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Practical application of controlling in agrarian business entities

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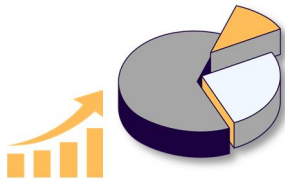
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***Abstract.** The article is devoted to the practical implementation of controlling in the activities of agricultural business entities, which is a relevant direction in ensuring effective resource management, optimizing production processes and increasing the competitiveness of enterprises. The article considers the main stages of implementing controlling, including the creation of a specialized department, integration of modern information systems, personnel training and development of key performance indicators (KPI).*

Key controlling tools are studied, such as budgeting, variance analysis, costing, and SWOT analysis, which allow for a comprehensive analysis of the economic activities of enterprises. Particular attention is paid to using ERP systems for centralized data management, accounting and monitoring processes automation, and support for strategic decision-making.

The authors emphasize the importance of improving personnel skills through training in the basics of controlling, training in working with modern software, and organizing inter-functional cooperation to strengthen process integration. The value of KPI as a tool for assessing the effectiveness of enterprises is determined, and



examples of indicators for the agricultural sector are given, such as yield, cost of production, degree of resource use, and environmental sustainability.

The article also highlights the key challenges of implementing control, including resistance to change, limited financial resources, and a shortage of qualified specialists. Ways to overcome them are proposed, including the involvement of external experts, the phased implementation of controlling practices, and the use of state support in the form of grants and subsidies.

The study's results indicate that controlling is a multifaceted process that requires careful planning, investment in technology, and development of organizational structure. This ensures increased management efficiency and optimization of resource use and contributes to the sustainable development of agricultural enterprises. The article offers scientifically sound approaches to the integration of controlling that meet modern challenges and needs of the industry.

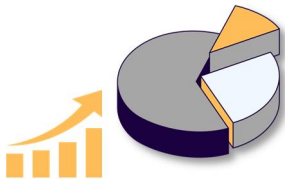
Keywords: *controlling, agrarian business, management, ERP systems, key performance indicators (KPI), budgeting, SWOT analysis.*

Практичне застосування контролінгу суб'єктів аграрного бізнесу

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Анотація. *Стаття присвячена питанням практичного впровадження контролінгу в діяльність суб'єктів аграрного бізнесу, що є актуальним напрямком у забезпеченні ефективного управління ресурсами, оптимізації виробничих процесів та підвищення конкурентоспроможності підприємств. У статті розглядаються основні етапи реалізації контролінгу, включаючи створення спеціалізованого відділу, інтеграцію сучасних інформаційних*



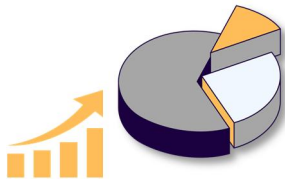
систем, навчання персоналу та розробку ключових показників ефективності (KPI).

Досліджено ключові інструменти контролінгу, такі як бюджетування, аналіз відхилень, калькулювання собівартості та SWOT-аналіз, які дозволяють забезпечити всебічний аналіз господарської діяльності підприємств. Особлива увага приділена використанню ERP-систем для централізованого управління даними, автоматизації процесів обліку та моніторингу, а також підтримки прийняття стратегічних рішень.

Автори акцентують на важливості підвищення кваліфікації персоналу через проведення тренінгів з основ контролінгу, навчання роботі з сучасним програмним забезпеченням, а також організації міжфункціональної співпраці для посилення інтеграції процесів. Визначено значення KPI як інструменту оцінки результативності діяльності підприємств, наведено приклади показників для аграрного сектору, таких як урожайність, собівартість продукції, ступінь використання ресурсів та екологічна сталість.

У статті також висвітлено ключові виклики впровадження контролінгу, серед яких опір змінам, обмежені фінансові ресурси та дефіцит кваліфікованих фахівців. Запропоновано шляхи їх подолання, включаючи залучення зовнішніх експертів, поетапне впровадження контролінгових практик, а також використання державної підтримки у вигляді грантів та субсидій.

Результати дослідження свідчать про те, що впровадження контролінгу є багатограним процесом, який потребує ретельного планування, інвестицій у технології та розвитку організаційної структури. Це забезпечує підвищення ефективності управління, оптимізацію використання ресурсів і сприяє сталому розвитку аграрних підприємств. Стаття пропонує науково обґрунтовані підходи до інтеграції контролінгу, що відповідають сучасним викликам і потребам галузі.



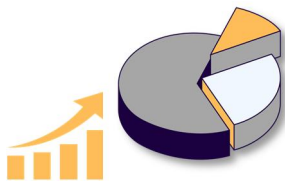
Ключові слова: *контролінг, аграрний бізнес, управління, ERP-системи, ключові показники ефективності (KPI), бюджетування, SWOT-аналіз.*

Statement of the problem. The agricultural sector faces significant challenges in today's rapidly changing economic, technological, and environmental landscape. Market volatility, fluctuating commodity prices, and increasing competition demand that agrarian enterprises adopt advanced management practices to ensure sustainability and profitability. Traditional approaches to management often fail to provide the flexibility and depth of analysis required for effective decision-making in such a dynamic environment. Consequently, there is a growing need for tools that enable comprehensive planning, real-time monitoring, and resource optimization.

One of the critical issues is the inefficiency in resource allocation and cost management. Many agricultural enterprises lack a structured approach to analyzing production costs, leading to financial losses and reduced competitiveness. Moreover, the absence of real-time data and integrated information systems often results in delayed responses to market changes and operational inefficiencies. These gaps hinder the ability of agrarian businesses to adapt to external pressures and capitalize on emerging opportunities.

Another pressing concern is the underutilization of modern technologies, such as Enterprise Resource Planning (ERP) systems, which can streamline data management and enhance decision-making. Implementing such technologies requires a structured framework, skilled personnel, and financial investment, which are often limited in small and medium-sized enterprises. Additionally, organizational resistance to change poses a significant barrier to adopting new practices and technologies.

The lack of trained specialists in controlling and the absence of a dedicated controlling department further exacerbate these issues. Without clear performance metrics and systematic monitoring, enterprises struggle to evaluate their effectiveness and identify areas for improvement. This situation is compounded by insufficient



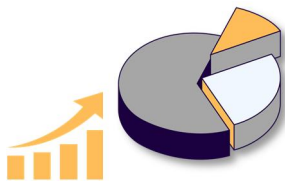
knowledge of risk assessment and scenario modeling, which are critical components of proactive decision-making.

Given these challenges, there is an urgent need to develop and implement a robust controlling system tailored to the specific needs of agrarian enterprises. Such a system would enhance financial transparency and support strategic planning and operational efficiency. This article addresses the problem by proposing practical solutions and strategies for integrating controlling into agricultural businesses, emphasizing its role in improving competitiveness and achieving long-term sustainability.

Analysis of recent research and publications. Controlling in modern conditions occupies a key place in the management of agricultural enterprises. Its implementation contributes to more efficient use of resources, increased competitiveness and ensuring sustainable development of enterprises. Controlling systems allow for the integration of financial and management accounting, implementation monitoring and diagnostic processes, and ensuring strategic planning. In the scientific literature, controlling issues are actively studied, indicating its relevance and prospects for the agricultural sector.

Among domestic researchers, it is worth highlighting the works of Tereshchenko O.O. [9], Lopatynsky Yu.M. [11], Rybakov M.V. [3], who consider the conceptual foundations of financial controlling, a systematic approach to the development of the agricultural sector and diagnostic procedures in enterprise management. In particular, Rybakov M.V. focuses on the use of diagnostic tools in the process of making managerial decisions, which helps to identify weaknesses in the enterprise's activities and develop anti-crisis strategies.

Research by Druhova O. [8] and her co-authors [2] focus on integrating controlling into agricultural enterprise project management and preventive anti-crisis management. This allows for the stability of enterprises in an unstable business environment, effective allocation of resources, and optimization of production processes.



In her work, Kalinichenko L.L. [1] draws attention to the adaptive management of the enterprise in a competitive environment, which is based on the implementation of controlling. Her research shows that using budgeting methods, analysis of deviations, and control over the implementation of plans allows for minimizing risks and improving the financial results of agricultural enterprises.

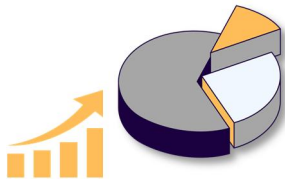
An important direction is the improvement of controlling methods to ensure economic security, which is discussed in the works of Poltina O.P. [4] and Ilashchuk S.A. [6]. Their research proves that modern controlling methods, such as resource efficiency assessment, SWOT analysis, and implementation of ERP systems, are crucial for the sustainable development of enterprises.

The practical application of controlling involves the implementation of such measures as the creation of a controlling department, the integration of information systems, personnel training, and the development of key performance indicators (KPI). Aksentiuk M.M. [5] emphasizes that an effective enterprise development strategy is impossible without implementing controlling approaches that provide a comprehensive approach to management.

Thus, the results of the conducted studies [1, 2, 3, 4, 5, 6, 7, 8] determine the basis for creating adequate information support for the management activities of agricultural enterprises. However, despite significant successes in the theoretical substantiation and practical implementation of controlling, there is a need for further research into its tools, methods and strategies. This is due to the growing requirements for flexibility, adaptability and innovation of management practices in the dynamic development of the agricultural sector.

The purpose of the research. The purpose of the article is to substantiate the need and practical importance of implementing controlling in the activities of agrarian business entities, as well as to identify key stages, tools and strategies that contribute to the effective integration of this management system.

Presentation of the main research material. Controlling is a key management tool that allows agribusiness entities to effectively coordinate



operational processes, optimize costs, and increase profitability. In the face of modern economic challenges such as climate change, volatile commodity prices, and market globalization, its practical application is becoming an integral part of managing agricultural enterprises.

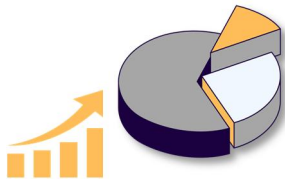
The primary purpose of controlling is to provide a holistic economic activity analysis for optimal management decisions. This includes:

- Planning of production and financial resources;
- Monitoring the implementation of planned activities;
- Monitoring the financial and economic indicators of the enterprise;
- Support in making strategic and tactical decisions.

The controlling system in the agricultural business is based on a wide range of tools and methods that ensure effective management of the enterprise's financial, production, and organizational processes [1]. The primary purpose of using these tools is to increase the level of transparency of management decisions, reduce risks, and optimize the use of resources.

Budgeting is a key controlling tool that ensures the formation of cost and income plans for individual divisions or types of activity of an agricultural enterprise. The budgeting process includes several stages: analysis of historical data, development of forecasts, approval of budgets and their subsequent control. Systematic use of this method allows enterprises to plan their resources and timely identify deviations from planned indicators, which contributes to the correction of management decisions.

Calculating the cost of production is an essential method of assessing resource use efficiency. This process involves a detailed analysis of all costs associated with a unit of production, including direct material costs, labor costs, equipment depreciation, etc. The information obtained allows you to determine which aspects of production activities need optimization and ensure the competitiveness of products in the market by rationalizing costs .



SWOT analysis is a universal method of strategic planning that allows you to assess internal and external factors that affect the enterprise's activities. In the agricultural sector, this method helps to identify the strengths and weaknesses of production (for example, soil quality and access to resources), as well as opportunities and threats (climate change, regulatory restrictions, price competition) [2]. The SWOT analysis results form the basis for developing effective management strategies and adapting to market changes.

Variance analysis is an effective tool for monitoring and assessing the effectiveness of the implementation of enterprise plans. The essence of the method is to compare actual indicators with planned ones, which allows you to identify the causes of deviations, mainly due to inefficient use of resources, external factors or errors in planning. This tool provides the enterprise with the necessary information to respond promptly to deviations and their correction.

Performance audits are aimed at a comprehensive assessment of the use of enterprise resources, including financial, human, material, and natural resources. During the audit, key factors that affect the efficiency of production activities are identified, such as labor productivity, level of automation, and reduction of losses and costs [3]. The audit results allow identifying weaknesses in the enterprise's organizational structure and developing recommendations for their elimination.

Implementing controlling at agricultural enterprises may include the following stages:

1. Creating a controlling department.
2. Integration of information systems.
3. Personnel training (fig.1).

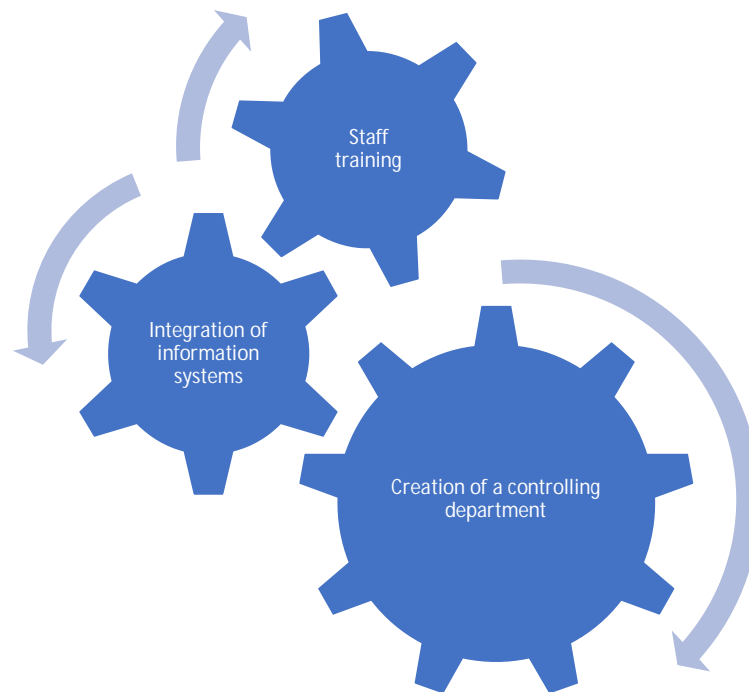
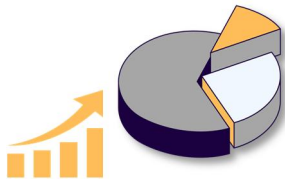


Fig 1 - Stages of implementing controlling at agricultural enterprises

Source: developed by the author

Implementing controlling in agrarian enterprises represents a systematic and multi-stage process to enhance operational efficiency, ensure effective resource management, and support strategic decision-making. Agricultural businesses can respond proactively to market challenges, environmental changes, and technological advancements by adopting controlling tools and principles. Below is an expanded examination of the key stages of implementing controlling practices [4].

Establishing a controlling department is a foundational step in integrating controlling practices into the operational structure of agrarian enterprises. This specialized unit is responsible for collecting, processing, analyzing, and interpreting financial, operational, and strategic data. Key tasks of the controlling department include (fig.2):

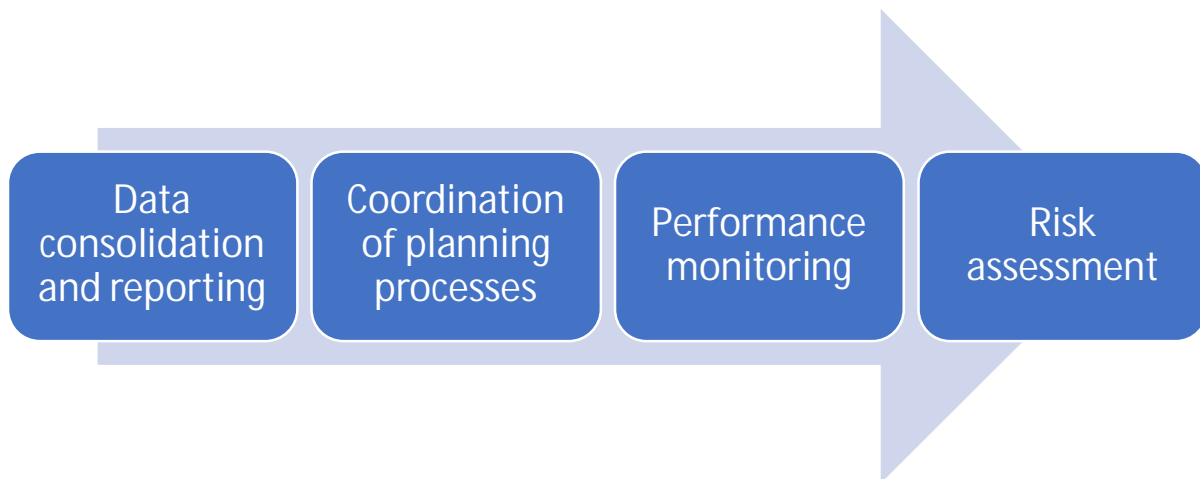
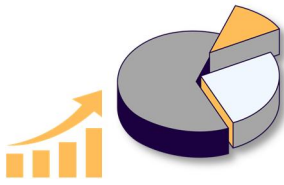


Fig 2 - Key tasks of the controlling department

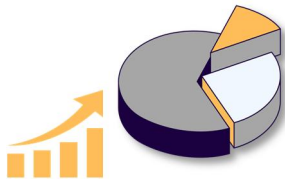
Source: developed by the author

Implementing controlling involves several critical activities that enhance an enterprise's efficiency and strategic focus.

Data consolidation and reporting serve as a foundation for effective decision-making. This process involves gathering data from various departments, such as production, finance, and logistics, to develop comprehensive financial and operational reports [5]. These reports provide a unified view of the enterprise's performance, enabling management to promptly identify trends, monitor progress, and address potential issues.

Coordination of planning processes is another key function of controlling. It supports the creation of budgets, forecasts, and strategic plans by offering detailed analytical insights. By aligning resources with organizational goals, this activity ensures that planning is realistic and aligned with market conditions and the enterprise's long-term objectives.

Performance monitoring focuses on regularly evaluating key performance indicators (KPIs). These metrics provide measurable benchmarks for assessing the effectiveness and efficiency of various operations. By identifying deviations from planned targets, controlling facilitates timely corrective actions to maintain or improve performance.



Risk assessment is an essential control component that involves analyzing internal and external factors affecting the enterprise. This includes identifying potential risks to profitability and sustainability, such as market fluctuations, regulatory changes, or operational inefficiencies. By proactively addressing these risks, controlling helps safeguard the enterprise's stability and ensures its resilience in a dynamic business environment.

The success of this step hinges on clearly defining the department's responsibilities, ensuring its integration with other business units, and establishing effective communication channels [6].

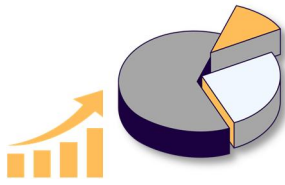
Modern agricultural enterprises thrive in a data-driven environment where timely and accurate information is essential for effective decision-making. Integrating advanced Enterprise Resource Planning (ERP) systems plays a pivotal role in this context, as it automates critical processes such as accounting, reporting, and performance monitoring.

A central feature of ERP systems is centralized data management, which consolidates information from diverse areas like procurement, production, logistics, and sales into a single, unified platform. This integration ensures that all departments operate based on consistent and accurate data, fostering better coordination and transparency.

Another significant advantage of ERP systems is real-time data access, which enables managers to retrieve key metrics and reports quickly. This immediacy supports more agile decision-making, allowing enterprises to adapt rapidly to changing circumstances or emerging challenges.

ERP systems also contribute to process optimization by automating repetitive and time-consuming tasks. This reduces the potential for human error and accelerates data processing and streamlines operational workflows, enhancing overall efficiency.

Additionally, scenario modeling capabilities embedded in ERP systems provide advanced analytical tools. These tools empower managers to simulate various strategic options, assessing their potential impacts before implementation. This



functionality enhances the ability to plan for uncertainties and make informed, data-driven decisions that align with the enterprise's long-term goals.

By integrating ERP systems, agricultural enterprises can enhance their operational efficiency, improve data accuracy, and strengthen their strategic planning capabilities, positioning themselves for sustained success in a competitive and rapidly evolving industry [9-10].

Successful implementation of ERP systems requires significant investment in technology and infrastructure, as well as alignment of the system's functionality with the specific needs of the agrarian enterprise.

The effectiveness of controlling systems largely depends on the competence and expertise of the personnel involved in their operation. Therefore, employee training and professional development are critical components of the implementation process. Key training initiatives may include (fig 3):

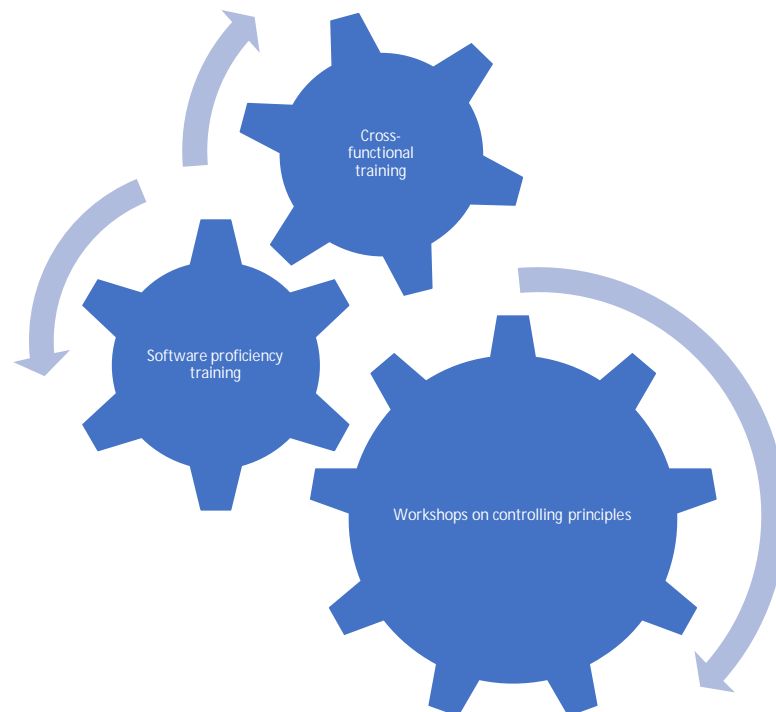
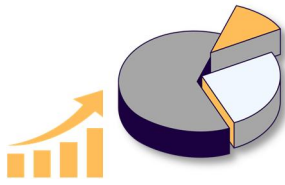


Fig 3 - Key training initiatives

Source: developed by the author



Effective implementation of controlling in an organization requires comprehensive training and development programs to ensure employees have the necessary knowledge and skills. Key elements of such training initiatives include:

Workshops on controlling principles are designed to educate staff about the foundational concepts of controlling. These sessions cover essential topics such as cost management, budgeting, and variance analysis, equipping employees with a clear understanding of how controlling contributes to operational efficiency and strategic decision-making.

Software proficiency training focuses on developing employees' ability to use ERP systems and other analytical tools effectively. Given the increasing reliance on technology in controlling processes, this training ensures that personnel can leverage these tools to collect, analyze, and interpret data accurately and efficiently.

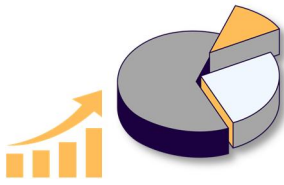
Continuous education provides employees with ongoing opportunities to deepen their expertise. Through access to seminars, certification programs, and courses, staff can stay updated on advanced controlling techniques, emerging trends, and industry best practices. This commitment to lifelong learning fosters innovation and adaptability within the organization.

Cross-functional training enhances collaboration between the controlling department and other business units. Promoting mutual understanding of processes and goals strengthens teamwork and ensures that controlling practices are seamlessly integrated into the broader organizational framework.

Together, these training initiatives improve individual competencies and build a culture of continuous improvement and collaboration, which is essential for the successful implementation of controlling in any enterprise [11].

While implementing controlling offers significant benefits, it is not without challenges. Common obstacles include resistance to change, limited financial resources, insufficient technological infrastructure, and a lack of skilled personnel. To mitigate these challenges, agrarian enterprises should:

1. Promote change management

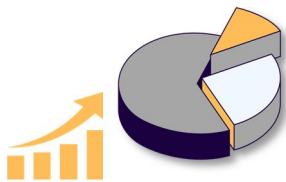


2. Seek external expertise
3. Adopt phased implementation
4. Leverage governmental and institutional support

The successful implementation of controlling practices in an organization requires a thoughtful and strategic approach to address potential technical, operational, and cultural challenges. One of the fundamental aspects of this process is promoting effective change management. Organizations must engage stakeholders at all levels, from top management to employees, to build support for the controlling initiative. Clear communication about the benefits of controlling, such as improved efficiency, transparency, and better decision-making, is essential. Additionally, involving employees in the planning and implementation phases fosters a sense of ownership and reduces resistance to change. Leadership commitment to the initiative and providing adequate training and resources ensure smooth adaptation to new processes.

Overcoming technical and operational barriers is another critical component of successful implementation. Collaborating with external experts, such as industry consultants and software providers, can provide the specialized knowledge and support needed for seamless integration. Consultants bring valuable insights into best practices and system customization, while technology partners offer technical support and maintenance. Learning from the experiences of other organizations that have implemented controlling systems can also provide practical guidance and help avoid common pitfalls.

A phased implementation approach is highly effective in minimizing disruption and resource strain. By focusing on high-priority areas first, organizations can test the system on a smaller scale, refine feedback-based processes, and demonstrate tangible results early on. These quick wins help build momentum and motivate stakeholders, paving the way for a broader rollout across the organization. Gradual scaling of the system ensures that lessons learned during initial phases are incorporated, reducing the risk of widespread challenges.



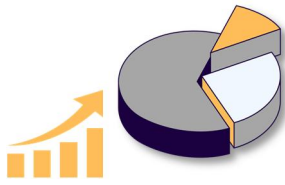
Financial and technical support from governmental and institutional programs can significantly enhance implementation, particularly for small and medium-sized enterprises. Grants and subsidies can help offset technology acquisition, training, and system integration costs. Many institutions also offer training programs and advisory services that provide employees with the skills and knowledge necessary for effective controlling. Access to these resources reduces financial burdens and equips organizations to achieve their controlling objectives more efficiently [12-15].

Implementing controlling is a complex process that transforms organizational operations and decision-making. By addressing resistance to change, leveraging expertise, adopting a phased approach, and utilizing available support, enterprises can navigate challenges and establish a robust controlling system. These efforts lead to greater transparency, operational efficiency, and informed decision-making, ultimately positioning the organization for long-term success in a competitive and dynamic business environment.

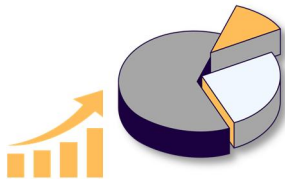
Conclusions. The practical implementation of controlling in agrarian enterprises is a multifaceted process that requires careful planning, technological investment, and commitment to organizational development. By establishing a controlling department, integrating information systems, training personnel, and developing tailored KPIs, agricultural businesses can enhance their decision-making capabilities, optimize resource utilization, and achieve sustainable growth. Although challenges may arise, proactive management and strategic alignment can ensure the successful adoption of controlling practices, ultimately contributing to the long-term competitiveness of agrarian enterprises.

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