

# **The Value of Project Management Reflects the Organization's Maturity in Project Management<sup>1</sup>**

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## **Abstract**

The purpose of this paper is to present the results of a study that demonstrates that the value of project management is directly related to each organization's maturity level in project management. This study, conducted in Brazil from September to December 2012 using the Prado Project Management Maturity Model - Prado-PM3 – and internet ([www.maturityresearch.com](http://www.maturityresearch.com)) concludes that:

- There is a direct positive relationship between total project success and the organization's level of project management maturity.
- There is an inverted relationship between project failure and PM maturity.
- There is an inverted relationship between project delay and PM maturity; the higher the maturity, the lesser the delay.
- There is an inverted relationship between cost overrun and PM Maturity; the higher the maturity, the lower the cost overrun.
- There is a direct positive relationship between perceived value aggregation and PM Maturity Levels; the higher the maturity, the greater the perception of added value by key stakeholders.

This study reveals the great importance of continual improvement in project management practices, especially for organizations that are initiating the use of those practices and are at maturity levels 1 or 2. For them, the daily performance indicators show weak values and there is no recognition by senior management of the value of project management. So for such organizations, this study presents a message of optimism: the evolution of maturity will change this scenario. This development does not happen overnight and requires discipline and dedication, but the results are significantly rewarding.

## **INTRODUCTION**

The rationale of this paper uses the responses summarized in three sets of data obtained in the survey through separate questions:

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<sup>1</sup> *Second Editions are previously published papers that have continued relevance in today's project management world, or which were originally published in conference proceedings or in a language other than English. Original publication acknowledged; authors retain copyright. This paper was originally presented at the 7<sup>th</sup> Annual UT Dallas Project Management Symposium in Richardson, Texas, USA in August 2013. It is republished here with the permission of the authors and UT Dallas.*

- a) Values of the perceived value of project management as a discipline by key stakeholders, stratified by levels of maturity of that discipline;
- b) Values of indicators of performance of finished projects, stratified by levels of project management maturity;
- c) Values obtained by means of a maturity questionnaire of 40 questions that produces a project management maturity score between 1 and 5.

The information was produced in the above sequence. Only after providing all the data shown above does one know the value of project management maturity. Therefore, when respondents provided the information in items a and b above they had no knowledge of the consolidated results obtained in item c.

Moreover, for didactic purposes, the following text was constructed in the following sequence, which is not the same as that shown above:

1. Maturity: which presents an overview of the maturity model Prado-PM3 and the results of research conducted in 2012;
2. Indicators: which presents an analysis of the results of key performance indicators (success, delay and overrun in cost);
3. Perception of added value: which presents an analysis of the results obtained regarding added value;
4. Conclusions;
5. Importance of this study.

## **1. MATURITY IN PROJECT MANAGEMENT**

### **The Maturity Model Used**

The Prado-PM3 considers five levels and seven dimensions and was developed in 2002<sup>2</sup> with the following objectives:

- Addressing the entire lifecycle of the asset (product, service or result), involving finalistic and support processes;
- Considering the use of Best Management Practices.

### **How to obtain the value for maturity**

The project management maturity value of a department can be obtained by the answers given to a questionnaire of 40 questions. The obtained value is between 1 and 5 and levels of maturity are:

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<sup>2</sup> For a detailed description of this model see <http://www.maturityresearch.com/novosite/en/index.html>

- **Level 1 (Ad Hoc):** There is no practice of formalized project management (PM).
- **Level 2 (Known):** PM is known by leading participants in the organization. The PM initiatives are isolated and not standardized.
- **Level 3 (Standardized):** Established standardization of PM processes, tools, organizational structure and strategic alignment of projects are being used. Related skills were developed. Everyone involved follows the PM standards.
- **Level 4 (Managed):** Identification and removal of the causes of PM anomalies occurs.
- **Level 5 (Optimized):** Schedule deadlines, cost and quality targets are optimized. The PM processes, tools and organizational structure have also been optimized.

### **The Maturity Research**

Research of maturity in project management has been conducted in Brazil since 2005 using the site [www.maturityresearch.com](http://www.maturityresearch.com). The 2012 survey included 434 participants involving 8,680 projects. It was also possible to stratify the results of various shapes such as:

- 4 types of organizations
- 11 project categories, depending on the model of Archibald
- 28 business areas
- Value of sales (or budget)
- Several aspects of the industry being researched, such as the existence of PMO, Project Manager, etc.

It's important to remember that the questionnaire is self-administered, ie, good preparation and a good degree of understanding of the organizational situation are essential to the respondents, beyond seriousness in implementing responses. Finally, the research team worried about possible unrealistic results, analyzed all questionnaires and purged all those who had a hardly indicative of a questionnaire poorly answered.

### **2012 Research Results**

The survey showed the following average results:

- PM Maturity: 2.6 (scale 1-5)
- Project Success:
  - Total Success Rate: 49.7%
  - Partial Success Rate: 35.2%
  - Failure Rate: 15.1%
- Delay: 28.0%
- Cost overrun: 15.0%

The percentage distribution of PM maturity values for all the participating organizations is shown in Figure 1.

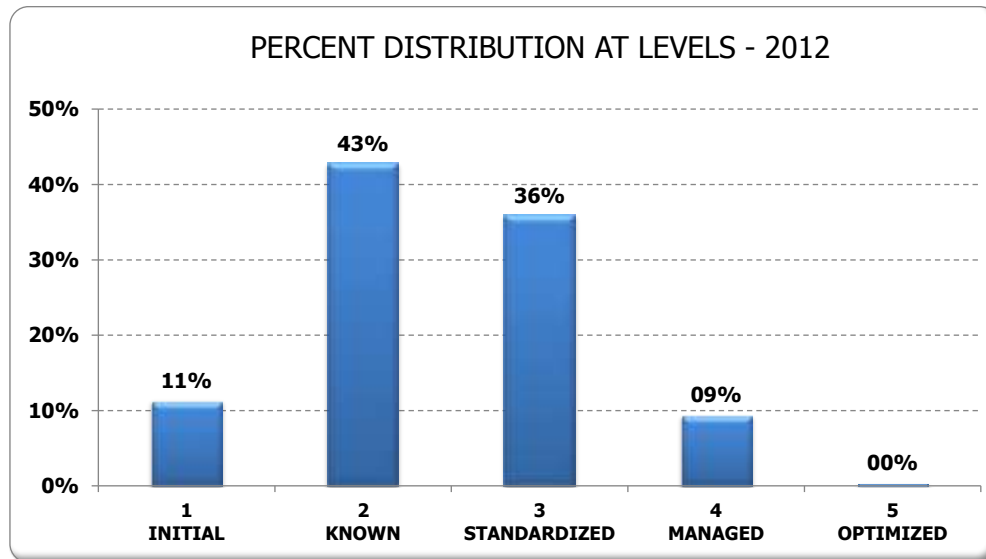


Figure 1: Distribution of Participating Organizations in the Five Levels of PM Maturity.

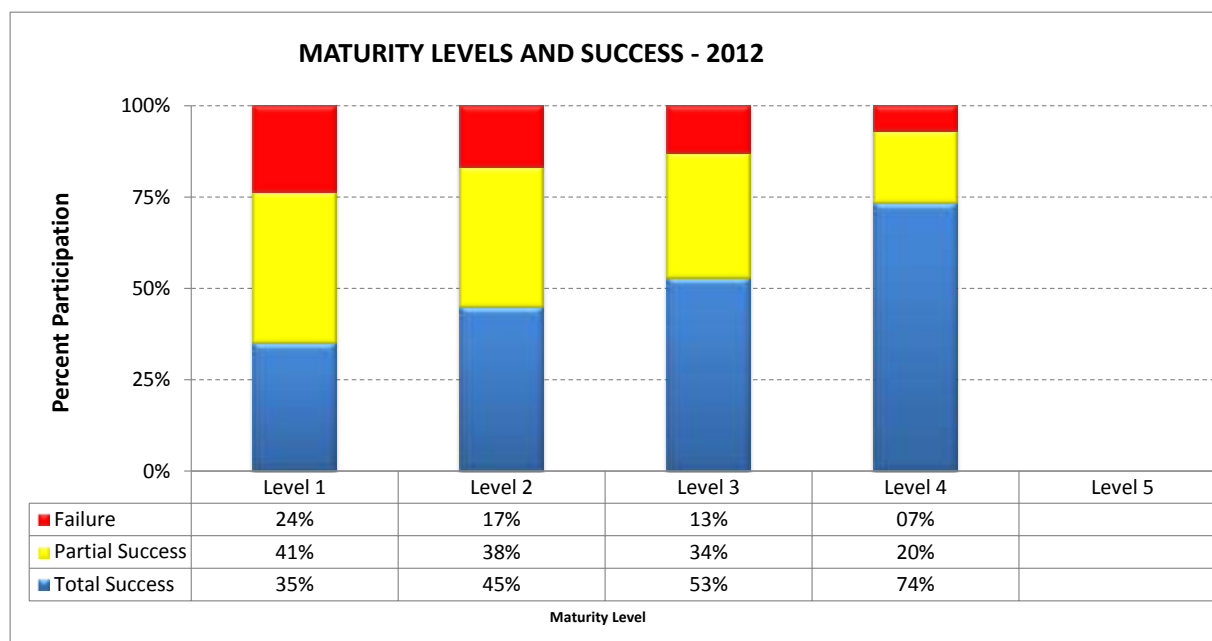
## 2. FINISHED PROJECTS PERFORMANCE INDICATORS

The performance indicators for completed projects are as follows:

- Success:
  - Total Success Rate
  - Partial Success Rate
  - Failure rate
- Delay
- Cost overrun

### Success

The relationships between success and maturity levels are shown in the following graph (Figure 2):



**Figure 2: Project Success versus Maturity Levels**

From Figure 2 we can conclude that:

- There is a direct positive relationship between Total Success and Maturity;
- There is an inverted relationship between failure and Maturity.

The definitions of success are:

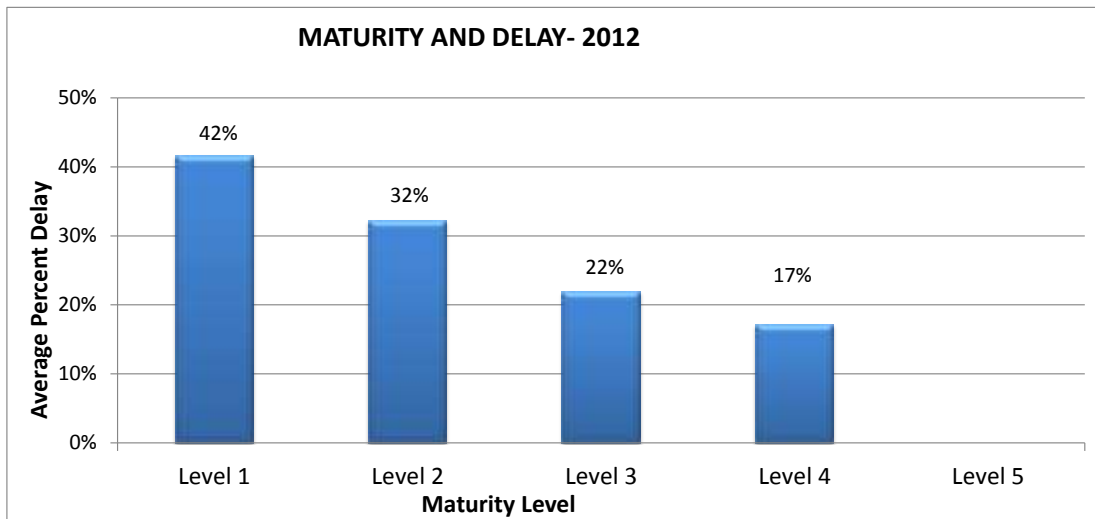
**Total success:** A successful project is one that has reached the goal. This usually means it was completed and produced the expected results and benefits and key stakeholders were fully satisfied. In addition, but not mandatory, it is expected that the project has been terminated within the requirements for time, cost, scope and quality (small differences can be accepted).

**Partial or challenged success:** The project was completed but did not produce the results and benefits expected. There is significant dissatisfaction among key stakeholders. Also, probably some of the requirements for time, cost, scope and quality were significantly exceeded.

**Failure:** Because there is a huge dissatisfaction among main stakeholders, or the project was not completed, or did not met the expectations of key stakeholders, or some of the requirements for time, cost, scope and quality were exceeded in an absolutely unacceptable way.

## Delay

The relationships between project delay and PM maturity levels are shown in the following graph (Figure 3):

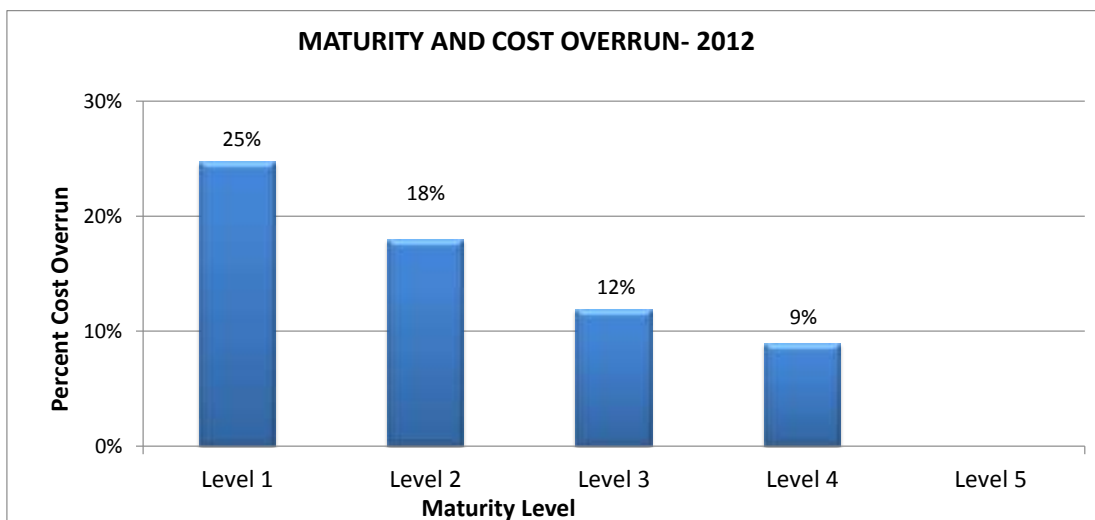


**Figure 3: Project Delay versus Maturity Levels**

From Figure 3 we can conclude that there is an inverse relationship between delay and maturity. The higher the maturity, the lesser the delay!

## Cost Overrun

The relationship between overrun costs and maturity levels are shown in the following graph (Figure 4):



**Figure 4: Project Cost Overrun versus Maturity Levels**

From Figure 4 we can conclude that there is an inverse relationship between Cost Overrun and Maturity. The higher the maturity, the lower overrun costs.

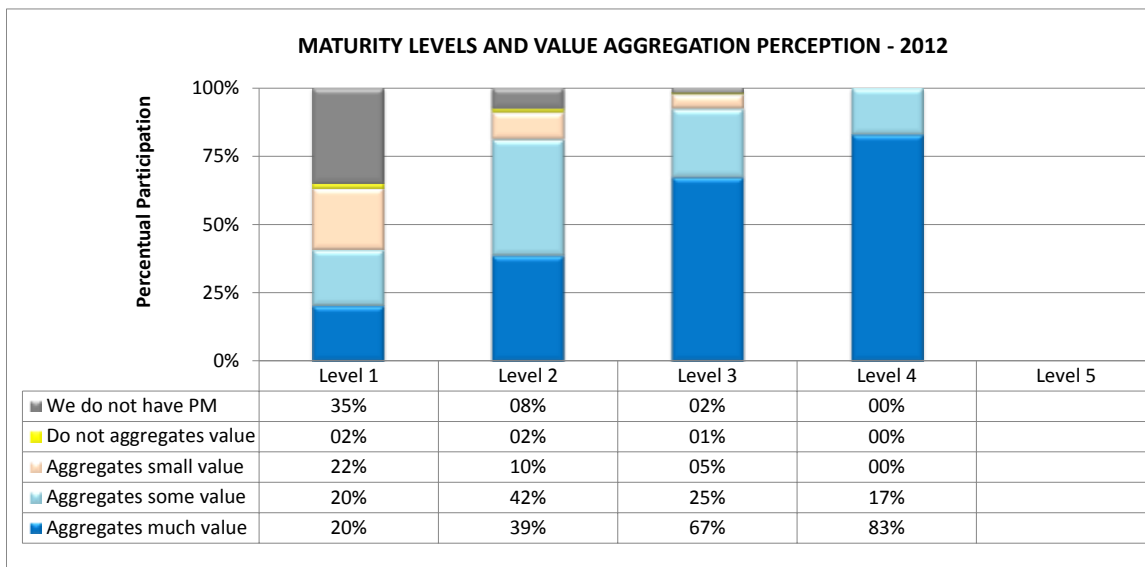
### 3. THE PERCEPTION OF VALUE AGGREGATION BY THE MAIN STAKEHOLDERS

The question on the perception by key stakeholders of value aggregation by project management is:

*19. Regarding the practice of project management (PM) in your department, what is the perception by key stakeholders on the importance (or value creation) that project management brings to the success of projects and / or for the business of the department?*

- a) PM adds a lot of value
- b) PM adds some value
- c) PM adds little value
- d) PM does not add value
- e) We have no PM

The intersection between key stakeholders’ perception of value aggregation by PM and maturity levels are shown in the following graph:



**Figure 5: Value Aggregation by PM: Perception versus Maturity Levels**

From Figure 5 we can conclude that there is a direct positive relationship between Perceived Value Aggregation and Project Management Maturity Levels. The higher the maturity, the greater the perception of added value by key stakeholders!

#### **4. GENERAL CONCLUSIONS**

In addition to the conclusions related to each of the five figures presented above, we can draw the following three more general conclusions from these research results:

##### **First General Conclusion:**

The Figures 2, 3 and 4 allow us to conclude that organizations of higher performance are precisely those of higher maturity value according to Prado-PM3.

That is, the Prado-PM3 is a good tool to measure the performance of projects: the greater the maturity, the higher the performance. Since the Prado-PM3 is based on, in its view, the best practices of project management, we also conclude that the use of good practices really produces better performance.

##### **Second General Conclusion:**

Figure 5 shows that organizations that have the greatest perception of value aggregation are precisely those that get higher maturity scores, according to Prado-PM3.

That is, the Prado-PM3 is a good tool to measure stakeholder satisfaction with the use of formal project management practices.

##### **Final General Conclusion:**

The junction of the two conclusions above leads us to the conclusion that the greater the use of best practices for project management produces higher performance (project success, etc.) and greater recognition by key stakeholders of the importance of the discipline of project management.

That is, the value of using the best practices of project management may be seen in better results and greater recognition by key stakeholders.

#### **5. VALUE OF THIS STUDY**

The conclusions of this study are not unprecedented, as several others have demonstrated the value of project management and its relationship with project management maturity.

The question about the value that project management brings to organizations and its relationship with maturity in project management, has been reported for many years in several studies around the world, especially in the studies of Ibbs et Kwak (1997), Kwak



et Ibbs (2000), Ibbs (2000), Ibbs et Kwak (2000), Ibbs et Reginato (2002), Cooke-Davies et al (2003), Pennypacker et Grant (2003).

In the case of the Brazilian research, the question of the perception of value aggregated by the project management does not determine what type of value has been gained. Thus, a possible next step would be to research what are these values are specifically and whether they are tangible or intangible values.

The study organized by Thomas et Mullaly (2008) called "*Researching the Value of Project Management*", performed a thorough analysis of this issue of the value of project management through multiple case studies and found, among other conclusions, that:

- The maturity is a value in itself, especially when there is significant emphasis on processes' outcomes;
- The value seemed to increase as the implementation of project management maturity is increased;
- Most organizations realize there are more intangible values gained than tangible values, and there's a difficulty and even a disinterest in measuring tangible values of project management;
- The achievement of intangible value is correlated directly with the PM maturity: higher levels of intangible value are reported in organizations with a higher level of PM maturity;

Therefore, we see that the Brazilian research corroborates with the Thomas and Mullaly (2008) study, because the result of the analysis between maturity level and perceived value of project management converges with the conclusions of Thomas and Mullaly (2008).

The Brazilian research also corroborated with the Thomas and Mullaly (2008) study, with its amazing simplicity, in respect to the relationship between success and maturity, as the Brazilian research achieved an excellent correlation between these variables, while the study of Thomas and Mullaly (2008) unfolded on the subject of success of projects through a complex but important principal component analysis (PCA).

Therefore, due to the complexity of the question of the value of project management, we believe that Brazilian research using the Prado-PM3 can become a "proxy"<sup>3</sup> measure of the success of the projects and even the value of project management in the organization, due to its easily application and interesting correlation with the success and value aggregation.

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<sup>3</sup> The proxy is a statistical definition for a variable which in itself would not have much relevance, but, if one variable has a strong correlation with another, could be of great interest. Such variables are often used in studies of the economy where, for example, we can measure the income receipts of a city by power electricity consumption. In that case the power electricity consumption would be the "proxy".

Thus, we believe that the following aspects are innovative in this study:

- A consolidated analysis is made of the recognition of the importance of project management based on maturity levels; and
- Values are presented for performance indicators based on maturity levels.

This study reveals the great importance especially for organizations that are initiating the use of project management practices and are at levels 1 or 2. For them, the daily performance indicators show weak values and there is no recognition of the value of project management by senior management. So for such organizations, this study presents a message of optimism: the evolution of maturity will change this scenario. This development does not happen overnight and requires discipline and dedication, but the results are significantly rewarding.

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