

Digital financial assets application for enterprise economic resilience provision

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Abstract — Objective. The report describes options for improving the economic resilience of industrial enterprises by organizing the issuance and circulation of digital financial assets (DFA). Economic resilience is understood as the ability of an enterprise to achieve its strategic goals in a timely manner under the conditions of positive and negative external influences on the enterprise system. In resilience models, an enterprise is presented as a cybernetic system. **Methods.** The methods of DFA emission based on mining and without mining are considered. DFA circulation options: direct exchange for traditional currencies or using DFA as a medium of exchange in barter transactions. The decision on the release and circulation of DFA is subject to modeling in the framework of the 4x6 matrix resilience model. It is advisable to manage DFA quotes on behalf of a specialized financial company. **Results.** The proposed DFA solution can be not only a new asset for the purposes of the operating activities of the enterprise, but also a means for filling pension accounts organized for employees of the enterprise. This solution minimizes staff turnover and allows the company to retain the best promising employees. **Conclusion.** The organization of the issuance and circulation of DFA can have a beneficial stabilizing effect on the organization, similar to how it could be organized by issuing its own corporate securities, but without the costs that accompany these traditional financial instruments.

Keywords — digital financial assets (DFA), initial coin offering (ICO), mining, issue, economic resilience (key words), 4x6 matrix, balanced scorecard (BSC)

I. INTRODUCTION

Economic resilience in the report is understood as the ability of an industrial enterprise to achieve its strategic goals in a timely manner in the face of external challenges of positive and negative content [1][2][3][4][5]. Also, for tech applications, resilience is «an emergent property associated with an organization's capacity to continue its mission despite disruption through mindfulness resourceful agility, elastic infrastructures and recoverability, e.g. Therefore, resilience is a combination of technical design features, such as fault-tolerance and dependability, with organizational features

such as mindfulness, training and decentralized decision making» [6].

The direction of resilience began to be widely studied, starting from the 90s of the last century, in connection with the request of the US government to protect key infrastructure elements [7]. Subsequent events of 9/11 and Hurricane Katrina confirmed the need for large-scale investments in the resilience of responsible systems, with the development of a list of systemic activities in the field of resilience.

For the purposes of the analysis of economic resilience, economic systems in the corresponding models are represented as cybernetic systems (Fig. 2) with the following basic properties:

- openness - open to impact on external challenges;
- strategic goal-setting - the desire of systems to achieve their strategic goals;
- controllability - submission of the behavior of the system to signals from the super-system that controls it;
- observability - the ability of a super-system to receive and interpret output signals from a managed system;
- homeostasis - the ability of the system to maintain and maintain stability while maintaining balance with the external environment;
- action of the system under conditions of restrictions of various nature.

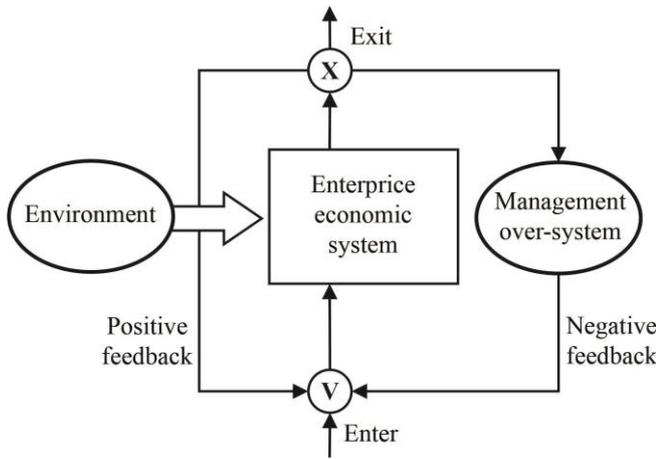


Fig. 1. Enterprise as a cybernetic system

Source: [8]

One of the tools to ensure economic resilience of an enterprise can be digital financial assets (DFA), which are commonly understood as cryptocurrencies. DFAs are not defined in Russian law, despite the fact that the practice of working with cryptocurrencies in the Russian Federation is extensive. It is assumed that the legal field under the DFA will be initially structured in the Russian Federation in 2020, while the list of operations with the DFA will be legally limited. At the same time, the very fact of adoption of the code of laws on DFA suggests that the DFA will receive a legitimate basis for recognition, will enter into circulation along with other assets in civil law transactions.

This report discusses the main possible areas of application of DFA in the economic turnover of industrial companies. The focus of the report was precisely on industrial enterprises, since enterprises of this industry class are in the most difficult situation in the Russian Federation due to the lack of an effective and comprehensive, strategically oriented industrial policy in the Russian Federation. Therefore, any assistance to industry, no matter where it comes from, will find appreciation in enterprises..

II. METHODS APPLIED

DFA can be realized in two main economic regimes - issue and the actual economic turnover, and the generation (issue) of the DFA can be carried out in two main ways: through mining or through a mining-free release, as a fork of an existing cryptocurrency. In both cases, we can talk about Initial Coin Offering, which should be accompanied by an emission prospectus (in relation to ICO - white paper).

The issuance by the enterprise of its own cryptocurrency is a form of crowdfunding, when investors in the DFA are counting on an increase in the exchange price of the DFA in the future. Such growth, as in the case of stocks, is correlated with the growth of the welfare of the enterprise itself and its ability to maintain the liquidity of issued DFAs during the repurchase. While the legislation of the Russian Federation does not determine a DFA, an enterprise can conduct an ICO through its foreign companies, in the applicable law of third countries. In exchange for a DFA, when issued, an enterprise

usually receives the cryptocurrency previously issued by third issuers. In contrast to the issue of shares, the company during the ICO does not transfer part of the control to new shareholders. And, unlike a bank loan, an enterprise is not responsible for issuing all of its property. In this regard, DFA can be regarded as a mild form of long-term financial loan with a variable interest rate.

The method of issuing a DFA by an enterprise is determined by the conditions under which the company intends to organize the economic turnover of a DFA. If the method of emission is mining, then the size of the issue is not initially determined, the issue is carried out continuously, including by any person participating in the mining, and the laboriousness of the issue is due to the cost of mining. By selling cryptocurrency attracted during the issue on crypto-exchanges, the company receives back dollars and euros, which it can use for its traditional purpose. That is, in this case the emission of DFA immediately goes to the market. If the method of issue is mining-free, then this implies that the volume of the issue is limited in advance, there is no labor input during the issue, and issued DFAs can be used as a medium of exchange for goods and services of third parties. This suggests that the company has formed an ecosystem around itself, consisting of committed partners who are ready to independently take on the risks associated with the ownership of the DFA, with the acceptance of the DFA as a means of exchange (barter) for the goods they ship.

As with securities, DFAs must meet the criteria for reliability, profitability and liquidity. All these parameters can be provided by the company in the buyback mode, in the conditions of an effective quotation process. Within the framework of the ecosystem, it is appropriate to attract a specialized financial company for circulation, which could invest its liquidity in the bilateral quotation of issued CFAs. Since the capital of CFA is a type of current assets and long-term liabilities at the same time, the issue of CFA increases the classically measured liquidity of the enterprise, and, consequently, its economic resilience.

In order to evaluate in detail the consequences of decisions made in the field of DFA, it is necessary to model the resilience of the organization on the basis of the 4x6 matrix model [3]. In this model (Fig. 2), rows are strategic perspectives (Effects, Relations, Processes, Resources), and columns are strategic maps (Threats, Occasions, Balanced scorecard (BSC), Risks, Chances, Solutions).

Attraction of financing using the CFA is reflected on the Decisions map, on the one hand, as an inflow of capital in the liabilities of the balance sheet, and, on the other hand, as an investment portfolio in the assets of the balance sheet, where each component of the portfolio is a separate project aimed at increasing the stability of the enterprise. The project portfolio has three thematic segments - strategic, risk-free and pro-risk. The strategic segment is responsible for the regular activities of the organization, the anti-risk segment is aimed at counteracting risks, and the probable segment is for activating and realizing chances (for example, due to design and implementation of innovations).

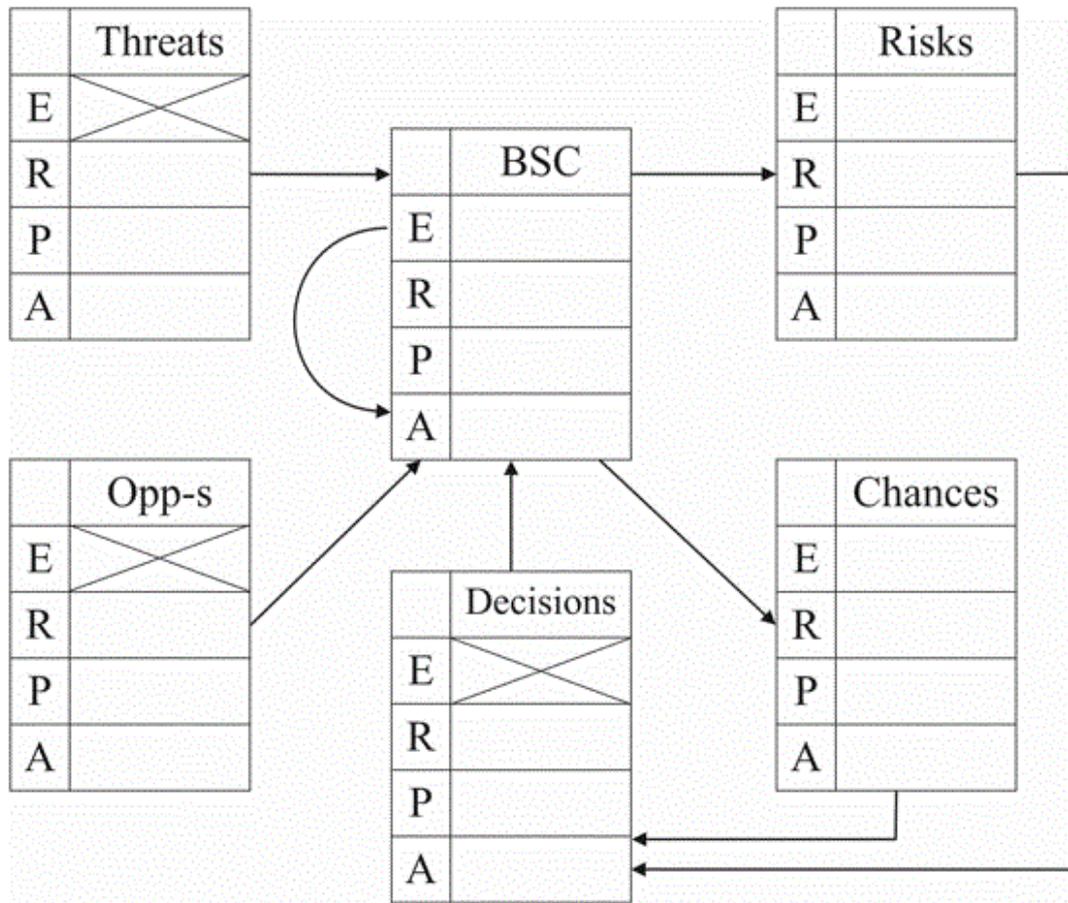


Fig. 2. 4x6 matrix

In order to accurately determine the size of the DFA emission, it is necessary to carry out special modeling of threat and exemption scenarios on the respective cards as part of the 4x6 matrix. For example, shrinking the sales market by volume and decreasing its profitability by trend can be modeled using appropriate random processes of revenue and marginal profit. These negative processes lead to cash gaps, and this cash gaps can be estimated either accurately or interval (fuzzy). The size of the gap corresponds to the amount of capital raised.

In general, the market uncertainty arising in the model is well represented in the format of fuzzy sets of various categories. Market processes can be interpreted in the model as fuzzy functions of time, and individual indicators in strategic charts as fuzzy numbers of any kind. Comparison of fuzzy indicators with scalar normative criteria allows us to assess the feasible measure of the chance of how much certain decisions made in the field of DFA will allow the company to reach a new strategic level. On the contrary, it is possible to assess the measure of risk that the company will not maintain stability, even if a DFA decision is made (the decision will be ineffective).

III. RESULTS OBTAINED

The newly issued DFA can also act as a means of pension provision for employees of industrial enterprises [9]. Despite the fact that the prospective legislation on DFA does not provide for pension schemes for employees with participation of the DFA, nothing prevents the opening of separate financial pension accounts for employees of enterprises and begin to gradually accrue DFA to these accounts, organizing the corresponding depositary accounting. At the same time, the filling of pension accounts will be carried out by those DFAs that are independently issued by the enterprise during mining or mining-free emission. Since employees receive DFAs only as a result of retirement, there are no problems associated with the taxation of personal income in connection with the ownership of DFAs. Such a measure, along with the methods mentioned above to increase the resilience of the company, will help to stabilize the number of enterprises and minimize staff turnover. Employees will be interested in modifying to retirement and receiving additional pension capital upon leaving the company.

IV. DISCUSSION

The central problem of the introduction of DFA in enterprises is the lack of Russian legislation regarding DFA and the absence of relevant law enforcement practice. In

addition, the Russian authorities are inclined to tighten legislation on CFA as much as possible in order to impede the implementation of criminal schemes for the legalization of capital. All this will not contribute to the development of the DFA market and will cause difficulties with their circulation. This difficulty can be overcome only by completely deanonymizing operations with DFA and introducing full-fledged means of accounting, reporting and state control of operations with DFA (similar to currency regulation in the Russian Federation).

V. SUMMARY

All the measures proposed in the report on the introduction of DFA in industrial enterprises contribute to increasing its economic resilience, make it more flexible and increase its survivability in an aggressive market environment. The impact of the DFA on the organization is similar to what it looks like with the use of corporate securities (stocks, bonds), but without the costs that accompany these traditional financial instruments.

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