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### SUSTAINABILITY OF THE COMPETITIVE POSITION OF ENGINEERING ENTERPRISES BY COSTS WHEN CHOOSING A CORPORATE CULTURE STRATEGY

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**Key words:**

multi-modular theory of elasticity, composite, shift module, matrix, fiber, torsion, relative torsion angle, terms of conditions.

The article is devoted to the stability of the competitive position of machine-building enterprises in terms of costs when choosing a strategy for the formation of corporate culture. It was found that the assessment of the competitiveness of machine-building enterprises in terms of costs is an important part of the analysis of the company's position in the market. It is established that if entrepreneurs allow the final consumer the same goods, the costs will be different, so the main reasons for the difference in production costs. The types of costs for obtaining finished products at machine-building enterprises are considered. It is pointed out that in all the costs of enterprises the largest share is occupied by the costs of production. It is found out that the cost of production determines the efficiency of the entire production process in enterprises. It is determined that in order to reduce costs at machine-building enterprises, unique competence is important, which is achieved as a result of long and effective work, in the future it becomes competitive and serves as a means of strengthening the competitive position. It is proved that the key positions are only those competencies that provide a strong competitive position to the company and the level of profitability above the industry average. It is substantiated that the unique competence of the enterprise becomes the basis for creating a strong competitive advantage. It is noted that the chances of success of the enterprise increase in the case when it has adequate and sufficiently competitive resources that fully provide a competitive advantage. The more cost and time it takes to reproduce a resource by competitors, the higher its competitive value. It is denied that all companies have weak competitively significant aspects, namely organizational problems, lack of assets, knowledge and resources. It was found that when developing a strategy it is necessary to take as a basis the resource on which the company will surpass competitors, ie unique experience, large reserves, strong competitive opportunities. The stability of the competitive position of machine-building enterprises is analyzed.

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### СТІЙКІСТЬ КОНКУРЕНТНОЇ ПОЗИЦІЇ ПІДПРИЄМСТВ МАШИНОБУДУВАННЯ ПО ВИТРАТАМ ПРИ ВИБОРІ СТРАТЕГІЇ КОРПОРАТИВНОЇ КУЛЬТУРИ

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**Ключові слова:**

стійкість, конкурентна позиція, стратегія, корпоративна культура, витрати, унікальна компетенція.

Статтю присвячено стійкості конкурентної позиції підприємств машинобудування по витратам при виборі стратегії формування корпоративної культури. Виявлено, що оцінка конкурентоздатності машинобудівних підприємств по витратам є важливою частиною аналізу положення підприємства на ринку. Установлено, що якщо підприємці дозволять кінцевому споживачеві однакові товари, то витрати в них будуть відрізнятися, тому сформовано основні причини різниці в витратах на виробництво. Розглянуто види витрат для отримання готової продукції на підприємствах машинобудування. Виокремлено, що в усіх витратах підприємств найбільшу

частку займають витрати на виробництво продукції. З'ясовано, що собівартість продукції визначає ефективність всього процесу виробництва на підприємствах. Визначено, що для зниження витрат на підприємствах машинобудування важливе значення має унікальна компетенція, яка досягається в результаті тривалої й ефективної роботи, в подальшому вона перетворюється в конкурентну спроможність й виступає засобом зміцнення конкурентної позиції. Доведено, що ключовими позиціями є тільки ті компетенції, що забезпечують міцну конкурентну позицію підприємству й рівень прибутковості вище середнього по галузі. Обґрунтовано, що унікальна компетенція підприємства стає базою для створення міцної конкурентної переваги. Відзначено, що шанси на успіх у підприємства збільшуються в тому випадку, коли воно володіє адекватними й достатньо конкурентно значущими ресурсами, які повністю забезпечують конкурентну перевагу. Чим більше витрат та часу необхідно для відтворення ресурсу конкурентами, тим вище його конкурентна цінність. Спростовано, що у всіх підприємств існують слабкі конкурентно значущі сторони, а саме організаційні проблеми, недостатність активів, знань, ресурсів. З'ясовано, що при розробці стратегії необхідно за основу брати ресурс на якому підприємство перевершить конкурентів, тобто унікальний досвід, великі резерви, потужні конкурентні можливості. Проаналізовано стійкість конкурентної позиції підприємств машинобудування.

### Statement of the problem

In modern engineering enterprises, the choice of corporate structure strategy is of great importance. Corporate culture significantly affects the development of new technologies in machine-building enterprises on the maneuvers of competitors, a sudden change in purchasing needs and unplanned increase or decrease in costs. The stability of the competitive position in terms of costs at machine-building enterprises significantly affects the choice of strategy in the formation of corporate culture, competitiveness, sustainability, efficiency, economic activity.

### Analysis of other researches and publications

The latest scientific research and publications on this topic are the following domestic and foreign scientists and specialists: Gonchar O.I. [1], Androsova O.F., Dubinina S.M. [2], Cherep A.V. [3], Thompson Jr., Arthur and Strickland [4], Koryugin A.V. [5], Krivov Yazuk I.V., Strilchuk R.M. [6], Popovich P.V. [7], Shkolnyk IO, Kremin V.M., Kozmenko S.M. [8], Chorna O.M. [9].

The scientific community has made a significant contribution through its research to address issues on such a topical issue, but the world's engineering companies are not standing still, they are constantly moving forward. New technologies are being mastered, new equipment is being introduced, new technologies are coming into force, new equipment is being introduced, innovative digital technologies and equipment are coming into operation, which contributes to the constant improvement of scientific issues and provisions on such topical issues.

### Objectives of the article

Investigate the reasons for the difference in production costs. Consider the types of costs for obtaining finished products when choosing a strategy for the formation of corporate culture. Justify the costs included in the cost of

production, analyze the stability of the competitive position of machine-building enterprises. Identify the impact of unique competence on cost reduction.

### The main material of the research

Assessing the competitiveness of machine-building enterprises in terms of costs is a very important part of the analysis of the situation of enterprises. If entrepreneurs allow the end consumer the same goods, the costs will always be different. This difference can be crucial for competition and can be explained by the following reasons:

- difference in prices for raw materials, components, energy and other materials purchased from suppliers;
  - differences in technology, different service life of equipment and production capacity.
- Due to the fact that competitors upgrade equipment and production capacity in different periods, the companies will differ in productivity and fixed costs. Older equipment has lower productivity, but if its installation or purchase is cheap for the owners, the company has the opportunity to compete on costs with more modern and expensive equipment:

- difference in production costs which is related to the difference in the level of productivity, effective training, experience, wages;
- various costs for marketing, advertising, promotion, condition of warehouses, administrative costs;
- various costs for transportation of materials and finished products, delivery of orders to customers;
- difference in sales costs (costs and surcharges of distributors of wholesalers and retailers for the delivery of goods from the manufacturer to the final consumer);
- difference in the sensitivity of competing companies to inflation, fluctuations in foreign exchange rates, changes in tax rates (processes familiar to global markets).

The higher the costs of machine-building enterprises in comparison with the costs of competitors, the more vulnerable

their competitive position. In order to remain competitive, engineering companies must maintain costs at about the same level as competitors. A small difference in costs is possible under conditions of great differentiation. The vulnerability of engineering companies with very high costs will increase with the difference in costs between them and competitors.

Current expenses or the cost of industrial production – is the total cost of the enterprise in terms of money for production and marketing. Production costs have different directions, they are divided into investment and current (operating), closely related to the manufacture of products (services).

For finished products operating costs are required, they events – lyayutsya into cyclic and continuous. With each cycle, the cyclic costs of product production are repeated (costs for basic and auxiliary materials, tools, manufacturers' salaries, technological, energy costs, etc.). Safety of – the continuous costs are considered fixed costs regardless of production (maintenance of premises, facilities, equipment, administrative staff).

During its activity the company provides material and financial costs, using a simple and expanded production assets and OBO – of company assets, production and marketing, Social Development SVO – second team, and more. For general performance evaluation under – enterprises' is crucial monetary estimate of costs, because it expresses the value of products (services).

In the mechanical engineering sector in the production of differentiated costs which form of cost – control in a certain period, the actual cash payments. Some related sobivar – dough products, others – a payment for the acquisition of factors of production, excluding the time of their use. External turnover and payroll servicing – tion actual cash payments.

All costs of the company occupy the largest share of spending on production products. The production cost of products set up production costs, which shows which value obho – ditsya company to manufacture marketable products. Generally, the cost of production – a value (monetary) evaluation of the cost of preparing the production, manufacture and marketing of products .

Among the most important indicators of robo – you owned enterprise production costs. It determines the efficiency of the entire production process at the plant, as it reflected: the level of organization of the production – the first process, the technical level of labor productivity, the share of expenditures on production for individual articles and other elements of cost of production of – control. Cost serves as an indicator for monitoring the use of production resources, determining the economic efficiency of organizational and technical measures, setting prices for products. There is a close relationship between the cost of production and economic calculation. Reducing the cost of production under conditions of self-financing is the main source of growth of the company's profit. Reimbursement enterprises through cost that ensures simple reproduction of all factors of production, objects and means of labor, robo – Choi forces of natural resources.

In this regard, the cost of production includes the following costs:

- to conduct market research to identify the need for a particular type of product;
- organization and preparation for the development of new products;
- the organization of production, including all the costs of raw materials, heat and electricity, depreciation of fixed assets and intangible assets, payroll personnel;
- maintenance and management of production personnel;
- sale of products (packaging, transportation, advertising, information security expenses);
- exploration, use and protection of natural resources (geological – Reconnaissance work, fees for water, timber, land reclamation, protection of air and water basins);
- organization of education and training;
- current rationalization of production (improvement of production equipment and technology, labor organization, product quality).

In mechanical engineering in practice there are production costs that are included in the cost – bivartist and production volumes, it is not always possible to predict because they have no direct connection with the production. These include: payment time previous individual by employees of public duties, parliamentary powers, payment of reduced working hours adolescent mothers of small children, according to the current legislation .

Grouping costs used in industries for economic – their elements, which are synthesis and these include: raw materials and basic materials (including components and semi-finished products); auxiliary materials; fuel; energy (thermal and electric); wages (basic and additional); social security contributions; depreciation of fixed assets; other monetary expenses.

Cost only primary for the entire resources included in each item. Usually are used – vyut group of current expenditure on economic performance elements for linking the cost with other sections of the plan (reports) enterprises, payroll, financial plan, plan logistics; to identify and analyze the structure of cost – bivartosti at all levels of management; for classifying businesses and ha – luzey to material- , for fuel , energy , fondo- and time-consuming, which is of particular importance to issues of allocation taking into account the availability of resources provided for use in the production and specifically have an impact on its cost.

To calculate the unit cost of production, the classification of costs by costing items is used . This typical grouping of costs by items of use is used in practice: raw materials and supplies; waste return (calculated from basic materials); fuel and energy for technological purposes; basic and additional wages of workers employed directly in production; deductions for social insurance – tion; costs for preparation and development of production; shop costs (expenses); equipment maintenance and operation costs ; zahalnoza – Votic costs; losses from marriage; other production costs; nevyrob – nychi costs.

Craft costs constitute the first eight articles production (by – Votic) cost – the first eleven. All articles together constitute the full cost of production.

This classification costs under allows to determine the degree of influence separately – IIR factors on formation costs and which areas should seek ways to reduce it.

Costs are further classified according to the degree of homogeneity costs about way – calculation per unit and coupled with the volume of production.

Unique competence is important for engineering companies to reduce costs.

Competence is a high professionalism in one or another type of enterprise activity, which is achieved as a result of long-term training and accumulation of experience.

The competence of the enterprise does not appear by itself, but is achieved by conscious effort, as a result of long and effective work, a prerequisite for which is the selection of staff with the necessary knowledge and skills and the organization of teamwork to achieve high productivity. Having accumulated enough experience, the company moves to a higher level of quality at the same cost; so knowledge and experience are transformed into true competence. Examples of the company's competence are experience in the organization of trade and promotion, the art of successfully choosing the location of outlets, skills of supply management system "just in time". Given the complex nature of such activities, competence – is not just the accumulated knowledge and experience, but a set of skills, knowledge, know-how, resources and technologies of individual departments and functional areas of the enterprise. The competence of the enterprise is transformed into competitiveness when it is noticed by consumers, ie it becomes a differentiating feature of the enterprise and a means of strengthening the competitive position. Not all competitive opportunities are equal: some ensure only the survival of the enterprise, as approximately equally characteristic of all major competitors, while others form the basis of competition policy due to its uniqueness, specificity and great value in the eyes of consumers. The enterprise can be represented as a set of competitive opportunities, part of the mediocre, part of the clear and creating a competitive advantage.

One of the most valuable resources of the enterprise is high efficiency in competitively significant activities. Competitively significant activities in which the company has achieved maximum efficiency are called key (basic) competencies. The company may have extensive experience in many activities, but the key can be called only those competencies that provide a strong competitive position to the company and the level of profitability above the industry average. Key competencies include: creation of computer networks and e-commerce systems, development of innovative products, quality after-sales service, production of high quality products, experience in combining technologies to create fundamentally new types of products.

Businesses rarely have key competencies in more than two or three activities. In general, the key competence ensures the competitiveness of the enterprise and is therefore the most important of its strengths and the main resource. Most often, the key competence of the enterprise is related to intangible assets, in particular, personnel and intellectual potential.

Almost every company has at least one competitively significant activity in which it has been successful enough to consider it its key competence. The key competencies of almost all retailers include commodity science and sales

organization; however, we can list many companies that have built their strategy on this competence and those who lost as a result of a collision with a competitor whose competence in this area was higher. Thus, a key competence provides a competitive advantage only if it is also unique. It is possible to determine whether a company has a unique or basic competence by comparing it with a similar competence of competitors. Competence is considered unique, in which the company clearly outperforms its competitors.

The unique competence of the enterprise becomes the basis for creating a strong competitive advantage.

Achieving competitive advantage is simplified if the company has unique competence in competitively significant activities, if competitors do not have similar or offsetting competence and its acquisition is associated with significant financial and time costs. Ideally, unique competence ensures the company's success – unless competitors mobilize more powerful resources to neutralize it.

No two companies have the same set of resources, so each company has its own unique set of strengths and weaknesses. Differences in the composition of the resource base determine the differences in profitability and efficiency of the enterprise. The chances of success increase if the company has adequate and sufficient competitively significant resources, which especially provide a competitive advantage. A resource creates a lasting competitive advantage if it meets four criteria.

Difficulty reproducing. The more cost and time required to reproduce a resource by competitors, the higher its competitive value. The difficult reproducibility of the resource can be explained by its uniqueness (exceptionally good location of real estate, patent protection), capital intensity (for the construction of a new plant for the production of chips with record low costs), or significant time (reputation, brand strength, technology).

Duration of use. The longer the period of possible operation of the resource, the higher its value. Some resources are rapidly depreciating due to rapidly evolving technologies or changing conditions in the industry.

Resource advantage. It is impossible to secure a dominant position in the market once and for all due to the uniqueness of a key competency or a stronger brand.

Resistance to neutralization. Many commercial airlines have succeeded due to the availability of resources and opportunities to organize convenient, reliable and safe air transportation with a wide variety of additional services.

Only a few companies have first-class competitive resources, most often recognized industry leaders or lucky newcomers, and most companies do not have significant competitive resources, especially those that would meet all four of these criteria. A common phenomenon is a heterogeneous set of resources, one or two of which are really significant, and the value of others ranges from medium to low. In addition, almost all companies have weak competitors, including organizational problems or lack of assets, knowledge and resources.

When developing a strategy should rely on a resource in which the company outperforms competitors, whether it is unique experience, significant reserves or strong competitive opportunities.



The lack of a first-class competitive resource does not mean that it is impossible to achieve a competitive advantage. Sometimes companies show amazing competitive viability and even advantage due to a successful combination of resources, the value of which ranges from medium to low.

The stability of the competitive position of machine-building enterprises in terms of costs is the basis for cost analysis.

Consider the stability of the competitive position of machine-building enterprises in terms of costs (calculation data in Table 1 ).

The cost analysis of PJSC “Zaporizhzhya Heavy Crane Plant” is summarized in table. 1 The dynamics of administrative costs and marketing costs are shown in Fig. 1. According to the cost analysis table. 1 at the enterprise PJSC “Zaporizhzhya plant of heavy crane construction” administrative expenses in 2013 amounted to 146.14%, in 2014 there was a slight decrease – 145.12%, but in 2015 they increased by 173.64%; in 2016, the company reduced administrative expenses by 119.37%. Sales costs increased in 2014 – 175.86%; in 2015 – 122.42%; the decrease in costs occurred in 2013 – 108.32%, in 2016 – 110.27% compared to 2017. Financial costs tended to increase in 2013 – 33.80%, in 2014 by 278, 17%, in 2016 at 44.24%. The increase in costs had a negative impact on the financial condition of the enterprise and competitiveness.

According to table. 1 cost analysis of PJSC “Motor Sich”, consider in table. 2 , in fig. 2 track the dynamics of costs of PJSC “Motor Sich”.

Based on the data in table. 2 cost analysis of PJSC “Motor Sich” for the period under review was: administrative costs decreased, so in 2013 they amounted to 44%, in 2014 decreased by 29.1%; in 2016 by 27.8%, which positively characterizes the company’s policy to reduce costs. Sales costs also tended to decrease, namely: in 2013 they amounted to 60.8%, in 2014 there was a decrease of 48%, in 2015 there was a decrease of 37.7%; in 2016 they decreased by 34.8% compared to 2017. Financial expenses in 2013 amounted to 174.8%, in 2014 there was a gradual decrease, they amounted to 78.6%, in 2015 decreased and corresponded to 55 .7%; in 2016 there was a decrease of 29.3%. Such actions to reduce costs at the enterprise have a positive effect on the competitiveness of the enterprise.

### Conclusions

The stability of the competitive position of machine-building enterprises in terms of costs when choosing a strategy for the formation of corporate culture depends mainly on the re sources of the enterprise and competencies: basic, unique. Costs play an important role in assessing the competitiveness of machine-building enterprises. Substantiation and choice of cost reduction strategy at

Table 1 – Cost analysis of PJSC “Zaporizhzhya Heavy Crane Plant”

Costs	Period					Deviation ( $\pm$ ) 2017 from			
	2013	2014	2015	2016	2017	2013	2014	2015	2016
Administrative expenses	14130	14229	11892	17298	20649	6519	6420	8757	3351
Selling expenses	7390	4573	6569	7293	8042	652	3469	1473	749
Other operating expenses	18159	70217	41363	12294	9091	-9068	-61126	-32272	-3203
Financial expenses	19211	4613	47041	29006	12832	-6379	8219	-34209	-16174
Other expenses	29847	203040	173743	56789	108144	78297	-94896	-65599	51355
Expenses (income) from income tax	-8076	-5144	-7052	-7695	-2462	5614	2682	4590	5233

Note: built by the author on the basis of (Official site of PJSC “Zaporizhzhya heavy crane plant”)

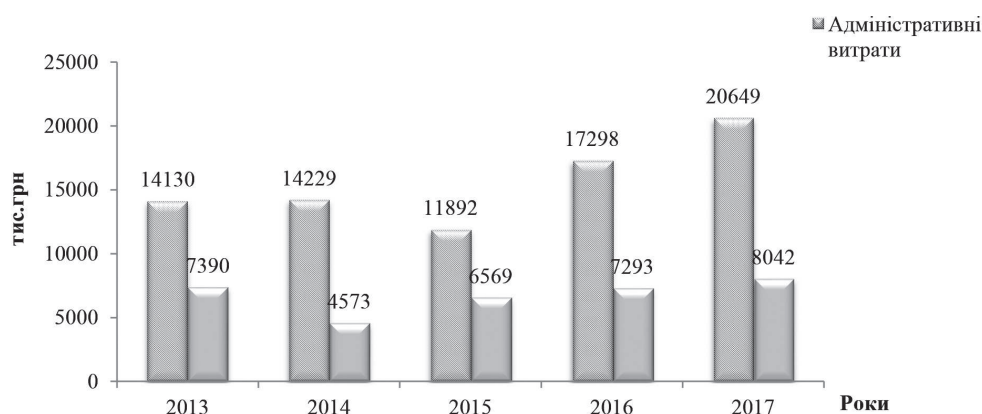


Fig. 1. Dynamics of administrative costs and marketing costs of PJSC “Zaporizhzhya Heavy Crane Plant”

Note: built by the author on the basis of table. 1

Table 2 – Cost analysis of PJSC “Motor Sich”

Costs	Period					Deviation ( $\pm$ ) 2017 from			
	2013	2014	2015	2016	2017	2013	2014	2015	2016
Administrative costs	657976	774110	997093	1041515	289658	-368318	-484452	-707435	-751857
Selling expenses	446726	565950	804270	779587	271439	-175287	-294511	-532831	-508148
Other operating expenses	5978638	7781602	11760076	11027717	2168927	-3809711	-5612675	-9591149	-8858790
Financial expenses	31898	70923	100003	190164	55756	23858	-15167	-44247	-134408
Other expenses	199029	1465816	1634929	893075	31850	-167179	-1433966	-1603079	-861225
Losses from equity participation	2827	619	1680	1	-	-2827	-619	-1680	-1
Expenses (income) from income tax	2063549	2306857	1193749	709587	25181	-2038368	-2281676	-1168568	-684406

Note: built by the author on the basis of (Official site of PJSC “Motor Sich”)

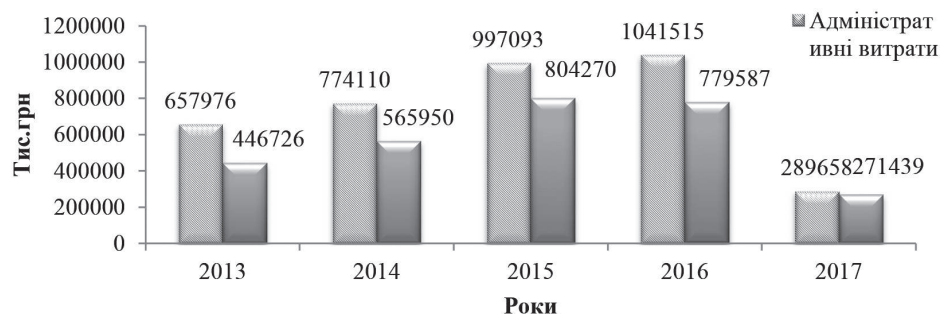


Fig. 2. Dynamics of administrative costs and marketing costs of PJSC “Motor Sich”

Note: built by the author on the basis of table. 2

machine-building enterprises requires a comprehensive approach to this problem, which includes: meeting the personal and social needs of workers, improving production capacity in the country and at enterprises, infrastructure development – science, management, planning; complex

economical use of natural resource potential and restoration of the natural environment in the process of production activity at machine – building enterprises. Such actions will have a positive effect on reducing the costs of enterprises, increase the level of competitiveness and corporate culture.

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