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BUILDING INTEGRATED MANAGEMENT SYSTEMS: ACHIEVING SYNERGY AND SUSTAINABILITY IN MODERN ORGANIZATIONS

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ПОБУДОВА ІНТЕГРОВАНІХ СИСТЕМ УПРАВЛІННЯ: ДОСЯГНЕННЯ СИНЕРГІЇ ТА СТІЙКОСТІ В СУЧАСНИХ ОРГАНІЗАЦІЯХ

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In today's competitive global marketplace, the quest for efficiency, sustainability, and quality is at the forefront of organizational management. The implementation of international management standards—such as ISO 9001 for quality, ISO 14001 for environmental management, and ISO 45001 for occupational health and safety—has become widespread across industries. However, these systems are often implemented separately, which can lead to inefficiencies and resource redundancy. An Integrated Management System (IMS) offers a strategic solution by consolidating these disparate systems into a unified framework, providing organizations with a comprehensive, cohesive approach to management.

This paper explores the evolution of management systems and the growing need for integration in response to globalization, increased competition, and stakeholder demands. By combining the principles of quality management, environmental sustainability, social responsibility, and occupational safety into a single system, organizations can streamline their operations, improve resource allocation, and enhance overall performance. This approach allows organizations to not only meet regulatory requirements but also achieve a synergistic effect, where the whole system performs better than the sum of its individual parts.

Two primary models for integrating management systems are discussed: the additive model and the comprehensive integrated model. The additive model involves the step-by-step incorporation of additional systems into an existing framework, typically beginning with ISO 9001 for quality management and gradually adding systems like ISO 14001 and ISO 45001. This modular approach allows for flexibility and is easier to implement for organizations with existing quality management systems. However, the additive model can sometimes result in systems that operate in parallel rather than truly integrated.

The comprehensive integrated model, on the other hand, is designed from the outset as a unified system. This

approach ensures that all components are interrelated and work together seamlessly, minimizing duplication of processes and promoting better alignment of organizational goals. The integrated model fosters greater synergy and reduces the administrative burden associated with managing multiple systems independently.

The paper also highlights the importance of adopting a structured approach to integration based on the Deming PDCA (Plan-Do-Check-Act) cycle, which is central to ISO management standards. The PDCA cycle provides a framework for continuous improvement, enabling organizations to adapt and refine their management systems over time. Through effective leadership and stakeholder engagement, organizations can achieve not only compliance with international standards but also significant improvements in operational efficiency and long-term sustainability.

The benefits of integrated management systems are numerous: they reduce duplication, optimize resource use, and improve communication and coordination across departments. Moreover, an IMS enables organizations to respond more effectively to external challenges, such as changing regulations, customer demands, and environmental concerns.

The paper concludes by advocating for the widespread adoption of integrated management systems, emphasizing that their success depends on both the structural framework and the active involvement of management and staff. As organizations continue to face complex, interconnected challenges, the integration of management systems is a crucial strategy for enhancing competitiveness, sustainability, and long-term organizational resilience. The future of organizational success lies in the ability to harmonize different management approaches into a single, efficient system that supports continuous improvement and adaptability in an ever-changing global environment.

Keywords: *ISO Standards, Quality Management, Environmental Management, Synergy, PDCA Cycle, Additive Model, Integrated Model*

Introduction. In today's highly competitive global marketplace, the need to ensure quality, efficiency and sustainability of processes in organizations has become more important than ever. Integrated systems based on international quality management standards provide a strategic framework for achieving these goals. Many organizations have adopted and use in their practice official standards and specifications of management systems such as ISO 9001, ISO 14001, ISO/IEC 20001, ISO 22001, ISO/IEC 27001, ISO 45001, etc. [1]. Often systems operate independently of each other. However, all management systems have certain elements in common that can be managed in an integrated manner. The necessary unity of these systems within the overall management system of the organization, which can be defined and used to achieve the best results [2].

Integrating these standards into one cohesive system allows organizations to streamline management processes, align goals across departments, and optimize resource allocation. By adopting an integrated approach, companies not only meet regulatory requirements, but also gain a competitive advantage by ensuring consistent product quality, minimizing environmental impact, and ensuring employee well-being [3, 4]. An integrated management system allows combining the advantages of several systems, which greatly simplifies the work of the organization. The integrated management system should be understood as a part of the general management system, which also includes financial, innovation management and other areas [5, 6].

The current development of management theory and practice is largely determined by globalization, increased competition, and the growing influence of various categories of stakeholders on the activities of enterprises. In the face of these challenges, there is a new trend in the evolution of management - the integration of quality management and sustainable development concepts through the creation of integrated management systems. This approach not only meets the requirements of international standards, but also contributes to the efficiency of enterprises by optimizing the interconnected processes and flows that underlie their activities [7, 8].

Today, the integration of management systems is a critical factor in the successful functioning of

organizations in the economic, production, environmental and social spheres. Building integrated systems helps to harmonize key business processes, which allows all departments to more effectively direct their efforts towards achieving the main goal of generating profit by meeting the needs and expectations of customers. The implementation of such systems is not only about improving the competitiveness of organizations and product quality, but also about achieving a synergistic effect, which is the complementary impact of different management systems, the result of which exceeds the sum of the individual components [9].

One of the main reasons for the effectiveness of integrated systems is the desire to enhance the synergistic effect that results from an integrated approach to management. This allows the organization to optimize the use of resources, increase process efficiency and reduce operating costs. Integration of management systems helps to avoid duplication of functions and processes, which is typical for parallel systems, and focus on strategic priorities [10, 11].

In addition, the modern market often dictates the need to have certificates of several management systems, and an integrated management system is the most rational way to solve this problem. The creation of a single management system greatly simplifies the process of its formation, documentation and development compared to maintaining several parallel systems. It also helps to reduce the number of audits, as a joint audit of the integrated system reduces the overall cost of audits and allows for a better balance of interests of the organization's external parties [12].

Models for the formation of integrated management systems. The formation of an integrated management system (IMS) is an evolutionary transition from fragmented, parallel management systems, such as quality management, environmental and energy management, industrial safety, labor protection and social responsibility, to a single, holistic system. This integrated system is able to combine the key managed aspects of an organization's activities into a single mechanism, which allows to increase management efficiency, reduce costs and contribute to the achievement of the company's long-term strategic goals.

The main approaches to defining the essence of integrated management systems vary depending on the characteristics of specific organizations and the requirements of the external environment. The diversity of existing management systems, as well as the varying degrees of their compliance with international standards and regulatory requirements,

determine several possible integration options. One of them is the gradual incorporation of new management aspects into existing systems, which allows to maintain continuity of processes and minimize risks during the transformation. Another approach is to develop separate systems independently and then integrate them, which provides greater flexibility and the ability to adapt each system to specific requirements. The most comprehensive option is to design integrated systems from the very beginning of their implementation, which allows taking into account all interrelated processes and aspects of activities at the development stage, creating a system that is maximally adapted to the organization's conditions.

An important aspect of integration is the harmonization of standards and procedures between different systems, which reduces duplication of functions and optimizes processes. In addition, the creation of an integrated management system helps to achieve a synergistic effect, when the interaction of individual components of the system leads to an increase in the overall performance of the organization.

The first approach to the formation of an integrated management system is a step-by-step adaptation of the existing quality management system (QMS). This approach involves the gradual expansion of the QMS by adding new components such as environmental management systems, energy management, risk management and social responsibility (Fig. 1). This process, known as the additive model, is based on the sequential integration of new systems into the existing structure, which allows the organization to flexibly adapt to changing stakeholder and internal needs.

International practice demonstrates that the additive model is the most common today due to its modular structure. Its phased implementation allows organizations to gradually adapt the system to the requirements of standards, which reduces the burden on internal processes and resources. However, this model, while providing a degree of flexibility, often results in different management systems continuing to operate separately from each other. This can result in an organization managing multiple parallel systems rather than a single integrated system, making coordination and process management difficult.

Despite the obvious economic and organizational advantages of this approach, its spread both in international and domestic practice remains limited. This is due to the lack of a clearly articulated strategic vision of the development of organizations, which should take into account the

current trends in the industry and the internal capabilities of enterprises. The introduction of management systems was gradual: starting in the late 1980s, when ISO 9000 standards were introduced, and continuing into the 1990s with the emergence of HAPPS and GMP principles, ISO 14000 (1996) and OHSAS, SA, FSC standards (late 1990s).

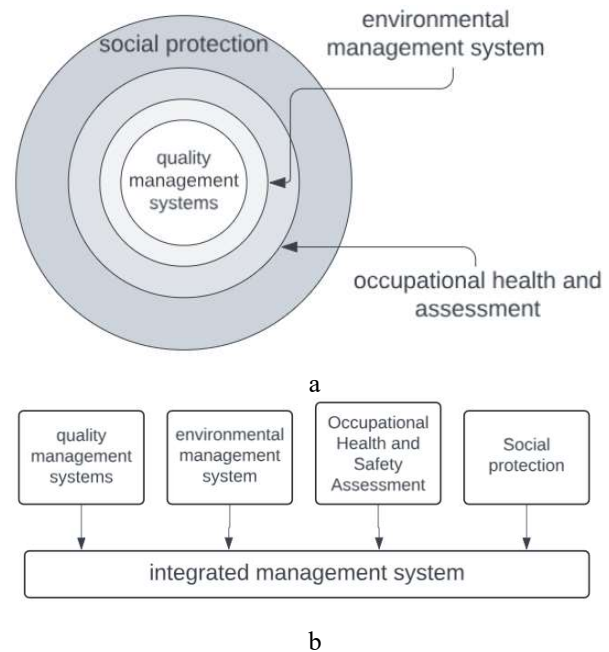


Fig. 1. Options for creating integrated management systems:
a - additive model; b - integrated model

An alternative approach is the comprehensive integration model. In this case, the design of the management system is carried out as a single, interrelated process, where all subsystems are considered not in isolation, but as part of the whole. The integrated approach involves the analysis of interrelationships between different systems, which allows minimizing the duplication of functions and finding solutions that simultaneously eliminate several problems. This approach provides more efficient management of resources and processes, reducing bureaucratic burden and increasing consistency between departments.

The benefits of an integrated approach are obvious: it reduces system development effort compared to an additive model, promotes greater staff involvement in improving organizational performance, and minimizes functional barriers between different departments. In addition, due to the reduction of document flow and improved

managerial coordination, the integrated model contributes to the overall efficiency of business processes and the adaptability of the organization in the context of dynamic changes in the external environment.

A key factor that can stimulate the intensification of the implementation of an integrated approach to the creation of integrated management systems is the methodological sophistication of these systems. This includes the availability of international and national standards offering detailed recommendations on the integration of various systems, as well as the accumulating experience of best corporate practices. In response to modern challenges, many national standardization organizations have developed and adopted documents that greatly facilitate the process of designing integrated management systems.

Special attention should be paid to the British document PAS 99 “Specification of General Requirements for Management Systems as a Framework for Integration”. This document focuses on improving business processes, creating a holistic approach to risk management, minimizing conflicts between different management systems, and reducing duplication of procedures and bureaucracy. As a result, organizations can improve the effectiveness of both internal and external audits.

The PAS 99 specification is universal and can be adapted by any organization, regardless of its size or scope, making it particularly useful for developing integrated management systems.

The foundation of this model is the Deming PDCA (Plan-Do-Check-Act) cycle and management leadership, which are basic principles for all quality management systems (Fig. 2). Management leadership plays a key role in the selection of management systems and determines the speed of their implementation. The example set by the management directly affects the motivation of the personnel, their desire to achieve the set goals, to ensure smooth production processes and to meet customer requirements. Thus, the successful implementation of integrated systems depends not only on the availability of standards, but also on the active involvement of management and staff in the process of improvement, which allows for

sustainable growth of efficiency and competitiveness of the organization.

The PDCA (Plan-Do-Check-Act) cycle provides management and staff with a systematic tool for continuous process improvement and goal achievement. The structure of this cycle allows to formulate specific goals, develop methods of their achievement, test them in real conditions, and then implement effective methods in the main business processes. An important feature of PDCA is its cyclical nature, which provides an opportunity for regular evaluation and adjustment of actions, which contributes to the creation of a flexible and adaptive management system. Thanks to this approach, the organization can not only react quickly to changes in the external environment, but also proactively anticipate possible problems, ensuring a stable improvement in performance.



Fig. 2. Model of integrated management system according to PAS 99 methodology

Application of the PDCA cycle in the context of integrated management systems (IMS) allows synchronizing the management of various aspects of the organization's activities - quality, health and safety, environment and information security. This ensures a uniform approach to meeting the requirements of all stakeholders, including customers, partners, employees and regulators. In addition, the integration of international standards such as ISO 9001, ISO 14001 and ISO 45001 using PDCA facilitates the creation of systems that not

only meet current needs but also aim for long-term sustainability.

Thus, an integrated management system is a comprehensive management mechanism built around compliance with international standards in key areas of an organization. This allows not only to ensure compliance with regulatory requirements, but also to improve the competitiveness, adaptability and sustainability of the organization in the market, which is especially relevant in the context of global competition and dynamic changes.

Conclusion. The conducted analysis, study of documentation and statistical information of enterprises forming their integrated systems allowed us to draw the following conclusions:

1. Integration of various management systems, such as ISO 9001, ISO 14001, ISO/IEC 20001, ISO 22001, ISO/IEC 27001 and ISO 45001, as well as their components (subsystems, elements and processes) into a single integrated system should be carried out on the basis of quality management system built in accordance with the international standard ISO 9001. The optimal approach to integration is the use of an additive model, which implies a step-by-step integration of different systems. At the first stage it is advisable to start with the connection of the updated management system according to ISO 45001 standard in the field of labor protection. It is important to take into account the experience of integrating the quality management system according to ISO 9001 with environmental management according to ISO 14001, which will create a harmonious and effective integrated system.

In addition, when integrating, attention should be paid to the compliance of all systems with current requirements and standards, which will ensure not only compatibility of processes, but also compliance with modern requirements of sustainable development and corporate governance. The implementation of an integrated approach will improve management efficiency and enhance the synergistic effect of integration, which will lead to an improvement in the overall performance and competitiveness of the organization.

2. To ensure continuous improvement at subsequent stages, in accordance with the Deming cycle (PDCA), it is important to first identify and analyze the most significant interrelationships between systems. On this basis, it is advisable to move to a comprehensive model of “cooperative interaction”, which provides for the integration of different components into a single management system. Completion of the process of optimizing the structure of the integrated system should be carried

out by closing the evolutionary cycle. This includes a return to the updated additive model of “synergetic unification” of previously integrated systems, while the number of links and components of subsystems should be optimized in accordance with the criteria or target function of the management model.

The optimal number of links and elements - subsystems, their components and processes - in a single integrated system should be determined taking into account the criteria of adaptability and reliability of the system. The application of a synergetic model, which takes into account the interaction of adjacent flows between subsystems, allows to achieve a balance between the necessary flexibility of the system and its stability, which in turn contributes to more effective management and adaptation to changes in the external and internal environment.

3. In the framework of the additive model of “synergetic unification”, the maximum adaptability of the integrated system is achieved by increasing the number of subsystems and their interconnections, which corresponds to the principles of the integrated development model. At the same time, the reliability of the system is ensured by minimizing the number of subsystems and their interconnections. The optimal ratio between adaptability and reliability of the integrated system is determined on the basis of analyzing the accumulated statistical data related to the formation and evolution of interactions between different components of the system, such as subsystems, their elements and processes. This process includes monitoring of dynamics and interrelationships, which allows to develop effective management decisions for balanced development of the system, taking into account its functional needs and external requirements.

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Стовпник О.В. Побудова інтегрованих систем управління: досягнення синергії та стійкості в сучасних організаціях

На сучасному конкурентному глобальному ринку прагнення до ефективності, стійкості та якості знаходиться на вістрі організаційного менеджменту. Впровадження міжнародних стандартів управління, таких як ISO 9001 для якості, ISO 14001 для екологічного менеджменту та ISO 45001 для охорони здоров'я та безпеки праці, набуло широкого розповсюдження в різних галузях. Однак ці системи часто впроваджуються окремо, що може призвести до неефективності та надлишку ресурсів. Інтегрована система менеджменту (ИСМ) пропонує стратегічне рішення, об'єднуючи ці розрізнені системи в єдину структуру, надаючи компаніям комплексний, цілісний підхід до управління.

У цьому дослідженні розглядається еволюція систем менеджменту та зростаюча потреба в інтеграції у відповідь на глобалізацію, посилення конкуренції та вимоги зацікавлених сторін. Поєднуючи принципи управління якістю, екологічної стійкості, соціальної відповідальності та охорони праці в єдину систему, компанії можуть впорядкувати свою діяльність, покращити розподіл ресурсів та підвищити загальну ефективність. Такий підхід дозволяє компаніям не тільки відповідати нормативним вимогам, але й досягти синергетичного ефекту, коли вся система працює краще, ніж сума її окремих частин.

Обговорюються дві основні моделі інтеграції систем менеджменту: адитивна модель та комплексна інтегрована модель. Адитивна модель передбачає поетапне включення додаткових систем в існуючу структуру, як правило, починаючи з ISO 9001 для управління якістю і поступово додаючи такі системи, як ISO 14001 та ISO 45001. Такий модульний підхід забезпечує гнучкість і його легше впроваджувати в організаціях з уже існуючими системами управління якістю. Однак, адитивна модель може іноді призводити до того, що системи працюють паралельно, а не є по-справжньому інтегрованими.

З іншого боку, комплексна інтегрована модель від самого початку розробляється як єдина система. Такий підхід гарантує, що всі компоненти взаємопов'язані і безперервно працюють разом, мінімізуючи дублювання процесів і сприяючи кращому узгодженню організаційних цілей. Інтегрована модель сприяє більшій синергії та зменшує адміністративний тягар, пов'язаний з незалежним управлінням кількома системами.

У статті також підкреслюється важливість прийняття структурованого підходу до інтеграції на основі циклу Демінга PDCA (Plan-Do-Check-Act), який займає центральне місце в стандартах управління ISO. Цикл PDCA забезпечує основу для постійного вдосконалення, дозволяючи організаціям адаптувати і вдосконалювати свої системи управління з плином часу. Завдяки ефективному керівництву та залученню зацікавлених сторін організації можуть досягти не лише відповідності міжнародним

стандартам, але й значного покращення операційної ефективності та довгострокової стійкості.

Переваги інтегрованих систем управління численні: вони зменшують дублювання, оптимізують використання ресурсів, покращують комунікацію та координацію між підрозділами. Крім того, IMS дозволяє організаціям більш ефективно реагувати на зовнішні виклики, такі як зміна законодавства, вимоги клієнтів та екологічні проблеми.

Наприкінці статті пропонується широке впровадження інтегрованих систем управління, підкреслюючи, що їхній успіх залежить як від структурної основи, так і від активного залучення керівництва та персоналу. Оскільки компанії продовжують стикатися зі складними, взаємопов'язаними викликами, інтеграція систем управління є важливою стратегією для підвищення конкурентоспроможності, сталого

розвитку та довгострокової організаційної стійкості. Майбутнє організаційного успіху полягає в здатності гармонізувати різні управлінські підходи в єдину, ефективну систему, яка підтримує постійне вдосконалення та адаптивність у постійно мінливому глобальному середовищі.

Ключові слова: стандарти ISO, управління якістю, екологічний менеджмент, синергія, цикл PDCA, адитивна модель, інтегрована модель

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