

PROVISION OF ECONOMIC SECURITY OF ENTREPRENEURSHIP ON THE BASIS OF STRATEGIC ALIGNMENT CONSIDERING FUTURE PARAMETERS OF THE BUSINESS ENVIRONMENT

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ABSTRACT

The article develops a methodological approach to providing economic security of entrepreneurship on the basis of strategic alignment considering future parameters of the business environment. It is substantiated that economic security provision consists in reaching the maximum possible conformity of the current state of the enterprise with the future parameters of the business environment. This enables determining steps to be undertaken today to provide the required level of economic security in the future. The developed approach enables shaping an idea of a certain package and sequence of measures to eliminate strategic gaps between requirements of the external business environment and internal business parameters based on the logic of retrospective review from the future. The article introduces the novel system of strategic indicators – drivers of strategic alignment provision of which facilitates achievement of the required level of economic security of entrepreneurship. Analysis of Ukraine's mining and metallurgical business demonstrates that the current conformity of strategic indicators of economic security provision with best foreign practices makes it impossible to reach the required rates of achieving parameters of the future business environment, such rates being characteristic of foreign companies. Maximum acceleration of these processes is a key factor of providing economic security of the mining and metallurgical business in the long run.

Keywords: Business Environment, Dangers, Economic Security, Opportunities, Strategic Indicators

INTRODUCTION

For many companies, the year 2020 was a bifurcation point: they either moved to the next level of development due to management of technological changes or suffered losses or were destroyed. At the same time, 2020 faced the greatest burst of investments in technology in the history. According to then Harvey Nash / KPMG CIO Survey 2020, to ensure safe work from home in conditions of COVID-19, world companies spent about \$15 bn on technologies every week. Here, security became one of the main investment targets (Yankovskyi, 2021). So, it is

important to consider technological trends while providing economic security of entrepreneurship.

The main question that CEOs ask is if the year 2021 will become a new catalyst for changes in the business environment. Great upheavals – whether pandemics or economic crises – open principally new opportunities for business if traditional business approaches could be reconceived. To find a safe way out of the current situation, companies should revise and update their digitalization plans and make sure that their employees are ready to acquire new knowledge and skills. The year 2021 will finalize division of businesses into leaders and outsiders: the market will belong to those who will be able to assess risks and priorities correctly and keep a long-term strategic focus (Tsymbol, 2021). However, digitalization is not the only global trend to be considered by businesspersons to provide economic security of their companies.

Thus, the article aims to develop a methodological approach to providing economic security of entrepreneurship on the basis of strategic alignment considering future parameters of the business environment.

LITERATURE REVIEW

The present paper touches upon three important directions of research: provision of economic security, strategic alignment and the business environment. Individually, they are rather well-studied and described in the literature. Yet, their combination both creates a new direction of research and furnishes practitioners (business owners, managers) with analytical tools for providing economic security of their businesses.

The concept of economic security is usually reduced to rivalry and protection from economic crimes including violence, fraud, robbery, falsification, counterfeiting, abolition, unfair competition, company spying, etc. Though all these threats result in significant economic losses and are those that should be grouped, studied and prevented, economic security of a business is a much wider concept (Cheshuk & Polinkevych, 2017; Mishchuk, 2020). As rightly pointed in (Dub, 2017), economic security is not only absence of danger but also effectiveness, development, competitiveness and independence. Yet, this viewpoint would benefit from its extension and consideration of stakeholders' requirements (Adamenko et al., 2020) and possibilities of the business environment. It should be noted that such shortcomings are quite common. For instance, according to Jim Negus (Negus, 2021), common challenges of the economic security systems of companies include predominance of protecting activities, risk definition, the risk assessment method, qualitative or quantitative indicators, the time interval, etc. However, this list does not include consideration of business environment parameters. According to KPMG, main problems of risk management are the risk management technology, management of the third party's risks, fraud and abuse of office, crisis management, data security, programme compliance, increase of risk data and reporting aggregation (Continuity Central, 2016). Just like Jim Negus, KPMG experts do not consider current parameters of the business environment. Expediency of considering complexity of the business environment is noted in (Dornberger et al., 2014), but the mechanism of doing so when providing economic security is not revealed. Three risk management-related challenges for companies mentioned in

(Gaffigan, 2015) are determination of the risk management role (culture, process, leadership) in the company, global strategy formation and big data. As is seen, this approach partially considers digitalization elements but not the ones of other modern technological trends.

The concept of strategic alignment was popularized by J. Henderson and N. Venkatraman (Henderson & Venkatraman, 1993) who suggested the method of reconciling business and IT-strategy on the strategic and operational levels. The method made the basis for further research. In 2014, 177 employees responsible for planning and company transformation (with 75% of them working in Europe, the other 25% - in North America) were engaged in the survey (Roelfsema et al., 2015). Based on it, strategic alignment factors were split up in the following way: culture, organization, communication. The survey results show that 36% of organizations cannot transform long-term strategic goals into short-term tasks; 35% think strategic goals to be insufficiently implemented; 51% of organizations state about absence of information systems for strategy support. The balanced system of indicators of Kaplan and Norton is one of the most known methodologies of strategic alignment (Kaplan & Norton, 2006). In spite of detailed treatment of the issue of developing the goal and indicator system, the work does not deal with shaping goals and indicators related to providing economic security of entrepreneurship.

Identification of the business-environment for company functioning is an important step to efficient provision of enterprise economic security. There is a close interconnection between business environment factors and enterprise economic security. Each of the factors impacts the level of economic security to some degree. The business environment is an indicator of a country's economy development and a positive or negative factor of the enterprise functioning. The business environment connects many economic actors: the enterprise itself, its competitors, suppliers, the public and consumers. At present, the business environment of entrepreneurship in Ukraine can be described as negative (Shvets, 2017) and therefore it is crucial to not only detect threats and dangers but also find the smallest opportunities occurring in the business environment.

METHODOLOGY

The research uses such general theoretical methods as generalization, explanation, and clustering to analyze economists' and practitioners' ideas about the research object and summarize the results of content analysis of primary sources; analysis and synthesis to justify a new conceptual approach to business analytics in evaluating and providing economic security of entrepreneurship.

RESULTS AND DISCUSSION

The analysis conducted proves that under modern world trends up to 2025-2030, mining and metallurgical business is acquiring completely new features (Mishchuk, 2021). Let us detail according to four global trends of the world economy:

1. The following threats and dangers for business in the mining and metallurgical industry correspond to the trend of deindustrialization of the world economy and transformation of the regional customer demand:

- 1) reorientation of developed countries' economies to servicing and development of the least metal-intensive industries;
- 2) further reduction of industry's share in the global GDP (only 25.4% in 2018);
- 3) deceleration of increment rates of metal products demand up to 1% per year;
- 4) intensification of protectionism steps on developed markets;
- 5) increased sales of iron ore and metal products by world leaders on traditional sales markets of Ukrainian mining and metallurgical enterprises.

Increase of production and sales by maximum 3-5% per year will become a key requirement for business owners. The growing world population of up to 8.5 bn in 2030 due to the countries of Sub-Saharan Africa, Central and East Asia and increased urbanization and construction volumes in these countries consuming 50% of steel will create important opportunities.

2. The following threats and dangers correspond to the trend of applied total digitalization of basic business-processes:

- 1) exhaustion of possibilities of enterprises' extensive growth;
- 2) the low index of enterprises' digitalization of Ukraine's mining and metallurgical industry against the backdrop of the scaled-up use of digitalization tools in the world;
- 3) the necessity of rapid managerial decisions making and realizing under ambiguous conditions of the activity environment and reducing the informational value of forecasts;
- 4) the necessity of providing personnel with 4.0 skills.

To survive the digital revolution, business will have to rethink the concept of the traditional labour force – its composition, quantity and the role at the enterprise. To do this, it is required to comprehend the potential of future digital changes in economy and specify the manner of human-machine interaction to increase productivity and value of products and services as well as business competitiveness. Maintaining profitability on the industry-average level should be mentioned as a key requirement for business owners, while acceleration of making managerial decisions is essential for top-management. With that, it is important to take the opportunity of reducing expenses through scaling Industry 4.0 tools; creating a radically new platform for making managerial decisions; shaping a single informational landscape that integrates industrial systems with business applications.

3. The following threats and dangers for entrepreneurship in the industry, especially the metallurgical one, correspond to the trend of intensifying requirements to environmental friendliness of production because of climate changes:

- 1) introduction of the environmental tariff considering CO₂ emissions (Carbon Border Adjustment) for Ukraine's mining and metallurgical business for goods imported to the EU countries that makes 35% of metal products sold. The difference in the value of emissions will cause additional payments of \$40/t of steel;
- 2) the ICF's recommendations on increasing the CO₂ tax from \$0.4/t to \$25/t;
- 3) intensified attention of leading international institutions to climate changes and greenhouse gas emissions;
- 4) reputation losses of enterprises-polluters.

This trend expands the range of stakeholders including international institutions demanding to increase environmental constraints, raise environmental taxes as well as the

community, governmental and public organizations aimed at monitoring, verification and reduction of greenhouse gas emissions. Legal prerequisites of implementing the European practice of encouraging reduction of CO₂ emissions in Ukrainian enterprises' activities and possible Ukraine's joining the largest world system of EU ETS (75% of the world volume) are possibilities worth mentioning. Besides, it is expedient to use modern technological trends to minimize harmful effects on the environment.

4. Threats and dangers accompanying decarbonization and robotization in the mining and metallurgical business are revealed through:

- 1) reduced profitability of blast and convertor furnaces, step-by-step refusal from these technologies in the world (about -60% by 2040):
- 2) lost competitive positions of mining and metallurgical enterprises on the old technological platform;
- 3) deterioration of mining and geological conditions of iron ore mining and reduction of industrial security of these processes;
- 4) a critically low level of technical and technological development of Ukrainian mining and metallurgical enterprises.

Within this trend, top-management demands complete elimination of industrial accidents, the optimized number of employees with simultaneous enhancement of production efficiency. Increased efficiency of production and enhancement of the industrial security level are possible due to unmanned shaft sinking and drifting, use of drones to assess the state of open pit mining; application of robots, unmanned cranes and other machines for basic metallurgical stages under artificial intelligence control.

To consider all the world trends, we suggest a system of indicators to assess the level of economic security provision in the strategic prospect (Table 1).

Table 1	
STRATEGIC INDICATORS OF ECONOMIC SECURITY PROVISION	
Indicator	Calculation
Digital maturity of production (<i>D maturity</i>)	$D_{maturity} = \frac{D_{value\ chain} + D_{equipment} + D_{m.r.\ base} + L_{big\ data}}{4},$ <p>where <i>D_{value chain}</i> is digitalization of the value chain:</p> $D_{value\ chain} = \frac{\text{number of digitalized business processes in value chain}}{\text{total number of business processes in value chain}},$ <p><i>D_{equipment}</i> is digitalization of equipment:</p> $D_{equipment} = \frac{\text{number of fixed assets with digital analogues at enterprise}}{\text{total number of fixed assets at enterprise}},$ <p><i>D_{m.r. base}</i> is digitalization of the mineral raw material base:</p> $D_{m.r.\ base} = \frac{\text{number of digitalized deposit areas}}{\text{total number of deposit areas}},$ <p><i>L_{big data}</i> is the Big data application level:</p>

	$L_{big\ data} = \frac{\text{number of unstructured data array processing methods applied}}{\text{required number of unstructured data array processing methods}}$
Technological level of suppliers ($M_{suppliers}$)	$M_{suppliers} = Chigh - tech / Ctotal$, where <i>Chigh-tech</i> is expenditures for highly technological suppliers; <i>Ctotal</i> is total expenditures for suppliers.
Level of free carbon footprint limits ($L_{free\ limits}$)	$L_{free\ limits} = 1 - \frac{\text{used limit volume}}{\text{total free limits}}$
Current expenditures for acquiring carbon quota per 1t of steel ($C_{c.q. 1\ steel}$)	$C_{c.q. 1\ steel} = \frac{\text{expenditures for carbon quota acquisition}}{\text{annual steel production (t)}}$
Production decarbonization rates ($R_{decarbon}$)	$R_{decarbon} = \frac{Q(CO2)report \times 100}{Q(CO2)base} - 100$, where <i>Q(CO2)report</i> is carbon emissions in the year under consideration; <i>Q(CO2)base</i> is carbon emissions in the base year.
Level of production robotization ($L_{robotics}$)	$L_{robotics} = \frac{\text{number of robotized or unmanned fixed assets}}{\text{total number of fixed assets at enterprise}}$
Rates of prospective market development (ΔT_{pm})	$\Delta T_{pm} = \frac{S\ current\ period - S\ base\ period}{S\ current\ period} \times 100\%$, where <i>S current period</i> is the volume of sales on prospective markets (Sub-Saharan Africa, Central and East Asia) in the current period; <i>S base period</i> is the volume of sales on prospective markets in the base period.
Level of product promotion digitalization ($D_{product\ promotion}$)	$D_{product\ promotion} = \left(\frac{S\ global\ platforms}{S\ total\ volume} + \frac{S\ blokchain}{S\ total\ volume} \right) / 2$, where <i>S global platforms</i> is the volume of sales on the basis of global platforms in a certain period; <i>S total volume</i> is the aggregate volume of sales in a certain period; <i>S blokchain</i> is the volume of sales applying blockchain.
Source: developed by I. Mishchuk	

Forecast internal standards of strategic indicators of economic security provision and benchmark values (based on data of Ukrainian mining and metallurgical enterprises) are given in Table 2.

Indicator	For 2025		For 2030	
	internal standards at Ukrainian enterprises	world's best business practices	internal standards at Ukrainian enterprises	world's best business practices
Digital maturity of production, unit fr.	0.45	0.67	0.72	1
Technological level of suppliers, unit fr.	0.17	0.32	0.35	0.5
Level of free carbon footprint limits, unit fr.	1	1	1	>1
Current expenditures for acquiring carbon quota per 1	0	0	0	0

of steel, USD/t				
Production decarbonization rates, %	8.2	13	12	25
Level of production robotization, unit fr.	0.26	0.35	0.37	0.58
Rates of prospective market development, %	8	12	17	22
Level of product promotion digitalization, unit fr.	0.33	0.75	0.78	1

Source: evaluated by I. Mishchuk with the assistance of experts from enterprises considering technical and technological, organizational and financial capacities of national enterprises and on the basis of analyzed forecast data of portals (Delfica, 2021; Deloitte, 2021; GMK Center, 2021), consulting companies (Pro Consalting, 2021; Metal Expert, 2021), international organizations (World steel association, 2021; GlobeNewswire, 2021; Steel Manufacturers Association)

Thus, the strategic gap between Ukrainian and foreign mining and metallurgical enterprises renders fast implementation of large-scale innovative investment projects impossible. Bright illustration of this is application of blast furnace production technologies at Ukrainian enterprises (foreign companies switch over to direct reduction of iron), sintering against pellet use, the low stage of digitalization of production and robotics use. The possible maximum application of the best business practices becomes a priority for Ukrainian enterprises considering future parameters of the business environment.

CONCLUSION AND RECOMMENDATION

The article develops a methodological approach of providing economic security of entrepreneurship on the basis of strategic alignment considering future parameters of the business environment. It is substantiated that economic security provision consists in reaching the maximum conformity of the current state of the enterprise with future parameters of the business environment. This forms a new context of perceiving the enterprise's current state and enables determining steps to be undertaken today to provide the required level of economic security in the future. The developed approach enables shaping an idea of a certain package and sequence of actions to eliminate strategic gaps between requirements of the external business environment and internal business parameters based on the logic of retrospective review from the future. There is suggested a system of strategic indicators the provision of which is determined by strategic alignment drivers. Analysis of Ukraine's mining and metallurgical business demonstrates that the current level of conformity of strategic indicators of economic security provision with best foreign practices makes it impossible to reach the required rates of achieving parameters of the future business environment, such rates being characteristic of foreign companies. Yet, maximum acceleration of these processes is a key factor of providing economic security of entrepreneurship in the mining and metallurgical industry in the long run.

AUTHOR CONTRIBUTIONS

Ievgeniia Mishchuk: the ideas, including development of the conceptual approach to provision of enterprise economic security on the basis of strategic alignment; development of the system of strategic indicators of economic security; Anna Pohrebniak, Yuliia Tiulenieva

analysis of the current definition of the strategic alignment; Lyshchenko Elena: analysis of the current definition of the business environment
Nadiia Skliar: analysis of the current definition of economic security.

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