PROJECTS MANAGEMENT

Oldenburg Basgal, D. M.

Universidad Nacional de Misiones

Facultad de Ciencias Económicas

Ruta Nacional 12, Km. 7 ½, C.P. 3304,

Miguel Lanus, Misiones, Argentina

Email: denisebasgal@fgvpr.br

ABSTRACT

This article describes the emergence of Project Management as a discipline and its transformation into a methodology. The article describes as a project its mechanisms of implementing changes in a structured and controlled manner, and the Project Manager the agent who performs the transformation in the Organizations. This article, relates the foundation in 1969, of the PMI - Project Management Institute, an entity that gets together professionals and organizations in activities of the Project Management area. It also describes the nine areas of knowledge used in the Project Management, inserted within the guide book dubbed PMBoK (Project Management Body of Knowledge).

KEY WORDS: Project management, PMI, Organizational Change

INTRODUCTION

4.5 thousand years ago, the Egyptians began the construction of Cheops' Pyramid, starting off from a plan. Herodotus, a Greek historian, wrote that, that pyramid took 20 years of work and around 100 thousand peasants to work part time (the greatest part of the work was done in the season in which the River Nile flooded the plantations). The workers heaped up, only in that

pyramid, 2.3 million granite blocks of calcareous stone that weighed, as an average, 2.5 tons each. Nowadays, workers build apartments, also starting off from a plan. What is there in common between today's workers and those of ancient Egypt?: The building of an enterprise.

And what is different? The difference, between today's construction and that of ancient Egypt, is the formalization of the Projects Management. The idea is as ancient as the Egyptian pyramids, but that name, Management of Projects, only arose during the Second World War.

As from the Second World War until mid 80s, the global environment begins to present a growing increase of competitiveness. Beginning initially at national level and with little relevance and starting off from the 80s at international level, coinciding with the increase of globalization. Even during the 80s, the interest for "Total Quality", expanded to global level starting off from the competitive success reached by Japanese enterprises. This concept became a positive fever within the organizations, through premises of continuous improvement and management of processes, which approved to guarantee the good operation of its operational processes.

As from the beginning of the 90s, with the vertiginous growth of globalization and the consequent opening of national and international markets, and the brutal increase of competitiveness, the international scenario was much more unstable, in an environment of great changes. In that environment, to rethink the organization, through the development of strategic plans, has become imperious.

The strategic plans of the organizations, determine guidelines of 2 types:

1. Operational, where what is wanted, is determined as a result of the operation of the organization-goals of sales, market, prospective results of costs, rotation of goods, etc.,

2. Of Development, where everything which has to be re-done within the organization, - a new product, a new process, a new market, a new system, a new organizational structure, etc. All that is new, means a change must be implemented

The Development guidelines need to be treated in a structured and controlled way, in such a way as to speed up and guarantee the success of its implementation. For such a matter, it is fundamental the existence of a methodology that guarantees the implementation of the changes.

Stakeholders Analysis

The identification of the universe of people that will be affected or that could have their interests altered by the change is fundamental. Those people are called Stakeholders, and they are positioned in four different roles in the implementation of a change: the Sponsor, the Agent, the Targets and the Advocates. To help to identify the Stakeholders, one must not forget to analyze the following types:

- The Project Manager

- Clients / final users

- Executing Organization

- Project Team Members

- Sponsor (s)

- Society

- Suppliers

- Competitors (current and potential)

- Regulating Organisms

The implementation process, of organizational changes, needs those vital roles and processes, in such a way that their success be guaranteed. Change is a 'top-down' process. From bottom-up, it is revolution or mutiny. And any revolution or mutiny is only true, when it takes over power, and starting off from there, the changes are implemented. No revolution has been certain in human history, without taking over power, and the changes idealized in the revolution only take place later. That configures that in any change process, be it fundamental and critical, the existence of a Sponsor, which is who gives legitimacy, to the change. Change does not exist without a Sponsor. The second and vital role is that of the Change Agent, who is the one responsible the change, for its implementation for people's effective use, - there the greatest responsibility is configured by the Project Manager. The third role is carried out by the Targets, who are people that will be affected by the change and the fourth, the Advocate who in spite of not being affected by the change, defends or attacks its implementation

For a perfect management in the implementation of changes, it is necessary to identify the

whole universe of Stakeholders, and to analyze their position facing change. It is important to identify for each kind of Stakeholder, 2 variables:

1. Which is their degree of interest in the Project, being able to go from Mutual to Conflict area, and

2. Which is their influence power in the Project, going bottom-up.

Barely with the identification of those 2 variables is it possible to define strategies of how to work with people, in such a way of identifying in which quadrants they are positioned, because the strategies depend on the quadrant:

If the Stakeholders have power of influencing in the Project, the same ones will hardly be considered as 'Political Supports". If they are in favor of the Project (mutual interest), these are those that we entitle Members of the Net, and our strategy should be to provide them of information on the Project, in such a way that they can defend it in the managerial environment, reducing the resistance of the De-accelerators (those that are against the Project). Those resistances, if one does not work well, will be able to hinder the implementation of the Project. There the Sponsor's performance is also important, with an active attitude, and that sends signals of his commitment with change.

The most important matter to be worked on is related to the Stakeholders with high influence degree in the project. If they are in favor of the Project, good, they are their Allies, and there obligatorily will be the Sponsor. The Allies will form their power base to act against the Blockers (those that are against the Project). These Blockers cannot be in that quadrant, because they will have a high influence in the result. It is necessary, to convince them on the importance of the Project (working on the axis of Degree of interest) for the organization, and consequently, transforming them into Allies or, through the use of the Sponsor, to take away their influence power in the Project, transforming them in De-accelerators. For this, the use of managerial mechanisms of solution of conflicts and scale up process in the hierarchy of the organization may be necessary.

Using this methodology, called, Stakeholders Analysis, and developed by Nolan Norton Corporation, we have the necessary tools to fight with the diverse positions of persons related to the project, the eliminating or reducing their resistances substantially and working in the generation

of the common interest with relationship to the result of the Project.

That entire context creates the necessity of new competitions and attitudes, and the function of the Projects Management becomes indispensable in the organizations of all the segments. The demands of high levels of unemployment, effectiveness of costs and competitiveness, are characteristic of the business environment of today. The organizations look for more effective work structures and more and more focused in Projects and in the commitment with the results.

The PMI - Project Management Institute

En 1969 a movement begins in Pennsylvania, United States, with a meeting of 5 volunteers, interested in fomenting the career of Project Management, becoming the embryo of the creation of the PMI - Project Management Institute. In 1974 the 1st 'chapter' of the PMI is created, (regional desk), in Houston, Texas, and the 1st international one, in Canada. In 1981, the 1st chapter is born outside North America, in South Africa.

Today the PMI has 250 representations, distributed in 67 countries. In Brazil, at present, the PMI has representations (chapters) in 13 States, and in Argentina it is in the city of Buenos Aires, since 1996.

The PMI is an entity that gets together professionals, practitioners and organizations in activities in the area of Project Management, promoting initiatives and opportunities for all, having as its biggest objective the development of professionalism in Project Management, and it has, all over the world today, nearly 250,000 registered members, approving to promote and to enlarge the existent knowledge on projects management, as to improve the training and the performance of professionals and organizations in that discipline.

Definitions

According to technical norm NBR 10006, a Project is:

> "A unique process, consisting on a group of coordinated activities, and controlled by dates for starting and ending, undertaken to reach an objective according specific requirements, including time, cost and resources limitations."

According with the PMI:

"A temporary enterprise, planned, executed and controlled, with objective of creating a unique product or service."

The definition of the PMI, besides being simple, points clearly at the change context in projects, because it defines the objective of creating a unique product or service.

- Based in that context, we can affirm that Project Management is the application of knowledge, abilities, tools and techniques in the project activities, with the objective of attending its necessities. To obtain success in that activity, a group of knowledge and capacities are necessary:

- Methodologies of Project Management, in way of having a structured process for the conduction of projects;

- Practices and knowledge of People Management, so as to be able to extract the maximum performance of their project team;

- Understanding of human impacts and mental behaviors involved in the implementation of projects, and methodology to fight the Stakeholders;

- Practices and knowledge of the areas of application of the project.

This, therefore, is not something so new in the organizations. The research "Benchmarking Study in Project Management Brazil 2007, Project Management Institute - Chapters Brasileiros", carried out in 185 enterprises of 13 sectors, concluded in December 2007, indicates the main factors that transform the project administration in management of problems. "In spite of the growing importance of the projects, they are still administered, in general, informally."

Some of the conclusions of the survey are:

- 14% of these enterprises did not have formal procedures of projects administration.

- In 21%, the problem was not the lack, but more so the excess: people worked with more than two different methodologies.

- Those responsible for the management of the projects hardly considered three basic aspects of the planning, - scope, term and cost -, leaving important matters aside. So was the case of risks management, so common in the organizations of the financial sectors and

of insurance, and of the quality management. The risks management in 49% of the enterprises was done informally and in 13%, there was no accompaniment.

- The task of learning lessons for the next projects used to be negligence: Only 4% of the enterprises affirmed to always take care of the administration of the knowledge at the end of each project.

The most common problems in the administration, according to the enterprises consulted by PMI (in % of the total), were:

- Extended terms: 72%

- To re-do the work: 72%

- Interruptions in the rhythm of the work: 71%

- Scope changes: 69%

- Insufficient planning: 63%

- Inadequate control: 51%

- Costs Increase: 46%

- Communication Problems: 43%

In that scenario, managers and professionals of the organizations needed to be qualified to implement projects in a highly complex environment, orchestrating multidisciplinary teams and controlling budgets and limited terms, apart from Risks, Human Resources and Quality, so as to reduce the negative aspects demonstrated in the research, guaranteeing success in the implementation of the projects.

In a research carried out by the PMI in the United States, in 2007, the characteristics of a Project Manager were identified and it was seen that their responsibilities tend to be more administrative and tending towards people, and not merely technical. Although technical knowledge is necessary, the project manager spends his day conferring the facing the functioning of the project with something that goes from few to hundreds of team members. The manager himself passes the client's necessities for the developers and he himself makes the terms to be fulfilled. He monitors the expenses and assures that the work is made within the budget or within the planned financial result. However, a project manager works not only with the technicians. He

also serves as connection with all those that solicited the project, be it an internal "client" such as the invoicing and accounting department, or an external client as an advertising enterprise.

The Project Manager has to guarantee the scope of the Success Critical Factors of a Project and these are:

- Objectives reached – be they technical as well as human,
- On-time, and
- On-budget

Knowledge Areas in Project Management

The group of technical knowledge of the Project Management necessary for the perfect performance of the function, according to the PMI in their international publication, PMBOK (Project Management Body of Knowledge), is made up of 9 areas. This knowledge is applied along the processes of Project Management, in a matrix. The processes are: Initiation, planning, control, execution and enclosure.

1. Integration

- This area is equal to making a puzzle, where each piece (knowledge area) should be placed in its due place, in order to obtain the desired final result. Each piece is a part of a whole, and if placed out of place, it will harm the final objective - this means to manage in an inadequate way. Integration contemplates the process of, having taken a decision, joined to the project objectives, to the development and execution of the complete plan of the project, as with the control of the alterations. Their principal processes and respective objectives are:

- Development of the Project Plan, which approves to integrate and coordinate all the plans of the project, generating a consistent document.

- Execution of the Project Plans, where the diverse plans are integrated (Scope, Time, Financial, Risks, Quality, etc.) and the plans are executed according to what was planned.

- Integrated control of all the types of changes – scope, time, term, cost, risk, etc...

Basically it is as if Integration was the seam among all the Projects Management disciplines.

Outreach Management

It is the heart of the project. It defines what should be done, the final objective to be reached (scope of the project product - characteristic and functionalities), just as the scope of the project that means, the work to be carried out for the development of the final product.

The outreach of the product is usually defined by the Client or with him together with the Manager or project team.

The outreach of the project should be developed starting off from the reach of the product and for such, we use a methodology called WBS - *Work Breakdown Structure,* which decomposes the project in elements, separating the products in their component parts.

The control of the scope begins in its definition. In the first place, it is necessary to transform desires, anxieties and expectations into a formal document, called Outreach Declaration, which is completed by the Project Analytic Structure. The success in the Management outreach is in establishing an only communication among the parts and in the formalization of all the outstanding information, accompanying each alteration solicitation and its respective impact on the project. Many changes should be deferred to make viable the term of the project under appropriate conditions to its main objective.

Time Management

Here we occupy ourselves with what should be done (defined starting off from the outreach of the work and the WBS), and we try to organize the work through time. Time is perhaps the only resource that is absolutely unrecoverable, which makes this discipline absolutely critical for the project, attending to one of the 4 Success Critical Factors – on time.

For this, we need:

- To define the activities, starting off from the WBS developed Outreach;

- Sequence the activities, defining their interdependences;

- To estimate their duration (preferentially together with the person that will be responsible for the development of the activity);

- To elaborate the chronogram.

- During the whole project development cycle, we have to control the chronogram,

guaranteeing that the activities are happening according to what has been planned.

Costs Management

Here, in spite of the title of the discipline, the focus should be on the Financial Management, where Cost is only one of the components. The process of projects analysis should contemplate the expected financial result, and that also contemplates the results of the project.

There we have one more of the Project Success Critical Factors of the budget (on-budget).

There are 3 basic planning processes:

- Resources Planning, where all the necessary resources, - people, equipment, inputs, etc. and their respective quantities and invested time, are defined;
- Costs Estimate, where the cost of each resource is elaborated for each activity, on-line with the ABC methodology (Activity Based Costing),
- Budget, where the costs are distributed along the projects activities, determining the cash-flow withdrawals of the project.

Within planning costs of a project, it is extremely common to forget some costs. That will cause a smaller foreseen cost, and consequently a better financial result, masking the real result of the project. This is one of the main causes for the frequent budget or financial plan failure of the projects.

Apart from the planning processes, a basic accompaniment process is that of Costs Control, where the planning is accompanied and the alterations of resources are controlled which will imply changes in the costs.

- The financial Analysis of the project, contemplates, besides the costs, the foreseen results, in such a way of having the financial indicators. The main indicators of the projects that also serve as decisive process for the selection of projects are:
- VPL- Present Liquid Value, where the best project is the one of most VPL.
- TIR - Returns Internal Rate Which presents the rate of attractiveness of investment in the project;
- Break-Even Point or Payback Period, also known as Equilibrium Point, presents in

how long the investments will be recovered, closing the credits and debits.

The uses of those 3 indicators on the whole, guarantee a perfect financial analysis, as well as a good mechanism to define projects priorities or a process of selection of projects.

Quality Management

- The concept of quality in projects is associated to 2 components:

- Quality of the final product to be developed, associated to the first 2 Success Critical Factors, - technical objectives and human objectives reached;

- Quality of the process of project development. This basically refers to the achievement of the Success Critical Factors - within the time and within the budget.

- The necessary processes to that discipline, consider:

- Quality planning, where models of quality to be reached and how to achieve them, are defined,

- Quality guarantee, where a periodic evaluation of the general performance of the project, is carried out;

- Quality control, where the results are monitored, in such a way of guaranteeing that they agree with what has been planned.

6. H R Management

- This area of knowledge tries to focus the effective use of the involved human resources with the project, that is, the Stakeholders. The PMBOK treats this area in a very simple way, focusing basically the components of the project team. For which, 3 basic processes are specified:

- Organizational Planning, where one searches to plan the organization of the project, with focus on the team, to define the roles and responsibilities of the members of the team - to respond to the question: who does what, and when;

- Team Formation, where one approaches the assembly of the team, preparing the human resources necessary for the project;

- Team Development, where one searches, taking advantage of the multi-disciplinarian status of the teams, so that all the team members grow professionally for the simple fact of working together. This is the application of the concept of "on the job training" - growth with the development of the work.

Even within the concept of assembly of the project team, it is important to remember that this should be balanced in terms of 3 components: Knowledge, Capacities and Experience. Those variables form a triad that needs to have its 3 parts balanced, non equilibrium can cause its fall. Human Resources should never be placed in function of the quantity (it is not reasonable that the organizations, today, still continue making reference to their resources as "headcount." "To count heads" is for livestock and not for people, even more so in today's world where so much is said about intellectual capital.), more so if in its contribution for the construction of the triad Knowledge, Capacities and Experience, necessary for the project.

The role of the Project Manager in that discipline is fundamental, because it is he who will process of generation of purpose consensus, motivation, integration, energizing, communication with the team and solution of potential conflicts that could somehow arise.

Also this important part with focus on the team, is important to highlight that for the perfect and complete management of the Stakeholders, it is fundamental the application of the methodology already approached of the Constituents Analysis, in such a way of defining the strategies to reduce the resistances and to increase the success opportunities in the implementation of the project, fighting with the Stakeholders outside of the project team. In this analysis, one's team should always be positioned in the Allies' quadrant, that is, with mutual interest and high influence power in the project.

Communication Management

- That is perhaps one of the main problems in the projects of modern organizations - the lack of, or bad communication. The communication management contemplates 4 important stages throughout the development of a project:

- Communication Planning, where one tries to respond the question "Who needs to

know the what, when and in what format, on the project?." For such, starting off from the relationship of all the Stakeholders we try to identify what kind of information each one needs, when and how periodically, and in what format (reports, intranet, circulars, formal presentation, etc.)

- Information Distribution, where we will attend to what is defined in the Communication Plan.

- Performance Report, that in fact is a type of information to be distributed, and where one will inform the facts of the project up to the present, such as forecasts and recommendations;

- Administrative Closing, where it is wished to formalize the finalization of the project and/or a phase of the project, through the generation, collection and popularization of the information, also here, this should be a part of the communication plan, so as to have an only source of directing the distribution of information, whatever be their objective, content or form.

One must highlight that, in spite of the existence of tools potentially fantastic for the communication process, such as the Internet, intranets and E-mails, their use should be planned, which rarely happens. It is more common to distribute information without planning, leaving the responsibility of the filter, for the receiver of the information (in case the reader had already received a communication, and had the sensation of not knowing why he was receiving that information?). Planning should contemplate the concept of "need to know", that is to say, information chosen for selected Stakeholders.

8. Risks Management

Risks Management. Does the reader know how the organizations usually treat this matter? Placing a managerial reserve, (typically 10%), in the costs and/or in the term, "for any eventuality." And that is where our risks management is contained. Who says that, that reserve is enough or even too much?, which ends up reducing the competitiveness of our proposal.

Risks Management is a very serious matter, and it becomes more serious still, for the little

attention or professionalism with which we treat it in our projects. There exist 2 sectors of the economy that strongly work with Risks Management, having a formal and structured process of planning and control of the risks - the financial one and the insurance market. Surprisingly, these sectors present excellent financial results in their projects. What should we do then? A necessary structured process, which allows us, to have an effective control on the project risks.

We can begin defining Risk as an "uncertain event, future that can have consequences either positive or negative for its project or organization." Here we have a not very usual connotation, because historically, risk was always something negative. If we analyze the uncertain fact of "high cambial variation", and their organization is to import, certainly that event, if it happens, will be a negative risk, (Threat), because it increases its costs. However, if their organization is an exporter, that will have positive connotation, because it impulses its gain (Opportunity).

- The PMBOK treats the matter of Risks Management, through 6 stages:

- Planning of Risks Management, where the decision is made on how this will be approached and how the risks management activities will be planned;

- Risks Identification, where all the risks are tried to be identified, positive or negative for its project. The description of the Risk should be complete and self-contained, in the text of the description of the risk, one should contemplate Cause and Consequence - which is the risk and what it causes.

- Risks Qualitative Analysis, where one tries to dimension categories for the risk, Very High kind, High, Medium, Low, or Very Low, approving to create a process to select the risks which will be treated.

- Risks Quantitative Analysis, where one searches to determine the Probability and the Impact of the risks in the project, so that we can compare risks of diverse types, one to another. That is where the essence of the treatment of the risks is given in the financial and insurance sectors. One tries to calculate, which is statistically, the Expected Monetary Value for each Risk, through the multiplication of the Impact Probability.

- Planning of Answers to the Risks, where we decide what we will do to respond to each Risk. This includes for the negative risks, to Accept the Risk; to Mitigate (to diminish its effects) or to eliminate them, and for the Positive Risks, to Ignore (not do anything), to

Improve (to try to increase its effects) or to Provoke (to try to make it happen). In that case, all the planned actions certainly will imply in costs, and the cost of the action to respond to the risk, has to be compared to the Expected Value of that risk, in such a way of validating the action. No action will have higher cost, than the expected value of the Risk.

- All those stages should be developed before the closing of the business, or contract with the Client, because one of the ways of responding to the risks is, for example, to include contractual clauses that protect the supplier or transfer the risk for the Client.
- Risks Control, where we will accompany what was planned. That activity is specially important, because the Risks can change - identified risks to disappear, to increase or to diminish the probability and/or the impact, or even new risks, to appear.

As we can see, Risks Management assumes a vital role within the projects, being indeed a Success Critical Factor, because it can (and usually does) impact costs, terms or preset results.

9. Recruiting Management

This knowledge area works with the resources, goods or external services to the project or organization that needs to be hired.

To fight that topic, it is fundamental to go through 6 basic stages:

- Planning, where one decides if we are going to buy or to do internally, Analysis Make Or Buy, defining the reasons for the decision.
- Solicitation Planning, where we should decide who are the potential suppliers, how the purchase process will be, how the prices formation will be, what we will take into consideration to choose the contracting supplier, and the clear definition of what will be bought.
- Sources Selection and Acquisition of Solicitation, where indeed we call the potential supply candidates, for the presentation of the proposals.
- Contract Management, where we control the product or service that is being acquired, the relationship with the supplier and the execution of the contractual clauses.

- Contract Enclosure, where we make the final verification of what was acquired, we emit the formal acceptance and we liquidate the contract. Here it is highly advisable that an evaluation of the supplier's performance is made, and keep registrations for future use, simplifying the processes of future recruiting.

These 9 disciplines generate the necessary knowledge base, so that one can work with projects in a planned and controlled way, substantially increasing its success chances.

CONCLUSIONS

If we consider the importance of this function of Project Managers within the modern organizations, as we were able to verify through, and by presented statistics, of the necessary technical and managerial knowledge for the perfect performance of the function through the disciplines of projects management, and fundamentally the importance of the perfect management of the Stakeholders, involved or affected with a project, we can conclude that this is not more than one of the momentary idioms which are born within the organizations, but it really is something that came to remain, and to contribute to the increase of efficiency, efficiency in public or private organizations, of their competitiveness.

What is "NEW" is each time more and more present, within the organizations, and to have total domain on the production process, through the management of projects, in a structured and controlled way, is critical factor for success.

BIBLIOGRAPHY

Please refer to articles Spanish bibliography.