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FORMATION OF PRODUCTION COST BY THE METHODS OF "TARGET COSTING" AND "KAIZEN COSTING" AND THEIR IMPACT ON THE ENTERPRISE EFFICIENCY

The object of this research is the process of formation of costs of enterprises for the production and sale of industrial products. The need for such a study is determined by the use of outdated methods of forming the cost of production at Ukrainian industrial enterprises, which are based on the actual costs of the enterprise. It is proved that the existing provisions of direct costing do not reproduce the provisions of the market pricing mechanism, since the market price is focused not on actual costs, but on the needs and preferences of consumers of products. A detailed study of the existing methods of forming the cost of production was carried out, among which special attention was paid to modern methods of target costing and kaizen costing, developed and widely tested by economists of Japanese enterprises.

The main advantages of target costing and kaizen costing systems when they are used in the conditions of the Ukrainian economy are studied and substantiated. The systems proposed for use provide for putting in the first place not the actual costs, but the market price of the product, and the costs are formed taking into account the desired level of profit for the enterprise. This approach involves the integral (complex) use of target costing and kaizen costing. It has been proven that the combination of these two systems allows to create a continuous cycle of production cost management at all stages of the product life cycle. Target costing provides strategic cost control during the product design phase, while kaizen costing supports and increases efficiency during the production and operation phase. The combination of targeted costing and kaizen costing provides a significant increase in the efficiency of industrial enterprises, is an effective way to achieve strategic and operational goals, increase the competitiveness and sustainable development of industrial enterprises. This is achieved due to the complementarity of these systems at different stages of the product life cycle.

Keywords: *production costs, prime cost, kaizen costing, target costing, product market price, industrial enterprises.*

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1. Introduction

Modern enterprises operate in a changing environment, the complexity and multidimensionality of which affects the uncertainty and unpredictability of their future. The growing level of competition, rapid technological progress, turbulence in raw material markets, investment and innovation activities, ensuring sustainable development necessitate the effective use of all resources owned by the enterprise. All this creates the need for precise management of enterprise resources in order to maintain their profitability and liquidity in conditions of market uncertainty [1–4].

Enterprises that want to succeed in a competitive environment must take into account the requirements and wishes of consumers. The success of each enterprise is most often determined by its ability to quickly introduce innovative products to meet the growing needs of consumers. In this aspect, the traditionally used strategies of price leadership and differentiation have lost their significance. To create sustainable competitive advantages, enterprises were forced to adopt a confrontation strategy that involves simultaneous competition on such product characteristics as quality, functionality and price (cost) [5–7]. Therefore, enterprises are actively looking for opportunities that will contribute to their development in the organizational, technical and managerial spheres.

Cost management is a fundamental aspect of effective management, which directly affects the profitability and competitiveness of any manufacturing enterprise. Effective cost management requires a deep understanding of all factors affecting the production process – from raw materials to labor and maintenance costs. In the context of global competition and constant technological and market changes, the ability to optimize production costs becomes crucial.

Currently, there are a number of methods and systems that allow for effective cost management of an industrial enterprise. One of them is the modern Japanese method – "target costing" and its development in the form of the "kaizen costing" system [8–11]. The Japanese philosophy of work "kaizen" is increasingly used by Ukrainian enterprises [12–15]. It is ideally suited for the organization of production processes, quality assurance and logistics, allows to gain competitive advantages through gradual, continuous improvement, setting and achieving increasingly high standards. By implementing kaizen, the effect of innovative solutions is achieved, kaizen principles allow to increase the efficiency of production processes [16, 17]. All this significantly updates the topic of

researching methodological approaches and tools that would be desirable to use when planning the cost of products on the basis of "kaizen costing". The use of kaizen calculation at Ukrainian enterprises and the process of constant optimization of costs for the production of industrial products will allow enterprises to significantly increase production efficiency in the direction of reducing costs. This is an extremely important factor and condition for effective activity in the current unstable economic situation for Ukraine.

Existing literature sources indicate that target costing allows an enterprise to ensure financial stability and competitiveness through competent preliminary planning, and kaizen costing contributes to improving organizational culture and the efficiency of production processes [2, 18–20]. Analysis of existing publications on the application of target costing and kaizen costing methods for product cost planning and their impact on enterprise efficiency demonstrates that these approaches are actively researched due to their positive effect on costs, product quality, and competitiveness [21–24].

Target costing is described as a cost planning method that focuses on the market price of the product and the expected profit [24, 25]. Many authors note that this method helps to ensure the profitability of products at the development stage by setting the maximum allowable costs [26]. Kaizen costing is defined as an approach focused on continuous improvement and cost reduction in the production process [27]. Researchers [28, 29] believe that kaizen costing allows enterprises to achieve resource optimization through constant changes that are implemented without high costs [30]. According to many studies [4, 5, 9, 31–33], target costing helps to increase the competitiveness of the enterprise by reducing the cost of the product and focusing on consumer needs. For example, in [32] it is emphasized that target costing makes it possible to produce a product optimized in terms of cost and quality that meets market requirements. The authors of the publication [31] do not fully agree with this opinion. They point out that target costing allows to reduce the risks of costs for new products only through careful preliminary planning [31]. This makes the development process more controllable and predictable. Studies confirm that kaizen costing helps enterprises to maintain constant cost optimization [9, 34]. In works [2, 16, 35] it is proved that continuous improvement allows to reduce production costs while maintaining product quality [24, 25]. A somewhat different emphasis is made in studies [10, 35], where the positive impact of this method on staff motivation and involvement [35] is brought to the fore. Thanks to the involvement of employees in the improvement processes, the efficiency of the work team increases, which is confirmed by research in the field of personnel management [13, 26, 36–38].

In the analyzed publications, insufficient attention is paid to the combination of the "target costing" and "kaizen costing" methods at one enterprise, since, according to some researchers, this allows to achieve maximum efficiency [31, 37]. The author of the study [35, 39] rightly points out that target costing establishes permissible costs and contributes to the effective start of product development, while kaizen costing ensures further continuous improvement in the production process. Examples of large Japanese corporations, in particular Toyota and Sony, demonstrate that it is the combination of target costing with kaizen costing that allows them to remain leaders in their industry [9]. Some authors attribute this gap in existing research to difficulties in personnel adaptation [13, 26] and the need for changes in corporate culture [7]. In contrast to this opinion, the study [29] indicates that enterprises that successfully adapt these approaches note a significant reduction in costs and increase in production efficiency. According to the results obtained in [2], the implementation of target costing requires market analysis and a clear product strategy, while kaizen costing requires a comprehensive approach to personnel management [26].

Analysis of existing research literature shows that the use of target costing and kaizen costing methods allows enterprises to achieve cost reduction and increase competitiveness. A significant level of production efficiency is seen in the combination of these methods, which urgently requires the development of such an approach and further research.

The aim of this research is to determine the effectiveness and prospects of introducing target costing and kaizen costing into the economic activities of Ukrainian enterprises, to determine the factors of effectiveness of their simultaneous use. This provides real opportunities for applying the results obtained in practical activities, carrying out work to significantly reduce production costs and increase the efficiency of production and commercial activities of enterprises and organizations.

To achieve this aim, it is necessary to:

– determine the essence of target costing and form a model of its use in industry, systematize its advantages, which enhance its impact on production efficiency, and disadvantages, which to some extent hinder its implementation;

– investigate the conceptual provisions of kaizen costing as a logical continuation of the target costing system, to determine and justify the feasibility of its use;

– justify the feasibility and effectiveness of combining target costing and kaizen costing systems in the production and commercial activities of industrial enterprises and organizations.

2. Materials and Methods

The object of this research is the production process of forming and using effective cost management strategies in forming the cost of industrial products. The subject of the study is organizational and economic relations that arise in the process of production and market sale of industrial products.

The main hypothesis of the study assumes the need to intensify the processes of introducing modern methods of forming the cost of products into the production and commercial activities of industrial enterprises, based on the positive experience of Japanese enterprises. Its relevance is explained by the need to improve the methods and strategies of producing industrial products in demand by the market, while simultaneously minimizing the costs of its production and maximizing the effect of its promotion and sales. This will significantly increase the efficiency of production cost management systems, increase the profits of enterprises and increase their competitiveness in the target market.

To achieve the objectives set in the study, the methods of the structural approach, systems analysis, induction and deduction, observation and comparison were used. The above methods were used to clarify the conceptual apparatus of modern systems for forming the cost of industrial products and systematize the factors of efficiency of their use.

3. Results and Discussion

3.1. Determining the essence of target costing and forming a model for its use in industry

Recently, various conceptual approaches to cost management for the formation of the cost of industrial products have been actively developed and improved in order to increase the efficiency of production and commercial activities [3, 23]. Such methods include, first of all, progressive systems of "standard costing", "direct costing", "kaizen costing", "target costing", etc.

In the world practice of cost management, the method of partial calculation – "direct costing" has become widely used, using which the cost of products is formed according to the values of variable costs (the method of truncated or incomplete cost). When using it, industrial production costs are most often divided into two basic groups: variable costs, which change proportionally with changes in production volume, and fixed costs, which practically do not change in the event of a change in production volume. Fixed costs are classified as current expenses, are not written off to the cost price and are not distributed between types of products, but are directly attributed to the general results of production

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and commercial activities. The cost price of the enterprise's products is formed only taking into account variable costs. In the "direct costing" model, a completely new factor of work results is formed – the margin of variable cost price. It is determined by the difference between the selling price of products and the amount of variable costs. If the amount of fixed costs is removed from this difference, then the final result will be a loss or profit of the enterprise. In our opinion, if the volume of the enterprise's products, then the "direct costing" model allows to measure the share of each type of product in the reimbursement of spent fixed costs when forming the level of profitability of the entire production.

The disadvantages of this method include: the lack of calculations of the full cost price of products (this is mandatory according to current legislation); the need for a more accurate division of fixed costs (both variable and fixed components), as this is important for determining marginal costs. The practical use of the "direct costing" model is effective for enterprises with a wide range of products.

The above-mentioned shortcomings were partially eliminated in the "standard costing" model, which involves the formation of cost on the basis of standard cost values and the analysis of existing deviations, that is, cost management is carried out on the basis of a comparison of normative and actual costs. In our opinion, in the "standard costing" model, the key is control over the accurate determination of deviations of actual costs from standards, which generally affects the improvement of existing standards. If such control is absent, then the application of this model will be conditional, without the desired effect.

It is possible to see the continuation of the search for more effective approaches to the formation of product cost in the wider use of the "target costing" model, which is based on cost management on the basis of target cost.

The target costing system includes methodological approaches to cost management and is aimed at reducing the costs of the enterprise's production and commercial activities at the stage of product or service design in order to ensure the achievement of the target level of profitability. The essence of the target costing system is based on the use of the traditional pricing model, according to which the price is formed as the sum of the cost price and profit. According to this concept, the cost price (C_t) is defined as the difference between the price (P_{rt}) and profit (P_{ft}):

$$P_{rt}–P_{ft}=C_t.$$

In this method, the market price P_{rt} is called the target price, the sought difference between the cost price and the selling price is the target profit Pft (target profit), the cost price at which the product should be manufactured is called the target cost C_t (target cost). Thus, the "target costing" model suggests considering the cost price not as the product of some calculation, but as a certain value that the enterprise should focus on when offering a competitive product to the target market (Fig. 1).

Based on the concept of Fig. 1, it is possible to say that the cost formation system using the target costing method is based on a very simple idea: instead of the standard question: "What is the cost of producing a product?", target costing asks a different question: "How much should the product cost?". Practical experience in cost management shows that enterprises that receive information from traditional cost accounting systems spend more time and money on the product creation process. This is due to the fact that the mechanisms of traditional systems allow to find out the estimated production costs only at the end of the product development process. If the costs of production and sales are higher than the market price, then the research simply needs to be started from the very beginning.

The process of forming the cost of products according to the target costing system includes the following stages:

Stage No. 1. Based on a study of the sales market and available (possible) production volumes, a hypothetical (forecast) price of products in the target market of the enterprise is formed.

Stage No. 2. The expected amount of profit of the enterprise from the sale of a unit of production or the entire volume of production is calculated. On this basis, the target cost is determined as the maximum allowable value of the cost under given market conditions.

Stage No. 3. Includes bringing the value of the normative cost to the value of the target cost by studying and analyzing the possibilities of changing the volumes and types of costs. The presence of such possibilities is determined by the technology of industrial production, the availability of alternative materials, design, technical or technological solutions that could ensure the reduction of the cost of products without losing its quality.

Stage No. 4. Development and technological testing of a model of a new product that meets the target cost. In this case, the difference between the target and standard cost should not exceed 10 percent of the standard cost. If the test results are positive, then an appropriate management decision is made to launch the product into industrial production. In the event of unsatisfactory results of testing the target cost, technological development ends, although the possibilities for further searches for new scientific, technological and constructive ideas remain [3, 8, 30].

It is proposed to include the following advantages of the practical use of the "target costing" model:

– the possibility of searching for innovative, non-standard design and technological solutions by the relevant structural units and managers in order to achieve the result necessary for the enterprise – the target cost;

– a significant reduction in production costs due to the active development of intellectual and innovative technologies and the impossibility of using high-cost materials and technologies.

The disadvantages of the "target costing" model include:

– low efficiency of managerial decisions, which are produced by changes in the target market situation;

– the need for closer interaction between various structural divisions and employees of the enterprise.

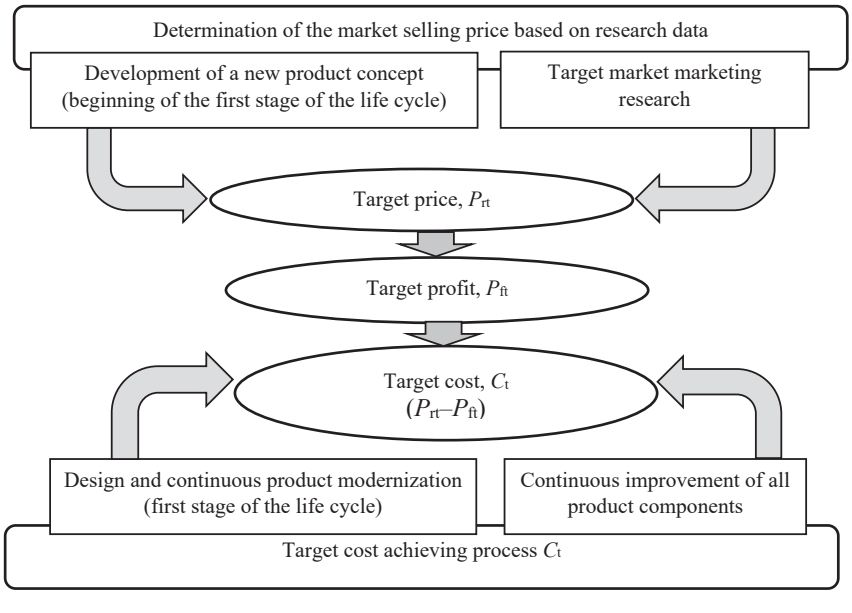

Fig. 1. Conceptual diagram of the process of using the target costing system (developed by the authors)

Reducing the cost of production can also be achieved using the kaizen costing model, the purpose of which is to improve the activities of the enterprise or its structural divisions using internal reserves, excluding the attraction of significant external investments.

3.2. Research on the conceptual provisions of kaizen costing as a logical continuation of the target costing system

Kaizen costing is a method of planning and reducing the cost of production, which is based on the philosophy of kaizen (from the Japanese "continuous improvement"). Its main goal is to constantly reduce the cost of production in the production process by eliminating losses, optimizing processes and involving personnel in the improvement process. Some researchers [9, 32, 35] describe kaizen as a philosophy of small improvements that contributes to a constant reduction in costs and an increase in quality. Kaizen costing is widely used in industrial enterprises, especially in countries with a developed industrial culture, such as Japan. Unlike target costing, which focuses on cost planning before the start of production, kaizen costing is aimed at constantly reducing costs in the production process. This approach allows companies to continuously improve processes and achieve optimal efficiency through small but regular changes.

The main principles of kaizen costing include:

– continuous improvement: employees at all levels are constantly looking for ways to improve processes, eliminate waste and reduce costs, even on a minimal scale;

– staff involvement: all employees are involved in the improvement process – from production workers to managers. This helps to create a culture of improvement and responsibility for the overall result;

– focus on the current production process: unlike target costing, kaizen costing works with the existing product and production process, focusing on gradual changes in real time, rather than on preliminary planning;

– loss minimization: the concept of kaizen costing is closely related to the ideas of lean production, where much attention is paid to eliminating all types of losses – from downtime and surpluses to defects.

The following stages of implementing kaizen costing in industrial enterprises are proposed for consideration:

1. Analysis of current costs and definition of goals: the cost of existing products is estimated, specific goals for its reduction are defined, often in the form of monthly or quarterly indicators.

2. Implementation of small improvements: employees, together with management, develop small but permanent changes in the production process to gradually reduce costs.

3. Monitoring and correction: the results are regularly analyzed to assess the effectiveness of the implemented changes and identify new points of improvement.

4. Personnel training: enterprises train personnel in improvement methods, allowing each employee to make suggestions for reducing costs and increasing efficiency.

While not being a direct method of forming the cost of industrial products, the development of the kaizen approach allows all employees who are associated with certain production costs to make their specific contribution to their reduction and management. The concept of "kaizen" includes all, to a certain extent, unique and original conceptual methods and management models used in the Japanese industry. Their use has allowed this country to gain a leading competitive position in the global technology market. In our opinion, the advantage of the kaizen costing system is the fact that it ensures continuous cost reduction and their maintenance at the appropriate (pre-set) level. The main disadvantage of this model is the need for constant motivation of employees, which should support the involvement of all production personnel in the activities of the enterprise. The process of continuous improvement can be effective only when production conditions are favorable for its use. To do this, the relevant requirements for management should be met:

– form the tactics and strategy of the enterprise's production activities;

– develop an appropriate style for top management that actively supports openness, cooperation and trust;

– maintain the immutability of the set goals;

– develop an effective incentive system that will encourage cooperation;

– implement personnel training programs (continuously operating);

– maintain the necessary balance between current and future tasks.

A comparison of the target costing and kaizen costing models, which are close in methodological essence, allows to identify certain differences between them:

– methodological content: the kaizen costing system does not include a set of pre-defined approaches or procedures at the enterprise, the use of which almost automatically allows to reduce costs;

– process orientation: target costing is focused on reducing costs at the design and development stage of the product, while kaizen costing works at the production stage, when the product is already being manufactured;

– role of employees: the finance and marketing department is primarily responsible for target costing, while kaizen costing actively involves all personnel, including production workers, in the optimization process;

– scale of changes: target costing requires significant structural changes, while kaizen costing focuses on minor, gradual, but constant improvements.

It should be noted that Ukrainian enterprises are not inclined to actively implement and use the "kaizen costing" method. There are many reasons for this conclusion. Basically, this is the lack of a scientific, theoretical and experimental, practical base, effective examples of use, the instability of the domestic economy. There are also significant differences in national mentality – employees of Ukrainian enterprises perceive changes (especially cardinal ones) with some fear and even hostility. Despite this, it is already possible to give examples of the effective use of kaizen costing in Ukraine. For more than 15 years (since 2007), Coca-Cola Beverages Ukraine has been using target and kaizen costing for the needs of forming the cost of products. Using its market position as the undisputed leader in the soft drinks segment, the company sets product prices using the target costing system in order to obtain the desired profit. Without disclosing the commercial profitability indicators of this company, it is possible to say that it receives the desired profits. When introducing kaizen costing at this enterprise, three basic principles were followed: standardization; maintaining order; eliminating losses. To truly eliminate costs, the company used the kaizen costing system in combination with the Japanese "just in time" approach, which aims to constantly pursue productivity by avoiding waste. The advantages of this method of organizing product costing are as follows: an increase in the turnover ratio, a decrease in unrealized income, a reduction in losses, savings on storage, etc. At the initial stage, this enterprise faced significant difficulties – the innovative method did not find wide support among employees. However, top management approached the solution of the task very seriously: work was carried out to clarify the essence of the innovation, foreign trainers were invited, etc. At present, 90 % of the production personnel of the Ukrainian enterprise are involved in the "kaizen costing" system. And as a result, the enterprise is among the leaders in its market segment.

3.3. Justification of the feasibility of combining target costing and kaizen costing systems in the production and commercial activities of industrial enterprises

Usually, the production cost formation system "kaizen costing" is used at industrial enterprises along with the "target costing" system. They have one goal – obtaining a target cost, although according to the target costing model, this goal is sought to be obtained at the design stage of a new product, and according to the kaizen costing model – at the stage of its manufacture. The combination of the two methods allows

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to achieve maximum efficiency. Target costing sets allowable costs and contributes to the effective start of product development, and kaizen costing ensures further continuous improvement in the production process. Examples of large Japanese corporations, in particular Toyota and Sony, demonstrate that it is the combination of target costing with kaizen costing that allows them to remain leaders in the industry [12].

In the standard costing model, which is currently the most widely represented in the practice of management accounting at Ukrainian industrial enterprises, possible deviations of actual costs from the directively established (normative) ones are recorded. The amounts of the deviations obtained are recorded by economists and reproduced on accounts specially created for this operation. At the end of the reporting (planning) period, all amounts of the detected deviations are written off to the results of the financial activities of the enterprise. In this case, a simple method of analyzing the detected deviations is used, on the basis of which a decision is made to adjust the norms and standards established at the enterprise. At the same time, the common task for the standard costing and kaizen costing methods is to control the state of costs and results by comparing the actual (achieved) results with the target settings established in advance. Since, unlike the target costing method, kaizen costing is used at the same stages of the product life cycle as the standard costing method, managers will face an important question regarding the choice of one of these methodological approaches, or the formulation of a proposal for their combination. Despite the more progressive logic of kaizen costing compared to standard costing, there is no need to oppose these systems to each other. Each of these systems can solve the corresponding problems, each of them has both significant advantages and certain disadvantages. The solution to the problem may be the integration (combination) of the standard costing accounting method and the kaizen costing accounting method, since there are good reasons for such a decision.

The combination of target costing and kaizen costing systems in the production and commercial activities of industrial enterprises is advisable, since these approaches complement each other, ensuring a balance between strategic cost planning and their continuous improvement in the production process. The main factor provisions justifying such integration are determined in several strategic areas of the enterprise's activity, the most important of which are presented in Fig. 2.

The combination of target costing and kaizen costing in the activities of industrial enterprises provides a comprehensive (integrated) approach to managing production costs, which is focused on achieving strategic and tactical goals. Let's consider in more detail the effectiveness of this integration, the main directions of which are briefly presented in Fig. 2.

The combination of target costing (target cost management) and kaizen costing (system of continuous cost improvement) provides a significant increase in the efficiency of industrial enterprises. This is achieved due to the complementarity of these systems at different stages of the product life cycle. The economic essence of this process is presented in Table 1.

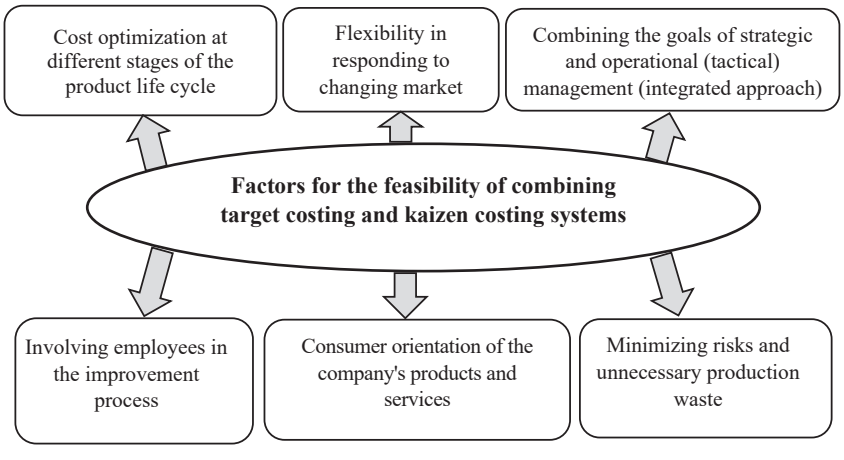

Fig. 2. Formation of directions of expediency (efficiency) of combining target costing and kaizen costing systems (developed by the authors)

Table 1

Main aspects of the effectiveness of combining target costing and kaizen costing systems in the activities of industrial enterprises

Efficiency aspect	Target costing	Kaizen costing	Result
Optimization of costs at all stages	Sets the target cost of the product, taking into account consumer needs and the level of competition. This allows to avoid excess costs even at the product development stage	Provides support and further cost reduction during the production process through gradual improvements	Reducing the cost of production without compromising quality
Increased competitiveness	Products are developed taking into account market price expectations, which allows the company to compete effectively	Supports competitiveness by continuously reducing costs even after the product is launched on the market	Sustained competitive advantage
Flexibility in responding to market changes	Allows to quickly adapt target costs to changes in demand or the market situation	Promotes rapid improvement of production processes in response to new requirements or constraints	Increased ability to respond to external challenges
Employee motivation	Forms a common vision of goals and involves employees of different departments in achieving the set tasks	Encourages staff to participate in process improvement, creating a culture of continuous improvement	Increasing labor productivity and the level of innovation
Reduction of costs and risks	Minimizes the risks of exceeding the budget even at the planning stage	Allows production costs to be reduced by reducing waste and inefficient operations	Company achieves stability in costs, which contributes to long-term profitability
Integration of innovations	Promotes the implementation of innovative solutions during product development, taking into account cost constraints	Allows effective implementation of small but continuous innovations in production	Innovation becomes a constant source of efficiency growth

In our opinion, to assess the results of the integration of target and kaizen costing, it is advisable to use the following indicators: reduction in product cost; level of compliance with the target cost; dynamics of operational efficiency; share of waste in the production process; increase in customer satisfaction.

3.4. Discussion of the results of the study on the formation of product cost using the "target costing" and "kaizen costing" methods

The conducted studies indicate that target costing is aimed at strategic cost management at the product design stage, focused on long-term goals, such as achieving profitability of a new product and entering new markets. It takes into account market needs, customer desires and price sensitivity, allowing to set a target cost that will ensure competitiveness and profitability. It is based on market analysis, determining a price acceptable to consumers and calculating allowable costs in reverse. Kaizen costing focuses on operational activities, reducing costs through incremental improvements in the production process, maintaining operational efficiency, ensuring flexibility in the short term through improving production processes. It is applied after the product is launched into production, aimed at constantly reducing costs through incremental improvements. These two systems in combination cover different stages of the product life cycle, creating a single continuous cost management system. Their combination provides a balance between achieving strategic goals (target costing) and solving current production tasks (kaizen costing).

Target costing allows to optimize costs during planning, which is especially important in conditions of high competition, avoids unjustified costs at the design stage, ensuring that the product meets market expectations. Kaizen costing provides continuous improvement after the product is launched, allowing to adapt to changes in the market or internal conditions of the enterprise.

Target costing is effective in the early stages of the product life cycle, when key decisions are made about design, materials, and technology. In this case, the target cost is formed taking into account the needs and capabilities of consumers. This ensures the creation of a product that meets market requirements. Kaizen costing allows to maintain and increase efficiency during the production stage, improving processes and minimizing waste, as it focuses on eliminating losses (including time, materials, resources) in the production process. This system allows to maintain product quality at a high level, while reducing costs, which is beneficial for the end consumer. The implementation of both systems allows to create an effective management system that prevents waste and at the same time eliminates existing inefficiencies. The integration of these systems ensures not only competitiveness, but also increased consumer satisfaction.

In kaizen costing, employees are involved in continuous process improvement, which helps to increase their motivation and grow a quality culture. This system is directly based on the active participation of employees in continuous improvement processes, forming a corporate culture of innovation and responsibility. In target costing, teams from different departments collaborate at the design stage to ensure compliance with target costs. Target costing includes cross-functional cooperation (marketing, engineering, finance), which helps to create a single vision and employee involvement in achieving target indicators. The combination of systems contributes to the formation of an organizational culture focused on quality, efficiency and continuous development.

The integration of target costing and kaizen costing allows to reduce the risks of budget overruns, ensuring control both at the strategic level and in the production process. Continuous cost reduction through kaizen costing allows to maintain competitive advantages even after the product is launched.

To effectively combine these systems, it is important to develop a clear integration methodology:

– creation of multifunctional teams for the implementation of target costing;

– introduction of PDCA cycles (plan, do, check, adjust) for kaizen costing;

– use of digital tools for cost monitoring and process analysis.

The combination of target costing and kaizen costing allows industrial enterprises to achieve high efficiency, adaptability and profitability in a changing market.

Thus, the implementation of the kaizen costing accounting and analytical system should not simply replace the standard costing methodology rooted in a large number of Ukrainian enterprises. Only their organic interaction can provide a positive result of use, which finds its reproduction in the minimization of production costs and the corresponding optimization of the size of profit.

If standard costing and the studied kaizen costing system can be used as a somewhat compatible option in the formation of product costs, then the target costing (target calculation) method, based on the product life cycle, appears to be to some extent a "predecessor" of kaizen costing [12]. The target costing and kaizen costing systems have the same national roots (developed in Japan), more than 80 percent of large Japanese enterprises and organizations currently use this method of cost formation. Both of these accounting and analytical systems try to achieve the same goal – to achieve the target cost value. That is, if to go through the stages of the product life cycle, then target costing tries to achieve the set goal at the design stage of a new product, and kaizen costing - already at the stage of production of new products. That is, the statement that kaizen costing looks like a certain continuation of the target costing system seems fair. It should be noted that this kind of consistency in the application of these accounting and analytical systems, in integration with the considered standard costing, is extremely important and simply necessary for the enterprise to achieve its goal of minimizing production costs.

4. Conclusions

The paper substantiates that target costing (or target costing) is a modern cost management method aimed at achieving the strategic and financial goals of the company. The main goal of the method is to ensure that the cost of products meets the specified parameters of profitability and price competitiveness determined by market conditions. The key aspects of target costing are orientation to the market price determined by consumer needs; cost management at the product design stage; involvement of cross-functional teams to achieve cost reduction goals. A model for using target costing in industry is proposed, the main stages of which are:

– determining the price that the consumer is willing to pay for the product;

– determining the level of profit that the company seeks to achieve;

– difference between the target price and profit forms the allowable level of costs;

– improving design and processes to achieve the set cost;

– constant adjustment of costs in the production process.

It is proven that target costing allows industrial enterprises to effectively manage costs and ensure their competitive position using a flexible and adaptive approach.

The relationship between target costing and kaizen costing is studied. Target costing and kaizen costing are complementary cost management methods. If target costing focuses on achieving the target cost of a product at the stage of its development, then kaizen costing continues this process at the production stage, ensuring continuous improvement and cost reduction. The essence of kaizen costing (from the Japanese "kaizen" – "improvement") is determined as an approach focused on systematic and gradual cost reduction through process optimization, increasing efficiency and eliminating losses. The main idea is small but regular improvements that ensure sustainable development and competitiveness. The authors consider the key aspects of kaizen costing to be the optimization of production processes in order to reduce costs, involving employees at all levels in the improvement process, the

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constant implementation of small changes to achieve a large effect, and reducing costs should not affect product quality. Thus, kaizen costing is not only a continuation, but also a logical development of the target costing system, ensuring a continuous process of improvement and competitiveness of enterprises in modern conditions. It has been proven that the combination of these two systems allows to create a continuous cycle of production cost management at all stages of the product life cycle. Target costing provides strategic cost control at the product design stage, while kaizen costing supports and increases efficiency at the production and operation stage. Integration of strategic and operational cost management: Target costing focuses on achieving long-term goals for competitiveness, and kaizen costing allows to adapt to changes in real time. The interaction of both systems guarantees the optimal balance between costs, quality and profitability. Kaizen costing allows enterprises to quickly adjust costs in accordance with changing market conditions, without going beyond the goals of target costing. Cost reduction occurs both through strategic planning and through continuous improvement of production processes. Products meet market expectations in terms of price, quality and innovation. Thanks to kaizen costing, costs are reduced at each stage of production, losses and defects are reduced. Involving employees in the kaizen costing process creates an atmosphere of cooperation and innovation. The combination of target costing and kaizen costing allows industrial enterprises to achieve stable financial results even in changing market conditions; increase consumer satisfaction by creating products that meet their expectations; ensure long-term business sustainability through more effective management of production resources.

Thus, the integration of these approaches is an effective way to achieve strategic and operational goals, increase competitiveness and sustainable development of industrial enterprises.

Conflicts of interest

The authors declare that they have no conflicts of interest in connection with the current study, including financial, personal, authorial or any other that could influence the research and results presented in this article.

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All data are available in the main text of the manuscript.

Use of artificial intelligence

The authors confirm that no artificial intelligence technologies were used in the creation of the current work.

References

1. Abate, Y. A., Mengesha, T. (2020). Factors Affecting the Successful Implementation of Kaizen in Ethiopia. The International Journal of Business & Management, 8 (1), 50–56. https://doi.org/10.24940/theijbm/2020/v8/i1/bm2001-019
2. Biadacz, R. (2024). Application of Kaizen and Kaizen Costing in SMEs. Production Engineering Archives, 30 (1), 17–35. https://doi.org/10.30657/pea.2024.30.2
3. Pererva, P., Ievsieiev, A., Maslak, M., Tkachov, M., Tkachova, N. (2024). Formation of intellectual property commercialization strategies. Eastern-European Journal of Enterprise Technologies, 1 (13 (127)), 80–91. https://doi.org/10.15587/1729-4061.2024.296836
4. Pererva, P., Nazarenko, S., Maistro, R., Danko, T., Doronina, M., Sokolova, L. (2021). The formation of economic and marketing prospects for the development of the market of information services. Eastern-European Journal of Enterprise Technologies, 6 (13 (114)), 6–16. https://doi.org/10.15587/1729-4061.2021.245251
5. Alosani, M. S., Al-Dhaafri, H. S. (2022). The integrated effect of Kaizen and innovation culture on the police performance: an empirical investigation. American Journal of Business, 37 (4), 153–172. https://doi.org/10.1108/ajb-02-2022-0024
6. Kaur, M. (2014). Kaizen Costing: A Catalyst for Change and Continuous Cost Improvement. GE–International Journal of Management Research, 2 (1), 1–16. Available at: https://www.academia.edu/42193192
7. Ramezani, A., Razmeh, A. (2014). Kaizen and Kaizen Costing. Academic Journal of Research in Business and Accounting, 2, 43–52.
8. Ariovaldo, G., Flavio, P., Gabriel, R. (2005). Target and kaizen costing in construction. 13th Annual Conference of the International Group for Lean Construction. Sydney. Available at: https://www.researchgate.net/publication/277948788_
9. Azimisani, A. (2021). Target-and-kaizen-costing. URL: https://www.researchgate.net/publication/353298584
10. Pererva, P., Kobielieva, T., Glisnuza, M., Ievsieieva, O., Doronina, M., Kosenko, A. (2024). Economic and Legal Problems of the Development of the Ukrainian Small Aviation Market and Ways to Solve Them. Transport Means 2024. Proceedings of the 28th International Scientific Conference. Kaunas: KTU, 787–792. https://doi.org/10.5755/e01.2351-7034.2024.p787-792
11. Gorodilov, M. A., Fetisova, O. A. (2015). Goal Costing-Cost of Products (Works, Services) Calculation Methods Based on Systems Target Costing and Kaizen Costing in Sphere of Information Technologies. International Business Management, 9 (5), 980–986. Available at: https://makhillpublications.co/view-article.php?doi=ibm.2015.980.986
12. Kachalay, V. V. (2013). Kaizen Costing: Experience and Prospects of Implementation at Industrial Enterprises of Ukraine. Biznes Inform, 8, 273–277. Available at: https://www.business-inform.net/export_pdf/business-inform-2013-8_0-pages-273_277.pdf
13. Spasić, K., Novićević Čečević, B., Antić, L. (2024). The impact of digitization of the cost accounting system on organizational efficiency and effectiveness in the healthcare sector of the Republic of Serbia. BizInfo Blace, 15 (2), 39–47. https://doi.org/10.5937/bizinfo2402039s
14. Pererva, P., Maslak, M. (2022). Commercialization of intellectual property objects in industrial enterprises. Problems and Perspectives in Management, 20 (3), 465–477. https://doi.org/10.21511/ppm.20(3).2022.37
15. Masadeh, A., Jrairah, T., Almasria, N. (2023). The Impact of Applying the Target Cost Approach on Products' Structure (Products Pricing, Development and Quality). International Journal of Professional Business Review, 8 (6), e02086. https://doi.org/10.26668/businessreview/2023.v8i6.2086
16. Maslak, M., Pererva, P. (2023). Formation of economic and legal measures for the development of the market of intellectual property objects. Eastern-European Journal of Enterprise Technologies, 1 (13 (121)), 113–124. https://doi.org/10.15587/1729-4061.2023.273850
17. Narsaiah, N. (2020). Application of Target Costing and Performance Analysis: Evidence from Indian Automobile Industry. Journal of Accounting Finance and Auditing Studies (JAFAS), 6 (3), 148–174. https://doi.org/10.32602/jafas.2020.022
18. Pererva, P., Besprozvannykh, O., Tiutlikova, V., Kovalova, V., Kudina, O., Dorokhov, O. (2019). Improvement of the Method for Selecting Innovation Projects on the Platform of Innovative Supermarket. TEM Journal, 454–461. https://doi.org/10.18421/tem82-19
19. Khoruzhy, L. I., Katkov, Y. N., Romanova, A. A. (2020). Use of target-costing and kaizen-costing to ensure effective cost management in interorganizational relations of agribusiness organizations. Buhuchet v Sel'skom Hozjajstve (Accounting in Agriculture), 11, 24–34. https://doi.org/10.33920/sel-11-2011-03
20. Pererva, P., Kobieliev, V., Maslak, M., Maslak, O., Kobielieva, A. (2022). Intellectual and Innovative Directions of Improving the Market Characteristics of Asynchronous Electric Motors. 2022 IEEE 4th International Conference on Modern Electrical and Energy System (MEES), 1–6. https://doi.org/10.1109/mees58014.2022.10005691
21. Gabriel, R., Ariovaldo, G. (2006). Target and kaizen costing implementation in construction. 14th Annual Conference of the International Group for Lean Construction. Santiago. Available at: https://www.researchgate.net/publication/237569619
22. Aqeel, S. M. (2021). The role of target costing in restructuring production costs to reach a competitive price: A case study in one of the Iraqi factories. Journal of Economics, Entrepreneurship and Law, 11 (1), 81–94. https://doi.org/10.18334/epp.11.1.111509
23. Brown, D. A., Booth, P., Giacobbe, F. (2004). Technological and organizational influences on the adoption of activity-based costing in Australia. Accounting & Finance, 44 (3), 329–356. https://doi.org/10.1111/j.1467-629x.2004.00118.x
24. Omotayo, T., Kulatunga, U., Awuzie, B. (2022). Modern Methods of Cost Control. Continuous Cost Improvement in Construction, 70–84. https://doi.org/10.1201/9781003176077-6
25. Omotayo, T., Kulatunga, U., Awuzie, B. (2022). Construction Cost Management Methods. Continuous Cost Improvement in Construction, 42–56. https://doi.org/10.1201/9781003176077-4
26. Terzi, A. (2021). A discussion on the problems and multi-dimensional reasons in target costing applications. Muhasebe ve Vergi Uygulamaları Dergisi, 14 (1), 363–396. https://doi.org/10.29067/muvu.643749

27. Maslak, M., Yakovenko, Y., Maslak, O., Pererva, P., Grishko, N. (2022). Problems of Intellectual Property in the Information Economy Through the Prism of Artificial Intelligence as a Dual-Purpose Technology. 2022 IEEE 4th International Conference on Modern Electrical and Energy System (MEES). Kremenchuk, 1–5. https://doi.org/10.1109/mees58014.2022.10005671
28. Pererva, P., Maslak, M., Nagy, S., Kosenko, O., Kobielieva, T.; Semenov, A., Yepifanova, I., Kajanová, J. (Eds.) (2024). Economic Assessment of Outsourcing of Intellectual and Information Technologies. Data-Centric Business and Applications. Cham: Springer, 147–186. https://doi.org/10.1007/978-3-031-54012-7_7
29. Singh, S., Kumar, M. (2014). Integration of Quality Function Deployment and Target Costing. Intern. Journal of Computer Applications, 16–19. Available at: https://www.researchgate.net/publication/304395289
30. Rattray, C. J., Lord, B. R., Shanahan, Y. P. (2007). Target costing in New Zealand manufacturing firms. Pacific Accounting Review, 19 (1), 68–83. https://doi.org/10.1108/01140580710754656
31. Egbuhuzor, C., Rumuolumeni, P. (2019). Target costing and value engineering. Available at: https://www.researchgate.net/publication/335224106_Target_costing_and_value_engineering
32. Sani, A. A. (2021). Target and Kaizen Costing. Available at: https://www.researchgate.net/publication/353298584
33. Pererva, P., Marchuk, L., Novik, I., Dolyna, I., Suslikov, S., Maistro, R. (2024). Study of the Theoretical and Methodological Essence of Transport Technologies. Transport Means 2024. Proceedings of the 28th International Scientific Conference. Kaunas: KTU, 137–142. https://doi.org/10.5755/e01.2351-7034.2024.p137-142
34. Arya, A. K., Choudhary, S. (2015). Assessing the application of Kaizen principles in Indian small-scale industry. International Journal of Lean Six Sigma, 6 (4), 369–396. https://doi.org/10.1108/ijlss-11-2014-0033
35. Kern, A., Soares, A., Formoso, C. (2006). Introducing Target Costing in Cost Planning and Control: a case study in a Brazilian Construction Firm. Construction in Developing Economies: New Issues and Challenges. Available at: https://www.researchgate.net/publication/335025726
36. Lueg, R. (2020). Target costin in electronics manufacturing – A case study. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3864422
37. Asiedu, Y., Gu, P. (1998). Product life cycle cost analysis: State of the art review. International Journal of Production Research, 36 (4), 883–908. https://doi.org/10.1080/002075498193444
38. Dhillon, B. S. (2009). Life Cycle Costing Fundamentals. CRC Press, 224. https://doi.org/10.1201/9781439816899
39. Kádárová, J., Kobulnický, J., Teplicka, K. (2015). Product Life Cycle Costing. Applied Mechanics and Materials, 816, 547–554. https://doi.org/10.4028/www.scientific.net/amm.816.547

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