Characterization of an evaluation success model of an IS project, focused on stakeholders

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Abstract. Typically, we measure the success of an Information Technology project through time, budget and quality. However, with the advance of years, we found that stakeholders have also something to say about success evaluation. Each stakeholder has an impact, its own interests and expectations about the project development. Therefore, what for some can be considered a success, for others can be considered a failure, because each one has a different perspective on the same project. This short paper proposes a flexible success evaluation model for an Information Technology project, called Success Breakdown Structure (SBS). In this model, the various stakeholders present in a project are presented, as well as their success assessment criteria over three different visions: after the completion of the project, after a few months and last, after a few years. From the obtained results, we can conclude that the evaluation of a project success is not concern of project managers only, but is transversal to all stakeholders.

Keywords: Project, Project management, Success, Stakeholders, Success criteria, success evaluation.

1 Introduction

Over the years, project managers, organizations and academics have been researching about project success, but it is difficult to explain, because is a very broad concept and has many different meanings [1]. It is observed that each stakeholder has a different perception about what constitutes a success project [2],[3].

It is not common that a stakeholders perception about a project success is related only with achievement of cost, quality and time criteria on a project [3].

There are quite a few well-known cases, such as "The Sidney Opera House" and "Thames Barrier" where the cost and time were largely outdated, but nevertheless they were perceived as very successful later [4].

This demonstrates that the famous Iron Triangle (budget, time and quality) is an inadequate indicator to evaluate a project success. Success is not only related with completion of work, but also with the achievement of business objectives, in other words, whether the project really provides the desired results and desired impacts when used, according to the different stakeholders perspectives [3], [5].

According to Atkinson [6], over the last 50 years a project success is related with Iron Triangle criteria, however Atkinson adds that project still continue fail, because these indicators are not enough to evaluate a project success.

Although the project success is often spoken, there is not complete agreement in its evaluation, because each stakeholder has his own perception [7], so Baccarini [8] adds that stakeholders satisfaction is crucial to project success.

Thus, this short paper aims to contribute to the advancement of knowledge regarding the project success creating a new model, the Success Breakdown Structure, because, "the truly successful project would be the one that is considered a successful by all stakeholders" [9]. The Research question is: "What are the criteria for success evaluation of the various stakeholders present in an IS project?"

2 Literature Review

2.1 Relevant Concepts about Success in Information Systems Projects

In this section we present the main concepts in the area of Information System Project Management and is reviewed relevant literature on project success.

There are many definitions about information system, project management, stakeholders, business analysis and success evaluation. We will be focusing on a short and concise definition of each one.

Information System is the management of human resources and materials performing the activities of acquiring, storing, processing and disseminating information, and may or may not have computers involved [10], in general is a set of informational relations existing in the organization [11].

Project is a temporary effort, having a well-defined beginning and end date, as well as resources, which aims to create a new and unique product, service or result, following a set of specific rules [12]. Life cycle phases of a project are: initiation, planning, execution, monitoring and control and conclusion [12].

Project Management is planning, delegate, monitoring and control all aspects of a project, including motivation of all involved, to achieve project objectives within the time, cost, quality, scope, benefits and expected risks [13]. The purpose of project management is to keep under control all work needed to create a new product, because it introduces change, and this usually has associated risks [13].

Stakeholders are people, groups or organizations that can affect or be affected during the project execution, due to a decision, some activity or even the final result. They also have interests, expectations or visions that can positively or negatively affect the performance. Some stakeholders are directly involved in the project, others have a smaller involvement, thus having various levels of responsibilities and authority, and these levels can change throughout the project life cycle [12]. Not knowing the stakeholders expectations and needs, especially those who have lot of power and influence can ruin a project completely [14].

Business analysis is the application of knowledge, skills, tools and techniques to determine existing problems, identify business needs and recommend solutions to address those needs. It also encompasses managing stakeholder requirements and their

documentation, and ultimately support the achievement of project expected benefits [15]. The application of appropriate business analysis techniques allows the collection of high-quality requirements, according to stakeholder expectations. It is also verified that the projects tend to be carried out with greater success [15].

Information System success cannot be seen only traditionally, the compliance assessment of time, cost and quality, but also if the project provides the desired benefit [5], that is if it brings to the organization new capabilities and business objectives and if it reaches the expected impacts in medium/long term, including future development desired for the business [16]. Stakeholders has different perspectives of what constitutes a project success according to its criteria and performance [2], [17].

2.2 Review of Stakeholders Success Perception models

In this section we present some of the best known models of success perception in information systems projects.

Atkinson [6] proposes a new framework to consider success criteria, called the Square Route. The author considers several success criteria, in addition to the already famous Iron Triangle, and divides them into three different categories: Technical strength of the resulting information system, direct benefits for organization and benefits to its stakeholders, which it calls indirect benefits.

Lim & Mohamed [18] propose to classify different success perspectives into two categories: Macro Vision and Micro Vision. Micro Vision is related with success criteria assessment in project conclusion and Macro Vision with project operational phase, post-implementation, where it observed if objectives are fulfilled as foreseen.

Davis [19] proposes a model where identifies the most relevant and cited stakeholders in the literature and finally group them according to their success project perception.

Egorova et al. [9] present a model based on an empirical research carried out in Australia and Sweden, which analyzes various success perspectives. The model studies the most important characteristics of a product and the factors and characteristics of a successful project, in three different stakeholders perspectives, strategical, tactical and operational.

Turner & Zolin [3] developed a model that judges the project success by stakeholders evaluation, in terms of final result and the impact of the project over months and years after project completion. They identify eight stakeholders types that will have different interests in the project outcome and their impact over time, so they will have different ways of evaluation a project success at different timescales.

3. A New Model for Project Success: Success Breakdown Structure (SBS)

The new model was named Success Breakdown Structure (SBS). The model proposes the identification of the stakeholders involved in a specific information system

project, followed by the characterization of the various success perspectives, that is, the main criteria that these stakeholders considerer for a successful project.

In order to improve the success assessment, each stakeholder will have defined criteria for evaluation success in three different views: short-term vision (end of project): Evaluation criteria success after project completion; medium-term vision (up to 1 year): Evaluation criteria success after a few months (operational phase); long-term vision (after 1 year): Evaluation Criteria success after a year or more.

The figure 1 shows the static view for the Success Breakdown Structure.
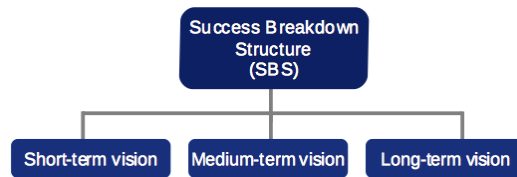

Fig. 1- Static view for the SBS

The stakeholders who initially will be present in this model are:

- **Owner:** Who pays the project to get benefits and pay the investment;
- **Sponsor:** Who promotes and support the project. Identify the need for a new good/service and the potential benefit it will bring. Conducts the project from the beginning to its delivery, guaranteeing financial and political support;
- **Project Manager:** Responsible for project management and for leading the project development team. It is the primarily responsible for achieving the objectives;
- **Project Team:** Responsible team for developing the project;
- **Customer:** Who approves and pays for the project result. They get benefits from the project result and pays for that. This allows the owner to make revenue to pay his investment;
- **User:** Who will effectively use the project result;
- **Supplier:** Who provides the necessary components, services, materials and resources to realize the project.

For a better understanding of stakeholders evaluation criteria and also so that they do not seem to be disorganized, these will be defined by types. Each type will have a different color for an easy distinction in SBS:

- Success criteria at project level – Yellow;
- Success criteria at product level – Light blue;
- Success criteria at business level – Orange;
- Success criteria at personal level – Green;
- Success criteria at satisfaction level – Purple.

The figure 2 shows the success evaluation criteria for short-term view of Success Breakdown Structure for all stakeholders.
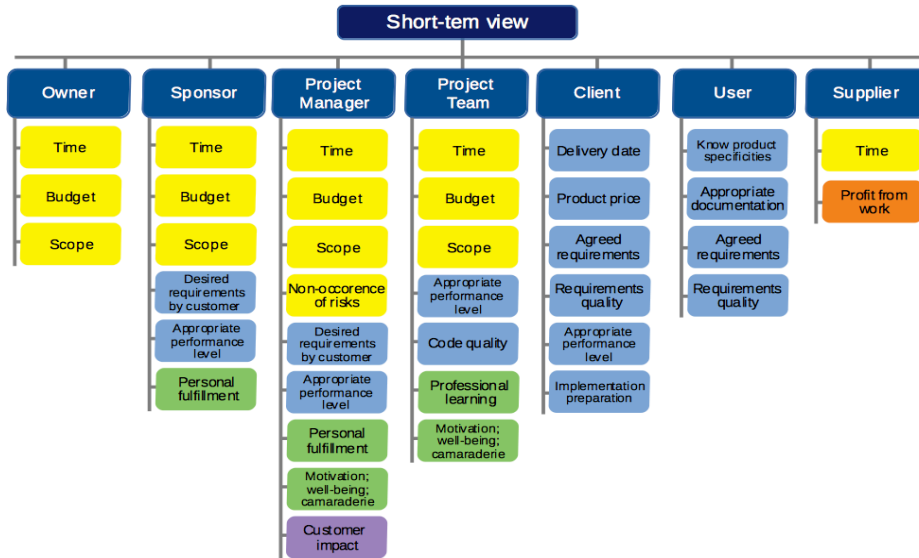

Fig. 2-Success evaluation criteria for short-term view of SBS

The figure 3 shows the success evaluation criteria for medium-term view of Success Breakdown Structure for all stakeholders.
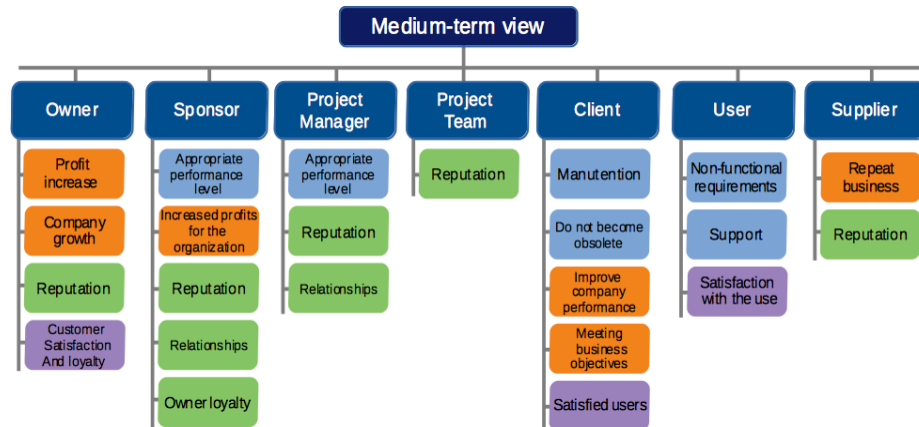

Fig. 3-Success evaluation criteria for medium-term view of SBS

The figure 4 shows the success evaluation criteria for long-term view of Success Breakdown Structure for all stakeholders.
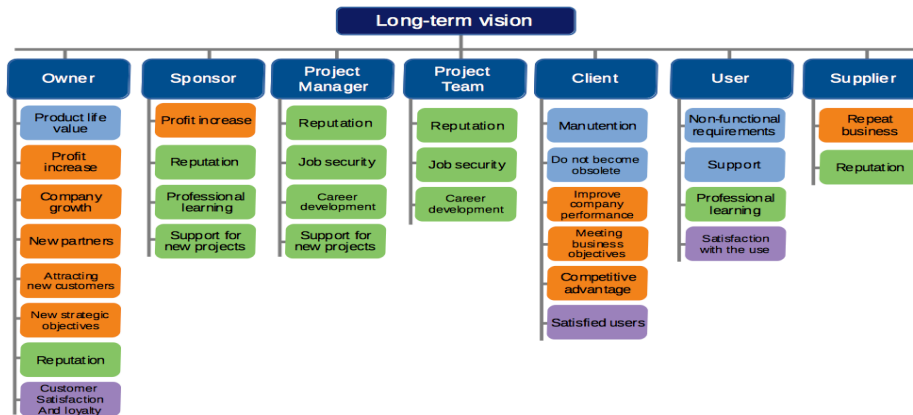
Fig. 4-Success evaluation criteria for long-term view of SBS

As we can see, in short-term vision most of criteria are linked to project and product level, while in medium and long-term visions, the majority of criteria are related to personal and business level.

3.1 Application Procedure

We propose an application procedure to facilitate the use and understanding of SBS.

We consider SBS a flexible model, because it can be adapted according project stakeholders and always keeping in mind its individual success evaluation criteria.

The SBS is defined and presented at the project kickoff meeting and must be included in the Project Charter, which is the first official document. This happens to define stakeholders of the project and align their expectations with respect to it, defining individually success evaluation criteria.

During all this procedure, the project manager has a relevant role, he is the main responsible for its definition, application and for the project success, therefore, all the criteria alignment has to have the consent of him.

The SBS created in this paper is only an example with some project stakeholders and their success evaluation criteria, despite it can be used just as it is. However, a new SBS can be created, it is only necessary to follow a few steps: 1. Identify project stakeholders; 2. Identify their success evaluation criteria in the three different views; 3. Define criteria by identified types; 4. Create the new Success Breakdown Structure in the three different views.

After these steps, the new SBS is created and it can be used to clarify objectively the project success.

During the project development phase, it is possible to add/change success criteria, however, these changes only can be made in exceptional cases, with project manager approval and all other stakeholders affected by the change.

At the end of project, it is advisable to perform a basic statistic, called Criteria Fulfillment Degree (SBS-CFD), to know degree of accomplishment of success:

(Number of successful criteria/ Total number of criteria) * 100. It is possible to perform this statistic for each stakeholder individually too.

Thus, we can identify which stakeholder has the highest number of criteria met and which stakeholder with the lowest number of criteria accomplish.

4. Conclusions

This paper tries to characterize a success evaluation model of an Information System project, based on stakeholders perception, because each one has its own expectations, interests and needs regarding to the same project. Due to this, evaluation success criteria vary depending on stakeholder.

Over time and through study, it was verified that evaluating a project success only with Iron Triangle criteria, is not enough, because these are usually project manager criteria regarding to the end of a project. Customer, end-user, or any other stakeholder will have other criteria to evaluate the same project.

Even each stakeholder criteria are variable according to the time that they are evaluating a project, since the success criteria at the end of a project are different from success criteria at operational phase, that is, after a few months or years of its use.

With the study of existing models, it was verified that there is already some concern about the importance of stakeholder perception, however, it is considered important to build a new model, more embracing and easier to use.

As a final result, a adaptable model was developed, called Success Breakdown Structure (SBS), where different stakeholders are identified, as well as their success criteria, divided over three different views: short-term, medium-term and long-term.

To help build the SBS, an Excel support tool is used, where the model is created, and, where success criteria can be evaluated, however this is only a first tool version.

Performing a basic statistic, called Criteria Fulfillment Degree (SBS-Cfd), it will be possible to realize a report with statistics of each accomplished project, such as average of fulfilled criteria and which is stakeholder with highest and lower criteria fulfillment, which will help to make forecasts for future projects.

It is expected that this new SBS model, will help to improve the Information Systems projects success evaluation, since, presenting a model with all stakeholders and all their success criteria, clear and well defined at the project beginning, will allow an alignment of expectations, interests and needs. Thus, the probability of a project being evaluated successfully by each stakeholder is greater, because there will be no false expectations about it.

This model was tested in academic environment, however, it is fundamental in the future to be validated by real stakeholders in a real context.

This is also the first version of the model (SBS), so it is just a possible suggestion of stakeholders and criteria. It is considered a flexible model, because it is possible to add and remove stakeholders and its criteria, so that it is constructed in the most realistic way and in accordance with the specificities of the project.

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