriminated (in comparison with other types of generation) situation both in terms of financial and economic indicators and in terms of loading existing capacity. The implementation of this set of measures will allow Ukraine to retain and strengthen the most powerful driver of the economy, which will not only have a favorable impact on the financial and economic and technological development of the country, but also stimulate the development of a number of related industries.

Security. There are two aspects to be distinguished here: operational and production.

The safety of operating nuclear power units has many components. One of the main is professional and independent regulation. Independent position of the nuclear regulator legally enshrined, its strengthening, expansion of the material and technical support base of the regulator will allow to put safety issues at the forefront and avoid situations in which tactical economic or political considerations may prevail over security. The independence of the nuclear regulator will also avoid conflicts of interest. It is very important at the state level to resist the temptation to manage the industry and regulate it manually. Nuclear power requires a systematic management approach and independent regulation.

The safety of the production of nuclear reactors, equipment and other components of nuclear technology are associated with high risks of information leakage and others, and therefore require special protection systems that domestic engineering companies are not able to provide at the current level. A possible solution is to organize cooperation on the basis of international-public-private partnerships in order to diversify risks. The foreign partner provides the technologies, the SBU provides protection against the leakage of classified information, the domestic enterprises provide technical and technological support for the production of modern equipment.

Education and human resources. The request for training, as the policy of preserving existing human resources, including its reserve component, directly related to the following factors: the current economic and financial situation in the industry and the development prospects of the industry in terms of new capacities construction and commissioning. In the matter of training, it may make sense to focus educational methodological base. This will improve the quality of education and to create a healthy competition for educational places is "smearing a thin layer of "available resource. It is necessary to avoid the situation that exists now, when the fullness of the student in the relevant specialty is only about 30%. Backed by powerful industry, our educational institutions, in particular the Dnipro state University of chemistry and technology, in addition to implementing internal problems, would systematically expand the export capacity of the domestic higher education system in the field of nuclear energy. It is advisable to develop modular units for the provision of professional knowledge and experience as a product of industry, rather than passively observing how the knowledge and experience flowing out of the country with specialists.

For the development of nuclear-industrial complex, it is advisable to use an innovative approach. This approach is represented as a set of three interconnected units, namely:

– methodical and informational block involves the development of methods for the assessment of the development of the nuclear industrial complex to improve the validity of decisions on the formation conditions of its reorientation on the basis of innovation, and the collection and primary processing of information for its further use in the evaluation process of the development of nuclear-industrial complex;

– diagnostic and indicative unit provides for implementation through the established information database according to the developed method of identification of the development type of Ukrainian nuclear-industrial complex and determination of its level and the development of recommendations on formation of conditions for innovation-oriented nuclear-industrial complex development;

– assessment-procedure – involves the assessment factors as the basis to further define the strategic determinants of innovation-oriented development, which needs to be developed actions to build conditions for innovation-oriented nuclear-industrial complex development, and forecasting expected results, and implementation that must be accompanied by the permanent control on the basis of comparison of the obtained results with the predicted.

Conclusions. It is advisable to include in the general results of the implementation of the program of development of the nuclear-industrial complex the following: increase of competitiveness of the enterprises of key strategic industries: nuclear, mining, metallurgy, chemical and mechanical engineering; increase of innovativeness of production through development of scientific potential of the region, commercialization of scientific process; enterprise development based on the latest industrial waste processing technologies, including for the development of the region's infrastructure; man-made load on the environment; creating more attractive and diverse jobs; ensuring the stabilization of the social processes of the mining regions. It is necessary to increase the volume of uranium production, to increase its level of enrichment and at the same time to solve environmental issues regarding waste disposal.

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Ляшенко В. І., Шевченко В. Г., Осадча Н. В., Коломійцев О. А., Котко О. К. Тенденції та перспективи розвитку атомно-промислового комплексу України

У статті проаналізовано тренди розвитку атомно-промислового комплексу. Серед основних проблем розвитку атомно-промислового комплексу визначені недосконаліть законодавчої бази, відсутність інвестицій. Необхідна кількість, збагаченого урану в ядерному паливі закуповується Україною тільки в РФ. Росія постачає відвал урану-235 після збагачення не менше 0,3%.

Обґрунтовано необхідність розроблення послідовності етапів інноваційно-орієнтованого розвитку атомно-промислового комплексу Україні на основі стратегічних детермінант. Безпосередньо атомно-промисловий комплекс, який є провідною ланкою ядерно-енергетичного комплексу України, можна вважати комплексною галуззю національної економіки, що включає: уранове виробництво, що створює основу для задоволення потреби атомних електростанцій у природному урані на середньо- та довгострокову перспективу; цирконієве виробництво, яке передбачає налагодження випуску цирконію, що є основним конструкційним матеріалом для виготовлення ядерного палива з огляду на його унікальні фізичні властивості слабкої взаємодії з нейтронним потоком в активній зоні реактора; виробництво іонообмінних матеріалів та забезпечення ними в повному обсязі уранове виробництво України; виробництво тепловидільних збірок та комплектувальних виробів як невід'ємної ланки створення власного ядерно-паливного циклу; наукове, проектне та інформаційне супроводження проведення науково-дослідних робіт. В Україні відсутній профільний інститут, який би займався координацією науково-дослідних питань щодо розвитку атомно-промислового комплексу.

Внесок атомно-промислового комплексу України у створення валового внутрішнього продукту не є значним, але його роль важлива щодо забезпечення економічної безпеки та досягнення енергетичної незалежності країни. Основні засади розвитку атомно-промислового комплексу доцільно відобразити у державній Програмі розвитку галузі та в Стратегії розвитку регіону. Для розвитку атомно-промислового комплексу доцільно використовувати інноваційний підхід. Даний підхід представлено як сукупність трьох взаємопов'язаних блоків, а саме: методико-інформаційний; діагностично-орієнтувальний; оціночно-процесуальний.

Обґрунтовано необхідність збільшення обсягу видобутку урану, рівня його збагачення та одночасно рішень екологічних питань щодо утилізації відходів

Ключові слова: атомно-промисловий комплекс, промисловість, енергетика, енергетична безпека.

Liashenko V., Shevchenko V., Osadcha N., Kolomiytsev O., Kotko O. Tendencies and Prospects of the Ukrainian Nuclear Industrial Complex Development

The article analyzes development trends of the nuclear-industrial complex. Among the main problems of development of nuclear-industrial complex determined inadequate legal framework, lack of investment. the required amount of enriched uranium in nuclear fuel purchased by Ukraine only in the Russian Federation. Russia supplies the stockpile of uranium-235 after enrichment not less than 0.3%.

The necessity of development sequence the stages of the innovation-oriented development of nuclear-industrial complex of Ukraine on the basis of strategic determinants. Directly the nuclear-industrial complex, which is the leading element of the nuclear energy complex of Ukraine can be considered a complex sector of the national economy that includes production of uranium, which forms the basis to meet the needs of nuclear power plants in natural uranium in the medium and long term; Zirconia production, which includes the establishment of the production of zirconium, which is the main structural material for the fabrication of nuclear fuel, given its unique physical properties of the weak interaction with neutron flux in the reactor core; manufacture of ion-exchange materials and to ensure the full production of uranium of Ukraine; production of fuel assemblies and components as a key link in the creation of our own nuclear-fuel cycle; research, design and information support of scientific research. In Ukraine there is no specialized institution that would deal with the coordination of the research questions regarding the development of nuclear-industrial complex.

The contribution of the nuclear-industrial complex of Ukraine in the creation of gross domestic product is not significant, but its role is important in ensuring economic security and achieving energy independence. The basic principles for the development of nuclear-industrial complex should be reflected in the state Program of development of the industry and development strategy of the region. For the development of nuclear-industrial complex, it is advisable to use an innovative approach. This approach is represented as a set of three interconnected units, namely: methodical-information unit; diagnostic-estimated; estimating procedure.

Reasonably necessary to increase the volume of uranium production, increase the level of its enrichment and at the same time to solve environmental issues on waste management

Keywords: nuclear-industrial complex, industry, energy sector, energy security.

Ляшенко В. И., Шевченко В. Г., Осадчая Н. В., Коломийцев О. А., Котко О. К. Тенденции и перспективы развития атомно-промышленного комплекса Украины

В статье проанализированы тенденции развития атомно-промышленного комплекса. Основными проблемами развития атомно-промышленного комплекса являются несовершенство законодательной базы, от-

сутствие инвестиций. Необходимое количество обогащенного урана в ядерном топливе закупается Украиной только в РФ. Россия поставляет отвал урана-235 после обогащения до 0,3%. В статье обоснована необходимость разработки последовательности этапов инновационно-ориентированного развития атомно-промышленного комплекса Украины на основе стратегических детерминант.

Непосредственно атомно-промышленный комплекс, который является ведущим звеном ядерно-энергетического комплекса Украины, можно считать комплексной отраслью национальной экономики, которая включает: урановое производство, создающее основу для удовлетворения потребности атомных электростанций в природном уране на средне- и долгосрочную перспективу; циркониевое производство, которое предусматривает налаживание выпуска циркония, что является основным конструкционным материалом для изготовления ядерного топлива, учитывая его уникальные физические свойства слабого взаимодействия с нейтронным потоком в активной зоне реактора; производство ионообменных материалов и обеспечение ими в полном объеме урановое производство Украины; производство тепловыделяющих сборок и комплектующих изделий как неотъемлемого звена создания собственного ядерно-топливного цикла; научное, проектное и информационное сопровождение, проведение научно-исследовательских работ. В Украине отсутствует профильный институт, который бы занимался координацией научно-исследовательских работ по развитию атомно-промышленного комплекса.

Значение и вес атомно-промышленного комплекса Украины в создании валового внутреннего продукта не является значительным, но его роль важна по обеспечению экономической безопасности и достижению энергетической независимости страны. Основные принципы развития атомно-промышленного комплекса целесообразно отразить в государственной Программе развития отрасли и Стратегии развития региона. Для развития атомно-промышленного комплекса целесообразно использовать инновационный подход. Данный подход представлен как совокупность трех взаимосвязанных блоков, а именно: методико-информационный; диагностико-ориентировочный; оценочно-процессуальный.

Обоснована необходимость увеличения объемов добычи урана, уровня его обогащения и одновременно решений экологических вопросов по утилизации отходов

Ключевые слова: атомно-промышленный комплекс, промышленность, энергетика, энергетическая безопасность.

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PROPOSALS FOR THE FORMATION OF A TRANSPORT AND LOGISTICS CLUSTER AS AN INSTITUTION OF REGIONAL DEVELOPMENT (ON THE EXAMPLE OF DONETSK ECONOMIC REGION)

The study was carried out as part of the research work of the Institute of Industrial Economics of NAS of Ukraine «Formation of the institutional environment for the modernization of the economy of the old industrial regions of Ukraine».

Problem statement. One of the dynamic and rapid lines of development of modern regional ecosystems is transport logistics as an effective source of competitive advantages. This requires the use of new tools to improve the competitive ability of regions, including the cluster approach, the essence of which is the formation and development of logistic clusters by consolidating the efforts of the state, business, science, education in priority fields of economic activity. As international practice shows, the implementation of the cluster model of logistic activities will contribute to the reduction of total logistic costs by 12-35% as a result of reducing transport costs by 7-20% and the cost of handling operations by 20-30%, as well as accelerating the speed of circulation of material resources by 20-40%. Therefore, the creation of transport and logistics cluster will create favorable conditions for the growth of the volume and quality of services and create a qualitatively new model of the regional economy in the economic regions of Ukraine.

Analysis of recent publications on the problem. On the basis of generalizations of scientific publications of foreign and Ukrainian scientists it is established that they paid considerable attention:

substantiation of application of an integrated approach to supply chain management and organization of logistics processes [1-5];

development of theoretical, methodological and applied principles of formation of the system of management of balanced development of the market of logistic services as a component of the national logistics system, which allows to activate and effectively use the existing logistical potential of Ukraine [6];

defining the directions of increasing the efficiency of transport and logistics activities and key tasks and priorities of the development of the transport sector in Ukraine [7; 8; 9];

evaluation of indicators of innovative development of the transport system of Ukraine to substantiate strategic guidelines [10];

development of proposal for activation of innovative development of the transport and logistics system of Ukraine [11];

defining the components of the financial support mechanism for managing the innovative development of the transport and logistics system [12];

substantiation of conceptual provisions of strategy of development of transport system of Ukraine and measures of state policy of its implementation [13];

the development of theoretical and methodological provisions and practical recommendations for the formation of transport and logistics clusters [14-24];

identifying global trends in digitalization, which include the use of big data and cloud technologies, the proliferation of the Internet of Things, the development of robotization, the spread of 3D printing, blockchain technology and crowdsourcing [25-26; 27-29]; development of a functional scheme of digital transformation of the transport sector in Ukraine [30].

At the same time, despite such close attention to the problem outlined by scientists, it is important and necessary to carry out scientific researches in the direction

of substantiation of conceptual provisions on modernization of transport infrastructure of Donetsk economic district with the help of the transport-logistic cluster as the «core» of the renewed transport system. All this largely determined the choice of the topic of this study and its focus.

Formulation of research. The purpose of the article is to develop proposals for the formation of a transport and logistics cluster as an institute for regional development (on the example of Donetsk economic region).

Outline of the main results and their justification. As a result of previous researches [31-36] it is proved that the development of transport and logistics system of Donetsk economic region is influenced by many factors that can be conditionally divided into 7 groups:

$$F = \begin{Bmatrix} F_1(x_{11}, x_{12}); \\ F_2(x_{21}, x_{22}); \\ F_3(x_{31}, x_{32}, x_{33}); \\ F_4(x_{41}); \\ F_5(x_{51}); \\ F_6(x_{61}); \\ F_7(x_{71}, x_{72}, x_{73}) \end{Bmatrix}, \quad (1)$$

where

F_1 – *political:*

x_{11} – unstable political situation in the country;

x_{12} – Donbass transport blockade;

F_2 – *institutional:*

x_{21} – imperfect legislative and regulatory framework;

x_{22} – lack of a regional program and strategy for the development of the transport and logistics cluster;

F_3 – *investment and financial:*

x_{31} – insufficient financing of the transport industry;

x_{32} – inefficient implementation of the public-private partnership mechanism;

x_{33} – limited tools for private investment in logistics infrastructure;

F_4 – *infrastructure:*

x_{41} – significant disruption to existing logistics infrastructure facilities;

F_5 – *environmental:*

x_{51} – insufficient application of the concept of green logistics in the transport sector;

F_6 – *information:*

x_{61} – insufficient use of information and communication technologies and tools of digital logistics;

F_7 – *logistic:*

x_{71} – ineffective organization of logistic activities;

x_{72} – reducing the level of service and quality of transport and logistics services;

x_{73} – reduction of cargo transportation by different modes of transport.

According to data of the State Statistics Service of Ukraine the volume of freight traffic by the Donetsk railway has decreased by 65.7% in 2000-2018 and its share in the total Ukrainian volume of freight traffic by railways – by 27.7 percentage points or from 44.7 to 17.0%. The freight turnover of the Donetsk railway has declined by 60.8% and share – by 12.4 p.p. or from 19.5 to 7.1% of the national freight turnover of public railway transport (Table 1).

Table 1

Volumes of cargo transportation and cargo turnover of the public railway transport

Years	Cargo dispatch, *million tonnes*	Cargo turnover, *billion tonne-kilometre*
2000	132.4	33.7
2001	140.5	31.9
2002	145.0	33.3
2003	156.6	37.3
2004	166.9	38.2
2005	157.8	36.9
2006	163.0	39.6
2007	167.6	42.4
2008	160.9	41.7
2009	131.4	32.1
2010	142.4	37.3
2011	153.1	41.0
2012	142.6	38.4
2013	139.0	34.6
2014	99.4	22.8
2015	69.2	13.8
2016	71.7	17.5
2017	48.7	13.2
2018	45.4	13.2

Source: [37, p. 72, 101; 38, p. 46, 50].

Statistical analysis showed that the volume of cargo transportation by road in Donetsk economic region has decreased in 2018 compared to 2000 by 22.5%. This is due to the decline of road freight in Lugansk region by 82.0% and Donetsk region – by 10.1%. Share of cargo transportation by road of Donetsk economic region has declined from 16.1 to 9.7%, it is 6.4 percentage points increase in the national volume (Table 2).
Freight turnover of road transport in Donetsk economic region has increased by 1.2 times as a result of an increase in cargo turnover in Donetsk region by 1.6 times. However, the turnover of road transport in Lugansk region has decreased by 1.8 times. Share of road transport turnover in the region has decreased by 7.8

percentage points or from 11.4 to 3.6% in the national freight turnover (Table 3).

Table 2

Volumes of cargo transportation by road in Donetsk economic region, million tonnes

Years	Donetsk economic region	*Including*	
		Donetsk region	Lugansk region
2000	151.4	125.3	26.1
2001	168.5	129.7	38.8
2002	177.0	145.7	31.3
2003	187.6	137.7	49.9
2004	179.1	147.1	32.0
2005	202.3	170.5	31.8
2006	210.8	182.5	28.3
2007	215.4	188.5	26.9
2008	202.3	174.9	27.4
2009	156.4	131.7	24.7
2010	174.1	149.8	24.3
2011	192.6	166.3	26.3
2012	199.1	174.4	24.7
2013	196.8	168.1	28.7
2014	94.9	68.0	26.9
2015	104.3	77.0	27.3
2016	134.7	118.6	16.1
2017	110.0	105.1	4.9
2018	117.4	112.7	4.7

Source: [37, p. 72; 38, p. 46].

Table 3

Cargo turnover of motor vehicle in Donetsk economic regions, million tonne-kilometre

Years	Donetsk economic region	*Including*	
		Donetsk region	Lugansk region
2000	2189.4	1301.9	887.5
2001	2358.8	1475.6	883.2
2002	2762.9	1747.2	1015.7
2003	3204.3	1950.4	1253.9
2004	3372.4	2019.8	1352.6
2005	3899.9	2202.4	1697.5
2006	4263.3	2523.0	1740.3
2007	4784.0	2771.1	2012.9
2008	5167.6	2853.0	2314.6
2009	4648.0	2458.7	2189.3
2010	5603.4	2897.1	2706.3
2011	6324.2	3258.1	3066.1
2012	6181.9	3793.4	2388.5
2013	7579.8	4393.2	3186.6
2014	5915.9	4125.9	1790.0
2015	3441.9	2238.3	1203.6
2016	3090.6	2230.5	860.1
2017	2844.5	2367.3	477.2
2018	2608.1	2125.6	482.5

Source: [37, p. 101; 38, p. 51].

Analytical evaluation of statistical data shows that the share of capital investment in transport and warehousing in Donetsk economic region has decreased in 2010-2018 by 3.4 percentage points or from 7.2 to 3.8% of the total volume of capital investment in this industry. This was due to a decrease in the share of capital investments in transport and warehousing in Donetsk region by 2.0 percentage points (from 5.7 to 3.7%) and Lugansk region – by 1.4 percentage points (from 1.5 to 0.1%) (Table 4).

Table 4

Capital investments in transport and warehousing in Donetsk economic region (in actual prices, million UAH)

Years	Donetsk economic region	*Including*	
		Donetsk region	Lugansk region
2010	1670.7	1323.8	346.9
2011	3642.9	3341.7	301.2
2012	3978.9	3858.7	120.2
2013	1816.2	1662.7	153.5
2014	1161.7	959.1	202.6
2015	898.2	871.0	27.2
2016	473.9	452.8	21.1
2017	1715.4	1672.1	43.3
2018	1868.0	1819.2	48.8

Source: [38, p. 16].

The key problem for the development of the Donetsk region is the deterioration of logistical activity of the Mariupol Sea Commercial Port due to blocking the possibility of passage of vessels through the Kerch Strait. According to the analysis of statistical data the total volume of cargo processing by stevedoring companies in Mariupol seaport has decreased in 2012-2018 by 60.5%. The volume of export goods has declined in 2018 compared to 2012 by 22.5%. During the research period, there was a trend of growth in the volume of imported goods by stevedoring companies by 3.6 times. In 2015, the volume of transit cargoes has decreased significantly. And since 2016 transit goods have stopped (*Table 5*).

In view of the above, it is advisable for the transformation of the regional transport and logistic system of Donetsk economic region to develop and implement a set of proposals, which should contain the following measures:

formation of transport and logistics cluster as an effective form of partnership between business structures, scientific institutions, higher education institutions, institutions of transport and logistics infrastructure and authorities in the context of ensuring the modernization of the economy: development of a strategy for the integrated development of transport and logistics cluster; development of financial support mechanism for the management of transport and logistics cluster development, the essence of which is the application of such financial instruments as venture investment, crowdsourcing, factoring, public-private partnership based on attracting private investment, funds of credit institutions, foreign investment financial resources, grants ; development and implementation of the regional cluster model of logistics activities organization; recon-

struction of existing and creation of new objects of proper logistics infrastructure (transport, trading, service, etc.); creation of optimal multimodal logistics chains, including through increased use of energy efficient modes of transport;

organization of logistic activity and development of port infrastructure in Mariupol seaport: attraction of private investments in technical modernization of seaport infrastructure; activation of innovative activity with application of different forms of preferences (credits, guarantees, tax privileges, subsidies) for the development of seaports; transfer of port facilities for concession or lease;

Table 5

Freight handling volumes by stevedoring companies in Mariupol seaport, thousand tonnes

Indicators	Years						
	2012	2013	2014	2015	2016	2017	2018
Total volume	14908.7	15499.4	13003.2	8984.0	7603.5	6514.5	5887.9
Including							
Export goods	13011.3	14058.3	10853.9	5178.0	5607.6	5462.6	4929.9
Imported goods	249.3	177.9	476.4	1321.7	269.8	936.6	907.5
Transit goods	1635.6	1217.5	473.6	8.3	-	-	-

Source: Information and statistical materials of the Administration of the seaports of Ukraine.

introduction of information technologies for management of transport and logistics system of economic region: introduction of «physical» internet based on the Internet of Things; development and implementation of information solutions for the delivery of the «last mile» (the use of autonomous vehicles for delivery of goods); introduction of digital crowdsourcing platforms in delivery of products to consumers using the principles of trust and cooperation between participants of logistic processes;

introduction and development of the concept of «green» logistics, which will allow to integrate ecology and economy into a single system in order to preserve the environment and modernize the regional transport and logistics system using environmentally friendly technologies; attraction of investments in the equipment and the equipment connected with environmentally friendly technologies, in the field of transport and the warehouse economy;

introduction of digital logistics as a mechanism for development of transport and logistics system of economic region: development and implementation of digital services in all modes of transport; use of digital platforms in the organization of cargo transportation; introduction of electronic document flow with various authorities (customs, tax, etc.); application of modern forms of calculations; formation of a system of management of road and water transport; implementation of Galileo satellite navigation system; development and implementation of an integrated ticket that allows the use of different modes of transport, which complies with the European transport policy TEN-T.

Implementation of practical recommendations on institutional support for the formation and development of a transport and logistics cluster in Donetsk economic region will contribute to obtaining a synergistic effect, which components are:

$$E = \sum_{ij=1}^{n} E_1(y_{11}, ..., y_{18}) + E_2(y_{21}, ..., y_{24}) + E_3(y_{31}, ..., y_{34}) \to \max, \quad (2)$$

where

E_1 – *economic effect:*

y_{11} – increasing the level of investment attractiveness of the territories of the region;

y_{12} – increase of revenues to the budgets (regional, local) at the expense of formation of a qualitatively new model of regional economy, strengthening of competitive advantages of the region and increase of economic capacity of territorial communities in the conditions of decentralization;

y_{13} – annual increase of freight transportation by rail transport by 5% and cargo turnover of Donetsk railway by 2%;

y_{14} – annual increase in the volume of transportation of goods by road by 6% and the turnover of road transport by 16%;

y_{15} – reducing logistics costs by 12% due to a 7% reduction in the cost of transport;

y_{16} – reduction of the average idle of the car under one cargo operation of Donetsk railway (hours) by 25%;

y_{17} – ensuring favorable institutional conditions for the functioning of the logistics services market;

y_{18} – improvement of transportation technology with the use of modern information and communication technologies and digital logistics;

E_2 – *social effect:*

y_{21} – annual growth of the average number of employees in the field of transport and storage by 1.5%, including in the field of land and pipeline, water, aviation – by 1%;

y_{22} – job creation and employment growth (for example, as shown by good European experience, 33.3% of cluster companies have a trend of steady employment growth);

y_{23} – improving the working conditions of workers employed in the field of transport and warehousing;

y_{24} – reducing the level of accidents;

E_3 – *ecological effect:*

y_{31} – ensuring almost complete decarbonization of city logistics;

y_{32} – reduction of greenhouse gas emissions from transport by optimizing transport flows;

y_{33} – increasing the share of electrically and environmentally friendly modes of transport;

y_{34} – increasing the level of environmental safety.

Conclusions and prospects for further research. As a result of the study it was found that the formation and effective functioning of transport and logistic cluster in the Donetsk economic region is hampered by many key barriers that can be conditionally classified into the following groups, such as political, foreign economic, institutional, investment and financial, infrastructure, environmental, information, logistics. It was proved that for the effective development of transport and logistic cluster in the economic region it is reasonable to develop proposals for the creation of appropriate institutional conditions, which are to finalize the Strategies of the regional development in terms of institutional, investment and financial, organizational and economic and information support of the functioning of transport and logistic cluster using the cluster approach, as well as the Concepts of creating transport and logistic cluster and Strategies for the integrated development of transport and logistic cluster as a component of the regional transport and logistic system; implementation of the financial support mechanism, which includes exogenous and endogenous factors affecting the development of the regional transport and logistic system; the principles on which the formation of transport and logistic cluster should be based; management functions (forecasting, planning, organization, accounting, control, analysis, regulation); a set of tools governing the organization and implementation of logistic activities, as well as the provision of transport services; financial instruments (venture investment, crowdinvesting, factoring, public-private partnership on the basis of attracting private investments, funds of credit institutions, foreign investment resources, grants of international financial organizations); means (digital, information and communication technologies, software, regulatory documents).

The indicators that characterize the effectiveness of the implementation of proposals for the formation of transport and logistic cluster in the Donetsk economic region include annual growth: length of public roads (*thousand km*) by 3.6%; solid-state public roads (*km*) by 1%; the density of public roads with hard surface (*km per 1 thousand km^2 of the territory of the region*) by 2%; the average daily productivity of the locomotive (*thousand tonne-kilometre gross*) of the Donetsk railway by 2.4%; average daily freight wagon productivity (*tonne-kilometre net*) by 17.5%; average section speed of freight train (*km per hour*) by 1%; the level of logistic service of consumers of services (*%*) by 3%; the share of direct investment in transport and logistics in the total volume of direct investment in all types of economic activity of the region (*%*) by 2%; the share of capital investments in the sphere of transport and warehouse economy in the total volume of capital investments by all types of economic activity of the region (*%*) by 3%.

Combination of modern cluster policy, mechanism of institutional support for the development of an integrated transport and logistic system and strategies of smart industry specializations in the context of decentralization will create the appropriate conditions for the formation of transport and logistic cluster as an effective form of partnership, strengthen the competitive advantages of the Donetsk economic region and increase the economic capacity of territorial communities.

It is planned in future to develop a cluster model of logistic activities in the economic regions of Ukraine.

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Іванов С., Джвігол Х., Трушкіна Н. Пропозиції щодо формування транспортно-логістичного кластеру як інституту регіонального розвитку (на прикладі Донецького економічного району)

Одним з динамічних і стрімких напрямів розвитку сучасних регіональних екосистем є транспортна логістика як ефективне джерело забезпечення конкурентних переваг. Це вимагає застосування нових інструментів підвищення конкурентоспроможності регіонів, серед яких кластерний підхід, суть якого полягає у формуванні й розвитку транспортно-логістичних кластерів шляхом консолідації зусиль держави, бізнесу, науки, освіти у пріоритетних сферах економічної діяльності.

Як показує міжнародна практика, реалізація кластерної моделі організації логістичної діяльності сприятиме скороченню загальних логістичних витрат на 12-35% у результаті зниження транспортних витрат на 7-20% і витрат на навантажувально-розвантажувальні роботи на 20-30%, а також прискоренню швидкості обігу матеріальних ресурсів на 20-40%.

Отже, формування транспортно-логістичних кластерів дозволить створити сприятливі умови задля зростання обсягів та якості наданих транспортно-логістичних послуг і сформувати якісно нову модель регіональної економіки.

У результаті дослідження виявлено, що формуванню й ефективному функціонуванню транспортно-логістичного кластеру в Донецькому економічному районі перешкоджає безліч ключових бар'єрів, які умовно можна систематизувати за такими групами, як політичні, зовнішньоекономічні; інституційні; інвестиційно-фінансові; інфраструктурні; інформаційні; екологічні; логістичні. Доведено, що для ефективного розвитку транспортно-логістичного кластеру в економічному районі доцільно розробити пропозиції щодо створення належних інституційних умов, які полягають у доопрацюванні Стратегії регіонального розвитку в частині інституційного, інвестиційно-фінансового, організаційно-економічного й інформаційного забезпечення функціонування транспортно-логістичного кластеру з використанням кластерного підходу, а також Концепції створення транспортно-логістичного

кластеру і Стратегії комплексного розвитку транспортно-логістичного кластеру як складової регіональної транспортно-логістичної системи; запровадженні механізму фінансового забезпечення, який включає екзогенні й ендогенні чинники, що впливають на розвиток регіональної транспортно-логістичної системи; принципи, на яких має базуватися формування транспортно-логістичного кластеру; функції управління (прогнозування, планування, організація, облік, контроль, аналіз, регулювання); сукупність інструментів, що регулюють умови організації й здійснення логістичної діяльності, а також надання транспортних послуг; фінансові інструменти (венчурне інвестування, краудінвестинг, факторинг, публічно-приватне партнерство на основі залучення приватних інвестицій, коштів кредитних установ, іноземних інвестиційних ресурсів, грантів міжнародних фінансових організацій); засоби (цифрові й інформаційно-комунікаційні технології, програмне забезпечення, нормативні документи).

Поєднання сучасної кластерної політики, механізму інституційного забезпечення розвитку інтегрованої транспортно-логістичної системи і стратегій розумних спеціалізацій промисловості в умовах децентралізації дозволить створити належні умови для формування транспортно-логістичного кластеру як дієвої форми партнерства, зміцнити конкурентні переваги Донецького економічного району і підвищити економічну спроможність територіальних громад.

Обґрунтовано, що впровадження пропозицій щодо створення належних інституційних умов формування й розвитку транспортно-логістичного кластеру в Донецькому економічному районі сприятиме одержанню синергетичного ефекту, складовими якого є підвищення рівня інвестиційної привабливості району; збільшення надходжень до бюджету за рахунок економічного зростання територій; створення нових робочих місць і зростання рівня зайнятості; збільшення обсягів вантажоперевезень і вантажообігу; оптимізація переміщення логістичних потоків; зниження витрат на організацію логістичної діяльності через зменшення транспортної складової у вартості послуг, скорочення часу на виконання митних процедур при оформленні вантажів; забезпечення сприятливих умов функціонування ринку логістичних послуг; створення об'єктів необхідної логістичної інфраструктури (транспортної, торгівельної, сервісної тощо); удосконалення технології перевезень з використанням сучасних цифрових інформаційно-комунікаційних технологій.

Ключові слова: економічний район, транспортно-логістичний кластер, інституційні умови, чинники, механізм фінансового забезпечення, логістична діяльність, синергетичний ефект.

Ivanov S., Dzwigol H., Trushkina N. Proposals for the Formation of a Transport and Logistics Cluster as an Institution of Regional Development (on the Example of Donetsk Economic Region)

One of the dynamic and rapid lines of development of modern regional ecosystems is transport logistics as an effective source of competitive advantages. This requires the use of new tools to improve the competitive ability of regions, including the cluster approach, the essence of which is the formation and development of transport and logistic clusters by consolidating the efforts of the state, business, science, education in priority fields of economic activity.

As international practice shows, the implementation of the cluster model of logistic activities will contribute to the reduction of total logistic costs by 12-35% as a result of reducing transport costs by 7-20% and the cost of handling operations by 20-30%, as well as accelerating the speed of circulation of material resources by 20-40%.

Therefore, the creation of transport and logistic clusters will create favorable conditions for the growth of the volume and quality of transport and logistics services and create a qualitatively new model of the regional economy.

It was found that the formation and effective functioning of transport and logistic cluster in the Donetsk economic region is hampered by many key barriers that can be conditionally classified into the following groups, such as political, foreign economic, institutional, investment and financial, infrastructure, environmental, information, logistics. It was proved that for the effective development of transport and logistic cluster in the economic region it is reasonable to develop proposals for the creation of appropriate institutional conditions, which are to finalize the Strategy of the regional development in terms of institutional, investment and financial, organizational and economic and information support of the functioning of transport and logistic cluster using the cluster approach, as well as the Concept of creating transport and logistic cluster and Strategy for the integrated development of transport and logistic cluster as a component of the regional transport and logistic system; implementation of the financial support mechanism, which includes exogenous and endogenous factors affecting the development of the regional transport and logistic system; the principles on which the formation of transport and logistic cluster should be based; management functions (forecasting, planning, organization, accounting, control, analysis, regulation); a set of tools governing the organization and implementation of logistic activities, as well as the provision of transport services; financial instruments (venture investment, crowdinvesting, factoring, public-private partnership on the basis of attracting private investments, funds of credit institutions, foreign investment resources, grants of international financial organizations); means (digital, information and communication technologies, software, regulatory documents).

Combination of modern cluster policy, mechanism of institutional support for the development of an integrated transport and logistic system and strategies of smart industry specializations in the context of decentralization will create the appropriate conditions for the formation of transport and logistic cluster as an effective form of partnership, strengthen the competitive advantages of the Donetsk economic region and increase the economic capacity of territorial communities.

It was substantiated that the introduction of proposals for the creation of the appropriate institutional conditions for the formation and development of transport and logistic cluster will contribute to a synergetic effect, the components of which are to increase the level of investment attractiveness of economic region; increase revenues due to economic growth of territories; creation of new jobs and growth of employment; increase in the volume of cargo transportation and turnover; optimization of movement of logistic flows; cost reduction for the organization of lo-

gistic activities for the reduction of transport component in the cost of services, reduction in time to complete customs procedures for clearance of goods; provision of favorable conditions for the functioning of logistic market; creating objects of the appropriate logistic infrastructure (transport, trade, service, etc.); improvement of the technology of transportation with the use of modern digital information and communication technologies.

Keywords: economic region, logistic cluster, institutional conditions, factors, financial support mechanism, logistic activities, synergetic effect.

Иванов С., Джвигол Х., Трушкина Н. Предложения по формированию транспортно-логистического кластера как института регионального развития (на примере Донецкого экономического района)

Одним из динамичных и интенсивных направлений развития современных региональных экосистем является транспортная логистика как эффективный источник обеспечения конкурентных преимуществ. Это требует применения новых инструментов повышения конкурентоспособности регионов, среди которых кластерный подход, суть которого заключается в формировании и развитии транспортно-логистических кластеров путем консолидации усилий государства, бизнеса, науки, образования в приоритетных сферах экономической деятельности.

Как показывает международная практика, реализация кластерной модели организации логистической деятельности будет способствовать сокращению общих логистических издержек на 12-35% в результате снижения транспортных затрат на 7-20% и затрат на погрузочно-разгрузочные работы на 20-30%, а также ускорению скорости обращения материальных ресурсов на 20-40%.

Таким образом, формирование транспортно-логистических кластеров позволит создать благоприятные условия для роста объемов и качества предоставляемых транспортно-логистических услуг и сформировать качественно новую модель региональной экономики.

В результате исследования выявлено, что формированию и эффективному функционированию транспортно-логистического кластера в Донецком экономическом районе препятствует множество ключевых барьеров, которые условно можно систематизировать по следующим группам, как политические, внешнеэкономические; институциональные; инвестиционно-финансовые; инфраструктурные; информационные; экологические; логистические. Доказано, что для эффективного развития транспортно-логистического кластера в экономическом районе целесообразно разработать предложения по созданию надлежащих институциональных условий, которые заключаются в доработке Стратегии регионального развития в части институционального, инвестиционно-финансового, организационно-экономического и информационного обеспечения функционирования транспортно-логистического кластера с использованием кластерного подхода, а также Концепции создания транспортно-логистического кластера и Стратегии комплексного развития транспортно-логистического кластера как составляющей региональной транспортно-логистической системы; реализации механизма финансового обеспечения, который включает экзогенные и эндогенные факторы, влияющие на развитие региональной транспортно-логистической системы; принципы, на которых должно базироваться формирование транспортно-логистического кластера; функции управления (прогнозирование, планирование, организация, учет, контроль, анализ, регулирование); совокупность инструментов, регулирующих условия организации и осуществления логистической деятельности, а также предоставление транспортных услуг; финансовые инструменты (венчурное инвестирование, краудинвестинг, факторинг, публично-частное партнерство на основе привлечения частных инвестиций, средств кредитных учреждений, иностранных инвестиционных ресурсов, грантов международных финансовых организаций); средства (цифровые и информационно-коммуникационные технологии, программное обеспечение, нормативные документы).

Сочетание современной кластерной политики, механизма институционального обеспечения развития интегрированной транспортно-логистической системы и стратегии разумных специализаций промышленности в условиях децентрализации позволит создать надлежащие условия для формирования транспортно-логистического кластера как действенной формы партнерства, укрепить конкурентные преимущества Донецкого экономического района и повысить экономическую состоятельность территориальных общин.

Обосновано, что внедрение предложений по созданию надлежащих институциональных условий формирования и развития транспортно-логистического кластера в Донецком экономическом районе будет способствовать получению синергетического эффекта, составляющими которого являются повышение уровня инвестиционной привлекательности района; увеличение поступлений в бюджет за счет экономического роста территорий; создание новых рабочих мест и рост уровня занятости; увеличение объемов грузоперевозок и грузооборота; оптимизация перемещения логистических потоков; снижение затрат на организацию логистической деятельности из-за уменьшения транспортной составляющей в стоимости услуг, сокращения времени на выполнение таможенных процедур при оформлении грузов; обеспечение благоприятных условий функционирования рынка логистических услуг; создание объектов необходимой логистической инфраструктуры (транспортной, торговой, сервисной и т.п.); совершенствование технологии перевозок с использованием современных цифровых информационно-коммуникационных технологий.

Ключевые слова: экономический район, транспортно-логистический кластер, институциональные условия, факторы, механизм финансового обеспечения, логистическая деятельность, синергетический эффект.

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STUDY OF THE ECONOMIC POTENTIAL OF THE INNOVATIVE DEVELOPMENT OF HOTEL ENTERPRISES IN AZERBAIJAN

Introduction. Today's hotel industry is an increasingly competitive industry in the hospitality market.

In modern circumstances, we agree that achieving a competitive advantage in the hotel business is mainly correlated with the implementation of advances in hotel business activities.

In the hotel business, creativity is the process of creating and introducing new methods of operation that differ from the standard ones, as well as developing innovative hotel goods, new ways of extending a hotel company's services, and creating conditions for guests to feel more relaxed.

The enterprise's ability to achieve a particular innovative target, i.e. the degree of the enterprise's readiness to execute the innovative change plan and the implementation of innovative technologies, goods, etc., is calculated as the enterprise's innovative potential [9].

The company's technological capacity forms a variety of structural components: intellectual, scientific, manufacturing and technical, economic, marketing, organizational and managerial.

At the intersection of all its structural components, the optimum use of a hotel enterprise's creative capacity is achieved. Therefore, they complement each other, creative capacity should be viewed not only from the viewpoint of a variable approach as a combination of resources, but also based on the principles of systematic method implementation.

One of the main features of this method is the synergy effect, i.e. an improvement in the performance of the entire creative potential process from the interaction of its components. The components of the company's creative capacity lead to the successful implementation of revolutionary practices and structural changes in the company's growth as they are tightly integrated and constantly communicating with each other.

Main part. Despite the fact that Azerbaijan's hotel business is still at the beginning of the road of development, domestic hotel companies should already make every effort to increase their technological capacity under conditions of high competition. The goal is to be able to provide and introduce consumers with innovative services in order to gain advantages over customers [3].

Choosing an innovative approach depends on the state of innovative ability and is therefore very critical for its objective assessment.

It is best to use Harrington's verbal-numerical scale for a qualitative assessment of the enterprise's level of creative capacity and the characteristics of its strengths in executing innovative activities. Here, the description of the results of quantitative calculations is given based on the classification of three grades of creative ability (high, medium and low) (Table 1). The values of the revolutionary potential integral indicator and its individual structural components are set within the range from 0 to 100 [7].

Table 1

Interpretation of innovative potential values

Level of potential	Value range of innovation potential	Qualitative characteristics of the state of innovation potential
1	2	3
(High) *H*	IP=100 $80 \leq IP < 100$	Corresponds to the best state of development of innovative potential (IP). Excellent condition of IP. The company has the maximum opportunities for innovation and uses them effectively. The company is at the level of the world leader in its industry
(Medium) *M*	$63 \leq IP < 80$ $33 < IP < 66$ IP=33	Good state of innovation potential. The enterprise has significant opportunities for innovation and uses them effectively. Corresponds to the state of the national leader in its industry.

Ending of table 1

1	2	3
		Satisfactory condition of SP. The company has the average capacity for innovation. Development of IP and activation of its use is required. The minimum acceptable level of innovation potential. Conforms to the ultimate level of competitiveness; urgent investments in the development of components of innovative potential are required
(*Low*) *L*	$20 \leq IP < 33$ $0 < IP < 20$	Poor state of innovation potential. Serious action is required to change the enterprise development strategy. Lack of opportunities for innovation. The company may be classified as insolvent.

Source: Dorofeev V.D., Dresvyannikov V.A. (2003). Innovation Management: textbook. Penza, Publishing House of Penza State University. 189 p.

Based on an analysis of the activities of capital hotels, we conducted a study of the creative potential of hotel enterprises. They are the most preferred and visited visitors, according to the booking.com reservation system, the object of the visit is leisure, entertainment and relaxation. As noted above, the following 4-star hotels are included: Gorgud Hotel & SPA, Askar Hotel, All Stars, Baku Winter Park Hotel, Demir Yol Plaza Hotel, Metro City Hotel, Baku City Hotel [10].

Competition is intensifying here today, and it seems important to determine what forces are operating on the segment and what opportunities are awaiting its current and future participants.

We consider it necessary to assess their innovative capabilities in order to determine the promising directions for the growth of these enterprises and to choose the optimal management strategies.

The values of quantitative indicators of the structural components of the innovative potentials of these enterprises were calculated by us, based on the data of their reporting.

Actual values and corresponding levels of development of individual structural components, as well as integrated indicators of innovative potentials of the studied hotel enterprises are presented in Table 2.

Table 2

Actual values and related growth rates of individual structural components and their critical measures of the innovative ability of Baku City Hotels ' studied hotel enterprises.

	Metro City Hotel	Gorgud Hotel & SPA	All Stars	Winter Park Hotel Baku	Askar Hotel	Baku City Hotel	Demir Yol Plaza Hotel
Intellectual component	36,6 M	36,8 M	36,2 M	34,0 M	35,0 M	35,0 M	36,8 M
Research component	0 L	0 L	0 L	0 L	0 L	0 L	0 L
Production and technical component	28,6 M	24,8 M	24,4 M	25,4 M	24,2 M	26,6 M	25,6 M
Financial component	25,9 M	23,9 M	28,2 M	27,1 M	26,4 M	23,8 M	24,1 M
	7,9 L	9,7 L	4,6 L	6,7 L	9,1 L	11,3 L	7,3 L
Organizational and management component	78 M	82 H	79 M	80 H	77 M	84 H	82 H
Innovative component	26,8 L	25,9 L	25,6 L	25,4 L	25,3 L	26,1 L	25,9 L

The approach suggested for a systematic evaluation of a hotel enterprise's innovative potential helps its management to evaluate the nature of changes in the degree of innovative potential or its individual structural components compared to previous periods and to respond quickly to changes.

Therefore, based on the current level of innovative potential, hotel management will, on the one hand, agree on the course of creation of the desired innovative approach and, on the other, assess the innovative opportunities that the hotel has. This means that a creative approach that suits a hotel company's requirements and ensures its successful innovative growth can be justified and executed on the basis of a thorough and objective assessment of innovative potential.

Conclusions. Practical use of the proposed innovative potential evaluation approach has shown that the hotels we are evaluating have an unsatisfactory state of innovative potential, i.e. poor innovative potential. It is therefore necessary to take concrete action to change these enterprises' growth strategies.

Studies show that cognitive, organizational and administrative are the main components of their creative capacity. There are prospects for future development in the creative direction. Their technological ability is a steady propensity to increase it, both at an average and high level, suggesting the existence of growth resources and a rise in their use in the future. Such hotel management will retain such components at the appropriate level, making full use of their development opportunities.

The manufacturing, technological, financial and marketing components of the hotels ' creative capacity are currently at a low level, but they have both strengths and weaknesses. These should be paid close attention to the management of hotel companies in order to build possible advantages over time, progressing to a higher quality standard. The weakness of the manufacturing and technological element is reflected by a rather high rate of deterioration of equipment in all the under study hotel enterprises, lack of modernization and introduction of advanced equipment in the reporting year.

Depreciation of manufacturing resources is one of the main reasons why corporations creative processes – their reactivity – are significant. The prevailing introduction of innovative products based on satisfying the current demand for services markets is capable of providing short-term financial revenue, but does not provide strategic advantages for businesses. If the equipment of the companies studied continues to age. That's it. It will soon be very difficult to change the content and technological basis, upgrade fixed assets and deliver profitable innovative products. The analysis of the financial element revealed that the hotels are financially dependent, only about 70% of the share of their resources is covered by their own capital, and the fund's turnover ratios are characterized by an insufficiently high level of their business activity.

To ensure the company's productive growth, it is necessary to ensure that the financial resources of hotel businesses are used effectively, to incorporate robust processes for attracting financial flows, and to create a framework for a coherent diagnosis of project execution within the hotel.

With regard to the advertising aspect, hotels have poorly developed market research, which involves a series of measures to promote hotel services.

Finally, the study element remains the weakest among the components of the studied hotels' creative capacity. The data show that all of this component's quantitative variables are equal to zero. Their management needs to adjust their policies as soon as possible, reorienting them not only in the short and medium term to achieve the desired results, but also laying the foundation for long-term success. And it will be difficult to achieve these successes without the availability of intellectual property and access to it, licensing agreements, partnership with research organizations.

Solving existing problems in a number of components of businesses ' innovative potential requires designing and enforcing a series of steps to improve the use and growth of their innovative potential structural components.

Trying to match the asset composition and boost its proportions, the organization improves its efficiency, will affect the size of innovative potential, thus improving strategic management of innovative activities, ensuring successful execution of selected innovative strategies.

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Рза-заде Нурай Рауф к. Дослідження економічного потенціалу інноваційного розвитку готельних підприємств Азербайджану

Впровадження інноваційних технологій – істотно важливий і необхідний чинник підвищення конкурентоспроможності компаній. Процеси глобалізації, виникнення нових потреб ринку і можливостей їх задоволення змушує переходити на шлях інноваційного розвитку і готельні підприємства.

Метою даного дослідження є комплексний розгляд економічного потенціалу інноваційного розвитку готельних підприємств Азербайджану, для визначення перспективних напрямків розвитку даних підприємств і вибору оптимальних інноваційних стратегій, що відповідають можливостям даних готельних підприємств, що забезпечують їх успішний інноваційний розвиток.

Відповідно до поставленої мети, у статті розглянуто структурні компоненти інноваційного потенціалу готелів, дана система узагальнюючих показників оцінки інноваційного потенціалу готелів м. Баку, а саме таких її складових, як: інтелектуальна, наукова, науково-дослідницька, виробничо-технічна, фінансова, маркетингова і організаційно-управлінська; запропонована авторська методика комплексної оцінки інноваційного потенціалу готельних підприємств, заснована на використанні системи якісних і кількісних показників, що характеризують, як стан його окремих структурних компонентів, так і загальний інтеграційний рівень інноваційного потенціалу готельних підприємств.

При написанні статті використовувалися **методи** емпіричного дослідження: порівняння, спостереження, угрупувань і такі загальнологічні методи, як логічне узагальнення, статистичний аналіз і системний підхід.

Застосування економіко-математичних і економіко-статистичних методів дозволило дати об'єктивну кількісну оцінку інноваційного потенціалу готелів, визначити тенденції розвитку його структурних компонентів, виявити існуючі в них диспропорції і протиріччя, прогнозувати їх подальший розвиток.

Результатом дослідження є виявлення існуючих проблем у ряді складових інноваційних потенціалів готельних підприємств м. Баку, а також розробка комплексу заходів щодо активізації використання економічного потенціалу інноваційного розвитку аналізованих готелів.

Ключові слова: готельні підприємства, інноваційний розвиток, оцінка інноваційного потенціалу, конкурентоспроможність готельних підприємств.

Rza-zadeh Nuray Rauf. Study of the Economic Potential of the Innovative Development of Hotel Enterprises in Azerbaijan

Innovation implementation is a very important and necessary element in improving company competitiveness. Globalization processes, the emergence of new market demands and opportunities to meet these needs force hotel companies to move on to the path of creative growth.

Our study aims at a comprehensive review of the economic potential of Azerbaijan's creative hotel business growth. This is necessary to identify promising areas and select the best creative approaches for the growth of these enterprises. Those approaches will suit those hotel companies ' capabilities.

In line with this **aim**, the article discusses the structural components of hotels ' innovative potential, including a framework for evaluating hotels in Baku's innovative potential. We are talking about the element intellectual, science, academic, manufacturing and technological, economic, marketing, organizational and managerial. Moreover, the researchers suggested a framework for a systematic analysis of hotel businesses ' creative capacity. It is focused on the use of a system of qualitative and quantitative measures that describe both the state of its individual struc-

tural components and the overall level of integration of hotel enterprises ' creative potential.

Empirical research approaches-comparison, evaluation, grouping, as well as logical generalization, statistical analysis, and a systematic **approach** – were used when writing the article.

The application of economic-mathematical and economic-statistical methods allowed an unbiased quantitative analysis of hotels' creative potential, identified patterns in the growth of their structural components, identified imbalances and contradictions, and predicted their further development.

The study succeeds in finding existing problems in some of the constituent elements of hotel businesses' creative capacity in Baku. The outcome is also a series of steps to aggressively harness the economic potential of hotels' creative growth.

Keywords: hotel businesses, innovative growth, innovative potential evaluation, competitiveness of hotel businesses.

Рза-заде Нурай Рауф. Исследование экономического потенциала инновационного развития гостиничных предприятий Азербайджана

Внедрение инноваций – существенно важный и необходимый фактор повышения конкурентоспособности компаний. Процессы глобализации, возникновение новых потребностей рынка и возможностей их удовлетворения заставляет переходить на путь инновационного развития и гостиничные предприятия.

Целью данного исследования является комплексное рассмотрение экономического потенциала инновационного развития гостиничных предприятий Азербайджана, для определения перспективных направлений развития данных предприятий и выбора оптимальных инновационных стратегий, соответствующих возможностям данных гостиничных предприятий, обеспечивающих их успешное инновационное развитие.

В соответствии с поставленной целью, в статье рассмотрены структурные компоненты инновационного потенциала гостиниц, дана система обобщающих показателей оценки инновационного потенциала отелей г. Баку, а именно таких ее составляющих, как: интеллектуальная, научная, научно-исследовательская, производственно-техническая, финансовая, маркетинговая и организационно-управленческая; предложена авторская методика комплексной оценки инновационного потенциала гостиничных предприятий, основанная на использовании системы качественных и количественных показателей, характеризующих, как состояние его отдельных структурных компонентов, так и общий интеграционный уровень инновационного потенциала гостиничных предприятий.

При написании статьи использовались **методы** эмпирического исследования: сравнения, наблюдения, группировок и такие общелогические методы, как логическое обобщение, статистический анализ и системный подход.

Применение экономико-математических и экономико-статистических методов позволило дать объективную количественную оценку инновационному потенциалу гостиниц, определить тенденции развития его структурных компонентов, выявить существующие в них диспропорции и противоречия, прогнозировать их дальнейшее развитие.

Результатом исследования является выявление существующих проблем в ряде составляющих инновационных потенциалов гостиничных предприятий г. Баку, а также разработка комплекса мероприятий по активизации использования экономического потенциала инновационного развития анализируемых гостиниц.

Ключевые слова: гостиничные предприятия, инновационное развитие, оценка инновационного потенциала, конкурентоспособность гостиничных предприятий.

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EVALUATION OF THE HEALTHY LIFE YEARS INDICATOR IN CONDITIONS OF EU DIGITALIZATION

Formulation of the problem. Digitalization is an end-to-end process that affects both the economic and social aspects of human activity. A quantitative assessment of the quality of expansion of the digital economy is one of the important scientific and practical problems. As a rule, its solution is sought purely on an economic plane. It's exist the estimate of the digital GDP percentage, the growth in the share of e-commerce, online services, the capitalization of technology companies, and the volume of cashless payments. However, the ultimate goal of digitalization is a person, the quality and expectancy of his life. Therefore, in general terms, there is a problem of assessing the impact of digitalization on a person.

Literature review. Researchers of digitalization processes consider its various aspects [1-4]. They agree on the fundamental impact of these processes on the economy and society. Particular attention is paid to the connection of the digitalization of the economy with the development of medical services [1, p.143-152; 5] and the solution of environmental problems [6]. At the same time, the assessment of the impact of digitalization on human life, which is characterized primarily by life expectancy, remains without proper attention. "Life expectancy at birth reflects the living conditions of the population and is a direct consequence of the socio-economic situation of the territory" [7, p. 61]. It should be borne in mind that modern researchers prefer the Healthy Life Years (HLY) indicator [8-10]. "Healthy Life Years (HLY) allow estimating the quality of the remaining years that a person is expected to live, in terms of being free of long-standing activity limitation" [8, p.1]. Researchers identify the following factors that affect HLY: «Air pollution – carbon dioxide emission in tons per capita; Education – fraction of population with tertiary education; GDP per capita; Material deprivation – fraction of population with 4 or more important housing items missing; Social protection expenditures to GDP; Population density; Beds in hospitals per 100000 inhabitants; Doctors per 100000 inhabitants; Alcohol consumption in liters per capita; Cigarettes – fraction of regular smokers in population; Obesity – fraction of obese inhabitants in population [10, p.185]. Thus, the problem of the influence of digitalization on the HLY indicator remains insufficiently studied Based on this, a hypothesis can be formulated that countries with a higher level of digitalization will be able to provide more HLY for their citizens and its positive dynamics.

Object of research. The EU is a unique entity, which harmoniously combines the signs of a single and universal. On the one hand, the EU includes sovereign states, and on the other, it is a single labor and capital market. The EU is actively supporting digitalization processes at the legislative level and work is underway to build a Digital Single Market. EU adopted "A Digital Agenda for Europe" [11], "A Digital Single Market Strategy for Europe" [12], "Building a European Data Economy" [13], and other regulations [14, p.122-123]. Therefore, the EU is a suitable target for testing a hypothesis.

Aim of research. Based on a review of the literature and the object of study, the aim of the study is to evaluate the state and dynamic of "Healthy Life Years" in conditions of EU digitalization.

Methods. There are various indicators for assessing the level of digitalization of countries [15-23]. The Digital Economy and Society Index (DESI) [17] the only of the considered indices is calculating specifically for the EU countries. Therefore, it was he who was chosen to assess the digitalization level of the EU member states. Healthy Life Years Index is calculated by Eurostat [24].

The Spearman's rank correlation coefficient was used as an analytical tool for evaluating the tightness of communication.

Results and discussion. Analysis of the HLY index shows that among the EU-28 has a significant difference (table). The leaders in HLY at birth for females (table, column 10) are Malta and Sweden, where this indicator is 73.4 and 71.9 years at the end of 2017. Moreover, in terms of digitalization, they occupy the 8th and 4th place. The last two positions are occupied by Slovenia and Latvia (54.6 and 52.2 years respectively). In terms of digitalization, they occupy the 16th and 19th positions.

The difference between the first and last position for HLY at birth for females (table, column 10) is 21.2 years. The median value for the sample is 61.4.

A similar situation is observed for HLY at birth for males (table, column 14), where in terms of HLY at birth the first positions are occupied by the same Malta (71.9 years) and Sweden (73.2 years). The last positions are held by Estonia (54.7 years) and Latvia (50.6 years).

The difference between the first and last position for HLY at birth for males (table, column 14) is 22.6 years. The median value for the sample is 60.6.

Table

DESI and HLY at birth in EU countries in 2014-2017

No.	Country	DESI				HLY at birth (females)				HLY at birth (males)			
		14[1]	15	16	17	14	15	16	17	14	15	16	17
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1	Austria	12	13	12	12	57,8	58,1	57,1	56,8	57,6	57,9	57	57,4
2	Belgium	9	9	7	7	63.7	64	63.8	64.1	64.4	64.4	63.7	63.5
3	Bulgaria	27	27	26	27	66.1	65	67.5	66.2	62	61.5	64	62.9
4	Croatia	21	20	20	20	60	56.8	58.7	58	58.6	55.3	57.1	57.3
5	Cyprus	23	23	21	22	66.1	63.4	68.8	65.8	65.8	63.1	67.5	64.7
6	Czechia	17	14	17	15	65	63.7	64	62.4	63.4	62.4	62.7	60.6
7	Denmark	2	1	1	1	61.4	57.6	60.3	59.7	60.3	60.4	60.3	59.8
8	Estonia	7	7	9	9	57.1	56.2	59	57.2	53.2	53.8	54.4	54.7
9	Finland	3	2	2	2	57.5	56.3	57	56.4	58.7	59.4	59.1	58.3
10	France	14	15	15	14	64.2	64.6	64.1	64.9	63.4	62.6	62.6	62.5
11	Germany	10	11	11	11	56.5	67.5	67.3	66.7	56.4	65.3	65.3	65.1
12	Greece	26	26	27	26	64.9	64.1	64.7	65.1	64.1	63.9	63.8	64.4
13	Hungary	22	22	22	23	60.6	60.1	60.2	60.8	59.1	58.2	59.5	59.6
14	Ireland	11	10	10	10	67.5	68	69.8	69.3	66.3	66.5	67.2	67.9
15	Italy	25	24	24	24	62.3	62.7	67.2	66.4	62.5	62.6	67.6	66.2
16	Latvia	19	19	19	19	55.3	54.1	54.9	52.2	51.5	51.8	52.3	50.6
17	Lithuania	18	18	18	18	61.7	58.8	59.4	59.8	57.6	54.1	56.2	56.4
18	Luxembourg	5	5	5	5	63.5	60.6	58.9	58.1	64	63.7	61.4	60.1
19	Malta	8	8	8	8	74.5	74.6	72.4	73.4	72.3	72.6	71.1	71.9
20	Netherlands	4	4	4	3	59	57.2	57.8	57.6	63.3	61.1	62.8	62.3
21	Poland	24	25	25	25	62.7	63.2	64.6	63.5	59.8	60.1	61.3	60.6
22	Portugal	16	17	14	17	55.4	55	57.4	57	58.4	58.2	59.9	60.1
23	Romania	28	28	28	28	59.1	59.3	59	58.3	58.9	59	59.8	59.2
24	Slovakia	20	21	23	21	54.6	55.1	57	55.6	55.5	54.8	56.4	55.6
25	Slovenia	15	16	16	16	59.6	57.7	57.9	54.6	57.8	58.5	58.7	55.3
26	Spain	13	12	13	13	65	64.1	66.5	69.9	65	63.9	65.9	69
27	Sweden	1	3	3	4	72.8	72.2	73.3	71.9	73	73.1	73	73.2
28	UK	6	6	6	6	64.2	63.3	63.1	62	63.3	63.7	63	63.3

[1] 14 means 2014, 15 – 2015.

Source: compiled by the author using data of Eurostat [17; 24].

Thus, the HLY at birth statistics for women and men are not fundamentally different.

For a more detailed analysis, the EU-28 member countries were divided into 4 quartiles by digitalization level. First quartile from 1 to 7 place (Denmark, Finland, Netherlands, Sweden, Luxembourg, United Kingdom, Belgium), second quartile from 8 to 14 (Malta, Estonia, Ireland, Germany, Austria, Spain, France), third quartile from 15 to 21 (Czechia, Slovenia, Portugal, Lithuania, Latvia, Croatia, Slovakia), the fourth quartile from 22 to 28 (Cyprus, Hungary, Italy, Poland, Greece, Bulgaria, Romania). For each quartile, the mean values of HLY at birth for females and males in 2017 were calculated. The graphic image (fig. 1) of these shows the uneven distribution pattern without any distinct tendency. HLY at birth for females and males in the 1st quartile in terms of digitalization is lower than in the second (61.4 years for female and 62.93 years for male in 1st quartile and 65.46 years for female and 64.07 years for male in 2nd quartile). A similar situation when comparing the 3rd and 4th quartiles.

The Spearman's rank correlation coefficient between HLY at birth (females) and DESI in 2017 is – 0.0268. The Spearman's rank correlation coefficient between HLY at birth (males) and DESI in 2017 is – 0.0268.

Thus, analytically and graphically, there is no positive relationship between the level of digitalization of countries and HLY at birth for both sex.

A separate issue is the study of the impact of digitalization on the dynamics of HLY. For 4 years (2014-2017), EU-28 member countries have demonstrated multidirectional dynamics. According to HLY at birth (females) in 13 countries (Germany, Spain, Italy, Ireland, Portugal, Slovakia, Poland, France, Belgium, Hungary, Greece, Bulgaria, Estonia) is positive changing. The leaders are Germany (+10.2 years), Spain (+4.9) and Italy (+4.1). The average increase for these countries amounted to 2 years. However, in 15 countries (Cyprus, Romania, Sweden, Austria, Malta, Finland, Netherlands, Denmark, Lithuania, Croatia, the United Kingdom, Czechia, Latvia, Slovenia, Luxembourg) there was a decrease, which also averaged 2 years. The largest declines were recorded in Slovenia (-5 years) and Luxembourg (-5.4 years).

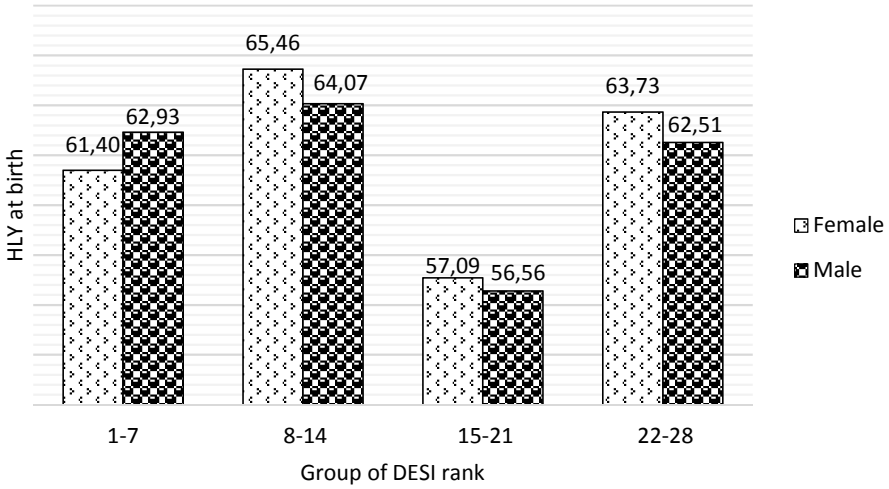

Fig. 1. HLY at birth in DESI quarters

Similarly, for HLY at birth for males. 13 countries shown growth. These are Germany, Spain, Italy, Portugal, Ireland, Estonia, Bulgaria, Poland, Hungary, Greece, Romania, Sweden, Slovakia. The average increase is 1.87 years. The leaders are the same Germany (+8.7 years), Spain (+4 years) and Italy (+3.7 years). A decrease in HLY at birth for males was recorded in 14 countries (Austria, Malta, Finland, Denmark, France, Latvia, Belgium, Netherlands, Cyprus, Lithuania, Croatia, Slovenia, Czechia, Luxembourg). The average decline is 1.3 years. Among the outsiders are Slovenia (-2.5), Czechia (-2.8), Luxembourg (-3.9). In the United Kingdom unchanged.

Thus, despite the deepening digitalization level in most EU-28 countries, there is a negative trend. It remains to explore how this dynamic is consistent with the level of digitalization. For this, the average rank for the EU-28 member countries for 2014-2017 was calculated.

All the Top 5 countries in terms of digitalization showed a negative change in the level of HLY at birth: Denmark (-1.7 years for female; -0.5 years for male), Finland (-1.1 years for female; -0.4 years for male), Sweden (-0.9 years for female; +0.2 years for male), Netherlands (-1.4 years for female; -1 year for male), Luxembourg (-5.4 years for female; -3.9 years for male). For 5 countries that occupy the last positions in terms of digitalization is more positive situation: Italy (+4.1 years for female; +3.7 years for male), Poland (+0.8 years for female; +0.8 years for male), Greece (+0.2 years for female; +0.3 years for male), Bulgaria (+0.1 years for female; +0.9 years for male), Romania (-0.8 years for female; +0.3 years for male).

If we analyze the quartile distribution (fig. 2), then the discrepancy between the digitalization level of the dynamics of changes in HLY at birth becomes noticeable. In the 1st quartile, according to the level of digitalization, the average decrease in HLY at birth is -1.8 years for females and -0.59 years for males. In the 2nd quartile in terms of level of digitalization, the average increase in HLY at birth is 2.27 years for females and 1.7 years for males. In the 3rd quartile, according to the level of digitalization, the average decrease in HLY at birth is -1.71 years for females and -0.99 years for males. In the 4th quartile in terms of digitalization, the average increase in HLY at birth is 0.61 years for females and 0.77 years for males.

The Spearman's rank correlation coefficient between the change in HLY at birth (females) in 2017 relative to 2014 and the average DESI in 2014-2017 is -0.28 (for females) and -0.20 (for females).

If we literally interpret the results, then we can conclude that a moderate level of digitalization (countries from 2nd quartile) is most favorable for HLY at birth. However, the tools and depth of research do not allow such a conclusion. Rather, the results obtained cast doubt on the unconditional effectiveness of digitalization from the standpoint of the life of an individual. Therefore, there is great potential for increasing HLY at birth. This is especially true for countries that are on decades behind the leaders in this indicator.

Conclusion. In the EU-28 member states, the process of digitalization and the construction of the Digital Single Market are actively underway. Its positive results are recorded in the continuous growth of DESI. However, against the background of these processes, a steady increase in HLY at birth is not observed.

The digitalization leader countries not only do not show high levels of HLY at birth, but also can not to reduce their gap with the countries of the leaders on HLY. For most of the EU-28 countries, with a deep digitalization level, a decrease in HLY is observed. This is a very unexpected result.

Thus, the hypothesis that "countries with a higher level of digitalization will be able to provide higher HLY for their citizens and its positive dynamics" has not been confirmed. No positive effect was found.

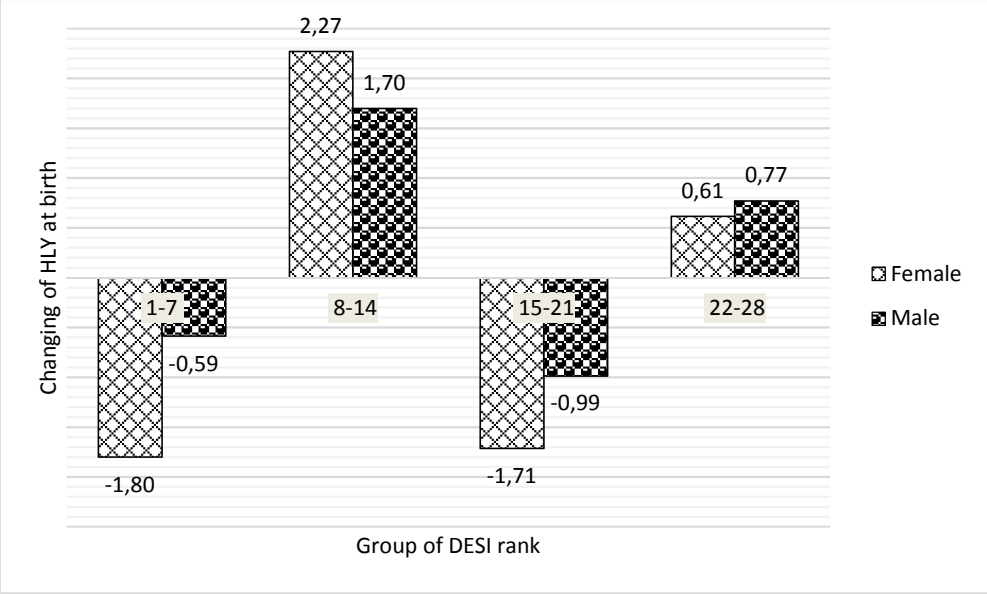

Fig. 2. HLY at birth in DESI quarters

Directions for further research. The directions of further research are related to the consideration of changes in the duration and quality of life depending on the level of digitalization in other parts of the world, as well as their compare with each other.

An important issue for the study is the analysis and systematization of the reasons for the lack of a positive impact of the digitalization level on HLY in the EU countries. As well as it's necessary the development of organizational, institutional, economic, technological tools for the effective use of the potential of digitalization in order to increase HLY.

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Вишневський О. С. Оцінка показника «Роки здорового життя» в умовах цифровізації ЄС

У роботі розглядається оцінка впливу цифровізації на людину. Аналіз літератури показав, що залишається недостатньо дослідженою проблема впливу цифровізації на кількість років здорового життя. Як об'єкт дослідження обрані країни-члени ЄС-28, оскільки, з одного боку, в ЄС входять суверенні держави, а з іншого – це єдиний ринок праці і капіталу. При цьому в ЄС активно підтримуються процеси цифровізації на законодавчому рівні та виконується робота з побудови єдиного цифрового ринку. Виходячи з огляду літературних джерел і об'єкта дослідження *метою дослідження* є оцінка стану і динаміки «здорових років життя» в умовах цифровізації в країнах ЄС.

Основні результати. Країни-лідери по цифровізації не тільки не демонструють високих рівнів за кількістю «здорових років життя», а й не можуть скоротити своє відставання від країн лідерів за показником «роки здорового життя». Таким чином, гіпотеза, що «країни з більш високим рівнем цифровізації зможуть забезпечити більшу кількість «здорових років життя» для своїх громадян і їх позитивну динаміку» не підтвердилася. Позитивний вплив не виявлено.

Ключові слова: цифровізація, показник «Роки здорового життя», ЄС.

Vyshnevskyi O. Evaluation of the Healthy Life Years Indicator in Conditions of EU Digitalization

The paper considers the impact of digitalization on humans. An analysis of the literature showed that the problem of the impact of digitalization on the number of years of a healthy life remains insufficiently studied. As an object of study, the EU-28 member countries were selected. Since, on the one hand, the EU includes sovereign states, and on the other, it is a single labor and capital market. At the same time, the process of digitalization at the legislative level is actively supported in the EU and work is underway to build a Digital Single Market. Based on a review of literary sources and the object of study, *the aim of the study* is to assess the status and dynamics of "Healthy Life Years" in the context of digitalization in the EU countries.

The main results. The countries leaders in digitalization not only do not show high levels in terms of the number of "Healthy Life Years", but I can't reduce their backlog from the countries of the leaders in terms of Healthy Life Years". Thus, the hypothesis that "countries with a higher level of digitalization will be able to provide a greater number of "Healthy Life Years" for their citizens and its positive dynamics" has not been confirmed. No positive effect was found.

Keywords: digitalization, Healthy Life Years indicator, EU.

Вишневский А. С. Оценка показателя «Годы здоровой жизни» в условиях цифровизации ЕС

В работе рассматривается оценка влияния цифровизации на человека. Анализ литературы показал, что остаётся недостаточно исследованной проблема влияния цифровизации на количество лет здоровой жизни. В качестве объекта исследования выбраны страны-члены ЕС-28, так как, с одной стороны, в ЕС входят суверенные государства, а с другой – это единый рынок труда и капитала. При этом в ЕС активно поддерживаются процессы цифровизации на законодательном уровне и проделывается работа по построению единого цифрового рынка. Исходя из обзора литературных источников и объекта исследования, *целью исследования* является оценка состояния и динамики «здоровых лет жизни» в условиях цифровизации в странах ЕС.

Основные результаты. Страны лидеры по цифровизации не только не демонстрируют высоких уровней по количеству «здоровых лет жизни», но и не могут сократить своё отставания от стран лидеров по показателю «годы здоровой жизни». Таким образом, гипотеза, что «страны с более высоким уровнем цифровизации смогут обеспечить большее количество «здоровых лет жизни» для своих граждан и их позитивную динамику» не подтвердилась. Позитивное влияние не обнаружено.

Ключевые слова: цифровизация, показатель «Годы здоровой жизни», ЕС.

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FOREIGN ECONOMIC ACTIVITIES OF UKRAINE: REGIONAL FEATURES, TRENDS AND DIRECTIONS FOR DEVELOPMENT

Target setting. The development of foreign economic relations is a very important task of the state. The realization of such a task contributes to the economic growth of the country and regions, and to improving the standard of living of the population. Foreign economic activity is an essential component of the country's economy, so its activation and strengthening in the regions is a priority direction of the state's economic development strategy.

The development of foreign economic relations of regions leads to an increase in the amount of tax revenues to local budgets according to the change of their sources in the conditions of decentralization reform. Thus, according to this reform, 50% of the amount of excess of the monthly indicators of customs payments received by the respective regional customs of the State Fiscal Service is credited to local budgets [1]. Such state policy, carried out in the framework of reforming local self-government and territorial organization of power in Ukraine [2], encourages the motivation for the regions development and their foreign economic activity, attracting investments to local budgets, and the amount of financial revenues create an opportunity for economy successful development of regions and the state.

Recent research and publications analysis. The research of foreign economic activity of the regions of Ukraine is devoted to numerous works of leading domestic scientists. In recent years the issue has been actualized in the writings of V. Hoblyk [3], E. Zabarna [4], M. Karpiak [5], V. Chernyshev [6]. The analysis of the main economic indicators of the foreign economic activity of the regions in recent years clearly shows the changes that have occurred in the total volumes, commodity structure and geographical directions of foreign trade and the factors that caused them. The outlined issues of the prevalence of low-cost (commodity) goods during export over highly liquid imported goods characterize the generally unsatisfactory state of economic development efficiency and point to the low competitiveness of domestic producers in the world market. According to scientists' opinions, the modernization of the economy of Ukraine, in particular of industrial regions in the conditions of decentralization of management [7; 8], the direction that will ensure the structural restructuring of production, improving the quality of goods produced in the regions, the growth of a developed economy of the state.

Ukrainian and international experts analyze and monitor key economic and political processes and provide comprehensive support to the Cabinet of Ministers of Ukraine. Thus, many institutions are currently dealing with decentralization issues, including The Center for Political and Legal Reforms is a non-governmental organization providing analytical support; the portal «Decentralization», created on the initiative of the Ministry of Development of Communities and Territories; VoxUkraine – an independent analytical platform where highly qualified economists and lawyers exercise their activities; The Reform Office is an organization that is part of an innovative Ukrainian Reform Architecture, created on the joint initiative of the European Union and the European Bank for Reconstruction and Development.

The strategic changes that have taken place in the reorientation of the global course of the national economy development to European and world markets have challenged the established partnerships that have existed for years between the industrial enterprises of the regions and their foreign economic partners. Therefore, an urgent scientific task is to study the processes of stimulating foreign economic activity development at the regional level and to develop appropriate mechanisms.

The purpose of the article is to substantiate the contemporary features and tendencies in the foreign economic activity sphere of economic regions of Ukraine and to develop proposals for directions of their development.

Research findings. At present, Ukraine has 24 oblasts in its administrative structure and is the largest in Europe in terms of its temporarily non-controlled territories. Due to the heterogeneity of natural resources, population, structure of economy, regions are conditionally united in 9 economic regions: Donetsk (Donetsk, Luhansk oblasts), Pridneprovskyi (Dnipropetrovsk, Zaporizhzhya oblasts), Northeast (Kharkiv, Sumy, Poltava oblasts), Central (Cherkasy, Kirovohrad oblasts), North-

western (Volyn, Rivne oblasts), Podilskyi (Vinnytsia, Ternopil, Khmelnytskyi oblasts), the Black Sea (Mykolaiv, Odesa, Kherson oblasts), and also annexed to present-day Crimea), the Carpathian (Transcarpathian, Lviv, Ivano-Frankivsk, Chernivtsi oblasts), the Capital region (Kyiv, Zhytomyr, Chernihiv oblasts).

Economic regions differ in their industrial specialization, which has been influenced by many factors, including such as natural conditions, geographical location, population, economic potential. By specialization, they are conventionally divided into industrial and agricultural regions, which in turn are divided by profile. Thus, in Donetsk and Pridneprovskyi regions electricity, metallurgy, fuel and chemical industries, machine building are more developed. In the North-East and the Black Sea regions, besides the fuel industry, mechanical engineering, light and food industries have been developed. Central, Podil, North-West and Carpathian regions specialize in mechanical engineering, forestry, agriculture, wood processing and food industry. Due to the close interaction between them, they make up the single economic complex of Ukraine. Currently, due to some actions on the part of the Russian Federation, Donetsk and the Black Sea regions have lost their industry share, reduced economic potential, and therefore have to rebuild their economic ties and seek new trading partners.

The technical rally of foreign economic activity and its strengthening in the regions is the basis for the national economy development, and therefore the Program of Development of Ukrainian Exports has been identified as one of the priorities for the Sustainable Development Strategy «Ukraine 2020» implementation [9], which is an instrument for transformation in the country under the concluded Agreement on association between Ukraine and the European Union [10]. Regions are independent subjects of market relations, where the goals and objectives of socio-economic development are directly realized, in which the region competitiveness is essential. In the context of globalization, the region competitiveness is the willingness to respond to the global environmental challenges, the ability to adapt to changing conditions, to find and protect local competitive advantages, to support or improve the position of the region's economy in global competition [11].

Based on the foreign trade volume in goods and services in 2018, the most significant volumes of imports and exports are in the Capital and Pridneprovskyi regions (Fig. 1). However, their focus is different. Import-oriented ones are the three regions – Metropolitan, Carpathian, Northwestern, and export-oriented are the six other regions, with Prydniprovskyi and Donetsk having the biggest difference between exports and imports.

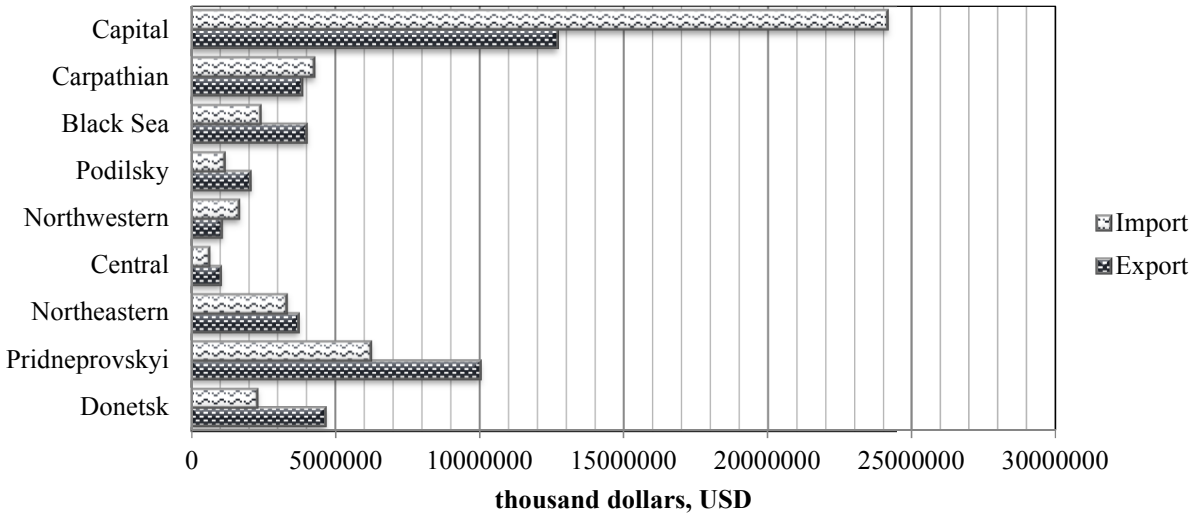

Fig. 1. Exports and imports by economic regions of Ukraine in 2018

Source: Compiled by the authors according to the State Statistics Committee of Ukraine (since 2015 without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and parts of the temporarily occupied territories in Donetsk and Luhansk oblasts) [12].

The analysis of the foreign economic activity of the regions was carried out according to the main analytical indicators – growth rates, changes in product structure and geographical directions, which were calculated according to generally accepted formulas [13]. Thus, the growth rate (Gr) was calculated by the formula:

$$\text{Gr} = \frac{C_1 - P_o}{P_o} \qquad (1.1)$$

where C_1 – volume of the current period,

P_0 – volume of the previous period.

The calculations depicted (Table 1) that the growth rates are different by economic regions and in time.

Thus, in 2014, in relation to 2013 from export-oriented regions, only North-West and Podilskyi show positive growth rates, but they are insignificant – from 4 to 5%. Other regions have negative growth rates, with the largest in Donetsk and the Black Sea regions. This is due to the military conflict that began in eastern Ukraine and the annexation of Crimea. Similarly, the political events that took place in the capital during the same period also affected the foreign economic volumes of the Capital Region – exports fell by 78% and imports – by 34%. In 2017 and 2018, export growth rates are positive for both export-oriented and import-oriented regions. Of the export-oriented regions, Podillya and Pridneprovskyi have the highest rates, but an import-oriented region such as the Carpathian one also exhibits high growth rates of exports – more than 20%, though smaller, albeit slightly, than in imports. The negative dynamics of the export growth rate continued throughout 2015-2016 and only since 2017 has become positive in all regions.

Table 1

The growth rate of exports and imports of goods by region in 2014-2018 (%)

Region	Growth rate, 2014/2013	Growth rate, 2015/2014	Growth rate, 2016/2015	Growth rate, 2017/2016	Growth rate, 2018/2017
Export					
Donetsk	-36.25	-60.88	-2.19	20.69	8.18
Pridneprovskyi	-7.27	-25.32	-12.57	23.00	10.63
Northeastern	-15.85	-27.43	-11.57	24.04	6.92
Central	-11.25	-41.81	7.26	14.60	26.52
Northwestern	4.25	-12.83	-7.91	15.32	5.43
Podilsky	4.83	-4.23	3.67	29.43	22.00
Black Sea	-23.11	-10.27	-3.80	16.61	1.18
Carpathian	3.67	-15.82	14.33	20.95	20.26
Capital	-78.48	243.00	-2.06	13.49	6.45
Import					
Donetsk	-46.82	-51.55	-3.48	57.18	9.73
Pridneprovskyi	-12.52	-30.66	3.05	40.43	12.66
Northeastern	-12.32	-29.27	10.63	19.90	15.10
Central	-16.46	-46.04	42.49	34.53	3.41
Northwestern	-26.01	-21.37	68.08	20.96	-0.53
Podilsky	-18.89	-27.20	15.38	29.45	21.79
Black Sea	-50.00	-41.89	23.80	15.72	8.45
Carpathian	-11.99	-40.99	17.73	28.13	21.62
Capital	-34.00	-17.13	12.37	21.35	16.76

Source: Compiled by the authors according to the State Statistics Committee of Ukraine (since 2015 without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and part of the temporarily occupied territories in Donetsk and Luhansk regions) [12].

Import growth rates in 2014 and 2015 were negative in all regions and changed to positive since 2016 with few exceptions (in Donetsk region in 2016, in the Northwest in 2018). Attention has to be paid to the fact that the highest growth rates of imports are in export-oriented regions: Northwestern – in 2016, Donetsk and Pridneprovskyi – in 2017. In 2018, the growth rates of imports decreased compared to 2017 and were the highest in the Carpathian region as an import-oriented region, as well as in the Podilsk region as an export-oriented one.

Another indicator for determining trends in the foreign economic activity development in the regional aspect is the indicator of absolute growth. It is calculated by evaluating baseline data for the current and base periods. The values of absolute growth were determined by two methods [13]. According to the first, basic method, the baseline absolute increment for each year (ΔY_b) was calculated by the formula:

$$\Delta Y_b = Y_i - Y_0 , \qquad (1.2)$$

where Y_i – value of the increase in the comparison period,

Y_0 – base period of increment value.

By the second, linear method, the chain absolute increment for each year (ΔYi) was calculated by the formula:

$$\Delta Y_l = Y_i - Y_{i-1} , \qquad (1.3)$$

where Y_{i-1} – value of the increase of the previous period.

According to the calculated data (Table 2), in 2017, none of the regions achieved the level of basic absolute growth in both exports and imports, which were noted in 2013. Changes in the national political and economic course, a sharp fall in the national currency against the

US dollar (almost three times), lost existing markets of the Commonwealth of Independent States, and not fully functioning new European agreements made the year 2015 the most difficult for the economy. All regions deteriorated, including in relation to the last year.

Further ratification of the Free Trade Agreement between Ukraine and the EU in the second half of 2016, as well as the entry of state agrarians into European markets, relative stabilization of the exchange rate, lower inflation and a gradual increase in gross domestic trade, led to a revival of international trade in all regions, but indicators did not reach the levels of 2013. The most stable growth during the 2016-2017 years was noted for the Donetsk and Pridneprovskyi regions. The sharp fluctuations in Capital Region indicators at that time did not have a stable tendency for the imports and exports development. This is due to the fact that many enterprises of Donetsk, Luhansk and Crimea have temporarily moved their production and industrial bases to the Capital Region, transport corridors, places of administration of customs payments had been changed. This is confirmed by the fact that such an increase was one-off, and in 2016 the export and import chain absolute growth in the Capital Region was the most negative in Ukraine, and in 2017 the indicator showed a slight increase.

Table 2

Absolute increase in exports and imports of goods by region in 2014-2017 (%)

Region	2014		2015		2016		2017	
	The basic absolute increase until 2013, ΔYb	Chain absolute gain, ΔYi	The basic absolute increase until 2013, ΔYb	Chain absolute gain, ΔYi	The basic absolute increase until 2013, ΔYb	Chain absolute gain, ΔYi	The basic absolute increase until 2013, ΔYb	Chain absolute gain, ΔYi
Export								
Donetsk	-136.25	-136.25	-160.88	-24.63	-102.19	58.69	-79.31	22,88
Pridneprovskyi	-107.27	-107,27	-125.32	-18.05	-112.57	12.76	-77.00	35,56
Northeastern	-115.85	-115.85	-127.43	-11.58	-111.57	15.86	-75.96	35,61
Central	-111.25	-111.25	-141.81	-30.56	-92.74	49.07	-85.40	7,34
Northwestern	-95.75	-95.75	-112.83	-17.08	-107.91	4.93	-84.68	23,22
Podilsky	-95.17	-95.17	-104.23	-9.07	-96.33	7.90	-70.57	25,76
Black Sea	-123.11	-123.11	-110.27	12.84	-103.80	6.47	-83.39	20,41
Carpathian	-96.33	-96.33	-115.82	-19.49	-85.67	30.15	-79.05	6,62
Capital	-178.48	-178.48	143.00	321.47	-102.06	-245.05	-86.51	15,55
Import								
Donetsk	-146.82	-146.82	-151.55	-4.73	-103.48	48.07	-42.82	60.66
Pridneprovskyi	-112.52	-112.52	-130.66	-18.14	-96.95	33.71	-59.57	37.38
Northeastern	-112.32	-112.32	-129.27	-16.95	-89.37	39.9	-80.1	9.27
Central	-116.46	-116.46	-146.04	-29.58	-57.51	88.53	-65.47	-7.96
Northwestern	-126.01	-126.01	-121.37	4.64	-31.92	89.45	-79.04	-47.12
Podilsky	-118.89	-118.89	-127.2	-8.31	-84.62	42.58	-70.55	14.07
Black Sea	-150	-150	-141.89	8.11	-76.2	65.69	-84.28	-8.08
Carpathian	-111.99	-111.99	-140.99	-29	-82.27	58.72	-71.87	10.40
Capital	-134.0	-134.0	-117.13	16.87	-87.63	29.5	-78.65	8.98

Source: Compiled by the authors according to the State Statistics Committee of Ukraine (since 2015 without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and part of the temporarily occupied territories in Donetsk and Luhansk regions) [12].

In order to objectively assess the state of international trade in the regions, one has to consider its product structure. The Standard International Trade Classification (SITC) of the United Nations Conference on Trade and Development (UNCTAD) was used to analyze the commodity structure [14]. According to the classification 225 categories of goods, according to different categories as for compatibility of different skills, technologies and capital intensity, are divided into several groups:

A – main products of consumption, food;

B – labour-intensive and resource-intensive production;

C – production with a low level of qualification and technological intensity;

D – production with average qualification level and average technological intensity;

E – productions that use highly skilled labour and have a high technological level;

F – unclassified goods.

Consequently, products of categories A and F can be divided into separate groups. The products of crop and livestock production, whose production depends on the geographical location of the regions, natural factors and does not require a high level of skills of workers, are mainly in category A. These are so-called consumption

products that satisfy the individual needs of the population. Category F is a single, low-value item, including single, high-value antiques and artwork. Categories B, C, D, E belong to the other product groups, which are a set of production products and are intended to participate in production processes that are distributed in order of their industrial purpose increase – from simple, low-efficiency and high-cost production to goods in need of high level of technology and skilled workers for their production, so-called high-tech goods. A number of high value-added goods characterize the state of economic development efficiency. The prevalence of such goods in exports indicates the competitiveness of manufacturers in the world market.

The established commodity structure of exports and imports of goods by region shows (Fig. 2) that in the export of most regions, with the exception of Donetsk and Prydniprovsky, commodities of category A are predominant, which are mostly low value-added goods, are seasonal and naturally dependent – climatic factors. The largest share in all regions is made up of products of category B – labour-intensive and resource-intensive, environmentally dangerous industries. The commodity structure of imports of goods is quite the opposite. All regions are actively purchasing finished products of category B and D, among which consumer goods – clothing, electrical goods, surfactants, detergents, various chemical products prevail. The volume of imported ground transport vehicles (category E) – goods that are almost not produced in Ukraine – are significant.

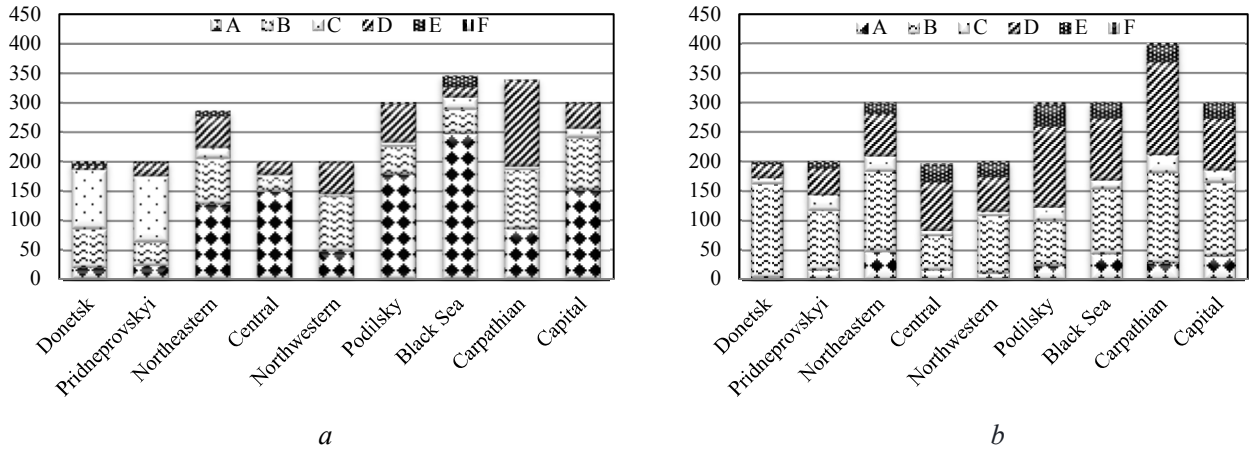

Fig. 2. Commodity structure of exports (a) and imports (b) by region

Source: Compiled by the authors.

The obtained data on the structure of foreign trade show considerable technical backwardness of the production of the regions. High value-added goods form the basis of imports, while high-cost and low-performing goods dominate exports. The prevalence of such goods in exports indicates low economic efficiency and low competitiveness of domestic producers. Structural restructuring of production, improving the quality of commodities produced by regions is the way to a developed economy of the state.

Conclusions. As a result of the research, modern features and tendencies in the sphere of foreign economic activity of economic regions of Ukraine have been scientifically substantiated. Most economic regions are found to be export-oriented – six out of nine. However, the export potential is not fully realized: the economic regions show positive growth in exports only from 2017, while in imports – since 2016. Moreover, the highest growth rates of imports are in export-oriented regions. In 2018, the growth rate of imports decreased. In 2017, none of the regions achieved the baseline absolute increase in both exports and imports noted in 2013. By commodity structure, according to the international classification, in the export of most regions, with the exception of Donetsk and Prydniprovsky, raw materials of category A with small added value prevail, and the greater share in all regions is represented by goods of category B – labour-intensive and resource-intensive, environmentally dangerous industries. The situation in the commodity structure of imports of goods is the opposite. All regions actively import finished goods of category B and D, and volumes of means of land transport – goods of category E are also significant.

In order to restore Ukraine's status as an export-oriented state, it is necessary, above all, to provide the following instruments in the economic development mechanism:

development and further implementation according to clear indicators of Export Development Programs by economic regions;

development of a strategy of competitiveness of Ukraine in the global world, and on the basis of it – spe-

cific programs for economic regions, coordinated with export development programs;

creation of a favorable institutional environment for business development, support of its competitive strategies for the formation of certain competitive advantages for regional business;

use of public-private partnerships for specific programs and business plans aimed at increasing export potential and import substitution.

The use of such tools will eliminate the imbalances in the socio-economic development of regions and the state as a whole.

Literature

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Дятлова В. В., Положенцева К. В. Зовнішньоекономічна діяльність України: регіональні особливості, тенденції та напрями розвитку

У статті науково обґрунтовано сучасні особливості і тенденції у сфері зовнішньоекономічної діяльності економічних регіонів України за основними показниками. Встановлено, що три з дев'яти економічних регіонів є імпортоорієнтованими (Столичний, Карпатський, Північно-Західний), шість – експортоорієнтованими (Донецький, Придніпровський, Північно-Східний, Центральний, Подільський, Причорноморський). Однак експортний потенціал не реалізується в повному обсязі. Економічні регіони демонструють позитивні темпи приросту з 2016 року за імпортом і з 2017 року – за експортом. Найбільші темпи зростання імпорту відзначено в експортоорієнтованих регіонах. На цей час жоден регіон не досяг рівня базисного 2013 року за абсолютним приростом як з експорту, так і імпорту.

Проведено аналіз товарної структури експорту та імпорту за Стандартною міжнародною торговою класифікацією ЮНКТАД, згідно з якою 225 категорій товарів розподіляються на шість груп: A – основні продукти споживання, продукти харчування; B – трудомісткі і ресурсомісткі виробництва; C – виробництва з низьким рівнем кваліфікації і низькою технологічною інтенсивністю; D – виробництва з середнім рівнем кваліфікації і середньою технологічною інтенсивністю; E – виробництва, що використовують висококваліфіковані трудові ресурси та які мають високий технологічний рівень; F – некласифіковані товари. Доведено, що в експорті більшості регіонів, за виключенням Донецького та Придніпровського, переважають сировинні товари категорії A з невеликою доданою вартістю, а також трудомісткі і ресурсомісткі категорії B, а в експорті – готові товари категорій B та D.

Запропоновано інструменти механізму розвитку економіки для відновлення статусу України як експортоорієнтованої держави, такі як розроблення та подальша реалізація за чіткими показниками Програм розвитку експорту за економічними регіонами; розроблення стратегії конкурентоспроможності України в глобальному світі, а на її основі – конкретних програм за економічними регіонами, узгодженими з Програмами розвитку експорту; створення сприятливого інституціонального середовища для розвитку бізнесу, підтримка його конкурентних стратегій для формування певних конкурентних переваг для регіонального підприємництва; використання державно-приватного партнерства за певними програмами та бізнес-планами, націленими на зростання експортного потенціалу та імпортозаміщення. Реалізація інструментів на практиці сприятиме соціально-економічному розвитку регіонів і держави.

Ключові слова: зовнішньоекономічна діяльність; регіональні особливості; тенденції з експорту та імпорту; інструменти механізму розвитку економіки.

Diatlova V., Polozhentseva K. Foreign Economic Activities of Ukraine: Regional Features, Trends and Directions for Development

The article substantiates modern peculiarities and tendencies in the sphere of foreign economic activity of economic regions of Ukraine according to the main indicators. It is established that three out of nine economic regions are import-oriented (Capital, Carpathian, Northwestern), six – are export-oriented (Donetsk, Pridneprovskyi, Northeastern, Central, Podilsky, Black Sea). However, the export potential is not fully realized. Economic regions have shown positive growth rates since 2016 in terms of imports and in 2017 in terms of exports. The highest growth rates of imports were observed in export-oriented regions. At this time, no region has reached the baseline level of 2013 in terms of absolute growth in both exports and imports.

The analysis of the commodity structure of exports and imports according to the Standard International Trade Classification UNCTAD, in compliance to which 225 categories of goods are divided into six groups: A – the main products of consumption, food; B – labour-intensive and resource-intensive production; C – production with low skills and low technology intensity; D – production with average skill level and average technological intensity; E – productions that use highly skilled labour and have a high technological level; F – unclassified goods. It has been proven that in the export of most regions, with the exception of Donetsk and Pridneprovskyi regions, commodities of category A with low added value prevail, as well as labour-intensive and resource-intensive categories of B, and finished goods of categories B and D dominate in import.

The instruments of the mechanism of economic development for restoring the status of Ukraine as an export-oriented state are offered, such as development and further implementation according to clear indicators of Export Development Programs by economic regions; development of a strategy of competitiveness of Ukraine in the global world, and on the basis of it – specific programs for economic regions, coordinated with export development Programs; creation of a favourable institutional environment for business development, support of its competitive strategies for the formation of certain competitive advantages for regional business; use of public-private partnership for specific programs and business plans aimed at increasing export potential and import substitution. The implementation of the instruments in practice will contribute to the socio-economic development of the regions and the state.

Keywords: foreign economic activity; regional peculiarities; trends in export and import; instruments of the mechanism of economic development.

Дятлова В. В., Положенцева Е. В. Внешнеэкономическая деятельность Украины: региональные особенности, тенденции и направления развития

В статье научно обоснованы современные особенности и тенденции в сфере внешнеэкономической деятельности экономических регионов Украины по основным показателям. Установлено, что три из девяти экономических регионов являются импортоориентированными (Столичный, Карпатский, Северо-Западный), шесть – экспортоориентированными (Донецкий, Приднепровский, Северо-Восточный, Центральный, Подольский, Причерноморский). Однако экспортный потенциал не реализуется в полном объеме. Экономические регионы демонстрируют положительные темпы прироста с 2016 года по импорту и с 2017 года – по экспорту. Наибольшие темпы роста импорта отмечены в экспортоориентированных регионах. В настоящее время ни один регион не достиг уровня базисного 2013 года по абсолютному приросту как по экспорту, так и импорту.

Проведен анализ товарной структуры экспорта и импорта по Стандартной международной торговой классификации ЮНКТАД, согласно которой 225 категорий товаров делятся на шесть групп: A – основные продукты потребления, продукты питания; B – трудоемкие и ресурсоемкие производства; C – производства с низким уровнем квалификации и низкой технологической интенсивностью; D – производства со средним уровнем квалификации и средней технологической интенсивностью; E – производства с высококвалифицированными трудовыми ресурсами и высоким технологическим уровнем; F – неклассифицированные товары. Доказано, что в экспорте большинства регионов, за исключением Донецкого и Приднепровского, преобладают сырьевые товары категории A с небольшой добавленной стоимостью, а также трудоемкие и ресурсоемкие категории B, а в экспорте – готовые товары категорий B и D.

Предложены инструменты механизма развития экономики для восстановления статуса Украины как экспортоориентированного государства, такие как разработка и последующая реализация по четким показателям Программ развития экспорта по экономическим регионам; разработка стратегии конкурентоспособности Украины в глобальном мире, а на ее основе – конкретных программ по экономическим регионам, согласованным с Программами развития экспорта; создание благоприятной институциональной среды для развития бизнеса, поддержка его конкурентных стратегий по формированию определенных конкурентных преимуществ для регионального предпринимательства; использования государственно-частного партнерства по определенным программам и бизнес-планами, нацеленными на рост экспортного потенциала и импортозамещение. Реализация инструментов на практике будет способствовать социально-экономическому развитию регионов и государства.

Ключевые слова: внешнеэкономическая деятельность, региональные особенности, тенденции по экспорту и импорту, инструменты механизма развития экономики.

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PROBLEMS AND PROSPECTS OF IMPLEMENTATION THE STRUCTURES OF THE INTELLECTUAL ELECTRICITY NETWORKS IN UKRAINE TO INCREASE THE LEVEL OF ENERGY SECURITY

Formulation of the problem. Functioning of energy enterprises of Ukraine, energy sphere as a whole in the conditions of market economy occurs at a high level of uncertainty and unpredictability.

The prolonged, deep political, economic, and energy crisis in the country has caused many unforeseen dangers and threats to the energy sector of the economy. Its development is also influenced by such factors as the unstable political and social situation in the country, imperfect energy legislation, the criminalization of society, government and business, corruption, fraud and others. All this aggravates the problem of ensuring a high level of energy security [1, p. 223-224]. These factors (factors) encourage the development of methods for improving the efficiency of economic entities in the field of energy, ensuring their stable functioning and harmonious development. One of these directions is the introduction of structures of smart electricity networks.

Analysis of recent research and publications. In recent years, interest in "smart grids" in the energy sector has increased significantly, in particular the number of scientific publications devoted to this. This testifies to their relevance and development. Technological support, prospects of their introduction and development in the energy sector of Ukraine were studied by the following specialists: S. Denysyuk [2], S. Dudnikov [3], S. Dubko [4], O. Kirilenko [2], O. Moroz [4], Popadchenko S.A. [4], Prahovnik A.V. [2, 5], O. Savchenko [4], B. Stogny [1], S. Tulchinskaya [6], M. Cheremisin [4], M. Chernyshov [6] and others.

Also important and equally important are the issues of energy security, which are being actively researched by domestic scientists, such as: O. Dzoba [7, 8], S. Kafka [8], K. Kulakovsky [9], O. Latysheva [10], L. Logachova [11], M. Muzichenko [12], O. Novikova [11], A. Lieutenant [9], L. Simkov [8], R. Opimach [13], A. Stepanova [14] and others.

However, studies have shown that today they are still insufficiently enlightened, analyzed and solved, needing further in-depth study of the problem and prospects of implementing the structures of intelligent power grids in Ukraine in order to increase the level of energy security.

The purpose of the article is to investigate the problems and prospects of the processes of development, implementation of structures of intelligent electricity networks in Ukraine in order to increase the level of energy security.

Presenting main material. At any point in the functioning of an energy enterprise, the energy industry as a whole of any country, there is a potential risk of crisis, even if crisis phenomena are not observed, when they are non-existent and cannot be predicted. This is primarily because the global socio-economic system, including the energy sector, is developing cyclically. The external environment is also developing dynamically, the ratio of managed and unmanaged processes is changing, the needs for energy resources (sources) and interests of society, the needs for these resources of production and other spheres of life and so on are changing. Therefore, the main task to maintain an acceptable level of stability will be in the process of avoiding critical and, even more so, catastrophic risks in order to avoid (prevent) the emergence of a crisis in the energy sector (and as a result, the economy as a whole). Therefore, energy security is a state of the energy sector's potential, which guarantees the highest level of efficient use of energy resources, timely, sufficient level of energy resources for the stable functioning of the country's economic system, its further harmonious development, etc.

The level of energy security will depend on how effectively its government, experts in the field are able to avoid (prevent) possible threats, eliminate the harmful effects of certain negative components of the external / internal environment, etc.

One of the ways to maintain a high level of energy security is to diversify energy resources, to use combined energy supply systems with renewable (renewable) energy sources (RES), taking into account the Smart Grid concept. Significant contribution to the development and design of combined energy supply systems with renewable (renewable) energy sources (RES), taking into account the Smart Grid concept, was made by S. Dudnikov [3, p. 67-69].

According to the research, the existing (existing) power grids in Ukraine are exclusively constructed un-

der the so-called “centralized power supply” scheme. This scheme requires the use of higher voltage, the creation of large-scale electrical networks.

In networks of this type, even small local disruptions can have a significant impact on the entire energy system of our country, even leading to large-scale crashes.

New conditions, factors, catalysts for the development of the energy sector of Ukraine in the context of European integration shape the need for the development, further active introduction of new (newest) technologies, elements, components that will allow to provide: movement of electricity flows, movement (flows) of information from energy companies to consumers and backwards; the process of continuous monitoring (with the possibility of further prompt and timely regulation (if necessary, in case of deviations from the planned indicators (parameters, indicators, etc.) for all elements of the network, from the activity of the country's power plants to the final consumption of electricity by individual devices; integration of the distributed power sources production; energy (including RES) and the means of storage of the generated electricity; heat recovery and the like.

Transformation of energy markets of the world (in particular the EU), crisis in Ukraine (in energy, economy), the latest trends in the EU energy sector, the need to ensure a sufficient level of energy (as a component of economic and national) security, other factors have led to the need for new positioning of economic policy Ukraine in the field of energy (fig. 1).

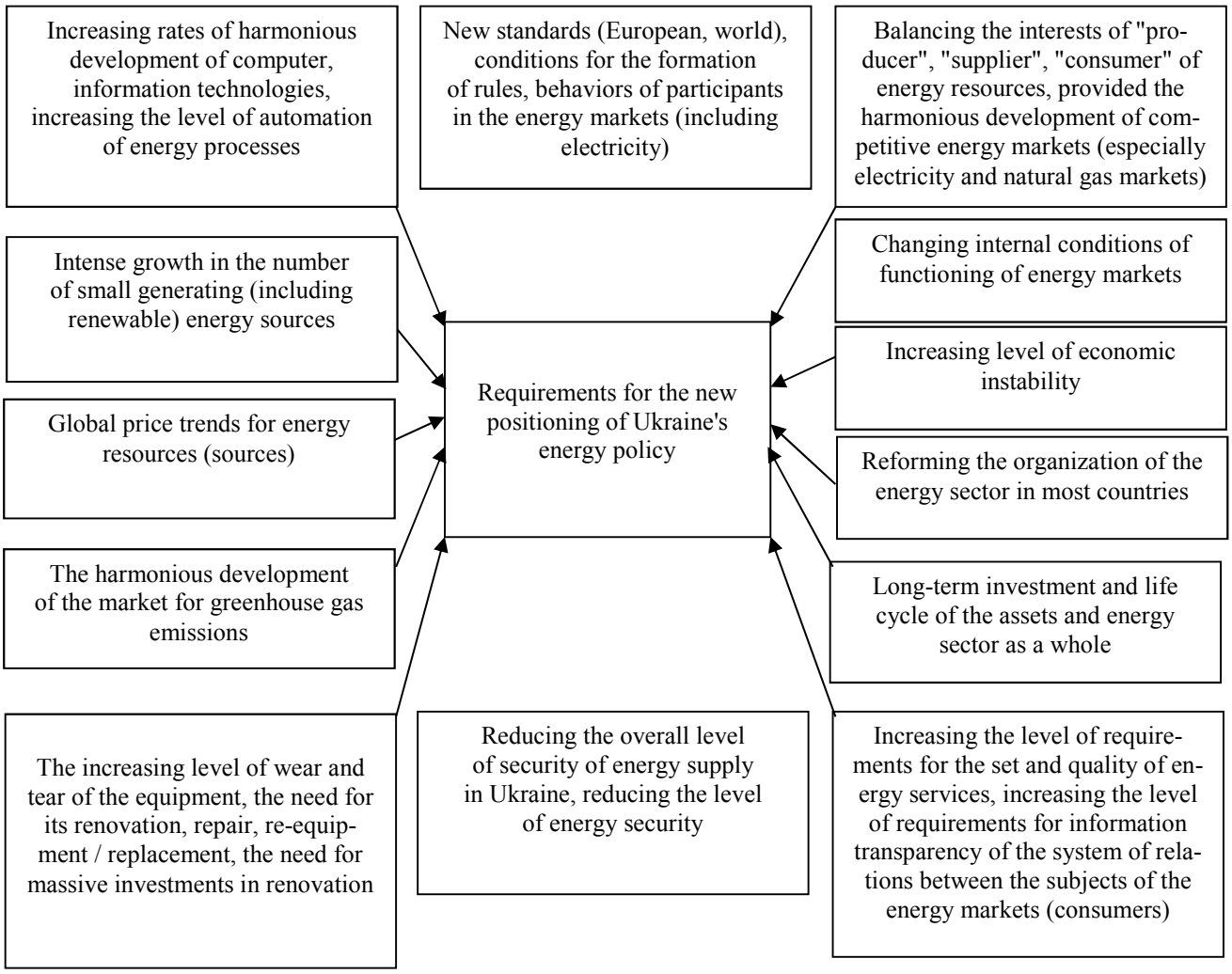

Fig. 1. Scheme of interaction of factors in repositioning of Ukraine's energy policy

Note: Created by the authors.

The research shows that an innovative energy system based on the Smart Grid concept has significant advantages over the current one in Ukraine. The main advantages include the following: cost-effectiveness, efficiency and controllability of the system. The development and implementation of functionality (table 1) will significantly increase the level of power efficiency, and provide the expected benefits for all stakeholders.

Realization of key requirements on the basis of basic approaches can be ensured by the development of traditional in combination with creation of new functional properties of the grid of Ukraine, its key elements.

In the table 1 gives a comparative description of the functional properties of the current (active) energy system of Ukraine and the potential energy system that is created on the basis of the implementation of the Smart Grid concept.

Table 1

Comparative characterization of the functional properties of the Energy system of Ukraine and the Energy system based on the Smart Grid concept

The current energy system of Ukraine	Innovative energy system based on Smart Grid concept
One-way communication between elements or lack thereof	Two-way communication
Centralized Generation – Distributed generation with a complex integration process	Distributed generation
Radial topology prevails	Network topology prevails
Responding to the consequences of an accident	Responding to predicting and preventing (preventing) an accident
Operation of the equipment until complete failure (breakdown)	Continuous monitoring, self-diagnosis, which help to extend the life of the equipment
Manual recovery for errors, crashes, etc.	Automatic Network Recovery (Self-healing Networks)
High level of system crashes	Forecasting the development of system crashes, predicting their occurrence
Manual, fixed network allocation	Adaptive network allocation
Checking the equipment on site	Remote monitoring of equipment
Limited power flow control	General power flow control
End-user pricing information is not available or too late	Consumer price level is displayed in real time

Note: authors based on [15].

The beginning for the development of the concept of "Smart Grid" in industrialized countries was the formation of a clear strategic vision of goals, objectives of electricity development, which would meet the ever-growing demands of society, stakeholders, namely: states, science, manufacturers, economy, entrepreneurship, consumers, etc. (fig. 2).

Therefore, the structure of smart electricity grids in Ukraine is promising for use.

To connect renewable energy sources to the grid of the country under the conditions of the electricity market development, it is necessary to use the appropriate Smart Grid systems for the purpose of automated management of energy flows, timely regime regulation of flows, electricity consumption by system maneuverability and so on. This is also related to the level of development of the country's electric transport (it has been happening rapidly in Ukraine in recent years, starting in 2016) [16].

The main trends in the development of Smart Grid systems are the automated management of large amounts of information; introduction of modern (in particular intelligent transformers); integration of all systems of accumulation (storage) of electric energy in commercial electric grids; software development, Internet networking, etc.; development of "Internet services", subscription systems for electricity; development of intelligent sensors (primarily thermostats), other intelligent systems, etc.

Major European Smart Grid projects include the following: ECOGRID (an initiative-driven multi-technology project to manage consumption with 28,000 residents, 300 large consumers and 56 MW of renewable energy generation, costing € 21 million, completed in 2014); DDRESS (managed distribution network for "active consumer" integration, demonstration, multi-technology project involving 400 consumers. Cost - EUR 16 million, completed in 2012; GRID4EU (research, demonstration, multi-technology project worth EUR 54 million) will be completed in 2018; GREEN eMOTION (a comprehensive project consisting of nine multi-technology projects for the study of the integration of power stations to charge electric vehicles, optimal charging circuits, etc.) worth EUR 24.2 million, completed in 2015, etc. [15].

In our opinion, the most complete, general functional and technological ideology of the concept of "Smart Grid" was reflected by the Institute of Electrical and Electronics Engineers. According to him, "Smart Grid" is the concept of a fully integrated, self-regulating, self-sufficient, self-renewing electricity system, which has a network topology, includes all generating sources, backbone, distribution networks, all types of electricity consumers, managed by a single network in real time [15].

"Smart Grid" systems are required for the process of connecting renewable energy sources to the large grid under conditions of constant development of the

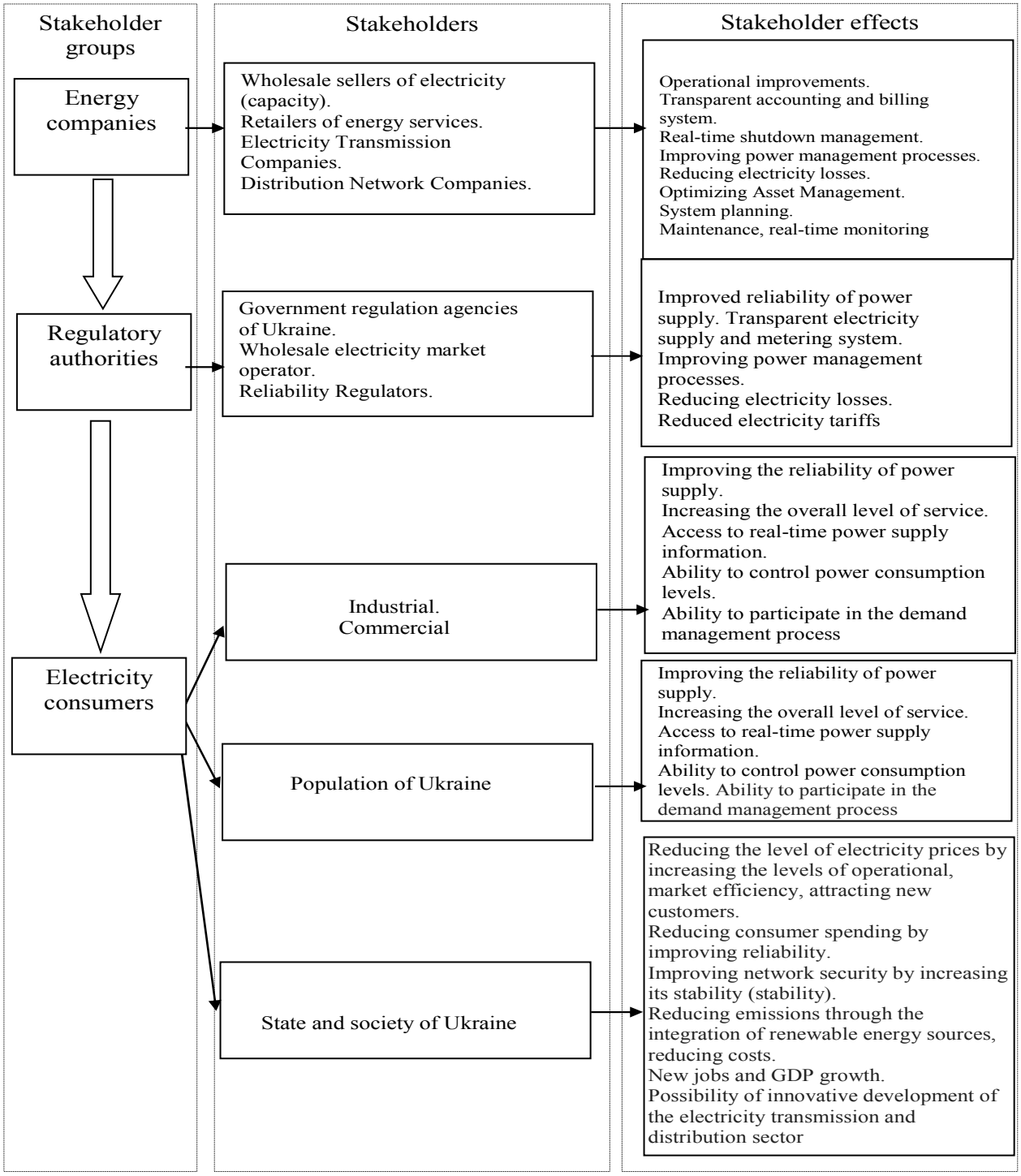

Fig. 2. The system of interconnection of the stakeholders, requirements and effects in the process of implementation of the Smart Grid concept in the energy sector of Ukraine

Note: systematized based on [15].

Ukrainian electricity market. Their need is the automatic control of energy flows, timely regulation of leakage, power consumption by system maneuverability.

Therefore, the movement towards the implementation of Smart Grid systems in Ukraine is closely linked to the objective and rigid need to increase the level of economic efficiency of electricity in the context of increasing energy consumption, limited energy resources. Implementation of the Smart Grid model in Ukrainian energy will not only optimize existing algorithms for generating, transferring energy, expanding potential uses of alternative sources, but will also make significant adjustments to the energy development strategy, energy policy of the country, change their approach to structure development, management systems. activities of energy companies.

Ukraine should actively join the global community in the process of building a green economy and energy, which in the future will not only solve energy and environmental problems, but also help create the conditions for solving social problems, improve the quality and efficiency of public administration, create conditions for long-term economic growth.

As the research showed, the following are the main problems [17, 18, 19]:

– the need to accumulate a significant amount of financial resources globally;

– technological obstacles;

– information asymmetry.

The latter problem is decisive, hindering the harmonious development of the necessary technologies, preventing energy market participants from adequately assessing the existing risks and opportunities of energy projects related to green energy construction.

The low speed of information exchange hindered the achievement of the goals of harmonious development (transformation of the world energy system into "green", combination of interests of all participants of relations in the energy market). It is the blockchain system that can solve this problem. In contrast to its use in the financial sector of the world economy (the ability to accelerate financial transactions), in the energy sector, this system allows direct interaction of suppliers with buyers of energy resources (excluding intermediaries – intermediaries who in Ukraine monopolized the electricity and natural gas market).

The blockchain system in the energy sector will also help to create the conditions for the accumulation, processing, analysis of vast arrays of non-financial information. This information is contained in the agreements and is unified, which makes it important for both energy market participants and representatives of the financial sector of the economy. This applies to the physical characteristics of energy resources: fuel, electricity, etc.

Conclusions and prospects for further research. In summary, it should be noted that the state of development, implementation of "smart" systems "Smart Grid", "Smart Metering", blockchain technology in the Ukrainian electricity industry has absolutely no systematic, and is carried out only in separate areas. This is due to the absence in Ukraine of a single integrated concept of building "smart" grids (neither in the United Energy System of Ukraine nor in other branches of the country's economy). First of all, it concerns the most energy-intensive industries.

The following conclusions, as a result of the study, can be drawn: the priority direction to ensure a high level of energy, economic and national security of Ukraine should be to achieve the appropriate level of stability of energy sector entities, minimize the impact of human factors, such as distraction and implementation, and effective use of structures of intelligent electricity networks. Ukraine should lead by example and follow the experience of the European Union, USA, China, other countries where at the state level are adopted, national concepts of development, financing of "smart" grids in electricity, other branches of economy, which became the basis for shaping national energy policies, are successfully implemented, programs, energy development strategies and more.

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Завербний А. С., Пушак Г. І. Проблеми та перспективи впровадження структур інтелектуальних електроенергетичних мереж в Україні задля підвищення рівня енергетичної безпеки

У статті сформульовано та обґрунтовано перспективи впровадження структур інтелектуальних електроенергетичних мереж в Україні задля підвищення рівня енергетичної безпеки. Виявлено проблеми впровадження цих мереж в Україні для підвищення рівня її енергетичної безпеки. Вивчено сутність енергетичної безпеки країни, фактори які впливають на її рівень. Визначено сутність інноваційної енергетичної системи, що ґрунтується на концепції «Smart Grid». Наведено переваги даної концепції над діючою в Україні на сьогодні. В статті наведено новітнє позиціонування економічної політики України у сфері енергетики. Побудовано систему взаємозв’язку стейкхолдерів, вимог та ефектів в процесі реалізації концепції «Smart Grid» в енергетиці України. Розглянуто етапи її формування. Проаналізовано загальну функціонально-технологічну ідеологію концепцію системи «Smart Grid» та можливості застосування в Україні. Визначено необхідність для енергетичного сектору України переймання досвіду Європейського Союзу, США, Китаю, інших країн, в яких на рівні держави прийняті, успішно реалізуються національні концепції розвитку, фінансування «інтелектуальних» мереж в електроенергетиці, інших галузях економіки, що стали основою для формування національних енергетичних політик, програм, енергетичних стратегій розвитку тощо

Ключові слова: енергетична безпека, інтелектуальні електроенергетичні мережі, електроенергетика.

Zaverbnyj A., Pushak H. Problems and Prospects of Implementation the Structures of the Intellectual Electricity Networks in Ukraine to Increase the Level of Energy Security

The article formulates and substantiates the prospects for introducing the structures of intelligent electric power networks in Ukraine to increase the level of energy security. The problems of introducing these networks in Ukraine to improve its energy security are identified. The essence of the country's energy security, factors affecting its level are studied. The essence of the innovative energy system based on the concept of "Smart Grid" is determined. The advantages of this concept over the current in Ukraine today are given. The article presents the latest positioning of Ukraine’s economic policy in the energy sector. A system of interconnection of stakeholders, requirements and effects in the process of the feasibility of the Smart Grid concept in the energy sector of Ukraine was built. The stages of its formation are considered. The general functional and technological ideology of the concept of the Smart Grid system and the possibility of application in Ukraine are analyzed. The need for the energy sector of Ukraine to borrow the experience of the European Union, the USA, China, and other countries in which they are accepted at the state level is successfully implemented; national concepts of development, financing of “smart” networks in the electric power industry and other sectors of the economy are successfully implemented; they have become the basis for the formation of national energy policies, programs, energy development strategies, etc.

Keywords: energy security, intelligent electric power networks, electric power industry.

Завербный А. С., Пушак Г. И. Проблемы и перспективы внедрения структур интеллектуальных электроэнергетических сетей в Украине для повышения уровня энергетической безопасности

В статье сформулированы и обоснованы перспективы внедрения структур интеллектуальных электроэнергетических сетей в Украине для повышения уровня энергетической безопасности. Выявлены проблемы внедрения этих сетей в Украине для повышения уровня ее энергетической безопасности. Изучены сущность энергетической безопасности страны, факторы, влияющие на ее уровень. Определена сущность инновационной энергетической системы, основанной на концепции «Smart Grid». Приведены преимущества данной концепции над действующей в Украине на сегодня. В статье приведено новейшее позиционирования экономической политики Украины в сфере энергетики. Построена система взаимосвязи стейкхолдеров, требований и эффектов в процессе реализации концепции «Smart Grid» в энергетике Украины. Рассмотрены этапы ее формирования. Проанализированы общая функционально-технологическая идеология концепции системы «Smart Grid» и возможности применения в Украине. Определена необходимость для энергетического сектора Украины заимствования опыта Европейского Союза, США, Китая, других стран, в которых на уровне государства приняты, успешно реализуются национальные концепции развития, финансирования «интеллектуальных» сетей в электроэнергетике, других отраслях экономики, стали основой для формирования национальных энергетических политик, программ, энергетических стратегий развития и т.д.

Ключевые слова: энергетическая безопасность, интеллектуальные электроэнергетические сети, электроэнергетика.

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DEVELOPMENT OF THE HUMAN POTENTIAL OF UKRAINE IN THE CONTEXT OF THE POLISH EXPERIENCE

Formulation of the problem. The dialectics of human development in the minds of modern innovation economics is seen as a more important fact in the realization of the concept of development. Human potential is at the heart of the sustainable development system. The ultimate goal must be human development, and ecological growth is considered only as a means to achieve the goal.

In doing so, it is suggested that the degree of enrichment of the material and spiritual life of the person, enhancement of his quality, is

considered not a quantity of received goods, but a measure of human development. These applications are currently embedded in «new growth theories» (models of growth) and models that determine the impact of human potential on the GDP.

As transformation processes in transition economies are similar in nature, the study, adoption and adaptation of new best practices will be beneficial for Ukraine. Poland is an innovator of conceptual design, implementation of a new innovative management strategy – state anthropopolitics.

Analysis of the latest publications on the subject of the article. The definition of «human potential» is a rather complex economic category and is increasingly used by both domestic and foreign scientists. The category «human capital» is derived from the definitions: «labor», «labor resources», «labor potential», «human potential». Human capital in general should be considered as a set of natural abilities (health, creative inclination, etc.), as well as self-accumulated (acquired through life experience) and developed as a result of investing in education, training and rehabilitation.

The development of human potential in Ukraine, the analysis of its condition and the methods of measurement are relevant directions of scientific research of various scientific schools of Ukraine of socio-economic orientation. This is reflected in the scientific works of S.I. Pirozhkov and A.S. Vlasyuk, E.M. Libanova, E.A. Grishnova, L.A. Zayats, A.M. Kolot, V.V. Onnikienko, L.K. Semiv, T.M. Kiryan, A.I. Kurilo, L.S. Lisogor, V.P. Antonyuk, O.F. Novikova, L.L. Shamileva, N.A. Kizim, L.V. Shaulskaya, A.O. Revenko, L.I. Mikhailova, L.I. Bestelesnaya, V.V. Bliznyuk, Y.N. Pakhomova, I.K. Bondar, B.E. Kvasnyuk, A.M. Porochnik, I.F. Gnibidenko, D.P. Boginia, V. I. Kutsenko and others.

However, some aspects of the theoretical and methodological nature require the expansion of research on human development as a component of sustainable development, which has defined **the purpose of the article.**

Presentation of the main research material. The concept of sustainable development is embedded in the European Union's development model and is designed to meet the challenges of the present without compromising on the potential for future challenges.

It was destroyed by European countries in June 2001. and launched in March 2010, our new European strategy for sustainable development over the next 10 years – «Europe 2020: A Strategy for Reasonable, Sustainable and Comprehensive Growth» (Europe 2020 A strategy for smart, sustainable and inclusive growth) [1] aims to identify and implement measures for which EU countries are able to achieve a truly sustainable quality of life through the creation of sustainable communities capable of managing and effectively harnessing natural resources, enhancing natural resources.

Europe 2020 establishes three key facts that will help achieve the goal:

– smart growth: developing economics based on knowledge and innovation;

– sustainable growth: creating economics based on the sustainable use of resources, ecology and competition;

– full-inclusive growth: promoting population employment, achieving social and territorial development.

Five key indicators are identified by the performance indicators for the achievement of the set goals (Fig. 1).

Regulating the development of human potential in the EU remains the prerogative of national states. A single system for evaluating the implementation of the Strategy is not suitable because of the different levels of development of EU economists.

Each EU country has developed its own national goals for each direction, as well as specific measures at the national level that need to be taken to implement them.

In the current version of the Europe 2020 Strategy, the concept of human potential becomes the key to achieving the EU goal (Table 1).

«Ukraine 2020 Development Strategy» [6] is a modern basis document that defines Ukraine's sustaina-

ble development policy as being ecologically sustainable and developing human potential [7]. Some economists have argued that «the core of the system of sustainable development is the system of unlocking quality resources – the most important of which is human potential».

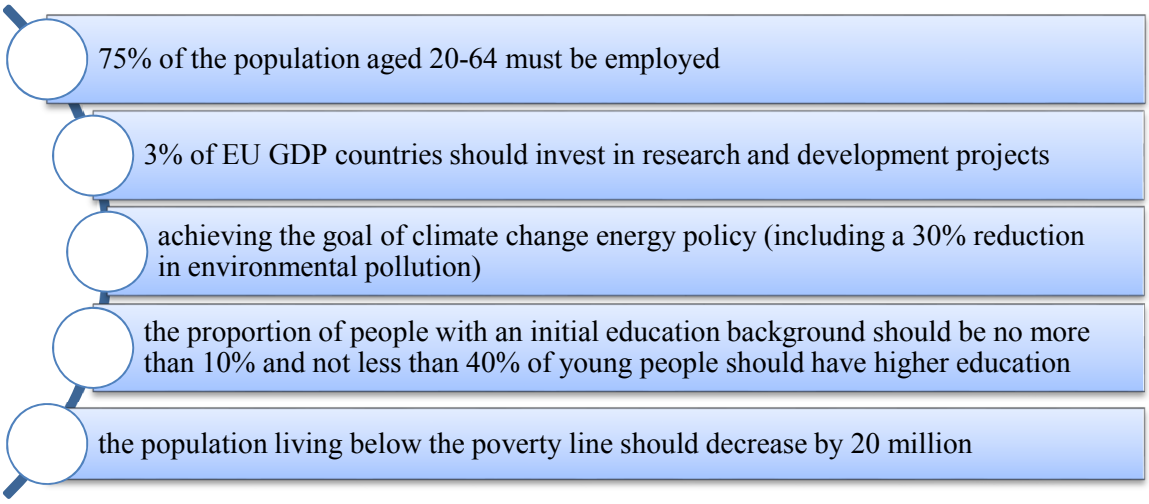

Fig. 1. Indicators of success in meeting Europe 2020 targets

Source: own processing.

Table 1

Europe 2020 Strategy goals related to the quality of human potential

Smart growth	Inclusive growth
Innovation. European Innovative Union Key Initiative to improve framework conditions and access to funding for research, innovation to strengthen innovation chains and accelerate EU investment	*Employment and qualification.* European key initiative «Agenda for job creation and skills» (adopted by the European Commission on 10 June 2016): Modernizing labor markets by increasing labor mobility and developing skills that foster successful employment
Education. European Movement on Youth on the Move to improve the functioning of education systems and enhance the international attractiveness of European higher education	*Combating poverty.* European Key Initiative «European Platform for Poverty Reduction» (approved on 31 March 2011): social and territorial cohesion for people living in poverty or excluded from society, they lived decently and were active members of society

Source: own processing.

One of the more ambitious strategic objectives of the Strategy is «... the introduction of European standards of living in Ukraine and Ukraine's entry into the world's leading positions» [6]. Further revising the Ukraine 2020 Strategy would have a paradigm of human-centrism, which implies a policy and practice, which requires a working person to feel foreign and socially protected.

The development of human resources is considered to be the ultimate result of the effective operation of the Government in the midst of the Government's 2020 priority plan [8]. It is this document that defines the main goals and directions of the Government's activities in 2017-2020, which are its budget planning, annual operational plans of the Government, strategic plans of the ministries and other documents, focusing on the government.

Key metrics for achieving your 2020 goal defined by:

human development index – ranked in the top 50 countries;

mortality rate – 10% reduction;

the poverty rate (by EU method) – 15%.

Unfortunately, experts' disappointing forecasts about Ukraine's place in the Human Development Index were unfortunately justified. According to the human development index in international comparisons, Ukraine is permanently moving from a group of countries with a high level of human development to a group of countries with an average level of its development and vice versa. During 1992–1999 Ukraine has consistently lost its position on the human development index, but the rate of decline of this indicator has been consistently reduced. This is primarily due to the deep transformation processes in all spheres of society, with economic stagnation, which resulted in a more than twofold decrease in GDP per capita, in a sharp and long-term deterioration of living conditions of people, which led to a significant reduction in life expectancy, which led to a decrease in the index human development in Ukraine and the corresponding deterioration in the country's rating

If in 1992 our country was in a fairly high rating position - 45th, then by 1995 it had sharply moved to 102nd, and in 2000 - it was already 78th.

Although Ukraine's position in the country index has been slowly increasing since 2001 (from 80 in 2001 and 78 in 2003 to 77 and 76 in 2005-2006, respectively), in the 2009 report, Ukraine has taken into account the

world financial crisis, which was only 85th place, in 2018 Ukraine went down even lower and took 88th place. Ukraine's western neighbors – Poland, Slovakia and Hungary – ranked 33rd, 38th and 45th, respectively.

On the path of Ukraine to European integration, Poland has been considered as a major partner in recent years, which is explained by the desire of Polish business to expand in the Ukrainian market. Let us evaluate the factors that affect the human development of the two countries.

Therefore, the quality and level of human development are significantly influenced by the incomes of the population, which are definitely determined by the economic dynamics (Fig. 2).

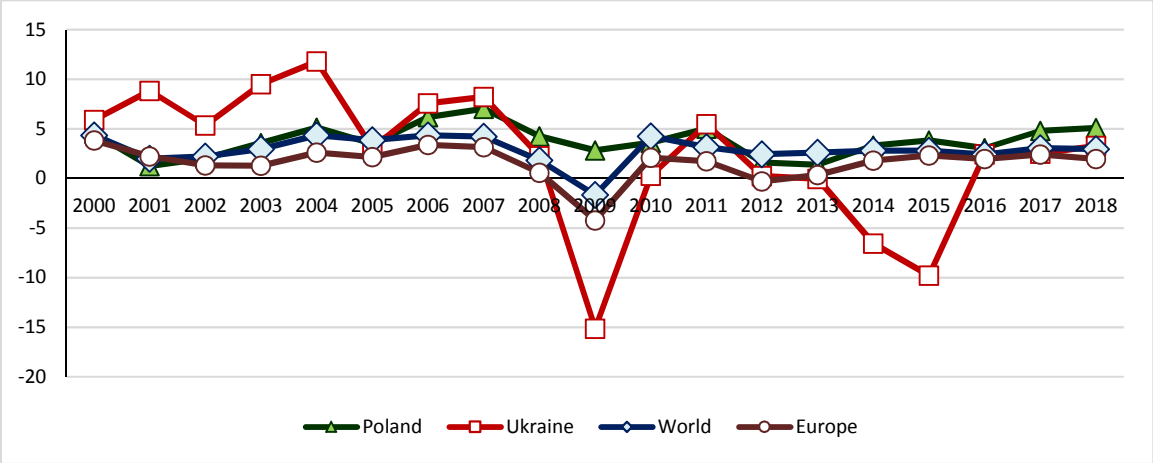

Fig. 2. Growth rates of real GDP of Poland and Ukraine in 2000-2018, % compared to the previous year

Source: own processing.

According to Fig. 2 shows that since the beginning of the millennium Poland's GDP growth rates have been ahead of the GDP growth rates of the European countries, which is largely explained by the crisis in some countries (Italy, Portugal, Greece, etc.) due to the crisis, having a negative impact on European ecological dynamics in general.

The stable economic dynamics of Poland also ensured an accelerated growth of the population (gross domestic product per capita). Somewhat different is the situation in the case of labor productivity analysis – the gross domestic product produced per employee is taken into account, given the purchasing power parity (Fig. 3).

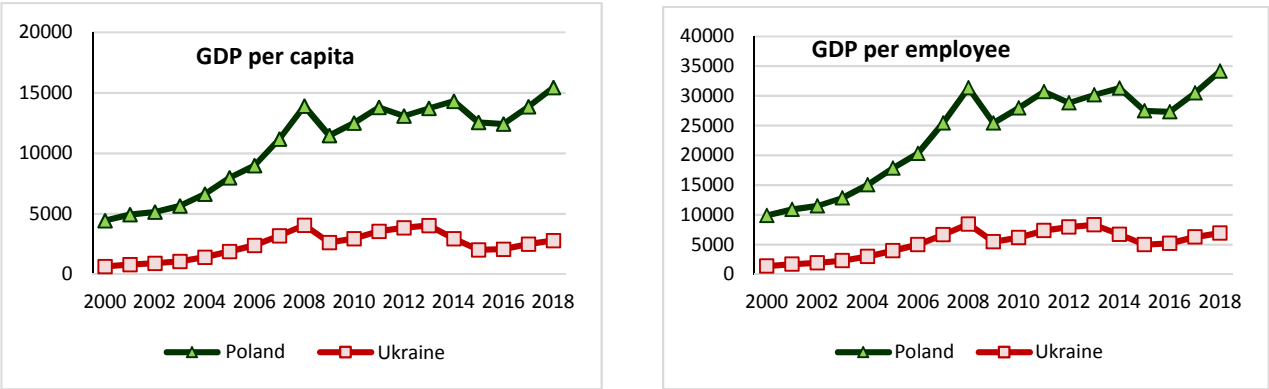

Fig. 3. GDP per capita and per capita employment in Poland and Ukraine in 2000-2018, USD USA

Source: own processing

In the post-crisis period in Poland, the growth of gross domestic product by one occupied somewhat decreased (in particular as a result of migration processes), however, the positive growing dynamics still persist. As far as Ukraine is concerned, the country's overall positive growth trend and periodic GDP per capita and productivity gains may not be sustained and may not be reflected in the country's overall performance.

Gross domestic product, in essence, is the sum of value added created, and is usually the main source of resources for wages and salaries received through wages and salaries. For the estimation of the real well-being of the population (on which the strengthening of the human potential depends) the real level of wages (that is, the nominal volumes weighted on the inflation index in the country) is crucial (Fig. 4).

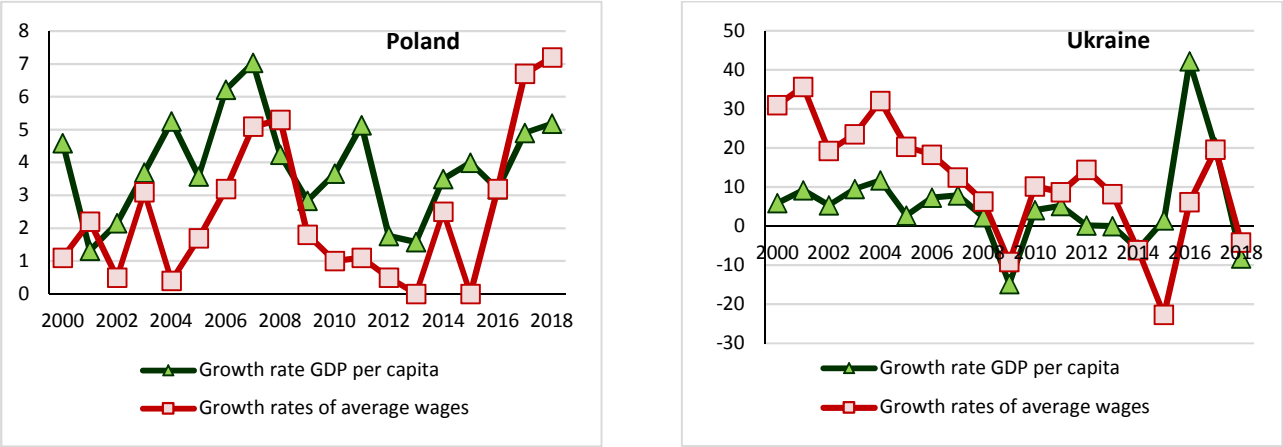

Fig. 4. GDP per capita dynamics and real wages in Poland and Ukraine in 2000-2018, % to previous year

Source: own processing.

In Poland, the growth of real average wage is mainly driven by the growth of GDP per capita, with the dynamics of GDP per capita appearing even ahead. Given the low inflation, on the one hand, it has to do with export policy and strengthening the competitive position of Polish producers in foreign markets, and other services.

The other situation was observed in Ukraine – there are no significant relationships between the two indicators, but there are significant «differences» in the pace of wage growth (at higher sustainability of GDP dynamics). This specificity is periodically criticized by international financial institutions for its alleged inflationary potential. However, this is not borne out by the statistical observations that the effect of wages on inflation is negligible. More than that, excessive wage restraints in 2014-2016 only exacerbated and deepened the crisis crises (sharp deterioration of the real sector indicators) in Ukraine. In addition, the domestic dynamics of both GDP and real wages are excessively volatile, including. as a result, the worsening of the dynamics of the dynamics was accompanied by both inflationary and devaluation shocks.

Certain reserves of human resources improvement, primarily due to wage increases, are linked to the "modernization" of the economic structure: the highest level of wages in the service sector, the average level in the industry, and the lower level in the agricultural sector. At the same time, the attractive economic structure is an important factor in the inflow of human potential (Fig. 5).

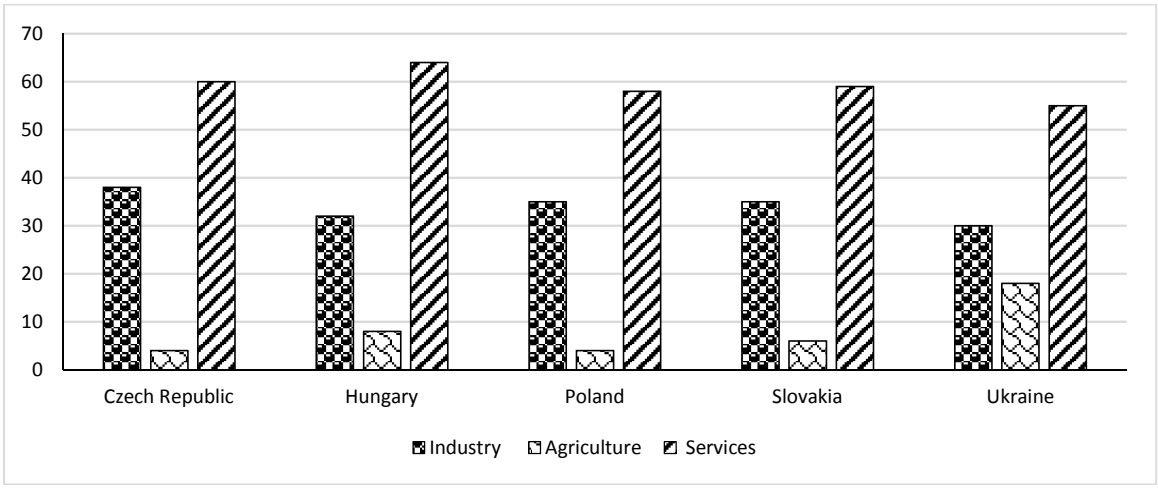

Fig. 5. Sectoral structure of GDP in 2018, %

Source: own processing.

According to Fig. 5 shows that the sectoral structure of the Ukrainian economy is far from the European one, which is a significant factor limiting the growth of human potential for a country surrounded by more economically attractive countries.

It should be emphasized that per capita income indicators and also that wages depend not only on the output of the GDP, but also on the employment of the population on the unemployment, nature and structure of the labor force. However, in recent years the number of

working force in Poland has stabilized by 18.2-18.4 million people in Poland. However, Ukraine continues to lose human resources – in 2012-2018, the number of labor force decreased by 1 million to 20.5 million, including through migration to Poland.

According to the Law of the Ouken, the increase in unemployment (employment reduction) is a significant factor in the deterioration of the ecological dynamics, the decrease of the ecological growth rate. However, it should be acknowledged that this relationship is not significant for Poland and Ukraine, since the real GDP growth rate is «indifferent» to the unemployment rate. A major factor in breaking such links is the high rates of transformation processes, significant structural changes.

An important part of the formation and strengthening of human potential is the employment of labor. It is believed that sustainable economic dynamics provide a proper demand for labor, increase employment (reduce unemployment), and therefore improve wages and gains. At the same time, an effective employment policy adds to the economic policy in general by establishing positive links between good and employment, resulting in better quality human potential.

In Poland, as well as in the EU as a whole, over 80% of the labor force is a wage earner, and to a considerable extent also forms the cost structure for human resources. This is due both to the structure of ecology and to the high level of social support of the population (special protection, proper education, primary health care).

Like Ukraine, which is also characterized by high expenditures on social programs, their share in the GDP structure remains at the level of Poland. However, public expenditures in 2018 amounted to: UAH 177.8 billion for education, social protection – UAH 145.5 billion, pensions – UAH 140.2 billion (approximately 16% of GDP).

Usually, such a level of social spending in Ukraine is extremely difficult to support and, probably, in the coming years it is necessary to bring the needs of the population to the payment of the state.

Another important feature of the country's unemployment pattern is youth unemployment (Table 2).

Table 2

Total unemployment and youth unemployment for 2004-2018

Countries	Total unemployment rate,% of labor force					Youth unemployment,% of labor force aged 15-24 years				
	2004	2008	2012	2016	2018	2004	2008	2012	2016	2018
Czech Republic	8,2	4,4	7,0	4,0	2,2	19,8	9,9	19,5	10,5	6,7
Hungary	5,8	7,8	11,0	5,1	3,7	14,4	19,6	28,2	12,9	10,2
Poland	19,1	7,1	10,1	6,2	3,8	39,8	17,1	26,4	17,6	11,7
Slovakia	18,6	9,5	14,0	9,7	6,5	32,9	19,1	34,0	22,2	14,9
Ukraine	8,6	6,4	7,5	9,2	8,1	15,7	14,0	17,1	22,0	17,9

Source: own processing.

High levels of youth unemployment (potentially a high-productivity labour force) in Poland and Ukraine have at least two immediate consequences: an increase in temporary or short-term employment and emigration flows due to the presence of a close economically stronger neighbour. In Ukraine, the migration flow of domestic workers, especially young people, in Poland, in Poland-in Germany, France, the UK.

Employment depends to a large extent on the supply of labor, its quality, as well as the level of cost recovery of labor. In developed countries, there is generally a pattern: higher education – higher qualifications – higher demand for redundant workers – better career opportunities – higher wages.

In the crisis period (2000-2008), during the expansion of global markets and the global demand for goods and services, Poland significantly improved its employment indicators, significantly reducing the unemployment rate. In the crisis and the first post-crisis years (2009-2012), the slowdown of the European economy has led to a decline in aggregate demand, resulting in an increase in unemployment. In Poland, in recent years, a stable positive dynamics of the economy has been restored, and the tendency to reduce unemployment has recovered.

With regard to Ukraine, the unemployment rate of workers with secondary education is low, and for workers with higher education – the unemployment indicator is the worst (Fig. 6).

The forecasts regarding the demographic component of human development of Ukraine are not comforting either. According to UNDP forecasts, Ukraine's population will decline sharply. Thus, as of February 1, 2019, the total population of the country was 42153.2 thousand people. By 2030, UNDP experts estimate that it will be reduced to 40.5 million people, which is a major feature of the current anthropocrisis.

Compared to other countries of the post-Soviet space, in terms of life expectancy, Ukraine holds the highest position – in 2018, life expectancy in Ukraine is 72.1 years. Among Ukraine's neighbors, Poland ranked 40th in the ranking of the healthiest countries, Belarus ranked 81, Moldova ranked 87, and Russia ranked 95.

In general, UNDP experts have determined that the average in our country is to spend 15 years and the average – 11.3 years.

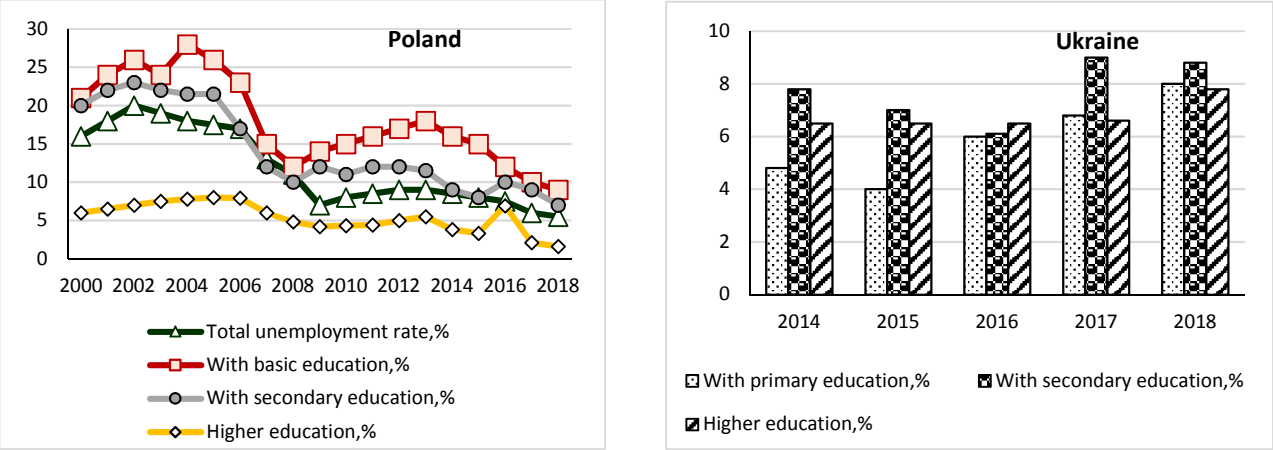

Fig. 6. The dynamics of the unemployed by educational level in Poland and Ukraine in 2000-2018, % compared to the previous year

Source: own processing.

The expansion of external relations and the acceleration of integration processes indicate the formation of «supporting» factors influencing the ecological structure of individual countries, including. in terms of employment or unemployment.

The expansion of globalization, the flow of investment and the re-qualification of labor provide additional opportunities for improving the quality of human potential.

If the displacement of labor due to the expansion of trade takes place, trade itself becomes a factor in improving the labor system and its (labor) productivity, creating new jobs (Fig. 7).

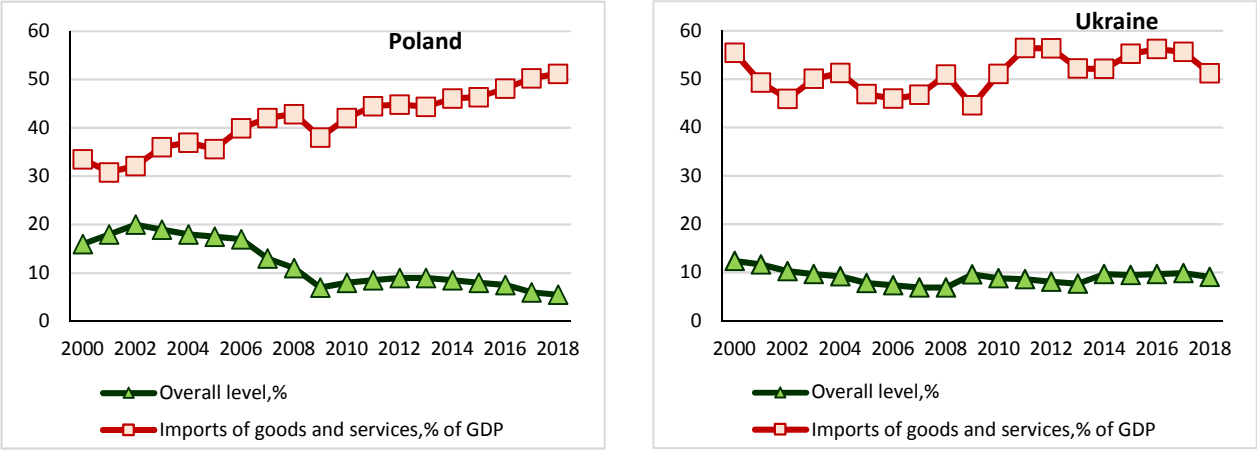

Fig. 7. Dynamics of the unemployed and imports of goods and services in Poland and Ukraine in 2000-2018, %

Source: own processing.

Today, the stable macroeconomic environment, even in the conditions of increasing imports, «relies» on the growth of unemployment. This applies primarily to European countries. Now in Poland there is a steady improvement in the employment situation, namely the reduction of unemployment, which leads to the stimulation of domestic demand, and thus imports, but this improved the welfare of the population and expanded the resource base of the national economy, and did not lead to the displacement of the national labor force in economic activity. In the case of Ukraine, the trends of imports and unemployment have quite a classic relationship, that is, the expansion of imports provokes trends to increase unemployment.

The explanation lies in the fact that in Ukraine (with a low competitive structure of the economy) the traditional is a high propensity to import. This could be offset if the country were sufficiently involved in value chains. However, while such attraction is extremely weak, and therefore the labor market is sensitive to negative changes in the external environment. In fact, we are talking about the fact that Ukrainians, preferring imports, reduce the demand for domestic goods, wash away the components of added value and human potential.

The promotion of quality jobs can only be adequately secured in dynamic balanced economics, in which investment and infrastructure projects are targeted not only at national economics but also at integrating potentials to enhance their potential.

The dynamics of investment in the economy of Poland and Ukraine for the years 200-2018 is shown in Fig. 8.

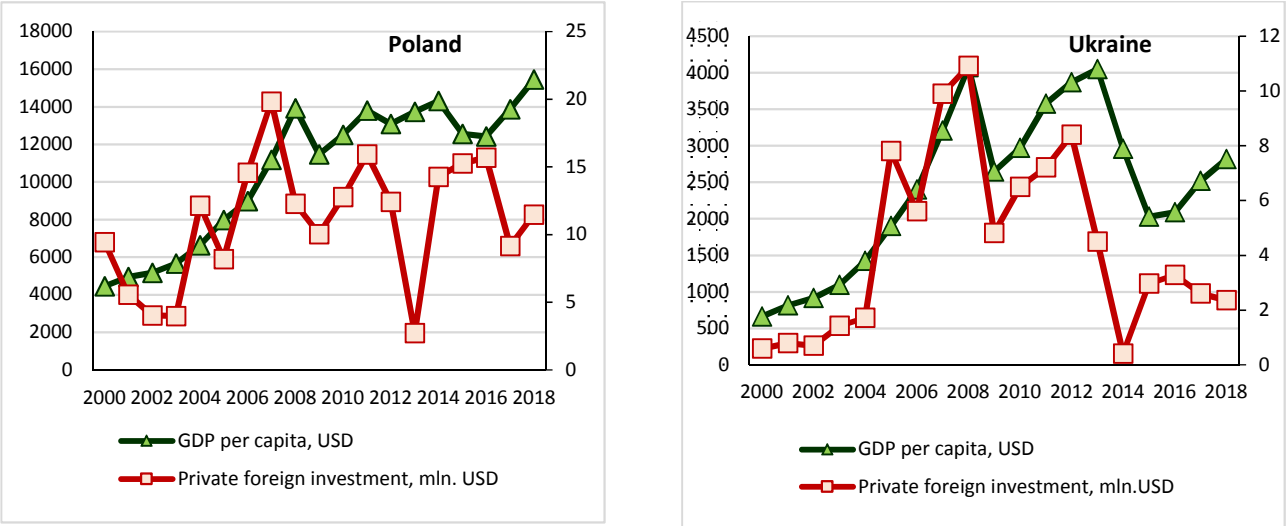

Fig. 8. GDP per capita dynamics and foreign direct investment in Poland and Ukraine in 2000-2018

Source: own processing.

However, the desirable «backlinks» are not always the right thing to do, confirming the appeals to the selected countries. However, in Poland the high growth rate of FDI in the first half of the 2000s, when active integration with the EU took place. It was accompanied by a significant increase in per capita production. However, in recent years, it is preferable to lead the way in stabilizing both GDP and FDI volumes.

Ukraine has a «worsened» scenario of European interconnection - after economically growing and investing in a crisis period, there is a significant reduction in the output of per capita people. In this way, not only has the dynamics of FDI inflows deteriorated in Ukraine, but also the indicators of income have decreased.

Conclusions and perspectives of further research. Brief analysis of macroeconomic components and interrelations with the human potential indicators of Ukraine and Poland, that Ukraine demonstrates a number of statistical indicators and trends inherent in some factors in European countries.

Today, per capita GDP and productivity in Ukraine are significantly lower than those of Poland. Poland is demonstrating a fairly stable positive dynamic. However, in the post-crisis period, Ukraine has significantly worsened its indicators of domestic product production and does not appear to be at the expense of any resources, which may result in a sustained trend of growth.

Ukraine is characterized by high expenditures on social programs. However, while their share in the GDP structure remains at the level of Poland, it is in absolute terms that it complicates the achievement of European standards of quality of life.

Ukraine stands out from the characteristics of unemployment. The peculiarity of Ukraine is that the overall dynamics of unemployment is close to that of Poland. In Ukraine, «deforced» unemployment in the world.

Import growth affects employment opportunities and therefore is a factor of higher unemployment, reduced income, loss of human potential, however in practice many countries there is the opposite – the spread of globalization, the flow of investment and requalification of the labour force to provide additional workers to access new jobs, and increased trade accelerated the formation of new system of labor, creating new jobs, improving productivity.

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Томчук О. Розвиток людського потенціалу України в контексті польського досвіду

У статті досліджено фактори впливу на якість людського потенціалу та виявлені закономірності розвитку потенціалу. У результаті дослідження було виявлено, що концепція сталого розвитку, покладена в основу моделі розвитку і ЄС, і України, наголошує, що економічне зростання та розвиток людського потенціалу є взаємодоповнюваними факторами. Проаналізовано динаміку макроекономічних показників України та Польщі. Встановлено, що якість людського потенціалу знаходиться у взаємозв'язку з: ВВП на душу населення, реальною зарплатою, безробіттям, імпортом товарів та послуг та інвестиціями. За результатами дослідження дійшли до висновків, що проаналізовані чинники в більшості здійснюють негативний вплив на якість людського потенціалу України. Перспективою подальших досліджень є обґрунтування моделювання якості людського потенціалу.

Ключові слова: людський потенціал, сталий розвиток, безробіття, зайнятість, інвестиції.

Tomchuk O. Development of the Human Potential of Ukraine in the Context of the Polish Experience

The factors of influence on quality of human potential are investigated in the article and regularities of potential development are revealed. The study found that the concept of sustainable development is embedded in the model of development of the EU and Ukraine, and emphasizes that ecological growth and development of human potential are complementary factors. The dynamics of macroeconomic indicators of Ukraine and Poland is analyzed. The quality of human potential is found to be correlated with: GDP per capita, real wages, unemployment, imports of goods and services and investments. The results of the study concluded that the analyzed factors in the majority have a negative impact on the quality of human potential of Ukraine. Prospects for further research are justification for modeling the quality of human potential.

Keywords: human potential, sustainable development, unemployment, employment, investment.

Томчук О. Развитие человеческого потенциала Украины в контексте польского опыта

В статье исследованы факторы влияния на качество человеческого потенциала и выявлены закономерности развития потенциала. В результате исследования было выявлено, что концепция устойчивого развития, положенная в основу модели развития ЕС и Украины, отмечает, что экономический рост и развитие человеческого потенциала являются взаимодополняемыми факторами. Проанализирована динамика макроэкономических показателей Украины и Польши. Определено, что качество человеческого потенциала находится во взаимосвязи с: ВВП на душу населения, реальной зарплатой, безработицей, импортом товаров и услуг и инвестициями. По результатам исследования пришли к выводу, что проанализированные факторы в большинстве оказывают негативное влияние на качество человеческого потенциала Украины. Перспективой дальнейших исследований является обоснование моделирования качества человеческого потенциала.

Ключевые слова: человеческий потенциал, устойчивое развитие, безработица, занятость, инвестиции.

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MODELS OF INNOVATION INFRASTRUCTURE IN EUROREGIONS

Formulation of the problem. Currently, for Ukraine, the activation of Euroregional cooperation is an extremely important component of economic development, since many regions of our country directly border the EU, forming Euroregions. Of particular importance is the activation of the innovation component in the economy of the border territories, which is manifested in the development of innovation infrastructure, cooperation of scientific institutions, joint research and projects, participation of the regions of Ukraine in European programs for the development and implementation of innovations.

Innovative development of Euroregions necessitates contacts and interaction between innovative entities through the development of infrastructure support. Understanding the limitations of traditional factors of economic development makes researchers pay more attention to innovative processes in Euroregions that can ensure the formation of long-term competitive advantages of economic growth. Under such conditions, a balanced policy of creating and supporting innovative infrastructure objects can become the most significant lever for activating innovative processes in Ukraine.

Analysis of the last publications. Exploring the organizational and economic aspects of integration of Euroregions, domestic scientists O. Honta (2000) and I. Storonianska (2002) advocate sectoral approaches to Euro-regional cooperation. S. Hlukhova (2010) believes that it is necessary to differentiate the factors of influence on the innovation activity of the region from the position of the origin of the regional aspects of innovative development in the economic system of the regions, the problems of determining and analyzing factors that hinder and promote innovation, a number of scientific papers of the following authors are devoted: P. Musienko, and A. Brazhnykova (2007), L. Semiv (ed.) (2009), V. Gubina (2010), A. Bezuska and V. Lukianykhin (2010), V. Uzunov (2012), E. Zelinskaya (2013), N. Pavlikha and Yu. Marchuk (2013), V. Miklovda (ed.) et al. (2013), S. Kovalenko (2014), H. Zavadskykh (2014), V. Pak (2016), V. Kravtsiv (ed.) (2016). However, the development of certain problematic issues in the Euroregion calls for a deeper study of national business cultures and profiles of managers from different countries, but there are few examples of such development. V. Chebotarev's (2019) works are devoted to this problematics. Exploring the works of foreign scientists such as R. Dragneva and K. Wolczuk (2014) from the UK, M. Krasucka (2010) from Poland and M. Moraliyska (2015) from Bulgaria, it can be argued that on the basis of these works, today there is a formation of a scientific direction that studies the transformation of socio-economic forms and types of entrepreneurship, new ways of managing these processes, and since the methodological basis in this direction is in the process of formation, this causes the need for deep scientific development of this issue.

Research objectives. In the study of innovative models in Euro-regions was reviewed by the infrastructure innovation investment model and clustering of European regions, and on the basis of theoretical and methodological research innovation infrastructure as a factor of innovative development of practical recommendations on the functioning of the innovation infrastructure in the regions. The article defines the concepts of innovative opportunities in Euro-Regional activities. Conclusions are drawn and further development prospects are defined.

Presentation of the main research material. The innovation system of the state can be considered as a set of its regional components – regional innovation systems. Based on this, we can highlight some topical issues.

1. The national innovation system as a whole should have a unified legislative framework and budget policy, and the flexibility of this system is necessary for timely adaptation to dynamic internal and external conditions, which should be provided by decentralizing management, organizing many centers of analysis and response. With regard to Ukraine, taking into account the system of political and administrative structure, levers for managing regional development should be created, and the classification of innovations is proposed to additionally introduce a group of innovations at the regional level (that is, innovations that exist in the country, but are new to the region).

2. Innovation potential is a component of the region's socio-economic potential. The innovation potential of a region can be defined as a set of scientific, technical, material, financial, human, institutional, and other resources of the region that can be used for innovation. It contains elements such as technological progress, institutional forms associated with the mechanisms of scientific and technological development, as well as the in-

novative culture of society, its susceptibility to innovation. For a comprehensive description of the state of innovative development of regions, together with the concept of "innovative potential", we suggest using a broader concept – "innovative opportunities". Under the innovative potential of the region is necessary to understand the totality of the assessment of the needs of the region in innovation upgrading (primarily the production and technological sphere), its innovative potential as well as existing organizational-legal, financial-economic, institutional, technological and other conditions for deployment of innovation.

The state of innovation infrastructure development directly affects the development of Euro-regional cooperation in the innovation sphere. Regional innovation infrastructure is a set of special innovation institutions and networks that are interconnected and ensure the development and support of all stages of the innovation process in the region in order to increase its innovative potential [16].

The main elements of the development of regional innovation infrastructure, which indicate the possibility of forming competitive advantages of the region and contribute to the development of its innovative potential, include: technoparks, scientific parks, innovation and technology centers, business incubators, venture firms, consulting and analytical firms, technopolises, etc.

If we consider these infrastructures, we can say that technoparks can be considered as an innovative and investment model of Euro-regional cooperation. Today, there are 7 technoparks in Ukraine that take part in Euroregional activities. Among them, we can highlight the Yavoriv Technopark – the bug and Carpathian Euroregions, and Eco Ukraine. The cluster approach contributes to the effective implementation of the innovation and investment economic model of Euro-regional cooperation. The experience of foreign countries shows that the emergence of clusters based on regional specialization increases the competitiveness of national economies. Clustering processes should be regulated by the legal documents of the countries participating in cross-border cooperation.

The basis of clustering within Euroregions is the creation of scientific, technical and logistics clusters. A scientific and technical cluster is an organizational structure that includes research institutes, higher education institutions, and enterprises where scientific and technical developments will be implemented. The implementation of the scientific and technical cluster in the Euroregions will solve the issue of updating the material and technical base of scientific institutions and higher education institutions, increase the share of innovative and active enterprises, increase the science intensity of GDP, create new jobs and improve the export potential of States. Scientific and technical clusters can be developed on the basis of existing technoparks.

Here, the Euro-regional cluster uses innovations as a technology to achieve the region's competitive advantages and a strategy for future development. These advantages include the possibility of promoting innovative clustering in Euroregions by financing and participating in cross-border and Euro-regional cooperation programs and projects.

Considering the prerequisites for the formation of Euro-regional cluster formations, it is necessary to analyze the Euroregions as a single territory, which should correspond to the equivalent selection of potential participants in such a cluster.

Thus, in order to determine the areas of functioning of a Euro-regional cluster formation, it is necessary to determine the competitive advantages and specialization of the border territories that are part of the corresponding Euro-regional space

As for Euro-regional business incubators, this activity is currently in its infancy. According to statistics, there are 76 business incubators in Ukraine. In fact, there are no more than 10 effective ones, and there are no Euro-regional ones at all. Today, a business incubator is known in Rezina (Moldova, Euroregion " Dniester») [4].

In Ukraine, business incubators as a direction of small business support are characterized by an evolutionarily determined specificity. There are problems both in the theoretical and methodological support, and in the implementation of the business incubation concept in practice. This is, first of all, the absence of a single conceptual and categorical apparatus, the failure to resolve issues of organizing financing and lending to business incubators, and the involvement of highly qualified personnel.

As part of the development of state policy at the national level, it is also advisable to develop a state program for the sustainable development of Euroregions and determine the main priorities for their development. In particular, the development of the border regions of Ukraine will significantly improve the activities of the Euro-regional formation by increasing the competitiveness of the territories belonging to its composition. It is necessary to consider that we should support the traditional sector and industry inherent in areas that are members of Euroregions, as well as save and that we should use innovative mechanisms to stimulate the development of the Ukrainian territories, which, compared to other members of Euroregional formation may lag in their development [9].

To this end, it is important to encourage cooperation between scientific and technological centers and small and medium-sized enterprises located on the territory of Ukraine and neighboring countries. It is also necessary to make a separate emphasis on increasing the accessibility of certain territories located on the periphery, developing infrastructure facilities, transport and com-

munication, and thus contributing to improving the provision of social services to the population.

Conclusions. Defining the creation of specialized infrastructures as a tool for activating the development of entrepreneurship in various fields of activity, we believe that the main motivation for creating such a structure is to increase the self-sufficiency of the economies of border territories, create the basic foundations for the development of new enterprises, stimulate job creation, develop cross-border infrastructure to support small businesses, and increase the welfare of the population of border territories through the development of entrepreneurship.

Successful implementation of the innovation and investment model of Euroregions depends on sufficient funding for projects and programs. Given the crisis state of the national economy, the financial assistance of the European Union plays a significant role in Euroregional cooperation.

Based on the above, the following development prospects can be identified:

1. One of the ways to improve the socio-economic development of Ukraine is to activate cross-border cooperation by creating Euroregions, which are an organizational form of cooperation between administrative and territorial units of European States, carried out in accordance with bilateral or multilateral agreements on cross – border cooperation.

2. To enhance cross-border cooperation through the implementation euroregionalmap structures it is necessary to use the innovative-investment model of development, which as a result of General economic modernization and growth in the share of high-tech industries will contribute to improving the socio-economic situation of border areas.

3. An important factor of adoption of innovation investment model of Euroregional collaboration is the creation of scientific-technological structures technological Park type, which unite scientific organizations, design bureaus, educational institutions, industrial enterprises and promote the introduction into production of scientific and technical developments.

4. Effective implementation of the innovation and investment model of Euro-regional cooperation involves the use of a cluster approach. The basis of clustering within Euroregions is the creation of scientific, technical and logistics clusters.

5. The implementation of Euro-regional structures in practice depends on the reliability of funding. At present, the most effective source remains the EU's financial assistance.

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Цеханович В. Б. Моделі інноваційної інфраструктури в єврорегіонах

Головною метою статті є визначення моделей інноваційних структур в єврорегіонах. Саме на сучасному етапі розвиток єврорегіонального співробітництва в інноваційній сфері та його ефективність визначається можливостями конкретного регіону з урахуванням вибраної моделі інноваційного розвитку, яка формується під впливом ряду факторів: рівень соціально-економічного розвитку регіону, стан розвитку інноваційної інфраструктури, кадровий потенціал в інноваційній сфері, наявність фінансових ресурсів для виробництва та впровадження інновацій, інноваційна політика місцевих органів влади, ступінь державного впливу на інноваційні процеси у регіоні. Взаємозв'язок цих факторів визначає можливості для розвитку єврорегіонального співробітництва у сфері інновацій, а також шляхи подолання перешкод активізації інноваційної діяльності регіонів України. Також у статті розглядаються інноваційні інфраструктури єврорегіонів, що веде до конкурентних переваг регіону і створення різних бізнес-утворень в єврорегіоні.

Ключові слова: єврорегіональне співробітництво, інновації, бізнес-інкубатори, кластери.

Tsekhanovych V. Models of Innovation Infrastructure in the Euroregions

The main purpose of the article is to define models of innovative structures in Euroregions. It is on the modern stage of Development of Euroregional cooperation in the innovative sphere and its efficiency is determined by the capacities of a particular region based on the selected models of innovation development, which is influenced by a number of factors: the level of socio-economic development of the region, the state of development of innovation infrastructure, personnel potential in the sphere of innovation, the availability of financial resources for production and innovation, innovation policy, local authorities, the degree of state influence on the innovation processes in the region. The interrelation of these factors determines the opportunities for the development of Euro-regional cooperation in the field of innovation, as well as ways to overcome the problems that stand in the way of activating the innovation activity of the regions of Ukraine. The article also discusses innovative infrastructure of Euroregions, which leads to competitive advantages of the region and the creation of various business entities in the Euroregion.

Keyword: Euro-regional cooperation, innovations, business incubators, clusters.

Цеханович В. Б. Модели инновационной инфраструктуры в еврорегионах

Главной целью статьи является определение моделей инновационных структур в еврорегионах. Именно на современном этапе развитие еврорегионального сотрудничества в инновационной сфере и его эффективность определяется возможностями конкретного региона с учетом выбранной модели инновационного развития, которая формируется под влиянием ряда факторов: уровень социально-экономического развития региона, состояние развития инновационной инфраструктуры, кадровый потенциал в инновационной сфере, наличие финансовых ресурсов для производства и внедрения инноваций, инновационная политика местных органов власти, степень государственного влияния на инновационные процессы в регионе. Взаимосвязь этих факторов определяет возможности для развития еврорегионального сотрудничества в сфере инноваций, а также пути преодоления препятствий активизации инновационной деятельности регионов Украины. Также в статье рассматриваются инновационные инфраструктуры еврорегионов, что ведет к конкурентным преимуществам региона и созданию различных бизнес образований в еврорегионе.

Ключевые слова: еврорегиональное сотрудничество, инновации, бизнес-инкубаторы, кластеры.

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BASIC ACCOUNTING ASPECTS OF AMORTIZATION POLITIK AND IT`S ROLE IN THE PROCESS OF PROCEEDING IN THE FIXED ASSETS (PROPERTY, PLANT AND EQUIPMENT) OF FOOD ENTERPRISES

Introduction. Studying the development of trends of the food industry allows us to reveal the current conditions for organizing its investment and innovation activities, the main of which include: incomplete use of existing capacities due to insufficient investment; restrictions on updating the material and technical base of industry enterprises and increasing the competitiveness of their products and services; poor development of investment and innovation infrastructures; imperfection of depreciation and monetary policy. This approach allows us to justify the need to strengthen structural integrity and increase the effectiveness of the relationship between participants in investment and innovation activities of food enterprises.

Methods

Results. The article identifies and discloses the economic nature of accounting depreciation, its impact on income tax expense through the deferred tax mechanism. The factors on which the depreciation amount depends are highlighted. A comparative analysis of the main methods of depreciation are performed.

Prospects. According to the activity or use of the asset, depreciation methods appropriate to that activity are selected. For smooth depreciation, uniform or constant accrual methods are selected. To increase depreciation over time, accruing accruals are used. To reduce depreciation - methods are reduced accruals.

Formulation of the problem. The most serious problem of accounting for depreciation is that there is no generally accepted distribution method. None of the depreciation methods used are better than others in every way. Before applying certain methods of distribution of initial or replacement cost, it is necessary to calculate:

• The value of the asset at the time of acquisition or its replacement cost at a later date;

• Expected service term of assets;

• Residual value at the time of the sale of this asset.

Accurately determining the future value of these quantities is quite problematic. Although they can be calculated on the basis of multiple probabilities, obtaining estimates at the level of an individual asset remains a complex problem.

Research Analysis. A large number of works by foreign and domestic scientists have been devoted to the problems of essence, accounting, and the economic justification of depreciation and such scientists as E. Hendricksen, M. Van Breda, B. Needles, H. Anderson, D. Caldwell, V. Paly, A. Soloviev, N. Vakhrushina, L. Melnikova, N. Plaskova, D. Lazarenko, S. Golov, V. Kostyuchenko and others made a significant contribution to theory and practice.

Formulation of the problem. The aims of this article are:

- Consideration of traditional accounting depreciation as a rational and systematic method of distribution of cost (expenses) for reporting periods.
- To show how the problem of sufficiency of financial resources can be solved, to some extent, using the mechanism of deferred taxes.

- The role of depreciation policy in the application of the investment and innovation program of the enterprise is considered.

Research results. The task that the management of food enterprises faces in the process of organizing its investment and innovation activity is, first of all, to ensure a balance between the goals and the specific investment and innovation program of the enterprise, and ensure their achievement. Investment processes and activities, projects and programs developed by food enterprises should take into account current trends and conditions for organizing its investment and innovation activities, as well as be consistent with the needs of the food industry, the agricultural sector and alternatives for the prospective development of the industry enterprise itself [7-15].

The process of determining the directions of prospective development of the industry establish general directions, the promotion of which ensures the growth and strengthening of the position of food enterprises. From these positions, the investment and innovation activity of food enterprises should be understood as a set of target settings for the detailed development of specific investment and innovation plans, implemented in accordance with applicable law and aimed at a significant update of the basic production assets of the industry enterprises. At the same time, to organize investment and innovation activities and determine alternatives for the prospective development of food enterprises, it is necessary to provide:

– achievement of the maximum possible economic and social effects from the considered events

– for each investment process and event (project), are used methods for evaluating effectiveness, and then choose those that, all other things being equal, provide the subject of investment and innovation with maximum efficiency;

– the achievement of such level of results of the implementation of investment and innovation processes and measures that would allow creating conditions for the further development of food enterprises;

– rational disposal of fixed assets is aimed at their effective depreciation and timely updating;

– minimization of investment risks associated with the implementation of investment processes and activities (projects);

– the conformity of measures carried out in the framework of the investment and innovation activities of food enterprises with legislative and other legal acts of Ukraine.

In order to improve the investment support of food enterprises based on existing alternatives for perspective development, it is necessary to reform the investment and depreciation systems, to develop the principles of self-regulation of the depreciation policies of enterprises.

Well-known main stages of the life cycle of an enterprise activity: establishment; intensive growth; stabilization (maturity); decline (aging).

The authors consider that in the first two stages, when the problem of sufficiency of financial resources is most urgent, it is exactly some "accounting tricks" associated with depreciation policy can to some extent solve it.

Depreciation is an accounting method that allows in a systematic and rational way to distribute expenses or the cost of capital assets (minus liquidation cost) throughout their entire life time [5].

In particular, the Art. 138.3.1. of Tax Code of Ukraine allows an enterprise to use the same methods of depreciation as for financial accounting purposes. Using various methods of depreciation for tax and financial accounting, an enterprise can find such a combination that will lead to the occurrence of deferred tax liabilities (DTL), that is, to reduction of tax payments (preservation of financial resources) for a certain period of time. Deferred tax liability – the amount of income tax that will be paid in the following periods from temporary tax differences liable to taxation (Regulations (Standards) of Accounting 17).

In the opinion of the authors from the position of accounting estimates of fixed assets are of particular interest problems connected with:

• revaluation of fixed assets in accounting without revaluation in tax accounting;

• applying various methods of wear in accounting and tax accounting.

In both cases, the concepts of deferred taxes appear in accounting (Regulations (Standards) of Accounting 17, and in the tax accounting in the second case of difference (Art. 138 of Tax Code of Ukraine). Now we will consider the problems of revaluation on the example. Let's assume that some enterprise in accounting and tax accounting uses the straight-line method of depreciation assessment (Regulations (Standards) of Accounting 7, Art. 138 of Tax Code of Ukraine).

On the balance sheet of this enterprise as of December 31, 2016:

• original cost – 8000000 UAH;

• amount of contribution – 4800000 UAH;

• residual (book) value – 3200000 UAH;

• useful life – 20 years;

• depreciation rate – 1/20 (0,05).

As of December 31, 2016, the company decided to reassess the cost of the construction. Current (market) cost of the construction according to the expert opinion is 4000000 UAH.

Revaluation index according to regulations (Standards) of Accounting 7 – 4000000/3200000 = 1,25. After the revaluation, the accounting and tax data will look like this.

Financial Accounting:

• original cost – 8000000 * 1,25 = 10000000 UAH;

• amount of contribution – 4800000 * 1,25 = 6000000 UAH;

• residual (book) value – 10000000 – 6000000 = 4000000 UAH;

• amount of revaluation – 4000000 – 3200000 = 800000.

Tax accounting:

• original cost – 8000000 UAH;

• amount of contribution – 4800000 UAH;

• residual (book) value – 8000000 – 4800000 = 3200000 UAH.

Let's consider the movement of relevant values in accounting and tax accounting in the following (from the date of revaluation) two years (Table 1).

Table 1

No.		Amount, UAH		
		31.12.2016	31.12.2017	31.12.2018
1	**Tax accounting data**			
1.1	Book value (the tax base) at the beginning of the period	8000000	32000000	2800000
1.2	Amortization charge for the year	4800000	400000	400000
1.3	Book value(the tax base)at the end of the period	3200000	2800000	2400000
2	**Financial accounting data**			
2.1	Initial cost	10000000	10000000	10000000
2.2	Amount of accrued depreciation	6000000	6500000	7000000
2.3	Book value at the end of the period	4000000	3500000	3000000
3	Temporary difference (p. 2.3 – p.1.3)	800000	700000	600000
4	Deferred tax at the beginning of the year	0	144000	126000
5	Deferred tax for the year (p.3*tax rate 18%)	144000	(700000 – 800000)*18% = (18000)	(600000 – 700000)*18% = (18000)
6	Deferred tax at the end of the year (p. 4 + p.5)	144000	144000 – 18000 = 126000	126000 – 18000 = 108000

In financial accounting, procedures that reflect deferred taxes (in the case of example - deferred tax liabilities) in determining the income tax expense associated with the revaluation have the following form:

December 31, 2016 **Debit** Profit tax expense – for the amount determined in the Report about financial results

Credit Current profit tax – for the amount determined in the profit tax declaration **Credit** Deferred tax liability – 144000 UAH

December 31, 2017 **Debit** Deferred tax liability – 18000 UAH

Credit Current profit tax - 18000 UAH

December 31, 2018 **Debit** Deferred tax liability – 18000 UAH

Credit Current profit tax – 18000 UAH.

In all subsequent reporting periods (at the end of the period), similar entries should be made until the deferred tax liability is 0.

Thus, in order to increase the efficiency of the structure of investment resources for the implementation of food enterprises of investment and innovation activity, it is necessary to implement a set of activities aimed at improving tax accounting, investment policy, minimizing the costs of improving the structure of investment resources according to specific criteria. Formed in the Ukrainian economy, including food enterprises, the structure of investment resources is deformed and inefficient. It is characterized by the superiority of its own sources of financing of investments by food enterprises. Depreciation policy, unlike in countries with developed market economies, plays a very minor role in the process of capital investment and timely renewal of fixed assets of Ukrainian food enterprises [2].

In this sense, it is important for a competent accounting and auditing specialist to master new methods of working with business information. In modern economic science, there are not enough qualitative (technical and economic) criteria for the formation of accounting and depreciation policy. Among the quantitative indicators, only money meter is used that characterizes the original (or residual) cost and a periodic indicator characterizing the useful life of the objects. Liquidation cost in many cases is not used or is equal to zero.

Fixed assets, as provided for in the relevant accounting provision, are the material assets that the enterprise contains for the purpose of using them in the process of production or supply of goods, providing services, renting to other persons or for the performance of administrative and socio-cultural functions, the expected useful life (operation) of which is more than one year (or an operational cycle if it is more than a year) [1].

Over the entire period of operation, fixed assets lose their usefulness, which is characterized by a decrease in their economic benefits in the amount of the excess of the residual value of the asset over the amount of the expected compensation.

Therefore, the use of non-current assets in economic activities provides for the determination of the intensity of their operation with a view to their future renewal. But this indicator (intensity of operation), although it characterizes the degree of wear, does not determine the amount of depreciation charges. In addition, not for all economic entities it is possible to determine the exploitationing intensity at all. We consider that the effective use of fixed assets and ensuring their timely renovation should take into account the physical and technical qualities of the object and its exploitative characteristics. This approach will give to an accountant

clear criteria for allocating the initial cost of fixed assets between financial periods and will be the basis for the formation of a depreciation policy depending on the use conditions of use of the facilities.

First of all, a clear definition of the economic nature of the object is important for choosing the method of distributing the value of an object (depreciation method) of fixed assets. The economic grouping of objects by their types almost corresponds to the grouping in terms of accounts.

As it can be seen from the table it is possible only for machines, equipment and vehicles to determine a measure of the intensity of operation of objects.

Table 2

The ability to determine the intensity of operation of fixed assets by their types

Objects	Score	Characteristic	Determination of the intensity of exploitation
Land plots	101	Land plots, including those obtained by state (treasury) and municipal enterprises on a permanent basis	Not depreciated
Land reclamation capital expenditures	102	Capital investments in land improvement (reclamation, drainage, irrigation and other works)	Not depreciated
Buildings, structures and transmission devices	103	Houses, structures, their structural components and transmission devices, as well as residential buildings	Impossible
Machinery and equipment	104	Machinery and equipment for various purposes	Possible
Vehicles	105	Vehicles for various purposes	Possible
Tools, devices, equipment (furniture)	106	Tools, devices, equipment (furniture)	Impossible
Animals	107	Animals	Impossible
Perennial plantings	108	Long-term biological assets, including perennial plantings that are not related to agricultural activities	Impossible
Other main facilities	109	Fixed assets not included in other articles	In most cases possible

The next stage should take into account the location of the object's operation and their impact on production or other operating (commercial, agricultural) activity.

According to the national financial legislation, the depreciation method is chosen by the enterprise independently, taking into account the expected method of obtaining economic benefits from its use and the economic role in the economic environment.

Thus, the type of object, its role and method of use determine the dependence of the depreciation amount on two criteria:

1. Useful time.
2. Intensity of operation.

Financial accounting defines 4 depreciation methods that constitute the amount of wear depending on the useful life (straight-line, reduction of residual value, accelerated reduction of residual value, cumulative). All these methods (temporary) do not take into account the degree of physical wear of objects as a result of their operation in the process of economic activity.

With such a variety of temporary depreciation methods, it seems very strange to have only one (industrial) method that puts the economic wear of the objects directly dependent on the degree of exploitation. From the point of view of cost effectiveness, it is the dependence of the amount of accrued wear on the intensity of exploitation of the objects that seems to be a more rational way of allocating the value of the fixed assets. Then, the amount of economic (accounting) wear will be as close as possible to the actual physical wear of the object. We consider it necessary to investigate the theory of industrial method in more detail, and to enrich the practice of its application.

A form of industrial method of depreciation is the method of calculating depreciation on the basis of margin income.

The essence of this approach is to assess the contribution to the marginal income of a non-current asset(s). The total value of a non-current asset(s) is allocated to the reporting periods in proportion to that contribution.

The calculation of the amount of depreciation is carried out with the help of the ratio of the value of non-current asset(s) to the expected amount of marginal income in a specific reporting period (1):

$$K = \frac{F}{\sum_{t=1}^{n} C_t}, \qquad (1)$$

where K – coefficient of the cost of non-current asset (s) to the amount of expected total marginal income;

F – amortized cost of a non-current asset(s);

C^t – the expected amount of marginal income for the reporting period t during the life of the fixed asset (s).

The amount of annual depreciation (A^t) is determined by the following formula 2:

$$A^t = K \times C^t. \qquad (2)$$

According to the authors, this approach most fully complies with the basic accounting principle – the calculation and accordance of income and expenses.

In accounting, depreciation is the process of allocating the cost of purchased non-current assets for the reporting periods from the use of these non-current assets.

Allocation is the process of dividing a sum into components by relating the latter to the objects of accounting or reporting periods [5].

The most serious problem of accounting of depreciation is that there is no generally accepted distribution method. None of the methods is better than any other.

When using each of the depreciation methods, it is necessary to determine:

- the cost of a non-current asset at the time of its purchase or its
- retrievable amount at a later date;
- life expectancy of non-current asset;
- liquidation cost at the time of dropping out of the non-current asset.

These values represent unspecified future costs. Although they can be calculated on a probabilistic basis, obtaining assessments at the level of an individual asset is a complex problem due to the complex interaction of non-current assets in the process of making profit, as well as the uncertainty of the relationship between expenses and incomes at the level of a separate non-current asset.

In the case of the industrial method, there is a problem of choosing a measure that determines the degree of intensity of exploitation corrects the degree of wear. For example, for a truck, a measure of exploitation is a quantitative indicator that characterizes the distance traveled (mileage). But using such a criterion as a depreciation rate does not take into account the degree of workload and the empty path. And for specialized transport, mileage is generally of minor importance after the number of work performed (manipulations).

Table 3

Use of criteria for determining the intensity of operation

Objects	Functional role	The indicator of the degree of intensity of use	Measurer
Vehicles	Cargotransportation	Number of traveled distance Degree of workload	Absolute (km) Relative (%)
	Passenger transportation	Number of traveled distance Number of passengers carried	Absolute (km) Absolute (units)
	Specialized functions	Number of work performed Number of manipulations Number of traveled distance	Absolute (pcs.) Absolute (units) Absolute (km)
Equipment	Production	The number of manufactured products Working hours Degree of workload	Absolute (units) Absolute (h) Relative (%)
	Implementation of products (cooling)	Working hours Amount of energy consumed	Absolute (h) Absolute (kW)
	Power supply	Amount of energy transmitted Amount of energy consumed	Absolute (kW)

The depreciation amount according to this method is determined by the formula 3:

$$A = V \times C_A \times k, \quad (3)$$

where V – volume of production (work performed, services);

C_A – absolute production rate of depreciation per unit volume;

k – correction coefficient which consider the relative index (%).

That is, the choice of the depreciation method should be based on the dependence of the method of their use on the degree of intensity of operation, taking into account the useful life.

Conclusions. To stimulate an increase in the optimality of the structure of fixed assets, it is necessary to implement the following priority measures at the legislative level:

1. To anticipate the possibility of forming a special reserve for updating fixed assets of food enterprises.

2. To anticipate the possibility of deferred depreciation, when in the case of losses the company may not accrue depreciation of fixed assets, and transfer it to a more favorable period without limitation in terms. The application of the method will help to reduce a number of unprofitable enterprises in the industry and as some of them come out of the crisis - the growth of capital investments to upgrade fixed assets.

3. If an irreversible asset is idle for any reason, depreciation should be accrued during the downtime, even if it does not create income for the enterprise. According to the authors, in this case, it is necessary to divide the depreciation charge into two parts:

– during the operation of the equipment the account of production or overhead costs are debited;

– during downtime its charged to the expenses of the reporting period.

4. To stimulate precisely expanded reproduction, rather then simple replacement due to depreciation, introduce an additional benefit for the growth of capital investments.

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Лазаренко Д. О., Сіренко С. В., Джвігол Х., Джвігол-Барош М. Основні облікові аспекти амортизаційної політики та її роль в процесі відновлення основних засобів харчових підприємств

У статті розглянуто проблемні аспекти, що стосуються суті, обліку, економічного обґрунтування процесу амортизації та амортизаційної політики підприємств харчової галузі. Показано можливе рішення проблеми поліпшення фінансового забезпечення підприємства шляхом використання механізму відстрочених податків. Розкрито та проаналізовано основні критерії визначення інтенсивності експлуатації необоротних активів.

Ключові слова: економічний район, транспортно-логістичний кластер, інституційні умови, чинники, механізм фінансового забезпечення, логістична діяльність, синергетичний ефект.

Lazarenko D., Sirenko S., Dzwigol H., Dzwigol–Barosz M. Basic Accounting Aspects of Amortization Politik and It`s Role in the Process of Proceeding in the Fixed Assets (Property, Plant and Equipment) of Food Enterprises

The article discusses the problematic aspects relating to the nature, accounting, economic justification of the depreciation process and depreciation policy of food industry enterprises. A possible solution to the problem of improving the financial security of the enterprise by using the mechanism of deferred taxes is shown. The main criteria for determining the intensity of operation of non-current assets are disclosed and analyzed.

Keywords: economic region, transport and logistics cluster, institutional conditions, factors, financial support mechanism, logistics, synergistic effect.

Лазаренко Д. А., Сиренко С. В., Джвигол Х., Джвигол-Барош М. Основные учетные аспекты амортизационной политики и ее роль в процессе обновления основных фондов пищевых предприятий

В статье рассмотрены проблемные аспекты, касающиеся сущности, учета, экономического обоснования процесса амортизации и амортизационной политики предприятий пищевой отрасли. Показано возможное решение проблемы улучшения финансового обеспечения предприятия путем использования механизма отсроченных налогов. Раскрыты и проанализированы основные критерии определения интенсивности эксплуатации необотротных активов.

Ключевые слова: экономический район, транспортно-логистический кластер, институциональные условия, факторы, механизм финансового обеспечения, логистическая деятельность, синергетический эффект.

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CONCEPTUAL PROVISIONS OF BUDGET FEDERALISM IN THE UNITARY STATE UKRAINE

Introduction. In the 2015 National Report «Policy of Integration of Ukrainian Society in the Context of Challenges and Threats of Events in the Donbass» (edited by E. M. Libanova) was emphasized the need to «define in the Budget Code of Ukraine the responsibility of budget spending units for late and incomplete financing». The main thing here is to determine the completion of the natural-material and cost cycle of reproduction processes at the regional and local levels [1, 2].

Twelve years ago (in 2008), two books on finance were published by the public organization «Znannya» in Kyiv on the recommendations of the Ministry of Education and Science of Ukraine, which contained two identical sections «Local Finance. Budget Federalism and Financial Equalization».

The first book is a textbook «Finance. Course for financiers» which was prepared by specialists of Kharkiv State University of Food Technology and Trade of the Ministry of Education and Science of Ukraine, edited by Ph.D. in Economics, Professor V.I. Osipov.

The second book is a textbook dedicated to the 40th anniversary of Ternopil National Economic University of the Ministry of Education and Science of Ukraine, edited by Doctor of Economic Sciences, Professor S.I. Yuriy, Doctor of Economic Sciences, Professor V.M. Fedosov.

For ten years monographic studies contributed to the development of the provisions of budget federalism. They were provided by passports of the master's educational program 8.03050801 «Finance and Credit» and the scientific specialty for candidate and doctoral dissertations in the specialty 08.00.08 «Money, Finance and Credit».

So, without disclosing the contents of the same chapters of these books, we state that they coincide with the following author's concise definition of budget federalism in the unitary state. Its essence is to regulate such scales of financial self-sufficiency of regional authorities and local governments on the assessment and forecast calculations of sources and volumes of local finances with the use of budget and fiscal decentralization of revenues, which are determined on the basis of expenditure powers in socio-economic development.

Problem statement. Expenditure powers should correspond to the volumes fiscal revenues. Regional authorities and local governments independently analyze options for their own financial capabilities in the base, reporting and planning periods (at least in three-year terms) without expecting instructions and control figures from national authorities. On the basis of social norms (not lower than the level of minimum social needs and sectoral standards for providing services to the population – educational and medical subventions, funds for social protection and social security) they independently decide on the implementation of Local Target Programs and Action Plans of Regional Strategies.

The introduction of budget federalism is aimed, on the one hand, at meeting the financial needs of each territorial community in accordance with its economic capacity with the mobilization of intraregional reserves, and on the other, – at ensuring social equality in obtaining constitutionally guaranteed public services in each district.

But, unfortunately, the provisions of budget federalism were not realized by the assistants of the people's deputies and heads of the Verkhovna Rada of Ukraine and the Government, specialists of the Ministry of Finance of Ukraine, the Ministry of Economic Development of Ukraine and the Ministry of Education and Science of Ukraine for their practical use.

Nine years ago (in 2011) the State Educational and Scientific Institution «Academy of Financial Management» and the Ukrainian University of Finance and International Trade of the Ministry of Finance of Ukraine published a scientific publication of the team of authors «Scientific and Practical Commentary to the Budget Code of Ukraine» (ed. F.O. Yaroshenko, scientific editor – responsible executor of the project V.F. Stolyarov).

In the Foreword, it was proposed to include in the financial standards of budget security in the planning of local budget expenditures (public administration; education; health care; social protection and social security;

culture and art; physical culture and sports) additionally financial standards for budget provision of guaranteed housing and communal services and mass media (to Chapter 13 «General Provisions», in the article «Financial standards of budget provision»).

In addition, it was recommended to develop in the Foreword the «Basic provisions for the implementation of the responsibility of higher state and local authorities and local governments for underfunding under the budget standards of national and regional human development programs» (to Section V «Control over compliance with budget legislation and liability for violations budget legislation»).

The purpose of the article. These proposals and recommendations should be aimed at establishing financial standards for budgeting of social services from the needs specified by law, and not from the amount of financial resources that the Ministry of Finance of Ukraine together with the Main managers of budget funds for educational and medical subvention, social protection and social provision consider it possible to allocate to meet these needs.

Outline of the main results and their justification. The main scientific and applied result of the Khmelnitsky Regional State Administration Working Group on the implementation of the Forecasting-Programming-Budgeting (FPB) system in the activities of regional state administrations was the pilot project «Mechanism of state regulation of regional human development of the administrative region in the conditions of decentralization», which gave grounds to the head of the Khmelnitsky Regional State Administration Working Group O.O. Korniichuk to address to the Government with proposals to conduct in 2017-2021 a corresponding experiment in the region «State regulation of regional human development at the level of administrative region» (by analogy with conducting from 01.04.2001 to 01.04.2005 state and legal experiment of local government development in the city of Irpin in the villages of Bucha, Vorzel, Gostomel, Kotsyubynske of Kyiv region) [4].

The main purpose of the experiment was to work out and finalize the powers of regional state administrations and the state administrations (functions and structure, rights and responsibilities, competencies in relation to local governments) in the conditions of realization of the Concept of local government reform and territorial organization of government and relevant laws of Ukraine on budget and financial decentralization using social standards (in descriptive and cost form with regulation of their min/max values within the amount of financial resources) and industry standards for the provision of services in the field of sustainable human development of the region as a central link of its sustainable (environmental and social) operation and dynamic development.

Regional state administrations should monitor compliance with the size of the financial standard of budget provision of public services, taking into account the various features of the population of each territory and its moral principles: spirituality and education, historical heritage and ethnic values, customs and traditions, culture and worldview, peaceful mentality and territorial unity.

In case of identified deviations – to have the right to receive additional transfers and subsidies from the State Budget of Ukraine, as well as to use part of the funds from the public-private partnership in the region, sponsorship and donor, international technical and financial assistance, and various grants with participation of the diaspora for achievement of financial standards provision of public services in the administrative and territorial boundaries of the region.

In the conditions of the experiment it was planned to improve methodological support of formula calculations of subventions, subsidies and transfers in region based on the fact that the so-called adjustment coefficients would be determined by the Khmelnitsky Regional State Administration relative to the average values of the relevant indicators of the united territorial communities (UTCs) and districts of the region, and not relative to the average values of the relevant indicators in Ukraine as a whole [4].

One of the main results of the experiment would be to take into account local features in the formation of the Registers of the following indicators of the system of state regulation of regional human development:

– state standards of social services and the procedure for determining the needs of the population of administrative and territorial units and monitoring and evaluation of their quality;

– industry norms and standards of service provision, primarily in the fields of education, health care and social protection of the population;

– social norms for each of the powers delegated by the state to local governments on the basis of the average administrative and territorial unit in descriptive and cost form (min/max), taking into account the amount of own and additional necessary financial resources in the context of decentralization.

The creation of these registers would ensure the development of basic provisions for the implementation of legal responsibility of state and regional authorities and local governments for underfunding the budget provisions of the National Human Development Program and Regional Human Development Programs.

In turn, this would facilitate the transition from an administrative and command mechanism of budget unitarism to the administrative and contractual interaction of public authorities at different levels of government based on the legal determination of independence and depth of compatibility of budget centralism with budget federalism.

The first basic aspect of human development is the «reproduction of the population». Therefore, first of all, socially adequate management of regional human development should be aimed at achieving harmonious symmetry and balance in the hierarchy and dynamic synchronization in the time of territorial and national reproductive processes of human capital.

It is possible and expedient to ensure harmonization of reproductive processes of the population with the use of the proportions of the «Golden Intersection» in the established reference ratios of volumes and dynamics of funds from the state and local budgets (including funds of local governments and the UTCs) for human development.

According to the proportions of the «Golden Intersection», the ratio of funds for human development from the state and local budgets to the amount of funds from the state budget should be equal to the ratio of the state budget funds from the local budgets and make up the golden proportion, which is 1.618.

The proportions of the «Golden Intersection», which are 62% x 38% (where 62% is the main and 38% – the additional value), determine the boundaries of the trajectory of sustainable human development of the adjacent scales of the administrative and territorial structure.

In the hierarchical system of public service management, the upper limit of this trajectory of sustainable human development (the limit of budget federalism) is determined by the ratio of 62% of the local budget to 38% of the state budget funds.

The lower limit of the trajectory of sustainable human development (the limit of budget centralism) is determined by the ratio of 62% of funds from the state budget to 38% of the local budget funds (100% of funds from the state budget is budget unitarism).

The common boundaries of budget centralism and budget federalism, which reflect the level of autonomy and depth of interaction of national and territorial processes of human capital reproduction, thus form a decision-making area in social dialogue of national and regional authorities of adjacent levels of hierarchy government 24% (62% – 38%) of the total amount of budget funds for human development in the region (100% is a consolidated budget as the sum of funds from the state and local budgets).

Due to this approach, the cost options of project decisions of Action Plans for the implementation of the State and Regional Development Strategies, as a form of expression of own and common interests of related scales, should be in the social dialogue of the adjacent levels of public administration to achieve coherence in co-financing of human development processes.

The two-sector model of market economy developed in the early 1990s by the ENDI of the State Plan of Ukraine and provided for use of harmonious proportions of the «Golden Intersection» to determine the ratio of public and private property of a diversified national economy and the splitting of national and local taxes.

The proportions of the «Golden Intersection» should be used to optimize the structure of the consolidated regional budget in determining the amount of budget funds of administrative districts, local governments and the united territorial communities.

The implementation of the ideas and provisions of budget federalism in Ukraine as a unitary state during of the pilot project will contribute the determine scales of financial self-sufficiency of Luhansk and Donetsk regions according to the Minsk Agreements of 2014.

At the initial stage of practical implementation of the idea of budget federalization, it would be appropriate to transfer all administrative districts simultaneously, without establishing a special status for some of them.

At the next stage, it would be expedient to transfer the considered administrative and territorial territories to the conditions of budget federalization, and at the final stage – local governments and the united territorial communities.

Conclusions. The logic of budget federalization is aimed at preserving the territorial integrity of Ukraine as a unitary state with a parliamentary and presidential form of government and administration. The two-tier budget system (state budget – local district budgets, local governments and the united territorial communities) should become the financial basis of the new administrative and territorial structure of Ukraine, which will not lead to a situation when **the leadership (those in power), which are always right, but can't «manage in a new way», and the masses which are always guilty, but don't want to «live the old way».**

The analytical assessment of social standards and regulations, as well as sectoral norms for the provision of social services (primarily in the field of education, medicine and social protection of the population) within administrative districts and regions should be the authority of district and regional state administrations.

The average quantitative values of social norms and industry standards, of course, will differ from the average values of similar indicators for Ukraine as a whole. Therefore, the regulation of their minimum/maximum values should take place within local financial resources.

In this regard, the development of local standards and regulations should be facilitated by the analysis and evaluation of components and the Regional Human Development Index (RHDI) at the region level with the gradual development of a national statistical database for both urban and rural settlements and the united territorial communities. Over time, this will allow us to accumulate a statistical basis for calculating the average values of the components of the RHDI using them as criteria for financial equalization of the components of human development between the subjects of the territories.

In addition, in the future, comparative estimates of the ratios of the RHDI in administrative districts and regions, urban and rural settlements with the average RHDI values in similar territories and for Ukraine can become a criterion for the distribution of budget funds from the State and regional funds for regional development.

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Столяров В. Ф., Шинкарюк О. В., Столярова В. В. Концептуальні положення бюджетного федералізму в унітарній державі Україна

У статті в порядку постановки проблеми визначено вихідні концептуальні положення бюджетного федералізму у взаємодії з бюджетним централізмом.

Розкрито основні ідеї й задуми проведення пілотного проекту «Державне регулювання регіонального людського розвитку в адміністративній області» (на прикладі Хмельниччини).

Розглянуто права та відповідальність (основні повноваження) обласних державних адміністрацій та обласних рад у регулюванні обсягів і структури місцевих бюджетів на фінансування складових Індексу регіонального людського розвитку.

Фінансову самодостатність регіональних та місцевих органів влади, органів місцевого самоврядування та об'єднаних територіальних громад регламентовано видатковими повноваженнями в межах фіскальних надходжень до місцевих бюджетів.

Розглянуто співвідношення бюджетних коштів місцевого і державного рівнів у Зведеному бюджеті України, які будуються на основі гармонійних пропорцій «Золотого перетину».

Прямі бюджетні трансферти пропонується здійснювати за нормативами фінансового забезпечення соціальних стандартів на людський розвиток.

Бюджетний федералізм в унітарній державі полягає в регламентації таких масштабів фінансової самодостатності органів регіональної влади та місцевого самоврядування щодо оцінки та прогнозних розрахунків джерел і обсягів місцевих фінансів на основі бюджетно-фіскальної децентралізації за доходами, які визначено, виходячи з видаткових повноважень у соціально-економічному розвитку.

Ключові слова: бюджетний федералізм, бюджетний централізм, бюджетний унітаризм, фінансова самодостатність, бюджетно-фіскальна децентралізація, джерела місцевих фінансів, видаткові повноваження.

Stolyarov V., Shinkaryuk O., Stolyarova V. Conceptual Provisions of Budget Federalism in the Unitary State Ukraine

The article defines the initial conceptual provisions of budget federalism in interaction with budgetary centralism in the order of the problem statement.

The main ideas and plans of pilot project «State regulation of regional human development in the administrative region» (on the example of Khmelnitsky region) are revealed.

The rights and responsibilities (main powers) of the regional state administrations and the regional councils in regulating the volume and structure of local budgets for financing the components of the Regional Human Development Index are considered.

The financial self-sufficiency of regional and local authorities, local governments and united territorial com-

munities is regulated by expenditure powers within the limits of fiscal revenues to local budgets.

The ratios of budget funds of local and state levels in the Consolidated Budget of Ukraine, which are built on the basis of harmonious proportions of the «Golden Intersection», are considered.

It is proposed that direct budget transfers should be carried out in accordance with the norms of financial provision of social standards for human development. Budgetary federalism in a unitary state is to regulate such scales of the financial self-sufficiency of regional authorities and local governments to assess and forecast the sources and volumes of local finances on the basis of budget and fiscal decentralization of revenues, which are determined based on expenditure powers in socio-economic development.

Keywords: budget federalism, budget centralism, budget unitarism, financial self-sufficiency, budget and fiscal decentralization, sources of local finances, expenditure powers.

Столяров В. Ф., Шинкарюк А. В., Столярова В. В. Концептуальные положения бюджетного федерализма в унитарном государстве Украина

В статье в порядке постановки проблемы определены исходные концептуальные положения бюджетного федерализма во взаимодействии с бюджетным централизмом.

Раскрыты основные идеи и замыслы проведения пилотного проекта «Государственное регулирование регионального человеческого развития в административной области» (в примере Хмельницкой).

Рассмотрены права и ответственность (основные полномочия) областных государственных администраций и областных советов в регулировании объемов и структуры местных бюджетов на финансирование составляющих Индекса регионального человеческого развития.

Финансовая самодостаточность региональных и местных органов власти, органов местного самоуправления и объединенных территориальных общин регламентирована расходными полномочиями в пределах фискальных поступлений в местные бюджеты.

Рассмотрены соотношения бюджетных средств местного и государственного уровней в сводном бюджете Украины, которые строятся на основе гармоничных пропорций «Золотого сечения».

Прямые бюджетные трансферты предлагается осуществлять по нормативам финансового обеспечения социальных стандартов на развитие общества.

Бюджетный федерализм в унитарном государстве заключается в регламентации таких масштабов финансовой самодостаточности органов региональной власти и местного самоуправления по оценке и прогнозным расчетам источников и объемов местных финансов на основе бюджетно-фискальной децентрализации по доходам, которые определены, исходя из расходных полномочий в социально-экономическом развитии.

Ключевые слова: бюджетный федерализм, бюджетный централизм, бюджетный унитаризм, финансовая самодостаточность, бюджетно-фискальная децентрализация, источники местных финансов, расходные полномочия.

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USING ENVIRONMENTAL MARKETING TOOLS IN THE IMPLEMENTATION OF THE CONCEPT OF SUSTAINABLE DEVELOPMENT OF THE REGION

Formulation of the problem. Among the directions of implementation of the strategy of sustainable development of the regions the special place belongs to the concept of eco-marketing. However, the current global and domestic experience of introducing elements of environmental marketing into the processes of managing the socio-economic development of regions is not systematic, since in most studies the focus of environmental marketing focuses on the promotion and promotion of products with environmental characteristics.

However, the concept of eco-marketing is much broader and, on the one hand, encompasses activities for the formation of consumers' environmental needs, production and promotion of eco-products, and on the other – a special case of regional non-commercial marketing, the purpose of which is to create a system of environmental management, environmental protection environment and environmental safety systems [1].

Analysis of recent research and publications. The current state of scientific development of environmental marketing topics does not meet the practical needs of the region in the restoration of ecological systems and the transition to sustainable development. The general theory of marketing, developed in the writings of foreign scientists (G. Armstrong, F. Kotler [1] and others), was created on the experience of countries with developed market economies and not adapted to domestic conditions. Research by domestic authors on environmental marketing is largely an analysis and synthesis of foreign experience, and mainly on the marketing of natural resources. Some studies that are directly or indirectly related to marketing (S. Ilyashenko, O. Prokopenko [2], V. Sabadash [3], M. Malchyk, O. Martynyuk [9] etc.), focused on the analysis of marketing of environmental products, and only approach to environmental issues, remaining within the scope of consideration of the process of formation of environmental needs.

The purpose of the article is to identify possible directions for the development of the region based on the production of environmental goods through the use of environmental marketing tools in implementing the concept of sustainable development of the region.

Outline of the main research material. Among a number of marketing concepts (improvement of production, product concept, concept of intensification of commercial efforts, traditional concept of marketing, concept of social and ethical marketing), the latter, which corresponds to the principles of sustainable development and allows to harmonize the interests of producers (profit), consumers and society at large (sustainable environmental, socio-economic development). The concept of eco-marketing has emerged in its focus, which is to focus production and marketing on meeting eco-oriented needs and demands of consumers, creating and stimulating demand for eco-friendly goods (products or services) – cost effective and environmentally safe in production, consumption and utilization. After all, for the formation of voluntary environmental initiatives of the region, enterprises and organizations, the development of the concept of environmentally friendly production, consumption of products and waste management, it is necessary to modify the marketing complex and its tools, taking into account the environmental factor.

The heterogeneity of scientific approaches to the essence of environmental marketing is due to the different attitude of specialists and scientists to this problem. Some define marketing as management, others as the concept, art and philosophy of business or as the market orientation of a company. This diversity of views provides a wide choice of definition for both marketing and environmental marketing. And O.V. Sadchenko, and S.K. Kharichkov views environmental marketing through "the prism of a defined system of concepts, each of which focuses on one of the key factors of environmental marketing". The authors highlight five concepts of environmental marketing [4, p. 56]:

– marketing of goods and services, taking into account environmental standards and restrictions as the most important factor of the environment;

– marketing of environmental goods and services – a specific type of marketing caused by the emergence of environmental needs of the population due to the deterioration of the quality of life and increase the environmental awareness of society;

– marketing of natural resources and resources (marketing of natural resources) – corporate type of environmental marketing, subject to local authorities and national governments – legal managers of natural resources located in the territories of regions and states;

– non-commercial type of environmental marketing aimed at preserving the human habitat and gene pool of the biosphere, as well as taking appropriate measures to reproduce disturbed ecosystems and individual components of the natural environment;

– marketing environmental knowledge and technology – a kind of marketing ideas.

In our opinion, the most successful is the definition, which is based on the integration of marketing approach and environmental requirements of the region, consumers, public, state and international organizations, enterprises. From this point of view, eco-marketing is a management function that organizes and directs the activities of public organizations, state institutions, enterprises, related to the assessment and transformation of consumer requests into environmentally-oriented demand for goods and services that contribute to maintaining quality and quantity. basic ecosystems that satisfy the needs of both individuals and organizations or society at large. In the system of managing the balanced development of the region, a prerequisite is the consideration of the territorial factor in the implementation of the tasks, functions and principles of environmental marketing. On the one hand, the territory from the simple place of economic events becomes the seller of goods and services, that is, an equal participant in the market, and on the other hand, the region (part of the territory) can be sold as an environmental commodity, which has its value and environmental value. The region is regarded as a coherent system and its advertising is exploited by the environmental benefits of the area, such as environmentally friendly sources of drinking water, no air pollution, compliance with environmental standards, etc.

In this case, the environmental marketing of the regions is aimed at attracting investments, development and implementation of environmentally sound programs, projects, regional schemes to prevent the consequences of likely environmental hazards [5, p. 121]. Moreover, the process of evolution of environmental marketing in the region is inextricably linked with the formation of environmentally conscious needs in the market (Figure).

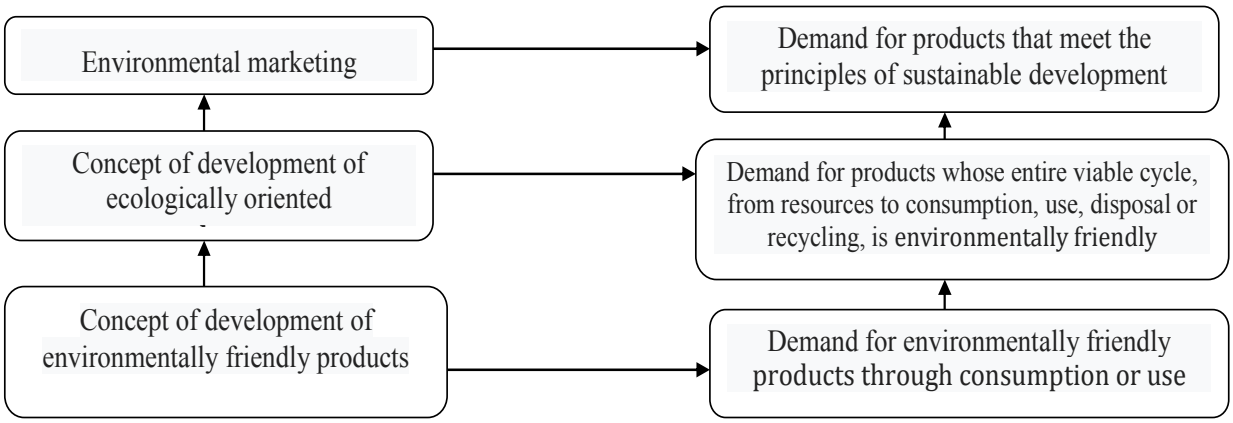

Figure. Developing an environmental marketing concept for the region
(based on source [5])

In the existing ecological, socio-economic conditions, the main tasks of environmental marketing of the region include the tasks of formation and development of the market of ecological goods in order to resolve the contradictions between economic development and the need to preserve and further improve the quality of the environment. In addition, environmental marketing tasks include: the formation of environmentally conscious needs in the market; creation of conditions for preservation of environment; adaptation of production to market conditions; development of competitive, environmentally friendly products; intensification of sales of environmentally friendly products; making extra profit through greening production. Enterprises seeking to be competitive and take advantage of environmental marketing have already realized the urgent need for certification through the ISO 14000 series "Environmental Quality Management".

This standard is the most influential standard in the world. Its implementation is an important step towards greening business. The "continuous improvement" concept described in ISO 14001 promotes improvement at all stages of the product or service life cycle. In June 1997, Ukraine approved international environmental management standards (EMS as State Standards of Ukraine (DSTU)). The use of them as voluntary for organizations and enterprises, regardless of their type of activity and form of ownership, was introduced since 1.01.1998. towards customers. The company's products should be designed to ensure environmental safety and sustainable development. It should minimize the use of non-renewable resources and be able to recycle [6].

The product environmental tool includes the entire environmental product life cycle, which includes, in addition to production-related steps, all the previous and subsequent stages of the product life:

– market research – first of all – the study of consumer needs and demand for environmental products, taking into account the dynamics of demand, its forecast size, activity in the market competitors, the assessment of existing competitors, consumer behavior, their preferences, attitude to environmental products;

– product design and development – it is at this stage that the environmental characteristics of the products are laid, the environmental impact of the products is assessed throughout the life cycle. At this stage, quality indicators of production are laid. Higher quality goods last longer, refuse to work less frequently, are easier to repair and typically use fewer resources when operating. It is important to emphasize that any environmental properties do not impair the quality and efficiency of the product.

If this does not happen, the consumer must be clearly explained. In terms of quality, products may differ as follows [6]:

1) high quality of usefulness of the products, which is determined by its acceptability for consumption, consumer value, durability, ability to service, appearance and others;

2) high ecological quality of products, which is determined by the production of natural materials, the absence of environmentally harmful substances, and when used, consumed or operated by the absence of residual materials that are harmful to human health and negative impact on the environment;

3) high ecological quality of production, which is determined by the level of minimization of the use of materials and energy, replacement of scarce raw materials with raw materials that are in sufficient quantity, replacement of energy sources, reduction of production negative impact on the environment.

By the way, like the traditional ones, the measures of the environmental marketing complex are formed on the basis of situational analysis of market opportunities and threats, as well as the strengths and weaknesses of the enterprise. It is necessary to constantly analyze the internal strengths and weaknesses of the region in terms of environmental marketing: participation and assessment of existing capabilities of enterprises (organizations) in solving regional environmental and economic problems; the level of environmental friendliness of raw materials used in the production of goods by the enterprises of the region; the level of ecodestructive environmental impact of the enterprises of the region (production process, waste, etc.); targeted management installations to address environmental issues; the image of the businesses in the region in terms of consumers and the general public, etc.

The 1994 European Commission report "Economic Growth and the Environment – Some Recommendations for Economic Policy" stated: "In our economy, decisions are made on the basis of price signals. Because consumers make purchasing decisions in line with price changes, and companies determine product design, technological development and production process to a large extent influenced by market prices, it is important that these prices correctly reflect the full costs and benefits for individuals and society…" [7, p. 26].

Considering the environment as a free asset is one of the causes of environmental problems. At the same time, pricing is one of the most effective tools of regulation of environmental safety, a tool that influences consumer behavior and provides a strong incentive for innovation by private enterprises. In some countries of the world (EU countries, Russia) prices for organic goods are high enough and their purchase is not available to most consumers.

In other countries (USA, Canada) production and consumption of environmental goods is more widespread. In addition, in these countries, green production is supported by governments. For the most part, nowadays, most environmental goods are more expensive than conventional goods [8]. Almost everywhere, pricing mechanisms do not reflect environmental costs, so people begin to neglect the environment.

But if environmental and cost-related environmental costs, which include economic losses that occur throughout the product life cycle, are taken into account along with fixed and variable production costs, prices of non-environmental or less environmental goods will become higher. Today, there is every reason to believe that this will soon be the case: if environmental costs were fully taken into account in market pricing, then people were more concerned with the environment. However, on the other hand, it is not easy to get people to pay for what they are used to using for free, especially at low incomes.

However, pricing is one of the most effective tools for eco-efficiency. The price reflects the qualitative composition of the product offer taking into account the environmental components, the level of demand taking into account the environmental disadvantages, needs and opportunities, the state of implementation (exchange) and consumption.

One of the main questions the company has to answer is whether its pricing policy makes it an environmentally friendly choice for its customers. The substantiation, calculation and pricing of environmental products offered by the company include the appropriate procedure and steps (Table 1).

In the classic version, in order to attract consumer interest in products with improved environmental performance and a gradual consolidation in the new market, it is advisable to set reduced prices (or penetration prices) compared to those of competitors or to their own

prices, which sell the product in already developed markets. After generating demand for eco-friendly products, developing a certain market share and forming a steady clientele, businesses are trying to maximize profits by gradually raising commodity prices to the level of other suppliers' prices.

Table 1

The mechanism for calculating the price of environmental goods
(developed by the author based on source [10])

Stages of analysis	Contents of the stage
Goal setting and goals	Maximize profit. In Generating demand for environmentally friendly products and gaining the appropriate share to hold market share
Demand determination	Upper price limit
Calculation of production costs	Lower price limit
Analysis of competitors' prices and goods	Prices and products of competitors
Choosing a pricing strategy. Choosing a pricing method	Based on current prices at a given cost. Average cost + profit. Break-even at target profit. The current price. Price based on operating effect. Price based on market demand. Based on the tangible value of the goods and others
Setting the final price option	The initial bid price
Setting the final price	Final sale price with discounts or surcharges
Adjusting the price of the goods	Adjustment of the price of a product depending on the stage of its life cycle, degree of competitiveness, environmental safety and useful properties

The market is gradually saturated and the main goal of the companies is to retain market share. To this end, firms are taking all possible measures to prevent a decline in sales and aggravation of competition, do not allow excessive overestimation or undervaluation of prices for their products [10]. From the point of view of a completely rational approach to the selection of eco-friendly products, consumers compare the benefit-to-cost ratio of the environmental components to the costs of purchasing and using them and favor the products with maximum performance. This comparison can only be made with other products on the market.

Often, even environmental concerns, consumers are reluctant to pay an environmental cost premium. Demand is rising as the price goes up, but the 2% price margin is below the consumer's awareness, so it is recommended to be bold. Consumers are not indifferent to the environmental factors of commodities willing to pay a higher price for them. The prerequisite of the consumer's desire to pay a price premium for environmental friendliness is to be informed about the environmental friendliness of the goods (first of all, through their marking), without which he will not be able to distinguish them from non-environmental counterparts, and therefore he will not have to pay extra [11].

The environmental marketing communication system is no different from the traditional marketing communication system; by its nature it is always in sight and encompasses a system of information events, persuasion and reminder measures, stimulation, creation of a positive image, which are involved in shaping consumer demand, public opinion and affecting the whole human life, its values and lifestyle. The main elements of communication are advertising, sales promotion, public relations and personal selling (Table 2).

Table 2

Marketing communications in the environmental marketing system (developed by source [10])

The element of marketing communications	The goals of the company
Advertising	Creation of ecologically safe image of the goods; an image of a company that cares about greening its own production and the environment, reaching out to potential buyers
Demand determination	Encouragement of purchases, promotion of the sales network
Personal sale	Establishing long-term two-way communications between producer and consumer of environmentally friendly goods
Public Relations	Achieving high environmental reputation of the company

Advertising is an impersonal form of communication, which is carried out through paid media [9, p. 167] and is one of the most effective tools in the attempts of the enterprise to modify the behavior of buyers, to attract their attention to goods with environmental characteristics, to show the environmental usefulness of goods, to create a positive image of the enterprise itself as environmentally oriented. Advertising serves a variety of purposes, influencing the economy, ideology, culture,

social climate, education, attitudes toward environmental issues, and other aspects of contemporary reality.

However, its main, traditional purpose – to ensure the sale of goods and profits to the advertiser [10, p. 167-168]. The use of environmental brands in advertising is one of the ways of shaping consumer behavior, which would be in line with current economic and environmental realities. The American researchers E. Callenbach, F. Capra and others [11] highlight five aspects that should be emphasized in environmental advertising:

– priority of long-term consumer satisfaction over short-term ones;

– priority of operating costs over initial costs;

– the priority of reliability, durability and safety over the original attractiveness;

– possibility for reuse or recycling of products and its packaging.

In this way, communication activities help to build trust with manufacturers and their products, help to explain the content and importance of eco-labeling, which is an advertising tool and can serve as a guide for consumers when choosing products and increase the competitiveness of goods.

Conclusions. Both external and internal factors should be taken into account in determining possible directions for the development of a region based on the production of environmental goods (services). In turn, the development of the market for ecological products and services is one of the main factors for ensuring the stability of the development of the economy of the region, makes it possible to solve economic, social and environmental problems in the complex.

Thus, addressing environmental problems in domestic regions requires not only a gradual transition from traditional means of establishing environmental constraints, but also active use of environmental management and marketing tools, both at the level of strategic planning for sustainable development of the region and in the economic activity of the enterprises of the region.

The existing lack of experience in applying the concept of environmental marketing can be offset by the use of external consulting, the study of foreign experience and its adaptation to the conditions of the Ukrainian economy, through the development of an environmental education system.

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Болотіна Є. В., Шубна О. В., Ніколаєва Ю. В. Використання інструментів екологічного маркетингу в реалізації концепції сталого розвитку регіону

У статті розглянуто розвиток концепції екологічного маркетингу регіону. Визначено, що в існуючих еколого-соціально-економічних умовах до головних завдань екологічного маркетингу регіону відносять завдання формування і розвитку ринку екологічних товарів з метою розв'язання суперечностей між економічним розвитком і необхідністю збереження і подальшого поліпшення якості довкілля. Розроблено механізм розрахунку ціни екологічного товару. Визначено, що основними елементами комунікацій в системі екологічного маркетингу є реклама, стимулювання збуту, зв’язки з громадськістю та персональний продаж. Комунікаційні заходи допомагають сформувати довірчі відносини до виробників та їх продукції, допомагають пояснити зміст і значення екологічного маркування, яке є рекламним засобом і може слугувати орієнтиром для споживачів при виборі продукції та підвищувати конкурентоспроможність товарів.

Ключові слова: екологічний маркетинг, споживачі, екологічна продукція, ринок, навколишнє природне середовище, потенційні покупці.

Bolotina Y., Shubna O., Nykolaiva Y. Using Environmental Marketing Tools in the Implementation of the Concept of Sustainable Development of the Region

The article describes the development of the concept of ecological marketing in the region. It has been determined that in the existing ecological, social and economic conditions, the main tasks of ecological marketing in the region include the tasks of forming and developing the environmental goods market in order to resolve differences between economic development and the need to preserve and further improve environmental quality. A mechanism for calculating the price of environmental goods. It is determined that the main elements of communications in the system of environmental marketing is advertising, sales promotion, public relations and personal selling. Communication activities help build trust with producers and their products, help explain the content and meaning of ecolabeling, which is an advertising medium and can serve as a guide for consumers when choosing products and increasing the competitiveness of products.

Keywords: ecological marketing, consumers, ecological products, market, environment, potential buyers.

Болотина Е. В., Шубная Е. В., Николаева Ю. В. Использование инструментов экологического маркетинга в реализации концепции устойчивого развития региона

В статье рассмотрено развитие концепции экологического маркетинга региона. Определено, что в существующих эколого-социально-экономических условиях к главным задачам экологического маркетинга региона относят задачи формирования и развития рынка экологических товаров с целью решения разногласий между экономическим развитием и необходимостью сохранения и дальнейшего улучшения качества окружающей среды. Разработан механизм расчета цены экологического товара. Определено, что основными элементами коммуникаций в системе экологического маркетинга является реклама, стимулирование сбыта, связи с общественностью и персональная продажа. Коммуникационные мероприятия помогают сформировать доверительные отношения к производителям и их продукции, помогают объяснить содержание и значение экологического маркирования, которое является рекламным средством и может служить ориентиром для потребителей при выборе продукции и повышать конкурентоспособность товаров.

Ключевые слова: экологический маркетинг, потребители, экологическая продукция, рынок, окружающая естественная среда, потенциальные покупатели.

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FEATURES AND PRINCIPLES OF FORMATION OF MARKETING STRATEGIES IN THE ACTIVITY OF AGRICULTURAL ENTERPRISES OF UKRAINE

Problem statement. With the development of market marketing, there is a greater role for the functioning functions of the country. For a clear position on the market, protection of the product from the market, giving in to marketing visits, you can use the effective function of the state donation.

There are some global trends, a quick technical and technological news, a quick development of national markets, as well as a greater competitiveness to put new opportunities before. One of the most important elements of a wide range of products is marketing and marketing tools, middle-class clients, especially respect for the fragmented marketing strategies, and for the most part, we'll understand the main direct marketing goals [1, p. 25].

Analysis of the rest of the publication and publication. Weighty science contribution to the theoretical aspects of the victorious marketing and marketing strategies has been shown to be so important that I'm I. Ansoff, S. Garkavenko, V. Gerasimchuk, O. Yerankin, F. Kotler [2], N. Kudenko, J.-J. Lamben, J. Larina, M. McDonald, G. Mintsberg, A. Pavlenko, M. Porter, I. Reshetnikova [5], A. Starostin and that. The following particularities and the problems of formulating marketing strategies in the field of social and business gifts were looked at in the hands of V. Andriychuk, P. Borschevsky, V. Gavrish, N. Oliynik [3], Y. Larino, V. Lutsyoz [4], Pisarenka, S. Prokhorchuk, I. Solovyova, P. Sabluka, V. Yurchishin and the others.

Advancement of expenses on business days before the target day of marketing strategies and the importance of clear theoretical ambushes development of strategic marketing activities and needs of business.

By the method of statistics, the characteristics and the order are formulated in the form of marketing strategies and social and business enterprises of Ukraine, with the need for minimum strategic risks.

Outline of the main research material. In the system of market economic relations, agriculture is gradually adapting to the entrepreneurial environment through the action of a number of specific features of the industry, in particular agrobiological factors, low elasticity of demand, seasonality of production, which requires finding effective tools for flexible adaptation of the enterprise's capabilities to market demands [6, p. 56].

In our opinion, the implementation of the marketing approach in the practical activity of agricultural producers will ensure more rapid adaptation of enterprises to the market environment, their competitiveness and sustainable development.

Research on the functioning of agricultural enterprises in terms of their marketing activities should be carried out in the following areas: analysis of resource potential; resource efficiency; assessment of financial condition [7, p. 716–718] (Fig. 1).

Fig. 1. Measures to improve the marketing activity of the enterprise
(developed by the authors based on source [7])

The need for marketing activities in the agricultural sector is manifested in the combination of efforts to sell agricultural products, meet the needs of the population in food, and processing enterprises - in raw materials. The features of agromarketing are first and foremost related to the specificity of agricultural production, which is characterized by the variety of products and market participants, a large number of organizational forms of management, problems of staffing. Features of agrarian production and marketing activities in this field are presented in Table. 1.

Table 1

Features of agrarian production and its marketing in enterprises
(created by the authors on the basis of source [8])

Features of agricultural production	Features of agrarian marketing
Seasonality of production and dependence on natural and climatic conditions, so production results are unpredictable	The production of basic necessities, most of them have a short shelf life and have not only consumer purpose, but also aesthetic, moral, good health.
Long duration of production cycle of production with determination of financial results at the end of the year	Time difference between production and consumption. Demand fluctuations and seasonal fluctuations in prices
High level of competitive environment in the industry, especially within a specific geographical region, due to the presence of a large number of homogeneous farms	Diversity of ownership, product range and market participants. The possibility of diversification of agricultural products is limited
Cyclicality of production	Low level of marketing knowledge and practical skills; lack of a clear, economically sound marketing system
Land is the main means of agricultural production	Imperfection of information support: insufficient and uneven development of market information and, as a consequence, opportunities for intermediaries to easily profit from agricultural producers
Interconnection of agrarian industries	High sensitivity to market changes: demand for agricultural and food products is not flexible in price and income, high sensitivity, supportiveness, adaptability, self-organization and self-management
The variety of products produced, its purposefulness and relevance to the end consumer	Lack of centralized incentives: the need for agro-producers in state support and coordination

Today, while conducting agrarian business, there are two philosophies – marketing and production-marketing, which differ fundamentally between the orientation of agricultural enterprises. In general, the marketing department plays a very important role in the activities of an agricultural enterprise and must fulfill two main tasks, which are assigned separately to the marketing department and the marketing department at large enterprises [8]:

1) market research, that is, identifying those products that are needed in the market, produced and sold by competitors, as well as forming orders to produce or submit to the procurement department proposals for the purchase of relevant products;

2) promotion, that is, presenting to customers the products produced by the enterprise and encouraging them to take such measures so that they contact the sales department or give the sales department the coordinates of those customers who may be interested in the products of the enterprise.

The main functions assigned to the marketing department [8] are:

– development of production and marketing strategy of products manufactured at the enterprise, in particular: information analysis and development of market and sales forecast; identifying key consumers, strategies and marketing policies.

– preparation of information for management on marketing activities: analysis of the industry market;

– development of recommendations on conducting marketing activities on the basis of the conducted analysis; analysis of the work of intermediaries (sales representatives).

– coordination of activity of the basic structures of the enterprise: management of implementation of improvements in production of products and new distribution channels; constant monitoring of the process of implementation of recommendations in the activity of the enterprise; expansion of the sales channel system.

– promotion: regular provision of recommendations on the promotion of goods on the market; creation and maintenance of a database on consumers of products of the enterprise; organization and participation in exhibitions; organization of advertising activities; developing a customer incentive system.

Marketing strategy of agricultural enterprise development is a set of directions of its activity in the market and decision-making, focusing individual marketing measures on the fullest possible implementation of the basic strategy of the enterprise. World experience shows that marketing is a means of future development of agricultural enterprises. On this basis, the development of marketing strategy of the enterprise is the process of creating and practical implementation of the general program of actions of the enterprise. Its purpose is related to the effective allocation of resources to reach the target market.

Successful functioning of agricultural enterprises in the current market conditions implies high efficiency of their activity and possibility to adapt to changing external conditions. As the world experience shows, these tasks are most effectively solved on the basis of the formation of a marketing strategy. The importance of theoretical, methodological and practical aspects of the marketing strategy of agricultural enterprises is increasing also because anti-crisis programs and adaptation processes are traditionally difficult in the agricultural sector of the economy.

Formation and improvement of marketing strategy, allows agricultural enterprises to successfully adapt to changing market conditions and function effectively. The procedure for forming an agricultural enterprise marketing strategy is presented in Fig. 2.

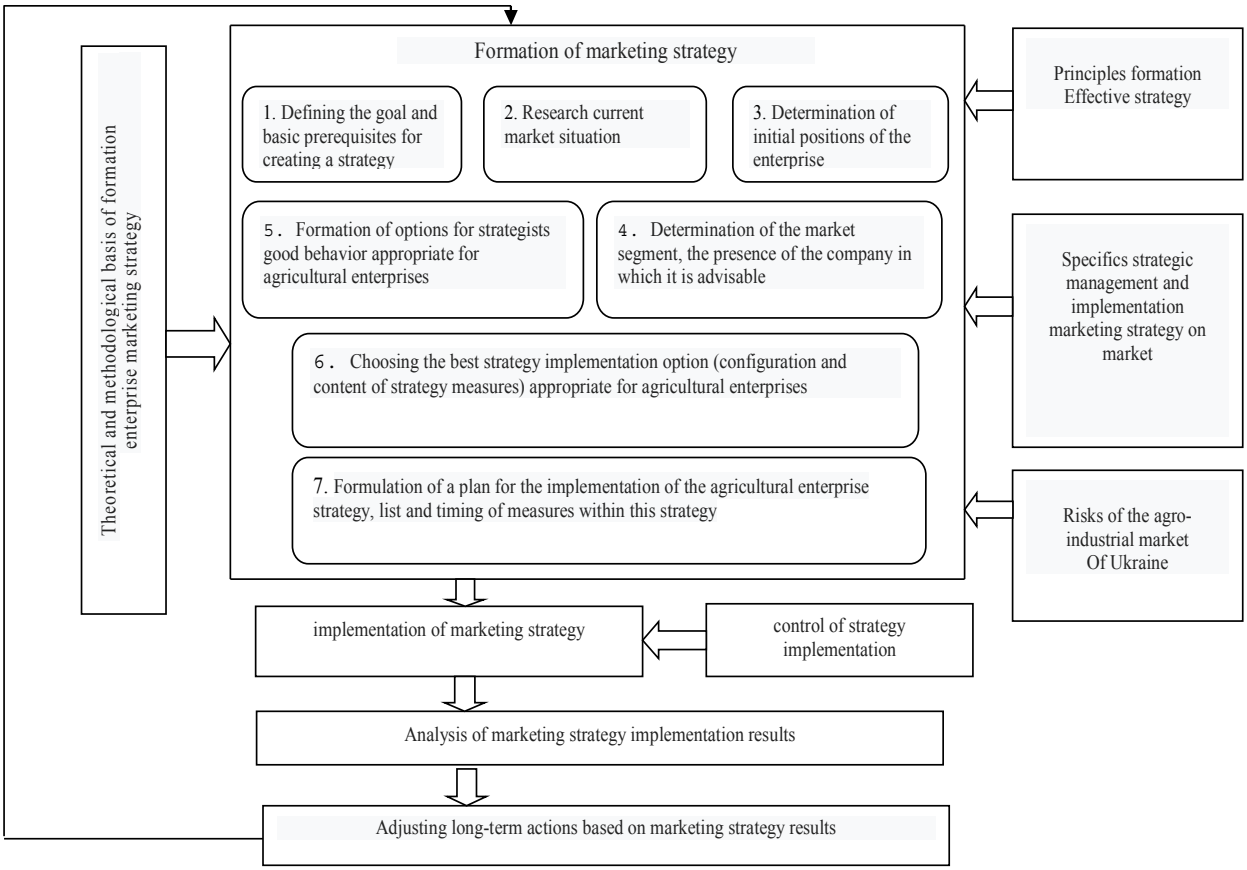

Fig. 2. The order of formation of marketing strategy of the enterprise on the agro-industrial market of Ukraine (developed by source based authors [9])

Improving the functioning of agricultural enterprises in a market economy is possible with the completed cycle of economic activity, which includes the process of economically profitable marketing of agricultural products on the market. With the change of management methods, the formation of a new strategy for agricultural enterprises, the search for effective marketing mechanisms in enterprise management systems began.

For the functioning of an agricultural enterprise, marketing strategy is the most important functional strategy, as it aims to provide a justification of goals and objectives in each individual market (market segment) and for each product, taking into account the peculiarities of competition and consumer demand [22, p. 387]. The principles of marketing strategy formation are slightly different from the principles of formation of the overall development strategy and follow from the very essence of marketing (Table 2).

Today, the formation of a marketing strategy can be considered the basis of strategic development of agrarian enterprises and is caused by the following factors: most agricultural markets are saturated and highly competitive in modern conditions, so for a successful

Table 2

Principles of formation of marketing strategy of agricultural enterprises and their characteristics

Principles	Features of agrarian marketing
Purposefulness	Mission statement, goals, orientation of all spheres of activity on satisfaction of needs of the consumer, on the one hand, and on achievement of the final practical result of production and marketing activity – on the other
Concentration of effort	Concentration of research, production, financial, sales efforts on strategic directions of marketing activity (search of markets, consumers, unmet needs, creative approaches to the solution of the set marketing tasks)
Focusing on long-term results	Forecasting, development of innovative products, introduction of innovations for obtaining the expected result in the future
Synergistic effect	Relationship between marketing strategy and tactics, which involves the need for targeted and active stimulating influence on market demand and the complexity of marketing measures to achieve the synergy effect
Flexibility	Adaptive response of enterprise commodity strategy to qualitative and quantitative changes in demand, use of flexible pricing in response to changes in market conditions; choice of optimal forms and methods of communication policy; Involvement of employees in active participation in marketing activities

market activity, each agrarian enterprise must define its target segment with specific needs, which is only possible if marketing tools are used; the modern external business environment is changing dynamically, which may give agricultural enterprises additional market opportunities or, on the contrary, threaten its strategic activities. Ongoing monitoring of the market situation will determine market opportunities for its strategic activities. Ongoing monitoring of the situation on the market will be able to identify market opportunities for agricultural enterprises, to identify and use them in a timely manner, while avoiding market threats. It is this component that forms the basis of methodological tools in the formulation of a marketing strategy; the high level of competition that exists in many commodity and regional markets requires agrarian enterprises to have adequate competitive behavior that will enable them to strengthen their competitive long-term position in the market. The theory of competitive advantages is aimed at: developing measures aimed at enhancing competitiveness; forming a mechanism for responding to external changes; integration of strategic actions of the main functional units of enterprises; solving specific business issues and issues that are relevant at the moment. All this is also the basis for formulating a marketing strategy; Consideration of changes in the nature and behavior of the consumer is important for the market activity of an agricultural enterprise.

The choice of the optimal variant of implementation of the marketing strategy of agricultural enterprises (configuration and content of measures within the strategy), from the possible alternatives of the formation of the marketing strategy can be applied any, depending on the specific conditions of activity, opportunities and prospects of the individual enterprise for which the strategy is being developed.

The most appropriate strategy for implementation should be in accordance with the nature of the changes in the environment and the ability of the enterprise itself to know and understand the content of these changes. A general characteristic of these conditions is the ability of management and business owners to understand the causes and anticipate changes that occur in the environment [3]. That is why the marketing strategy of an agricultural enterprise must be adequate to a certain level of forecasting by that enterprise of future changes in its external environment. The scheme of choice of marketing strategy of an agricultural enterprise is presented in Fig. 3.

Implementation of the marketing strategy as a stage that follows the formation of the strategy and provides for the direct practical implementation of the marketing strategy, involves the implementation of the activities planned within the strategic marketing plan. If the marketing strategy determines the general directions and basic principles of adaptation of the marketing potential of the agricultural enterprise to the conditions of the market environment, then its practical implementation is due to the use of the appropriate marketing complex by the enterprises.

Monitoring the implementation of the strategy involves:

1. Expert and statistical analysis of the image of the enterprise and its products.

2. Comparison of the amount of resources expended with the planned amount in the context of achievement of specific strategic goals.

3. Determining the market share at the stages of strategy implementation and the dynamics of its changes, ascertaining that the changes are planned.

It is important to take into account in the process of forming and implementing the strategy of marketing risks of agricultural enterprises, which can be implemented in case of adverse changes in the internal and external environment. Risk management of the agricultural market allows to some extent to predict, control, control, take measures to eliminate or reduce the negative effects of these events.

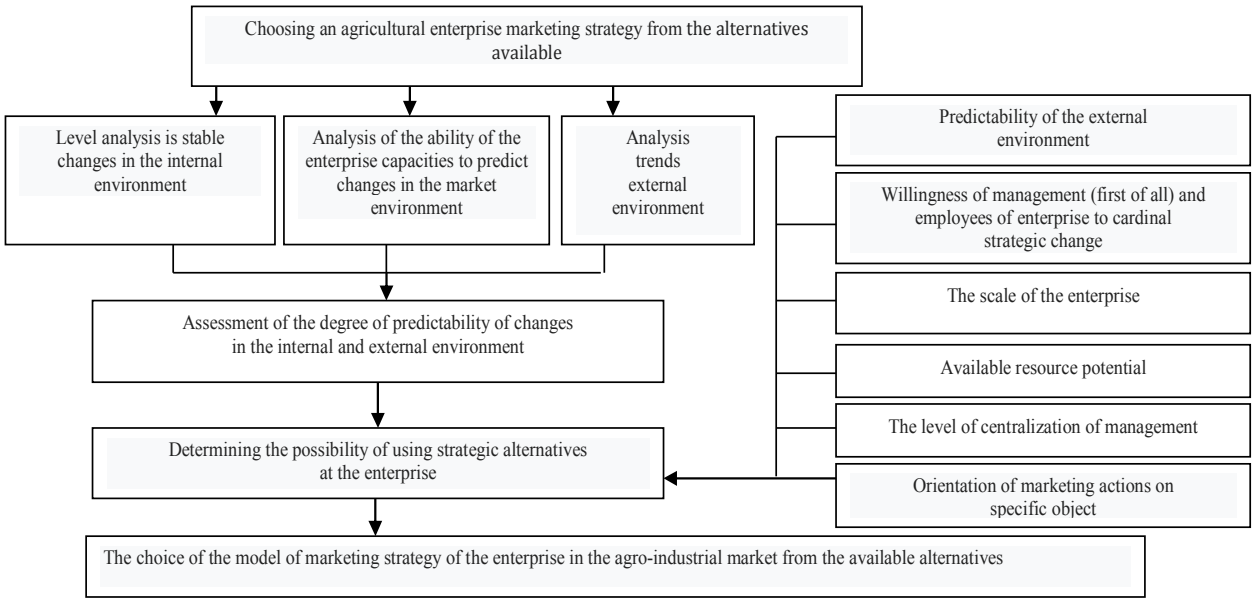

Fig. 3. Selection of the marketing strategy of the enterprise in the agro-industrial market of the alternatives available (created by source based authors [9])

Against this background, the tasks of agricultural market risk management are to: identify areas of increased risk in the agricultural market; assessment of the degree of risk to agricultural products; analysis of the acceptability of such a level of risk in the agricultural market for a particular enterprise; developing measures to prevent or reduce risk in the agricultural market; taking measures to maximize compensation for the damage caused in the event of a risk event.

Conclusions. In formulating the marketing strategy of an agricultural enterprise, it is necessary to coordinate its potential capabilities in meeting the requirements of end consumers regarding the range, quality and price of the agricultural, to take into account the maximum use of their competitive advantages and the weak positions of competitors, to substantiate the strategies of the main elements of the marketing complex: goods, prices, distribution. The mechanism of effective functioning of the organizational marketing service of an agricultural enterprise implies its integrity, unity, orderliness on the basis of optimization of its structure.

It is determined that the marketing strategy is a general philosophy of doing business in the context of globalization. It envisages the development of strategic directions and methodological tools to achieve long-term competitive advantages and the possibility of timely adaptation of economic entities to the dynamic changes of macro and microenvironmental factors, contributes to shaping consumer needs and tastes in accordance with social values.

The marketing strategy of an agricultural enterprise is formed on the basis of the basic conception of its development and takes into account resources and opportunities, the state and features of competition, demand trends, conditions of marketing environment and internal factors that are interconnected and observed chain reaction, which is reflected in the change in the final result.

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Бившева Л. О., Кондратенко О. О., Коваленченко А. Особливості та принципи формування маркетингових стратегій у діяльності сільськогосподарських підприємств України

У статті визначено, що маркетингова стратегія є загальною філософією ведення бізнесу в умовах глобалізації і передбачає розроблення стратегічних напрямів та методологічного інструментарію для досягнення довгострокових конкурентних переваг та можливості своєчасної адаптації суб'єктів господарювання до динамічних змін факторів макро- і мікросередовища, сприяє формуванню потреб і смаків споживачів відповідно до суспільних цінностей. Маркетингова стратегія підприємства формується на базі основної концепції його розвитку та враховує ресурси і можливості, стан та особливості конкурентної боротьби, тенденції розвитку попиту, умови маркетингового зовнішнього середовища та внутрішні чинники, що взаємопов'язані між собою й між ними спостерігається ланцюгова реакція, яка відображається на зміні кінцевого результату. Представлено порядок формування і реалізації маркетингової стратегії підприємств на агропромисловому ринку, що передбачає планування та втілення на практиці маркетингового інструментарію, вибір найбільш доцільної з існуючих альтернатив моделі стратегічної поведінки підприємства на ринку. Актуалізовано значення врахування стратегічних ринкових ризиків. Обґрунтовані принципи формування маркетингової стратегії дещо відрізняються від принципів формування загальної стратегії розвитку і випливають із самої сутності маркетингу. Доведено, що при формуванні маркетингової стратегії сільськогосподарського підприємства необхідно узгоджувати його потенційні можливості стосовно забезпечення вимог кінцевих споживачів щодо асортименту, якості і ціни сільськогосподарської продукції, враховувати максимальне використання своїх конкурентних переваг та слабкі позиції конкурентів, обґрунтовувати стратегії основних елементів маркетингового комплексу: товару, ціни, розподілу і просування.

Ключові слова: маркетингова діяльність, сільськогосподарське підприємство, агропромисловий ринок, маркетингова стратегія, стратегічні ризики, стратегічна поведінка, сільськогосподарська продукція.

Byvsheva L., Kondratenko O., Kovalenchenko A. Features and Principles of Formation of Marketing Strategies in the Activity of Agricultural Enterprises of Ukraine

The article defines that the marketing strategy is a general philosophy of doing business in the context of globalization and involves the development of strategic directions and methodological tools for achieving long-term competitive advantages and the possibility of timely adaptation of business entities to the dynamic changes of macro and microenvironmental factors, contributing to the needs and environment. consumers according to social values. The marketing strategy of the company is formed on the basis of the basic concept of its development and takes into account resources and opportunities, the state and peculiarities of competition, demand trends, conditions of marketing environment and internal factors that are interconnected and observed chain reaction, which is displayed on the change in the final result. The order of formation and realization of the marketing strategy of the enterprises in the agro-industrial market is presented. The importance of taking into account strategic market risks has been updated. The principles of marketing strategy formation are substantially different from the principles of formation of the overall development strategy and follow from the very essence of marketing. It is proved that in formulating a marketing strategy of an agricultural enterprise, it is necessary to coordinate its potential capabilities in terms of meeting the requirements of the end consumers regarding the range, quality and price of agricultural products, to take into account the maximum use of their competitive advantages and weak positions of competitors, to substantiate the stra-

tegies of the main elements of the marketing complex: distribution and promotion.

Keywords: marketing activity, agricultural enterprise, agro-industrial market, marketing strategy, strategic risks, strategic behavior, agricultural products.

Бывшева Л. А., Кондратенко О. А., Коваленченко А. Особенности и принципы формирования маркетинговых стратегий в деятельности сельскохозяйственных предприятий Украины

В статье определено, что маркетинговая стратегия является общей философией ведения бизнеса в условиях глобализации и предусматривает разработку стратегических направлений и методологического инструментария для достижения долгосрочных конкурентных преимуществ и возможности своевременной адаптации субъектов хозяйствования к динамическим изменениям факторов макро- и микросреды, оказывает содействие формированию нужд и вкусов потребителей соответственно общественным ценностям. Маркетинговая стратегия предприятия формируется на базе основной концепции его развития и учитывает ресурсы и возможности, состояние и особенности конкурентной борьбы, тенденции развития спроса, условия маркетинговой внешней среды и внутренние факторы, которые взаимосвязаны между собой и между ними наблюдается цепная реакция, которая отображается на изменении конечного результата. Представлен порядок формирования и реализации маркетинговой стратегии предприятий на агропромышленном рынке, который предусматривает планирование и воплощение на практике маркетингового инструментария, выбор наиболее целесообразной из существующих альтернатив модели стратегического поведения предприятия на рынке. Актуализировано значения учета стратегических рыночных рисков. Обоснованы принципы формирования маркетинговой стратегии, которые отличаются от принципов формирования общей стратегии развития и вытекают из самой сущности маркетинга. Доказано, что при формировании маркетинговой стратегии сельскохозяйственного предприятия, необходимо согласовывать его потенциальные возможности относительно обеспечения требований конечных потребителей по поводу ассортимента, качества и цены сельскохозяйственной продукции, учитывать максимальное использование своих конкурентных преимуществ и слабые позиции конкурентов, обосновывать стратегии основных элементов маркетингового комплекса: товара, цены, распределения и продвижение.

Ключевые слова: маркетинговая деятельность, сельскохозяйственное предприятие, агропромышленный рынок, маркетинговая стратегия, стратегические риски, стратегическое поведение, сельскохозяйственная продукция.

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INTERNET MARKETING AS A TOOL FOR THE DEVELOPMENT OF INDUSTRIAL ENTERPRISES IN MODERN ECONOMIC CONDITIONS

Formulation of the problem. With the development of the economy of Ukraine in the market is increasing competition. For industrial enterprises, the issue of survival most urgently arises, forcing them to fight for the consumer, to seek new, more effective forms of communication to promote products. The constant changes lead to the development of marketing and the emergence of new tools of interaction with consumers and other market participants.

The result of such a transformation can be considered Internet marketing. In today's society, Internet marketing plays an important role in the activities, development and organization of an industrial enterprise. Research shows that e-commerce is growing rapidly, because the right and timely use of Internet technologies ensures revenue growth and cost savings through traditional marketing tools. That is why it is advisable to talk about the development of a new direction of research, which is an important component of integrated marketing enterprise – Internet marketing (or e-marketing, online marketing). It allows you to view the traditional 4P marketing mix (Product, Price, Price, Place, Promotion) through the prism of online features [1].

However, most Ukrainian businesses do not use all the promotion options and do not have all the necessary elements to get the most effective results and minimize the costs of implementing an online marketing system.

Analysis of recent research. Many researches of scientists are devoted to the solution of problems of Internet marketing, Sokrem, L. Vinarika, O. Shchedrina, N. Vasilion [3], M. Makarova [4], D. Straus [5], R. Uilsona [6], I. Uspensky [7], V. Kholgomogorov [8].

Most authors, working in the given sphere don't violate Internet marketing in self-identity science field. So, I. Uspensky notes, Interthere are no unary characteristics, but I am aware of the characteristics of traditional tools tiv marketing. One of them – hypermedia nature. Accordingly, he feeds there Internet-marketing as a new straightforward marketing – gipermarketing as theory and methodology of organization marketing in hypermedia middleware Internet [7].

M. Makarova considers Internet marketing warehouse part of the foreign marketing country tags and firms and defines it as technology marketing with the help of computer systems that measure. In the Internet fully nominate only those tasks Firms, so be effective from the point of view of income that costs [4].

The modern realities of functioning of Ukrainian enterprises require the use of appropriate tools for the formation and development of competitive advantages, some of which are components of the marketing complex.

Their research is devoted to the works of leading domestic and foreign scientists, such as I. Boychuk, A. Zagorodniy, T. Auckland, V. Holmogorov and many others. The main factors for improving the efficiency of business activity of enterprises are based on the intensive use of marketing communications, the functions of which are to convey to consumers information about the unique properties of products (goods, services, ideas), stimulate demand, maintain customer loyalty, forming a positive image of enterprises. These issues are addressed in the works of O. Klichuk, M. Auckland, B. Halligan. O. Yashkina.

The purpose of the article is to substantiate the use of Internet marketing as a tool for the development of thought-provoking enterprises in order to ensure the efficiency of commercial activity of enterprises in modern conditions of management.

Outline of the main research material. With the formation and development of the information economy, Internet technologies have given industrial enterprises a new tool for doing business and doing business in general. Usually, their use is aimed at reducing costs, increasing sales and expanding marketing communications with consumers.

Internet technologies have proven to be highly effective in the enterprise marketing policy-making system. Consumers themselves received a new information source on products and services, new ways to meet their needs through the opportunity to interact with a wider range of businesses [2]. Recent studies show that the use of Internet technologies in marketing brings real profits and significant savings in resources.

In the context of global computerization, the role of internet marketing will grow, driven by convenience and benefit for both the consumer and the business. Today, the Internet is one of the most effective marketing channels. The advantages of Internet marketing in the activities of industrial enterprises are:

1) a high degree of personalization (if traditional marketing is aimed at the mass consumer, then everyone's opinion is taken into account on the Internet);

2) interactivity (clients are involved in the business processes of the enterprise by participating in surveys, forming the reputation of the company, attracting new customers);

3) a large amount of information which is impossible to receive offline (on the Internet you can highly estimate the effectiveness of advertising, determine the number of visitors, their interests, get feedback, successfully conduct competitive intelligence.

An important component of industrial enterprise internet marketing is the creation and development of your own website.

It can significantly improve economic performance, for example, increase sales, refine search for your target audience, that is, relevant leads. Creating your own website, from the point of view of Internet marketing, can proceed in the following stages: 1) defining the functions and tasks of the site; 2) research of the target audience; 3) development of site structure; 4) choice of site design and style (graphic representation of the site, which should be effective and effective); 5) selection of a navigation model that would provide ease of access to the information component of the site; 6) provision of information support and support; 7) hosting definition (choosing where the site will physically be hosted).

After defining the goals and objectives of the site, structure and design, selecting a target audience and advertising is extremely important. As for the target audience, its number on the Internet increases every day. The development of the domestic Internet space is ambiguous, but analysts estimate that the number of Internet users in Ukraine will increase rapidly in the coming years. This is facilitated by the following factors: Increase in the sale of Internet access media; increase of opportunities of Internet providers; increase of speed of the Internet, stabilization of traffic. Fig. 1 shows the components and tools of Internet marketing for Ukrainian industrial enterprises. The use of online marketing tools greatly expands the capabilities and characteristics of the traditional marketing environment.

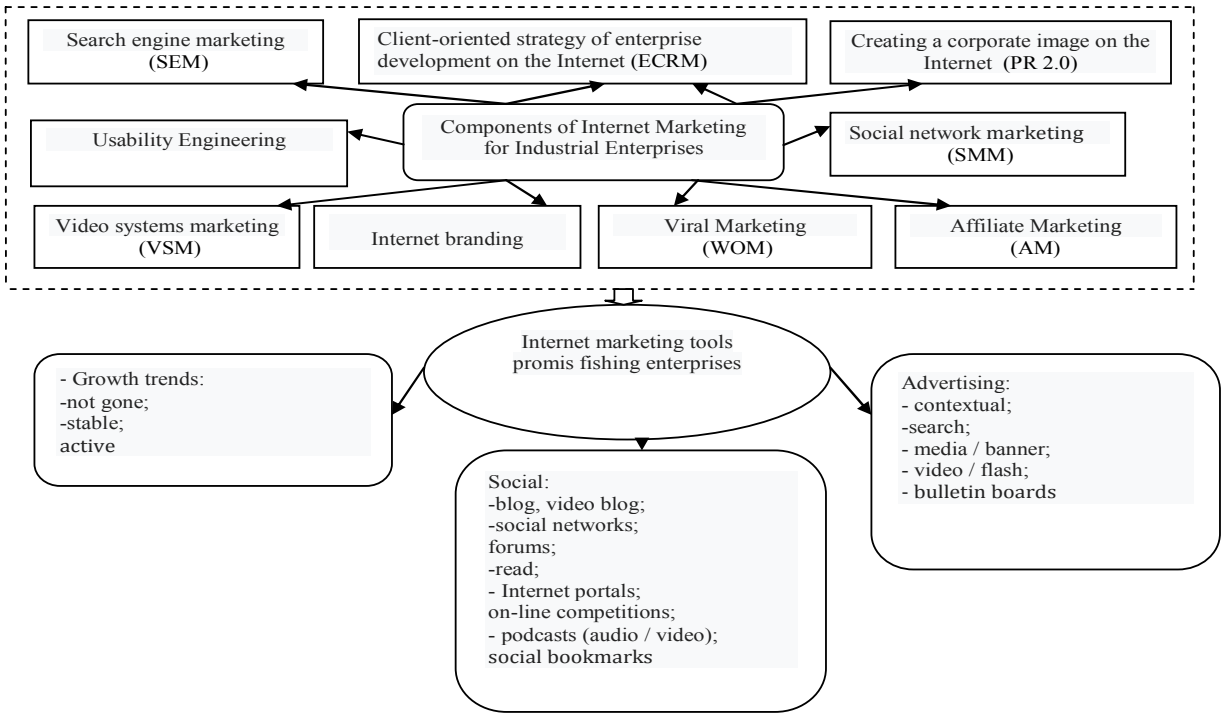

Fig. 1. Ingredients and tools of internet marketing of Ukrainian industrial enterprises
(developed by source [9])

For example, the Internet provides high efficiency in the presentation and assimilation of information, which strengthens the relationship between the manufacturer, seller (enterprise) and consumers. It is effectively used for field and office marketing research, thereby providing an analytical marketing function. In addition, the Internet can reduce the costs of marketing campaigns, as opposed to traditional media. Now any industrial enterprise active in the World Wide Web can easily change market boundaries (move from local to international markets) and introduce new tools and opportunities for competition. The possibility of introduction of Internet technologies depends on the peculiarities of functioning of enterprises, industry and scale of activity, degree of dependence on network space.

The modern strategy of marketing of industrial enterprises is aimed at attracting and retaining customers, finding opportunities to increase sales of goods and ser-

vices. Businesses operating in a globalized world are more than ever interested in turning potential clients into real ones. That is why social networks are considered as one of the main factors influencing business. The modern method of communication on the Internet – honest conversations and communication with the audience through relevant content.

It is nowadays important to include content marketing in public relations and to prepare quality content for placement on the site and on social networks.

Globalization is an additional incentive for industrial enterprises to engage content marketing in marketing communications: real and potential consumers are accelerating the pace of migration, changing methods of competition for the consumer, and therefore the enterprise should expand the boundaries of information dissemination. Content marketing is a promising means of marketing communication due to the rapid development of modern technologies that allow you to create all kinds of online publications (websites, digital magazines, e-mailings). In this period, industrial enterprises continue to actively apply the methods of SEO, SEM, SMM, as well as other methods (display advertising, viral marketing), but at a new level due to the technical development of the Internet. Virtual communications are more effective: you can maximize (target) communications to your target audience (geographically, by time, context, user behavior, product type or service, etc.), monitor and quickly monitor their performance with Google AdWords, line adjust. One of the components of the process of conquering the market is marketing communications.

Today much of the variety of advertising is becoming less effective. Standard advertising does not elicit a conscious reaction from buyers. The company is forced to sell its products, accompanying them with original, informative and attractive appeals that would convince the conformity of these goods to the needs and desires of consumers. The application of marketing innovations in the marketing communications system is an extremely pressing issue because of the oversaturation of the market with traditional advertising. But, because innovation is a fleeting thing, analysis of the latest technology in marketing communications should be done using online resources where information on marketing innovations in the marketing communications market appears in the form of blogs, analytical reports and popular articles. It should also be noted that not all innovative technologies or the latest trends in the marketing communications market can be extrapolated and implemented into commercial and industrial activities of industrial enterprises.

And it can be caused both by subjective (absence of innovative marketing vision in the management of the enterprise, insufficient level of qualification of marketing service of the enterprise), and objective reasons (inconsistency of innovations of the direction of business activity, orientation of innovation not at the target audience of industrial enterprise, lack of funds of industrial enterprise, lack of etc).

Today, Internet marketing highlights many tools that are effective for an industrial enterprise. Let's look at some of them.

Contextual advertising is a fairly new and easy-to-use tool that has many support services and applications, even freeware. These apps help you select the most popular and potentially most profitable keywords, automatically calculate your monthly budget, generate statistical reports related to internet marketing, such as: clicks per day, number of searches for your keywords, clicks on each keyword, and more. functions.

These add-ons greatly automate the process of advertising campaigns at each stage. According to observations in Ukraine on the effectiveness of Internet advertising is occupied by Google. Yandex Direct takes second place, and all other systems are far behind in terms of implementation and usage efficiency. Banner advertising also plays a special role. Using this tool requires more professionalism from a specialist who is a promoter.

The main tasks at this stage are: to analyze the target audience, to choose the right advertising pitches, the form of the advertisement submission and to perform all actions in order to understand and feel the client's purpose. The client's goal is not always taken into account, and in the future, this leads to insufficient attention in the choice of the target audience. Search engine promotion or SEO is an online marketing that is characterized by text content and product advertising on social networks. A large share of the market is owned by outsourced online agencies, purchasing services from freelancers or specialist companies. This approach often leads to unprofessional consulting of the client, an increase in the real cost of the service, as well as the absence of any guarantees. In order to properly evaluate the effectiveness of the use of Internet marketing tools, it is important to clearly identify all the components of marketing costs, bring statistics to the target audience, identify the main basics of consumer impact and position among all competitors in the internal market.

Savings on marketing costs when implementing individual measures of Internet marketing is manifested in:

- saving on advertising costs (by maintaining an online store, producing video clips, running a forum, blog, etc.);
- savings on telephone calls;
- saving time to study products (all can be seen on the company's website);
- savings on speed before and after sales service;
- much lower costs for opening and operating an online store.

According to the survey, one third of Ukrainian companies consider selling goods via social networks

and only 20% consider establishing communication with consumers not on social networks. That is, the domestic market is rapidly introducing Internet marketing into the activities of the industrial enterprise, as well as realizing the potential of social networks in marketing communication activities on the Internet [10].

Any kind of activity the enterprise tries to apply influence on consciousness of "the" consumer. Among the tools that affect group consciousness are the following: verbal and non-verbal information. By using various methods, tools and mechanisms of social psychology, it is possible to influence the basic principles of group consciousness, which are formed as a result of interaction of community members on the Internet and create the desired context for further communication. The organizational stage of the mechanism of realization of the concept of crowd-marketing, in accordance with the two-circuit model of communication, involves work in two directions: organization of work regarding the formation of the context of the information level of communication influence and the organization of traditional marketing communication with consumers. The main object of influence in the implementation of the concept of crowdsourcing are: network communities, but they are formed not only on social networks, but also on other services of the Internet, where users interact.

An example of forming a network context is a variety of product review sites, aggregator sites, or major online stores, where users post product reviews, rate product ratings, and solicit customers who have already purchased a product. In this way, users on such sites also create a network context, form a majority of the product or manufacturer.

In this case, Internet marketing gives the consumer the opportunity to get information about the products. Any potential consumer can use the Internet and receive information about the product, and most importantly – buy it. If, for example, there is no information at all, he will seek that information from a competitor. This should be foreseen and marketers should take action.

The important point is that, unlike traditional marketing methods, online marketing gives a clear statistical picture of the effectiveness of a marketing company. Compared to other types of media marketing, internet marketing is growing very fast. It is gaining popularity not only in business but also in the general public who want to promote and make money from an effective website or blog. In developed countries, Internet marketing and advertising costs account for about 5% of total advertising costs [13].

However, Internet marketing has its drawbacks as well. Restrictions in Internet marketing pose problems for both companies and consumers. For example, if a consumer has a slow internet connection, it can make it difficult to use animated commercials, presentation films and high quality graphics in advertising. This issue can be corrected, but it can occur to any consumer. Another inconvenience is that Internet marketing does not allow the consumer to try the product before making a purchase. Most consumers solve this problem simply. They get acquainted with the right product in a regular store, and make a purchase in an online store. There is also the concept of return of goods. Internet marketing should provide that the product may not suit the consumer. The problem of the ability to "touch" the product should also be solved in other ways.

For example, some online store owners use high quality product photos to try to convey all the details and features of their products in the images. Gaining popularity and the use of special photo equipment for digitizing product images in 3D, which allows the visitor to view the product from all angles [10]. Another limiting factor is the limited payment methods trusted by consumers.

Internet applications for payment terminals can fail. Card payment is also not very secure because the consumer is not always sure that the correct details on the site and the goods will arrive on time. Internet marketing in the industrial market is realized with the help of a set of tools. They can be divided into two groups based on the environment in which they are used – internal and external. External tools include those that are visible to consumers and competitors, that is, are responsible for implementing marketing activities online.

These include a company website, a web store, various types of advertising, search engine marketing, social media marketing, email marketing, content marketing, PR and placement on aggregate platforms and platforms. Internal tools serve as a kind of infrastructure for the enterprise. They are responsible for the accumulation, processing and integration of data on the results of marketing activities of the company in the network.

They cover CRM systems and a variety of web-based tools that provide analytics for specific tools (website, search engine optimization, social networks, brand mentions in social media, and more). Thus, as a result of the digital marketing audit of the major industrial enterprises operating in this market in Ukraine, it was found that the level of development of the tools is low.

Not all businesses have their own websites. The most widely used tool is online marketplaces. After all, these platforms are popular with customers and are well-promoted online. However, trends in the environment of industrial consumers, caused by the development and penetration of Internet technologies, indicate that business, even in traditional industries, needs transformation.

Here are the main ones. According to the statistics portal Statista, during 2013-2017 the volume of e-commerce market in the B2B sector consistently increased on average by 7% annually (Fig. 2) [11].

The specificity of the B2B market usually determines the choice in favor of traditional channels of promotion, which include personal communication with a potential client.

In addition, the feasibility of investing in an Internet channel depends on the particular decision making of the specific target audience. Therefore, executives serving the needs of other businesses and organizations may be conservative when developing a communications strategy, favoring proven tools. Also, the 2017 B2B market exceeds the B2C market by nearly 235% in volume, according to Statista 2017 Ecommerce Report [12].

This is due to the gradual formation of a culture of doing business online, the development of industrial consumers and Internet providers as a sales channel. The Internet is not just an advertising channel in the media mix of B2B companies, it is part of the business development and marketing strategy of an industrial enterprise.

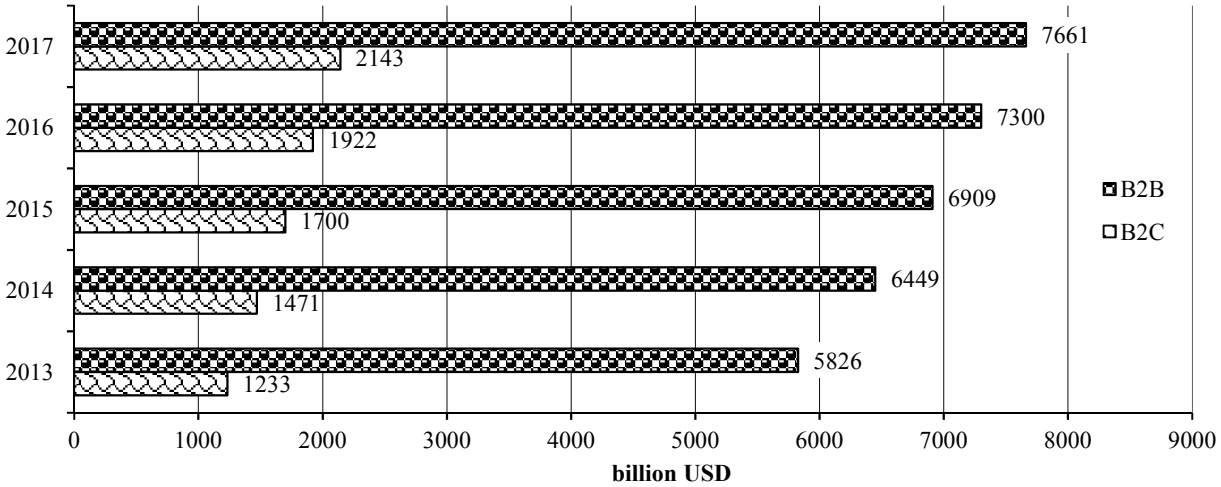

Fig. 2. Global E-Commerce Market Volume 2013-2017, Billion USD United States
(created by authors based on Source [11])

According to Forrester, which researches the development of Internet marketing in the industrial market and provides relevant services, about 90% of people involved in purchasing industrial products use the Internet to find product information and select a provider. For 74% of people, half the way to go offline shopping is online.

That is, industrial consumers search, study information on existing offers, evaluate alternatives on the Internet. On average, 6 different online channels are used in the purchasing decision process [15]. According to a survey conducted by the consulting company Accenture in 2014, only 12.4% of industrial consumers seek meetings with company representatives or even a telephone conversation (Fig. 3).

Most respondents (71%) prefer to search and evaluate options online with or without the help of company consultants [16].

For companies operating in the B2B market, this means having to have such an online presence to ensure that each of these groups is complete with information about the company's offerings. According to a study conducted by the Boston Consulting Group with Google in September 2017, which involved more than 2,000 B2B companies, 67% of purchases were made from information of all kinds available on the Internet.

Before making an online purchase, or at least go to an offline communications channel with a provider of decision-makers, search the web. They search on a variety of queries, browse online catalogs, explore information on websites, compare product specifications, pricing, and more. The search for information at this stage is broader, more fundamental than targeted.

Thus, it is determined that in 71% of cases the search begins with general queries, ie queries by product category, and not by specific trademarks [17]. This factor must be taken into account when forming a semantic search kernel. According to a 2014/2014 Google / Millward Brown Digital, B2B Path to Purchase Study, a significant change in the demographics of business executives and positions that assume responsibility for procurement was made during 2012-2014.

That is why, when designing an Internet marketing strategy, one should take into account the particular behavior of this category of people, the tools and channels that are popular among them. In addition, the change in management systems in modern companies has led to the fact that the decision to buy is influenced not only by top management, so-called C-suite managers, that is, executives, but also ordinary employees.

Thus, according to the results of the same survey, 81% of people holding non-managerial positions in the company have the opportunity to influence the decision to buy industrial goods [17]. For B2B companies, this means that you need to build communications that target not only top management, but also influence other employees of the target audience.

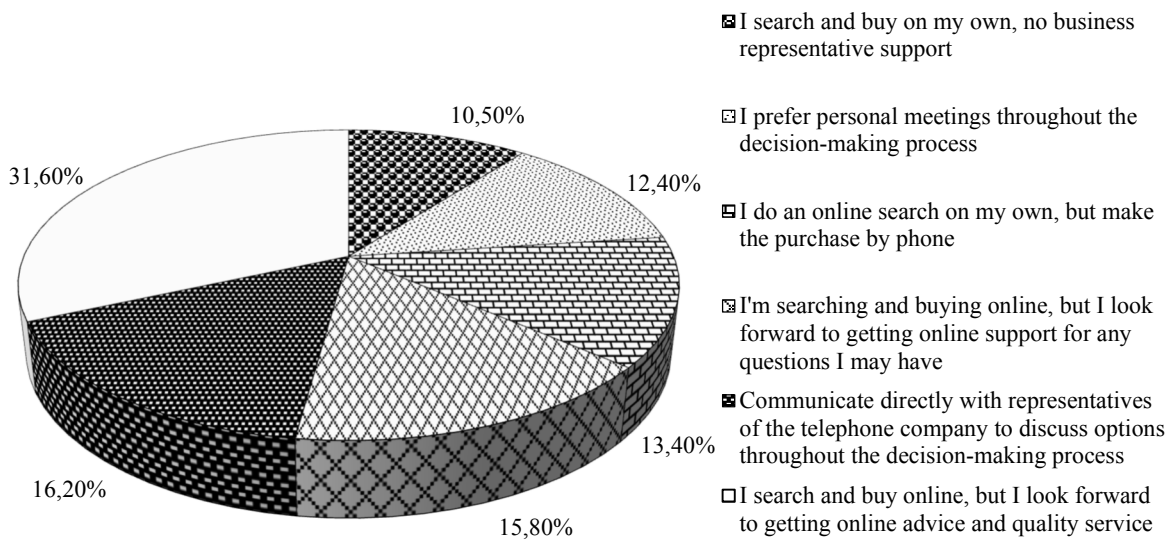

Fig. 3. Distribution of respondents' answers to the question of involvement of a company consultant in the decision to purchase industrial goods (generated by the author from source [16])

If top management is easy to reach via social networks, because of the complexity of identifying all professionals involved in the purchase of products, more massive, at the same time targeted, tools (blog posts, search engine advertising, whitepapers, etc.) should be used. As for the way to buy in an industrial market that originates on the Internet, it begins in 90% of cases with relevant search engine queries, according to the Think with Google resource [15].

On average, the consumer in the industrial market performs about 12 searches before proceeding to study information on a particular vendor's website or other specialized resource. This points to the critical importance of search engine marketing for B2B businesses. All these facts are strong arguments in favor of formulating a digital marketing strategy by companies that serve the needs of industrial consumers.

Therefore, we can conclude that the role of the Internet in the decision-making process of purchasing by industrial consumers is increasing. Despite the fact that the results of the research were conducted mainly in more developed countries than Ukraine, the trends are relevant to the Ukrainian market environment. The study found that the consumer is in the crossroads of online and offline communication when making a purchase decision. Accordingly, companies need to consider this fact and formulate a marketing strategy based on the quality integration of the two channels.

Conclusions. Thus, Internet marketing is an important phenomenon in the modern management of industrial enterprises. Improved and updated Internet marketing technologies will help maintain and develop the relationship of the company with customers. This will contribute to the high communication status of the marketing system, increase the effectiveness of marketing activities and expand marketing relationships.

In addition, in today's business environment, it is very difficult to imagine a successful business that has not used at least one type of marketing communications on the Internet: company site, blog, series of videos about the company, etc. The interactive nature of the network environment allows to increase the effectiveness of interaction of all participants of communication, which positively influences the realization of marketing functions of a particular enterprise as a whole.

Features of Internet marketing is that the Internet allows you to dynamically track and adjust the course of a marketing company, and further research should be aimed at developing recommendations for the use of Internet communications by enterprises.

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Фоміченко І. П., Баркова С. О. Інтернет-маркетинг як інструмент розвитку промислових підприємств в сучасних умовах господарювання

У статті висвітлено значення та основна роль Інтернет-маркетингу у діяльності промислового підприємства. Визначено основні переваги, складові та сегменти Інтернет-маркетингу. Визначено, яким чином особливості діяльності на ринку промислових споживачів впливають на розробку стратегії Інтернет-маркетингу. Виявлено особливі аспекти стратегії Інтернет-маркетингу, які мають бути враховані підприємствами при її розробці. Досліджено ключові тенденції у середовищі промислових споживачів, сформовані під впливом розвитку та проникнення Інтернет-технологій у бізнес-середовище. Доведено, що при впровадженні індивідуальних заходів Інтернет-маркетингу спостерігається економія на маркетингових витратах підприємства. Запропоновано складові та інструменти Інтернет-маркетингу промислових підприємств України, які мають бути задіяні у стратегії Інтернет-маркетингу промислових підприємств та шляхи їх використання для підвищення ефективності діяльності підприємств: система автоматизації маркетингу, CRM-система, вебсайт, пошуковий маркетинг, онлайн-маркетплейси, контент-маркетинг.

Ключові слова: Інтернет-маркетинг, інтернет, Інтернет-технології, веб-сервіси, соціальні мережі, стратегія промислового підприємства, ринок електронної комерції.

Fomichenko I., Barkova S. Internet Marketing as a Tool for the Development of Industrial Enterprises in Modern Economic Conditions

The article highlights the values and the main role of Internet marketing in the activities of an industrial enterprise. The main advantages, composition and segments of Internet marketing are defined. It was determined how the features of the activity in the industrial consumer market influence the development of the Internet marketing strategy. Identified specific aspects of the strategy of Internet marketing, which should be taken into account by enterprises in its development. The key trends in the environment of industrial consumers, formed under the influence of the development and penetration of Internet technologies into the business environment, are investigated. It is proved that the introduction of individual activities of Internet marketing, there is a saving on the marketing costs of the enterprise. The composition and tools of Internet marketing of industrial enterprises of Ukraine are proposed, which should be involved in the Internet marketing strategy of industrial enterprises and ways to use them to improve the efficiency of enterprises: a marketing automation system, a CRM system, a website, search marketing, an online marketplace. content marketing.

Keywords: Internet marketing, Internet, Internet technologies, web services, social networks, industrial enterprise strategy, e-commerce market.

Фомиченко И. П., Баркова С. А. Интернет-маркетинг как инструмент развития промышленных предприятий в современных условиях хозяйствования

В статье освящены значения и основная роль Интернет-маркетинга в деятельности промышленного предприятия. Определены основные преимущества, состав и сегменты Интернет-маркетинга. Определено, каким образом особенности деятельности на рынке промышленных потребителей влияют на разработку стратегии Интернет-маркетинга. Выявлены особые аспекты стратегии Интернет-маркетинга, которые должны быть учтены предприятиями при ее разработке. Исследованы ключевые тенденции в среде промышленных потребителей, сформированные под влиянием развития и проникновения Интернет-технологий в бизнес-среду. Доказано, что при внедрении индивидуальных мероприятий Интернет-маркетинга наблюдается экономия на маркетинговых затратах предприятия. Предложено состав и инструменты Интернет-маркетинга промышленных предприятий Украины, которые должны быть задействованы в стратегии Интернет-маркетинга промышленных предприятий та пути их использования для повышения эффективности деятельности предприятий: система автоматизации маркетинга, CRM-система, веб-сайт, поисковый маркетинг, онлайн-маркетплейси, контент-маркетинг.

Ключевые слова: Интернет-маркетинг, Интернет, Интернет-технологии, веб-сервисы, социальные сети, стратегия промышленного предприятия, рынок электронной коммерции.

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STRATEGIC MARKETING DECISIONS OF INDUSTRIAL BUSINESS ORGANIZATIONS

Introduction. The dynamics of supply and demand in industrial markets, the competitive business environment, the technologies and innovations of industrial products, as well as the development of modern management approaches require that modern industrial business organizations seek management tools in order to achieve sustainability in implementing adopted marketing strategies. A way to achieve this is to apply accurate procedures and prescriptions for making strategic marketing decisions considered as a component of the strategic marketing management in industrial enterprises.

1. Characteristics of strategic marketing in modern industrial business organizations

Over the last decades, the importance of strategic marketing has increased when managing industrial companies. This is mainly due to the pursuit of accurately predicting the future of markets and the business environment, reducing the risk of possible threats, achieving sustainable conditions for development, as well as to the realized importance of marketing achievements in implementing business strategies adopted by organizations. The need for a strategic marketing objective that the entire marketing activity should be oriented to and the necessity to develop the strategic thinking of marketing managers are the basis of similar processes. All these factors create the need to develop and execute ***marketing strategies in industrial companies***. Essentially, these strategies focus on the B2B marketplace, product development and technological innovations, price flexibility, sale, or appropriate communication tools. Their diversity creates prerequisites for alternatives, opportunities for timely and proper response to unexpected situations or to the emergence of new market trends, as well as for optimized management of operational marketing activities.

In industrial business organizations strategic marketing management (marketing management through marketing strategies) is recognized as an activity performed by managers, which relies on human potential as the basis of organizations, orients business activities to the needs of consumers, performs flexible regulation and timely changes in organizations that meet the challenges of the environment and allow for competitive advantage. All these enable organizations to survive and achieve their objective in the long run [adapted from: 1, p. 183].

In modern industrial enterprises, the classic formulations of a marketing strategy, seen as "a common plan for marketing activities by which a company expects to achieve its marketing goals" [2, p. 106], are being renewed. A marketing strategy traditionally refers to the process of planning and executing various marketing activities subject to the achievement of the set corporate goals. Modern trends in the concept of marketing strategy result from the *changing role of marketing* as [adapted from: 3, p.13]:

– an integral part of an organization's strategy determining its long-term benefits;

– a participant in organizational changes, requiring the creation of more flexible management structures;

– a prerequisite for the development of corporate culture enhancing the motivation of associates and their interest in the final business outcomes;

– a major factor in creating good long-term relationships with customers and partners;

– changing the way of thinking and the priorities of all contributors within an organization;

– an enhancer for significant management transitions: from marketing in a department to marketing within an organization, from tangible to intangible assets, from profit-earning transactions to long-term consumer profitability, from financial to marketing metrics.

The concept of industrial strategic marketing focuses on using B2B market information, identifying the 'right business consumer' and designing a competitive market position for a company. In this way, marketing strategies of industrial companies practically bind industrial markets and industrial products together, thus guaranteeing the existence of enterprises.

Strategic marketing management, as a management approach, along with the developed complex of marketing strategies, determine the future of an industrial enterprise in the long run, orienting it to achieving set strategic marketing *objectives* and agreed actions for managing demand. One of the main objectives of this complex is to create conditions under which a company not only avoids market problems, but also realizes achievements such as increasing its market share, entering new target markets, etc. As an integral part of the corporate strategy of industrial enterprises, marketing

strategizing faces major tasks related to the direction of business expansion, increasing the technological potential for expanding production capacity, product innovation, conquering new markets, etc. In addition, the marketing strategy of industrial enterprises determines the way the marketing structure is organized.

2. Specifics of strategic marketing decisions in industrial business organizations

Achieving the objectives and tasks of strategic marketing management in an industrial enterprise is implemented through a ***strategic decision-making process***. It includes decisions generally related to formulating a marketing strategy, its implementation, evaluation and the degree of its implementation, as well as to changing the strategy when irrelevance is identified.

The varieties of strategic decisions are also defined by marketing strategies as tools for solving strategic problems with long-term effects and key importance to industrial enterprises. From this point of view, a ***portfolio of key strategic marketing decisions*** is created as presented in Fig. 1.

Fig. 1. A portfolio of key strategic marketing decisions in an industrial business organization

The position strategic marketing decisions hold in relation to the corporate strategy of industrial organizations ranks them in three levels presented in Fig. 2.

Strategic decisions related to the *formation and implementation of a marketing strategy* are an integral part of the management of industrial enterprises. The following groups of factors affect their development:

– trends in the external marketing environment related to market demand, requirements of consumer organizations, distribution conditions, legal regulation, and territorial distribution;

– state of competition in supply, major competitors and strategic fields of their activity;

– industrial enterprise potential and management resources (product, financial, commercial, personnel, scientific, technical, information) and defining its strategic advantages;

– basic concept for the development of an enterprise, strategic goals and objectives of the business in its main strategic fields.

Taking the above mentioned factors into account enables marketing managers to choose the most appropriate ways to work in different markets.

When implementing a marketing strategy, decisions made are allocated according to the stages of development of this process, namely:

1) Decisions on major components of market environment. In the long run, determinants of demand and competition which are in permanent dynamic dependence are crucial.

2) Decisions related to the availability of resources and the management potential of an industrial organization. The advantages and disadvantages of competitors are justified here.

3) Decisions on synchronizing enterprise potential with the interests of individual segments of consumer organizations. Thus, a target market with regard to which an enterprise develops its competitive advantages is identified.

4) Decisions on creating a set of marketing activities. Impact is made on the target market by which an enterprise can realize its competitive advantages and achieve development in the perspective outlined by the marketing strategy.

Various management approaches are applied when making the presented strategic marketing decisions.

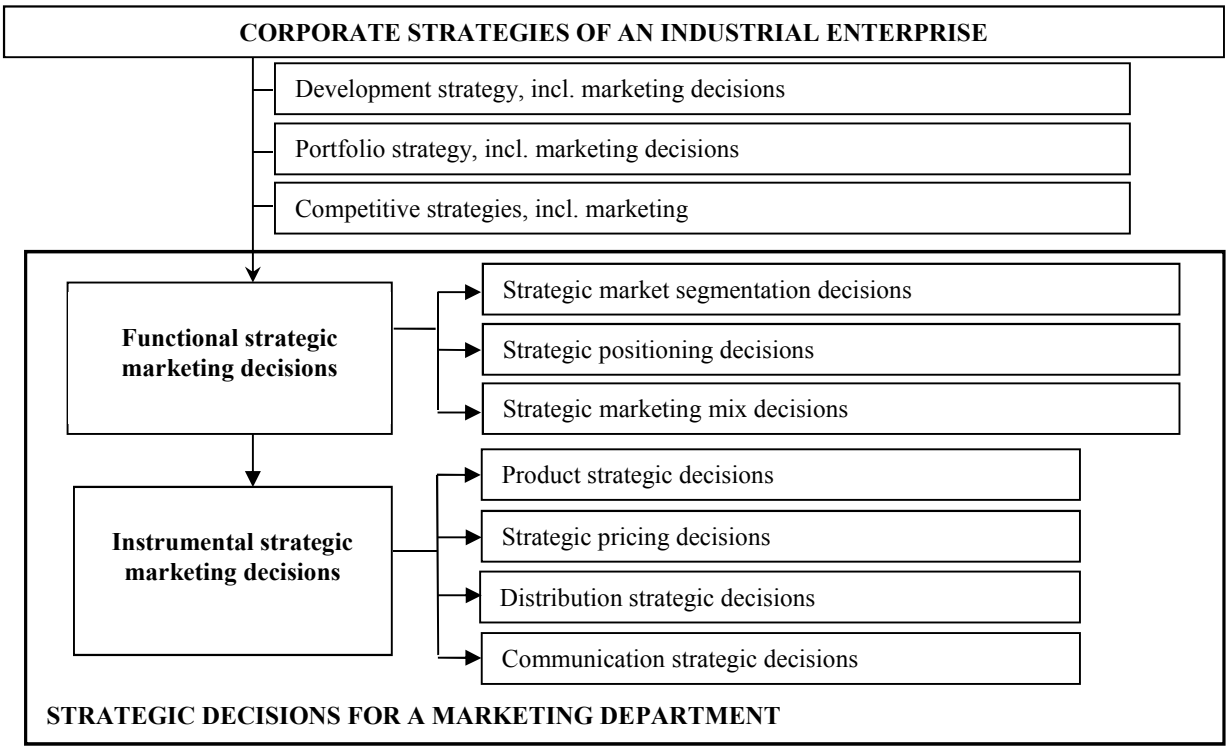

Fig. 2. A system of strategic marketing decisions of an industrial enterprise

3. Strategic marketing decision-making approaches in industrial business organizations

In industrial organizations, strategic marketing decisions can be made through management approaches, including the following:

– ***An approach to making 'unstructured' strategic decisions***. Brothers, Andriessen, and Nicolaes [4, p. 132] determine three phases of this process through empirical research:

▪ *Identification.* Includes two options: a) managers recognize that something happens and it presents a problem or opportunity (changes in enterprise environment, etc.); b) managers have reliable information about the change and events are well understood.

▪ *Development.* It consists of two sub-processes: a) search for internal and external periodic decisions for recurring events; b) generating potential decisions or modifying existing ones to adapt to new conditions.

▪ *Selection.* It comprises three sub-processes: a) screening and detailed study of the alternatives generated in the previous phase; b) selecting and evaluating alternative decisions by analyzing and arbitrating them; c) making a final decision by reviewing the specifics of strategic alternatives.

Studying practices applied in different industries shows that this process is affected by factors such as pursuit of rationality, forces and policies within organizations, and external control.

– ***A rational decision-making approach***. With it, strategic decisions are perceived as a kind of rational decisions, defined by Rue and Byars [5, p. 52]. Rational decisions include assessing factual information through deduction and can be optimizing and satisficing. The optimization approach (sometimes completely identified with the rational one) involves the following steps:

1) Recognizing the need for a decision.

2) Identifying, ranking and weighing decision-making criteria.

3) Collecting the necessary accessible information and data.

4) Identifying possible alternatives.

5) Evaluating alternatives with regard to each criterion.

6) Choosing the best alternative.

When the need to make a strategic marketing decision of the 'satisficing' type is realized, the main criterion is the expected outcomes of implementing the decision which are ranked according to their interrelated importance. In addition, interests of in-company groups (labour unions, informal groups), decision-makers (managers and contractors) and their personal characteristics (individual personal environment and experience) are taken into account, as well as dimensions such as

position, structure, objectives and traditions of an enterprise.

– ***A situational approach to strategic decision-making***. Dikhtl' and Khërshen [6, p. 12] give a detailed description of the stages of decision-making depending on a particular situation. The main phases with their corresponding sub-phases are as follows:

1) *Identifying the problem*: Describing the problem → Structuring the problem;

2) *Developing a concept of data collection*: Creating a model → Determining the purpose of data collection → Formulating hypotheses → Designing a research project (sources of information, contractors) → Research plan (loss of time, value) → Determining the method of data collection;

3) *Field studies*: Selecting and developing data collection tools → Determining the object of study and the volume of the panel → Data processing → Developing a detailed plan for data collection → Organization, implementation and control of data collection → Documentation;

4) *Data analysis*: Preliminary verification of collected information → Preparing for a computer analysis → Material processing → Interpretation of results → Preparing a research report;

5) *Presenting and delivering to decision-makers*.

– ***'Minimax', 'Maximin' and risk proofing approaches***[1]. In this aspect, several types of decision-making conditions can be distinguished, namely:

- *security* – in a security situation, managers can specify the results for each alternative;
- *risk* – managers can often, and at certain costs, obtain information on various possible outcomes in order to prevent a risk situation by using a value analysis of expected payments for each alternative, such as a mathematical calculation based on probability of occurrence;
- *uncertainty* – the 'minimax' (optimistic), 'maximin' (pessimistic), and the risk-averting (supports effective planning) approaches are applied when managers have little or no information to evaluate various possible outcomes.

– ***Strategic decision-making approach in strategic uncertainty***. Based on the strategic management theory, Belorus, Rogach and Chekerda [8] define the tools used to make decisions in the event of strategic uncertainty. One of them is the management system through ranking strategic tasks by: *constantly monitoring changes in the environment; *reporting the results from analyzing changes and assessing the degree of urgency to make a decision (a problem or a new opportunity found); *classifying and categorizing tasks with constantly revising, updating and ranking their structure in order to make the right decision. This system is perfectly appropriate for strategic marketing decisions, with decision-making and implementing being controlled by taking into account important strategic effects not only for marketing but also for the entire enterprise.

When applying the above mentioned approaches, each industrial enterprise must choose the most appropriate one on the basis of a serious analysis as well as the correct market behaviour, supported by a procedure, which will ensure the achievement of the adopted strategic marketing objective.

4. Conditions and recommendations for strategic decision-making

The necessary conditions for making the right decision in an industrial enterprise include the presence of:

– a database of up-to-date data describing the status of the issue;

– various alternatives among which to choose one or more;

– criteria for comparing alternatives according to the degree to which the objectives of an enterprise are achieved;

– objectives and individual qualities of particular employees or managers making decisions;

– decision-making tools, additional data collection, analysis, forecasts of the consequences of decision-making, etc.

In the process of making strategic marketing decisions in an industrial enterprise, it is possible to affect the objective sources or subjective preferences of decision-makers, as well as the process itself, through the following:

- creating conditions for selling products whose consideration as initial information in decision-making brings benefits to a particular enterprise;
- adopting criteria for comparing alternatives that help the objectives of decision-makers to correspond to those of an enterprise;
- unrealistic assessment of basic information and decision-making with emphasis on individual inclinations and the quality of decision-makers.

This means that in making this type of decisions, industrial organizations must follow some basic ***recommendations***, such as:

- Strategic marketing of an enterprise requires a purposeful, well-coordinated management approach in a framework integrating marketing tools.
- It is necessary to establish a specialized strategic unit in an enterprise, which will serve the formulation and implementation of the marketing strategy, solve

[1] These approaches are related to the management concept of decision theory studying the choice of economic agents [7]. It develops in two directions: **normative decision theory* – analyzes results from decisions or determines the optimal decisions, given limitations and hypotheses; **descriptive decision theory* – analyzes how business agents make decisions that they need to execute. It is also closely related to the 'game theory' and 'probability theory'. The practical application of decision theory is implemented by statistical and econometric methods.

strategic problems and apply the adopted procedure for strategic decision-making. If such a unit cannot be set up, it is necessary to train individual managers or to involve external specialists in strategic marketing management.

- If strategic risks and crises in industrial marketing are to be overcome, the following activities should be implemented:

– develop a predictive system, i.e. a sensible perception of the moment a crisis is expected to occur;

– develop a system of measures in case of strategic uncertainty related to information overload, inadequacy of marketing activities, existing irrelevance of marketing strategy, etc;

– determine all possible causes for a possible crisis and the so-called 'crisis centres' in an enterprise;

– assess the degree of danger of each possible crisis;

– eliminate the impact of the 'crisis centres'.

In case problems arise when implementing the strategic decision-making procedure, certain possible actions for eliminating them are suggested in Table.

The recommendations presented here do not completely exhaust the possibilities for ensuring the proper implementation of the strategic decision-making process, as well as for overcoming potential risks and threats with the marketing strategizing in industrial business organizations.

Table

Solutions to some problems in the course of making strategic marketing decisions

Problems	Management decisions
Using only quality marketing analytics tools	Increased use of modern software quality approaches and marketing analytics tools
Insufficient/missing information or fragmented/ missing strategic decision-making analysis	Obtaining analytical information and firmly renouncing intuitive strategic decision-making
Impact of unsubstantiated opinions on managerial staff	Improving the scanning of the external and internal marketing environment

Conclusion. Identifying the specifics of strategic decisions in marketing, as well as the contemporary approaches for making this type of decisions in industrial business organizations emphasizes their significance for modern marketing management. This gives grounds for such decisions to be defined as a strategic management tool suitable for several purposes: determining the right strategic direction for these enterprises, successfully implementing the marketing strategy and revising it when needed, and overcoming strategic marketing issues with long-term effects on their business. Strategic marketing decisions are further evidence of the benefits of purposeful long-term management and have successfully revealed their potential in modern industrial organizations.

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Григорова В. Стратегічні маркетингові рішення промислових бізнес-організацій

Проблемою дослідження цієї статті є стратегічні рішення, прийняті при формулюванні та реалізації маркетингових стратегій організацій промислового бізнесу. Основна мета полягає в тому, щоб розкрити потенціал стратегічних маркетингових рішень як сучасного інструменту управління маркетинговою стратегією, позначивши позицію, яку цей тип рішень займає в стратегічному маркетингу в промисловому секторі, характеризуючи їх специфіку і типологію, пока-

зуючи можливі підходи і процедури для прийняття таких рішень, винесення рекомендацій щодо їх успішного впровадження як процесу і подолання можливих проблем.

Ключові слова: стратегічне управління маркетингом, стратегічні маркетингові рішення, підходи до прийняття стратегічних рішень, організація промислового бізнесу.

Grigorova V. Strategic Marketing Decisions of Industrial Business Organizations

The research problem of the present concept study is the strategic decisions made when formulating and implementing the marketing strategies of industrial business organizations. The main objective is to reveal the potential of strategic marketing decisions as a modern management tool in marketing strategizing by outlining the position this type of decisions holds in strategic marketing in the industrial sector, characterizing their specifics and typology, showing possible approaches and procedures for making such decisions, making recommendations for their successful implementation as a process and overcoming possible problems.

Keywords: strategic marketing management, strategic marketing decisions, strategic decision-making approaches, industrial business organization.

Григорова В. Стратегические маркетинговые решения промышленных бизнес-организаций

Проблемой исследования настоящей статьи являются стратегические решения, принимаемые при формулировании и реализации маркетинговых стратегий организаций промышленного бизнеса. Основная цель состоит в том, чтобы раскрыть потенциал стратегических маркетинговых решений как современного инструмента управления маркетинговой стратегией, обозначив позицию, которую этот тип решений занимает в стратегическом маркетинге в промышленном секторе, характеризуя их специфику и типологию, показывая возможные подходы и процедуры для принятия таких решений, вынесения рекомендаций по их успешному внедрению в качестве процесса и преодолению возможных проблем.

Ключевые слова: стратегическое управление маркетингом, стратегические маркетинговые решения, подходы к принятию стратегических решений, организация промышленного бизнеса.

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MARKETING RESEARCH IN THE MARKETING INFORMATION SYSTEM

Formulation of the problem. In the current conditions of globalization, the theory of marketing information has become a very relevant section of marketing, as the scientific basis of the processes of reducing market uncertainty in the face of increasing business risks.

The need for information determines the performance of marketing research, the main task of which is to avoid inaccurate assessments, risks and unjustified costs – monetary efforts, time in making management decisions.

Market research, including the study and forecasting of its market conditions, the calculation of its capacity, the definition of projected sales, analyzing consumer and competitor behavior, and the competitive environment as a whole.

The purpose of marketing research is to provide the company with reliable and reliable information about the market, the structure and dynamics of demand, the tastes and desires of consumers, the creation of an assortment that meets the market requirements and satisfies demand better than the products of a competitor.

Systematic market research, that is, market research, enables the formation of an information base for effective business management.

Analysis of recent research. Marketing studies in both theoretical and practical aspects are devoted to many works of domestic and foreign authors. Among them are the work of such foreign researchers as I. Ansoff, W. Wong, P. Dickson, F. Kotler [1], M. Porter, D. Saunders. Among domestic scientists, these questions were taken care of: S. Garkavenko, V. Gerasimchuk, N. Goncharova, A. Grechan, O. Zozuliov, Y. Larina, I. Lilyk [2], I. Pedko, P. Break, T. Primak, M. Auckland, T. Reshetilova, A. Starostina, N Chukhray, Yu. Yakovets, O. Yashkin and many other scientists.

The purpose of this article is to determine the role of marketing research in the marketing information system.

The main results of the study. To solve the marketing problems of a company, firm or enterprise, to study the current market opportunities requires reliable marketing information.

Marketing information is the objective (statistics, marketing research results, etc.) and subjective (estimates, opinions, rumors) information needed to analyze the marketing environment, market, product, consumer and involvement in marketing decisions, development marketing plans [3, p. 37].

There are a number of alternative classifications of marketing information [4, 5, 6].

S. Chebotar, Y. Larina etc. proposed a classification of marketing information, which contains ten features [7]:

- purpose – initial data, control data;
- level – macroplane data, microplane data;
- property – property of the enterprise, property of other enterprises or the state;
- measure of openness – open, private, secret;
- role in the activity of the enterprise – strategic, tactical, operational;
- content – ideas (hypotheses, concepts), methods (approaches, techniques), fact (statistics);
- poll source – internal, external;
- needs of the enterprise – information about the environment, available opportunities for influencing the market, existing restrictions on the impact of marketing tools in different environmental conditions;
- aspects of marketing activity – information of demand, supply, to what extent and under what conditions the supply and demand were balanced, the state of the market, consumers, prices, competition, macrosystems;
- time of receipt – secondary, primary information.

I. Pedko [8] proposed a classification of marketing information based on the principle "marketing environment factor – information on marketing environment factor". This classification has five attributes and has an applied focus on creating customized databases of marketing information for management decisions:

1) factor of marketing environment:

– database of suppliers (importers, domestic, manufacturers, intermediaries);

– database of marketing intermediaries (wholesale, retail);

– customer database (corporate, end);

– database of competitors (domestically, internationally);

– database of contact audiences (state institutions, mass media, banking institutions, insurance companies, public organizations, political organizations);

– database of macromarketing environment (international-economic, socio-economic, socio-demographic, regulatory-legal, social-political, scientific-technological, natural-ecological, cultural);

2) database replenishment cycles:

– continuous;

– periodic;

3) availability of information at the time of the problem:

– primary (does not exist);

– secondary (there are – foreign sources, domestic sources).

4) presentation form:

– text information;

– numerical information;

– graphic information;

– audio, video information;

5) possibility of mathematical and statistical analysis:

– quantitative information;

– quality information.

Marketing information itself is one of the most valuable market products, products. Its value lies in the fact that it: creates prerequisites for competitive advantage; helps to reduce the degree, degree of risk; warns of changes in the environment; facilitates the formulation and coordination of strategies; supports and substantiates decisions; contributes to the growth of the company's image; gives an opportunity to analyze the activity of the firm in order to improve its efficiency [9].

Availability of valuable marketing information provides prompt decision-making, reduces the impact of market uncertainty, reduces the risks of entrepreneurial activity.

Such value is manifested by the following characteristics:

- purposefulness – the degree of orientation towards achieving the set goal;
- relevance – the degree of time criticality to solve a particular problem;
- reliability – the degree of correspondence to objective reality, the accuracy of reproduction of the state of the object;
- promptness – the degree of timeliness of receipt;
- relevance – the degree of compliance with the requirements for the required data;
- completeness of display – the degree of consideration of all factors that determine the state of the object;
- comprehensibility – the degree of possibility of rational interpretation;
- consistency - the degree of avoidance of conflicting conclusions in interpretation [8].

Marketing information is collected, analyzed and distributed within the Marketing Information System (MIS), which is part of an organization's management information system.

The main purpose of MIS is to provide valuable marketing information, eliminate market uncertainty and reduce the risks of entrepreneurial activity in the management decision-making process for problem areas of marketing. The goal can be considered achieved if the product obtained meets the set requirements. The product of the MIS is a set of information about the state of the firm's internal environment, the state of the micro and macro environment of the firm, which can be presented in the form of databases or marketing research reports.

For the first time, a combination of marketing information collection was proposed F. Kotler.

The traditional model of marketing information system of F. Kotler, assumes the presence of four elements:

1) the internal reporting subsystem;

2) subsystem of external marketing information;

3) the marketing research subsystem;

4) subsystem of information analysis (Fig. 1).

Each task is assigned its own tasks, so the presence of each element is justified.

Let us dwell more on the marketing research subsystem. The role of the marketing research subsystem is to gather the necessary information to evaluate marketing situations and make informed marketing decisions based on them.

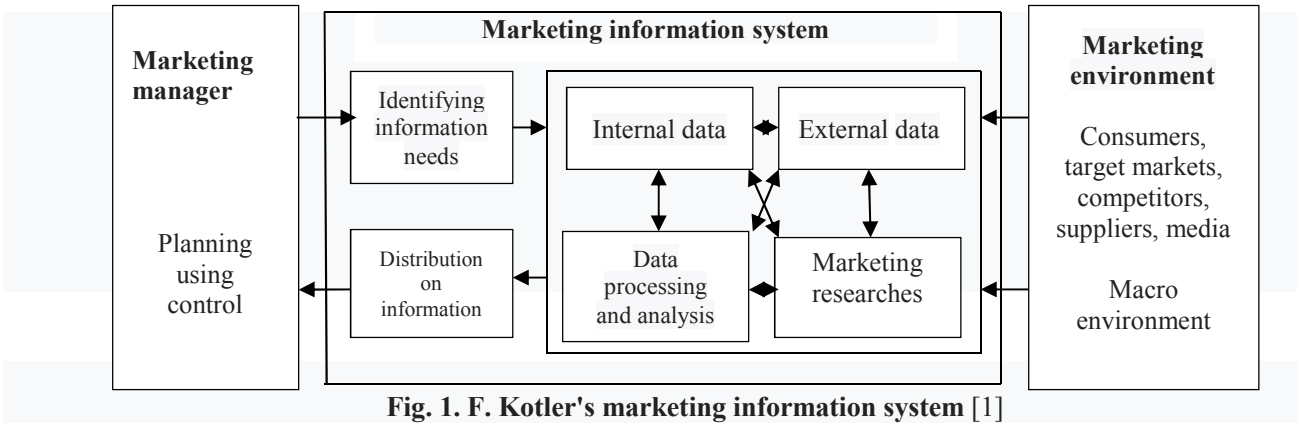

Fig. 1. F. Kotler's marketing information system [1]

This system works periodically if necessary to solve certain market problems: introduction of a new product on the market; search for new markets; increase in sales; study of competitors' activities; development of advertising campaign [8].

Marketing research is defined as a broad range of research, encompassing sociological and public opinion polls, which involves the collection and interpretation of information about markets and organizations, and individuals.

Marketing research is a management function that binds manufacturers to the market through information used to identify market opportunities and problems necessary to formulate and evaluate a company's mar-

keting activities, to monitor marketing activities, to develop an understanding of marketing as a process.

The goal of marketing research is to provide management with accurate, relevant, timely information to make the right decisions [2].

Required elements of marketing research:

– scientific approach based on objectivity and accuracy;

– systematic and complex nature;

– the ability to use productive information to make decisions at different levels in the enterprise management system [2].

The objectivity of information is ensured when it is confirmed by different sources.

Accuracy is related to the use of research tools, which are developed very carefully, especially when composing the questionnaire, its structure, the selection and training of those who will conduct the survey, the processing of answers.

Complexity means that the application of marketing provides effect only if it is used as a system. Performing individual marketing actions usually does not produce lasting positive results.

As a result of marketing research, executives and specialists of the marketing firm receive information that allows them to obtain benefits in relation to a specific product and market; reduce financial risk; to study the attitude of existing and potential buyers; observe and respond to changes in the external environment; evaluate your own business. Thus, marketing research is an important component of marketing activities in order to reduce the uncertainty that accompanies marketing decisions. It should also be borne in mind that the tasks that are solved in marketing research require close collaboration between marketers and line managers of the customer company who are responsible for operational activities. Therefore, granularity of research tasks will help to reach an understanding between all stakeholders, since among a sufficiently large list of research tasks, it will not be difficult to find at least one solution that would help a specific manager [10].

Empirical MD as a process and method of obtaining data, facts of the development of market processes has its logic, according to which the stages of its implementation are determined. The number of such steps, their nature and sequence are slightly different in different guides. In Fig. 2 shows the most frequently highlighted ones.

In the first stage, the marketing manager needs to articulate the research problem. A clear statement of the problem is the key to successful marketing research.

The concept of marketing research is a general statement of goals, objectives and identifying possible ways and ways to solve the problem. The problem is seen as some kind of contradictory situation, as a complex issue that needs to be addressed.

Therefore, an important prerequisite for a successful solution to the problem is its correct formulation. The classic situation is when marketing research is not addressed to a real problem. In order to avoid such a situation, it is necessary to investigate all possible causes of symptoms. Often a reconnaissance survey is conducted for these purposes. Most often, clients of marketing firms do not know their problems. They state that profit is decreasing, sales are falling, market share is decreasing, inventory is increasing, etc., but these are only symptoms, and it is important to identify the causes of their manifestation.

Fig. 2. Stages of marketing research (F. Kotler classification) [1]

You need to know what the problem definition is:

– identification of symptoms;

– a clear statement of the possible causes or underlying problems underlying the symptoms;

– Identify a complete list of alternative actions a marketing manager can take to solve problems.

In the second stage of marketing research, a plan for collecting the necessary information is developed. Developing a research plan requires identifying data sources, research approaches, research tools, sampling methods, and contact methods [1, p. 130].

In the third stage, the necessary information is collected. This phase of marketing research, as a rule, high costs and is the source of the maximum number of errors. In the fourth stage, the analysis of the activity, the analysis of information that is obtained through cabinet and field research, as well as the choice of the optimal solution from the alternatives that may arise in the analysis of information. The fifth stage is the implementation of marketing activities. This is the level of decision making by the management of the organization based on the information obtained during the marketing research project. At the end of the marketing research, its results should be presented to stakeholders. The management needs only the most significant results that will form the basis of the marketing decisions made.

The sixth stage is decision making. The results may not satisfy the managers who can make the decision in a deeper study of the issue. If the reliability of the research

results casts doubt on management, the decision may not be made in favor of the new service.

Marketing research requires a careful study of the object of study. Because in the end, the object of the study sets the goals and objectives of marketing research, detailed search technology.

The main objects of marketing research can be the economy and the market, product and product groups, consumers, competitors, elements of the marketing complex [11]. There are different areas of marketing research that are based on common theoretical and methodological principles. There are nine main areas of marketing research: market research, competition research, consumer research, product research, price research, product distribution research, product promotion system research, enterprise internal environment research, enterprise research.

Of all areas of marketing research, market research is of the greatest interest to marketers and business executives. The objects of market research are: trends and processes of market development and factors that influence it (analysis of changes in economic, scientific and technical, demographic, environmental, legislative and other factors); market structure and geography; supply and demand in the market and conditions of their optimal ratio, capacity and its dynamics; market barriers; state of competition; market conditions opportunities and risks.

Based on market research, you can get forecasts of its development, find out market trends, key success factors;

effective ways of conducting competition policy in the market and information on the possibility of entering new markets; segment the market, justify the choice of target markets and market prices.

Also, with the help of a complex of market research works they find potential buyers, study their needs, real and possible demand for the product, determine the trends of the market situation change, predict the market development in the future. Such studies provide information about all the conditions and processes that affect goal setting, strategy development and marketing planning.

Information about the state of the market makes it possible to: obtain competitive advantages, determine opinions and attitudes of consumers, coordinate strategy, increase confidence in advertising, reduce business risk, monitor the external environment, evaluate their own activities, improve efficiency [11, 12]. The research of competitors is to obtain the necessary data to develop strategies for achieving competitive advantage in the market, as well as to find ways and means to achieve the most favorable position on the market. Objects are different types of competitors. This trend involves identifying the main competitors and analyzing their strengths and weaknesses (production, sales, product policy, personnel, financial status, etc.), studying their market share, as well as consumer reactions to competitors' marketing tools. Consumer research allows you to identify and explore the whole set of stimulating factors that guide consumers in their choice of goods (income, social status, gender and age structure, education). Objects are individual consumers, families, consumer organizations. First of all, determine the actual and potential consumers, after which the specificity and structure of consumer requests, their possible reactions to measures to promote specific goods in the market. The purpose of the analysis - to study "his" consumer, his real needs and requests.

The process of analysis determines not only their own tastes and habits, customs and inclinations, but also their intrinsic motivations, which makes it possible to predict the peculiarities of behavior of certain groups of consumers in the future as a reaction to the purposeful actions of the producer, as well as to change the situation on the market.

Consumer research involves studying the structure of consumption, the supply of consumers with goods, trends in consumer demand, the analysis of processes and conditions to meet the basic requirements of consumers.

Proper interpretation of these data allows you to develop products that are almost guaranteed to be in demand, as well as an adequate strategy for their promotion in the market.

The study of a product (product or service) is aimed at determining the correspondence between the technical and economic indicators, the quality of goods on the market and the requests and requirements of customers, as well as an analysis of their competitiveness.

The analysis of goods shows, on the one hand, what goods the consumer wants, what he values most in them (design, technical level, convenience in consumption, repair and maintenance, etc.), and on the other – what new (modified) products and how to provide consumers who should first and foremost focus on manufacturing and marketing. In addition, the research results make it possible to determine how products should be distinguished from a number of similar ones (positioned on the market), which should be directly targeted by consumption-enhancing measures that benefit the consumer who purchased the product, etc. Price research is focused on determining the level and price ratio that would make the most profit at the lowest cost. The objects of study in this case are: the cost of development, production and sale of goods; correlation of consumer properties and prices for similar products of competitors; consumer behavior and response to commodity prices. As a result of research, the most effective ratios of cost – price (internal conditions) and "price – profit" (external conditions) are selected.

The results of the analysis are used to develop the pricing policy of an enterprise in specific commodity markets (segments).

The study of the distribution of goods is aimed at finding the most efficient ways and ways to quickly bring goods to consumers, their implementation, determine the optimal number of warehouses, vehicles. The main subjects of the study are product distribution channels, intermediaries, forms and sales methods.

The analysis of methods and channels of distribution (distribution or sale) of products is carried out in

order to determine how it is possible to bring products to consumers most effectively: directly or through intermediaries,

what should be the structure of the sales system, who can be involved as an intermediary and under what conditions, etc. At the same time, they compare all types of costs for the sale of products for alternative options and determine the optimal one.

The study of the system of promotion of goods is aimed at identifying the best means of promotion of goods in the market, increasing the authority of the producer. The subjects of the study are: the behavior of suppliers, intermediaries, buyers, the effectiveness of advertising and sales promotion tools.

Research in the field of advertising involves testing (preliminary test) means of attracting consumers, comparing actual and expected results. The data obtained allow us to make decisions on activation of advertising campaigns, to search for new ways of influencing consumers, to increase interest in the products of the enterprise.

The study of the internal environment of the enterprise aims to determine the real level of its competitiveness, the possibility of successful adaptation to the factors of the environment that are dynamically developing.

The study of an enterprise (firm, organization) aims at analyzing the results of its economic activity; research of external and internal environment of the enterprise; research of the enterprise image; evaluation of the effectiveness of marketing activities. The object of such research is the results of marketing and production and economic activity of the enterprise; external market opportunities and threats.

Within the framework of the analysis of the macroenvironment, the influence of its factors on the market processes in general and on the activity of a particular enterprise is studied.

These factors determine the field of market activity of the enterprise, and therefore the purpose of the analysis is to study the possible directions of development, of course, taking into account the characteristics of the enterprise itself.

The enterprise market analysis is carried out by a specific type of product or group of homogeneous products. The purpose is to study demand, its quantification (market capacity) and trends (long-term, seasonal, etc.).

In doing so, the estimates should reflect both the overall market situation of specific product changes and the distribution of demand by market segments, the position of the company being analyzed (market share), and the elasticity of demand relative to prices. As a result of such studies, measures are being developed to ensure that the activities of the enterprise are fully adapted to the dynamic environmental factors; identify the weaknesses of the enterprise and what measures should be taken to reinforce those weaknesses. All marketing research in general can be divided into two main groups: fundamental and applied.

Fundamental MD is the study of the basic market patterns and trends, macroeconomic indicators. The subject of such studies are consumer price indices, socio-demographic structure of the population as a whole and by region, the structure of the average consumer basket and so on.

Applied MDs are studies that are conducted to meet the needs of organizations for the information that is needed to make management decisions.

Conclusions. Thus, the main purpose of a marketing information system is to provide valuable marketing information, eliminate market uncertainty, and reduce the risks of entrepreneurial activity in the management decision-making process for problem areas of marketing. The traditional model of the marketing information system involves four elements: the internal reporting subsystem; external marketing information subsystem; the marketing research subsystem; subsystem information analysis.

The role of the marketing research subsystem is to gather the necessary information.

Therefore, marketing research is concerned with the systematic collection, display and analysis of data from various aspects of marketing activities. Marketing research is a function that, through information, connects marketers with markets, consumers, competitors, with all elements of the external marketing environment. Thus, they reduce the degree of uncertainty and apply to all elements of marketing that affect the marketing of a particular product in a specific market.

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Педько І. А., Гордієнко В. В. Маркетингові дослідження в системі маркетингової інформації

У статті визначено сутність поняття маркетингової інформації, маркетингових досліджень та ієрархію цих понять. Проаналізовано класифікацію маркетингової інформації, яка має прикладну спрямованість на створення спеціальних баз даних. Описано суть маркетингових досліджень та їх роль у системі маркетингової інформації. Обґрунтовано, що в умовах невизначеності зростає значення ефективної роботи підсистеми маркетингових досліджень, роль якої полягає у збиранні необхідної інформації для прийняття управлінських рішень, що покликані усунути ринкову невизначеність і знизити ризики підприємницької діяльності в процесі прийняття управлінських рішень щодо проблемних сфер маркетингової діяльності.

Ключові слова: маркетинг, маркетингове дослідження, система маркетингової інформації, управлінське рішення.

Pedko I., Hordiienko V. Marketing Research in the Marketing Information System

The article defines the essence of the concept of marketing information, marketing research and a hierarchy of these concepts. The classification of marketing information, which has an applied focus on the creation of special databases, is analyzed. The essence of marketing research and their role in the marketing information system are described. It is substantiated that, in the context of uncertainty, the importance of effective operation of the marketing research subsystem, whose role is to collect the necessary information to make management decisions, increases, that are designed to eliminate market uncertainty and reduce the risks of entrepreneurial activity in the management decision-making process for problem areas of marketing.

Keywords: marketing, marketing research, marketing information system, management decision.

Педько И. А., Гордиенко В. В. Маркетинговые исследования в системе маркетинговой информации

В статье определена сущность понятия маркетинговой информации, маркетинговых исследований и иерархия этих понятий. Проанализирована классификация маркетинговой информации, которая имеет прикладную направленность на создание специальных баз данных. Описаны суть маркетинговых исследований и их роль в системе маркетинговой информации. Обосновано, что в условиях неопределенности возрастает значение эффективной работы подсистемы маркетинговых исследований, роль которой заключается в сборе необходимой информации для принятия управленческих решений, призванных устранить рыночную неопределенность и снизить риски предпринимательской деятельности в процессе принятия управленческих решений по проблемным сферам маркетинговой деятельности.

Ключевые слова: маркетинг, маркетинговое исследование, система маркетинговой информации, управленческое решение.

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PROBLEMS OF PUBLIC ADMINISTRATION IN THE UNITED TERRITORIAL COMMUNITIES IN UKRAINE

Actualization of the problem. The implementation of the decentralization reform in Ukraine is entering the final phase of creating about 1,500 united territorial communities (in Ukrainian OTG) throughout the country. However, the current phase of the completion of the creation of the OTG revealed a number of problematic issues, the relevance of which increases as new ones are created, and as a result of the full-value functioning of the already created the OTGs. The problems that fell out of the attention of the developers of decentralization reform are becoming apparent. The most important of them is the striking inequality in the initial conditions for the formation of the OTG, which became clear only now, after two or three years of functioning of the created OTG, especially of the rural type. The decisive motive for the creation of the OTG over the entire period starting in 2015 is the expectation of a better, in comparison with the current administrative system, financing of primary communities. The budget of any OTG for the first time is formed taking into account direct subventions from the general budget of Ukraine, which ensure the functioning of health care and educational institutions, partly also – the development of the OTG itself from centralized sources. However, the second part of the OTG budget is made up of own funds earned by the OTG itself on the basis of centrally established by the state norms for deductions from taxes, excise duties etc. Expectations of their own source of development and improvement of the living standards of residents are connected with this part of the OTG's own budget. However, the available data indicate a huge difference in the amounts of income earned by different OTGs. Thus, in the most successful OTG, own funds in the community budget per resident reach 15-18 thousand hryvnias, and on average in the country – less than three [1]! In the Troitska OTG of Luhansk oblast there are 7 thousand own funds per inhabitant, and only a little more than two thousand per inhabitant of the neighbor's Chmyrivska one.

The decentralization reform in Ukraine is carried out, first of all, as a budget one. However, in fact, in the OTG a fundamentally new paradigm of the position of a person as a member of society is formed, which had no analogues in the system of the former administrative model: district – settlement-personality. The success of the community cannot be achieved without taking into account the role of the individual person – a participant of the OTG as a self-sufficient business entity. And on the other hand, OTG should provide every person with the development opportunities, the potential of which is formed by the very status of this new administrative unit.

Unfortunately, the authors of the decentralization reform did not provide for the necessary symbiosis of new human capabilities in the OTG and the sources of his self-development. Under the current conditions, there is a «vacuum» of public administration on the part of the OTG leadership, which has limited opportunities to influence income growth, to assist its residents in initiating entrepreneurial activities, and to take an active part in managing the community. The management apparatus itself in most rural OTGs is formed by analogy with previously existing village councils, in which it is impossible to implement full-fledged public management of the community, covering setting goals for their development, planning and financial support for their achievements, organizing feedback and motivation population to perform common tasks, effective control and regulation of planned processes. It is the results of the analysis of the problems of public administration in the OTG that the present article is devoted to.

Analysis of materials, which demonstrate the process of understanding the issues of public administration in the OTG. The fundamentals of decentralization reform in Ukraine, which were scattered by the low sovereign bodies and the huge bodies, fully were built on the positive growth in foreign countries, in particular, Denmark, Norway, Poland etc, mostly represented in numerous publications, for example [2]. The powers of local self management at the beginning of the reform of decentralization in Ukraine are disclosed in the monograph [3], development and implementation of projects in the public sphere is in the work [4], implementation of national regional policy is in the work [5]. But in fact, as a result of analysis of the process of creation and activity of the OTG [6], most attention of decentralization theorists and practitioners in Ukraine is paid to the issues of budgetary decentralization, the most of the works devoted to the creation of the OTG in Ukraine such as [7]. As a result, in the process of building the OTG in Ukraine, a new type of budget type was implemented in the framework of the model of

budgetary unitarity, which is carried out in the largest countries of Europe. Theoretical points of public administration in the OTG at the most general form is regulated by the Law of Ukraine "On the principles of state regional policy" [8], which outlines the order of power division in Ukraine into two branches – state government and local self management, but without clear reflection of the governance features that emerge from reform at the lower level of the administrative system.

The Law of Ukraine «On the Principles of State Regional Policy» provides for the establishment of special regional development agencies, co-founded by regional chambers of commerce and industry, regional associations of entrepreneurs, regional representations of all-Ukrainian associations of local self management, associations of local self management of the region etc. However, the two-stage process of creation of the OTG in Ukraine, when at the first stage, the OTGs were created voluntarily according to the Law of Ukraine «On Voluntary Amalgamation of Territorial Communities» [9], led to a delay of the whole process of administrative decentralization, when for the mass of technical details of creation of the OTG there was a problem of management within them which fell out of the attention of the creators of the OTG.

Awareness of the issue of public administration in the OTG becomes evident as a result of the first years functioning of the already created territorial associations. For example, the authority of a number of the OTGs in Luhansk oblast, who have been working for 2-3 years, note the insufficiency of their own means of managing the development of the production base inside the OTG, without which their financial recovery is impossible. Thus, in Krasnorichinsk community with 7 thousand people, they protect youth from outflow, as a potential power, which is able to create new farming or participate in its work. The main issue of these problems is to ensure the participation of the OTG in the implementation of the program for developing entrepreneurship as a part of the assistance of the United Nations and different foundations with the financial support of foreign countries [10]. This incentive to encourage entrepreneurship remains a major source in a number of other communities in the Luhansk oblast. The head of the «Kreminska Business Association» said that for the development of business in the OTG there was not enough information and mutual understanding with the authorities, which at the grassroots level of the administrative structure of the country did not fully understand the benefits of cooperation with businessmen [11]. Therefore, as the problems that hinder the development of the domestic OTGs become more and more important, there is an increasing awareness of the existence of a certain «vacuum» of public-private management within the OTGs, which is the topic of this article.

The purpose of the article is to show the results of the analysis and identification of actual issues of public administration development within the OTG.

Outline of the main material of the article. Ukraine carries out its decentralization almost the last of the Eastern European countries, using the positive foreign experience, most of all – Poland, as the closest large country, with which Ukraine shares a common history, and many quantitative parameters.

Analyzing the legislation on the decentralization of Ukraine, it is clear that the image of Poland's three-level administrative system «voivodship-county-gmina» was taken as a model, however, the final parameters of the administrative restructuring, which is still incomplete, still differ from the Polish one.

So far, 25 regions remain in Ukraine with 16 voivodships in Poland, however, administrative units of the middle and lower links in Ukraine are formed on a larger scale. There should be approximately 100 districts, which are supposed to be reorganized in the regions, in the presence of 380 counties in Poland, and the number of units of the lower level – amalgamated hromads – 1,500 instead of almost 2,500 in Poland.

Taking into account the large territory of Ukraine, the area of formed self-managed administrative units is much larger. The question arises about the completeness of the competence that local authorities in the Ukrainian OTG should have, including in comparison with Polish gminas. This issue should be considered in the context of the expected results of the completion of the administrative reform of decentralization.

In the existing system, the executive agencies of the lower-level settlements – towns of regional subordination, urban villages, villages are located at the lower level of the three – or even four-level executive branch system. In such circumstances, the decision of many issues of self-management in the lower-level communities is undertaken by the executive agencies of higher administrative units – the district in the town, district and region. As a result of the reform of decentralization, the whole range of issues of self-management in the lower-level communities falls on their own executive agencies, except for tasks which are solved jointly with the executive agencies of the higher links.

Actually, several hundred existing united territorial communities have actually encountered the peculiarities of self-management in the new conditions. The self-management in the OTG is practically becoming autonomous, and all participation of higher levels of management is reduced to a system of forming the OTG budgets at the expense of centralized budget subventions and own funds. The funds of state subventions for the functioning of the health care and education sectors, as well as the funds of the regional development fund, are set by the state budget for the next calendar year and cannot serve as a source of financing the development of the OTG in other areas.

Own funds of the OTG are formed on a single regulatory framework, including about 40 sources, the most important of which are:

60% of the individual income tax;

100% of the property tax;

100% of the single tax;

5% of the excise tax on retail (tobacco and alcohol products, petroleum products);

100% of the tax on profit of enterprises and public utilities of the OTG;

100% of payments for the provision of administrative services;

25% of the environmental tax.

The possibility of expanding the basis for the formation of its own part of the OTG budget and its effective use forms the tasks of the executive branch within the community as an object of public administration. An analysis of the results of the OTG functioning, the dynamics of their indicators, allows to judge the unavailability of public administration within the OTG to solve the tasks. The published materials of numerous analyzes of the OTG work in different regions of the country, the data obtained from the study of the state of OTG of Luhansk oblast indicate that the OTG, for the most part, is not able to seriously influence the processes of its own development and remain hostages to the conditions in which they were created.

The decisive indicator, which proves the low dynamics of the development of the OTG, is the share of own revenues earned by the OTG per resident.

Let's present the data in the table on the amount of own income and share of income per resident for some OTG.

Table

Data on the number and income of the OTG

Name of the OTG	Region	Reporting period	Number of inhabitants, thousand people	Own income of the OTG, thous. UAH	Own income per one resident of the OTG, thous. UAH	Source
1	2	3	4	5	6	7
Troitska	Dnipropetrovsk	9	2,7	48330	17,9	[1]
Senchanska	Poltava	months	3	50100	16,7	[1]
Slobozhanska	Dnipropetrovsk	2018	14,6	229220	15,7	[1]
Boratynska	Volyn	year	7,5	94380	12,1	[1]
Verbkivska	Dnipropetrovsk	–	7,5	84000	11,2	[1]
Oliivska	Zhytomyr	–	5,3	58300	11,0	[1]
Bohdanivska	Dnipropetrovsk	–	6,8	74120	10,9	[1]
Shakhivska	Donetsk	–	2,9	31030	10,7	[1]
Stepanetska	Cherkasy	–	5,3	55650	10,5	[1]
Hrechanopodivska	Dnipropetrovsk	–	3,6	37440	10,4	[1]
Troitska	Luhansk	2018	14,1	97871	6,9	[12]
Chmyrivska	Luhansk	2019	7,68	16468	2,14	[13]

Significant differences in the amount of the OTG own income per inhabitant for different territorial communities indicate not so much the different level of quality of self-management in the OTG, but the difference in the initial conditions for creating the OTG. Let us note several reasons explaining the various results of the OTG activity.

1. OTGs were in the most favorable position, on the territory of which there are larger communal enterprises and budgetary institutions, as the Individual Income Tax (IIT) are protected by more than 50% of the total revenues from the OTG. Whereby, the higher the salaries of employees of enterprises and institutions, the greater the amount of contributions to the community budget. In other words, the advantage was found in the OTG, created on the basis of more developed industrial and agro-industrial areas.

2. Serious differences in the initial conditions are noted for the OTG, which were created at the first stage by voluntary association, and those that now have to be created by force. During 4 years of decentralization reform, the legislation was constantly improved and supplemented, in particular, starting in spring of 2018, it became possible to create the OTG based on the unification of villages and urban villages together with nearby towns of regional subordination. For small settlements near such cities, more attractive opportunities for unification appeared [14], while the settlements that had created the OTG before the adoption of this Law lost this opportunity.

3. On the contrary, the negative factor is the proximity of the OTG to the large industrial cities if they divert the activities of the residents of neighboring OTG, created from relatively weaker in terms of industrial development of settlements and villages. In general, the

system of the OTG creation there is their division into those that attract the attention and participation in the activities of residents of the other OTGs (let's call them OTG-recipients), and on the other hand – those whose activities are carried out outside the OTG (let's call them OTG-donors). As a result, there are already significant trends in impoverishment of the OTG-donors and, on the contrary, enrichment of the OTG-recipients. It means that usual, as under the conditions of the past administrative structure, the participation of a resident of any settlement in the activities of another, which did not cause any impact on their relations before, leads to the creation of new effects, which are reflected in the formation and use of budgets. The usual manifestations of a person's life in the conditions of the OTG affect the formation of income and expenditure of their budgets. Thus, the work of residents of villages and urban villages adjacent to larger settlements, including towns outside the OTG, means payment of individual income tax (IIT) to the OGT-recipient's budget. The purchase of fuel at gas stations, other goods and services also increases the revenues of the OTG-recipient in the form of excise taxes and taxes. At the same time, residents of the OTG-donor use the results of community activities at the expense of their own earned money. In such an unenviable position was Chmyrivska OTG of Luhansk region, located near the larger town Starobilsk, where many residents of the villages which belong to Chmyrivska hromada, work. It is no coincidence that Chmyrivka, which is the typical OTG-donor, earns the smallest amount of its own income per resident, while Ttoitsk OTG's income per resident is higher, because it does not feel the influence from being near the larger town.

The pattern of formation of OTG recipients and OTG donors is shown in the figure.

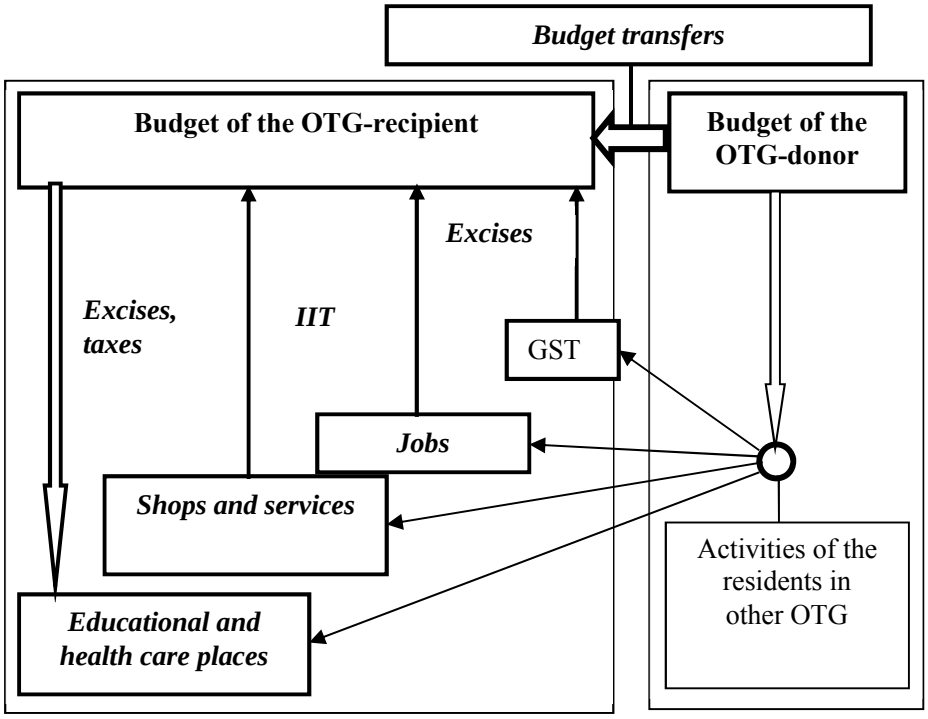

Figure. Scheme of donor and recipient OTG formation through participation of residents of some communities in the activities of others (GST – gas stations; IIT – individual income taxes)

4. Neither the developers of the decentralization reform, nor the creators of the first OTGs took into account the inevitable enlargement of districts, their transformation into counties with new administrative centers, with the inevitable change in the status of former district centers and the procedure for their centralized financing from the country's budget. For example, the town Starobilsk, previously a district center, having become the center of Starobilsk community, receives a state subvention for education and medical care not for the entire district, as before, but only on the basis of the number of residents of Starobilsk community. As a result, Starobilsk OTG is now invoicing for payment to neighboring OTG, whose residents are served in medical facilities in Starobilsk.

5. It is known that OTG took over thousands of institutions of education, culture, and health care with their centralized funding from subventions from the country's budget. At the same time, it is not taken into account that hospital counties with new medical centers are being created by the health care reform, and the financing of the small medical institutions in OTG falls on their shoulders.

Overcoming these negative phenomena requires effective public administration, the tools of which for such objects as the united territorial community are still

being developed. Keep in mind that public administration, as part of the general theory of management, is nevertheless different from classical management, whose objects – organizations and enterprises – are deterministic systems with a certain set of elements. Public administration in OTG cannot be carried out in the form of administrative management, but rather in the form of economic management, when set goals and objectives are solved by means of stimulation and accounting results based on developed feedback [15].

Accordingly, the deterministic plans in OTG typical for management are replaced with open offers in the form of motivational offers that take into account the prevailing archetypes of population behavior in this OTG based on stable traditions, upbringing, regional peculiarities, etc. Thus, public administration in OTG should implement certain paradigms of activity, designed for different segments of the population. So, for the population of agricultural regions of the north of the Luhansk region, such stereotypes of behavior are simultaneously characteristic, as:

work in other regions of the country and abroad while maintaining the constancy of the place of residence in his OTG;

the desire to develop their own business in the form of farms, especially family type;

obtaining education and subsequent work in nearby larger settlements, etc.

Given these archetypes, for example, development programs for farming within the OTG should be developed, which has a significant impact on the own revenues of the OTG budget, namely – a single income from entrepreneurial activity, 60% tax on personal income, property tax, in particular, land.

Such programs should persuade farmers not to transfer their activities to other territorial communities on their own motives, thereby changing the recipient of these payments. Particular, attention should be paid to family farms (FF), which are least likely to change their habitat. So far, programs provided by the UN and various funds with financial support from foreign countries remain the main source of agricultural development. But already, OTG executives are seeing a decrease in external assistance and see the need to create a favorable public environment within the OTG to stimulate entrepreneurs, in particular, through the use of best practices from foreign countries to stimulate entrepreneurial activity at the expense of their own communities.

The analysis of the world experience shows that it is within the local self-government bodies that they develop their own system of measures to stimulate entrepreneurial activity, in particular for the initiators of the creation of new FF, for young farmers under 40 years of age and others [16]. In order to improve their self-financing, it is better to anticipate some costs for setting up new farms to compensate for them over time by increasing the revenue from the activity of the created business objects. Thus, it may be expedient to pay for the development of the first hectares of arable land, discounts to the payment of taxes to farms when increasing their production volumes, the introduction of zero and reduced rates of taxation of young farmers, improvement of land relations within OTG for their preparation for leasing new farmers, assistance in state registration of created objects.

Conclusions. An analysis of existing OTG and the process of completing their creation shows that for the success of the decentralization reform it is necessary to overcome the problems that arise within the created OTG. The traditional relations “society-personality”, “leadership-population” inside the OTG do not meet the requirements that form the nature of self-governing administrative and economic units, which become the OTG. This makes the task of forming a modern public administration system within communities capable of recognizing the causes of emerging problems, timely responding to them and developing measures to prevent negative trends, encouraging community members to work for the common good, including by allocating budget funds for farming development and other types of entrepreneurship/

The necessity of legislative regulation of the problem of unequal conditions of formation of OTG, should not be excluded.

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Савченко О. С. Проблематика публічного управління в об'єднаних територіальних громадах в Україні

Аналіз діючих об'єднаних територіальних громад (ОТГ) і процесу завершення їх створення показує наявність серйозних проблем, що виникають всередині ОТГ як через нерівномірність початкових умов їх створення, так і через неготовність їх керівництва до нових умов публічного управління всередині громад. Показано, що традиційні відносини «суспільство-особистість», «керівництво-населення» всередині ОТГ не відповідають вимогам, які формує сама природа ОТГ, як самоврядних адміністративних одиниць. Традиційні прояви людей-членів ОТГ, пов'язані з їх від'їздом, роботою, покупками і користуванням послугами в інших ОТГ, призводять до зменшення доходів ОТГ, в яких вони проживають, чим обумовлюється поява ОТГ-донорів і ОТГ-реципієнтів.

Це робить актуальним завдання формування сучасної системи публічного управління всередині громад, здатної усвідомлювати причини проблем, своєчасно на них реагувати і розробляти систему заходів запобігання негативним тенденціям і заохочення членів громад до праці на загальну користь, у тому числі за рахунок виділення спеціальних коштів бюджету на розвиток фермерства та інших видів підприємництва в ОТГ.

Ключові слова: підприємництво, адміністративна реформа, об’єднана територіальна громада, спроможність громади, фермерське господарство.

Savchenko A. Problems of Public Administration in the United Territorial Communities in Ukraine

An analysis of the existing united territorial communities (OTG) and the process of completion of their creation shows the presence of serious problems arising inside the OTG as a result of unequal initial conditions for their creation, and because of the unwillingness of their leadership to the new conditions of public administration within communities. It is shown that the traditional relations “society-personality”, “leadership-population” within the OTG are not correspond to the requirements that form the very nature of OTG as self-governing administrative units. The traditional manifestations of the people who are members of OTG related to their departure, work, shopping and using services in other OTGs lead to a decrease in the incomes of the OTGs in which they live, which determines the appearance of OTG-donors and OTG-recipients.

This makes it urgent to create a modern public administration system within communities that is able to recognize the causes of emerging problems, respond to them in a timely manner, prevent negative trends and encourage community members to work for the common good, including by allocating special budget funds for farming development and others types of entrepreneurship in OTG.

Keywords: entrepreneurship, administrative reform, united territorial community, community viability, farming.

Савченко А. С. Проблематика публичного управления в объединенных территориальных громадах в Украине

Анализ действующих объединенных территориальных громад (ОТГ) и процесса завершения их создания показывает наличие серьезных проблем, возникающих внутри ОТГ как по причине неравномерных начальных условий их создания, так и из-за неготовности их руководства к новым условиям публичного управления внутри громад. Показано, что традиционные отношения «общество-личность», «руководство-население» внутри ОТГ не соответствуют требованиям, которые формирует сама природа ОТГ, как самоуправляемых административных единиц. Традиционные проявления людей-членов ОТГ, связанные с их отъездом, работой, покупками и пользованием услугами в других ОТГ, приводят к уменьшению доходов ОТГ, в которых они проживают, чем обусловливается появление ОТГ-доноров и ОТГ-реципиентов.

Это делает актуальной задачу формирования современной системы публичного управления внутри громад, способной осознавать причины возникающих проблем, своевременно на них реагировать и разрабатывать систему мер предотвращения негативных тенденций и поощрения членов общин к труду на общую пользу, в том числе за счет выделения специальных средств бюджета на развитие фермерства и других видов предпринимательства в ОТГ.

Ключевые слова: предпринимательство, административная реформа, объединенная территориальная громада, состоятельность громады, фермерское хозяйство.

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EMPIRICAL RESEARCH OF DEVELOPMENT FEATURES OF THE ORGANIZATIONAL CULTURE OF CONSTRUCTION ENTERPRISES

Problem statement. The problems of development of the organizational culture of enterprises by different types of economic activity are being actualized, taking into account their specificity. This allows for greater flexibility and the ability to respond promptly to changes in the internal and external environment, to strengthen competitive positions in the markets that meet the current conditions of management.

Against this background, the need for theoretical substantiation and the development of practical recommendations to improve the management effectiveness of organizational culture of enterprises in the context of corporate social responsibility have emerged.

Analysis of recent publications on the problem. Over the past decades, foreign and domestic scientists have paid considerable attention to substantiating conceptual provisions and scientific and methodological approaches to improving corporate culture development management. The evolution of development and essence of organizational culture of enterprises from different points of view is investigated, its peculiarities and differences from corporate culture are determined [1-17]. The mechanisms of managing the organizational culture of enterprises under changing environment are substantiated [18-25]. The impact of organizational culture on the efficiency and level of competitiveness of enterprises was evaluated and the relationship between organizational culture and financial results was proved [26-37]. Various methodological approaches have been proposed, which allow to estimate the level of development of organizational culture [38-44].

The author of this article in the previous researches revealed the modern tendencies of development of the organizational culture of the enterprises according to the results of the expert survey [45]; features, barriers and drivers of digital transformation of organizational culture of enterprises have been investigated [46]; systematic existing scientific approaches to defining the meaning of the term «customer orientation» by classification groups, among which the component of organizational culture, which means the key competence of the enterprise, is highlighted; ability of the company; skill; part of organizational culture, set of beliefs [47]; the structural components of the organizational and economic mechanism for managing the organizational culture of enterprises have been determined [48].

Based on this, despite such close attention to the problem identified by scientists, it remains relevant to conduct scientific research in the field of evaluating the development of organizational culture of construction enterprises using economic and statistical methods. All this largely determined the choice of the topic of this study and its focus.

Setting objectives. The purpose of this article is an empirical research of the organizational culture of construction enterprises, identifying trends in its development in modern conditions and improving the methodical approach to assessing the level of development.

Outline of the main results and their justification. In the last decade there is a tendency of deterioration of labor potential in the construction industry. Thus, the analytical estimation of statistics shows that the number of employed workers in construction enterprises decreased by 40.4% in 2010-2018, and their share in the total number of employed workers by all economic activities – by 1.2 percentage points, or from 4.8 to 3.6%. The number of employed workers in construction enterprises decreased by 42.3% and their share by 1.3 pp or from 5.8 to 4.5% of the total.

During this period, the number of employees in construction enterprises decreased by 40.3%, and their share in the total number of employees by all types of economic activity – by 1.3 percentage points, or from 5.3 to 4%. The number of employees in construction enterprises decreased by 42.1% and their share by 1.2 pp or from 5.7 to 4.5% of the total number (Table 1).

Table 1

Dynamics of employed and employees persons at construction enterprises

Years	Number of employed, *thousand people*		Number of employees, *thousand people*	
	from economic entities	*including at the enterprises*	*from economic entities*	*including at the enterprises*
2010	524.0	472.1	477.7	462.8
2013	399.6	371.7	373.2	362.1
2014	318.5	286.1	288.1	278.2
2015	282.5	248.1	247.6	239.2
2016	283.9	247.0	252.8	241.7
2017	293.7	257.8	265.0	251.9
2018	312.3	272.2	285.1	268.0

Compiled by: [49, p. 21, 23].

As can be seen from the analysis, the proportion of staff costs on construction enterprises negligible ends to lowering spare. For the years 2010-20188 this figure

decreased by 0.7 pp or from 3.9 to 3.2% of the total Ukrainian personnel expenditures. Accordingly, the share of labor costs at construction enterprises decreased by 0.8 pp or from 3.9 to 3.1% of the volume of labor costs at enterprises for all types of economic activity (Table 2).

Table 2

Dynamics of personnel costs at construction enterprises

Years	Personnel costs – total, *million UAH*	*Including* labor costs, *UAH million*
2010	11024.4	8066.5
2011	12498.4	9140.3
2012	15197.2	11321.4
2013	13681.4	10008.6
2014	15182.8	11083.7
2015	11628.1	8625.4
2016	12612.7	10402.2
2017	18167.2	14925.3
2018	24325.0	19757.3

Compiled by: [49, p. 85].

In order to identify contemporary problems, barriers, features, tendencies and ways of development of organizational culture of construction enterprises in Ukraine, an expert survey was conducted as a method of empirical research. This amounted to 5.2% of the total number of experts in all economic activities (115 respondents).

It is found that the formation of organizational culture of enterprises is influenced by top managers (1.7% of respondents), the owner of the firm (0.9%); HR department (0.9%) and clients (0.9%). Some experts (0.9%) said that organizational culture cannot be influenced because it is a process that cannot be managed.

It is proved that organizational culture is usually organized by company management (3.5% of respondents). A number of experts (0.9%) noted that organizational culture was formed spontaneously in their enterprises. And some (0.9%) state that they have absolutely no organizational culture.

Most surveyed companies do not impose corporate values and rules (3.5% of respondents). It was found that the corporate values and slogans stated by the company fully (3.5% of respondents) or partially (0.9%) coincide with its real values.

Most experts (5.2%) believe that the organizational culture of companies is effective. Based on the expert survey, key obstacles were identified to change the organizational culture of construction enterprises in the conditions of digitalization of business processes. Among them are: insufficient financial resources (1.7% of respondents); underdevelopment of IT infrastructure (0.9%); imperfection of the organizational structure (0.9%); lack of clear vision and support of the management (0.9%); low level of employee involvement (0.9%).

It was found that the values and principles, on which the organizational culture of the surveyed enterprises is formed, largely or partially, correspond to the personal values and principles of employees (1.7% of respondents each).

Experts say that organizational culture affects the financial performance of enterprises (3.5% of respondents). Successful organizational culture of construction companies can reduce costs and costs (2.6%); increase the level of profitability (1.7%); to increase sales volumes by improving the quality of logistics services (0.9%).

Based on the expert survey, it was found that the surveyed enterprises required complete (1.7% of respondents) or partial (3.5%) transformation of organizational culture. According to the respondents, the modernization of organizational culture should consist of upgrading of employees (3.5%) and introduction of digital technologies in order to optimize business processes (1.7%). However, construction companies do not point to the feasibility of transforming the relationship management system with consumers. This is mostly the case with companies in services, education and science, food industry, wholesale and retail trade.

The formation and development of the organizational culture of enterprises in the field of construction are significantly influenced by endogenous factors, which include the following: organization management (scientific and technical and innovative activities, production, personnel management, marketing and logistics, financial status, communication policy, planning and strategizing); employees of the organization (loyalty to personnel policy, personnel management, mission of the organization, work activity; observance of interests of the organization, confidentiality of information, value orientation). The above factors require the use of certain techniques and tools that can succeed in transforming the organizational culture of enterprises.

Therefore the author during the expert survey was focus on internal factors that influence the development of organizational culture of surveyed companies (Table 3).

It is established that, as a rule, the key companies are not formed on the construction enterprises and the strategic direction of the companies' activity is not defined. Most experts pointed to a lack of consistent and predictable approach to doing business and a clear overlap of goals across all hierarchical levels of the company (Table 4).

In construction companies, insufficient attention is paid to organizational training. For the most part, innovative ideas are not supported, employees are not encouraged to be creative and constantly improve their skills and knowledge (Table 5). It does not meet the modern requirements of the functioning of enterprises. This is especially true in the context of the intensive use of digital technologies, when the personnel must have digital competencies and the organizational culture of enterprises is transformed.

Table 3

Expert assessment of the influence of endogenous factors on development organizational culture of construction enterprises

Assertion	% to the respondents
1. The life of an organization should be guided by:	
constant coordination and discussion of all employees of the organization	66.7
teamwork based on a common idea	33.3
2. The real leader (leader) must first of all:	
possess various resources (image, money, connections, etc.) and enjoy recognition from subordinates	33.3
to initiate the process of creativity	66.7
3. Everyday work should:	
to constantly improve	66.7
performed and changed by each employee in their own way, based on the ultimate goal	33.3
4. Desires and interests of individual employees:	
individual and should be considered by the organization if it wants to achieve its goals	100.0
5. The main task of management:	
clearly structure business processes, create instructions, regulations, regulations and work with subordinates with their help	33.3
to set the general context of team movement and interaction, to provide employees with opportunities for development	66.7
6. Discrepancies and conflicts between employees are:	
threat to the stability of the organization, which interferes with the work	33.3
productive expression of individual opinions and differences of opinion	66.7
7. Communication between employees should be based on:	
open, comprehensive discussion of work issues	100.0
8. Working information and data:	
it is a common knowledge that does not need to be brought out	33.3
must be controlled and restricted	66.7
9. Decisions in the organization should be made on the basis of:	
roundtable discussion that allows you to see the problem from different angles	66.7
potential benefits (profits) and risks	33.3
10. It is preferable to do something:	
focusing on the benefits to yourself and the organization	33.3
in line with the overall goals, objectives, and traditions of the organization	33.3
following the rules and instructions	33.4
11. The working environment should be:	
harmonious, comfortable, and should like the staff	100.0
12. The basic principle of the organization should be:	
«We are one family»	33.3
there are no limits to perfection	66.7

Prepared by the author according to the results of the survey.

Note: 114 experts in various economic fields were interviewed, including 3 (2.6%) in construction. The share of respondents is calculated to the total number of experts of the respective type of economic activity.

Table 4

Answers to the question «What do you think are the goals and principles of the company?»

Assertion	Responses,% of experts		
	So	No	Part
There is a long-term purpose and direction of activity	-	50.0	50.0
Our strategy causes other organizations to change their methods of competition	16.7	50.0	33.3
There is a clear mission that gives meaning and direction to our work	-	50.0	50.0
There is a clear strategy for the future	-	66.7	33.3
Our strategic direction to employees is unclear	33.3	16.7	50.0
Short-term thinking threatens long-term vision	50.0	16.7	33.3
Our approach to doing business is consistent and predictable	16.7	33.3	50.0
Employees from different departments share a common perspective	-	16.7	83.3
It is easy to coordinate projects between different departments of the company	16.7	50.0	33.3
Working with someone from another company department is like working with someone from another company	16.6	16.7	66.7
There is a clear overlap of goals at all levels of the company	-	66.7	33.3

Prepared by the author according to the results of the survey.

Note: the proportion is calculated to the total number of experts of the respective economic activity.

Table 5

Answers to questions regarding the organization of training while working at the company

Assertion	Responses,% of experts		
	So	No	Part
We see error as an opportunity to learn and improve	16.7	-	83.3
Innovation and risk are encouraged and rewarded	16.7	66.7	16.6
Many things are «lost in the system»	16.7	50.0	33.3
Learning is an important goal of our daily activities	16.7	50.0	33.3
Employees are encouraged to be creative	-	66.7	33.3
We can introduce new ideas	16.6	16.7	66.7
New ideas are constantly being evaluated and improved	-	50.0	50.0
It is ready to support the development of new ideas	33.3	50.0	16.7
Innovation is a «painful» issue of our business activity	33.4	33.3	33.3

Prepared by the author according to the results of the survey.
Note: the proportion is calculated to the total number of experts of the respective economic activity.

Based on empirical research, it has been found that construction companies do not implement corporate social responsibility mechanisms in the context of sustainable development. Most respondents noted that companies did not invest in the transformation of organizational culture, did not implement the concept of sustainable development, and did not develop corporate codes. Organizational culture does not meet the goals and principles of sustainable development (Table 6). Consequently, construction managers tend to aim at reducing costs and increasing profitability.

Table 6

Expert evaluation of organizational culture construction companies in the corporate social responsibility system in the context of sustainable development

Assertion	Responses,% of experts		
	So	No	Part
The company is investing in the modernization of its organizational culture	16.6	66.7	16.7
The company implements special programs on the transformation of organizational culture within the Corporate Code	-	83.3	16.7
The company does not pay due attention to the modernization of organizational culture, which leads to deterioration of the financial condition of the company	33.4	33.3	33.3
The company implements the concept of sustainable development, one of the elements of which is organizational culture	-	66.7	33.3
Issues of organizational culture development are clearly presented in the strategic planning process of the company	-	83.3	16.7
Issues of organizational culture development are presented in the company's mission or basic principles of doing business	-	66.7	33.3
When organizational culture development issues are clearly presented in the strategic planning process of the company, the top management team makes cautious farsighted decisions	16.6	33.3	50.0
The staff influences the process of strategic management of organizational culture development	-	83.3	16.7
Organizational culture is an important component of corporate responsibility	16.7	50.0	33.3
The company has a Corporate Code, a key element of which is organizational culture	-	66.7	33.3
Organizational culture is consistent with the goals and principles of sustainable development	-	83.3	16.7

Prepared by the author according to the results of the survey.
Note: the proportion is calculated to the total number of experts of the respective economic activity.

An important element of the organizational culture of construction companies is the channels of internal communication. Experts noted that most often they use e-mail, the corporate website of the company, and sometimes the personal folder of the manager; corporate forum, chat; internal communication tools (video conferences, seminars, trainings); personal blogs, chats. The majority of respondents do not use personal blogs or chats at all (Table 7).

Based on the expert survey, the level of development of organizational culture of construction enterprises was estimated. For this purpose, indicators reflecting the characteristics of organizational culture have been identified and calculated. Thus, changes in the company, consumer orientation and organizational training characterize the adaptability of the organizational culture; strategic planning, goal setting and vision – mission; coordination, agreement and values – in-

teraction; ability development, teamwork, responsibility and authority – involvement. In the Table 8 presents the data of calculation of the level of development of organizational culture of the surveyed enterprises.

Table 7

Definition of internal communication channels and the frequency of their use in construction enterprises

Channels	Intensity of use, % of experts		
	Often	Sometimes	Never
Corporate site of the company	60	20	20
Email	80	20	-
Corporate forum, chat, email	40	60	-
Personal blogs and chats	-	40	60
Internal communication tools (reception hours of executives, information meetings, conferences, roundtables, meetings, conference calls, videoconferences, trainings, training programs, personal communication of employees, corporate holidays)	20	60	20
Manager personal folder (for transferring information)	-	80	20

Prepared by the author according to the results of the survey.
Note: 130 experts in various economic activities were interviewed, including 5 in the field of construction.

Table 8

Calculation of characteristics of organizational culture of construction enterprises

Features	Name and value of indicators, points			Characteristic values, points
Adaptability	Changes in the company	Consumer-oriented	Organizational training	0.33
	0.19	0.34	0.47	
Mission	Strategic planning	Goal setting	Vision	0.33
	0.37	0.38	0.25	
Interaction	Coordination	Consistency	Values	0.33
	0.50	0.27	0.23	
Engagement	Capability development	Teamwork	Responsibility and authority	0.33
	0.20	0.43	0.37	
In general	0.33			

Compiled and calculated by the author on the results of the survey.
Note: 127 experts from various economic activities were interviewed, including 6 experts in the field of construction.

Calculations showed that the assessment of organizational culture surveyed is 0.33 points. According to the scale (Table 9) the level of development of organizational culture of enterprises in the field of construction is low, because it is in the range of 0.26-0.5 points.

Table 9

The scale of assessment of the level of development of organizational culture

Assessment of organizational culture, points	The level of development of organizational culture
0–0.25	Very low
0.26–0.5	Low
0.51-0.75	Average
0.76-1.0	High

Compiled by the author on expert estimates.

To assess the level of development of organizational culture of construction enterprises, the technique of D. Denison was used. The survey includes 60 questions, organized into 4 groups: adaptability, mission, consistency and engagement. When filling out the questionnaire, 60 statements are evaluated on a five-point scale (from 1 to 5 points), after which the respondents' answers are translated into the average value of the evaluation of organizational culture characteristics. The next step is to calculate the arithmetic average of the scores on the survey items, for five questions for each index, as well as the average of the indices for the characteristics of the organizational culture. The average value of indicators of characteristics of culture is calculated. The average value of organizational culture determines the level of its development as a whole.

The calculations show that the organizational culture of construction companies is 0.69 (adaptability is 0.68; mission is 0.70; consistency is 0.72; engagement is 0.67), it is within 0.51–0.75. This means that the level of development of the organizational culture of the surveyed enterprises is average (Table 10).

Table 10

Calculation of characteristics of organizational culture of construction enterprises

Indicators	Assertion	Rating
1	*2*	*3*
The ability to adapt		
The ability to change (0.65)	The organization is very flexible and easy to change under the influence of external factors	0.50
	An organization aware of what is happening to competitors and trying to respond to changes in the external business environment	0.75
	The organization constantly uses qualitatively new ways of doing work	0.75
	Changes in organization are rarely met with employee resistance	0.50
	Various departments within this organization often collaborate to make the necessary changes	0.75
Attention to customers (0.75)	Customer comments and recommendations often lead to changes in the organization	0.75
	The customer's opinion directly influences our decisions	0.75
	All employees of the organization have a deep understanding of the wishes and needs of the client	0.75
	We encourage direct contact with members of the organization	0.75
	The interests of the end consumer are never ignored in our decisions	0.75
Organizational Training (0.65)	The organization encourages and rewards innovation and risk-taking	0.75
	We see failure as an opportunity for learning and improvement	0.50
	There are no major omissions in the organization	0.50
	Learning is an important goal of daily work	0.75
	We try to be sure that «the right hand knows what the left does»	0.75
Mission		
Strategic direction and intentions (0.70)	The organization has a clear mission that gives meaning and direction to our work	0.75
	The organization has a long-term goal and direction	0.75
	The employee understood the strategic direction of the organization	0.75
	The organization has a clear strategy for the future	0.75
	The organization's strategy forces other firms to change their competitive strategies	0.50
Goals and Objectives (0.75)	There is complete agreement about the goals of the organization between employees and executives	0.75
	The organization's leaders set far-reaching but realistic goals	0.75
	Leaders of the organization formally, publicly and openly speak about the goals we are trying to achieve	0.75
	We are constantly monitoring our progress against our stated goals	0.75
	Employees at the organization understand what needs to be done to succeed in the long run	0.75
Vision (0.65)	The organization has a vision for the future	0.50
	Leaders in the organization are forward-looking	0.75
	Short-term goals rarely conflict with the long-term orientation of the organization	0.75
	Our vision of the future inspires and motivates our employees	0.50
	We are able to accomplish short-term tasks without compromising our long-term prospects	0.75
Consistency		
Coordination and integration (0.65)	Our approach to doing business is very consistent and predictable	0.75
	There is a clear alignment of goals across the organization	0.75
	Employees from different organizational units share common perspectives	0.75
	It is easy to coordinate projects in different functional units of the organization	0.50
	It is much easier to work with someone in another organization than it is to work with someone from another company	0.50
Consensus power (0.75)	When there are differences, we work hard to reach a mutually beneficial solution for all parties to the conflict	0.75
	The firm has a strong organizational culture	0.75
	There is a clear agreement on the right and wrong approaches to performing work in the organization	0.75
	It is easy for us to reach agreement even on difficult issues	0.75
	We rarely find it difficult to reach agreement on key issues	0.75
Engagement in value (0.75)	The company has a clear and consistent set of values that determines how it does business	0.75
	This company has a distinctive management style and a clear set of management methods	0.75
	Executives show an example of reinforcing words with cases	0.75
	There is an organization code of ethics that defines employee behavior	0.75
	Ignoring the core values of the organization can lead to trouble	0.75

Ending of table 10

1	*2*	*3*
Engagement		
Authorization (0.65)	Most employees in the organization are actively involved in their work	0.75
	Organizational decisions are usually made at the level where the best information is available	0.75
	The information is widely disseminated in an organization where anyone can access the information they need	0.75
	Each employee believes that he can have a positive impact on the work of the entire organization	0.50
	Business planning in the organization is ongoing and in one way or another attracts every employee	0.50
Development opportunities (0.70)	The organization delegates power to allow employees to act independently	0.75
	People's abilities in an organization are seen as an important source of competitive advantage	0.75
	The organization continuously invests in the training of its employees	0.50
	The level of human capacity of the organization is constantly increasing	0.75
	Problems rarely arise in an organization, so employees have the skills they need to work	0.75
Teamwork orientation (0.65)	Co-operation and collaboration of employees with different functional roles in the organization are actively encouraged	0.50
	Working in an organization means being part of a team	0.50
	Work is organized in the company so that every second employee was able to see the link between their activities and goals of the organization	0.75
	Teams – primary «building blocks» of the organization	0.75
	Organizations rely more on horizontal control and coordination than on a hierarchy position	0.75

Compiled and calculated by the author on the results of the survey.

Due to the fact that completing the Denison's survey and assessing the level of organizational culture is time consuming, the author has proposed an improved methodology. The process of developing an integral methodology for quantitative assessment of organizational culture consists of the following stages: preparation of a questionnaire of 24 statements regarding the characteristics of organizational culture of enterprises; development of methods of analysis and evaluation of organizational culture.

The questionnaire consists of 24 statements based on the techniques of Denison and Hofstede. As a result, a new questionnaire is formed with 24 statements, assessments of which determine the organizational culture profile.

The assessment methodology is quantitative and includes procedures for collecting and analyzing data on the organizational culture of the enterprise. The procedure of organizational culture research consists of the following stages: filling in the questionnaires by experts; collecting and processing of received data; analysis and evaluation of the organizational culture development of the enterprise. The analysis and evaluation of organizational culture is carried out by calculating the obtained indicators with the following steps:

1. Translating respondents' answers from a five-point rating scale to the average of the evaluation of organizational culture characteristics (Table 11).

Table 11

Transfer of points in the answers of the respondents

Answer values (points)	1	2	3	4	5
Evaluation of answers	0	0.25	0.5	0.75	1

Compiled by the author.

2. The average arithmetic estimation of indicators on the items of the questionnaire (total 24) is calculated.

3. The arithmetic mean of two questions for each indicator is calculated (12 in total).

4. The average value of indicators on the characteristics of culture (total 4) is calculated.

5. The average value of indicators of cultural characteristics is calculated. The average value of organizational culture determines the level of its development as a whole.

Calculations on the example of construction companies showed that the Alpha Cronbach's ratio is 0.999. The coefficient of variation is 16.4%. In this regard, it is possible to take the average values for analyzing the organizational culture of enterprises (Tables 12, 13).

Table 12

The arithmetic average of indicators for the points of the questionnaire

Questionnaire points	Rating	Questionnaire points	Rating
1	0.464	13	0.607
2	0.607	14	0.607
3	0.679	15	0.679
4	0.750	16	0.779
5	0.679	17	0.714
6	0.464	18	0.750
7	0.786	19	0.786
8	0.607	20	0.607
9	0.786	21	0.821
10	0.643	22	0.536
11	0.750	23	0.929
12	0.571	24	0.750

Designed and compiled by the author.

Table 13

Assessment of organizational culture characteristics of construction enterprises

Organizational Culture Characteristics / Indicators	Average Values
Adaptability	0.608
The capacity for organizational change	0.536
Focusing on consumers	0.715
Organizational training	0.572
Mission	0.691
Strategic direction and intentions	0.697
Objectives and perspectives	0.715
Vision	0.661
Consistency (consistency)	0.689
Key values	0.732
The ability to consensus	0.729
Coordination and integration	0.607
Engagement	0.739
Delegation of authority	0.786
Orientation to teamwork	0.840
Capability development	0.679
Overall score	***0.682***

Designed and compiled by the author.

Thus, the calculations of the integral index of organizational culture showed that construction enterprises have an average level of its development, since the values are in the range of 0.5 to 0.75.

Conclusions. The results of the study allow us to draw the following conclusions. Enterprises in the construction sector have a fairly clear idea of their purpose and direction (the value of the indicator «Strategic direction and intentions» – 0.697). The mission statement, understood by the management, is understood by all employees and gives their actions purposefulness (Goal and perspective indicator – 0.715).

Companies have a sufficient level of employee dedication, their own approach to doing business (Coordination and Integration indicator – 0.607) and a clear set of key values (Key Value Indicator – 0.732).

Enterprises in the construction industry have a sufficient understanding of their customers' needs and needs (consumer focus indicator is 0.715, but they are not well adjusted to organizational changes and are not adaptable to changes in the environment (Change ability indicator 0.536; Organizational learning indicator – 0.572).

Employees of construction companies have a high level of involvement: they are dedicated to their work (the indicator «Development opportunities» – 0.679; the indicator «Orientation to work in a team» – 0.840).

It should be noted that in modern conditions, construction companies should focus on flexible development and internal focus.

Prospects for further research in this area are to develop a marketing strategy for managing the organizational culture of enterprises of different types of economic activity, taking into account their specificity.

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Ринкевич Н. С. Емпіричне дослідження особливостей розвитку організаційної культури будівельних підприємств

На даний час актуалізуються проблеми розвитку організаційної культури підприємств різних видів економічної діяльності з урахуванням їх специфіки. Це дозволяє досягти більшої гнучкості й здатності оперативно реагувати на зміни внутрішнього і зовнішнього середовища, посилити конкурентні позиції на ринках збуту, що відповідає сучасним умовам господарювання.

Мета даного дослідження полягає в емпіричному дослідженні особливостей організаційної культури будівельних підприємств, виявленні тенденцій її розвитку в сучасних умовах та удосконаленні методичного підходу до оцінювання рівня розвитку.

У результаті дослідження проаналізовано динаміку кількості зайнятих і найманих працівників у сфері будівництва. Викладено результати проведеного експертного опитування з метою виявлення сучасних проблем, бар'єрів, особливостей, тенденцій та шляхів розвитку організаційної культури будівельних підприємств в Україні. Виконано оцінку рівня розвитку організаційної культури підприємств. Запропоновано інтегральну методику оцінки організаційної культури будівельних підприємств. Апробація даної методики показала, що обстежені підприємства мають середній рівень розвитку організаційної культури (0,69), оскільки значення інтегрального показника знаходиться в межах 0,5–0,75.

Ключові слова: будівельне підприємство, організаційна культура, управління розвитком організаційної культури, експертне опитування, методики оцінки, тенденції, ефективність.

Rynkevich N. Empirical Research of Development Features of the Organizational Culture of Construction Enterprises

Currently, the problems of developing the organizational culture of enterprises of various types of economic activity are being updated taking into account their specifics. This allows you to achieve greater flexibility and the ability to quickly respond to changes in the internal and external environment, to strengthen competitive positions in the sales markets, which corresponds to modern business conditions.

The purpose of this study is an empirical research of the organizational culture of construction enterprises, identifying trends in its development in modern conditions and improving the methodological approach to assessing the level of development.

As a result of the research, the dynamics of the number of employed and hired workers in the construction industry is analyzed. The results of an expert survey are presented to identify current problems, barriers, features, trends and ways of developing the organizational culture of construction enterprises in Ukraine. An assessment of the level of development of the organizational culture of enterprises. An integrated methodology for assessing the organizational culture of construction enterprises is proposed. Testing of this methodology showed that the surveyed enterprises have an average level of organizational culture development (0.69), since the value of the integral indicator is in the range of 0.5-0.75.

Keywords: construction enterprise, organizational culture, organizational culture development management, expert survey, assessment methods, trends, efficiency.

Рынкевич Н. С. Эмпирическое исследование особенностей развития организационной культуры строительных предприятий

В настоящее время актуализируются проблемы развития организационной культуры предприятий различных видов экономической деятельности с учетом их специфики. Это позволяет достичь большей гибкости и способности оперативно реагировать на изменения внутренней и внешней среды, усилить конкурентные позиции на рынках сбыта, что соответствует современным условиям хозяйствования.

Цель данного исследования заключается в эмпирическом исследовании особенностей организационной культуры строительных предприятий, выявлении тенденций ее развития в современных условиях и совершенствовании методического подхода к оценке уровня развития.

В результате исследования проанализирована динамика количества занятых и наемных работников в сфере строительства. Изложены результаты проведенного экспертного опроса с целью выявления современных проблем, барьеров, особенностей, тенденций и путей развития организационной культуры строительных предприятий в Украине. Выполнена оценка уровня развития организационной культуры предприятий. Предложена интегральная методика оценки организационной культуры строительных предприятий. Апробация данной методики показала, что обследованные предприятия имеют средний уровень развития организационной культуры (0,69), поскольку значение интегрального показателя находится в пределах 0,5-0,75.

Ключевые слова: строительное предприятие, организационная культура, управление развитием организационной культуры, экспертный опрос, методики оценки, тенденции, эффективность.

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IT INDUSTRY AS THE BASIS OF INNOVATIVE DEVELOPMENT ECONOMY OF UKRAINE

Formulation of the problem. The current stage of development of the world economy is characterized by accelerated rates of scientific and technological progress and increasing intellectualization of the main factors of production. The development of a country and its level of competitiveness in the world market depends on the innovative activity of the subjects of the national economy. Nowadays, scientific knowledge and information resources are an important information and communication resource of the economy. The system of relations of modern society is turning in the direction of more efficient work with information.

The social significance of any process is determined not only by the availability of resources, production conditions, capital or money, but also by the availability of information resources, scientific knowledge and information. Priorities in industrial relations are shifting to scientific knowledge and information. In modern economy, social significance depends on the information essence, that is, the awareness of the subject or the saturation of its information flows. Public and economic power is shifted not to the owners of tangible capital but to the owners of information that is educational about how to make the most of the wealth in today's economy. Today, the richest people in the world are those involved in the information business.

Analysis of recent research and publications. The high degree of influence of information on modern socio-economic processes is emphasized by many researchers. Information economy in a narrow sense means "the aggregate of industries related to information production and logistics of this process" [1, p. 74]. In the broad sense of IE, it is seen as a component of IP, in which "socio-economic development depends, first of all, on the production, storage and dissemination of information among members of society" [2, p. 35], and productivity gains in the "new" economy, in turn, are driven by technological advances in information processing and transmission. Considerable contribution to the research of problems of innovative activity was made by such domestic and foreign scientists as A. Galchinsky, V. Geyets, M. Dolishny, A. Savchenko, M. Delyagin, V. Inozemtsev, E. Sparrow, B. Haywood, E. Jordan et al. However, in our opinion, the scale and level of scientific research of the problem of activation of innovative activity of domestic enterprises remain insufficient. This is evidenced by the low level of innovation component in economic processes.

The purpose of the article is to investigate information aspects of innovation and identify ways to overcome the contradiction between the high innovative potential of Ukrainian IT specialists and the low level of innovative development of Ukraine.

Outline of the main research material. In the information economy, economic activity is manifested mainly in the production and use of accumulated information and advanced information technologies to improve the efficiency and profitability of other forms of production and ensure economic growth, as well as the accumulation of information capital and wealth (information products and services).

Limiting factors in this case are information, scientific knowledge, intelligence and human capital. Thus, economic and political power passes to the owners of information and the means of its reproduction. Business success is beginning to be driven by involvement in global information, communication and digital networks. The information paradigm is based on the following fundamental position: the substance of various socio-economic phenomena and processes is information and communication processes and all their manifestations. Various political, social, psychological, and economic phenomena (processes) have an informational nature or an information-based genetic basis.

Information dynamics have both economic dynamics and dynamics of social processes. If we consider the information criterion (the method of collecting, producing, analyzing, using appropriate information and managing information processes in society) as a systematic principle and basis for reproduction, then we can develop a classification of stages or stages of development of human civilization. Each of these stages is closely interdependent with the change in the modes of reproduction that accompany the expediency of the in-

formation determined by the evolution of the technological basis of the reproduction of society.

In order to carry out the process of reproducing their diverse social life, and, above all, the socio-economic one, people enter into certain relationships and relationships, within the framework of those forming a single coherent system, there is their relation to the world and nature. Agreeing with S. Dyatlov, we note: "Relations and relations of this kind are informational in nature, that is, the combination of all relationships between people about the reproduction of their multifaceted social life is an information interaction, exchange of information, formation, its accumulation, production, analysis, selection and consumption" [3, p.79]. In the information society, the structure of creative productive human forces is actualized in the form of human information resources (information needs and abilities). In an information society, a person is a multifaceted personality as the decisive creative factor and the main information resource of society. In the modern socio-economic system of a new type, which has an extremely complex structural and functional organization, a person performs various functions, plays a variety of social roles. Within the information paradigm of socio-economic development [3], that reproduction is a system of wholly organized structures and elements that functions and develops in accordance with objective laws of expression. In such a system, the exchange of information, energy and matter with the external environment cannot occur freely and spontaneously, but is carried out within the boundaries determined by the conscious goals and interests of development and determined by the type, level, type and form of its concrete existence. The increasing role of information in socio-economic development and its acceleration on this basis has led to the socio-technical process of informatization of society. As a social phenomenon, informatization acts in the form of social activity, focused on the ultimate goal – the transformation of humanity into an information civilization with a humanistic and rational social system. The essence of this activity lies in the mastery of social information as the most important resource of development by means of informatics [4, p.45].

To reflect post-industrial development, Bell proposed to apply traditional indicators of economic development, such as GNP, and to revise the system of national accounts (SNA) in terms of costs and benefits.

"The system of national accounts should begin with a series of social indicators, which should give us a broader and more balanced account of economic progress in the sense in which we understand it" [5, p. 116]. Bell believed that efforts to create a system of national accounts should be aimed at achieving four major goals: a) measuring the social costs and benefits of innovations; b) measurement of social illnesses (ie crime, divorce); c) creation of "budgets achieved" to identify social needs (ie, housing, education); d) search for indicators of economic opportunities and social mobility.

The appropriateness of accounting in the system of national accounts of social needs can be confirmed by the studies of J. Keynes [6, p.103-110], dedicated to identifying the main incentives or goals (aspirations) that encourage people to refrain from spending received funds and are subjective. A. Marshall [7, p.117] wrote about the expediency of including in the SNA the analysis of peculiarities of behavior of economic entities. This proposal is relevant today and has developed in modern world practice in accordance with the UNSR project, approved in 1993 [8]. The calculation of GDP is carried out by three methods: production, distribution and end use (Table 1).

At the same time, intangible services are being introduced into the new conceptual model of inter-industry balance (IMB) [9, p.12].

Table 1

Methodological bases for building the system of national accounts (SNA) and balance of national economy (BNG)

(developed by the authors on the basis of source [9])

Principles of construction of the SNA	BNG construction principles
Marxist conception of the interpretation of social production, according to which material production plays a key role in the structure of social production. It participates in the creation of the aggregate social product (CSP) and national income (ND).	Extended interpretation of social production, according to which all branches of material and intangible production take part in the production of national income
The primary is the income of workers in the sphere of material production (distribution). All other categories of employees form the secondary income structure resulting from the redistribution	Any economic activity that generates income for the subjects of such activity is considered productive. That is, the criterion of productivity is income. Primary income is treated as that resulting from the primary distribution of GDP and includes the income of all economic entities.
The result of viral performance is formed not less than the product of the end, but of the longest living in the sphere of material production	The result of production activity is the final product of all sectors of the economy

There is a trend toward transition to the CHP, a technique of folding a singing order to see the traditional balance sheet (Table 1) to join the Ukrainian economy. With the reorientation of the economic system of Ukraine from plan-command to market principles of management, the previously used balance of the na-

tional economy (BNG) ceased to meet the growing needs of economic and economic agents in information. This led to the expediency of moving to a new form of accounting and calculation of macroeconomic indicators.

You can see the three main groups of factors that can be used to develop productive forces, suspension institutions, enriching the formulas of new minds of the state, and the development of the economy [10, p. 78-79]:

1. I'm persuading a group of technological factors. The price is enriched by the emergence of new technologies – information technology, computer technology, computer technology, and so on.

2. It is possible to introduce social and economic factors to other groups, as well as related to the institutional and social transformations.

The third group should include the factors that determine the strengthening of socialization of the economy in the current NTP. A significant impetus to the formation of the information economy is the development of the intellectual potential of society, for the successful formation of which it is expedient to introduce such principles as [11, p.119-124]: freedom of creativity; inviolability of intellectual property; non-opposition of the intellectualization of society to the general progressive changes, their synchronization and complementarity; establishing interconnection and conformity of intellectualization and informatization; the creation of new warehouse structural assimilation on the basis of intellectual capital; the fate of the country is active in the international cooperation.

Along with the process of intensification of information production, there is a problem of information culture, which E. Semeniuk defines as the level of practical achievement of "information interaction and all information relations in society, a measure of perfection in the operation of any necessary information" [12, p. 2]. In this case, M. Kolyada [13, p. 22] distinguishes between the information culture of relations and the information culture of knowledge. The increase in the status of the central understanding of the information economy is enriched by the active change of minds of socially-economic development, the average of some clearly progressive productive forces, and the increase in the concentration of scientific and technical progress on economic processes,

The main significance of science and information factors in all areas of social welfare, the increase in the speed of informatization and economic suspension, as a result, the transition to a new stage of social and economic organization.

To imbalance in the development of small warehouses of innovation and the factors of efficiency and effectiveness of the economy, Seminozhenko's respect [14]. There is a need to understand that everything that needs to be spent on human resources - to educate, expressively qualify personnel, the market for patent activity of the population, patent science infrastructure – is lost in the long term.

However, the institutional organization of warehouses, including the number of companies acquired before the innovation processes, the competitiveness of the internal market, the regulatory environment, there is little to do with the innovation of the whole world. The leading role in the transition of Ukraine to the innovation rails is development in the IT sphere. The main part of the Ukrainian IT market is outsourcing – transferring to one company of singing processes, but the function to the weekend of the company, so much is competent. In addition, it seems, outsourcing companies to test that robot, but you should be able to do it anyway; The main deputies for the outsourcing of outsourcing companies are the main company.

In the field of software security support for IT outsourcing, Ukraine is the leader in Central and International Europe. What is meant by foreign scholars to hinder pressure for Ukrainian programmers is not a different development cycle, but a viola outsourcing, but a lesser part of the deal. The line of offshore outsourcing in Ukraine is explained by the decile factors. One of them is the development of information technology and communication, allowing small companies to join small companies, and the high-tech Internet technology and security service. The final factor was a seemingly low price of labor in Ukraine, which was added to the highest level of qualification.

Finally, the third factor was the low level of demand for Ukrainian programmers by Ukrainian companies, as well as ill-considered tax policy. Therefore, the best professionals are forced to offer their services outside the country. The main consumers of IT services in Ukraine are the USA and Western Europe. Orders are made mainly in English and German. The programs developed in Ukraine are used in the information systems of the world's largest corporations, banks, and in the billing systems of leading telecom operators. The software developer is known only to the customer and the copyright is the customer. The reason for the rapid development of offshore outsourcing in Ukraine is the weak internal demand and high level of IT services provided by Ukrainian professionals. The geographical location of outsourced enterprises is mainly located in cities with one million inhabitants. However, trends are gradually changing and outsourcing businesses are beginning to emerge in areas and areas. As a rule, this concerns outsourcing companies that provide services only in Ukraine and employees who can outsource services only in Ukrainian and Russian.

The largest number of outsourcing companies is registered in Kyiv and Kharkiv. In Kyiv, as a rule, outsourcing companies seek to enter international and European markets. And, as a consequence, the main requirement for employees is fluent in foreign languages, since outsourcing services are already provided exclusively in foreign languages. Therefore, the highest salaries of employees working at outsourcing companies in Kyiv compared to regions. With the entry into force of the Law of Ukraine "On Limited and Additional Liabi-

lity Companies" of February 6, 2018 No. 2275-VIII, there are certain restrictions in the conclusion of contracts. The members of a limited liability company are liable within the limits of their contribution. The company is responsible by his obligations to all his property.

Outsourcing companies are usually created by individuals. The number of such participants is one or two. The maximum number of founders is 5. Sometimes there are cases when legal entities set up outsourcing companies by investing their own share in the authorized capital. LLC "ITY OUTSOURCING UKRAINE" has the largest authorized capital (15625798,9 UAH). The second place by the size of the authorized capital is held by AK "PIESPUTSORSING" LLC, with the authorized capital 11728667.60 UAH. The third step was taken by ALFA OUTSOURCING LLC, whose share capital amounts to 8383000,00 UAH. All three societies are located in Kyiv. In the above outsourced companies founders: individuals and legal entities. Founder of LIGHTFIELD STUDIOS INC. At ITE OUTSOURCING UKRAINE LLC (USA) and the final beneficiary is an individual (Republic of Cyprus). IN AK "PI. PIAUTSORSING" founder – Limited Liability Company "CONSULTING COMPANY" PI. PIP CONSULTING ". The founder of "ALFA OUTSOURCING" LLC is a privately owned enterprise "ST TRUST". The areas of outsourcing activity under the existing CEAs of the three leaders of outsourced enterprises in terms of authorized capital are as follows: 62.01 – Computer programming; 69.20 – Accounting, bookkeeping and auditing activities; tax consultancy 46.90 – Non-specialized wholesale trade. For any outsourcing enterprise in Ukraine, the system of taxation is essential for its stable existence [16]. Conducting outsourcing analysis, obtaining information from the official Payer Register and the Single Payer Register, the maximum number of out going payments is limited to the public (fig. 1).

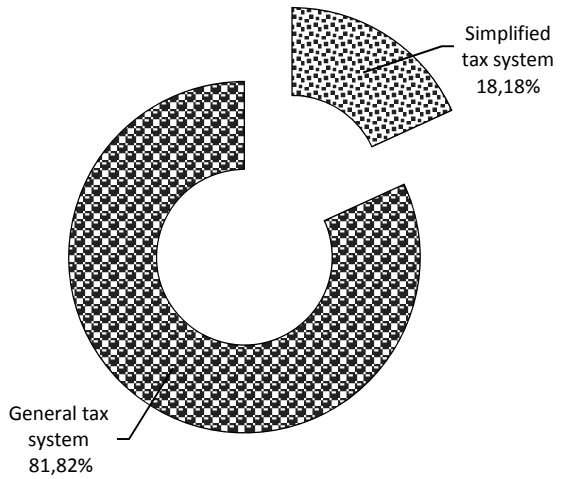

Fig. 1. The system of subsiding, so as to rob outsourcing of enterprises in advance to the tax code of Ukraine
(scribbled by the authors on the basis of sources [15])

Outsourcing enterprises, as a rule of thumb, state support, as a rule, by payers of personal income taxes, but in fig. 2 of these enterprises total 25.17% of the total number of residents. So, for example, from 2016 TOV "IT OUTSOURCING UKRAINE" registrations yak payer PDV.

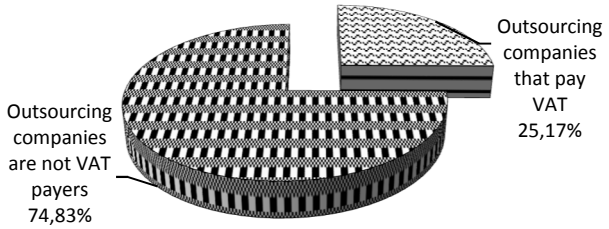

Fig. 2. Outsourcing enterprises, such as PDV in business camps for 2019 (insured by authors on the basis of sources [15])

Repaired from 2004 to 2019 the number of outsourcing enterprises – payers of personal income taxes (fig. 3) At 2019 the number of outsourcing enterprises – payers PDV stockpiled 36.

26 outsourcing companies have bored registered like VAT payers, however, for the present hour they have turned around for a simplified system for roll-back, but they have forgotten for an out-of-band system for roll-back, but they canceled the restoration of a paid pay-as-you-go system. C Clear the first and foremost anonymous registration of MPEs: canceled for independent decision-making body (6 outsourcing companies), canceled for payer initiation (20 outsourcing companies). The main reasons for the impairment of MPE are the availability of supplies and the lack of declaration. The average duration of outsourcing as a VAT taxpayer is more than four years. For example, AKYUMEN OUTSOURCING LLC was registered as a VAT payer for over 14 years [17]. Only four outsourcing companies were VAT payers for more than a year (OUTSORSING YUY LLC, PE GSISM, YURIDICHNAYA KOMPANIYA "PREOGATYVA", DENISOV LLC CAMPAIGN OUTSOURCING, OUTSOURCING INTERNATIONAL LTD.).

At the same time, 18.18% of outsourcing outfits are robbed of a simplified pay-as-you-go system. In 2019, the number of outsourced businesses that opted for a simplified taxation system was 25. These businesses pay a single tax at a rate of five percent and are in the third group in accordance with the requirements of the Tax Code of Ukraine [17]. The world of information technology is changing rapidly, as demand for service providers is changing as well, and the pace of outsourcing market development is gradually increasing. New forms of customer-outsourcing interaction are blurring the boundaries and opening up new opportunities for outsourcers as well as their employees. One of the positive features of outsourcing is the ability to constantly improve skills in order to be competitive in the market and the prospect of fully discovering your talent, including outside the country.

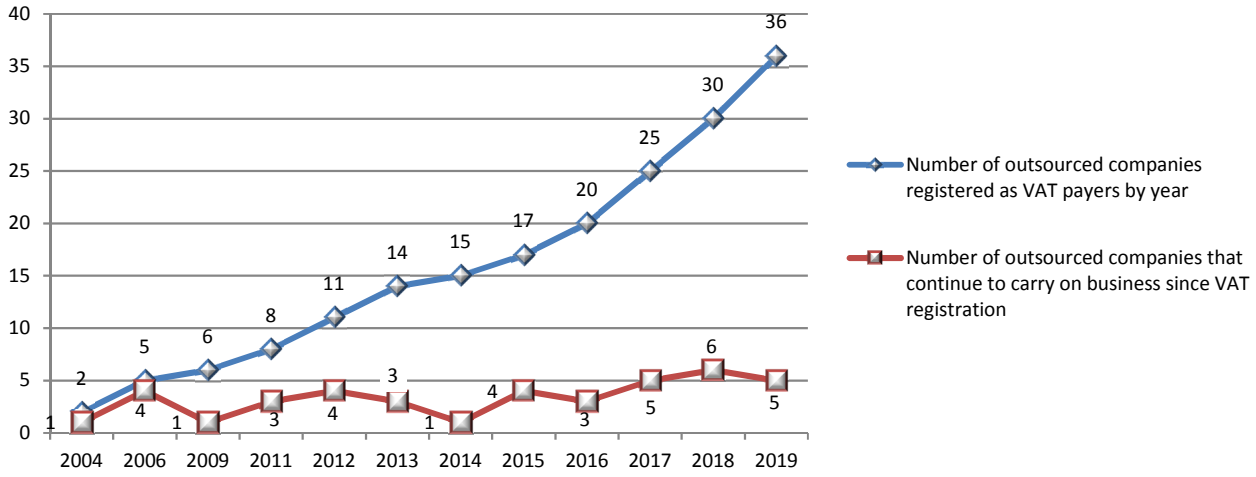

Fig. 3. Dynamics of increase in the number of outsourcing companies – VAT payers
(patched by the authors on the basis of sources [15])

Conclusions. A key prerequisite for innovating in the IT industry is having an effective marketing system that connects the enterprise with the end consumer of the service, in order to constantly identify new explicit and hidden consumer needs for the quality of this service. This condition is crucial because only innovations that give the end user new benefits are successful. The decision to use outsourcing is always a risk, and the reality of receiving immediate benefits in the form of cost reductions raises considerable doubts. That is why the success of the enterprise's developed measures depends to a certain extent on the feedback and the current monitoring system.

Thus, it is worth highlighting the following areas of development of the IT industry in Ukraine:

1. Ensuring transparency and openness of the IT market, facilitating the emergence of a significant number of public projects.

2. Development of regulations, standards and normative framework that helps to maintain long-term relationships between the supplier and the customer of the software.

3. Providing legal protection for IT market participants.

4. Creation of basic infrastructure for the opening of R&D centers (research and development).

5. Creating the conditions for the mass appearance of startups, and later large product companies.

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Волошина О. О., Володченко В. В., Шашко В. О. ІТ-галузь як основа інноваційного розвитку економіки України

У статті визначено основні інформаційно-комунікаційні ресурси та резерви національної економіки, що дозволило обґрунтувати феномен інформатизації, який виступає у вигляді соціальної діяльності на шляху світового суспільства до інформаційної стадії розвитку. Розглянуто причини протиріччя між значним інноваційним потенціалом і низьким рівнем інноваційного розвитку економіки України. Визначено позитивні та негативні сторони аутсорсингу, обґрунтовано напрямок розвитку ІТ. Запропоновано шляхи для активізації інноваційної діяльності в Україні.

Ключові слова: інформаційно-комунікаційні ресурси, соціально-економічний розвиток, економіка, інформація, інновації, ІТ, аутсорсинг, оподаткування.

Voloshina O., Volodchenko V., Shashko V. IT Industry as the Basis of Innovative Development Economy of Ukraine

The article defines basic information and communication resources and resources of national economy which allows to explain the phenomenon of informatization that appears as a social activity on the way of global community to the informative stage of development. Interprets the reasons for the contradiction between the significant innovational potential and low innovative development of economics of Ukraine. Positive and negative aspects of outsourcing are identified, the development direction of IT is explained. The ways to foster innovation in Ukraine are suggested.

Keywords: information and communication resources, social and economic development, economy, information, innovation, IT, outsourcing, taxation.

Волошина Е. А., Володченко В. В., Шашко В. А. ІТ-отрасль как основа инновационного развития экономики Украины

В статье определены основные информационно-коммуникационные ресурсы и резервы национальной экономики, что позволило обосновать феномен информатизации, который выступает в виде социальной деятельности на пути мирового общества к информационной стадии развития. Рассмотрены причины противоречия между значительным инновационным потенциалом и низким уровнем инновационного развития экономики Украины. Определены положительные и отрицательные стороны аутсорсинга, обосновано направление развития ІТ. Предложены пути для активизации инновационной деятельности в Украине.

Ключевые слова: информационно-коммуникационные ресурсы, социально-экономическое развитие, экономика, информация, инновации, ІТ, аутсорсинг, налогообложение.

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MANAGEMENT OF INNOVATION FACTORS OF SUSTAINABLE SOCIALLY ORIENTED ECONOMIC DEVELOPMENT: GENERALIZING SCIENTIFIC THEORIES

Introduction. The negative tendencies in the development of the national economy and the threatening trends in the demographic situation of Ukraine in recent years determine its further lagging behind the socio-economic level of development of the countries that have chosen the model of an effective socially oriented market economy.

In this regard, the question of exploring ways and opportunities to use innovative factors as a basis for sustainable socially-oriented economic development, as well as finding tools and methods for influencing those areas that may be drivers of further socio-economic development, are of particular importance and need to deepen management methodology innovative factors of sustainable socially oriented economic development.

Problems of sustainable economic development are considered in the works of N. Belikova, R. Gataullin, V. Lyashenko [37], V. Mykytenko, Y. Kharazishvili [37]. The work of such scientists as E. Atkinson [8], D. Bell, M. Weber [11; 32], B. Gubsky, A. Dieton [6], T. Zaslavskaya [11], L. Ehrhardt, D. Kahneman [5], E. Libanova, T. Pickett [7], A. Sen, R. Tyler [9], Y. Kharazishvili [38]. The innovative component of socio-economic development is investigated by G. Androschuk [31], Y. Bazhal [17; 18], N. Bryukhovetska, V. Vyshnevsky, V. Gerasimchuk, P. Druker [23], O. Lapko [16], B. Santo, V. Seminozhenko, R. Solow [22], M. Tugan-Baranovsky [3-4] and J. Schumpeter [19]. The interconnection of social and innovative components of economic development is highlighted in the research of I. Bouleev, M. Zgurovsky, S. Kuznets, P. Nikitenko [1; 15], O. Mekh [28], V. Solovyov, L. Fedulova [2], I. Yashchishina; interdependence of innovative and sustainable development of economy is presented in the works of V. Heitz, B. Malitsky, L. Hannes [30], the combination of ways of providing sustainable and socially oriented development is given in the works of O. Amosh, V. Antonyuk, O. Novikova.

However, the new challenges facing modern economic policy, including those related to the current scientific and technological revolution, require a comprehensive approach to removing obstacles to the simultaneous and balanced promotion of all vectors of economic development, which makes it relevant to summarize scientific theories in context management of innovative factors for sustainable socially oriented economic development.

The purpose of the article is to summarize scientific theories in the format of managing innovative factors for sustainable socially oriented economic development.

Presenting main material. The basic fundamental socio-economic theories of civilizational development of mankind, which outline the format of the new economy in the context of sustainable innovative socio-oriented development, as shown by the study of scientific opinion of authoritative specialists are: 1) **noospheric theory**, which selects the criterion of priority development. This contributes to the development of post-industrial production forces, the improvement of industrial relations, and the conservation of nature for future generations; 2) **neo-Keynesian theory**, which provides for the maximum employment of the able-bodied population, as well as active state intervention in the social reproduction of man, society, nature; 3) **neo-Marxist theory**, which considers the development of science as the main factor of production, which assumes the use of all forms of ownership for sustainable GDP growth (34% of GDP should be created in the sphere of material production), as well as the state regulation of the optimal structure of stratification of the population. In this case, its main vector of development is "ahead of the accumulation in the intangible sphere, especially in the person, his mind, knowledge, science, education, culture, without which it is impossible to expect GDP growth, efficiency gains in material and intangible production" [1, p. 16–17; 2, p. 134]; 4) **conflict theories** (M. Weber, V. Muntian – Sociology of economic life), which represent society with a set of specific groups whose ideas and interests diverge at all times; 5) **crisis theory and cyclicality** (P. Samuelson, M. Tugan-Baranovsky [3-4]); 6) economic evolutionary theories, in particular **innovative theories** [11, p. 441]; 7) **behavioral theories of economics and theories of inequality**: Kahnemann Daniel [5] (satisfaction with life as a combination of psychology and economics), Engus Diton (analysis of consumption, poverty and social security) [6], Thomas Picketti [7] and Anthony Atkinson [8] (exploring the nature of social inequality and its strategy to combat it), Richard Tyler (behavioral economics) [9], separate provisions of the Poor Law Amendment Act of 1834-1948, and the National Law of England "On assistance "(National Assistance Act) 1948 in the centralization of the

juice assistance to low-income groups [10]; 8) **theory of social stratification** (T. Zaslavskaya [11] and others); 9) **theory of technical and technological structures** (M. Tugan-Baranovsky, M. Kondratiev); 10) **cybernetic theory of control** (N. Wiener, V. Glushkov), as well as its current modifications is the general theory of optimal control in economics and the theory of automatic control [12]; 10) **"The New Theory of Growth"**, developed in the 1980s by American economist Paul Romero (Endogenous Technological Change) [13] and his followers, suggesting the endogenous nature of technological development; 11) **the theory of equivalence of material and spiritual factors in the social development** of M. Weber [14, p. 130].

The use of innovative factors as a driving force for sustainable socially oriented economic development has outlined their pivotal role and identified the leading position of innovation theories among the above. So, one of the founders and the developer of the model of innovative socially oriented development of social reproduction of capital in the history of economic thought is the Nobel Prize winner in Economics 1971 Simon Kuznets, the gains of which are "to quantify the economic quantities that are most likely to elucidate the processes of social change" [15, p. 43].

In order to explain the extraordinary nature of the situation that emerges in post-socialist countries, it makes sense to recall the attitude of M. Tugan-Baranovsky [3-4] in the last century in Ukraine, which stood at the origins of an innovative theory that is used by the world. O. Lapko rightly noted that "while in the West the theories of innovative development were studied, analyzed and refined, in Ukraine, as in all countries of the former USSR; theories of innovation were considered anti-class" [16, p. 25]. In industrialized countries, the theory of innovation processes replaced the theory of intensification in the 1980s and became the basis for a new model of economic growth. The above fact determines the expediency of taking into account the factor of power elites (national establishment) in the stratification of the population during the formation of concepts and models of economic development. It is now possible to thoroughly explore innovative theories in the context of the socially-oriented development of the national economy, to identify the root causes of technological change and the place of man in this process.

In addition, innovative theories are studied not only in the field of economics, but also become a beacon for sciences such as sociology, pedagogy, psychology, thus emphasizing its "potential for interdisciplinary". A striking example of what can be the work of Y. Bazhal and Y. Pisotska "The need to study the theory of economic development of J. Schumpeter in Ukrainian institutions of higher education" [17], as well as the first in Ukraine textbook Y. Bazhal "Economic Theory technological change" [18].

The founder of modern economic evolutionary theory is rightly considered J. Schumpeter [19]. The central point of his theory was the exclusive role of "entrepreneur-innovators" as opposed to "just-master", which determines the nature and pace of economic development. Thus, the first reason for the implementation of scientific and technological progress and the first link of the content-logical chain of transformation of the economy on innovative principles is the person, namely the entrepreneur-innovator, who tries to satisfy his own vital interests, which is the main motive of his actions (Fig. 1).

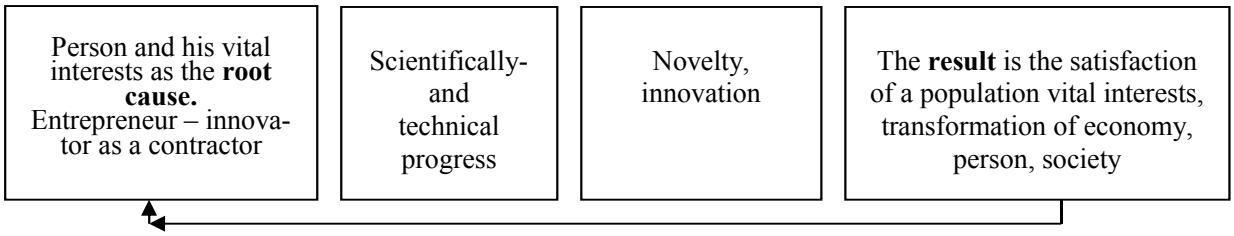

Fig. 1. Person as a factor of transformation of economy on innovative principles

Source: developed by the author.

In this sense of methodological importance is the opinion on the exclusive role of man as a biosocial product. That is, the final result of the social process of production is always the man himself in his social relations, which requires an assessment of state regulation of the development of these processes. P. Nikitenko emphasized the primary importance of human reproduction: "If there is no pre-emptive accumulation in the intangible sphere, especially to the individual, his mind, science, education, culture, then one cannot hope for GDP growth ..." [1, p. 16].

The isolation of the dominant role of the social factor can be found in neoclassical (new classical posthumper) theories [16, p. 32]. Thus, in developing J. Schumpeter's thoughts on basic and secondary innovations, G. Mensh in his work "Basic innovations and innovations of perfection" [20] explains the crisis phenomena by the lack of basic innovations due to the lack of necessary conditions for science and invention. And another representative of the same school M. Kalecki [21, p. 95], formulating their achievements in the work "Theory of Economic Dynamics" states that the interac-

tion of innovation and economic experience, the main accumulator of which is, again, a person, form a tendency for social development.

In the future, the focus of research has shifted towards highlighting the most significant drivers of GDP growth, that is, dedicated to the phenomenon of technological change as a factor of economic growth. The generalization and confirmation of this idea was the work of the 1987 Nobel Prize winner R. Solow, "Technical Changes and the Function of Cumulative Production" [22], which proved that doubling gross output per one man-hour spent in the United States in 1909-1949 occurred at 12.5% due to growth in capital labor and 87.5% – due to technological changes.

B. Malitsky in his work "Neoliberalism and the crisis of innovative economic development, the crisis formula clearly shows that it is innovative progress that predominantly determines the rate of growth of the standard of living of people. That is, it is about scientific and technological progress as an exogenous factor influencing the economic system.

At the same time, models of scientific and technological progress, which foresee the endogenous nature of technological development, are beginning to emerge. This is how the "New Theory of Growth", developed by American economist Paul Romero [13], found its continuation in the writings of V. Golovatyuk.

Peter Drucker in Innovation and Entrepreneurship [23] noted that during the downturns of the industries, economic growth, caused by increased entrepreneurial activity, that is, entrepreneurship and innovation, is the cause of the economic success of US firms due to the effective work of business managers. The main slogan of the proponents of innovative type of development is the willingness to quickly say goodbye to the previous case and constantly find new ones.

At the same time, the Western economic literature of the 1980s focuses on the need for state support for innovative efforts by private firms for several reasons outlined in S. Tisdell's Government Policy Priorities [24], which led to the conclusion that the benefit of intensifying government action in the field of innovation process regulation, without which it is impossible to effectively allocate country resources to obtain a potentially innovative product aimed at satisfying the vital interests of the majority population in the country.

Generalizing the research of scientists of the last decade of the last century in the context of the development of innovative concepts, it is advisable to pay attention to the emergence of socio-psychological theories (H. Barnet, E. Wittie, E. Denison) [16]. This is related to the priority of human relations in the management of innovation. The main place in them are the problems of personal value, the role of the leader's behavior, the level of education in the system of innovation development, as well as the impact of socio-psychological and organizational factors. In the XIX century. M. Tugan-Baranovsky's submission [3, p. 51] about the economy as a continuous interaction of man (subject) with nature (object) formed his opinion about the growing role of psychological factors in the management of economic systems. Now the power of the state lies in the ability to invent, innovate and unconventional flexible thinking, so the question of the need to use national mental potential, the ability to make fundamentally new decisions, accelerate the solution of tasks, and mastering new ways of thinking can provide the most effective ways out ways out of the crisis [3].

I. Ansoff speaks about the importance of "special" creative type of thinking when solving strategic problems, and P. Drucker defined this way of thinking as innovative [25, p. 406-411].

That is, the driving force of the human factor with the appropriate innovative type of thinking is indispensable in the process of managing innovation. This is the driving force behind completely new knowledge and intelligence of man, which destroys the traditional principles of management of scientific, technical and innovative activities. So, new technologies or revolutionary transformations emerging in a particular industry can lead to the disruption of existing technologies and, as a consequence, change the value proposition of consumers. Clayton Christensen [26] called these technologies disruptive technologies, which, starting a fundamentally new technological cycle of production of goods, destroy the existing basic technology. Old technologies become uncompetitive only because the parameters on which the competition was previously based are no longer relevant. It should be noted that disruptive (breakthrough) technologies are organically linked to strategic and reactive innovations [27], which should be taken into account when supporting and developing innovative systems of economic systems aimed at increasing the satisfaction of vital interests of the majority of the population.

At the same time, the increasing value of the socially oriented innovation vector of development is caused by the emerging contradictions between the opportunities provided by the growing economic dynamics due to the innovative renewal of the capital of industry and the occurrence of relapses in the intensification of the problem of job creation. Addressing the contradictions between growing economic dynamics through innovative capital upgrading and increasing job creation is called for by a socially oriented market economy (CORE). The social orientation of innovative activity implies the focus of the national innovation system on solving the problems of social development, namely: improving the standard and quality of life, energy efficiency, competitiveness, social security, stability, environmental protection. It is about socializing innovation as the ideology of CORE. According to O. Meh, “most scientists recognize the priority of social aspects of scientific, technical and innovative development” [28, p. 22].

Under social innovation, most scholars understand the creation of a new social product or service and measures for its implementation, and innovative social activity involves activities aimed at finding, evaluating, developing and applying social innovations.

G. Dobrov [29] raised the issue of the socialization of science, which he defined as "the most rapidly progressing social organism of society".

L. Hannes concludes in favor of socialization of innovations [30, p. 6-12] during the study of the Scandinavian (with its complex social protection) and liberal Anglo-Saxon models, which are on par. Thus, the main reason for the success of European models was the successful reform of the social security system. This, together with the revitalization of policy measures aimed at stimulating research, education and technology transfer, significantly contributed to the reduction of expenditures and stabilization of the state's finances.

Thus, the generalization of innovative theories has made it possible to conclude that the socio-cultural factor, in particular vital human interests, is the root cause of the transformation of the economy on innovative grounds. So, the result of the study of the representatives of the classical school concluded that "the entrepreneur is the bearer of scientific and technological progress". Innovation is the result of scientific and technological progress, and the consequence of innovation is technological change, which, in turn, causes the transformation of the economy, society and man in particular. The established chain of technological change becomes the basis for building the mechanism of transformation of the Ukrainian economy on innovative grounds in the context of the formation of a socially oriented market economy. However, the existence of this type of economy in the country is not yet a sufficient condition for its sustainable development. Professional and real actions of the state and local government bodies are needed to create a favorable environment for innovative development of the country, implementation of economic growth strategies, reengineering of social policy. So, promising areas are innovation, education, competition policy, regulatory and macroeconomic policies, as well as theoretical and empirical models of scientific and technological progress that help illustrate certain situations.

Supporting scientific and technological progress in the country is based on a purely economic calculation of maximizing national income. The obvious and economic feasibility of transferring the external claim received by the state in the form of positive externalities of the innovation process to the private sector, namely to stimulate the dynamics of technological change [18, p. 196]. It is becoming clear not only the possibility but also the expediency of forming a socially oriented economy on an innovative basis: the state, at the expense of obtaining positive externalities, is profitable to satisfy the vital interests of both the individual and society as a whole, because, in the end, it concerns the national security.

That is why Y. Bazhal called technological change a public good [18, p. 191]. Innovation is organically linked to a socially oriented market economy. That is, they are the basis for its development and include positive externalities, namely free resources and consumer benefits to third parties that do not participate in the sale agreement, and therefore are not taken into account in pricing. However, the innovation process is directly related to both positive and negative externalities, that is, the consequences that occur in third parties who are not contractors of market relations in the implementation of a specific agreement between the producer and the consumer of goods.

G. Androschuk, I. Zhilyaev, B. Chizhevsky, M. Shevchenko [31, p. 115] defined the role of the state in the current environment as decisive, especially in ensuring the innovative development of the economy, and also much higher than the role of the market. This finally confirmed the need for state regulation of innovative processes due to their increasing importance for the economy and society as a whole, as well as the limited market mechanisms as a medium for reproduction and diffusion of innovation. Economic cybernetics is called to promote efficiency of state regulation processes.

Cybernetic theory of management, in particular economic cybernetics, the founder of which is traditionally considered by N. Wiener, studies economic systems and issues of automation of management of individual elements of the economy and the economy as a whole. In the case of traditional regulation, the task of sustainability is set. In the visualization of simple economic systems, stability is achieved by selecting the appropriate parameters of the designed system. When the number of impacts and the size of the system are extremely large, self-tuning and self-organization are used to achieve sustainability. However, some of the parameters of the system that determines the nature of its existing connections may change during the functioning of the system. During the removal of the system from the equilibrium it through a special block registers the nature of transients in it [12]. When transient instability is detected, the system changes the value of the parameter relationships until it is stable. Systems of this kind are commonly called "ultra-resistant". V. Glushkov considers modification of cybernetic theory, in particular the theory of optimal control, according to which "in systems of optimal control the main task is to maintain the maximum (or minimum) value of a function of two groups of parameters, called the criterion of optimal control. The parameters of the first group (external conditions) change regardless of the system, the parameters of the second group are regulated, that is, their values can change under the influence of control signals of the system" [12].

Automatic regulation theory is the direction of cybernetic management theory, which studies the auto-

matic management processes of different physical nature objects (technical cybernetics). However, nowadays, using this theory in adaptive dynamic economic systems can solve the complex problems, associated with increasing the dynamic of challenges and threats.

Analysis of **the theory of cycles and crises** (P. Samuelson, M. Tugan-Baranovsky) proved a certain frequency of their occurrence and the possibility of prevention. Thus, based on the works of M. Tugan-Baranovsky [3-4], it makes sense to use the deduced pattern and update it in the format of managing innovative factors of sustainable socially oriented development of the economy: "cyclicality of economic dynamics – periodicity of industrial crises – social sphere – satisfaction of vital interest". This creates is the basis for solving the problem of inequality in society.

The theories of inequality by Thomas Pickett [7] **and Anthony Atkinson** [8] shed light on the main factors behind the stiffening of the population. This is available capital and economic development. Thus, rapid economic growth reduces the role of capital and its concentration in private hands, which reduces social inequality, while slowing growth increases the value of capital and causes injustice to rise.

Anthony Atkinson [8], while revealing the nature of social inequality, devises strategies to combat it, and Richard Tyler [9], combining economics with psychology, has shown that human traits influence decision-making and market outcomes. That is, he introduced realistic assumptions about people's actions. In this way, human happiness becomes a goal function, and inequality as an obstacle in its path needs to be minimized through economic growth.

The **behavioral theory of economics by R. Thaler** sheds light on the combination of economics with psychology, the introduction of more realistic assumptions about people's behavior, driven by the consequences of "limited rationality, social advantages and lack of self-control", as well as the traditional predictions of economists about the rational actions of people and organizations.

Engus Dieton [6] examining the problems of consumption, poverty, and social security with Daniel Kahneman [5] justified the existence of a direct but not linear relationship between material security and happiness in the sense of "life satisfaction" (the happiest are those Americans, who earns about $ 75,000 a year). In this case 1) consumption theory does not explain the actual relationship, based only on the aggregate (average) indicators of income and consumption; 2) the poverty line is different for all countries (minimum income); 3) home consumption can be estimated as a correlation between income and calorie consumption; 4) the basis for understanding the averaged data currently used in macroeconomics is the analysis of individual data. That is, E. Ditton's methodology is to study consumption at different levels in different countries of the world. Only after that, in his opinion, should we go from partial data to general data. And here **the theory of equivalence of material and spiritual factors** in the social development of M. Weber comes into force.

However, Rodrick Danny explains the rise in social inequality over the last twenty years by the decline in employment in traditional industrialized countries, with intensive productivity gains as a result of innovative activities and the emergence of a large number of low-productivity jobs, namely social and personal services.

In industrial society, the achieved level of production created the basis for mass consumption, which helped to raise the standard of living of the majority of the population and was reflected in the **theory of social stratification**, the leading place in which the concept of the middle class.

The foundations of the present understanding of the essence of the middle class as a socio-economic category are laid down in the works of Aristotle and Plato; A. Toynbee, L. Ehrhardt and others. The phenomenon of the middle class in the transitive economy was actively considered by T. Zaslavskaya [11] and others, which was reflected in the writings of the author as a condition and criterion for sustainable development of a socially oriented market economy [34-36].

Now it is worth emphasizing the exceptional role of traditional production in the field of reducing social inequality and the formation of the middle class. The lack of a developed industrial sphere of society causes a sharp stratification of the poor and the rich, as well as provokes social tensions. It becomes apparent that the development of a socially oriented market economy, which is characterized by the presence of the middle class, depends on the efficiency of production.

In this case, the poor state of the production sector or its absence is one of the main reasons for the poor stratification of the population, the decline in the level of social stability in the country.

In unison, Y. Bazhal emphasized the importance of having sufficient productive capacity in the country under the right macroeconomic policy, which will accelerate the correction of the crisis situation, in comparison with the situation when such potential is low or none at all.

Therefore, overcoming the negative phenomena in the national economy is quite possible, provided that innovations in the industry are introduced, which will cause intensive increase of labor productivity and growth of economic dynamics, which will help to increase the level of satisfaction of vital interests of the majority of the population. In doing so, the nuances of behavioral theories of economics should be taken into account. Generalization of scientific theories in the context of managing innovative factors of sustainable development of socially oriented market economy is presented in Fig. 2.

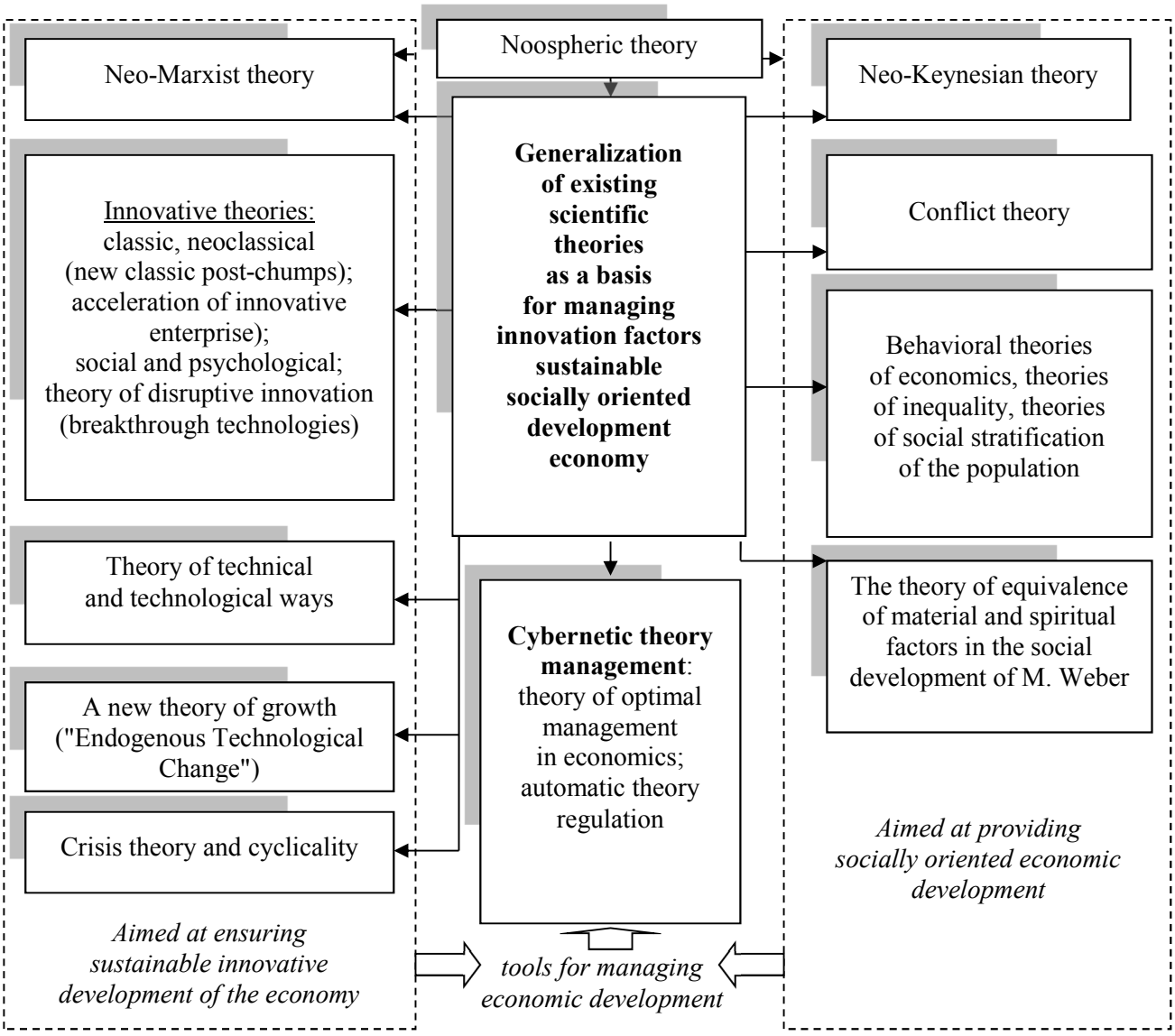

Fig. 2. Generalization of existing scientific theories in the context of managing innovative factors for sustainable socially oriented economic development

Source: generalized, systematized and created by the author.

Conclusion. Based on the generalization of scientific theories, it is revealed that scientific and technological progress (innovative progress) causes an increase in satisfaction with the growing vital interests of the population, manifesting itself as a factor of influence (exogenous and endogenous) on the economic system. Activation of endogenous factors of technological development in current models of scientific and technological progress has determined the crucial role of man as a biosocial product in the growth of GDP of the country and the implementation of scientific and technological progress, namely the entrepreneur-innovator who seeks to satisfy his interests, which are his main motive.

The necessity to consider the qualitative composition of the power elites (national establishment) as a driving force in the formation of concepts and models of economic development is substantiated. Particular attention is paid to the cybernetic theory of control (N. Wiener, V. Glushkov), as well as its current modification, in particular the general theory of optimal control and the theory of automatic control within the economic system.

Emphasis is placed on the expediency of using the theory of automatic regulation in the process of managing the innovative factors of sustainable socially oriented economic development as adaptive dynamic economic systems, which allows solving complex problems related to increasing the dynamics of challenges and threats.

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Бондар-Підгурська О. В. Управління інноваційними факторами сталого соціально орієнтованого розвитку економіки: узагальнення наукових теорій

Узагальнено наукові теорії у контексті управління інноваційними факторами сталого соціально орієнтованого розвитку економіки. Проаналізовано та синтезовано концепції наукових теорій спрямованих на забезпечення сталого інноваційного соціально орієнтованого розвитку економіки (ноосферна, неокейнсіанська, неомарксистська, конфліктності, теорії криз і циклічності, економічні еволюційні теорії, зокрема інноваційні; поведінкові економіки та нерівності, соціальної стратифікації; техніко-технологічних укладів; рівнозначності матеріальних і духовних чинників у суспільному розвитку, «Нова теорія зростання»), а також інструменти управління ним, які дозволяють розв'язувати складні проблеми, пов'язані із підвищенням динамізму викликів і загроз (кібернетична теорія управління: теорія оптимального управління в економіці та теорія автоматичного регулювання). У результаті обгрунтовано науково-технічний прогрес (інноваційний розвиток) як фактор задоволення життєво важливих інтересів населення, а якісний склад владних еліт (національного істеблішменту) як рушійні сили економічного розвитку у частині прийняття управлінських рішень, розробки концепцій, стратегій і його моделей.

Виявлено причини та чинники нерівності, усунення та вчасне управління якими допоможе оптимізувати структуру стратифікації населення.

Наголошено на доцільності упередження та подолання негативних явищ за рахунок вчасного впровадження нововведень у промисловість, що спричинить інтенсивне підвищення продуктивності праці та зростання економічної динаміки, яка, в свою чергу, забезпечить задоволення життєво важливих інтересів більшості населення країни.

Ключові слова: сталий розвиток, інноваційні фактори, соціально орієнтована ринкова економіка, життєво важливі інтереси, нерівність, стратифікація населення.

Bondar-Pidhurska O. Management of Innovation Factors of Sustainable Socially Oriented Economic Development: Generalizing Scientific Theories

Scientific theories are generalized in the context of managing innovative factors of sustainable socially oriented economic development. Concepts of scientific theories aimed at ensuring sustainable innovative socially-oriented economic development (noospheric, neo-Keynesian, neo-Marxist, conflict, crisis and cyclical theories, economic evolutionary theories, including innovative ones; economics of behavior and inequality, social stratification; technical and technological structures; equivalence of material and spiritual factors of social development, «New theory of growth»), as well as tools for managing them to solve complex problems related to increasing the dynamics of challenges and threats (cybernetic control theory: theory of optimal control in economics and theory of automatic control)), have been analyzed and synthesized.

Scientific and technological progress (innovative development) as a factor of satisfaction of vital interests of the population and qualitative composition of the power elites (national establishment) as a driving force of economic development from the point of view of decision-making, concept development, strategy and its models were substantiated as a result.

The importance of preventing and overcoming negative phenomena by timely introduction of innovations into industry is emphasized, which will lead to intensive increase of labor productivity and growth of economic dynamics, which, in turn, will ensure the satisfaction of the majority population country vital interests.

The reasons and factors of inequality, elimination and timely management which will help to optimize the structure of country population stratification are revealed.

Keywords: sustainable development, innovative factors, socially oriented market economy, vital interests, inequality, stratification of population.

Бондар-Подгурская О. В. Управление инновационными факторами устойчивого социально ориентированного развития экономики: обобщение научных теорий

Обобщены научные теории в контексте управления инновационными факторами устойчивого социально ориентированного развития экономики. Проанализированы и синтезированы концепции научных теорий направленных на обеспечение устойчивого инновационного социально ориентированного развития экономики (ноосферная, неокейнсианская, неомарксистская, конфликтности, теории кризисов и цикличности, экономические эволюционные теории, в частности инновационные; поведенческой экономики и неравенства, социальной стратификации; технико-технологических укладов; равнозначности материальных и духовных факторов в общественном развитии, «Новая теория роста»), а также инструменты управления им, которые позволяют решать сложные проблемы, связанные с повышением динамизма вызовов и угроз (кибернетическая теория управления: теория оптимального управления в экономике и теория автоматического регулирования). В результате обоснованы научно-технический прогресс (инновационное развитие) как фактор удовлетворения жизненно важных интересов населения, а качественный состав властных элит (национального истеблишмента) как движущие силы экономического развития в части принятия управленческих решений, разработки концепций, стратегий и его моделей.

Выявлены причины и факторы неравенства, устранение и своевременное управление которыми поможет оптимизировать структуру стратификации населения.

Отмечена целесообразность предупреждения и ликвидации негативных явлений за счет своевременной реализации нововведений в промышленность, что повлечет интенсивное повышение производительности труда и роста экономической динамики, которая, в свою очередь, обеспечит удовлетворение жизненно важных интересов большинства населения страны.

Ключевые слова: устойчивое развитие, инновационные факторы, социально ориентированная рыночная экономика, жизненно важные интересы, неравенство, стратификация населения.

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IMPROVING THE PERSONNEL MANAGEMENT SYSTEM OF AN INDUSTRIAL ENTERPRISE

Formulation of the problem. At present, the basic component of enterprise personnel management is to create the conditions for the expansion of knowledge, improvement of skills, improvement of skills and continuous development of employees. Increasing the role of knowledge in society, the development of smart, intelligent technologies require flexible and adaptive use of human resources of the enterprise, increasing the creative and organizational activity of employees, the formation of a humanized organizational culture.

In the context of market relations, the introduction into the production of new technologies of particular importance are acquired by adequate methods of personnel development management, which are based on progressive approaches to expanding its competencies. Considering this, in modern production there are problems of modernization of classical systems of management of personnel and introduction of new models of management, oriented on continuous development of intellectual, cultural and creative potential of employees of enterprises and organizations.

Analysis of recent research and publications. Problems of personnel management systems as one of the most important strategic directions of work of enterprises are constantly attracting the attention of economists. Thus, foreign scientists I. Ansoff, P. Drucker, G. Kunz, M. Mescon, T. Peters, and G. Simon made a significant contribution to the development of the theory of personnel management.

A. Smith explained the differentiation in wages of skilled and unskilled workers through difference in time, labor and cash costs incurred by the first to obtain the necessary knowledge, skills, and mastery [1].

This paper is devoted to a large number of works of foreign and domestic authors, the analysis of which shows the diversity of existing approaches and methods. Such Western economists as V. Petty, A. Smith, J. Sey, S. Fisher, L. Valras, Sidgwick, G. Becker [2], T. Schultz [3], I. Ilyinsky [4], when considering the issue of investment in human capital, give special attention to investment in the capital education. The first measurement pattern to estimate the value of an able-bodied person, used by V. Petty, assesses the value of the stock of human capital by capitalization of earnings as a life annuity with a market interest rate [5].

Among domestic researchers, these issues were considered by L. Balabanov, D. Bohin, O. Grishnova, L. Goroshkova, V. Danyuk, A. Kolot, I. Kryzhko, A. Cherep, L. Chervinskaya, who analyzed theoretical and applied aspects of personnel management. at enterprises of different industries. However, due to the complexity of the problem in the current context, some issues are not adequately addressed or need to be detailed, especially in the face of a constant change in the market.

The purpose of the article is to identify the problems of personnel management and the impact of the effectiveness of the personnel management system on the sustainable development of the enterprise.

Outline of the main research material. Personnel management is one of the most important areas of the modern enterprise strategy. In order to succeed in a changing world and gain a competitive edge, every business needs to achieve efficient and cost-effective use of advanced technologies that require human resources that have the requisite knowledge and professional experience.

I. Kychko and M. Gorbachenko argue that the efficiency of the enterprise, undoubtedly, is based on labor resources, namely competence, qualification, capacity for training and development of personnel within the organization. However, current unemployment indicators in the labor market of Ukraine indicate that the current system of organization of social production, including personnel management, needs improvement [7].

Management style combines professional competence, efficiency and high ethics of relationships between people, as well as practically affects all areas of the enterprise. It depends on him to what extent external factors of increase of efficiency of activity at the enterprise will be taken into account. Therefore, proper management style as an integral element of modern management is an effective factor in improving the efficiency of any enterprise and every business structure [8, p. 72]. Therefore, the basic condition that ensures the development of the enterprise is the efficient use of staff.

The experience of foreign corporations confirms that the implementation of the latest technologies of personnel management increases the productivity of staff, improves team performance, reduces staff turnover, and increases the activity of enterprises at different levels of management [7]. The competitiveness of an enterprise depends to a large extent on the preferences of the staff, which are manifested in two main aspects, such as high qualification of personnel (advanced knowledge and in-

tellectual capital, pursuit of knowledge and improvement, high motivation of staff, effective incentives for hard, quality work); the skills and experience of staff to reduce the level of marriage and the cost of production through the use of first-class service traditions, unique style of advertising and promotion of goods (services).

Personnel management in modern conditions is one of the most influential tools of formation of competitiveness, financial independence and development of the enterprise. That is why there is an urgent need to develop and implement such management levers that could meet the requirements of a market economy [7].

We consider it necessary to define that in the current conditions at the enterprises of the country insufficient attention is paid to the formation of the personnel management system as a whole set of interacting elements, which provides for making economically sound management decisions. As practice shows, nowadays in the enterprise the solution of problems of personnel management is mostly limited to the study of issues of material incentives. Figure 1 shows the motivation system for industrial enterprise personnel.

In order to create the conditions for proper human resource management, quality funding is needed. Therefore, modern enterprises cannot be saved on personnel, since the overall success of the enterprise depends on the efficiency of its work. The enterprise's need for personnel development is driven by constant changes in the internal and external environment, improvement of management processes, development of new technologies and activities.

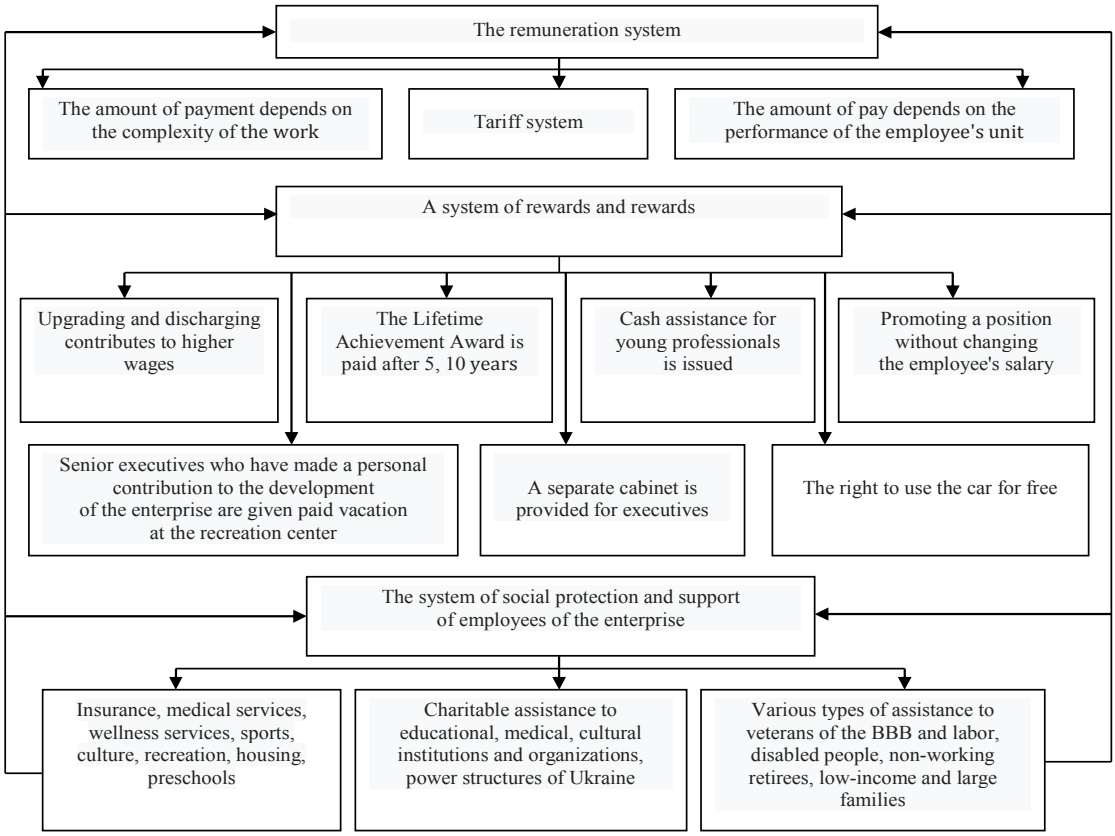

Fig. 1. System of motivation of the personnel of the industrial enterprise
(developed by authors based on source [9])

The efficiency of the enterprise depends on investment in production by 30%, while 70% of all enterprises depends on the level of skill of employees. The importance of personnel development can be drawn from the following figures: in the European Union countries, the period of training of employees is about five years, in Japan – from one to one and a half years, in Ukraine, the training is carried out every 12 years [10].

As we can see, Ukraine is far behind other countries in this aspect. At the same time, some enterprises do not pay attention at all to the development and professional development of employees [11].

Financial expenses for the management and development of dedicated staff have the following structure:

– remuneration of staff (salaries, bonuses, bonuses, surcharges, holidays, rewarding valuable and valuable gifts for professional achievements);

– reimbursement of the professional activity of employees (business trip, accommodation, transport, communication, etc.);

– participation in profit (payment for shares., Shares percentage of profit);

– organization and protection of labor (technological costs and measures of individual protection);

– the maintenance of units and employees who ensure the functioning of the personnel management system (human resources, public services, economic services);

– professional development and formation of personnel reserve (basic education, advanced training, internships, courses, trainings, examinations, mentoring, coaching, staff adaptation measures, corporate publications, etc.);

– socio-cultural development (organization or reimbursement of physical education and sports, rehabilitation, recreation, etc.);

– corporate socio-cultural activities (expenses for forming corporate culture, events, anniversaries, excursions, circles, etc.);

– insurance (professional, social, medical);

– social obligations and social protection (saving jobs, paying, assistance, reimbursement, sale of products and materials at reduced prices, preferential loans, etc.);

– tax deductions for the enterprise (for all the above costs).

Thus, the financing of personnel management and development is a cost process that over time provides a profitable component. Accordingly, the financing of the management and development of personnel in conceptual content is an investment. In the Table 1 we give a comparative description of the costs of enterprises in different countries staff development.

Table 1

Dynamics of total costs for training and advanced training of personnel in the countries of the world
(compiled by the authors on the basis of sources [12, 13, 14])

Country	The average percentage of payroll, %	General expenses staff development, $ billion	Medium size cost per month for 1 employee, USD
USA	5-10	50	1252
Japan	10-20	80	1670
France	2-5	30	1085
Germany	2-5	20	970
United Kingdom	6-8	40	1355

As you can see, the cost of staff development is different in each country. First of all, they depend on the economic development of the country of residence of the enterprise. For example, the costs of domestic enterprises for the development of personnel are not comparable with the costs of foreign enterprises. As our country is going through difficult economic times, domestic companies are trying to maximize personnel savings. However, this approach is incorrect, because even in times of crisis it is not possible to save on personnel.

It is important to note the interesting trend that large corporations are losing more money to staff development. At the same time, small businesses with small staff spend a minimum of financial resources on staff development. In the table. 2 shows the costs of foreign enterprises, which spend the most on personnel development.

In general, enterprises' personnel development costs continue to increase in countries. The business invests in the development of its employees. Thus, according to expert estimates, $ 1 of investment in staff development brings the company $ 33 in profits, and the total amount of money that US companies send for professional training of personnel is about $ 50 billion. per year [10].

Table 2

Expenses of foreign enterprises on personnel development (compiled by [15])

The company name	Total development costs staff, million dollars USA	Percentage of total labor costs
American Thermal Technologies	1300	6
IBM	750	5
General Motors	1000	4.5
Xerox	220	4
Texas Instruments	145	3.5
Motorola	142	2.6

Professionalism and qualification of labor resources are certainly one of the main advantages of modern enterprises, which can guarantee the strategic growth of the enterprise in the long run. The basis of the personnel policy of Corum Druzhkivsky Machine-Building Plant is based on the principles of succession of generations, ensuring the production of skilled workers and specialists, improving the level of qualification of the personnel reserve, optimizing the structure and number of employees [9].

In 2018, the average number of full-time employees was 1577, of which 736 were basic workers, 382 were auxiliaries, 300 were general staff, 159 were administrative staff. [9] In 2017, Corum Druzhkivsky Machine-Building Plant production by 122% compared to the previous period - the expected forecast for the end of the year is 757 million UAH. At the same time, the enterprise loading from January to December increased by more than a quarter and made 123%.

Corum Group's contractual volume increased by 116% year-on-year to achieve these figures. Figure 2 presents the educational structure of industrial-production personnel of Corum Druzhkovsky Machine-Building Plant LLC.

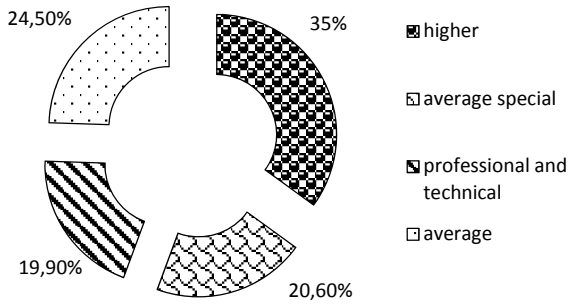

Fig. 2. Educational structure of industrial-production staff of Corum Druzhkivsky Machine-Building Plant LLC on 01/01/2018
(compiled by the authors on the basis of source [9])

Corum Druzhkivsky Machine-Building Plant LLC carries out its activities in order to achieve the goals that are strategic for the enterprise. The degree to which these goals are realized reflects how effective the enterprise is, ie how effective it is uses the resources at his or her disposal.

It is clear that the main focus in achieving the goals of the company is due to the efforts of competent and professional staff. Therefore, the enterprise is faced with the task of retaining and preserving the jobs of "experts in the business" and dismissing those employees whose activities are the least effective. This can be achieved through regular systematization of staff assessment and training needs based on:

– requirements or recommendations for training and advanced training of employees of production departments by the company management;

– recommendations for training of employees, which are drawn up as a result of the performance appraisal of the employee and are fixed in the individual plans of employee development;

– the proposals for training received from the employees of the structural divisions of the company during the periodic determination of the needs for work with the employees, justified in terms of production necessity.

In identifying training needs, attention should be paid to the following main areas (Fig. 3):

1) training of managerial and managerial personnel;

2) creating a reserve of managers by training prospective employees;

3) an internship program abroad;

4) staff evaluation;

5) career planning;

6) Targeted training of young professionals and career guidance;

7) training and certification of personnel involved in international projects;

8) training of scientific personnel;

9) training of employees.

Although the management of Corum Druzhkivsky Machine-Building Plant LLC is trying to provide an efficient process of professional development of human resources and maintain its competitiveness in the labor market, however, the share of workers and employees who have passed professional training and job training.

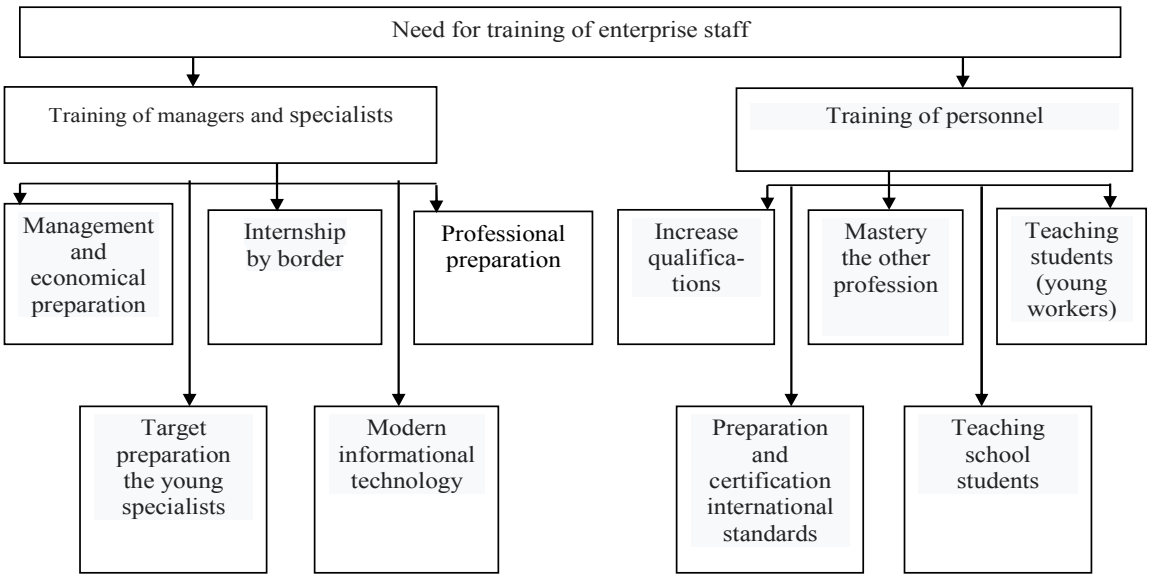

Fig. 3. Main directions of training of the staff of Corum Druzhkivsky Machine-Building Plant LLC
(compiled by the authors on the basis of source [9])

The management of Corum Druzhkivsky Machine-Building Plant LLC should understand that, because economic circumstances do not allow the company to hire new employees and increase its staff, this issue should be given sufficient attention. Therefore, the management needs to create conditions that are conducive to training and advanced training, because it depends on productivity, quality of production, savings of material resources. The mechanism of personnel management at the enterprise consists of three main components, which are the management of training and formation of personnel, the management of placement and movement of personnel, the management of the use of personnel. Management training and formation includes the implementation of socio-demographic policies, management recruitment, management training.

Management of placement and movement of personnel contains the placement of personnel in structural units, sections, workplaces, organization of intra-industrial movement of personnel, organization of professional and qualitative movement of personnel, organization of official transfer of executives, engineering and technical workers and employees. Human resources management is a generalization of scientific and technological progress management, scientific organization of labor, labor economy.

Different companies work with different staff in different numbers. Figure 4 presents the personnel management mechanism of an industrial enterprise.

One of the important stages of industrial enterprise personnel management is staff assessment and certification. Having the legal basis for researching the staff of the company, as well as describing it from different positions (quantitative and qualitative), we are able to evaluate this staff.

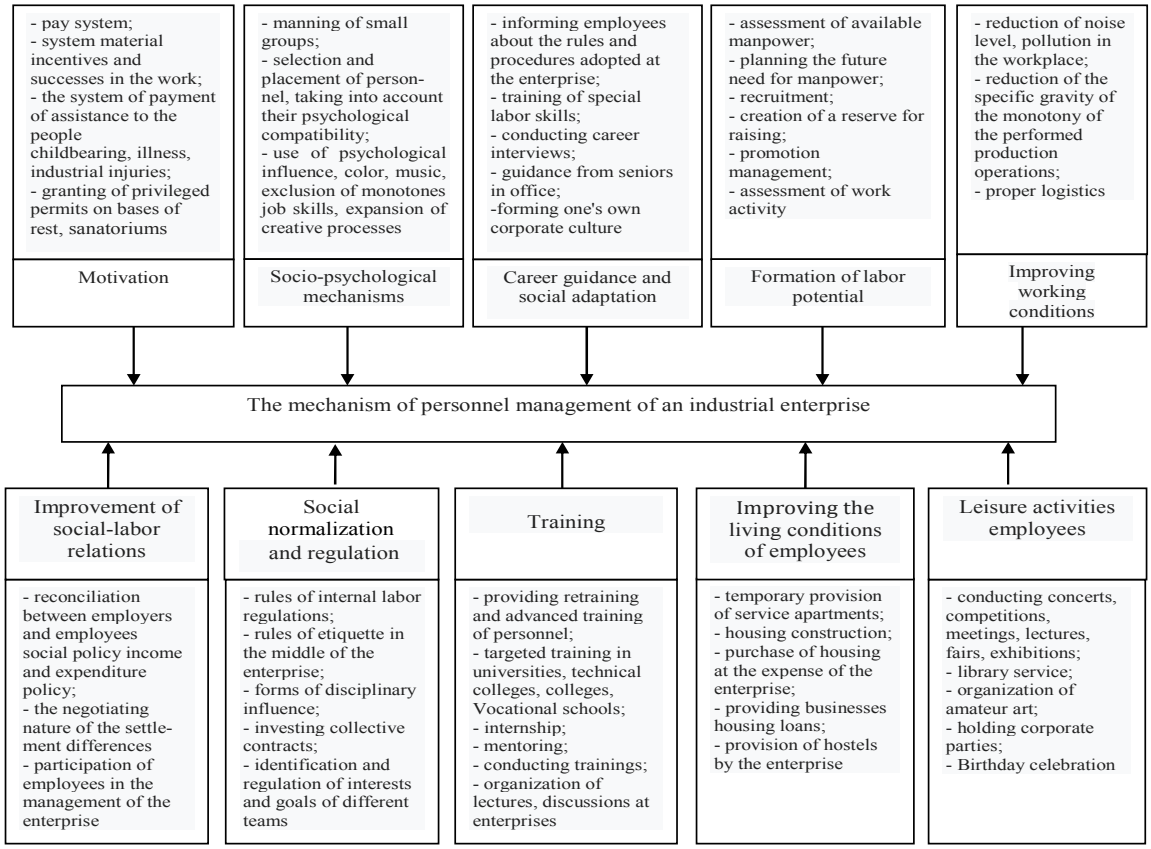

Fig. 4. The mechanism of personnel management of an industrial enterprise
(developed by authors based on source [16])

Industrial enterprise personnel are described by a number of quantitative and qualitative characteristics that are formed into a system of indicators. After researching and analyzing these characteristics, experts determine the various factors of influence on the staff. Therefore, staff assessment is a complex process that can be divided into several sub-processes, such as calculating a system of indicators that characterize the staff of an enterprise; comparison of certain characteristics of employees with corresponding parameters, requirements, standards; determining the impact of factors affecting staffing levels.

Therefore, the system of indicators characterizing all industrial enterprise personnel in general and by categories (workers, managers, professionals and technicians, technical employees) can be divided into the following groups: the number of enterprise personnel (total, in particular, the average number of industrial and non-industrial personnel); structure of industrial production staff by sex (men, women); age composition of industrial production staff;

distribution of industrial production personnel by length of service (up to 15 years or more); educational level of industrial production staff; qualification of employees (discharge on a single tariff grid); level of vocational training (for workers in the interim, for managers, professionals and specialists, technical officers for education and practice) [17, p. 30–31].

Comparison of certain characteristics of employees of the enterprise with the relevant parameters, requirements, standards is carried out at industrial enterprises by means of external evaluation and self-assessment with the performance of orientation and incentive functions. The process of comparing certain characteristics of an evaluation involves several components, namely the evaluation procedure, the content of the evaluation, and the evaluation method.

The evaluation procedure involves determining the location of the assessment, the subject of the assessment, its order and the frequency with which it is used. The content of the assessment is to evaluate the personal qualities of the employees and their performance. The method of assessment is to identify and measure indicators.

Valuation is based on generally recognized principles, namely the principles of objectivity, comprehensiveness, systematic (sustainability), which allows the use of staff appraisal for the recruitment and placement

of new employees; forecasting the promotion of employees; rationalization of methods and methods of work; building the efficiency of the system of work motivation; assessing the effectiveness of individual employees and staff.

Comprehensive assessment of staff on the point system is widely used, which makes it possible to quantify the most significant characteristics with the help of points, as noted by S.F. Pokropivny [18, p. 87–95]. The valuation of the personnel of an industrial enterprise is determined by the evaluation of the personnel, ie both each employee and the collective as a whole.

This assessment complements the full characterization of the resource potential of the enterprise, industry and enables management decisions to be made to improve the functioning of the enterprise or subcomplex. Valuation of the personnel of the enterprise encourages specialists and managers of the enterprise for its efficient use and profitable functioning, which results in the necessity to study the effective use of the personnel and in general the management of industrial enterprises.

Conclusions. The personnel of the enterprise is the main object of management, which is first and foremost related to the processes that occur in the society in order to protect the interests of employees, as well as the increasing role of the human factor in the production process. Personnel management is essential for all organizations – large and small, commercial and nonprofit, industrial, and operating.

Thus, the conceptual mechanism of industrial enterprise personnel management is a complex process that attracts all employees of the enterprise to different degrees, but with one goal that is effective growth throughout (for the enterprise, of course, financial and economic growth, and for employees – career-profitable). Considering the financing of personnel management and development, we can say that this issue has a strong theoretical basis and examples of successful application in countries. The peculiarities of financing the personnel development management system in companies depend on numerous micro, meso, macro factors, as well as global factors, which necessitates further research in the areas of cost structure determination, balancing and targeting.

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Смирнова І. І., Рудика К. Ю. Вдосконалення системи управління персоналом промислового підприємства

У статті проаналізовано тенденції розвитку та сучасні технології навчання персоналу вітчизняного підприємства. Досліджено структуру персоналу організації. Наголошено на постійній необхідності вдосконалювати знання та вміння працівників підприємства, а також важливість перевірки цих знань. Запропоновано заходи щодо впровадження організаційних засад поліпшення системи управління персоналом у галузі професійного навчання та оцінювання працівників підприємства. Досліджено головні аспекти фінансування управління та розвитку персоналу промислового підприємства. Визначено особливості фінансування персоналу в зарубіжних компаніях. Розроблено механізм управління персоналом промислового підприємства, який привертає до свого виконання всіх працівників підприємства в різному ступені, але маючи одну мету, що полягає в ефективному зростанні в усьому (для підприємства – це, звичайно, фінансово-господарське зростання, а для працівників – кар'єрно-дохідне).

Ключові слова: персонал, структура персоналу, механізм управління персоналом, промислове підприємство, мотивація, навчання, розвиток, оцінювання персоналу, фінансування управління та розвитку персоналу.

Smyrnova I., Rudyka K. Improving the Personnel Management System of an Industrial Enterprise

The article has analyzed the trend of development and advanced technology for the personnel of the company. The structure of the personnel organization is provided. It is numbed on a post-requisite basis to thoroughly know the knowledge and knowledge, and also the importance of knowing it. Entered into the organization's ambush, ambush improvements system and personnel management at the galley of professional advancement and appreciation of public relations. The following is the main aspect of financial management and personnel development for industrial enterprises. The special features of financial support for personnel in foreign companies are highlighted. The mechanism of managing industrial personnel has been scattered, a kind of front door to the end of all prizes in the first stage, only one way, but for the most part, for the first time career income).

Keywords: personnel, structure for personnel, mechanism of personnel management, production, motivation, motivation, advancement, evaluation of personnel, financial management and personnel development.

Смирнова И. И., Рудыка К. Ю. Усовершенствование системы управления персоналом промышленного предприятия

В статье проанализированы тенденции развития и современные технологии обучения персонала отечественного предприятия. Исследована структура персонала организации. Отмечена постоянная необходимость совершенствования знаний и умения работников предприятия, а также важность проверки этих знаний. Предложены мероприятия по внедрению организационных основ улучшения системы управления персоналом в области профессионального обучения и оцениванию работников предприятия. Исследованы главные аспекты финансирования управления и развития персонала промышленного предприятия. Определены особенности финансирования персонала в зарубежных компаниях. Разработан механизм управления персоналом промышленного предприятия, который предрасполагает к своему выполнению всех работников предприятия в разной степени, но имея одну цель, которая заключается в эффективном росте во всем (для предприятия – это, конечно, финансово-хозяйственный рост, а для работников – карьерно-доходный).

Ключевые слова: персонал, структура персонала, механизм управления персоналом, промышленное предприятие, мотивация, обучение, развитие, оценивание персонала, финансирование управления и развития персонала.

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6-HOUR WORK DAY INSTEAD OF USUAL 8: FEASIBILITY (OR BENEFITS) OF IMPLEMENTATION FOR UKRAINIAN ENTERPRISES

The theme of my article is "6-hour work day instead of the usual 8: feasibility (or benefits) of implementation for Ukrainian enterprises". Initially, we will consider countries in which people work the least hours per week, after that - experiments related to the 6-hour working day, and imagine the introduction of this system in Ukraine and around the world.

In the Netherlands, the shortest work week in the world is only 29 hours. Dutch specialists are used to working 4 days a week. For 3 days in a row, working mothers and working fathers take consecutive days. Everyone is guaranteed vacation and medical care. If the employee wants, he can reduce the number of working hours, while wages will remain hourly [1]. So the state takes care of the balance between personal life and work among its citizens.

In second place is Denmark and 33 working hours per week. All Scandinavian countries have adopted flexible working hours and 5 weeks of paid leave per year. It is easy for employers to dismiss and recruit new candidates, but the employees themselves are protected by law. Compensation after the dismissal of the company must pay two years.

In Sweden and Italy, it is also customary to work no more than 36 hours, they pay extra for overtime employees, but if they are regularly delayed at work, the employer may be fined for the incorrect organization of work. Most of all in Europe, the British work – up to 39 hours a week.

And the most important workaholics in the world can be called workers in developing countries - Japan and South Korea. It is customary to work there for 50-55 hours a week, without days off, while still a few hours to get to and from work. That is why the term "karoshi" appeared in Japan - a sudden death in the workplace from overwork.

In Sweden, an experiment was conducted at the state level: for two years, employees of the municipal nursing home in Gothenburg worked six hours a day instead of eight. As a result, they became less likely to go to sick leave, more efficiently fulfill their duties and, on the whole, became happier and healthier.

After almost two years on such a schedule, the staff again switched to the old system: 8 working hours a day. Research has proven the benefits of shorter working hours in terms of health and productivity, but not money. Bloomberg went deeper into the study to figure out if a shorter working day could translate into real savings for the employer. In the long run, yes.

The experiment in Gothenburg was not extended because the authorities had run out of funding. About 17 million kroons ($ 1.3 million) were spent on two additional carers who closed the released watch over two years. After which, officials said that spreading the practice to the entire municipality would have been too expensive and closed the project.

However, in the long run, savings would be felt. A shorter working day makes employees happier, said researcher Bengt Lorenzon. "They are less susceptible to stress, less sick, they have more energy and time for different activities", he explained [2].

In particular, as part of the experiment, nurses were less likely to go on sick leave than with an 8-hour working day. They were also less likely to get sick than their counterparts in the control group. In general, they were sick less often than nurses throughout Gothenburg (Fig. 1).

On average, they took 4.7% less sick days for the experiment period, while nurses with a traditional schedule from the control group took 62.5% more sick days for the same period of time. Nurses who worked less were also less likely to use time off (Fig. 2).

And although the study found the benefits of shorter working hours for the health and productivity of employees, it failed to measure the potential economic benefits of the project in the long term. Although the improvement in health and attitude towards work has led to an increase in the quality of service for sisters on a reduced schedule.

In general, the health status of nurses in Sweden is worse than that of an average citizen of the country. Women in civil service are more likely to suffer, for example, overweight. Although the study does not provide exhaustive figures on the impact of the shortened schedule on health, its improvement in nurses from the test group was noticeable and over time this would have an economic effect.

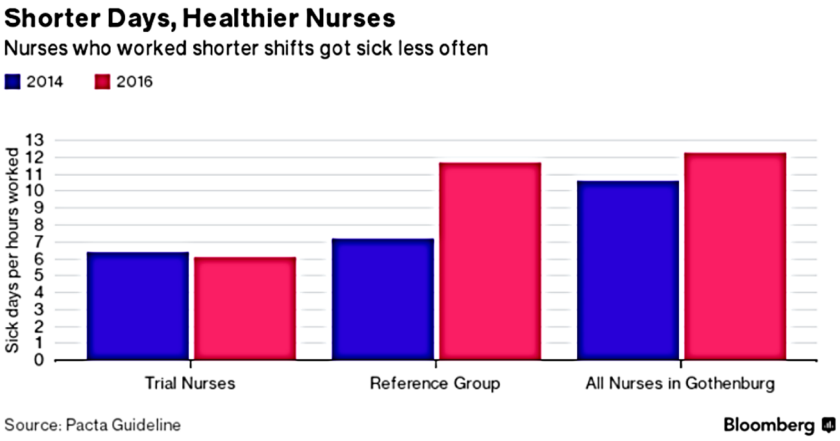

Figure 1

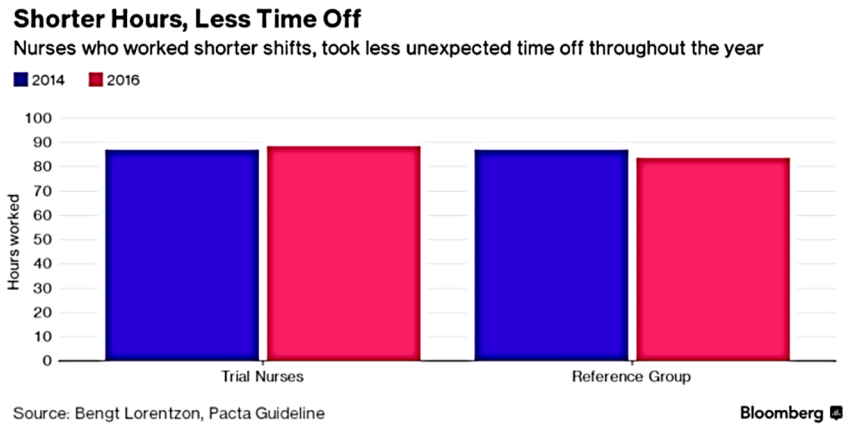

Figure 2

In the nursing home, unfortunately, they did not consider the costs of health care for nurses, not to mention the calculations of savings in the long term. However, they recorded an improvement in blood pressure.

Toyota centers in Gothenburg, Sweden's second largest city, switched to this system 13 years ago. The company claims that this gave a positive result – employees became happier, staff turnover was lower, and profits increased.

Although at the legislative level, a 6-hour working day has not yet been legalized, so far we can only talk about an experiment, the effectiveness of which is evaluated by each enterprise that joined it. Firms make preliminary calculations and determine the consequences of introducing such a working day.

In the US, some companies spend hundreds of dollars per employee on special programs to make their lives happier and healthier, hoping to save money on healthcare in the future and increase productivity in the present. But what if this problem is easier to solve not by fitness and diets, but by simply reducing the number of working hours for them? However, an eight-hour work day in America is still considered a necessary minimum.

From Sweden we will return to Ukraine. Ukrainian legislation provides that the weekly working time may not exceed 40 hours. For employees, a five-day work week with two days off (a working day can not exceed 8 hours), a six-day work week with one day off (no more than 7 hours a day) can be set, and the final accounting of working time is valid for continuously operating enterprises.

It is necessary to pay attention to the fact that according to Art. 53 of the Code of Labor Laws of Ukraine on the eve of holidays and non-working days, the working hours of workers are reduced by one hour during both a five-day and six-day working week, and on the eve of the weekend, the working time for a six-day working week cannot exceed 5 hours. Thus, if we adopt a legally defined length of the working day, then it turns out that on average with a five-day working week, an employee works out for about 7 hours 10 minutes, and for a six-day one - a little more than 6.5 hours. The problem is that few people know about this law and few employers want to follow these rules [3].

The second is a 2 month notice. In Ukraine, the employer has the right to establish part-time at the enterprise. This means that wages will be paid for hours actually worked, and for hours worked overtime, you will have to pay double the amount as stipulated by the provisions of Article 106 of the Labor Code of Ukraine. The employer must notify employees in advance of the es-

tablishment of part-time work in advance – at least two months in advance, and during these two months pay wages as a full-time job. If there is a simple non-fault of the employee during these two months, then you still have to pay at least 2/3 of the "regular" salary.

The third, in practice, situations arise when orders to switch to part-time work were allegedly signed in two months, with which workers were also allegedly acquainted two months ago, although in fact everything happens today. Formally, in this case there are no violations, since the legislation does not yet stipulate the obligation of the employer to warn state bodies about the introduction of part-time work at the enterprise.

At the same time, during the transition to the six-day period, it will be possible to "win" only if the people are actually transferred to part-time jobs – the employer will be able to save part of his wages, but most likely he will lose in labor productivity. A variant is also possible, of a legal transfer to part-time work during the actual performance of work throughout the day, but it must be remembered that with the actual admission of an employee to work without an employment contract, full-time registration if the work is actually performed is complete working time and wage payments without paying a single contribution and taxes may be fined thirty times the minimum wage for each employee in respect of which was committed, and it is today 126000 hryvnia.

So, in Ukraine in will be good for health of nation, have a bigger profit for a firm, decrease an unemployment in country, that take away 3% of GDP and people can find another job and work less. And this all only because we decrease the working hours down to 6. But also we will have the bad sides of this program and they are: losses of the firm, big fine, if we don't have the law about it, this program works only in long-term perspective.

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THE UKRAINIAN-POLISH SEMINARS

The Institute of Industrial Economics of the National Academy of Sciences of Ukraine (Kyiv) have a good tradition of seminars with polish colleagues from Universities of Poznan, Lodz and Zabje.

On December 2-3, 2019, on the basis of the Institute of Industrial Economics of the National Academy of Sciences of Ukraine (Kyiv), the Ukrainian-Polish seminar "Reforms of self-government and education systems in Poland: problems and implementation mechanisms in Ukraine" was traditionally successfully held. Its organizers were: IIE of the NAS of Ukraine, Academy of Economic Sciences of Ukraine, the University of Lodz (Department of Management of the Faculty of Management), Luhansk Taras Shevchenko National University (Department of Economics, Marketing and Entrepreneurship of the Educational and Research Institute of Economy and Business), the Research and Scientific Cooperation Center: Poland-Ukraine. The previous Ukrainian-Polish seminar by the same organizers on the problems of innovation and investment cooperation between Ukraine and Poland on the basis of the IIE was held in September 2018.

The December 2 session was dedicated to the section "Experience in the implementation of regional policy and the reform of local self-government in Poland – ways and mechanisms of adaptation in Ukraine". The meeting was opened by the Director of the IIE, President of the AES of Ukraine, Academician of the NAS of Ukraine A.I. Amosha. He spoke about the experience of fruitful cooperation between representatives of academic and university science of the two countries – the founders of the seminar and also presented diplomas of academicians of the AES of Ukraine to its new foreign members: Dr. hab., deputy dean of the Management Faculty of the University of Lodz Beata Glinkowska-Krauze and Prof. UŁ Dr. hab. Bogusław Kaczmarek, the Management Faculty of the University of Lodz.

Took part in the discussion of B. Kaczmarek's report on the analysis of common regional policy of the European Union in Poland: Academician of the NAS A.I. Amosha, Vice-President of AES Academician V.I. Liashenko, Academician O.F. Novikova, Professors V.A. Chebotarov, Yu. M. Kharazishvili, A.N. Kolosov and V.V. Zablotsky; Associate Professors O.O. Lemishko, A. Vishnevsky and Ie. Chebotarov; PhD-students A.S. Savchenko, M.V. Suvorov, I.F. Semikina, V.E. Kruglyakov, V.B. Tsekhanovich, entrepreneur P. Tesnovsky and others.

The attendees put forward and substantiated proposals for the implementation of the experience of the former socialist countries in reforming local government system, taking into account domestic realities; reflecting the characteristics of the reform of industry-oriented and rural areas; substantiation of forms and methods of increasing the role of business in filling budgets of united territorial communities.

On the second day of the seminar in the section "Reform of the higher education system in Poland: problems, prospects and first results" the prospects for reforming higher education in Ukraine were discussed taking into account the positive and negative experience of such reforms in Poland. Of particular interest were specific proposals for implementing the concept of an innovative elevator for secondary school graduates in Ukraine and for encouraging enrollees from the Middle East, Africa and Asia to obtain bachelor and master degrees in higher education institutions of Ukraine with the further possibility to continue higher education in Poland.

Also, on the second day of the seminar, participants from Spain and Poland joined the discussion with their presentations in a videoconference mode: M.Sc. Adrianna Glinkowska Mares, Eng. Łukasz Górecki, M.Sc. Joanna Krzymianowska-Kozłowska, B.Sc. Anastasiia Tiviakova, Yana Klymovska.

Following the discussion of issues of the II Ukrainian-Polish seminar, it was decided to create a joint group of scientists and practitioners of the two countries and submit relevant proposals to the Ministry for Development of Economy, Trade and Agriculture of Ukraine and the Ministry of Education and Science of Ukraine.

The practice was approved and new tasks were outlined to deepen the interaction of academic and university science of both countries on the basis of the Research and Scientific Cooperation Center: Poland-Ukraine.

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