

CLASSIFICATION OF MANAGERIAL AND BUSINESS PROCESSES OF INSURANCE COMPANIES IN THE CONTEXT OF AUTOMATED CONTROL AND MANAGEMENT TECHNOLOGY

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Abstract. In the context of economic digitalization and increasing competition in the insurance market, the optimization of internal processes within insurance companies has acquired particular significance. This study examines the classification of managerial and business processes of insurance organizations, taking into account the capabilities of Automated Control and Management Technology (ACMT). The main groups of processes—business, managerial, and auxiliary—are identified, and the directions of their automation are analyzed. Special attention is given to the role of ACMT in ensuring transparency, responsiveness, and efficiency in managing insurance operations. Process automation not only reduces costs and improves the quality of customer service but also guarantees control at all levels of decision-making. The proposed approach contributes to the formation of a unified digital management environment for insurance companies and enhances their competitive advantages.

Keywords: insurance company, business processes, managerial processes, automation, control and management technologies, process approach, process classification, BPM (Business Process Management), digital transformation, internal control

1.Introduction

Modern insurance companies operate in a highly competitive environment characterized by digitalization and the continuous evolution of the regulatory and legal framework. The efficiency of their activities largely depends on the quality of business process organization and the level of management control. Process automation enables a reduction in operational costs, enhances transparency, and ensures alignment with strategic objectives.

In recent years, a new direction known as InsurTech [10] has emerged globally, representing the integration of insurance and technology. This concept resembles FinTech, which refers to innovations in financial services. InsurTech encompasses companies, startups, and products that utilize advanced technologies such as artificial intelligence, big data, blockchain, and others to transform traditional processes in the insurance industry.

Yuldashev N. K. and et.al.researched innovative and export potential of the agro-industrial complex of Uzbekistan. [10]. The innovations introduced by InsurTech significantly improve both the internal business processes of insurance companies and the overall customer experience. For example, artificial intelligence and machine learning can enhance risk assessment processes, personalize customer offers, and accelerate the handling of applications and claims. Big data enables the analysis of customer behavior and the prediction of potential risks, leading to more effective portfolio management and more accurate pricing. Blockchain technologies, in turn, provide opportunities to make processes more transparent, secure, and efficient.

However, insurance companies operating in the Republic currently demonstrate a more cautious approach to the adoption of such technologies. Although recent years have shown a trend toward digital transformation, local companies have mainly focused on improving online sales of insurance products. This aligns with the changing market demands brought about by the COVID-19 pandemic, during which many business processes shifted online. Nevertheless, it is evident that the development of innovative technologies in the domestic insurance sector remains one-sided and largely limited to sales. Other aspects—such as the automation of claims processing, advanced risk analysis, or the application of new technologies in product development—are still underdeveloped.

2.Literature review.

The classification of managerial and business processes in insurance companies is considered an important topic in the field of insurance and business management. The literature presents various approaches to systematizing these processes, which provide a deeper understanding of the structure and functioning of insurance organizations.

In the research of D. Belousov [2], business processes such as marketing, the formation of insurance services, insurance sales, underwriting, contract maintenance, and claims settlement are thoroughly examined. In our view, this classification contributes to the systematization of processes and the improvement of insurance company management.

Moreover, the scholar's works highlight in-depth analytical and optimization methods that are valuable for enhancing the efficiency of insurance organizations.

Y. N. Lebedeva [3], in her studies, proposes a classification of business processes based on functional characteristics.

In the academic works of Professor Kh. M. Shennayev [8], the international experience of regulating insurance activities has been investigated through the examples of the United States, the European Union and its member states—such as the United Kingdom and Germany—as well as advanced Asian countries like Japan and China. Furthermore, changes and trends related to the regulation of insurance activities on a global scale under conditions of globalization have been analyzed. Based on this, recommendations have been developed for applying advanced and modern forms of insurance regulation in Uzbekistan through the improvement of business processes.

In our opinion, the reviewed sources offer diverse approaches to the classification of insurance companies' business processes, which allows for the following:

- systematization of company activities;
- identification of core processes and their interrelations;
- enhancement of management efficiency and customer service quality.

3. Analysis and Results.

It should be emphasized that although local insurance companies are moving toward greater digitalization, this alone is not sufficient to achieve a comprehensive transformation of the entire sector. To continue progressing, it is necessary to introduce broader innovative solutions capable of significantly reshaping the entire process of delivering insurance services, making them more convenient, faster, and more transparent for customers.

The research is based on the analysis of practices of leading insurance companies, expert interviews, as well as process modeling using BPMN notation (Table 1).

Table 1.

Analysis of practices of leading insurance companies

Category of Processes	Examples	Characteristics
Core (Key) Processes	Subscription (underwriting), tariff calculation, claims settlement, underwriting, contract administration	Aimed at creating the insurance product and interacting with the client

Managerial Processes	Strategic planning, risk management, budgeting	Ensure coordination and resource management
Supporting Processes	IT support, HR, accounting, legal services	Support the execution of core and managerial processes

Overall, it is of crucial importance for an insurance company to maintain a balance between risk and profitability while ensuring its financial stability. To achieve this, each insurance product must be carefully analyzed by taking into account the numerous factors influencing its pricing and the potential risks that may arise.

The risk of bankruptcy during claim settlement directly affects both the timing of introducing new insurance products to the market and the speed of their sales. To prevent fraudulent activities, every insurance contract must undergo verification against false claims or unlawful demands. It is equally important that the pricing of the contract adequately reflects the probability of an insured event, the potential magnitude of loss, as well as other risk factors such as legislative changes, socio-economic conditions, or natural disasters.

In our view, classical business processes in insurance are aimed at minimizing the volume of insurance payouts, while at the same time ensuring that the quality of customer service is not compromised. This requires continuous monitoring of risks and the adjustment of tariffs, as well as prudent management of payouts to avoid unnecessary expenses. To mitigate sanctions or penalties, it is essential that companies comply with legal requirements and avoid violations of the regulations set by supervisory authorities. Therefore, an insurance company must not only secure profitability but also maintain a strong reputation, uphold client trust, and strictly adhere to legal standards.

Considering that insurance represents a category of relations connected with the protection of property interests, it involves the accumulation of insurance premiums to ensure compensation for losses in the event of insured accidents. This function provides protection for individuals, enterprises, and even the state. The insurance system relies on solidarity among participants, where losses are distributed proportionally between insurers and insured parties within the framework of pre-agreed liability.

The social dimension of insurance also plays a vital role in its functioning. According to some scholars, the current model of the insurance market does not contribute sufficiently to the sustainable reproduction of internal insurance capital. Instead, it is often oriented toward achieving fiscal objectives, which in turn restricts the development of insurance companies and

their long-term stability. From a societal perspective, insurance is seen as an institutional mechanism that reduces business risks, contributes to economic resilience, and ensures the continuity and stability of reproduction processes [4].

However, we argue that insurance in itself does not guarantee protection against crises, volatility, or economic downturns. This is because overcoming the pandemic-related impacts of competition and uncertainty in the insurance industry requires the development of a sustainable strategy for the long-term growth of insurance relations. In conditions of economic instability, risk monitoring and analyzing their underlying causes become particularly significant. Increasingly, risk-oriented approaches are being applied to the financial assessment of insurance companies, helping them move toward sustainable development and improved sectoral efficiency [6].

We believe that the most important strategic task of the national insurance market is to create a stable and efficient insurance ecosystem that can adapt to rapidly changing conditions while addressing both the current and future needs of all its participants. Such a system must be dynamic and multifaceted, integrating the interests of consumers of insurance services, their providers, as well as the state, which plays a key role in regulating and supporting these relationships.[1]

It should be recognized that the insurance ecosystem is a complex and interconnected structure that includes not only insurance companies and their clients. For its effective functioning, it must ensure transparency of information for all participants, enable the creation and introduction of new types of insurance products that respond to evolving demands and requirements. For businesses, building such an ecosystem provides not only greater competitiveness and higher product quality but also long-term growth and opportunities for innovative development.

Citizens, in turn, play a dual role—as consumers of insurance services and as active participants in the process. They must be aware of their rights and responsibilities, while also having access to a wide range of insurance products that can effectively protect their interests. The interaction between all participants—state, business, and citizens—constitutes the core element of an effective insurance ecosystem.

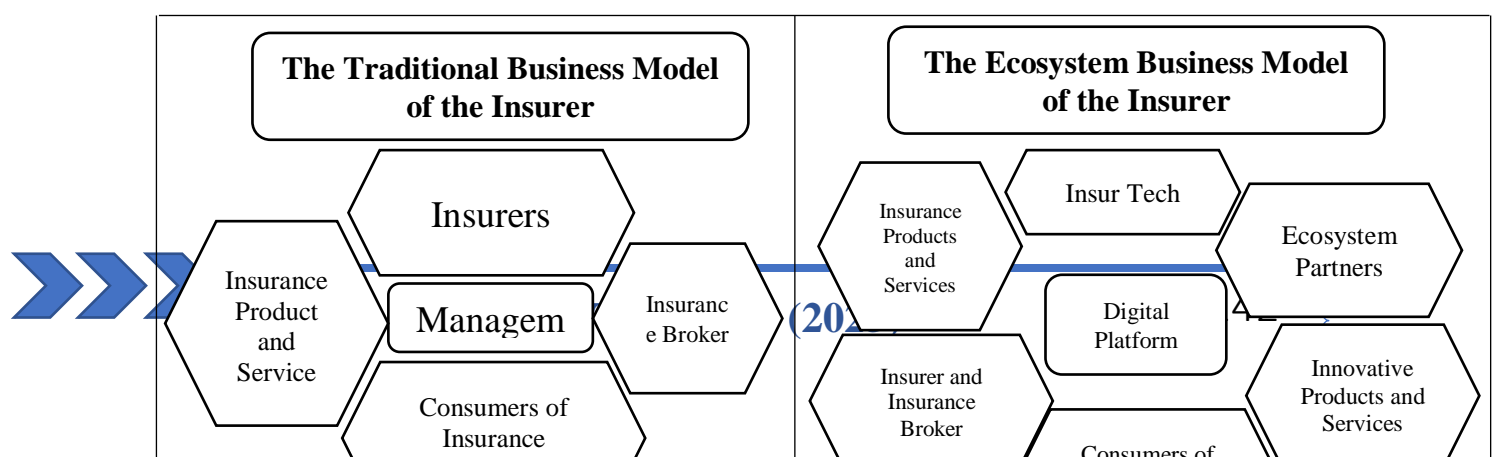


Figure 1. Differences Between the Insurer's Traditional and Ecosystem Business Models

Our research has shown that, for successful integration into the digital economy, insurance companies must transition from traditional business models to ecosystem-based approaches. Unlike the conventional model, in which insurers independently develop and offer products and services, the ecosystem model is based on digital platforms that integrate third-party products and services while fostering cooperation with distribution partners oriented toward the insurance market. Thus, for modern insurance organizations to achieve effective integration into the digital economy, they must transform their traditional business models and shift toward ecosystem-based business models underpinned by advanced digital technologies (Figure 1).

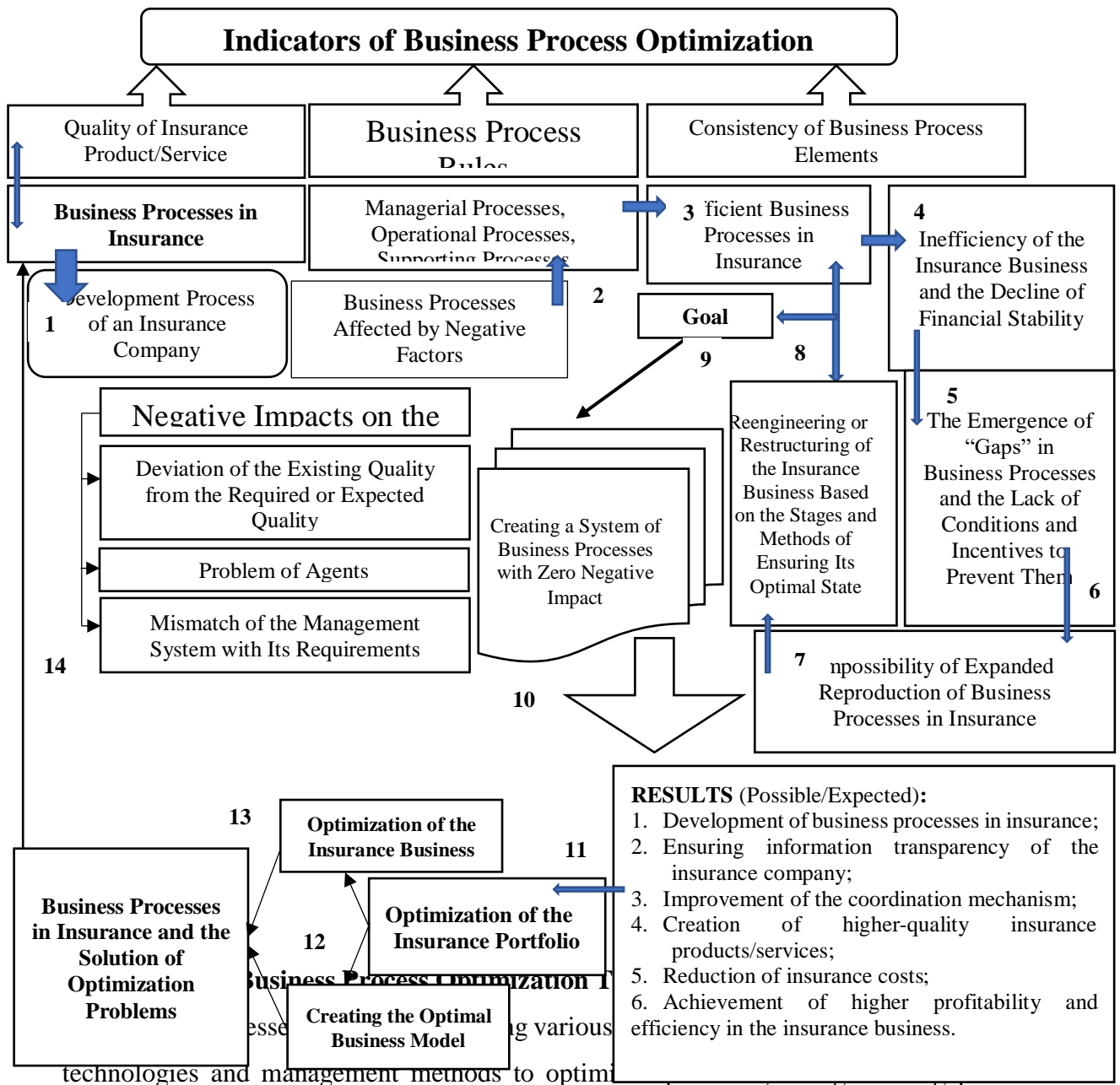
The concept of an insurer's partner-driven innovative ecosystem is based on digital platforms that serve as online marketplaces where demand and supply converge. Through these platforms, insurers and their partners are able to offer and compete in providing services. Digitalization opens up the following new opportunities:

- scalability becomes easier due to lower costs of acquiring additional customers;
- minimal transaction costs allow for the effective expansion of the customer base;
- network effects, where the value of the platform increases with the number of participants—both providers and customers.

The innovative insurance ecosystem represents a model of interaction among participants in the context of digital transformation, whereby insurers and partners combine their offerings into an integrated product or service focused on customers. To ensure the effective functioning of the ecosystem, insurers may expand their offerings or enter into collaborations to enhance the value of their services. In doing so, insurers have two options: to establish their own micro-ecosystems or to join an existing mega-ecosystem.

For effective fraud prevention, monitoring of policies and claims, and preparation of reports, all insurers require a shared database. This improves underwriting, facilitates the collection of statistical data, and contributes to the development of a more mature and

competitive market. At present, the optimization of business processes within insurance companies remains at a developmental stage. Business processes in the insurance sector can be viewed as a set of interrelated actions and operations aimed at the efficient provision of insurance services and the achievement of financial results.



service delivery (Figure 2).

In addition to the reasons illustrated in Figure 2, several other factors can be identified that influence the necessity of regulating business processes in the insurance sector:

- adjustments to the strategic objectives and guidelines of the insurance company;
- organizational restructuring within the scope of internal transformations;

- changes in key personnel and management structure;
- creation of a transparent and comprehensible system for organizing business processes;
- introduction of new information and management technologies for the purpose of business process optimization.

The establishment of such a system is of great importance, as it allows the identification of deviations from the optimal state that could indicate negative trends or potential problems. By analyzing deviations from the standard, it becomes possible to determine the causes of deteriorating performance indicators—such as reduced operational efficiency, worsening financial results, or loss of competitiveness—while also assessing potential risks and adverse effects.

To ensure the relevance of processes, the system of business processes should be compared with the functional units of the insurance company [6]. This makes it possible to better understand how different processes influence one another, how they are interconnected, and which ones require optimization. A systemic approach, including the analysis of interrelations between company departments, contributes to the comprehensive improvement of business processes and to enhancing the overall efficiency of the company.

Our analysis shows that the organizational structure of an insurance company must be adapted to its business objectives. If the functional divisions cannot effectively address these issues, the structure should be revised, which may include reengineering of business processes. The identification and proper organization of business process elements are critical to improving their efficiency.

Traditionally, business processes can be divided into several categories:

- Cross-functional processes – those that affect multiple departments or the entire company and extend beyond functional boundaries.
- Functional internal processes – those carried out within a single functional unit without crossing its boundaries.
- Low-level operations – individual actions performed by employees that form the elements of more complex processes.

Studying the various levels of detail in a company's activities makes it possible to identify key factors and trends linked to its strategy, as well as to assess its stability and efficiency. From this perspective, an insurance company can be seen as a process, while the provision of a particular insurance service can be considered as an individual process. It is important to

recognize that a technological approach to company research facilitates the integrated application of management technologies aimed at resources and all company activities.

Business processes in the insurance sector may vary depending on the strategies chosen. The most effective strategy for an insurance company is one that ensures synergy among its business processes. The interaction of processes creates an overall effect that exceeds the sum of their individual outcomes—this phenomenon is referred to as process synergy [5].

In our view, the implementation of process synergy enables an insurance company to achieve improved coordination, enhance staff motivation and professionalism, optimize costs, and increase the operational and economic efficiency of resource utilization. A customer-oriented strategy that redirects priorities toward consumer interests supports long-term growth of the client base and the provision of high-quality insurance services. This strategy also helps resolve the "principal-agent" problem within corporations by transferring certain managerial functions to customers, thus allowing management to more effectively integrate and coordinate business processes in line with their own interests.

The analysis of digitization in insurance business processes shows that there is no clear distinction between the concepts of process management, process analysis, optimization, and improvement, and they often fail to align with the fundamental stages of the process life cycle.

The first stage of automating business processes in an insurance company involves the development of a business process strategy, which requires strategic analysis—including SWOT analysis—identification of target segments, and determination of key performance indicators. This step is crucial and time-intensive, as it sets target values for quantitative indicators.

The second stage—planning and design—is based on strategic analysis and includes three sub-stages: the description of current business processes, their analysis, and their improvement. Each sub-stage employs different methods and produces different outcomes.

5. Conclusions

Effective automation of managerial and business processes in insurance companies is impossible without their clear classification and analysis. The proposed classification provides a systematic approach to process management, allows for the identification of priorities in automation, and ensures transparency in company operations.

Automated control and management technologies contribute not only to cost reduction but also to improved service quality, greater flexibility in decision-making, and compliance with regulatory requirements. In the context of digital transformation, such a management

model becomes not merely a competitive advantage, but a necessary condition for survival in the market.

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