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Application of the Balanced Scorecard and the Cost-Benefit Model to Evaluate Social Projects

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ABSTRACT

Social interventions are not always considered in the context of efficiency. The solution of certain tasks often prevails, and unfortunately - without considering investments and results. In the situation, when financial resources is extremely limited, the issue of efficiency is of particular relevance both for the state and for private investors implementing social projects. One of the most common methods in the field is the balanced scorecard and the cost-benefit model. The **purpose** of this work is to study the features of the practical application of these tools for evaluating the effectiveness of social projects, the rationale for specific metrics, approaches to their integration into a single system, as well as consideration of some features of the calculations, for example, the justification of the social discount rate. The work used such scientific methods as analysis, comparison, generalization and modeling. The author adapts the balanced scorecard for the evaluation of social projects, explains its structure and offers a typical model that can be used regardless of the field of application (health, education, sports, etc.). Today the presence of a fair evaluation system is becoming an important competitive advantage that makes this study interesting for government agencies at the federal and regional levels, government corporations and businesses, as well as charitable foundations.

Keywords: social effects; social efficiency; SIA; social discount rate; social management; social entrepreneur; performance management; social project management

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INTRODUCTION

The Balanced Scorecard and the cost-benefit model [1, 2] are widely used in the evaluation of commercial projects. This article discusses the specifics of these methods in relation to social projects, whose performance indicators are rarely discussed in Russian practice. The author gives the structure of the balanced scorecard and proposes a universal model of four blocks: operational activity and internal processes; customers; effective management; financial sustainability. In terms of the cost-benefit method, the article describes the ways of determining the monetary value of intangible benefits of social projects, performance indicators based on the concept of time value of money, and approaches to calculating the social discount rate, including the calculation of specific risk.

THE BALANCED SCORECARD

The concept of balanced scorecard (BSC) was developed in the late twentieth century by R. Kaplan and D. Norton [3]. The main merit of the authors was to create the possibility of integral use of non-financial and economic factors, since it is impossible to assess effectiveness with only one of them. The combination of different criteria makes it possible to obtain complete information about the situation in a company or a project and justify the decision-making process [4]. In addition, a management system is formed based on the results of performance evaluation, taking into account the specifics of the industry or individual organization; one of the main objectives of this system is to balance not only financial and non-financial indicators, but also to find balance between the short-term and long-term development goals. Kaplan and Norton identify four groups of performance factors: 1) financial performance; 2) customer relations; 3) internal business processes; 4) staff training and development.

Despite the importance of balancing these groups, the financial component has always remained at the 'top of the pyramid', since it is financial performance that is the ultimate goal of a commercial enterprise. For social projects, making a profit has never been a priority — social ambition prevails, embedded in their mission, which is usually conceptualised in terms of the individual needs of the beneficiaries, the social conditions created, or the public goods provided. The best way to "measure" such goals is considered to be the number of participants involved or people supported.

At the same time, as M. Moore [5] points out, financial indicators are also important for non-profit organisations (projects) which, while staying within the budget, have to spend available resources efficiently as well as studying the cost structure and looking for ways to minimise the latter without losing quality. The difficulty in this case is that financial indicators themselves do not reflect the main thing — the public (social) value that the project aims to achieve.

Similar to commercial organisations, every social project has 'clients' (consumers). However, they are not clients in the 'classical' sense, since the beneficiaries of most social initiatives do not pay for the products or services they consume. A client in a business is someone who receives a service in exchange for financial resources; but in a non-profit organisation a third party pays for it and the beneficiaries receive it [6]. This is further complicated in the case of a hybrid social enterprise, which receives additional income from clients. Non-profit organisations receive funding from a variety of sources: charitable and governmental, as well as from businesses and individuals. These donors need something more than just

client satisfaction. Their goal is a specific social outcome. For example, the state supports vocational training programmes not only to help individual unemployed citizens get jobs, but also to reduce aggregate unemployment rates and ensure equal economic opportunities for all. Drug rehabilitation programmes are funded not only to help, but also to reduce crime and increase safety in society as a whole. Since donors pay for socially useful results as well as meeting the individual needs of the target audience, they become important "clients" for social entrepreneurs (projects).

For most non-profit projects, competition is also treated and interpreted differently. As a rule, the goal of creating a competitive advantage or increasing market share is irrelevant to them. The aim is to strengthen the cluster as a whole, including through the emergence of new players. There is competition for funding among non-profit organisations, but its nature is very specific.

Based on the above-mentioned features of social projects, M. Moore [5] in 2003 proposed a Public Value Strategy, which is shaped by the three blocks (triangles):

Value, namely focusing on the key issue of any social project, on what meaningful outcome it forms. In the non-profit sector, this usually includes achieving social goals for a specific group of people in need of support or creating certain social conditions to be achieved through the project. A key feature of a value-based measurement system is the pyramid, which allows the extent to which objectives are achieved to be measured by moving from an often-abstract mission (e.g., to promote the well-being of people) to a more specific goal that can be measured. The value creation chain links the desired outcomes on the one hand, and the resources, processes and actions required to achieve these outcomes on the other.

Legitimacy and support — working with clients or "third-party payers" who provide funding for social purposes. This refers to a system of relationships with government agencies, charities, businesses, and individuals. Although there is no profit motive, a non-profit project should aim to diversify its funding. This includes building a convenient system of interaction with private donors (for example, automatic debit of funds every month under the "1 rouble a day" system). Some organisations commercialise their product,— that was originally created as a social good,— and generate additional income. Also, many organisations rely not only on the financial support of individuals, but also on other donations such as volunteer time or material or tangible donations and contributions (things, building materials), etc.

Operational capacity — shows the ability to achieve desired goals and the productivity or efficiency of engagement with partners. The fact is that non-profit organisations often need outside help — they are rarely large enough to carry out important social tasks on their own, and they are often faced with important choices about how much of their resources to spend on themselves and how much to channel to partners. One important way for them to create social value is to 'amplify' their own position at the expense of other organisations that share their goals or have capabilities that they can leverage. Operational capacity can be assessed through the set of assets, the level of staff training, the existence of regulations for operational procedures and the technologies used.

An important component of any evaluation system are performance (or productivity) indicators. Moore [5] refers these indicators to the relationship between the quantity and quality of products and the costs of their

production. These can be complemented by measures aimed at minimising direct or overhead operating costs. For not-for-profit organisations, it will also be important to assess financial integrity, by which we mean the losses due to fraud, waste or abuse. Indicators of operational capacity should also include reports on learning and innovation. Since the long-term effectiveness of the project will depend on the speed of operations, training can focus on ways to improve productivity, to adapt standard operations to new conditions, and to develop entirely new lines of business consistent with the mission.

A. Somers [7] proposed a number of changes to the Balanced Scorecard, adapting it to non-profit organisations and social projects. He developed the Social Enterprise Balanced Scorecard, making the following adjustments to the classic approach: the financial criteria block was expanded to focus on improving sustainability, and the client block was expanded to include a greater number of stakeholders. In the former, it was a matter of modelling potential revenue streams and minimising costs. The following groups were identified as the clients: payers (those who pay for services), beneficiaries (those who use services for a fee and free of charge), employees, suppliers and partners.

The internal processes block looks at information exchange, external and internal communication systems. The author notes that every well-drafted strategy map should be accompanied by a performance measurement schedule. This is an internal management tool in which all objectives from the strategic map are linked to the indicator(s) of success. In turn, the objective requires appropriate activities and an employee who is responsible for achieving this objective.

Finally, the fourth block looks at resources, including information technology and the skills needed. Somers recommends that a 'Balanced Scorecard' should be published on social projects. He notes that this will help gain the trust of investors, sponsors and contributors, clients, and stakeholders, as well as facilitate the sharing of experiences within the industry.

Based on the experience of researchers and a number of foreign social projects,[1] the author has attempted to form a balanced scorecard for social projects (*Table 1*).

As shown in *tab*. 1, the balanced scorecard cannot be recognised as a stand-alone assessment tool. Rather, it requires separate methods within the framework of each block. For example, a different approach is needed to assess the level of satisfaction of beneficiaries and donors; the assessment framework must also be formalised into one or more outcome indicators that will characterise its effectiveness. In addition, a more in-depth analysis of the quality of the elements to be checked (value creation chain, communication systems, etc.) will be required —only their presence ('yes/no') is recorded in the table.

A definite advantage of this method can be seen as the consolidation of metrics that characterise different areas of activity into a single system: aspects of the social project's effectiveness that are necessary to create the required impact are captured. It is a useful tool for improving strategic planning, setting goals, and communicating the effects created both internally and externally. However, the Balanced Scorecard is not recommended for use in the early stages of company development [10]; it is also not appropriate for comparing different projects.

[1] Social Value UK. URL: https://socialvalueuk.org/report-database/

Table 1

Social Balance scorecard

No.	Index	Unit of measure
Operational activities and internal processes		
1	Existence of mission-driven processes described (value creation chain)	Yes/No
2	Existence of an approved system of external and internal communication	Yes/No
3	Number of regions of presence and operation	Pcs.
4	Existence of an approved performance evaluation system and target indicators, including quantitative/monetary social impact assessment	Yes/No
Clients		
1	Number of people supported and their dynamics over 3 years	People.
2	Number of volunteers involved	People.
3	Satisfaction of the beneficiaries	Survey results
4	Satisfaction of donors and contributors (funding providers)	Survey results
Effective management		
1	Number of full-time employees	People.
2	Availability of public reporting and accountability	Yes/No
3	Presence of representatives of all stakeholders on the governing body	Yes/No
4	Established innovation process / number of innovative solutions implemented	Yes/No Pcs.
Financial sustainability		
1	Availability of sources of income / share of earnings in total budget for the year	Yes/No, %
2	Dependence on one funding source (share of the most significant funding source in the total budget,%)	%
3	Cost of support per person (beneficiary)	RUR.
4	Debt burden / share of borrowed funds in total budget	RUR. %

Source: compiled by the author based on [3–9].

Table 2

Cost-benefit matrix

The non-financial costs of the project	The financial costs of the project
– Stress related to dealing with people's personal problems; – pressure of wanting to make a project successful on a very limited budget; – stress due to the feeling that work is undervalued; negative displays of aggression	– Costs of the project initiator (investment, operating and financial costs), RUR; – costs of the project participants (fees, outfit, transportation), RUR.
The non-financial benefits of the project	**The financial benefits of the project**
– Providing new opportunities; – improving the quality of life; – socialisation; – strengthening families; – positive outlook on life and mutual trust	– Number of full-time and part-time jobs, pcs; – number of volunteer hours, hours; – costs of equipment and outfit, RUR.; – infrastructure construction costs, RUR.; – growth of tax deductions,%; – project-related travel costs, RUR.; – proven reduction in morbidity by individual diseases, %; – proven reduction in crime (e.g. in person-days spent in prison)

Source: compiled by the author based on [11].

COST-BENEFIT ANALYSIS

This tool compares the benefits of the project with the costs incurred — a positive assessment can only be made if the former are greater. The analysis can be done ex ante (before implementation) or ex post (afterwards) and allows the economic value to be linked to the impact created [2].

In terms of evaluating social initiatives, the main difficulty is that even the well-documented interconnectedness of the activities in these projects is difficult to monetarily measure and specify or consolidate into a financial forecast. To solve this problem, A. Ziller and P. Phibbs [11] suggest the use of a cost-benefit matrix that maps financial benefits to non-financial benefits and similarly to the cost component (*Table 2*). It cannot be said that any one cell in the matrix is more important than another; nor do formulas apply to compare them. The tool allows us to compare non-financial costs and benefits, which are not easily quantifiable, with financial costs and benefits that we can calculate. The exceptional value of this approach is that it allows competing viewpoints to be represented, and the objectivity of the evaluation is ensured by the equal weighting of each subjective opinion.

This approach allows for a comprehensive conclusion on the social project, but it is hardly applicable for comparative analysis. Another variant of the cost-benefit method, namely the use of the following investment attractiveness indicators, can solve the problem: net present value (*NPV*), internal rate of return (*IRR*) and payback period [2].

Net present value (*NPV*) shows the increase in value that the project under analysis can bring:

$$NPV = -Inv + \sum_{n=0}^{n} \frac{CF_n}{(1+r)^n},$$

where *Inv* — initial investments in the project;

CFn — project cash flows;

r — discount rate;

n — the number of forecast periods.

According to the *NPV* rule, a project is considered profitable if the net present value is greater than zero. One of the main elements of this model is the calculation of cash flows, which are essentially a comparison of costs and benefits, namely outflows and inflows of money.

Since the main challenge for social projects is the monetary valuation of the generated effects, the following approaches are used for these purposes:

1. Stakeholder surveys followed by several methods:

The Revealed Preference Method is the evaluation of priorities derived from the *actual* behaviour of market participants. One form of revealed preference, Hedonic pricing, generates a valuation based on the market price of the constituent parts of the service or commodity in question and is used, among other things, to estimate the environmental effects that influence the value of residential property. For example, this approach can help to estimate the cleanliness of the air (or its pollution) by taking into account a premium (mark-up) on house prices in good environmental areas (or a discount on identical houses in polluted areas). Another example might be the wage differentials that it takes for people to assume and incur certain risks — this can calculate how they value different aspects of their lives.

Another approach assumes that a person is usually willing to travel some distance or sacrifice time to gain access to specific goods and services; this is known as the 'travel cost/time value'; it uses hedonic pricing models and the travel cost method.

The Stated Preference Method is designed for monetary valuation of benefits that do not have a market equivalent, and involves questioning users about hypothetical preferences, which are evaluated in monetary terms as a maximum willingness to pay (Willingness to Pay, WTP) or minimum willingness to accept (Willingness to Accept, WTA) changes in the quantity or quality of services provided or access to resources [12]. These methods include contingent valuation methods and discrete choice experiments (DCE).

Table 3

Social discount rate values

Country/structure	Value of the social discount rate, %
World Bank	10–12
EBRD	10
Australia	7–8
Canada	8–12
China	8
UNITED STATES	2–7
European Commission	3–5

Source: compiled by the author based on [13].

2. Cost savings estimate: applicable if the project leads to a reduction in the cost of another initiative or indirect costs (e.g., introducing prevention measures/prophylaxis to save the cost of treatment).

3. Alternative or cheaper source: replacing one project with another, more expensive project is replaced by a cheaper one.

In defining "proxies", it does not matter whether the money actually changes hands. Nor does it matter whether the stakeholders in question are able to afford to buy something — they can appreciate it anyway. Another important point has to do with the type of costs used as "proxies": they are divided into fixed and variable costs. The former are independent of volume, such as the number of participants. For example, assume that the project being implemented

has enabled 50 people to stay out of prison. This would lead to a reduction in variable costs (per prisoner) but no effect on fixed costs.

Another important feature is discounted cash flows. The point is that the *NPV* is calculated based on data projected for at least 3–5 years. Because the decision to invest is made now, the future cash flows must be discounted to today. This is done using the concept of time value of money, which is based on the premise that, all else being equal, every investor would prefer to receive a certain amount of money now rather than in the future. In other words, money has a different value depending on the period: the further away from today, the lower the value will be. This difference is determined by the interest rate or discount rate, which is formed by taking into account:

- the required rate of return — the minimum rate of return that an investor agrees to receive as compensation for participating in a particular project;
- opportunity cost of capital — the value an investor gives up when choosing a particular project over available alternatives;

The discount rate must take into account the specifics of the project and its inherent risks. The method for calculating it depends on the structure of the capital used — the proportion of equity and debt. For commercial projects, a weighted average cost of capital (WACC) model is most often used; for social projects,— a special Social discount rate (SDR) (*Table* 3), whose value is often not justified at all [14, p. 34], which makes the final result highly questionable.

To calculate the social discount rate for a specific project, several features must be taken into account. First, the sector in which it is being implemented: most studies focus on justifying the social discount rate for environmental projects. Obviously, the rate will be different for sectors such as education, health, or sport. Second, the project implementation period should be taken into account. One popular view is to use social discount rates that decline over time [15]. The most popular argument in favour of this approach stems from the fact that future economic growth is uncertain [16, 17]. Finally, the rate presented in *Table 3* should be adjusted for the level of risk inherent in a particular project and country, as in most cases it is risk-free. Country risk can be taken into account through differences in government bond yields. For example, for Russia, according to Stern, the country risk as of January 2022 was 2.18%.[2]

An individual approach is required to assess the specific risk: each of its factors can be assessed by means of scoring models according to criteria that are expressed by questions with "yes", "no" and "no data" answers. A "yes" answer corresponds to a risk value of 0%, a "no" answer — to 5% (maximum) and a "no data" answer — to 2.5% (average). The value of each risk factor is determined by the ratio of the sum of the criteria values (answers to questions) to the number of criteria (questions). This model is shown in *Table 4*.

Therefore, the overall social discount rate for this hypothetical project would be:

Average rate according to the European Commission (*Table 3*) (4%) + Country risk for Russia (2,18%) + Specific risk (5%) = 11,18%.

The next indicator — *IRR*, is the discount rate at which the present value of future cash flows corresponds to the investment made, or *NPV* = 0. Typically, *IRR* values are found either by selection method or graphically (by plotting the *NPV* against the discount rate), or using specialised software

[2] URL: https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

Table 4

An example of a specific risk assessment for a social project

No.	Question	Answer	Risk level
Operational activities and internal processes			
1	Mission-driven processes and the value creation chain are described	N/a*	2,5
2	External and internal communication system approved	Yes	0
3	The project is being implemented in 10 regions	Yes	0
4	Approved performance evaluation system and targets, including quantitative/monetary social impact assessment	No	5
Total risk level for the block			1,875
Clients			
1	The number of people supported is over 100 and has increased by 5% compared to the previous period	Yes	0
2	More than 100 volunteers are involved in the project	Yes	0
3	Satisfaction of beneficiaries is assessed as high	Yes	0
4	Satisfaction of donors and contributors (funding providers) is assessed as high	N/a	2,5
Total risk level for the block			0,625
Effective management			
1	The number of full-time staff is not higher than that of similar projects	Yes	0
2	Availability of public reporting and accountability	Yes	0%
3	Representatives of all stakeholders are present on the governing body	Yes	0%
4	The project uses innovative solutions	No	5%
Total risk level for the block			1,25%
Financial sustainability			
1	The share of commercial revenues in the total budget is at least 20%	Yes	0%
2	The most significant source of funding represents less than 30% of the total budget	No	5%
3	The cost of support per person (beneficiary) is no more than 50,000 roubles per year	Yes	0%
4	The share of borrowed funds in the total budget does not exceed 30%	Yes	0%
Total risk level for the block			1,25%
Total risk level for the project			**5%**

Source: compiled by the author using the *Table 1*.

Note: * no data.

(MS Excel's *IRR* function is used to calculate *IRR*). For each investor, this rate of return will be individual and it will be set based on his or her requests and previous transactions, i.e., there is no single *IRR* target indicator.

In addition to *NPV* and *IRR*, two types of payback periods are usually calculated:

1) *PP* (payback period) — is the number of months (years) in which an investor fully recovers his or her investment in a project. Typically, the payback period is calculated by constructing the cash flow of the project cumulatively, but this does not take into account the value of money over time, and hence the risks of the project. In addition, cash flows in the periods after payback is achieved are not taken into account.

2) *DPP* (discounted payback period) — is a discounted return period. It partly addresses the weaknesses of *PP*, primarily in terms of accounting for the time value of money. However, it also does not cover cash flows in the periods after payback is achieved. It is possible for a project to have a negative *NPV* with a positive accumulated cash balance in the middle of the life cycle.

The limitations of applying *IRR* and payback periods for social project appraisal are similar to those discussed above. It should be noted that monetary valuation of social effects required for cash flow calculation is difficult. A similar disadvantage is inherent to the cost-benefit method in general.

CONCLUSIONS AND RECOMMENDATIONS

The research has found that cost-benefit analysis allows for the comparison of social projects and helps to choose the most effective. This is an extremely useful tool for investors who want to understand the expected results of a project and compare them with different alternatives before proceeding with funding [18]. Cost-benefit analysis is often used to evaluate public initiatives that address complex social problems. It is also used to assess the economic effects generated by sports competitions [19]. This sometimes generates very subjective indicators that are difficult to use in comparisons. An important advantage of this approach is that it can be applied in countries with different socio-political models.

The author has reviewed the practical aspects of applying the two methods for assessing the effectiveness of social projects. To date, they are not widespread in Russia, which (considering the foreign practice) can be recognised as an omission. Their more active implementation in the work of government agencies, charitable foundations and businesses would improve the efficiency of social initiatives implemented, ensure objectivity in the allocation of funding and contribute to the achievement of the stated objectives.

The advantage of the balanced scorecard is that it combines criteria that characterise different aspects of the project into a single model. The article attempts to present an example of such a system of indicators. Individual metrics can be considered in more detail in subsequent studies.

Today, expert models are most often used to analyse social projects, which somewhat reduces objectivity and is often a formal procedure. Based on the results of the research, government agencies and businesses financing social interventions can introduce a balanced scorecard and cost-benefit model, which will facilitate decision-making, eliminate subjectivity in assessment and improve the effectiveness of the projects implemented.

The following topics could be suggested as areas for further research: models for assigning weights to individual metrics and blocks within

the balanced scorecard; justification of the social discount rate for Russian practice; approaches to monetary valuation of intangible benefits generated by social initiatives.

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