

PROJECT'S ASSESSMENT PRINCIPLES AND STRATEGIES

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ABSTRACT

The decision of investment is related with a lot of issues that have an assignment in each project and in the final success of a project. In a project appraisal it is important to consider not only the project characteristics, but also the constraints that influence the project. It seems relevant the coordination between evaluation and planning, the continuous or phased evaluation, experience and learning. In the analysis of a project we have also to analyze financial and the non-financial factors.

INTRODUCTION

An investment project arises from the organization and combination of human and non-human resources, temporarily gathered to perform a unique task with specific goals and facing a set of conditions (Turner and Muller, 2003; PMI, 2013). Project assessment should take into consideration all of the company's intrinsic and extrinsic aspects, as well as the project's, so as to verify its viability. This is the motive behind the presentation of the main factors that can affect the investment decision. The key objective of the analysis of these aspects is to achieve project success.

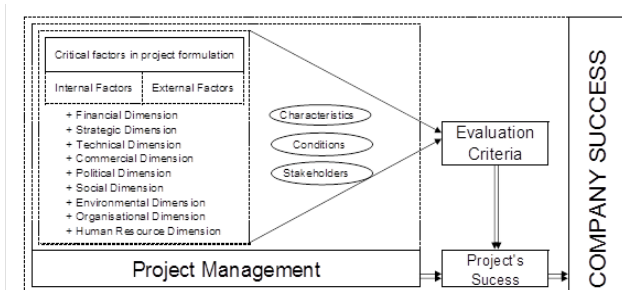


Figure 1: Process that lead to company success, through projects

Source: Authors' Figure, adapted from Belout (1998), Cooke-Davies (2002), Datta and Mukherjee (2001), Lee-Kelley et al. (2003), Lim and Mohamed (1999), Love et al. (2002) and Westerveld (2003).

Figure 1 evidences the critical factors in the formulation of projects, highlighting the fact that several internal and external factors must be considered in project management.

Apart from these factors, the project's context must also be analysed, which we will study in this paper. Here, we analyse the project's main characteristics and constraints, which influence its assessment and implementation, as well as the satisfaction of stakeholder needs and goals. As for the project's context, it is also necessary to take into account the global principles and strategies of project evaluation, given that the not consideration of any of these aspects may lead to a wrong evaluation. Based on the critical factors and context elements, the project's evaluation criteria are set. This evaluation determines the success, or failure, of the project by comparing it to the generic objectives defined earlier. The management process of the critical factors and the aspects that surround it can also contribute to the project's success. This situation is reflected on the company since the success (failure) of the project leads, or may lead, to the creation (destruction) of value in the company.

In this paper we present some of the most important issues that we must consider in the moment of the decision-making if we must or not implement the project.

This paper is organized as follows. In the next section, we present the main project characteristics. Then we present the typical constraints of the projects. After this we present stakeholders issues. We also take into account the financial and non-financial analysis. Next, evaluation principles and strategies are presented. Finally, we give our conclusions.

1. PROJECT CHARACTERISTICS

The main characteristics of the project that influence its implementation are size, maturity, industry, type of project and life cycle (Meredith and Mantel, 2012).

- **Size** – Projects differ in terms of the amount invested. For Westerveld (2003), this difference is reflected in the evaluation and success criteria of each project. Payne and Turner (1999) evidence that, depending of the project's size, there are different types of resources, different management procedures, different activity

sequences and different timing and costs that are involved.

- **Maturity** – Long-term investment projects require a deeper involvement of the various dimensions. The decision to invest in the short- or long-term must be consistent in terms of its implications. Managers acknowledge that, the higher the time necessary to execute a project, the higher the uncertainty associated with it and the more distortions or alternatives to initial forecasts tend to exist, with underlying risks increasing with the unknown distant future facts (Mohamed and McCowam, 2001).

- **Industry** – Koetse et al. (2003) verify the existence of differences in investment behaviour between industries and Lim and Mohamed (1999) evidence that each industry has its own critical factors. Therefore, in a project's assessment, the specific aspects of that industry must be considered.

- **Type of project** – The characteristics and success factors of a project vary according to the type of project to be considered (Zita-Viktorsson et al., 2003; Akalu and Turner, 2002). Projects can be categorized according to various different classifications: objectives; dependence; nature and entity (State or private) that implements it, among others.

- **Life cycle** – The companies that implement investment projects usually divide them into stages to better control management and provide a connection to the ongoing operations (PMI, 2013). The analysis of projects is different according to the stage they are in (Akalu and Turner, 2001; Akalu, 2003).

Miriithi and Crawford (2003) refer that several functions (p.e. specifications, cost, timing, human resources, among others) are managed differently throughout the project's life cycle. McCray et al. (2002) consider that specific activities vary according to the stage of the project and that the "output of initial processes is, later, an input to other processes and has a potential negative impact in many or all activities". Therefore, backsliding in initial stages will cause problems in later phases of the project's life cycle. The division of the project into stages allows the analysis of the preset strategy for the next stage.

2. LIMITATIONS OR CONSTRAINTS

The main constraints of the project that can affect its implementation are: specifications, cost, quality, schedule, resources, integration, complexity, risk and uncertainty.

- **Specifications** – For Wysocki et al. (2000) the specifications tell us not only what is to be done, but also what must not be done; they are also the basis of all the work to be performed, since this is where what the project is and what is intended by it is clearly defined and understood. The perspectives of the various stakeholders must be considered.

- **Cost** – Belout (1998), Lim and Mohamed (1999) and Shenhar et al. (1997) highlight the importance of the project's cost and the need to finish the project within the budget. Therefore, the project management must be concerned with the cost of the resources necessary to complete the project's tasks.

The cost of the project is often associated with its life cycle (Wysocki et al., 2000 and PMI, 2013) and depends, also, on the information needs of the various stakeholders in the project (PMI, 2013). Cooke-Davies (2002) points out the strong correlation between delays in scheduling and the costs deriving from it.

- **Quality** – The implementation of the project must ensure the satisfaction of the needs it was built for, fulfilling the quality standards demanded by the various stakeholders (Baccarini, 1999; Lim and Mohamed, 1999; PMI, 2013). Wysocki et al. (2000) defines quality as a more effective and efficient use of resources, by reducing waste and work repetition. PMI (2013) presents quality as the acknowledgement of the importance of: client satisfaction, preventing negative aspects, management's responsibility in supplying the necessary resources for success and processing within stages.

- **Schedule** – The project's schedule determines the period of time within which the project must be completed. Atkinson (1999), Lim and Mohamed (1999), Shenhar et al. (1997 and 2001) highlight the importance of project scheduling. Yates and Eskander (2002) identify three basic factors that justify the delay relative to the preset schedule: constant project requirement alterations; development of multiple projects at the same time; lack of communication between various departments.

- **Resources** – Companies should focus on business and investment opportunities that can best be explored by their resources (skills, knowledge and assets). The companies that best know their resources have more information and are those that make the best investment decisions for the future (Bernardo and Chowdhry, 2002). Tuman (1986) evidences the importance of having resources that fit the project's needs and using them efficiently. Often, the difficulty in managing large and complex projects may also come from resource constraints.

- **Integration** – It is necessary to integrate the various elements of the project, in order to ensure appropriate coordination. This involves a trade-off between competitive and alternative objectives to meet or exceed the needs and expectations of stakeholders (PMI, 2013). The integration should occur between various areas of knowledge. The integration and interaction between various characteristics and constraints of the project must occur and there must be effective coordination between the project's stakeholders. On the other hand, the work on the project must be integrated with the company's operations already taking place.

- **Complexity** – Westerveld (2003) points out the importance of complexity for project success,

considering that management style should be more flexible as the project's complexity increases (Kenny, 2003). The differences in project complexity derive from conceptual difficulties, from the contract and the existence of complex procedures and complex coordination systems between sub-projects.

- **Risk** – Risk is an uncertain event or condition that, if it occurs, will have a positive or negative effect in the project's objective (PMI, 2013). In projects, risk is potentially adverse to performance and sources of risk are “things that can go wrong” or threats to the project (Ward and Chapman, 2003).

- **Uncertainty** – Uncertainty in any project is considerably high, so that it is important to manage the factors that originate it from the early stages of the project. The uncertainty is related to the variability of performance relative to costs, scheduling or quality, or the ambiguity associated to the lack of clarity due to the behaviour of the main stakeholders, lack of information, lack of detail, inexistence of adequate structure, inadequate assumptions, lack of knowledge of sources of influence and ignorance relative to the effort needed to clarify the situation. Ward and Chapman (2003) consider that these aspects contribute to uncertainty in estimates of project parameters, in design and logistics, in objectives and priorities and in the relationship with project parties.

3. STAKEHOLDERS

Project's stakeholders are persons or organisations actively involved in the project, or whose interests may be positively or negatively affected, as a result from the execution or termination of the project, and who may influence the project and its results (PMI, 2013). Therefore, a stakeholder is an interested party in any aspect of the investment process, and “all parties involved in investment initiatives bring a certain volume of knowledge and influence” (Pettinger, 2003). Each stakeholder has a role in defining and determining success and, in this sense, each has specific tasks and responsibilities to fulfil (Munns and Bjeirmi, 1996).

A project should incorporate the vision of all stakeholders, so that its successful conclusion depends on the satisfaction of all or the largest possible number of stakeholders (Westerveld, 2003). Note that the management of the different stakeholder expectations may become difficult since, many times, different stakeholders have distinct goals that may come into conflict with each other (PMI, 2013).

Project management should try to identify the main stakeholders, determine their demands, and manage and influence those demands in order to ensure a successful project (PMI, 2013).

While for Meredith and Mantel (2000), the most important stakeholders in defining success criteria are the clients, the parent company, the project's team and the public, Atkinson (1999) defends they are the project

manager, the top management, the client and the team members. For Isham et al. (1995) the direct participation of beneficiaries leads to better results in projects, and participation in early stages improves project performance on all stages. PMI (2013) observes that stakeholders and their importance vary throughout the various stages of the project's life cycle.

4. FINANCIAL AND NON-FINANCIAL AREAS

In the evaluation of investment projects, we have to consider not only the financial analysis, but we also have to analyse non financial issues that can influence its viability. Because the investment decision based only on financial criteria may lead to inadequate decisions, Skitmore et al. (1989) note that we should use any knowledge that can help us to appraise a project and analyse related uncertainties and risks. As many of the objectives of a project tend to be qualitative and not easily measured, the investment decision process should encompass a wide spectrum of analysis dimensions, whether financial or non-financial, as a way to fully study all the aspects that may influence its viability.

Moutinho and Lopes (2011a) identify the importance of non financial aspects at the decision making process and the evaluation of projects. Based in a survey they find support for the importance of incorporating non financial aspects into the appraisal of projects. They present the strategic, the technical, the financial and the commercial analysis as the most important areas at the appraisal and at the decision-making stages. They also find a higher probability of being perceived as having project success when companies consider environmental, human resource, project manager, financial and political analyses in project appraisal. In summary, they evidence the importance of analyzing various non-financial aspects and conclude that traditional financial analysis must be considered as one side of project appraisal.

Moutinho e Lopes (2011b) present the different areas of analysis, and the way the analysis is done, according to the characteristics of the company and the project, company's administration and project manager. They also support the ideia about the importance to project success of some specific non-financial aspects, in each area of analysis.

5. EVALUATION PRINCIPLES AND STRATEGIES

For Lopes and Flavell (1998) the coordination between evaluation and planning is important in knowing whether or not the project is desirable. Therefore, the evaluation must be performed in light of the strategic objectives defined and planning should be executed throughout the life of the project.

The division of the project into stages should allow, at the end of each stage (defined as cutoff points), an

evaluation of the work already finished and, if necessary, a revision or adjustment to the initially designed (i.e., preset strategy for the next stage), so as to adapt the initial project to circumstances that arise with the project's execution and avoid distancing from the goals defined (Lopes and Flavell, 1998).

Given that the project is continuously changing, as a result of the dynamic and turbulent environment that surrounds it, the initial evaluation may not be enough to allow it to function. For Love et al. (2002), it is important to know and understand the complexity and dynamics of the project, in order to adjust the responses to problems and changes that occur throughout the project, whether internal or external. For those areas identified as having more risk and uncertainty, it is advisable to build alternative strategies (Lopes and Flavell, 1998; Love et al., 2002; Wheelwright and Clark, 1992), elaborated based on the project's stages that makes project evaluation more flexible, apart from facilitating the adaptation of the project to new events or unexpected situations.

For Lopes and Flavell (1998), the phased evaluation of projects brings benefits, such as: establishing decision points, to continue the project or not, making it easier to stop; avoiding the repetition of work in several stages; preventing the overenthusiasm of workers and managers from bringing added costs; allowing the constant analysis of compliance with initially defined goals; and allowing phased spending, making it more controlled.

The evaluation of the project must be encompassing and progressive, and all risk and uncertainty factors must be duly identified from the beginning of the project (Lopes and Flavell, 1998), in order to allow their consequences to be assessed. The continuous evaluation ensures that the organization learns how to reduce negative impacts and take advantage of positive impacts from the projects' dynamics.

Keil and Montealegre (2000) refer that one of the greatest problems in evaluation is related to the continuation or termination decision. When a serious problem is identified, there has to be courage to terminate the project or, at least, implement alterations or adjustments. The authors also highlight the fact that the opinion of an auditor or advisor, internal or external, may be relevant in the recommendation of actions that may otherwise, be difficult to be heard. Therefore, advisors may be a powerful way to identify alternative courses of action and make them legitimate, while reducing the exposure of executive directors to internal policy.

It is essential that those intervening in the project can think and do not act mechanically given the previously stated. Manuals should be taken as guidelines, and not a mandatory checklist. Those involved must show flexibility in learning and the ability to adjust to the evolution of the project (Lopes and Flavell, 1998). The experience (because it allows one to learn from past experiences and based on intrinsic characteristics) is an

important factor in project execution as a way to avoid future mistakes (Bernardo and Chowdhry, 2002; Lopes and Flavell, 1998). The use of pilot projects and feedback from monitoring are two ways of learning based on past experiences. More important than each person's knowledge, it is the knowledge acquired by the company, so it should incorporate it into its culture. Learning by doing contributes to the development of skills fundamental to obtaining desirable results.

CONCLUSIONS

In investment project evaluation, the following project characteristics should be considered: Size, maturity, industry, type of project and life cycle. There are also several constraints that influence the project, such as: specifications, cost, quality, schedule, resources, integration, complexity, risk and uncertainty. The analysis should contemplate the perspectives of different stakeholders in the project. Also important, as evaluation principles and strategies, are the coordination between evaluation and planning, the continuous or phased evaluation, experience and learning. For the investment decision it is important to analyze not only the traditional financial analysis, but also it is necessary to analyze non-financial factors, like strategic, technical, commercial, political, social, environmental, organizational, human resources and project manager factors.

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