Maturity in Project Management Series¹

Impact of PPPM Maturity on the Success of Construction Industry Projects in Brazil

By Russell Archibald and Darci Prado

The Brazilian Experience with PPPM (Portfolio, Program and Project Management) Maturity is distinguished by longevity of the research (since 2005); by frank acceptance by the PPPM community and the broad range of participants; by the huge amount of results made available on the web site: and by the consistency of those results. In this article we will show the impact of PPPM Maturity on construction industry projects in Brazil.

This PPPM research program was initiated by the authors in 2005 and by 2012 it had involved 434 participating organizations, including companies, governmental agencies (both directly managed and indirectly managed), and non-governmental organizations/NGOs. The total of projects involved was 8,680. Four major reports are available for download free online (www.maturityresearch.com):

- General Report: includes analysis of all types of organizations, all categories of projects and all business areas;
- I. T. Report: dedicated only to the I.T. category of projects;
- Construction Industry Report: dedicated only to Engineering & Construction categories of projects;
- Organizational Change Report: dedicated only to transformational projects that are related with redesign of processes and the business, reduction of expenses, acquisition and integration of competing companies, etc.

In this article we will continue to show some results in the 2012 survey related to Construction Industry. This is a very important business sector in Brazil and represents about 5% of Brazil’s GNP. But, despite the good moment in many businesses in Brazil over the last 8 years, the construction sector is not in good shape: expenditures rose higher than incomes. A survey conducted by Ernest & Young and University of São Paulo [1] showed that, for the building construction sector, the Ebitda² indicator dropped from 21% to 16% in

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¹ The Project Management Maturity series of articles by Russell Archibald & Prof Darci Prado is based on their extensive research on this topic in Brazil, the United States and other countries. Russ is one of the pioneers in the project management field and the originator of the Archibald Project Categorization Model. Darci is the developer of the Prado Project Management Maturity Model which has been successfully implemented by many organizations in Brazil. More about this model and related research can be found at http://www.maturityresearch.com/

² Earnings Before Interest, Taxes, Depreciation and Amortization
the period of 2007-2011. Among the levers to increase productivity, improved project management is highlighted.

In the 2012 PM maturity research there were 60 participating organizations from this area, with 1,020 projects. Final results showed an average maturity of 2.68. In the Table 1 we show how this group (Construction Industry) is deployed in subcategories.

<table>
<thead>
<tr>
<th>Project Subcategory</th>
<th>Participants</th>
<th>Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Construction</td>
<td>12</td>
<td>2.53</td>
</tr>
<tr>
<td>Heavy Construction for private customers</td>
<td>19</td>
<td>2.93</td>
</tr>
<tr>
<td>Heavy Construction for government</td>
<td>5</td>
<td>2.61</td>
</tr>
<tr>
<td>Engineering (design or engineering projects)</td>
<td>10</td>
<td>2.87</td>
</tr>
<tr>
<td>Owner’s Engineer</td>
<td>5</td>
<td>3.28</td>
</tr>
<tr>
<td>Other subcategories (Architecture, etc.)</td>
<td>9</td>
<td>1.85</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>2.68</strong></td>
</tr>
</tbody>
</table>

Table 1. Project Sub-Categories within the Major Construction Industry Group [2]

In this article we will show some Construction Industry results in the 2012 PM maturity research related to leading indicators and some of the groups that the database records. The indicators are:

- Maturity
- Success
- Delay
- Cost Overrun.

Besides these indicators and to better understand this category of projects, we will show two other studies that point in the same direction.

This article is divided into two main parts:

1. Summary results for Construction Industry
2. Analysis of these results in four groups:
   - Organization Types
   - Project Subcategories
   - Businesses Areas
   - Organization Sizes
To fully understand the Prado-PM Maturity Model, it would be better if the reader could read the third article (March 2014) of this series that describes the model in some detail. To facilitate the understanding, we include at the end of this article a summary of the Prado-PMMM and Archibald Project Categorization Model.

1. Brazilian PM Maturity Research Program: Construction Industry Summary Results

The survey shows the following average results for 60 participants and 1,020 projects:

MATURITY
- PM Maturity: 2.68 (scale 1-5)

RESULTS INDICATORS
- Project Success:
  - Total Success Rate: 49.5%
  - Partial Success Rate: 41.7%
  - Failure Rate: 8.8%
- Delay: 24.0%
- Cost overrun: 16.0%

PORTFOLIO OF PROJECTS COMPOSITION BY PARTICIPANT
- Average number of projects: 17.
- Average duration of each project: 14 months.
- Average value of each project: US$ 57,000,000.00

In this research the participants responded to two separate and independent questionnaires:
- Questionnaire (40 questions) for maturity evaluation;
- Questionnaire (28 questions) to identify the characteristics of the organization and inform the assessor about the department project performance indicators (project and product success, delays, cost overrun, scope adherence, etc.)

With this approach in evaluating the research results we can cross reference between the responses of the two questionnaires.

DISTRIBUTION BY MATURITY LEVELS
Figure 1 shows how the participants were distributed among the five maturity levels. We can conclude that 52% of organizations are at weak levels (levels 1 and 2) and only 17% of organizations are at excellence levels (levels 4 and 5).

3 These 28 questions can be found on the site www.maturityresearch.com by registering and then clicking on the “Start Evaluation” button. You can read all questions in both questionnaires there without actually giving answers to the questions. The corporate identity of organizations is not revealed in the study results.
DIMENSIONS ADHERENCE

Figure 2 shows the average adherence to the maturity dimensions used within the Prado PM Maturity Model. This figure shows that Construction Industry is poor in Behavioral Competence and in the usage of PM Organizations Structures (Project Manager, PMO, Sponsor and Committee).

MATURITY LEVELS AND SUCCESS

In the research, participants were invited to report how successful the portfolio of projects was in the last period (for instance, the last year) using given success concepts available in
the site. The concepts of TOTAL SUCCESS, PARTIAL SUCCESS AND FAILURE, for the various subcategories (see Table 1 above) of the Construction Industry are described as follows for each subcategory:

a. For these three subcategories:
   - Building Construction,
   - Services (Industrial Construction, Heavy Construction) for clients of private sector,
   - Public Works and Infrastructure (including Heavy Construction) to public sector clients,

the success concepts are described as:

**Total success:** almost finished the work on time, scope and budget (insignificant differences). The customer was very satisfied with the product delivered. The company obtained the expected profit and there is no significant technical or pending judicial or labor issue. There were no serious accidents during construction.

**Partial success:** the work was completed and delivered. However incriminating facts occurred (significant delay and / or significant overrun on budget) that significantly decreased the profitability of the work, or there are minor technical or legal disputes or labor that certainly will reduce the expected profit, and / or client received the work, but was not satisfied, and / or accidents occurred, but the rate of their severity remained within the established parameters.

**Failure:** the work was not completed or delays and / or overruns in budget were so exaggerated that the work was in a deficit, or there are pending technical, legal or labor issues that are quite significant and sure to create a loss, and / or client does not agree to accept the work, and / or accidents occurred during construction that tarnished the reputation of the company.

b. For the Subcategory Owner’s Engineer (as the Project Manager)

The concepts are described as:

**Total success:** almost finished the work on time, scope and budget (insignificant differences). The customer (internal or external) was very pleased with the product delivered. The company has obtained the financial results expected and there is no significant technical or pending judicial or labor. There were no serious accidents during construction.
Partial success: the work was completed and delivered. However incriminating facts occurred (significant delay and / or overflow significant budget) that significantly decreased the expected financial results, or there are minor technical or legal disputes or labor that will certainly reduce the expected financial results, and / or customer (internal or external) received the work, but was not satisfied, and / or accidents occurred, but the rate of their severity remained within established parameters.

Failure: the work was not completed or the delay was so exaggerated that it compromised the success of the enterprise and / or the financial result was negative, or there are pending technical or legal or labor issues that were quite significant and sure to make the bottom line deficit, and / or the customer (internal or external) does not agree to accept the work, and / or accidents occurred during construction that tarnished the reputation of the company.

c. Subcategory Engineering (Engineering Projects, ie, design) to customers outside
- public or private

The concepts are described as:

Total success: almost finished the work on time, scope, quality and budget (insignificant differences). The customer (internal or external) was very satisfied with the delivered product and its performance, and the company achieved the expected financial results.

Partial success: the work was completed and delivered. However incriminating facts occurred (significant delay and / or overflow significant budget, and / or underperforming for the product delivered) that significantly reduced the financial result, and / or the customer (internal or external) received the job, but was not satisfied.

Failure: the work was not completed or the delay and / or overflow budget were so exaggerated that the work caused a financial deficit, and / or the performance was far below that expected for the product delivered, and / or the client (internal or external) does not agree to accept the job.

In Figure 3 we show the relationship between maturity levels and success for Construction Industry projects. It is very clear that the higher the maturity, the higher degree of total success.
VALUE AGGREGATION PERCEPTION

In the 2012 research [1], 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 PM value aggregation and maturity levels is shown in the following graph (Figure 4):
From Figure 4 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, by key stakeholders, of added value!

**MATURITY LEVELS AND DELAY**

The relationship between maturity levels and delay is shown in Figure 5. Here we may notice an unexpected result for level 1 group.
MATURITY LEVELS AND COST OVERRUN

The relationship between maturity levels and Cost Overrun is shown in Figure 6. Here we may notice again unexpected results for levels 1 and 3 groups.

![Figure 6. Maturity Levels and Cost Overrun. Construction Industry [2].](image)

POINTS FOR IMPROVEMENT

To complement this study, we show below the results of two surveys conducted to better understand the construction scenario in the following subcategories of projects:

- Heavy constructions projects (for private customers)
- Building (real estate)

A. Cause of failure for Heavy Constructions Projects (for private customers).

The following causes were identified [3]:

- Planning versus execution;
- Supply (internal and external);
- Deficit in definition of scope;
- Frequent changes in design;
- Non-convenient skills for the management team;
- Contract management.

Each of these points is discussed below.
PLANNING VERSUS EXECUTION
- Planning of the entrepreneur is not always the same quality as the planning of the performers;
- During the contracting phase, in many cases, unrealistic planning and scheduling requirements are imposed. Then it is necessary to ignore them in the execution phase, but this creates conflicts between the parts;
- Planning teams are not always well prepared or do not have necessary authority;
- In many cases there is not effective integration of the planning of various project phases (e.g., Construction Planning, Electromechanical Assembly).

PURCHASING (INTERNALS AND EXTERNAL)
- In many cases the activity of purchasing is not inserted in project planning;
- Hiring packages are not always planned effectively;
- The knowledge and technical proposal is not given due weight in hiring decisions;
- In many cases the contracts are made at the lowest price and not at the best price including needed quality and delivery time;
- Many of the executing companies do not have a structured and agile process of purchasing and contract management.

DEFICIT IN DEFINITION OF SCOPE
- Often there are situations where there is a contract that is not based on a consolidated Basic Design;
- Often the type of contract is incompatible with the level of information available;
- The contractual instrument does not provide effectively for the possibility of making changes in the scope.

FREQUENT CHANGES IN THE DESIGN
- The detailing of design occurs in most cases parallel with implementation;
- Constructability is not always taken into account in the detailing of design;
- There is not always an interaction between the implementation team and detailing team (Entrepreneur / Planner / Constructor);
- In many cases there is a divergence between planning of the detailed design and the construction planning.

NON-CONVENIENT SKILLS FOR THE MANAGEMENT TEAM
- There is a lack of professionals at the management level who are properly prepared and knowledgeable of best practices;
- There is a lack of skill and care in assembling a team that complements each other in terms of competence;
- There is a lack of interaction between members of the different teams that make up the Project.
CONTRACT MANAGEMENT

- There is a lack of contract analysis in the phase of the contract pricing;
- There is a lack of good-will between the teams to analyze and discuss the contract in the contractual phase;
- There is a lack of managers with knowledge of contractual management;
- Lack of effective contract management processes, including lack of knowledge of the contract;
- There should be established a basic premise that the main team members should know the contract in depth.

B. Levers to Improve Productivity of Building Construction (Real Estate).

A survey conducted by Ernest Young and the University of São Paulo [1] aimed to understand this important business sector, which has a significant share of the Brazilian GNP. This sector had a significant rise in business between 2007 and 2012 (50% increase in revenue) but costs increased in greater proportion (60%), which resulted in a drop in Ebitda from 21% to 16%. The study presents a set of levers to improve the sector’s productivity. We may notice that many of these levers are related with management.

a. Planning the implementation of projects
   - Planning the need for resources and materials in different planning horizons (short, medium and long term)
   - Structured process of updating the plan as implementation proceeds
   - Integrated management office (PMO - Project Management Office)
   - Application software type BIM (Building Information Model)

b. Adoption of management methods
   - Lean Construction - construction based on the paradigm of waste reduction that became known as the Toyota production method
   - Better synchronization of the development and improvement of the flow of materials for the elimination of activities that do not add value
   - Strategic Sourcing - Optimization of suppliers and purchases

c. Equipment
   - Modernization of equipment (cranes flexible, fastest elevators, etc.)
   - Higher utilization rate of equipment

d. Materials
   - Adoption of more efficient new materials (self-healing concrete, magnesia cement, etc.)

e. Constructive methods
• Implementation of more efficient construction methods (precast beams, structural masonry, steel structures etc.).

f. Improvement Projects
• Focus on improvement projects and their suitability for implementation

g. Qualifying the workforce
• Actions to enhance recruitment
• Measures to increase the current qualifications (training, motivation etc.).
• Plan for retention of professionals

2 - Maturity Research Results for Organizational and Business Sector Groups

In this section of this article we present the results for the following deployment groups:

a) Organization Types
b) Project Subcategories
c) Business Areas
d) Organization Size

a) Organization Types

The research grouped the participants into four organization types:

i. Private companies
ii. Government – Direct Administration
iii. Government – Indirect Administration
iv. NGO - Non Governmental organizations.

Table 2 shows the main numbers for the organization types. As seen, we only obtained significant participation for Private Companies.

<table>
<thead>
<tr>
<th>ORGANIZATION TYPE</th>
<th># of Respondents</th>
<th>Percentual Maturity</th>
<th>Total Success</th>
<th>Partial Success</th>
<th>Failure</th>
<th>Average Delay</th>
<th>Average Cost Overrun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Companies</td>
<td>58</td>
<td>96,7%</td>
<td>2,68</td>
<td>50,3%</td>
<td>41,4%</td>
<td>8,3%</td>
<td>24%</td>
</tr>
<tr>
<td>Government - Direct Administration</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Government - Indirect Administration</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>General Totals</td>
<td>60</td>
<td>100,0%</td>
<td>2,68</td>
<td>49,5%</td>
<td>41,7%</td>
<td>8,8%</td>
<td>24%</td>
</tr>
</tbody>
</table>

Table 2. Maturity Research Results by Organization Type
b) Project Subcategories

The research grouped the participants into the following subcategories:

i. Building Construction
ii. Heavy Construction for private customers
iii. Heavy Construction for government
iv. Engineering (design or engineering projects)
v. Owner’s Engineer
vi. Others (Architecture, etc.)

According to Table 3 and Figures 7, 8, 9 and 10 we may conclude that (not considering the group “Other”):

- Owner’s Engineer has the best indicators (exception: Cost Overrun)
- Heavy Construction and Engineering has the worst indicators.

### Table 3. Results by subcategory.

<table>
<thead>
<tr>
<th>SUB-CATEGORY</th>
<th># of Respondents</th>
<th>Percentual</th>
<th>Maturity</th>
<th>Total Success</th>
<th>Partial Success</th>
<th>Failure</th>
<th>Average Delay</th>
<th>Average Cost Overrun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others (Architecture, etc.)</td>
<td>9</td>
<td>15,0%</td>
<td>1,85</td>
<td>53,0%</td>
<td>40,0%</td>
<td>7,0%</td>
<td>18%</td>
<td>3%</td>
</tr>
<tr>
<td>Building Construction</td>
<td>12</td>
<td>20,0%</td>
<td>2,53</td>
<td>55,0%</td>
<td>35,0%</td>
<td>10,0%</td>
<td>25%</td>
<td>16%</td>
</tr>
<tr>
<td>Heavy Construction for private</td>
<td>19</td>
<td>31,7%</td>
<td>2,93</td>
<td>51,6%</td>
<td>39,4%</td>
<td>9,1%</td>
<td>24%</td>
<td>16%</td>
</tr>
<tr>
<td>customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy Construction for government</td>
<td>5</td>
<td>8,3%</td>
<td>2,61</td>
<td>20,0%</td>
<td>63,3%</td>
<td>16,7%</td>
<td>27%</td>
<td>13%</td>
</tr>
<tr>
<td>Engineering (design or engineering</td>
<td>10</td>
<td>16,7%</td>
<td>2,87</td>
<td>38,9%</td>
<td>51,1%</td>
<td>10,0%</td>
<td>28%</td>
<td>12%</td>
</tr>
<tr>
<td>projects)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>5</td>
<td>8,3%</td>
<td>3,28</td>
<td>67,0%</td>
<td>32,0%</td>
<td>1,0%</td>
<td>18%</td>
<td>26%</td>
</tr>
<tr>
<td>Totals</td>
<td>60</td>
<td>100,0%</td>
<td>2,68</td>
<td>49,5%</td>
<td>41,7%</td>
<td>8,8%</td>
<td>24%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Figure 7. PM Maturity by C.I. Project Subcategories [2].
Figure 8. Success by C.I. Project Subcategories [2].

Figure 9. Delay by C.I. Project Subcategories [2].
c) Business Sector Areas

The research grouped the participants into the following business areas:

1. Agriculture, Cattle Raising and Forestry
2. Food and beverage
3. Banking, finance and insurance
4. Trading
5. Construction
6. Consulting
7. Defense, Security and Aeronautics
8. Distribution (Water, gas)
9. Education
10. Electronics
11. Engineering
12. Electrical Energy (Production and/or Distribution)
13. Pharmaceutical
14. Mining
15. Metallurgy and Steelmaking
16. Paper and Cellulose
17. Oil and Gas
18. Chemical
19. Refractories, Ceramic and Glass
20. Health
21. Information Technology (Hardware & Software)
22. Telecommunications
23. Textile  
24. Transportation, Storage & Services, Logistics  
25. Tourism & Sports  
26. Automotive & Automotive Parts  
27. Clothing, Footwear, Fashion and Sports Equipment  
28. Other

Table 4 shows the main numbers for three business areas that constitutes the Construction Industry group. Figures 11, 12, 13 and 14 are related with this table.

<table>
<thead>
<tr>
<th>BUSINESS AREA</th>
<th># of Respondents</th>
<th>Percentual Maturity</th>
<th>Total Success</th>
<th>Partial Success</th>
<th>Failure</th>
<th>Average Delay</th>
<th>Average Cost Overrun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>29</td>
<td>48,3%</td>
<td>2,49</td>
<td>49,2%</td>
<td>41,6%</td>
<td>9,2%</td>
<td>26%</td>
</tr>
<tr>
<td>Consulting</td>
<td>6</td>
<td>10,0%</td>
<td>3,20</td>
<td>55,8%</td>
<td>37,5%</td>
<td>6,7%</td>
<td>16%</td>
</tr>
<tr>
<td>Engineering</td>
<td>25</td>
<td>41,7%</td>
<td>2,78</td>
<td>47,3%</td>
<td>43,7%</td>
<td>9,0%</td>
<td>24%</td>
</tr>
<tr>
<td>General Totals</td>
<td>64</td>
<td>100,0%</td>
<td>2,64</td>
<td>52,4%</td>
<td>34,0%</td>
<td>13,6%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Table 4. Maturity Data Related to Three Business Sector Areas

According to Table 4 and Figures 11, 12, 13 and 14 we may conclude that:

- Consulting has the best indicators;
- Construction has the worst indicators.

![Figure 11. PM Maturity by Businesses Areas in Brazil Construction Industry [2].](image-url)
Figure 12. Success by Businesses Areas
Construction Industry [2].

<table>
<thead>
<tr>
<th></th>
<th>Construction</th>
<th>Consulting</th>
<th>Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure</td>
<td>9.2%</td>
<td>6.7%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Partial Success</td>
<td>41.6%</td>
<td>37.5%</td>
<td>43.7%</td>
</tr>
<tr>
<td>Total Success</td>
<td>49.2%</td>
<td>55.8%</td>
<td>47.3%</td>
</tr>
</tbody>
</table>

Business Area

Figure 13 - Delay by Businesses Areas
Construction Industry [2].
d) Organization Size (Annual Gross Revenue or Budget)

The research grouped the participants into the following revenue or budget groups:

- Under US$ 250,000
- From US$ 250,000 to US$ 1 million
- From US 1 million to US$ 5 million
- From US$ 5 million to US$ 50 million
- From US$ 50 million to US$ 500 million
- Above US$ 500 million

The Table 5 shows the main numbers for the organization sizes based on revenue or budgets. Figures 15, 16, 17 and 18 are related with this table.
Table 5. Maturity Data Related to Organization Size.

According to Table 5 and Figures 15, 16, 17 and 18 we may conclude that medium size organization (from US$ 1 million to US$ 5 million) have the worst performance.

Figure 15. Global PM Maturity by Organization Size as Indicated by Annual Gross Revenue or Budget - Construction Industry [2].
Figure 16. Success by Organization Size as Indicated by Annual Gross Revenue or Budget
Construction Industry [2].

Figure 17. Delay by Organization Size as Indicated by Annual Gross Revenue or Budget
Construction Industry [2].
The Prado PM Maturity Model

The principal criteria used in the design of the model are [4]:

- Use the same levels (1 to 5) of the model SW-CMM developed by Carnegie-Mellon University for software development.
- Have simplicity (questionnaire with only 40 questions) and universality (application to all types of organizations and the entire list of project categories).
- Relate the maturity of the organization to its ability to execute projects successfully.
- Enable direct indications of where PM practices need improvement in order to grow the organization’s PM maturity and project success rate.

The five levels and seven dimensions of PM maturity in the Prado PMM Model are shown in Table 6.

![Figure 18. Cost Overrun by Organization Size as Indicated by Annual Gross Revenue or Budget Construction Industry [2].](image-url)
The five levels are characterized as follows:

1. **Initial**
   - Little knowledge of the subject
   - Lack of methodology and/or management models
   - Use of intuition in management of projects.

2. **Known – Isolated Initiatives**
   - Start creating a new culture to build skills.

3. **Standardized**
   - Implementation of a standardized platform for project management:
     - Organizational Structure (Governance)
     - Methodology
     - Computerization
     - Strategic Alignment
   - Skills (behavioral competence) development.

4. **Managed**
   - Improvement of the platform: the standards work
   - Anomalies identified and eliminated
   - Effective human relationships
   - Consolidation of alignment with the organization's business.

5. **Optimized**
   - Innovation in technology and processes
   - Results in high efficiency (optimization of time, scope, quality and costs)
   - High efficiency of management processes
   - Wisdom
   - Low stress and Low noise
   - Something natural.

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Table 6. Levels and Dimensions of the Prado PM Maturity Model [3].
The Archibald Project Categorization Model

Because there is usually a wide variation within one organization in its PM maturity for different types or categories of projects, the most useful measure of PM maturity relates to each specific project category. To accomplish this PM maturity measurement on a globally consistent basis the Brazilian PM Research Project has adopted the widely accepted project categorization model developed by Archibald [5] with these 10 basic project categories:

1. Aerospace/Defense
2. Business & Organizational Change
3. Communication Systems
4. Events
5. Facilities
6. Information Systems
7. International Development
8. Media & Entertainment
9. Product/Service Development
10. Research & Development.

There are several sub-categories within each of these; for the Brazilian research, for example, within the Facilities category the PM maturity is measured for “engineering design” and “construction and assembly” projects. The benchmarking results at the project category level are averaged for a given organization when one organization has assessed its maturity for more than one project category. More detailed discussion of the purposes and methods of project categorization can be seen in reference 3.
Final Consideration

In the site www.maturityresearch.com the reader can find more information about Construction Industry projects.

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May 2014: Maturity, Success and Competitiveness
June 2014: The Brazilian Experience: General Results
July 2014: Impact of PPPM Maturity on the Success of Software Application Development Projects in Brazil

References

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