

Portfolio Management of Social Projects: A case study in IFSP

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Abstract

Portfolio Management is a technique to manage several individual projects with similar goals at the same time. Social projects with Non-Governmental Organizations (NGOs) are very common, however NGOs do not normally possess the knowledge or the manpower to take in new projects. When social projects are undertaken, the management of scarce resources and knowledge is fundamental to achieve each individual project goal. Through a literature review and search for the best selection method to incorporate projects in the portfolio this work will demonstrate a case study performed by a scholarship student of IFSP in the selection, execution and control & monitor phases of a portfolio that was undertaken in the 2020 school year. The work was able to answer the research questions and improve overall individual project performance, increasing the institutions body of knowledge and lessons learned, even in a year with many uncertainties due to the COVID-19 restrictions.

Keywords

Portfolio Management; Project Management; Social Project Management; Projects & Portfolio

1. Introduction

With the transformation and changes in the world caused by technological advancement and the need to increase the manor in which project management is seen, new strategies, technics and tools for project management are required to increase visibility and results in organizations. This research is motivated by the increase in knowledge in managing a portfolio of Social Projects that are undertaken as a part of the mandatory subject of “Integrated Project” in the second year of Electronics Technical Course.

There are several different methodologies for portfolio management, such as Canvas (Neto, 2016), with the programming of criteria to properly select and categorize the various individual projects. Since the “Integrated Project” subject of IFSP utilizes the Project Management Body of Knowledge (PMBOK) as the managing tool for the individual projects, the Portfolio management will follow the instructions and methodology of the PMBOK.(PMI, 2018)

This paper will be divided into five chapters: what is portfolio management based on a literature review; important and relevant definitions; the criteria for selecting the Non-Governmental Organizations (NGOs) projects to fit in the portfolio; execution and monitoring/control phases and a conclusion.

1.1 Objectives

The main objective of this paper is to enable and help managers in Portfolio Management of Social Projects. To perform such task the following research questions should be answered:

What are the best methods in choosing projects to fit in a portfolio?

How can Portfolio Management increase the success rate of the individual projects?

2. Literature Review

Literature review is the process of searching, evaluating, analyzing and describing a specific knowledge, and in the case of this paper the information will be gathered about portfolio and project management. The word “literature” covers all written material in books, proceedings, journals, historic records, governmental records, dissertations and thesis etc. There are three forms of Literature review: narrative, systematic and integrative.

The “Narrative Review” do not use explicit and systematic criteria for searching and analyzing the literature nor sophisticated search strategies. It is proper to be used as theoretical base of articles, dissertations, thesis and conclusion course papers.

The “Systematic Review” is a scientific inquiry. This type of review is considered experimental studies of recovering and critically analyzing the literature with the objective of assessing, gathering and evaluating the method of research and synthesizing the results of several studies. Its goal is to answer a specific research question clearly formulated and uses systematic methods the select the most relevant work to that question.

The “Integrative Review” is used to review and combine studies with different methodologies. It also has the potential to promote review studies in different knowledge areas, keeping the rigor in method of a systematic reviews. The Integrative Review allows for the combination from theoretical and practical data literature that can be used to define concepts, identify research holes, theory revision and method analysis of studies in a certain topic.

The literature review used in this paper is a fusion of “Narrative Review” and “Systematic review”, that will fit for the objectives of this paper The website <https://scholar.google.com/> was selected as a search mechanism since it indexes several databases such as IEEE, Springer, and SCOPUS. Due to restrains in language by the students only Portuguese texts were selected. The keywords used to select the papers were:

“(Gestão de Projetos)” OR “Fundamentos para Gerenciamento” OR “Projetos Institucionais” OR “Gerir” OR “Fundamentos para Gerir” OR “Planejamento e Gestão de Portfólios”

After the search parameters were introduced, 203 literature pieces were found on March 2020 when the query was executed. To reduce the number of literatures under review, two criteria were assigned one for publication date to have the most recent work and another for citations to gather the most relevant work. The criteria are described in Table 1, reducing the final number of papers to 20 as seen in Table 2. Table 2 also shows the PMBOK reference that was included due the use in the study’s case course.

Table 1 – Exclusion Criteria

Criteria	Description
Publication Date	Work must be published in the last 10 years
Citations	Work must have at least 10 citations

Table 2 –Literature Review Selected Papers

Author(s)	Title	Year
Almeida & Almeida	Metodologia de gerenciamento de portfólio: teoria e prática	2013
Archibald & Prado	Gerenciamento de projetos para executivos	2011
Barbosa & Moura	Trabalhando com projetos: Planejamento e gestão de projetos educacionais	2013
Besteiro	Escala de mensuração dos fatores críticos de sucesso no gerenciamento de projetos	2012
Camargo	Gerenciamento de Projetos: Fundamentos e Prática Integrada	2018
Carneiro & Martens	Análise da Maturidade em Gestão de Portfólio de Projetos: O Caso de uma Instituição Financeira de Pequeno Porte	2012
Carvalho & Rabechini	Fundamentos em Gestão de Projetos - Construindo Competências para Gerenciar Projetos	2018

Guedes et al.	Alinhamento do portfólio de projetos à estratégia das organizações: um estudo exploratório quantitativo	2011
Keeling & Branco	Gestão de Projetos	2017
Kerzner et al.	Gerenciamento de Projetos: uma Abordagem Sistêmica Para Planejamento, Programação e Controle	2015
Larson et al.	Gerenciamento de Projetos: O Processo Gerencial	2016
Marques Junior & Plonski	Gestão de projetos em empresas no Brasil: abordagem "tamanho único"?	2011
Neto	Gestão Dinâmica de Projetos: LifeCycleCanvas®	2016
Patah	Avaliação da relação do uso de métodos e treinamentos em gerenciamento de projetos no sucesso dos projetos através de uma perspectiva contingencial: uma análise quantitativa.	2010
PMI	PMBOK - Um Guia de Conhecimento em Gerenciamento de Projetos	2018
Prado	Planejamento e Controle de Projetos	2014
Prado	Maturidade Em Gerenciamento De Projetos	2016
Sabbag	Gerenciamento de projetos e empreendedorismo	2013
Valle et al.	A representação social do escritório de gerenciamento de projetos na percepção de profissionais da área	2014
Vargas	Utilizando a Programação Multicritério (AHP) para Selecionar e Priorizar Projetos na Gestão de Portfólio	2010
Watanuki et al.	Gestão de projetos internacionais: um estudo bibliométrico	2014

2.1 Concepts and Definitions

This section defines several terms and terminology that will be used henceforth.

2.1.1 Project

A project is a temporary effort, undertaken to create a product, service or exclusive result. The concept of a project brings 3 important fundamental characteristics that are: unique, temporary and progressive. A project is considered temporary as it has a start and end date. A project is unique as it generates exclusive deliverables that can be products, services or exclusive results. A project is progressive as the tasks are performed in sequence until the project ends, either by completion or by cancelation. (PMI, 2018).

There are several types of projects that can be found, such as Social, Personal, Public, IT, Educational. A Social project is developed in communities or companies from the third sector, normally inside NGOs, with the objectives of public interest. Personal projects are those to meet individual or familiar needs. Public projects are developed by the government with the objective to meet society's needs. IT Projects are software or hardware developments with the objective of using information technology to increase profits and efficiency inside organizations. Educational projects are developed by both public and private schools and universities to educate their students. (Carvalho & Rabechini, 2018; Larson et al., 2016; Prado, 2014; Sabbag, 2013)

2.1.2 Process

A process is an activity or set of activities that uses specific tools and techniques to transform (process) a set of inputs in a single or a set of desired outputs. It is a set of actions and related activities that are executed with the goal of achieving a product, service or exclusive result. Each process will have its unique inputs and outputs, as well as tools and techniques to perform the action needed. The 3 fundamentals of processes are: Progressive, repetitive, enduring. (PMI, 2018)

2.1.3. Project x Process

Both project and processes are important for the execution and improvement of a business. However, depending on the desired result a choice needs to be made between both. As previously demonstrated, there are intrinsic differences between both project and process and the most significant one is that a project will create something new, while a process repeats itself to yield the same results. It is important to notice that when a project ends and delivers the new product, service or exclusive result one of its deliverables can be a process chart to allow the stakeholders to repeat the results, thus creating a production process.(Camargo, 2018; PMI, 2018)

2.1.4. Portfolio

The word Portfolio means a folder of archive in which research data is filed. To Project Management, a Portfolio consists in grouping Programs and Projects that have a particular connection or purpose to increase the success rate of the individual Programs and Projects as well as maximizing corporate efficiency. It creates a consolidated view of the Programs and Projects of a company to better understand the goals - both short and long-term - intended. (PMI, 2018)

There are several benefits in incorporating Programs and Projects in Portfolios, such as the improvement in decision making, minimizing operational risks, maximizing and improving operational resources, improving the perceived value by the stakeholders, increase product and service reliability and quality. (Almeida & Almeida, 2013; Besteiro, 2012; Carneiro & Martens, 2012)

Managing a Portfolio is not simply managing multiple projects simultaneously, but is the use of knowledge, strategies and management techniques on the integrated work of the diverse projects that are included in the portfolio. The objective is to maximize the return over the investment, efficiently and lucratively, in full synergy with the company's strategic objectives. It is the association of knowledge, strategies and management techniques that makes several standalone projects into a portfolio. The portfolio manager must ensure that all his projects are developed equally and concluded with success. (Guedes et al., 2011; PMI, 2018)

According to Almeida & Almeida (2013) there are several types of portfolio. The most recurring are:

- *Academic Portfolio*: a pedagogical tool that gathers both student and professional work, papers and thesis.
- *Scholar Portfolio*: a register system that follows the student's development through the course.
- *Investment Portfolio*: a great importance procedure for companies in which the capital budget is divided between projects and financial investments. The purpose of the portfolio is achieving the company's strategic goals while yielding perpetuity, positive repercussion and rentability
- *Personal Portfolio*: is a document that summarizes the value of a candidate, with both professional and personal information.
- *Digital Portfolio*: can be on-line or off-line. Very common in professions that depend on digital content and is often created on platforms for easy access.

2.1.5. Portfolio Management

According to PMBOK (PMI, 2018) portfolio management is a form of closing the gap between strategy and implementation in project management. The Portfolio management is undertaken in two steps: i) selecting the right projects at the right time, maximizing the time and capital investment of the company and ii) follow-up on project execution. Even though portfolio management does not interfere directly on project planning and follows-up on the execution and control & monitoring phases, there are several steps into portfolio management as described below.

- *Identification*: This phase requires the portfolio manager to understand more about the proposals as listing the basic information is not enough to guarantee a good performance. The objectives, resources, duration, desired progress and deliverable.
- *Selection*: This phase defines the criteria to assess which projects will be prioritized. Analyzing all parts of the project including risks, stakeholders may be the difference between failure and success.
- *Categorization*: This phase is designed to better control the projects, "separating" them so individual quality and control of deliverables and easily tracked. Once the individual targets are known the portfolio manager can suggest changes to achieve a better equilibrium all over the portfolio.
- *Execution*: The most difficult part of a project as it is necessary to perform all work planned. Normally there will be unexpected risks and events that will trigger reactions from the individual project management teams.
- *Control & Monitor*: Comparing the actual data to the project plan, observing and reporting performance to stakeholders. While individual projects are concerned with Scope, Time, Cost, Quality etc. the Portfolio Manager is concerned with the Performance Index and Return Over Investment (ROI), the new products already launched and other high levels indicators.

3. Methods

To choose which projects should be part of the portfolio, this study used the methods described in Vargas (2010) in multicriteria programming known as Analytic Hierarchy Process (AHP). AHP, developed by Prof. Saati in 1970, is one of the most used mathematical models for market decision making. The programming of the criteria in AHP is a

structured technique for decision making in complex environments in which several variables or criteria are considered. An example of AHP can be found in Figure 1 below (Vargas, 2010)

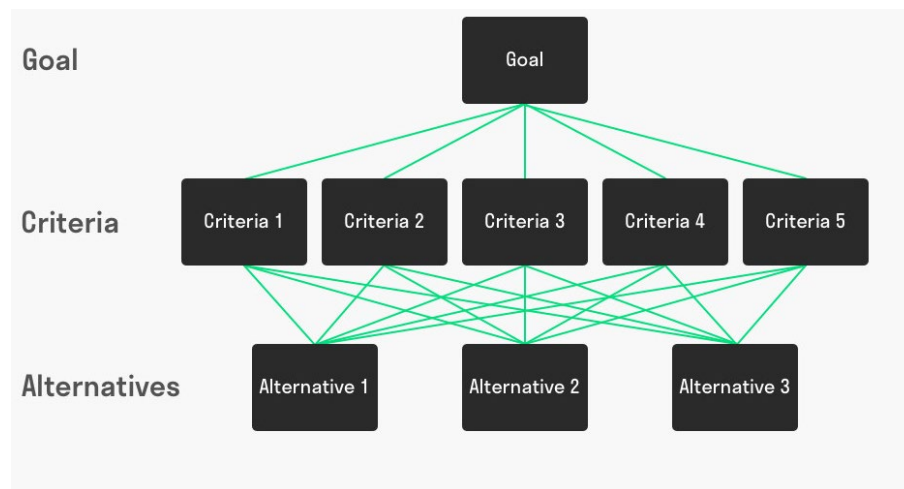


Figure 1 – An example of AHP Criteria

With AHP method selected, the criteria for sorting the projects was established as described in Table 3 below:

Table 3 – AHP Selection Criteria.

Criteria	Description
Introduction	Clear Mission and Vision statement for the project
Structure	Fits the project definition as seen in Section 2.1.1.
Objectivity	Project Objectives are clear and well defined
Methodology	Methods described to achieve project goals are feasible
Complexity	Level of complexity to achieve the project's objective
Strategic Planning	Clear Milestones to achieve the project's objective

4. Case Study in IFSP

Eight projects were submitted to the “Integrated Project” subject of IFSP in 2020 academic year. Out of the original eight, five needed to be selected by the method described in Section 3 to form the Portfolio. The Portfolio Manager (Lima) proceeded to review the projects and analyze the submissions, with the results displayed in Table 4.

Table 4 – Proposal Scores

Project	Intro	Structure	Object.	Method.	Complex.	Strategic	Total
Proposal 1	5	6	5	0	7	6	29
Proposal 2	10	9	8	8	8	9	52
Proposal 3	9	10	8	7	9	8	51
Proposal 4	8	9	10	10	8	8	53
Proposal 5	8	10	7	6	8	7	46
Proposal 6	8	7	9	6	9	6	45
Proposal 7	8	7	8	6	8	7	44
Proposal 8	10	8	8	8	7	8	40

To determine which projects would be part of the portfolio the higher grades were selected, if they were not submitted by same NGO. This was the case of proposals 3, 4 and 5 and proposals 6 and 7. As a result Proposals 3, 5 and 7 were excluded from the final possibilities since they were submitted by the same NGO.

As well as the analysis by the Portfolio Manager of the proposals, the students in the course were asked in which proposal they would like to participate. Each student was asked to select 3 proposals (with no order of importance) in which they would like to participate. The results from the student query are displayed in Figure 2 below. This was a key factor in obtaining a high level of interest by the students in the actual project. After the groups were divided between 6 and 7 individuals and all students were allocated in one of the projects that they previously selected.

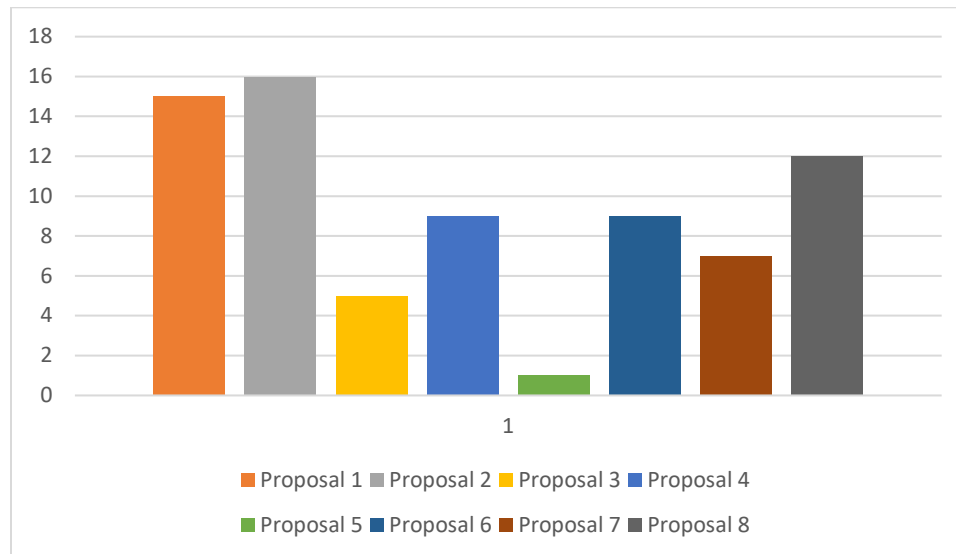


Figure 2 – Student Interest

Proposal 1, even though it had the lowest score on AHP was one of the most popular with the Students. Proposal 2 had the best introduction, with a clear mission and objective statement. Proposal 4 had the best objectivity and methodology. Proposal 6 had the best complexity score, being the easiest one to be achieved. Proposal 8 followed in the same idea as Proposal 1, but the submission was lacking information for better scores.

In each group two individuals had specific roles. The first was the Communications Liaison, with responsibilities to communicate not only results to stakeholders but also keep communication inside the group and with the Portfolio Manager and Tutor Professor. The second was Control and Monitor Liaison, with responsibilities to report performance in Scope, Time, Cost, Risk and Team Management with performance reports sent to the Communications Liaison.

A weekly meeting was scheduled with each group. In it all the Project Team, Portfolio Manager and Tutor Professor would be present, and the Communications Liaison would report performance, next steps were clarified and request for changes were analyzed. Eventually the NGOs partner would attend the meetings to report on the perceived improvement and report overall satisfaction with the project.

5. Results and Discussion

During the academic year of 2020 the 5 approved proposal were accompanied as a portfolio. Following the Execution and Control & Monitor phases it was possible to notice changes early in the individual projects that lead to pressure and disagreement between the project group (students allocated to that proposal). It was necessary to apply tools and soft skills techniques to properly manage the project's teams so they could get back on track.

One of the biggest challenges was keeping engagement on the projects by the shareholders, not only students but also the NGO partners, who would not respond for several days. Another unforeseen challenge was the restrictions imposed by COVID-19. Social distancing and the fact that schools were closed with on-line teaching classes transformed all meetings in virtual events. There were several connection and availability problems with the students and NGO partners.

To evaluate the result of each individual project and overall Portfolio Management group, 10 (ten) criteria were selected between the Portfolio Manager and Tutor, 5 (five) related to the documental part of the project as described by PMBOK (PMI, 2018) and 5 (five) related to the overall success: Achieve expectations, Project conclude in time, quality achieved, scope achieved, Risk and change Management. The result from the individual projects is shown in Figure 3 below and the result of the Portfolio in Figure 4.

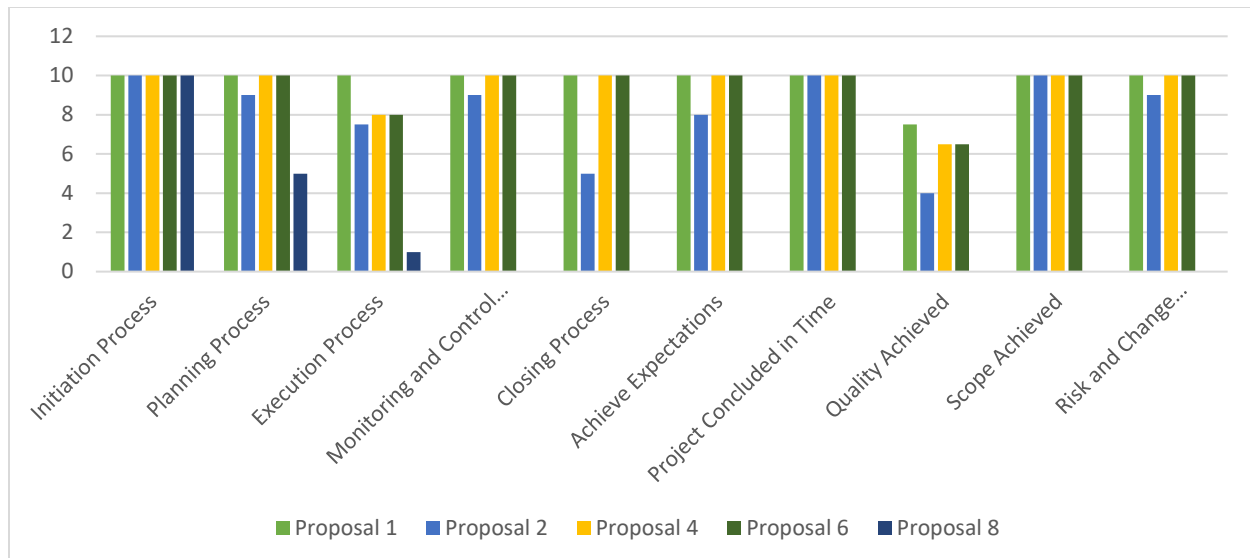


Figure 3 – Individual Projects Result

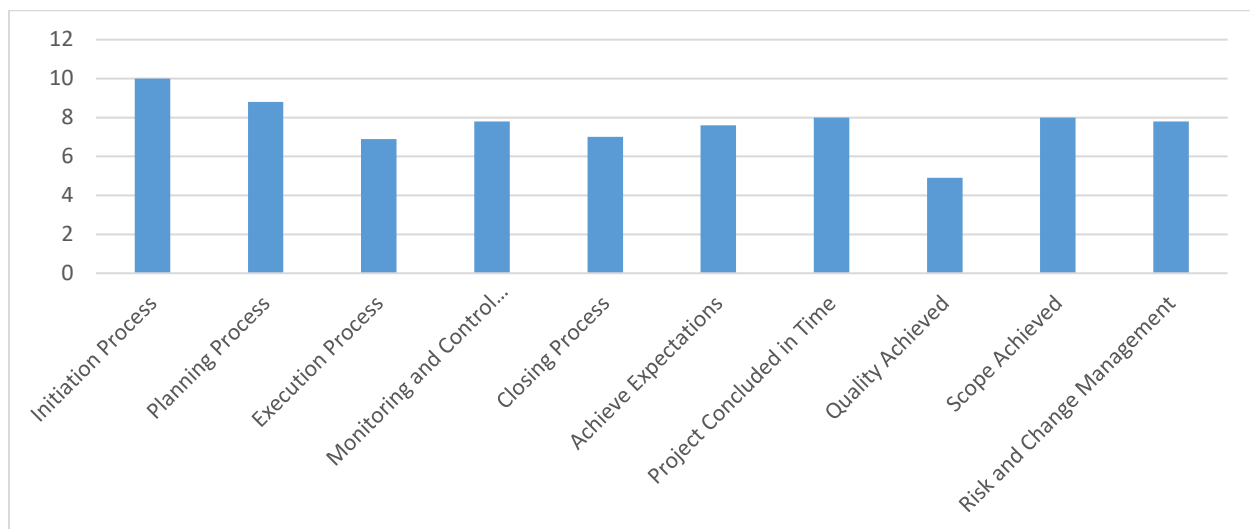


Figure 4 – Portfolio Result

There were advantages of having a Portfolio Manager of the Social projects, as solutions found by one group were quickly shared amongst other participants increasing the efficiency of the overall projects and the response time for uncertainties. It was also possible to notice that after the first couple of weeks students became more open to suggestions by the Portfolio Manager.

The rigorous control by the portfolio manager also allowed for better performance indexes, even though one project was inexplicably terminated by the NGO. This case was listed as failure to communicate properly between the NGO and the project group. Unfortunately, due to the restrictions imposed by COVID-19 several objectives could not be met and most of the projects had to have their objectives changed to meet the new sanitary reality. All other 4 proposal were concluded to new approved specifications that were implemented by Integrated Change Control.

The lessons learned with the 5 projects that were accepted will help to better select proposals in 2021 academic year as this project will continue with new NGO's and new proposals. Amongst them we quote: i) better engagement from the NGOs; ii) at least a monthly conference call with all stakeholders to assess project perception; iii) improvement of the criteria and selection process of proposals; iv) standardize reports for all projects to better keep track of performance.

6. Conclusion

Portfolio management is a complex task to be undertaken, with several problems affecting the success of the projects. To achieve success the project management plan must be aligned with realistic achievements and goals. Also, the metrics between what was proposed and what was delivered is important to remove speculative results. To achieve this the actions were taken to comply with the project plan, always searching for fast solutions for the issues that arose keeping stakeholder's engagement in the process.

When referring to the research question "What are the best methods in choosing projects to fit in a portfolio?" Section 3 was able to properly respond that inquiry. The other research question "How can Portfolio Management increase the success rate of the individual projects?" was detailed Section 2 with the literature review. Finally, the case study displayed in Section 4 made a practical use of the theory in which it was possible to implement knowledge developed in this paper, thus allowing the Portfolio Manager and the individual projects to have a better perception of the complete Project Management process.

Working with NGOs of different sizes and managing their expectations was the most challenging aspect of the task undertaken. Due to the level of knowledge by both students and NGOs communications and reports need to be improved for the next instances of the Portfolio Management project to ensure even better results.

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Biographies

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Vitor Mendes Caldana is a professor at the Sorocaba Campus of the Federal Institute of São Paulo (IFSP) in the industry department. Received his Electrical Engineering degree from Universidade Presbiteriana Mackenzie in 2004 and his M.Sc. in Industrial Engineering from UNIP in 2017. In 2016, as a full-time professor, began teaching at IFSP Sorocaba to implement the technical course of Electronics and recently was given the Coordination of the Post-Graduate Specialization Course in Industry 4.0. Before becoming a full-time professor worked in the printing industry for over 15 years in the fields of maintenance and project management based in Brazil covering all Latin America.