A Hybrid Methodology to Project Management

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Abstract- Project, processes, and other routines compose the types of activities performed in organizations. Each one of these types requires a different management model. When a demand arises in the organization, it is very important to recognize what type of solution should be adopted. The non-differentiation between project and other types of activities can complicate the management process since their process are different one to another. Demands which solution is reached by a process execution have common characteristics as limited scope, a defined set of objectives, clear results to be reach, budget, and deadlines well defined. This paper proposes a methodology that aims to classify demands which arise in a corporate environment. Called Hybrid Methodology for Project Management (HMMP), it facilitates the decision-making process, as well it defines the management model that should be applied in each case. First the HMMP focuses in to separate projects from other types of activities. Some simple questions permit to identify characteristics of the demand to make the separation. When the methodology identifies a project, it proposes a process to suggest the better approach of project management.

Keywords: organizational demands analysis; identifying projects, process, and routines; project identification methodology.

GJMBR-B Classification: JEL codes: M12, O22

Strictly as per the compliance and regulations of:
Abstract - Project, processes, and other routines compose the types of activities performed in organizations. Each one of these types requires a different management model. When a demand arises in the organization, it is very important to recognize what is the type of solution should be adopted. The non-differentiation between project and other types of activities can complicate the management process since their processes are different one to another. Demands which solution is reach by a process execution have common characteristics as limited scope, a defined set of objectives, clear results to be reach, budget, and deadlines well defined. This paper proposes a methodology that aim to classify demands which arise in a corporate environment. Called of Hybrid Methodology for Project Management (HMMP), it facilitates the decision-making process, as well it defines the management model should be applied in each case. First the HMMP focus in to separate projects from other types of activities. Some simple questions permit to identify characteristics of the demand to make the separation. When the methodology identifies a project, it proposes a process to suggest the better approach of project management. Using the temporal characteristics of demands, the HMMP propose a model to organize and after prioritizing the demands. It then determines the project management model. An example helps the reader to realize the potential of the proposal.

Keywords: organizational demands analysis; identifying projects, process, and routines; project identification methodology.

I. Introduction

In the business context, achieving certain goals can be the difference between success and failure. The data driven management becomes a key factor for planning and monitoring actions and projects, which must be managed in a coordinated and standardized way. In this work, actions, and projects, are cited based on the understanding that each demand will have a different way of achieving its objectives.

According to the Project Management Institute - PMI, a project is a temporary effort undertaken to create a unique product, service or result in a finite period (PMI, 2021). This finite characteristic of projects establishes a limited time horizon for achieving a result. Thus, it is necessary to plan and control the actions that allow carrying out the necessary deliveries and achieving the defined objectives. Projects can be coordinated by a nucleus that can be centralized to have a strategic vision, called Project Management Office PMO (PMI 2021).

On the other hand, not only projects live organizations. There are routine actions that are part of their daily lives and that also require management. These actions compete with the same resources, occur in the same space and at the same time with the projects. These routine demands are often processes. According to Business Process Management - BPM, business processes are composed of a set of interconnected activities to achieve a specific objective (BMP 2013). One of the main characteristics of processes is the cyclical nature, they occur repeatedly to ensure the functioning of the organization. This characteristic differentiates the processes of the projects. While projects have as their main attribute the fact of being finite, while processes happen routinely.

Both projects and processes will always involve people. Simon Sinek (2009), speaker and writer, states that new ideas seek lasting success, and that this success requires the help of other people. Aligned with this thought, this work also believes that people’s involvement is essential for success.

Aware of the differences between project and process, this work proposes a methodological model to equip organizations to recognize these differences. The methodology formalizes a flow to classify whether the actions to solve a demand will be a project or a process. It is based on human decision-making and supported by technology.

Finally, the general objective of this work is the creation of a methodology for identifying and managing projects, called Hybrid Methodology for Project Management - HMMP.

II. Vision by Project

To deepen the project definition, it can be seen in Figure 1 that the PMBOK¹ (PMI, 2021) pre-defines a generic life cycle for projects.

¹ PMBOK: Project Management Body of Knowledge Guide.
According to Figure 1, a project has five basic phases. Initiation, Planning, Execution, Monitoring and Controlling, and Closing (PMI 2021). In a high-level view we have.

1. **Initiation**: The initiation of the project aims to align the expectations of everyone involved. In initiation, the scope of the project is refined.

2. **Planning**: In planning all details of the scope of the project will be carried out. Thus, it will be possible to create the schedules, define costs, assess risks, create the communication plan, etc. Here it is defined what the delivery of the project will really be.

3. **Execution**: The main objective of the execution is to carry out the planned actions, producing the defined deliveries.

4. **Monitoring and Control**: Monitoring and control permeates every moment of the project. It aims to compare what was planned with what was carried out and act correctly when discrepancies are identified.

5. **Closing**: This phase formalizes the end of the project. After closure any activity will no longer be part of the project.

In another view, The Scrum Guide (Scrum.org, 2020) defines project as a lightweight framework that helps people, teams and organizations generate value through adaptive solutions to complex problems. The Figure 2 shows the Scrum lifecycle.
Analyzing Figure 2, it’s possible observe the Scrum framework has two distinct elements: Ceremonies, which are the moments (events) of project execution, and Artifacts, which are the results or values delivered.

In Figure 2, you can analyze the lifecycle of Scrum. They are:

1. **Vision**: The objective of the vision is to give a macro idea of what will be developed. The Scrum framework works adaptively. It makes it possible to start with a high-level vision and during the project the details are elaborated.
2. **Product Backlog**: Is a list of products that need to be delivered by the project.
3. **Sprint**: It is a period that can vary from two to four weeks, where something of value is delivered. This valued thing are in the list of Product Backlog.
4. **Sprint Planning**: Here it is defined which activities will be carried out within the period defined for the Sprint.
5. **Sprint Backlog**: The sprint backlog is a list of items that will be delivered within the period stipulated by the team. It is the Sprint results.
6. **Sprint Review**: The sprint review is the event that the team must deliver something ready to the customer.
7. **Sprint Retrospective**: The retrospective is intended to evaluate what went right and what went wrong in the last sprint. It’s time to collect the learnings and prepare for the next sprint.

All terms mentioned here come from the guidelines contained in the Scrum Guide (2021). The Figure 2 shows us as the Scrum’s guidelines lead us to think about generating short, constant, and high-value deliveries. The methodology allows for adjustments throughout the project, enabling a more adaptive management.

The universe of project management is not restricted to just these two guidelines, PMI, and Scrum. But what is sought in this work is to define a decision-making model where it can be possible to use one of this approach depending on the project type.

To define what kind of project management approach should be adopt, this work uses the uncertainty and complexity model (PMI, 2021). The Figure 3 presents the Uncertainty and Complexity Model of the PMBOK (PMI, 2021), which was inspired by Stacey's Complexity Model (Stacey, 1992). This model shows that different scenarios require different project management methods.

![Figure 3: Uncertainty and Complexity Model](source)

The Uncertainty and Complexity Model (PMI, 2021) shows that when there is a high degree of certainty and greater knowledge of the requirements, the more classic approaches are more adaptable to this scenario. On the other hand, as the degree of uncertainty and lack of knowledge of the requirements increase, other adaptive approaches, which are riskier, can generate better use.

### III. Vision by Processes

Like a project, processes also have a life cycle guided by BPM through its Guide to the Business Process Management Body of Knowledge (BPM CBOK® 4.0). The BPM Guide defines for a typical process life cycle six steps. They are planning, Analysis, Design, Implementation, Monitoring and Control, and Refinement. The Refinement step doesn’t finish the process, it improves the process working. The Figure 4 show the aspect cyclical of the process. Its happen because the process establishes the way as an organizational activity works, and its will repeat several times in the organization.
The cyclical view clearly differentiates a process from a project. Projects are not cyclical, since they have a defined deadline, that is, beginning and end. Although they have distinct and clearly distinguishable characteristics, it is a great challenge for organizations to separate what is a project from what is a process. This confusion occurs in the work carried out daily in organizations, generating management problems.

Faced with this problem, this work brings a methodological proposal to help in the differentiation and, later, in the management of these two different types of activity.

IV. PROPOSED METHODOLOGY

The Hybrid Methodology for Project Management (HMMP) proposes a clear way to differentiate projects from other actions that occur in organizations. It separates what a project is from processes, daily routines and even of actions to continuous process improvement.

a) Manchester Protocol

The basis for the development of the HMMP is in the guidelines of the Manchester Protocol (Mackway-Jones et al., 2013). The protocol is a screening method widely used in the health sector, developed with the aim of classifying the priority of patient care. The Manchester Protocol was created between 1994 and 1995, being applied for the first time in 1997 in the city of Manchester, England.

The protocol uses colors to prioritize demands in a health unit, as follows:
1. Red: Cases of maximum level of urgency.
2. Orange: Severe cases.
3. Yellow: Moderate severity
4. Green: Cases with less severity.
5. Blue: Cases for simpler assistance.

The Figure 5 shows the Manchester protocol with its respective colors and meanings of colors.

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**Figure 4:** Processes Life Cycle.

**Figure 5:** Protocolo de Manchester.
Based on the Manchester protocol, Figure 5, the HMMP proposes the use of a similar approach, but with the objective of classifying the demands that arise in organizations.

b) Demands Classification

Based on the principle that a project has a beginning, middle and end, and the process has a cyclical characteristic, the HMMP proposes a diagram, like the Manchester protocol, which classifies the demands according to the lanes of the diagram. The lanes are represented by the letter R, where R1 means lane 1, R2, lane 2 and so on, as shown in Figure 6.

<table>
<thead>
<tr>
<th>Lane</th>
<th>Description</th>
<th>Time</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>To deal with emergency activities</td>
<td>Each demand will have its time stipulated in a maximum of one day.</td>
<td>Service Level Agreement</td>
</tr>
<tr>
<td>R2</td>
<td>To deal with non-emergency activities</td>
<td>Each demand must have its time stipulated between two and five working days.</td>
<td>Service Level Agreement</td>
</tr>
<tr>
<td>R3</td>
<td>Demands that are treated with an action plan</td>
<td>Each demand must have its time stipulated with, at least, one, and a maximum of four weeks.</td>
<td>Specific indicators that will compare the expected delivery time with real time spent.</td>
</tr>
<tr>
<td>R4</td>
<td>Projected demands</td>
<td>Each demand that must have a deadline of more than four weeks.</td>
<td>Time, cost, scope, and other project-specific indicators.</td>
</tr>
<tr>
<td>R5</td>
<td>Improvements</td>
<td>Demands that must be previously scheduled to verify already existing products and services.</td>
<td>Indicators to measure schedule or service level agreements.</td>
</tr>
</tbody>
</table>

Source: Author himself.
As services as deadlines and indicators may change depending on the environment where they are inserted. The main objective of prioritization using Table 1, is to separate what is a project from what is a routine, process, and action plans.

V. The Hybrid Project Management Methodology – HMMP

The Hybrid Methodology for Project Management (HMMP) presents a method to separating the demands type, followed by a proposal for project management. The methodology does not address, in this second stage, the management methods of routines, processes and action plans. Figure 7 presents the methodological flow proposed by the HMMP.

The demands that are distributed in lanes R1, R2, R3 and R5, identified as processes. These types of demands will not be detailed in this work since the main objective is to analyze the method for managing projects. However, it is emphasized that the HMMP offers a formal model to identify the difference between process and project. This action can be easily applicable in any organization.

Once the demand is classified as a project, HMMP proposes to analyze the project based on some requirements and a specific technical vision. For this, it proposes the use of the uncertainty and complexity model (PMI, 2021). This diagram allows identifying characteristics of the project that allow identifying the best approach for its management.

The characteristics classify the project into:

1. Predictive: This kind of project happen when you have more technical knowledge about the project and less uncertainty about the requirements. In this case, the suggestion is to use a more predictive model. More classic approaches work well with greater predictability and scope awareness.
2. Adaptive: A view from the other extreme. Identify this type when there is a very high level of technical uncertainty and the requirements are not well known. In that case, the more adaptive approach is the best option. The chances of constant changes are higher, suggesting the use of scope fragmentation advantages.
3. Hybrid: The hybrid model will combine the two extremes depending on the technical vision and knowledge of the requirements.

Table 2 shows, in a high-level view, how to classify projects.
Table 2: Classification Table.

<table>
<thead>
<tr>
<th>ID</th>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Does the project involve a non-existent or little-known product/service/process?</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Will the project involve unknown requirements?</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Is the project innovative and there are not many records of similar projects already carried out?</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Will the project pass for several tests in a short period?</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Are project requirements dependent on expert analysis for understanding and development?</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Will the project need to be carried out in small deliveries?</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>During the project progresses, can the defined scope easily to change?</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Does the project have a high-level scope document? This eliminates the need for initial detailing?</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Does the project involve software development?</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Looking to obtain advantage or to maintain current service levels, can the deliveries to be accelerated?</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Author himself.*

According to Table 2, each asking should be answered with a number on a scale from 1 to 5. The number 1 is meaning “no” and 5 meaning “Yes”. But the user should consider intermediates answers as:

a) 1 - No.
b) 2 - Not much.
c) 3 - Probably not.
d) 4 - Probably yes.
e) 5 - Yes.

With the option chosen, the user must mark with an “x”. After answer all ten question, it uses the scale below:

a) 1 - No: Worth one point
b) 2 - Not much: worth two points
c) 3 - Probably not: worth three points
d) 4 - Probably yes: worth four points
e) 5 - Yes: worth five points.

At the end, the total scores of the project will define what kind of approach of project management should be used. The Figure 8 shows a scale where the score obtained by the project defines the better approach to conduct the project. The minimum score is ten, that indicate a fully predictive project, and maximal score is fifty, that indicate a fully adaptive project.

![Figure 8: Scale of Project Classification.](image)

In a more detailed analysis of Figure 8, one can observe the intermediate scales that can vary from eleven to forty-nine. This intermediate range helps the user to choose the best approach, possibly a hybrid approach, for example. Table 3 presents an example of the classification obtained for a project to implement a Project Management Office (PMO) (PMO - Escritórios de Projetos, Programas e Portfólio na prática).

Table 3: Classification of a Project to Create a PMO in an Organization.

<table>
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<tr>
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<td></td>
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<td></td>
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<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
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<td>5</td>
<td>Are project requirements dependent on expert analysis for understanding and development?</td>
<td>x</td>
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*Source: Author himself.*
During the project progresses, can the defined scope easily to change? To change without a rigorous change process.

Does the project have a high-level scope document? This eliminates the need for initial detailing.

Does the project involve software development?

Looking to obtain advantage or to maintain current service levels, can the deliveries to be accelerated?

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<tr>
<td>10</td>
<td>Looking to obtain advantage or to maintain current service levels, can the deliveries to be accelerated?</td>
<td>x</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

Source: Author himself.

In the example in Table 3, the project could have a more predictive method, but with some adaptive elements. It was observed that this type has already been performed in several companies, the requirements are well known, and there is not a high technical complexity.

On the suggested scale, it would be at position 20, slightly tending towards a predictive bias, as shown in Figure 9.

![Classification of a Project to Create a PMO in an Organization.](image)

Source: Author himself.

**Figure 9:** Classification of a Project to Create a PMO in an Organization.

**VI. DISCUSSIONS**

Several scenarios can occur when it comes to demands that arise in the organization. The HMMP presents a mechanism to supply an initial bias for choosing the project management approach, as well as a starting point for prioritizing demands.

HMMP leads to the correct definition and prioritization of demands that arise. It is a methodology based on data-driven management, since the indicators seek to measure what really matters.

Jhon Doerr (2019), in his work “Evaluate what matters”, defines that ideas are easy. Execution is everything. Corroborating this idea, the HMMP informs that the execution will generate results, if carried out and managed correctly.

In a project-oriented context, the HMMP helps to define the correct method for managing the analyzed project. The use of this hybrid methodology helps organizations to define the management method according to the technical knowledge and the requirements that involve the projects.

Other demands (actions, routines and processes) that are not classified as projects may have their indicators and management standards defined according to their classification.

**VII. CONCLUSIONS**

The main objective of HMMP is the separation of different management methods for different types of demands. Thus, it can be concluded that it is satisfactory in its initial stage.

In organizations, resources can often be the same to carry out projects and to take care of day-to-day routines. Therefore, it is concluded that a methodology for defining teams, deadlines and efforts, considering each type of demand, is an important tool.

Projects and other demands can be conflicting. This generates negative impacts if project planning is influenced by interruptions in emergency routines. The classification proposed here helps to provide an overview of potential conflicts.

It is also concluded, according to the assumptions adopted, that the proposed methodology will help standardize project management.

Projects can be managed in different ways. But the standardization proposed by the HMMP is that when there is a standard, knowledge transfer and governance perpetuation are considerably greater.

Management prioritization can and should become an organizational habit. According to Duhigg (2012), without the habit loop, our brains would break down.

As a final conclusion, it is believed that this work can contribute to future discussions in the area of project management. Be these in the professional or educational scope, since projects exist in both universes.
REFERENCES RÉFÉRENCES REFERENCIAS


