

## OPTIMIZATION OF CRISIS MANAGEMENT IN BUSINESS PROCESSES IN THE COMPUTER HARDWARE DISTRIBUTION SECTOR

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**Abstract.** This study examines the optimization of crisis management in business processes under wartime and post-war instability. The research subject is the theoretical and methodological foundations of anti-crisis adaptation of business processes in the computer hardware distribution sector. The relevance of the topic is determined by the high sensitivity of the computer hardware trade to supply chain disruptions, logistics instability, inventory management difficulties, service pressure, demand fluctuations, and restricted access to financial and digital resources. Under such conditions, business process management must ensure continuity, resilience, and adaptability. The study aims to synthesize contemporary scientific approaches to the anti-crisis adaptation of business processes and identify the limitations of existing optimization models. The objectives include analyzing the sector-specific features of operational processes, assessing the limitations of capital-intensive digital solutions, exploring the potential of frugal innovation, lean management, horizontal cooperation, digitally affordable coordination, and social capital, and developing a managerial matrix for selecting crisis-response tools. The methodological framework is based on the methods of analysis, comparison, generalization, and synthesis of scientific and analytical sources. This enabled the identification of the dominant theoretical approaches in the literature, the comparison of their explanatory and practical value, and the formulation of an integrated interpretation of anti-crisis adaptation mechanisms. The study combines a process-oriented perspective with concepts of

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resilience, organizational flexibility, interorganizational coordination, and social network embeddedness. The study shows that business processes in computer hardware distribution have a distinct sectoral configuration shaped by import dependence, logistics sensitivity, short product life cycles, critical inventory turnover, the strategic importance of service support, and the growing need for accurate information coordination. It is argued that standard anti-crisis or digital optimization models are insufficient when applied in isolation. Capital-intensive digital tools may be effective in principle, but for many enterprises, they remain financially inaccessible and organizationally burdensome. The principal result of the study is the substantiation of an integrated anti-crisis approach based on five mutually reinforcing components: frugal innovation, horizontal cooperation, lean process transformation, digital, affordable coordination, and social network support. On this basis, the study proposes the FCLDS Resilience Mechanism as an integrated tool for configuring crisis-response solutions in business process management. Its practical expression is a managerial matrix linking typical process-related problems with feasible adaptation tools and expected effects. The conclusions confirm that resilience and efficiency in the computer hardware distribution sector are better enhanced through the integration of frugal, cooperative, lean, digitally accessible, and social-network mechanisms than through exclusive reliance on capital-intensive digital solutions.

### **Introduction**

Today, companies operating in the computer hardware distribution sector face a multi-layered environment of instability characterized by military risks, disruptions to international supply chains, fluctuations in demand, and limited access to financial resources. For Ukraine, this issue is particularly relevant in a context where companies are forced to maintain operational continuity, remain competitive, and adapt their business processes amid prolonged uncertainty. In modern academic discourse, approaches related to frugal innovation, lean management, horizontal inter-firm cooperation, the shared use of logistics and warehousing resources, and the application of affordable digital coordination tools suitable for resource-constrained enterprises are actively developing. Of particular interest are studies of social capital, interorganizational trust, and local business networks as factors

in enhancing the resilience of economic actors in a crisis environment. However, existing research primarily examines these mechanisms in a fragmented manner, as separate management tools, without integrating them into a coherent framework for anti-crisis optimization of business processes in post-war conditions.

The scientific innovation of this study lies in the justification of an approach to crisis-response-optimized business-process optimization in the field of computer hardware distribution, based on a combination of cost-saving, cooperative, digitally accessible, and social-network mechanisms for adapting to post-war instability.

This study aims to synthesize scientific approaches to crisis-response adaptation of business processes in small and medium-sized enterprises in the computer hardware distribution sector, identify the limitations of existing optimization models, and justify an integrated approach to enhancing their resilience in the context of war and post-war instability. To achieve this aim, the following objectives have been identified:

- 1) analyze the industry-specific characteristics of operational processes in the computer hardware distribution sector;
- 2) assess the limits of applying capital-intensive digital solutions in the current Ukrainian context;
- 3) explore the potential of cost-saving innovations, horizontal cooperation, digitally accessible coordination tools, and social capital as factors in enhancing the resilience of business processes;
- 4) summarize the mechanisms of crisis adaptation for enterprises in the sector under study;
- 5) develop a matrix for managerial selection of tools for the crisis adaptation of business processes.

The methodological framework of the study is based on methods of analysis, comparison, generalization, and synthesis of scientific and analytical sources, which makes it possible to identify the main theoretical approaches, compare their explanatory and practical value, and justify the relevance of interpreting the mechanisms of crisis adaptation in the sector under study.

The relevance of the chosen topic stems from the combination of the computer hardware distribution sector's high sensitivity to logistical and resource-related challenges, the limited applicability of many capital-

intensive models of digital optimization, and the insufficient integration in the scientific literature of cost-effective, cooperative, digitally accessible, and social-network-based adaptation mechanisms into a unified applied system.

### **1. Theoretical foundations of adaptive and crisis management**

According to modern management science, adaptive and crisis management are viewed as interrelated but distinct approaches to ensuring an enterprise's viability in an unstable external environment. While crisis management traditionally focuses on identifying threats, minimizing losses, and restoring system controllability, adaptive management emphasizes an enterprise's ability to modify its structures and processes in response to new operating conditions [11, p. 37; 20, p. 6]. Together, these two approaches form the theoretical basis for studying enterprise resilience as the dynamic ability to maintain performance by revising methods of organizing operational activities, utilizing resources, and interacting with the external environment [6, p. 1043; 11, p. 37].

Today, many businesses in Ukraine operate with limited financial reserves, less formalized management procedures, greater dependence on key counterparties, and less time to respond to crises. Simultaneously, Ukrainian businesses often demonstrate greater flexibility, faster decision-making, and the ability to quickly reconfigure business processes. Within the process-oriented approach, a company is viewed not merely as a collection of functional departments, but as a system of interconnected business processes that transform resources into consumer value. That is why, in a crisis, management's attention shifts not only to the enterprise as a whole but primarily to its key business processes: procurement, supply, warehousing, order processing, service, operational financial support, information coordination, and interaction with counterparties. This approach shifts from a general anti-crisis response to a more precise analysis of which areas of the operational cycle are experiencing losses, delays, function duplication, coordination breakdowns, and critical dependence on external factors.

The concept of "process resilience" is gaining increasing importance in modern theoretical approaches [2, p. 25; 6, p. 1043; 11, p. 37]. This refers to the capacity to maintain a minimum necessary level of operation, quickly resume operations after a disruption, and, if possible, transition to a more

resilient operational configuration. For small and medium-sized enterprises, resilience is built less on large reserves or costly protection systems and more on flexible resource use and effective coordination. This is why the theoretical understanding of business process resilience requires a shift from a static view of stability to a dynamic view of viability.

The relationship between crisis management and the logic of continuous business process improvement deserves special attention. In classical approaches, process optimization is often associated with streamlining, eliminating waste, standardization, and increasing productivity. However, in conditions of instability, the goal of optimization changes. Here, it lies in enhancing processes' ability to withstand shocks, adapt quickly, and ensure the continuity of critical operations. In this sense, crisis-resilient optimization is not just operational improvement but a process-oriented approach that values not only speed and cost but also reliability, recoverability, coordination flexibility, and performance under uncertainty.

Many modern process optimization models rely on complex digital platforms, analytical systems, and automated management support solutions to ensure a high level of predictability and control [7, p. 676; 21, p. 100]. At the same time, for small and medium-sized enterprises, the excessive complexity of such tools can itself pose a risk, as it requires financial investment, technical infrastructure, specialized personnel, and time for implementation. This raises the question: what should the company's crisis-adaptation management mechanisms look like if its resources do not allow it to focus exclusively on capital-intensive digital transformation models? In response to this, contemporary research increasingly features approaches that shift the focus from full-scale technological modernization to more accessible ways of enhancing the resilience of business processes [3, p. 795; 9, p. 573]. These are management decisions based on process efficiency, cooperation, resource sharing, local network interaction, increased transparency in coordination, and the use of digital tools that require minimal investment [4, p. 47; 15, p. 125].

The interorganizational dimension is also a key element in the theoretical understanding of adaptive management. In an unstable environment, a company's ability to maintain stability increasingly depends on the nature of external relationships with suppliers, logistics partners, service contractors, local business networks, and support institutions. This means that the

adaptability of business processes must be viewed as an enterprise's ability to restructure coordination mechanisms not only internally but also across organizations. Thus, the theoretical foundations of adaptive and crisis-response management of business processes are formed at the intersection of several approaches: the process-oriented approach, the concept of organizational flexibility, the idea of process resilience, the principles of crisis response, and the need for resource-adequate managerial adaptation. That is why further analysis should focus on how these general theoretical principles manifest in the computer hardware distribution sector, where there is a high degree of dependence on logistics, imports, warehousing, service support, and rapid response to changing market conditions.

## **2. Industry-specific features of business processes**

One of the key characteristics of the sector under study is its high dependence on imports and external supply chains. The procurement process is not limited to selecting a product line and agreeing on a price. It involves a complex system of interactions with manufacturers, authorized distributors, customs infrastructure, logistics providers, and financial intermediaries. In crisis conditions, this dependence intensifies due to longer delivery times, rising transportation costs, and greater planning complexity for import shipments. As a result, the procurement business process takes on the characteristics of a strategic process, on which both the availability of goods and the company's ability to maintain predictability in fulfilling its customer obligations depend.

Another key aspect of the industry's specific characteristics is the inventory management component of business processes. On the one hand, maintaining sufficient inventory levels is critical to fulfilling orders quickly, retaining customer loyalty, and avoiding losses from product shortages. On the other hand, excessive inventory leads to tied-up working capital, increased storage costs, and losses from rapid product line turnover. This problem is particularly acute in the computer hardware sector due to short product lifecycles, rapid changes in technical specifications, and high sensitivity of demand to technological innovations. Under such conditions, the warehousing process ceases to be merely a function of physical storage. It becomes a complex mechanism for balancing product availability, inventory liquidity, and the company's financial stability.

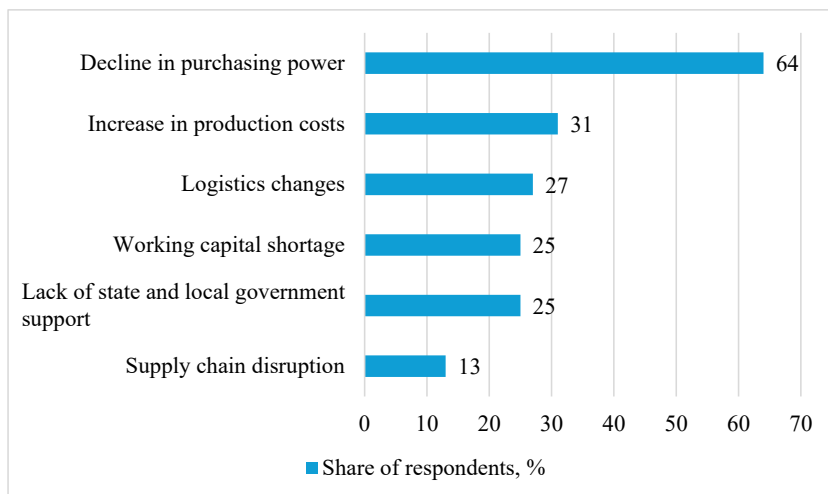
Another distinctive feature of computer hardware distribution is the critical role played by the order fulfillment process as the central hub of the entire operational system. Timely and accurate order fulfillment is a key competitive advantage, as high customer expectations for speed, completeness, and delivery predictability characterize the IT equipment market. Any disruption during delivery, storage, internal coordination, or external shipping directly affects order fulfillment times and the company's overall reliability in the customer's eyes.

The service component of business processes also deserves special attention. In the computer hardware market, value for consumers is created not only through the physical receipt of the product but also through after-sales support, technical consulting, warranty, post-warranty service, prompt responses to complaints, and the ability to resolve issues quickly. Service offerings often serve a compensatory function, allowing companies to compete not so much on scale as on the quality of customer interaction. However, the service process is also resource-intensive and depends on the availability of personnel, spare parts, and stable communication with suppliers. In a crisis environment, the service function may be the first to come under pressure. However, it is precisely its deterioration that often triggers long-term reputational damage. Therefore, in the field under study, anti-crisis optimization cannot be limited to logistics and procurement alone but must also encompass the service chain as a critical component of business process resilience.

Another characteristic of the industry is its heightened reliance on effective information coordination. Timely data on product availability, delivery times, order status, customer needs, inventory movement, and the company's financial capabilities is critical. Even in the absence of complex digital platforms, a company must maintain sufficient alignment among procurement, warehousing, sales, delivery, and service. In times of instability, the importance of how quickly a company receives up-to-date information, how accurately it circulates among process participants, and how promptly management decisions are made based on it increases. In this sense, the challenge of business processes in IT equipment distribution is not only logistical but also informational and organizational.

The results of the UNDP assessment provide empirical evidence of the structural vulnerability of Ukraine's SMEs in wartime conditions

[20, p. 6]. As shown in Figure 1, among the main obstacles to doing business, respondents most frequently cited a decline in purchasing power (64%), rising production costs (31%), logistical changes (27%), a shortage of working capital (25%), insufficient support from the state and local authorities (25%), and supply chain disruptions (13%). A significant portion of these barriers directly relates to logistics, inventory turnover, resource availability, and operational continuity. Therefore, in the context of post-war instability, business process optimization should be viewed as a mechanism for maintaining the enterprise's operational viability.



**Figure 1. Main obstacles to doing business for Ukrainian SMEs during the war, % of respondents**

*Source: compiled and organized by the authors*

Thus, business processes in the computer hardware distribution sector are shaped by import dependency, logistical sensitivity, complex inventories, short product cycles, service importance, and continuous information coordination. In the war and post-war context, these characteristics expose the limits of standard operational management and call for optimization models that consider efficiency, SME resource constraints, process

flexibility, and stability amid logistical disruption. For this reason, the next step is to examine which approaches to business process optimization are proposed in the scientific literature, which of them are potentially relevant for SMEs in this area, and which have significant limitations given the financial and organizational operating conditions.

In the context of crisis-response business process optimization, it is worth considering approaches that do not require significant capital expenditures, complex digital infrastructure, or lengthy organizational implementation. This explains why the frugal innovations, lean management, and horizontal inter-firm cooperation are attracting increasing attention in contemporary academic literature. Broadly speaking, the concept of frugal innovation focuses on creating practical solutions in environments characterized by resource scarcity, limited access to capital, and high uncertainty [9, p. 573; 12, p. 24]. Its significance for SMEs lies in shifting the emphasis from investment scale to the functional adequacy of management decisions. This involves seeking organizational and process solutions that enable the desired outcome to be achieved with less time, money, and infrastructure effort. For business processes in the distribution of computer equipment, frugal innovation is particularly relevant when a company cannot completely overhaul its operational system but needs to improve its operational stability quickly. This may involve simplifying approvals, eliminating unnecessary order steps, improving logistics partner flexibility, and reviewing costs to ensure the reliability of critical operations. Thus, frugal innovation serves not only as an approach to resource conservation but also as a form of process rationalization under constraints.

Closely linked to this logic is lean management, which is traditionally viewed as a system for eliminating waste, increasing customer value, and improving value streams. In the classical interpretation, lean focuses on identifying non-functional costs, redundant operations, delays, unnecessary movements, and unproductive inventory and procedures that do not create customer value [2, p. 25; 11, p. 37]. For SMEs in a crisis environment, the significance of lean extends beyond mere efficiency gains, as waste elimination is directly linked to preserving the company's operational viability. Every optimized procedure, shortened approval cycle, or reduced working capital burden can have not only an economic but also a crisis-mitigating effect. However, applying lean in an unstable environment

requires critical rethinking. While in a relatively predictable market, lean can be implemented through buffer elimination, minimizing inventory, and strict process standardization. In a crisis economy, excessive frugality can reduce the enterprise's resilience to external shocks. That is why it is important for SMEs not to transfer classic lean practices mechanically but to adapt them to the context of heightened uncertainty. In this case, lean should be viewed not as a radical minimization of everything superfluous, but as a tool for identifying those process elements whose reduction does not undermine the enterprise's ability to maintain critical functions. In the computer hardware distribution sector, the lean approach is particularly significant for inventory management, warehouse operations, order processing, service procedures, and information coordination. With a systematic audit of such processes in place, lean can serve not as an abstract management philosophy, but as a practical mechanism for restoring control over the operational loop. However, lean alone does not always provide a sufficient solution to resource constraints if the company remains isolated in addressing logistics, procurement, or service challenges.

This is precisely why, in times of instability, horizontal cooperation between companies becomes particularly important. Unlike vertically integrated models, which require the concentration of significant resources within a single organization, horizontal cooperation is based on coordination among independent market participants who retain their autonomy but jointly use certain resources, functions, or infrastructure capabilities. For SMEs, this model is attractive both theoretically and practically, as it reduces individual resource burdens without compromising managerial autonomy. In academic research, cooperative forms are most often examined in the context of shared logistics, shared warehousing, purchasing pools, collaborative distribution, and other mechanisms of inter-firm interaction [10, p. 336; 13, p. 60].

In practical terms, horizontal cooperation opens up several important opportunities. First, it reduces unit logistics costs by consolidating shipments and sharing transportation resources. Second, it creates conditions for more efficient use of warehouse infrastructure, particularly in sectors with high inventory costs and rapidly changing product ranges. Third, cooperation can strengthen companies' bargaining positions in procurement processes by allowing small operators to pool their demand or coordinate their

purchasing activities. Fourth, it fosters the formation of more resilient local mutual-support networks, enabling individual companies to offset each other's vulnerabilities. For the distribution of computer equipment, horizontal cooperation is particularly promising, as this sector depends on both delivery speed and product availability, as well as precise warehouse coordination and service support. In a cooperative model, some of these functions can be performed more efficiently through resource sharing, load balancing, or the coordination of individual processes. It is important to note that cooperation does not necessarily mean a complete merger of operations. Often, it involves partial coordination of specific operational segments, which preserves flexibility and allows the level of interaction to be adapted to the company's actual capabilities.

Meanwhile, cooperative mechanisms are not automatically effective. Their effectiveness depends on the level of interorganizational trust, the transparency of interaction rules, the willingness to coordinate, the compatibility of processes, and the presence of a minimal information environment that enables coordinated action between partners. Without this, cooperation can generate new costs, conflicts of interest, and problems with the distribution of responsibility. Therefore, horizontal interaction should be viewed as a distinct management mechanism requiring institutional and procedural configuration.

Thus, frugal innovation, lean management, and horizontal cooperation form an important alternative framework for SMEs' crisis adaptation. Their shared value lies in orienting the enterprise not toward maximizing technological complexity but toward functional process improvement, eliminating waste, enabling flexible resource utilization, and pursuing more sustainable forms of interorganizational interaction. At once, a full understanding of the potential of such approaches is impossible without considering the roles of social capital, inter-organizational trust, and local business networks, which are essential prerequisites for their practical implementation.

In studies of business adaptation to crises, it is increasingly important to recognize that a company's resilience is shaped not only by internal process optimization and technological upgrades, but also by its integration into an external system of relationships. In this context, social capital, interorganizational trust, and local business networks become important

analytical categories. In an applied management sense, social capital should be viewed as a set of relationships, norms of reciprocity, trust, and stable ties that reduce transaction costs and facilitate the coordination of joint actions [4, p. 47; 18, p. 9932]. Therefore, social capital serves not only a communicative but also an operational function. In a post-war environment, inter-organizational trust and local business networks reduce uncertainty, lower transaction costs, and strengthen SME resilience through practical cooperation. In this context, veteran entrepreneurship is a potential element of post-war business ecosystems, capable of strengthening networks of trust, local economic inclusion, and mutual support among entrepreneurs [1, p. 19; 16, p. 295; 17, p. 7]. Veteran-owned businesses can be viewed as part of a local partnership infrastructure that increases the density of the business network and expands opportunities for coordinating individual processes. Their inclusion in joint operational schemes can help build trust in inter-organizational relationships, especially in regional ecosystems where reputation carries significant weight. Such enterprises have the potential to strengthen the service and logistics aspects of business processes for local delivery, technical support, warehousing, and other functions that do not require full vertical integration. The presence of a veteran component in a business network can increase the institutional visibility of entrepreneurial initiatives and facilitate access to specific support programs, partnership platforms, and recovery projects. Nevertheless, incorporating veteran entrepreneurship into the logic of crisis adaptation requires analytical caution. It should not be viewed as a universal and self-sufficient factor of resilience. Its actual impact will depend on the nature of the specific business, the level of its integration into local networks, the availability of competencies, the ability to perform certain operational functions, and the quality of interorganizational coordination. Thus, an analysis of social capital, trust, and the potential of veteran entrepreneurship allows us to broaden our understanding of crisis-resilient business process optimization beyond purely internal organizational decisions.

### **3. Interpretation and conceptual hypothesis**

The results of the analysis suggest that crisis-response optimization of business processes can be based on integrating frugal innovations, lean management, horizontal cooperation, digitally accessible coordination, and

social network-based trust. Let's examine how the proposed configuration impacts business processes. The first step in this process is identifying critical areas of process waste and vulnerabilities. It is here that the logic of frugal innovation and the lean management approach enables a company to determine which operations generate unnecessary costs. This makes it possible to separate secondary process elements from those critical to its continuity.

The next step involves the cooperative reorganization of specific functions. Once the most resource-intensive and vulnerable areas have been identified, a company can not only improve them within its own organization but also partially shift them to a framework of horizontal coordination with other market participants. This primarily concerns the logistics, warehousing, procurement, and service segments, where the shared use of resources allows for reducing costs, increasing operational capacity utilization, reducing the burden on working capital, and enabling more flexible order fulfillment. Another element of the mechanism is maintaining digitally accessible coordination. Available digital tools serve as a coordination infrastructure that ensures alignment of actions without the need to implement overly complex systems.

The final element of the proposed mechanism is social-network embeddedness. Trust, reputation, the stability of partnerships, and the density of the local business network constitute an institutional environment without which cooperative and even digitally coordinated decisions may remain merely formal. In the postwar context, veteran entrepreneurship can be an important component of social network resources. It should be viewed not only as a socially significant avenue for reintegration but also as a potential source of new local partnerships [8, p.44; 16, p. 295; 19, p. 737]. This is confirmed by survey results conducted by the Ukrainian Veterans Fund [22, p. 12]. In 2024, the desire to start one's own business among the surveyed veterans was five times higher than the preference for salaried employment. And the retention rate of entrepreneurial orientation compared to 2023 was 78.8%, indicating the resilience of this potential even in wartime conditions. Thus, the veteran segment can be viewed as a key carrier of social capital, through which trust, local economic inclusion, and the practical implementation of cooperative mechanisms are strengthened in post-war business ecosystems [5, p. 749; 19, p. 737].

The interaction of these components creates a chain in which process efficiency reduces internal losses, cooperation alleviates individual resource constraints, digitally accessible coordination ensures operational coherence, and social capital provides the institutional conditions for stable interaction. Given the described mechanism of interaction among the proposed components, it is advisable to proceed to their application in a management choice matrix (Table 1). Such a matrix allows for correlating individual anti-crisis adaptation tools with typical operational challenges faced by an enterprise. The proposed matrix serves an applied function and can be used to select priority management actions in a post-war instability scenario.

Table 1

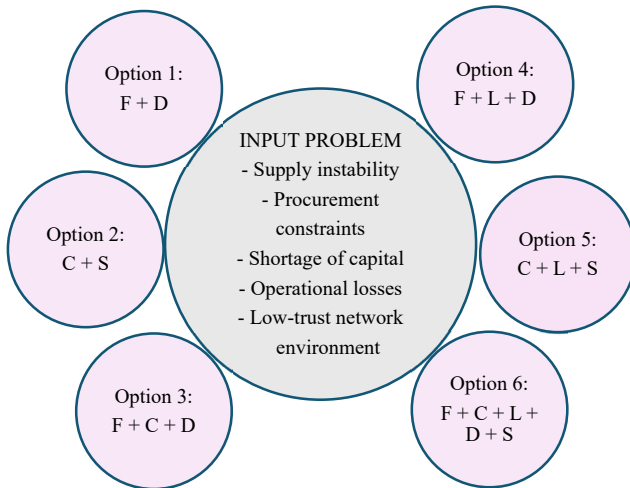
**Matrix for selecting management tools for the crisis-response adaptation of business processes**

| <b>Tool</b>                              | <b>Typical problem</b>   | <b>Conditions for Application</b>  | <b>Expected Effect</b>  |
|--|--|--|---|
| Frugal innovation                        | Excessive costs, shortage of working capital   | Capital shortage   | Waste elimination and cost reduction                                    |
| Horizontal cooperation                   | High logistics costs, supply instability, limited warehousing and procurement capacities | Presence of potential partners, need for shared logistics                                | Cost and risk sharing, enhancing supply stability                       |
| Lean process transformation              | Functional redundancy  | The need to streamline key processes without significant investment                      | Streamlining order fulfillment and minimizing operational waste         |
| Digital affordable coordination          | Fragmentation of processes across procurement, warehousing, logistics, and service       | Necessity of information synchronization without the deployment of sophisticated systems | Enhancing cross-functional coordination and mitigating information gaps |
| Social capital and the veteran component | Trust deficit as a primary barrier to establishing horizontal cooperation                | Fostering local partnerships and the necessity of reinforcing trust-based bonds          | Cost reduction and enhancing mutual support                             |

Source: compiled and organized by the authors

The proposed matrix serves as a tool for prioritizing managerial decisions by linking process vulnerabilities to feasible adaptation mechanisms under resource constraints, supply volatility, and limited access to capital-intensive digital solutions. In this regard, the matrix operationalizes the research findings, transitioning them from conceptual generalizations into the realm of potential practical application.

To illustrate the proposed approach more clearly, it is advisable to present the matrix as a conceptual diagram (Fig. 2). Such a diagram reflects the non-linear logic underlying the development of crisis-response solutions, whereby a single problem or a set of problems is transformed into a combined configuration of complementary modules. To this end, the FCLDS Resilience Mechanism has been developed as part of this research. An integrated tool for anti-crisis adaptation of business processes, combining frugal innovation, horizontal cooperation, lean process re-engineering, digitally accessible coordination, and social network support within a unified framework for management decision-making.



**Figure 2. Conceptual diagram of the FCLDS Resilience Mechanism as a configurator of integrated crisis-response solutions**

*Source: developed by the authors*

The diagram illustrates the logic behind transitioning from an enterprise's process vulnerability profile to the formation of a combined configuration of anti-crisis solutions, based on various combinations of FCLDS modules. Option 1 applied for resource shortages, poor coordination, and the need for rapid simplification and synchronization of processes. Option 2 for logistical instability, a weak partner network, and the need for trust-based collaboration. Option 3 is due to high logistics costs, limited procurement capabilities, and the need for operational coordination. Option 4 for overloaded processes, delays, data loss, and low transaction transparency. Option 5 to address logistical challenges, process losses, and insufficient local support. Option 6 requires a comprehensive assessment of an enterprise's process vulnerabilities.

Its practical significance lies in the fact that it allows anti-crisis adaptation to be viewed not as the selection of a single methodology, but as the formation of an integrated solution that corresponds to the structure of the enterprise's specific problems.

### **Conclusions**

Based on the results of the research, the following conclusions have been formulated:

1) It has been established that, under conditions of post-war logistical instability, resource scarcity, and prolonged market uncertainty, the business processes of small and medium-sized enterprises in the computer hardware distribution sector are a key dimension for ensuring enterprise resilience. Within the researched sector, procurement, logistics, warehousing, service, and information-coordination processes are identified as critical, as their disruption directly compromises the enterprise's capacity to maintain operational continuity.

2) A synthesis of contemporary scientific approaches indicates that the literature has formed several directions for conceptualizing business anti-crisis adaptation: digital optimization of business processes, frugal innovation and lean management, horizontal cooperation, and approaches related to social capital and inter-organizational trust. Concurrently, it has been established that high-tech digital transformation models often exceed the resource capacities of SMEs. At the same time, more accessible

cooperative, frugal, and social-networking mechanisms are typically considered in a fragmented, insufficiently sector-specific manner.

3) It is substantiated that, in the computer hardware distribution sector, applying general anti-crisis management approaches without considering sector-specific factors is insufficient. Defining characteristics of this sector include import dependence, high sensitivity to logistical disruptions, complexity of inventory management, short product lifecycles, an elevated role for the service component, and a critical reliance on information coordination. This necessitates adaptation models that integrate process flexibility, resource accessibility, and the capacity to maintain operational resilience under conditions of instability.

4) It has been determined that the most realistic direction for anti-crisis optimization in the researched sector is not an exclusive focus on capital-intensive digital solutions, but rather a combination of interrelated mechanisms: frugal innovation, lean management, horizontal cooperation, digital-accessible coordination, and the social-network resource of trust. This specific configuration enables reducing internal waste, mitigating individual resource pressure, enhancing operational alignment, and creating institutional conditions for the viability of cooperative solutions.

5) Quantitative calculations conducted in the study confirm the empirical prerequisites for specific components of the proposed approach. Particularly, for the cooperation-network block, high inertia of partnership ties in a crisis environment is demonstrated; for the digital-accessible component, the higher accessibility of basic digital coordination tools compared to infrastructure-heavy digitalization is shown. Separately, it is established that the veteran segment can be regarded as a potential source of social capital, local partnerships, and new cooperation nodes within post-war business ecosystems.

6) The practical output of the research is the formulation of a managerial choice matrix for anti-crisis adaptation tools for business processes in the computer hardware distribution industry. Its significance lies in its ability to correlate typical process-related problems of an enterprise with the conditions for the appropriate application of specific adaptation mechanisms, the expected operational effect, and the strategic managerial consequences. In this regard, the proposed matrix transitions the research findings from a conceptual level to the plane of potential applied utilization.

7) Overall, the findings suggest that improving resilience and efficiency in computer hardware distribution during war and post-war periods is better achieved through frugal, cooperative, and accessible digital and social network mechanisms than through reliance on capital-intensive digital solutions. This constitutes the primary analytical result of the study and its contribution to advancing anti-crisis adaptation approaches for SME business processes.

Prospects for further research in this direction are associated with the empirical verification of the proposed approach using data from specific enterprises, the development of a system of applied metrics for evaluating the effectiveness of individual adaptation mechanisms, as well as the further exploration of the role of veteran entrepreneurship, local cooperation networks, and digital-accessible coordination tools in ensuring SME resilience within the post-war economy.

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