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Improving the Efficiency of the Company's Activities while Optimizing Auxiliary Business Processes

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ABSTRACT

The directions of improving the efficiency of economic work and operational efficiency of the company in modern conditions are gradually shifting from the predominant assessment of the main activities to a complex analysis, including auxiliary and non-systemic processes. Such a shift is based on innovative management approaches formed within the framework of the individual functioning of individual commercial organizations, the application of which is complicated by the lack of proven and reasonable ways to optimize activities and increase operational efficiency. The purpose of the study is to identify standardized opportunities to improve the efficiency of the functioning of commercial enterprises based on the use of auxiliary reserves for business processes. The relevance of the topic is determined by the need to develop solutions that provide additional economic benefits to organizations interested in this. The object of the article was to select the activity of private economic organizations from the sphere of transport services, and its subject was their resource base as a reserve for increasing the efficiency of work. Methods of econometric and statistical analysis and modeling, theoretical formulation of promising development directions was used as tools. The results of the article showed the importance of improving operational efficiency to achieve the final financial result of a commercial organization. The development and analysis of optimization solutions aimed at the development and functioning of the company within the framework of orientation to sustainable development were carried out, the negative impact of certain aspects of ESG transformation on the final result of a commercial enterprise was assessed. The economic result of the introduction of the author's conclusions and recommendations into the workflow of a particular organization was an increase in the effectiveness of its activities.

***Keywords*:** commercial companies; business processes; operational efficiency; reserves; optimization; economic activity; management; ESG

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INTRODUCTION

In today's unstable business environment, the efficiency of the company is determined by its ability to quickly adapt to changes in economic realities combined with the maximum use of internal resources. The activities of a business organization within a market system (both country and international) also depend on a qualitative and integrated definition of the strategy formed by dependent business units. In the conditions of competitive activity, the companies are interested in identifying all resources capable of influencing the preservation and strengthening of competitive advantages and control in the course of economic relations.

According to the typologization of management approaches M. Porter to achieve leadership in this case is allowed in the following areas:

- establish a cost leadership strategy;
- define a strategy for broad differentiation;
- adopt a focused low-cost strategy;
- define a focused differentiation strategy [1].

The experience of organizations during the COVID-19 pandemic has shown that applying differentiation strategies during the period of decline in the income of the main consumer category is rather high risk. Striving to reduce costs while maintaining the same acceptable level of consumer characteristics of the goods and services requested by customers, leads to unpreparedness to switch to those with fundamentally new and distinctive characteristics.[1]

The reduction of production and business activities and the increase in the number of bankruptcies of commercial organizations present a potential opportunity to attract new audience of users (consumers) [2]. In such circumstances, American researchers believe that the cost leadership approach is appropriate, attracting new and keeping old consumers at low prices (as a consequence of lower costs) [3].

R. Grant took a similar approach to identifying sources of efficiency improvement, considering the resources of the organization from the perspective of searching for strategic gaps [4]. Similar research views have been noted by D.J. Collis and S.A. Montgomery, which focus on strategic decisions capable of obtaining sustainable competitive advantages based on company resources [5]. Detailed search of strategic gaps and competitive advantages present in both main and auxiliary business processes is recommended to be conducted on the basis of value chains (M. Porter), decomposing business processes.

Approach to achieving cost leadership and understanding of theoretical proposals of M. Porter, R. Grant and other researchers, leading to the search for the most favorable management solutions aimed at increasing operational efficiency, organization, activity and determination of its additional reserves.

In order to create such solutions, companies involve internal and external experts (approach proposed by a number of Chinese researchers) [6]. Within the existing economic system, in fact, lack of developed application and universal type proposals for the development of corporate activities by optimizing business support processes and resulting operational efficiencies, as these are often considered to be a business advantage of the company and are not disclosed [7].

Research aimed at identifying standardized solutions to identify hidden performance-enhancing resources, conducted on the basis of generalization and analysis of economic-management approaches, implemented and tested on the basis of the enterprise

[1] Research on the impact of the COVID-19 pandemic on Russian business. Marketing Agency RBC, SAP. Analytical compilation. RBC Moscow; 2020. 49 p.

"X" (next — the company "X"), organizing transportations in Moscow and the Moscow region.

According to the results of economic activity in 2020 the management of the company "X" has decided on the need to improve the activity in the conditions of the increasing epidemiological situation and the fall of consumer demand. For this purpose, the authors of the article as an external expert were invited to analyze the functioning of the structural business units of the organization and propose ways to optimize it on the basis of available reserves. The objectives of the research were:

- identification of compliance of the mission and values of the company "X" with the results of its work;
- identifying efficiency improve the effectiveness based on an analysis of its activities;
- development of directions of optimization of functioning of the company "X", corresponding to its mission and values;
- implementation results of the work into the business process and assessing its importance.

SOURCES OF INCREASE OF EFFICIENCY OF THE COMPANY

Basics of functioning of the company depend on the use of high-quality strategic opportunities, which, for commercial organizations, appear as meeting the minimum competitive requirements the existence of core competencies (activities and resource management processes).

- Efficiency, in this case also a strategic opportunity for the organization, is expressed in:
- company experience;
- value of resources used and supplies;
- efficiency of resource use;
- level of load production capacity;
- technical feasibility of the activity to the required standards [8].

The combination of these factors, which constitute the potential business development environment, together with sustainable strategic planning and systemic analysis of the company's performance, allows to make the right scale decisions and, as a result, systematically increase the value of the enterprise by obtaining a positive financial result.

The scheme reflecting the conditions necessary for sustainable business growth is presented at *fig. 1*.

This scheme reflects the organization of the main activity of the company, which consists in increasing the value of the business (creation of new capital), directed to search for new, unique ways of its development. At the same time, increased efficiency of work at the expense of resources and capabilities allows the economic entity (producer of goods or services) to increase its importance within the economic system and increase its market share.

Business enterprises have an interest in a favourable domestic environment for such growth, with maximized use of the following reserves:

- full involvement of employees in the labor process;
- reduce the use of resources to ensure that staff are on the job;
- the ability of employees to quickly and independently master innovative software and technical complexes;
- absence of costs due to inefficient inter-office interaction;
- no illegal expenses (theft) of materials and property of the organization.

Attempts to comply with these conditions are limited to the search for "strategic breaks" in the work of the company, which can be combined into 3 main categories:

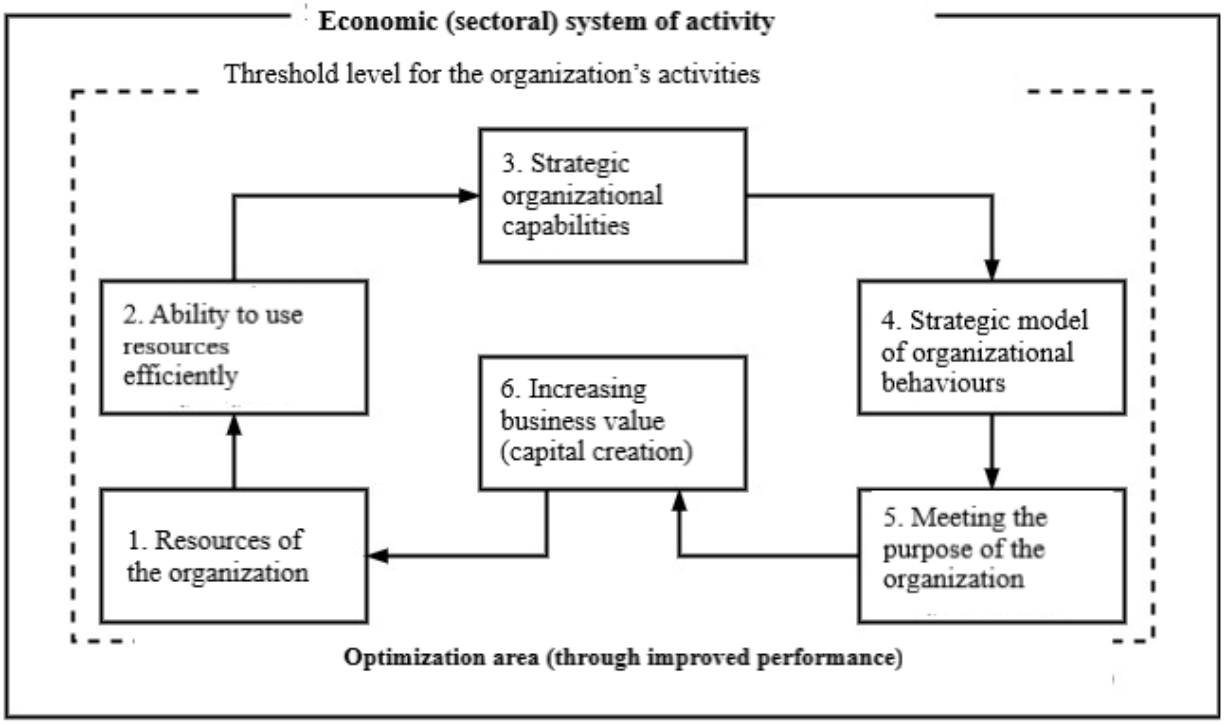

Fig. 1. **The scheme of using the resources and capabilities of the organization**

Source: developed by the authors based on [4].

• material costs (direct use of material resources of the company in the implementation of the work process);

• labour costs (reduction in the staff member's real time at work and consequent reduction in his or her productivity);

• illegal expenses (expressed in unjustified expenditure of resources of the organization for the purpose of profit: own or benefit of others).

Eliminating such «gaps» improves the quality of the organization's activities.

ANALYSIS OF THE COMPANY'S KEY ACTIVITIES "X"

During the preparation of the recommendations for the development of the company "X", management decisions contributing to the reduction of its operating costs were given priority and, accordingly, which reduce to "threshold level of opportunities" [9], to increase the market share in the competition and to redirect resources to the creation of additional capital (increasing its size within the "economic [sectoral] system") (*fig. 1*).

In order to determine the reserves of the functioning of this organization, which can be used to increase efficiency, an analysis of the status of its business processes was conducted.

Brief description of the company "X" at the beginning of 2021:

• main activities: organization of road freight transportation;

• organizational and legal form: limited liability company (LLC);

• company size according to Russian classification: average enterprise;

• main activity region: Moscow region;

• revenue from sales for the year 423 mln rub.;

• net profit for the year 10.6 mln rub.;

• staff — average annual number of 106 people;

• managerial staff — 23 people;
balance currency — 770 mln rub.

Company "X" specializes in providing logistics, forwarding and organizational services for the delivery of goods by road. Its main operational process is carried out in the office through the functioning of:

• marketing department (sales);
• department for claim work;
• legal service;
• financial department (including accounting);
• household department;
• call-center (external communication and information services);
• digitization services.

Until 2020, the company abandoned a number of non-operational activities related to cleaning of premises, courier deliveries and transportation movement (services of personal drivers), by outsourcing them. Such a decision in the past has already allowed the enterprise to reduce the cost of its operation by 6.5% per year.

The company's values are aimed at implementing sustainable development activities and ESG [10].[2] Mission, the implementation of which management strives to ensure sustainable business growth through the provision of quality and efficient services to clients.

ENSURING THE EFFICIENCY OF "X" COMPANY

Sustainable development is accepted by company "X" as a priority way of business formation within the framework of state and international policy [11].

Solutions are also attractive for other organizations, advanced within the framework of ESG-development in this case — economic actors.

[2] ESG (environment, social, governance) — environmental factors, social responsibility and corporate governance, respectively.

Sustainable development should be assessed within the framework of a comprehensive qualitative analysis.

On *fig. 2* shows how certain aspects of the ESG-segment as additional factors (marked with dotted lines) interact with each other and affect the end result of the organization's work — capital change: these factors affect the integrated functioning, ensuring compliance with the objective — improve performance.

Optimization solution for the company "X", from the model on *fig. 2*, was based on the following principles:

• it should lead to improved performance, expressed in positive change in capital and financial result;
• the cost of its implementation cannot exceed the profit that the company can additionally derive from the optimization (the profit of the organization for 6 months corresponding to the implementation period was taken into account);
• its application should improve the quality of process administration (management);
• the results of its implementation are aimed at increasing the interest of employees in the economic process and improving their working conditions;
• it is designed to have a positive impact on the environment (ecology).

That is, following these principles is a condition for qualitative improvement of the company's activities within the framework of the system functioning of business processes when using existing reserves.

IDENTIFICATION OF RESERVES OF INCREASE OF EFFICIENCY OF ACTIVITY OF "X" COMPANY

According to the management of "X" the main volume of expenditures by categories of "strategic breaks" was on material and labor expenses (see section "Sources of improvement of efficiency of the company").

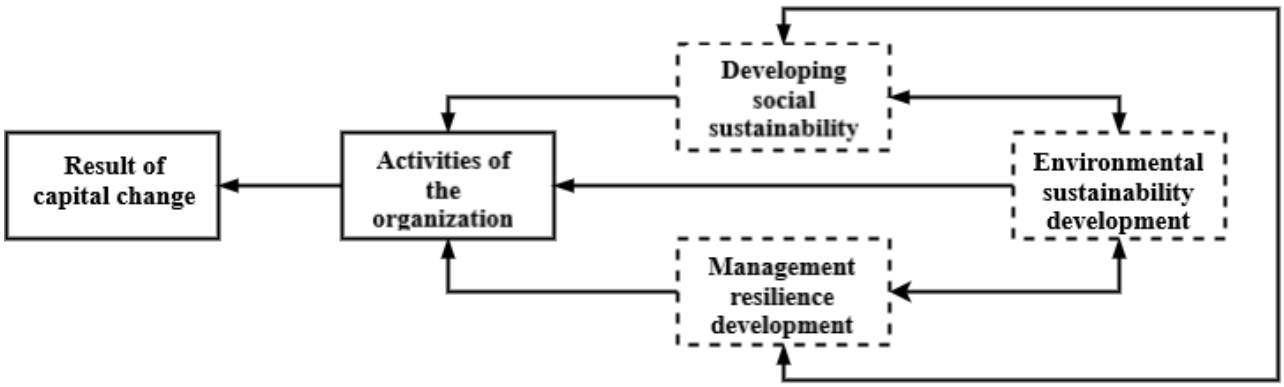

Fig. 2. **The model of the impact of ESG activities on the result of capital changes**

Source: developed by the authors based on [11].

The assessment of the enterprise management of various types of costs that need to be optimized is given in the *table 1*.

As the company did not keep records of the cost presented in the *table 1* cost per individual offices and staff member, caused by illegal activities, proved difficult. Management to simplify activities took into account that staff members did not embezzle the assets of the organization.

The estimate of material costs was based on accounting procurement data and was therefore the most accurate.

Food products, rental and service of office and warehouse costs have a reputation for the organization and are expressed in providing a comfortable environment for employees (one of the principles ESG), they were therefore not included in the analysis.

Cost of stationery as determined by retrospective analysis (based on 7-year quarterly data), were compared to the cost of purchasing paper products by calculating the correlation value of the formula (1):

$$r_{xy} = \frac{\overline{yx} - \overline{y} \times \overline{x}}{\sigma_x \sigma_y}, \quad (1)$$

where x — percentage of office paper costs of operating costs (explanatory variable);

y — percentage of office supplies costs (paper excluded) of operating costs (explained variable);

$\overline{x}$ и $\overline{y}$ — average values x and y by sample respectively;

$\overline{xy}$ — average value of products of cost categories;

σ_x and σ_y — standard deviation of cost categories x and y by sample, respectively.

The calculated correlation is 0.916, indicating a close and almost direct relationship between cost categories. Consequently, the percentage of paper costs (as an explanatory factor) can be used to determine the percentage of office supplies costs (an explanatory factor).

In order to determine the most favorable econometric model, the data were checked by Goldfeld-Quandt tests[3] and Darbin-Watson (their homoskedability and lack of autocorrelation of residues were recognized).[4]

[3] Goldfeld-Quandt test (GQ) is based on an assessment of the random (unexplained) perturbation of the remnants of the data array, allowing to test the hypothesis of their homoskedability (homogeneity) or heteroskedability (heterogeneity).

[4] Darbin-Watson test (DW) is used to test the Gauss-Markov theorem for the absence or presence of autocorrelation (relationship) of residues. This econometric analysis method makes it possible to determine the interval boundaries on which covariance (measure of dependence) of their values is observed or absent.

Table 1

Resources to improve company "X" from the point of view by cost category

No.	Category	Cost	Cost management estimate (annual averages,% of cost)
1	Material costs	Office supplies costs (excluding office paper)	Up to 0.20
2		Office paper costs	Up to 1.55
3		Food costs (coffee, cream, tea, sugar, water)	Up to 0.15
4		Cartridge refilling costs (toners)	Up to 2.00
5		Cost of service and rental of office and storage space	Up to 25.00
6	Labour costs	Actual labour costs (including labour taxes and fees)	Up to 22.00
7		including labour costs due to inefficient organization of activities (costs of design, printing and preparing of paper documents)	No cost
8		including costs associated with limited software packages	No cost
9	Costs caused by illegal activities	Appropriation and personal use of office supplies (excluding office paper)	No cost
10		Appropriation and personal use of office paper by employees	No cost
11	Costs caused by illegal activities	Personal appropriation and use of refilling (replacement) cartridge, printers	No cost
12		Office food appropriation	No cost

Source: by the author on the basis of expert data collection.

And then the relationship between the indicators is evaluated using linear, polynomial (second-degree polynomial), degree, logarithmic and exponential models.

The exponential model with the formula was chosen as the most favourable (based on the highest determination coefficient of 0.839) (2):

$$y = 0{,}0714 \times e^{0{,}5327 \times x}, \quad (2)$$

where $e^{0{,}5327 \times x}$ — exponential value in degree $0{,}5327 \times x$.

The graph of this model is shown at *fig. 3*.

This model explained the cost of related materials used in business activities and gave the management of the organization the basis

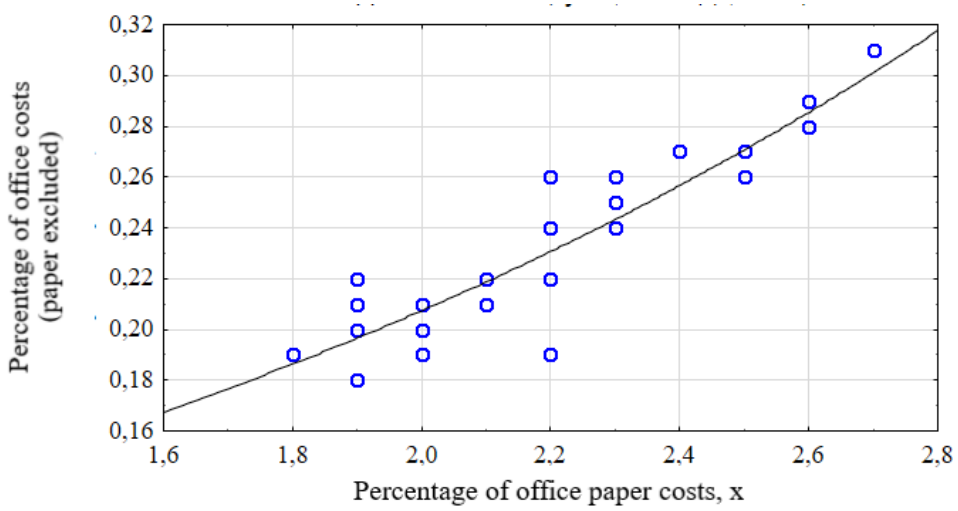

Fig. 3. **Logarithmic model of the dependence of office expenses on paper consumption**

Source: compiled by the authors.

to check the use of resources in the future. Since management personnel believed that the cost of replacing and refueling toners and cartridges was also economically related to the cost of purchasing paper, calculations were made.

When calculating the correlation coefficient for formula (1), the following parameters were selected:

x — percentage of office paper costs of operating costs (explanatory variable);

y — percentage of cost of replacement and refilling of cartridges and toners (explained variable).

A correlation coefficient of 0.543 was obtained from similar calculations, which indicates that there is an average correlation and does not allow the creation of qualitative regression models.

Data for model construction proved to be heteroskedatic.

Company "X" avoided long-term crisis situations, reorganizations and other events during the seven-year period under consideration, can significantly influence the cost of printer accessories and multifunctional devices (MD), comparison data of office paper and cartridge and toner usage. The network memory of printed devices did not store information on the periods prior to the last 3 months (they were subsequently applied to determine the percentage of printouts of a particular device and to count daily transactions), that is why we used the information about the decommissioning of cartridges and toners from the warehouse of "X" (pcs.) and reserve of their printing[5] (in the number of sheets) on the basis of which the formula (3) was derived:

$$S_t = \sum_{i=1}^{n} ((R_i - \beta_i - \xi_0 - \xi_1) \times f_i^t), \qquad (3)$$

where t — time period (certain calendar year);

S_t — total office paper consumed by all printers per year t;

i — indicator reflecting the printing device model;

n — the number of the last model of the printing device (in the company "X" is 4);

R_i — resource of cartridge or toner model in

[5] The printing reserve refers to the difference between the actual printing of office paper and the average value of sheets printed by one cartridge.

Table 2

Comparison of normative and actual paper costs based on company "X" printing data

Year	Normative paper costs calculated on the basis of formula (3), (sheets, pcs.)	Normative paper costs, based on column data 2 (packs of 500 sheets, pcs.)	Actual expenditure of paper cancellation from stock (sheets, pcs.)	Actual paper expenditure, based on column 4 of the table, (packets of 500 sheets, pcs.)	Excess of normative costs of paper, over actually written off, %
1	2	3	4	5	6
2017	845 500	1691	364 500	729	131.962
2018	795 000	1590	373 000	746	113.137
2019	825 000	1650	382 500	765	115.686
2020	705 000	1410	321 500	643	119.285
2021*	815 000	1630	369 500	739	120.568

Source: compiled by the author on the basis of the accounting data of company "X".

Note: * – forecast data estimated by the company.

sheets of office paper, declared by the cartridge manufacturer;

β_i — average error value of refilling of the cartridge or toner model by the manufacturer (from 1.5 to 3%);

ξ_0 — average error value of underuse of the cartridge or toner model, obtained on the basis of data of the household department of the company "X" (оценена в 3% от ресурса картриджа и тонера);

ξ_1 — average value of sheets of paper not used for printing (and for technical installations and manual records), obtained on the basis of analysis of expenses of office paper by "X" (estimated at 4.5% of total paper consumption);

f_i^t — number of cartridges of the given model, written off from the warehouse of the company for a certain year *t*.

The data obtained on the basis of calculations on the formula (3) were compared with the results of consumption of office paper on the basis of information from the accounting system of the company "X" (*table 2*).

Presented in the *table 2* data show a significant excess (more than 110%) of standard costs of paper for printing (based on information on the write-off of cartridges and toners) over actual write-offs. As the management of the household department of the company "X", which accounts for the write-off of materials, could not explain these discrepancies, the authors have admitted that the excess of write-offs can be attributed to the category "costs caused by illegal actions of employees" (*table 1*). At the same time, the cost of actually spent paper according to the data of the use of property in 2021 amounted to 202 766 rub. (based on the information about the purchase of paper).

A comparison of the value of cartridges and toners was made to verify and analyse the approval:

- it actually purchased and written-off by the organization (according to the accounting system);
- used for printing on discarded paper [based on assumptions β_i, ξ_0, ξ_1 formula at (3)].

To correctly calculate the cost of the latter, the formula was derived and applied (4):

$$P_t = \sum_{a=1}^{m} \left(\frac{(Q_t - \xi_1) \times \frac{E_a}{\sum_{a=1}^{m} E_a}}{R} \times c_a \right), \quad (4)$$

where P_t — amount spent on replacement of cartridges and toners used for printing by company "X" for a given year t;

a — footprint symbolizing the specific printing device of company "X";

m — total number of printing devices (in the company "X" equals 32);

Q_t — total office paper consumed by all printers during the period (is shown in column 4 in *table 2*);

E_a — number of documents printed on a specific printer (MD), calculated on web-based office paper consumption by printing devices;

c_a — cost of replacement of cartridge or toner for specific model, based on data from dealers;

$\frac{E_a}{\sum_{a=1}^{n} E_a}$ — share based on 3month network printing data; (was accepted as a constant value for a specific device according to the data of the household department of the company "X" on the uniform loading of printers).

The results of calculations carried out under formula (4) are presented in *table 3*.

The sum of the values in column 4 indicates a loss of 1 316 690 rub. for 5 years due to the lack of effective control over the expenditure of material resources, which is 1.84% of the organization's net profit in 2020.

According to preliminary data on net profit for 2021, similar illegal write-offs are forecast at 2.03%.

Paper, cartridge and toner consuming process is subsidiary and supporting for individual business processes, but it is present in all companies and creates (with inadequate accounting) opportunities for illegal actions of staff. The results of the calculations show that the cost reduction reserves at the optimization of operating activities can be significant for any enterprise, but they are most relevant for organizations with a large document management. Efficient use of support resources reduces the amount of natural resources used for their production and contributes to the realization of ESG-goals of the company.

Additional costs associated with the printing process are labour costs (*table 1*, rows 7 and 8), who print the documentation. Taking into account the fact that in the company "X" 95,5% of the amount of office paper written off from the warehouse is sent for printing every year [on the basis of the ξ_1 of formula (3)], to calculate labour input data, the following formula was derived: (5):

$$N_t = \left(\sum_{i=1}^{n} \left(\frac{Q_t - \xi_1}{V_t} \times \frac{U_i}{3600} \right) + \sum_{i=1}^{n} \left(\frac{F_i}{3600} \times K \times m \right) \right) \times V_t \times \frac{1}{8} \times \frac{Z_t}{D_t}, \quad (5)$$

where N_t — annual amount spent on staff printing time during working hours for a given year t;

V_t — number of working days in a given year t;

U_i — printing time of 1 page of a given printer model or MD per second (for all devices of the company "X" 4 second);

$\frac{U_i}{3600}$ — ratio of printing time of 1 page (second) to the number of second per astronomical hour;

F_i — duration of activation and warm-up of the printing unit of a particular model before each start of printing in second (for all devices of the company "X" 9 second);

Table 3

Comparison of information on discarded and used cartridges and toners of company "X" printing device models*

Year	The cost of cartridges and toners actually purchased and cancellation by the organization, rub.	The cost of cartridges and toners used when printing on cancellation paper, rub.	Variances between costs from columns 2 and 3, rub.	Variances between costs from columns 2 and 3,%
1	2	3	4	5
2017	372 343.19	155 172.51	217 170.68	139.95
Corrected values of 2017 to2022	520 182.91	216 784.11	303 398.80	–
2018	392 453.74	179 543.00	212 910.74	118.58
Corrected values of 2018 to 2022	502 815.50	230 032.22	272 783.29	–
2019	414 571.14	187 516.43	227 054.71	121.09
Corrected values of 2019 to 2022	494 478.69	223 659.75	270 818.94	–
2020	354 673.34	159 719.22	194 954.12	122.06
Corrected values of 2020 to 2022	394 438.92	177 626.76	216 812.16	–
2021*	424 129.49	185 519.22	238 610.27	128.62
Corrected values of 2021** to 2022	449 488.90	196 611.72	252 877.18	–

Source: compiled by the author based on the organization's accounting data.

Note: * – the values given have been calculated by a multiplier based on the CBRF key rate. ** – forecast data estimated by company "X".

$\frac{F_i}{3600}$ — ratio of activation and warm-up time to the number of second in astronomical hour;

K — average number of printer's inclusions and warmers before each printing [for "X" company — this is 14 times (based on data from network memory devices]);

$\frac{1}{8}$ — ratio intended to translate the number of hours received on working days (8 hours);

Z_t — average salary of employees for a certain year t in rub. per month (employee pay is taken into account non-staff personnel: printing of documents is not their main activity);

Table 4

Costs incurred by company "X" for employee labour in printing documents

Year	Printing time of all employees, number of working days	Working hours (column 2) per 1 printing officer, number of working days	Cost of employees' time from (column 2) spent on printing, rub.	Expenditures from (column 4) expressed per 1 printing officer, rub.
1	2	3	4	5
2017	82.93	0.99	259 859.92	3130.84
2018	84.05	1.01	272 785.15	3286.57
2019	85.31	1.03	295 526.23	3560.56
2020	77.36	0.93	277 572.47	3344.25
2021*	83.59	1.01	307 015.89	3698.99

Source: compiled by the author based on data on the reflection of salaries in the 1C Enterprise system, and expert assessments.

Note: * – forecast data estimated by company "X".

D_t – average duration of 1 month (in working days) for a given year t;

$\frac{Z_t}{D_t}$ – ratio, which determines the average salary of the employees engaged in the printing of documents in a month (in rub. for one working day).

Formula (5) allows the calculation of the cost of working time (in ruble terms from wages), and also take into account working hours (when used without multiplication by $\frac{Z_t}{D_t}$), that staff used to print documentation.

Such employment actually distracts the staff and contradicts the ESG's environmental focus (for paper consumption rather than electronic workflow). The result of these costs for the company "X", calculated according to the formula (5), is given in the *table 4*.

These *tables 4* allow to approve: printing of documents in the company "X" annually leads to underperformance of employees one working day (column 3), this is the reason for the increase in their salaries (column 4). It is appropriate to consider that this type of activity in this case causes additional labour and material costs (*table 1*).

USE OF EFFICIENCY RESERVES IN ECONOMIC ACTIVITIES

Improving the performance of the company has an impact on the optimization of the work of specific units that determine the end result of the activity. This is due to both the ease of administration and the ability to assign responsibility for results. Since the identified losses, which led to the search for ways to improve business efficiency, are the result of all identified cost categories (material, labour and illegal,

Table 5

Optimisation matrix of company "X" activity

No.	Optimization solution name	Impact effect optimization of cost category			Implementation risk
		Material	Labour	Illegal	
1	Establishment of a staff monitoring system	Reducing office space costs	Improving the workflow quality	Increasing staff responsibility	Reducing staff motivation
2	Introduction of additional staff motivation systems	Reduced use of material resources	Increasing employee loyalty	Failure of staff to engage in defamatory activities	Increase in operating costs
3	Establishment of compulsory accounting for targeted material consumption	Material cost reduction	Increasing staff responsibilities	Reducing non-earmarked material costs	Bureaucratization of activities
4	Introduction of new technological solutions	Technology implementation and services costs	Improving the quality of operations	Avoiding unnecessary expenses of activities	Staff skills shortage
5	Identification and prosecution of individuals with illegal expenses	Reimbursement costs to the organization	Loss of employee loyalty	Minimizing the costs of the illegal type	The emergence of new ways of avoiding responsibility
6	Rejection of the use of expensive materiel	Loss of value of material resources	Reducing the quality of staff	Reducing the cost of illegal write-offs	Company reputational loss
7	Transfer of individual business processes to outsourcing	Loss of synergy of activities	Staff reductions	Reduction of illegal expenses	Loss of competitive advantage

Source: compiled by the author.

table 1), it is possible to divide the ways of their optimization. Possible solutions and their risks are given in *table 5*.

Presented in the *table 5* decisions are acceptable to use when choosing methods of optimization of economic activity of a commercial organization, and it is advisable to single out those that aim to avoid the negative consequences arising from the minimization of operational risks.

For the company "X" such solutions are established taking into account the principles of ESG and should have a qualitative impact on the results of the organization of work. In the case considered, the exclusive application of decisions 1 or 5 will not lead to the optimization of the enterprise's activities, negatively affecting its social orientation. Decisions 6 and 7 can disrupt the workflow and affect the quality of its organization.

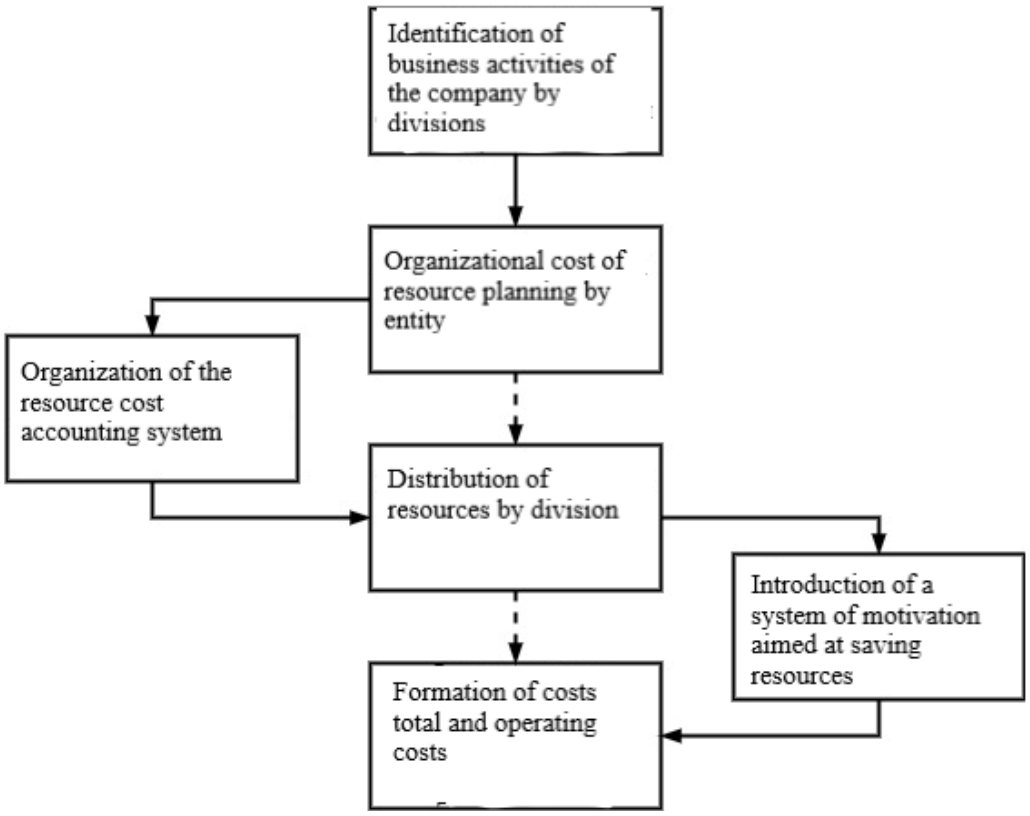

Fig. 4. **Scheme of implementation of optimization solutions in the economic activity of the organization**

Source: compiled by the author.

However, the application of all indicated in the *table 5* directions of changes can improve the efficiency of the organization as a whole.

Based on these *table 5* will formulate 2 final decisions:

1. Organization of accounting for the distribution of the organization's material costs among units in order to minimize illegal write-offs in future periods.

2. Establishment of a staff motivation system, aimed to awards a staff and offices, trying to reduce costs of the company "X", including through saving of support materials.

In order to implement the first organization recommended to oblige the household department to carry out a permanent inventory of sets of office paper and cartridges (toners) sent to specific departments of the company. Such accounting system allows for the identification of the entities with the largest expenditure of resources and the adjustment of their targets.

The second decision aims to encourage (reward) employees and divisions in the organization to reduce printing and to convert documents to electronic format.

The scheme given in *fig. 4* allows to assess the need for a step-by-step introduction of these optimization decisions, which is due to the lack of information in the company "X" about the target spending of resources. They involve a change in the organization of activities (previous versions are marked with a dotted line).

When assessing the potential reduction in printing costs, the authors based their

assessment on the data on "X" activities during the period of distance work caused by the COVID-19 pandemic in 2020. The transfer of employee interactions to an online format allowed for almost complete suspension of material consumption, labour and illegal costs of printing documents due to the absence of staff in the office and the establishment of ways to provide and preserve basic documentation in electronic format.

Distance activity contributed to a 6.4% decrease in the cost of material write-off for the year, with no deterioration in the performance of "X" company. As a result, the reduction target for cartridges, toners and paper, the amount of this reduction has been determined.

This level has been proposed through the staff motivation system. In the early stages of the project, a premium of 125% of the cost of the material saved was proposed (paper and cartridges), further — pay fees up to 75% of the savings. Since around 40% of printing costs are wages (data on *tables 3*, *4*), a 1% reduction in printing volumes will result in an additional 0.66% reduction in staff labour input. As a result, the company "X" will get the opportunity to save up to 1.7% of material costs (taking into account the summing with labor). Payment of a premium equivalent to 125% of the cost of the saved materials in this case will allow the company to save the amount equal to 0.45% of the price spent on the used materials.

Accordingly, the company will be able to optimize its printing and training costs up to promotion the amount of the employee, up to 180% (short term) of the cost of the material saved.

According to the authors, this decision on staff motivation is economically justified and recommended for introduction into economic activities.

BUSINESS PROCESS CHANGES BASED ON OPERATING PROCESS OPTIMIZATION

The proposed solutions on *fig. 4* to increase the efficiency of activity were gradually introduced into the economic process of "X".

In the first phase, a cost-accounting system was established. The Department of Household, which is responsible for the preservation of materials in the warehouses, began to maintain detailed records of the allocation of resources to specific units of the company.

This system was tested over two quarters, the results are shown in the *table 6*.

Data *table 6* about the period before (from 2017 to 2020) and after (2021). Implementation of the accounting system shows a significant reduction in the excess of the normative costs of office paper, which indicates the effectiveness of its use and a decrease in the illegal write-offs of cartridges and toners by almost 69%.[6]

Cost accounting additionally allowed to identify the units of the company "X", carrying the largest consumption of office paper and cartridges. This information contributed to further training and implementation of the staff motivation system. Ideally, the preparation and content of printed documents is not appropriate only for those reports for which such type of legal regulation exists.

Implementation and testing of recommendations were carried out between III and IV quarters 2021. The implementation of the system was carried out by informing staff about the payment of bonuses amounting to 125% of the cost of the saved cartridges, toners and office paper relative to I–II quarters and prior periods.

As a means of reducing material costs, it was suggested:

[6] The value is obtained from the calculation of the excess of illegally written-off materials.

Table 6

Data on the results of the implementation of the resource accounting system in the company "X"

Period	Normative paper costs calculated on the basis of formula (3), (packs of 500 sheets, pcs.)	Actual paper costs calculated on the basis of formula (3), (packets of 500 sheets, pcs.)	Excess of standard costs of paper, over actual cancellation, %
1	2	3	4
I–II quarters 2017	881	521	69.10
I–II quarters 2018	850	533	59.48
I–II quarters 2019	873	546	59.89
I–II quarters 2020	746	459	62.53
I–II quarters 2021	526	442	19.01

Source: compiled by the author on the basis of the accounting records of company "X".

Expenses of "X" company for remuneration of employees before and after introduction of motivation system

Period	Printing time of all employee, working days	Cost to pay for working time (column 2) basis of formula (5), rub.	Cost growth rate on column 3, %
1	2	3	4
III–IV quarters 2017	39.68	124 334.89	–
III–IV quarters 2018	40.80	132 419.98	6.50
III–IV quarters 2019	41.01	144 159.14	8.87
III–IV quarters 2020	36.84	132 177.37	– 8.31
III–IV quarters 2021	29.85	109 648.53	– 17.04

Source: compiled by the authors on the basis of data from the 1C Enterprise system and expert assessments.

- transfer all documents to electronic format, acquire qualified electronic signatures;
- explore independently way to optimize its activities based on software packages;
- transfer paper-based documentation to cloud services and hard drives.

As a result, staff salaries decreased (*table 7*).

Table 7 shows a significant reduction in staff time to print documentation. Relative to 2020, the change in 2021 was more than 17%, as for 2019–23.94%. As a result, staff became more efficient in managing their work

processes, performing more scheduled tasks, and printing losses were reduced.

At the same time, according to "X", the aggregate reduction of costs for office paper, replacement and refueling of cartridges, toners and wage of employees was 6.64% after the introduction of the first and second optimization solutions (including premium costs).

The organization managed to develop ESG-sustainability, increase its investment attractiveness, increase the motivation and quality of its employees.

CONCLUSIONS

In today's unstable environment, a company's market success will be determined by rapid adaptation to changing environmental conditions combined with the most efficient use of its own resources, and, given the drop in demand for some services caused by the pandemic, to a large extent — the ability to mobilize all available reserves. Known strategic approaches focus on finding opportunities in the value chain and in company resources. A significant increase in the efficiency of the enterprise can provide analysis and optimization of the use of auxiliary resources: office paper, cartridges, etc. Proper accounting for support materials and monitoring of office equipment exposes financial losses (of which incurred as a result of unproductive work by staff), substantiate recommendations to improve business processes, find opportunities for material remuneration of staff by saving resources. The developed methodical approach and mathematical apparatus can be used for analysis of efficiency of use of other support materials.

Optimizing the use of support resources contributes to the company's ESG goals by reducing the cost of natural materials needed for their production. But it should be noted that at the same time the question of the impact of the ESG-orientation on the economic activities of a single organization in terms of support processes and their costs remains little studied.

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