

1.4. SWOT ANALYSIS in PROJECT MANAGEMENT

SWOT analysis is a type of qualitative (not quantitative) analysis of the state of an organization (industry, firm, project, work) and at the same time a method (tool) of strategic planning.

Information about the original authorship of this tool varies. In the research conducted by Tim Friesner, a lecturer from The University of Winchester ([https://www.researchgate.net/publication/288958760 History of swot analysis](https://www.researchgate.net/publication/288958760_History_of_swot_analysis)), two theories are proposed. The first theory claims that the invention of the methodology belongs to Harvard Business School professors George Albert Smith Jr. and C. Roland Christensen, who formulated the theoretical rationale in the 1950s. Their colleague Kenneth Richmond Andrews began to put SWOT analysis into practice in the 1960s

The second assumption is that SWOT analysis was created in the 1970s by Albert Humphrey, head of a research group at the Stanford Research Institute. His team was developing a concept that allowed managers at different levels to quickly implement changes in business processes based on the key goals and objectives of the company. In any case, the beginning of this method dates back to the mid 60s - early 70s of the XX century.

The name of the tool is due to the application of an approach that analyses the main sides of an organization (industry, firm, project, work). In the following we will talk about the application of the method only for **project management**, although the scope of its use is much wider.

So, the abbreviation **SWOT** stands for:

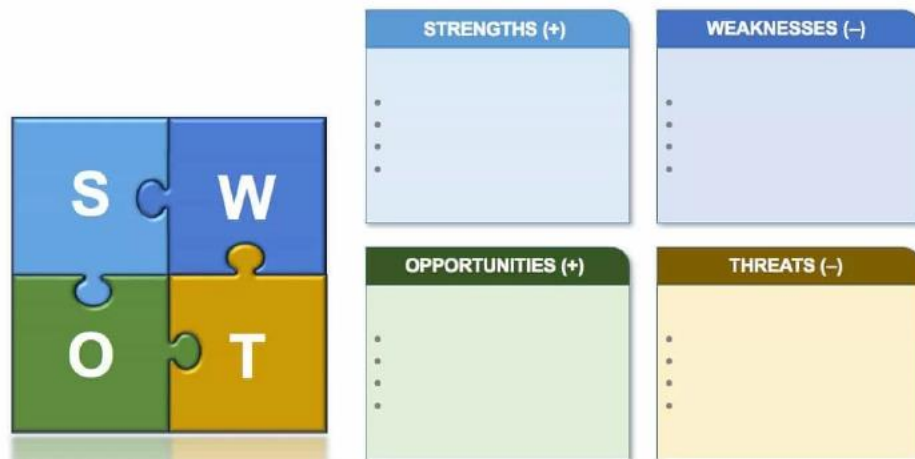
S - Strengths;

W - Weaknesses;

O - Opportunities;

T - Threats.

The classic way is to format the results in the form of a table of dimension 2*2 (we recommend the site <https://www.smartsheet.com/14-free-swot-analysis-templates>):



Recall that in what follows we are only talking about the **project**, not the firm or the industry. The purpose of the analysis is to assess the potential and environment of the project and then plan actions in accordance with this assessment. The categories "strengths and weaknesses" belong to the factors determined by the internal characteristics of the project, while the categories "opportunities and threats" should describe the external factors to be taken into account when planning the project. Thus, we can talk about the following division of the table.

- Horizontally, there is a division into internal and external factors; the first row (strengths and weaknesses of the project) - internal factors; the second row (favorable opportunities and threats) - external factors.
- Vertically, there is a division into positive and negative factors; the first column (project strengths, favorable external opportunities) - positive factors for the project implementation; the second column (project weaknesses, external threats) - negative factors.

The strengths and weaknesses in SWOT analysis are under the control of the project managers. They can be changed over time.

Examples for financial and economic projects:

- client list;
- project team;
- partnerships;
- intellectual property;
- tangible and financial assets.

Conversely, the opportunities and threats of a SWOT analysis are usually beyond the control of project managers.

Examples:

- actions of competitors;
- exchange rate;
- tax legislation;
- weather conditions;
- epidemiological situation.

Note that sometimes a "transposed matrix" is also used. Naturally, in this case the roles of columns and rows change, but it is absolutely clear to mathematicians.

Gathering all the data together makes it possible to understand how to minimize the damage from negative aspects. Ideally, after a SWOT analysis, you should modernize your project management plan to turn the negative factors into new points of growth.

One of the most **common mistakes** is to reduce the SWOT analysis to a single table. There should actually be two tables. The first table should describe the results of the analysis, while the second table should describe the actions that are planned (or recommended) based on the results of the analysis in order to achieve the main objective of the project.

It should also be emphasized that it is desirable to highlight the project's purpose (main objective). If the project management or customer seeks to achieve several objectives at once, the task becomes multi-criteria (to use mathematical terminology). In most cases, a multi-criteria problem has no classical solution. We can only talk about some approximations to the desired result.

Let us give a view of two necessary tables.

Table 1

Project Analysis

	+	-
Internal factors	S Strengths of the project that enable it to deal effectively with the situation being analysed	W Weaknesses of the project that may have a negative impact in the analysed situation
External factors	O The opportunities that the situation being analysed presents us with	T The dangers of the analysed situation

Table 2

Actions based on the project analysis

	+	-
Internal factors	S Activities to be undertaken to capitalise on the strengths to increase the capacity of the project	W Activities to be undertaken to mitigate the impact of project weaknesses
External factors	O Activities to be undertaken using favourable external opportunities	T Measures to be taken to reduce the impact of external hazards

How to analyse a project? Only general guidelines are possible here. It is essential to focus on the main objective of the project. Consultation with the customer is likely to be required. Usually experts in the relevant field are involved in the analysis. The main questions to be analysed, of course, depend very much on the type of project.

How to plan actions based on the analysis? Usually several directions are distinguished.

- 1) Competent calendar planning. Parallel engineering, that is combining several independent works in time in order to accelerate project implementation. Critical path analysis in order to optimize the performance of critical activities.
- 2) Proper planning for the receipt and utilization of all types of resources.
- 3) Monitoring deviations from objectives or intermediate indicators of project success (sometimes called "gap measurement" in the English language literature). Deviation measurement scales are commonly used here.

Identification of gaps leads to one of three courses of action: leave as is, reduce the gap, eliminate the gap.

Now let us list the obvious **disadvantages of** this tool.

- 1) The method is qualitative, not quantitative. It does not allow you to accurately calculate the impact of the analyzed factors and the results of the proposed actions.
- 2) The method strongly depends on expert opinions and assessments of external factors, which can be very subjective.
- 3) The method is based on analyzing the situation "now", at a given moment. After some time, the situation may change dramatically, and the developed strategies will cease to be relevant.