

PROJECT MANAGEMENT MATURITY

Archibald & Prado Research www.maturityresearch.com

Report "Development of New Applications – Software" - 2012

Summary Version

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Version 2

Organized by:
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Authors



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Carlos Eduardo Andrade has a Bachelor degree in Computer Science and MBA degree in Business Management, both from UFMG. Is IPMA certified. Works for over 10 years with project management, in IT, Telecommunications and Government.



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Introduction

This is the **Development of New Applications – Software – Summary Version** of the 2012 Archibald & Prado Research. It was available at the website **www.maturityresearch.com** from september to december 2012 and was taken by **64** professionals from organizations of this area, which represents a great progress when compared with last year's research, with 24 participants. The data provided are from a total of 1,472 projects.

Final results showed an **average maturity of 2.64**. This can be considered good for the brazilian organizations, considering the short time in which the Project Management subject became popular in Brazil. But it is certainly a low score considering how much still has to be done.

Results in the following text are grouped and, as informed on our website, all data is shown under the following premises:

- Data is only shown for groupings with more than 5 participants;
- No individual maturity score will be available for the general public, in any media.



Introduction (cont.)

Attention must be paid to the fact that this report is totally deicated to **Development of New Applications – Software** . In the last years, the reports included all Information Systems (Software) subcategories together.

In order to illustrate, we show below the participation of all subcategories.

Subcategory (2012)	Participants	Maturity
Development of New Applications	64	2.64
Great Maintenances	21	2.41
Implementation of applications for other areas of the organization	5	2.10
Implementation of applications for external clients	13	2.68
Implementation of new applications Instalação de novos aplicativos purchased from external suppliers	25	2.44
Total	130	2.55



Introduction: Global Results

MATURITY:

Maturidade: 2.68

RESULTS INDICATORS

Success Index :

Total Success: 52.4%

Partial Success: 34.0%

Failure: 13.6%

• Average Delay: 30.0%

Average Cost Overrun: 16.0%

PORTFOLIO COMPOSITION OF AVERAGE PROJECTS BY PARTICIPANT

- Average projects number: 23
- Average duration of each project: 8 meses
- Average value of each project: R\$ 11,165,000.00



Contents

- 1. 2012 Maturity Results
- 2. 2012 Indicators Results
- 3. Governance Aspects
- 4. Maturity Model Value
- 5. Main Results Overview
- 6. Participants
- Prado-PMMM Model Revision
- 8. Research Team
- 9. Acknowledgements



Maturity Results

This part of the report contains:

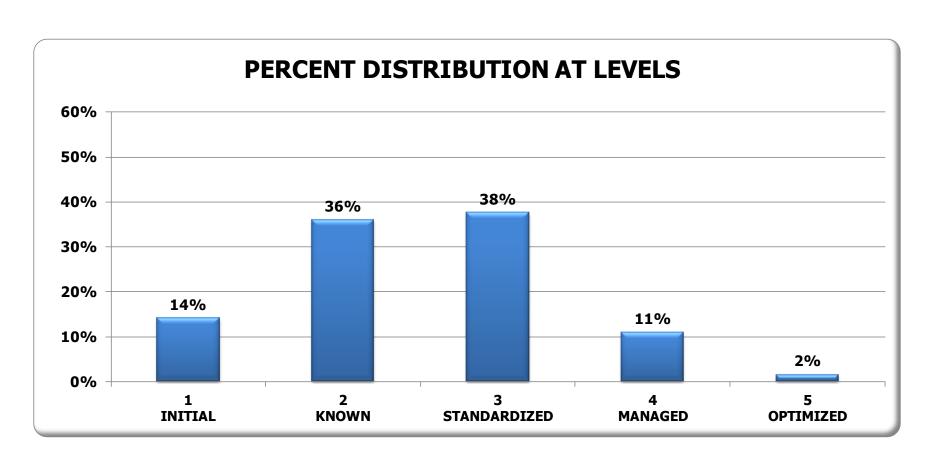
- Overall results of Development of New Applications Software
- Maturity broken down by :
 - Organization type
 - Project Categories
 - Business Areas
 - Billing Classes
 - Brazilian State



2012 Global Maturity

Average Global Maturity: 2.68

There is a strong predominance in level 3





Global Maturity

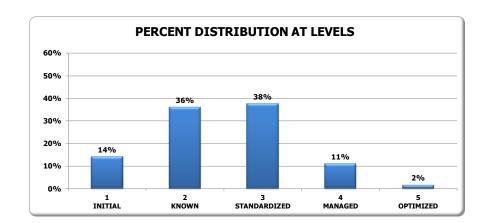
Level 1 – 14.1% haven't started evolving.

Level 2 – 35.9% invested in knowledge.

Level 3 – 37.5% implemented standards

Level 4 – 10.9% dominate the process.

Level 5 - 1.4% reached the optimized level.



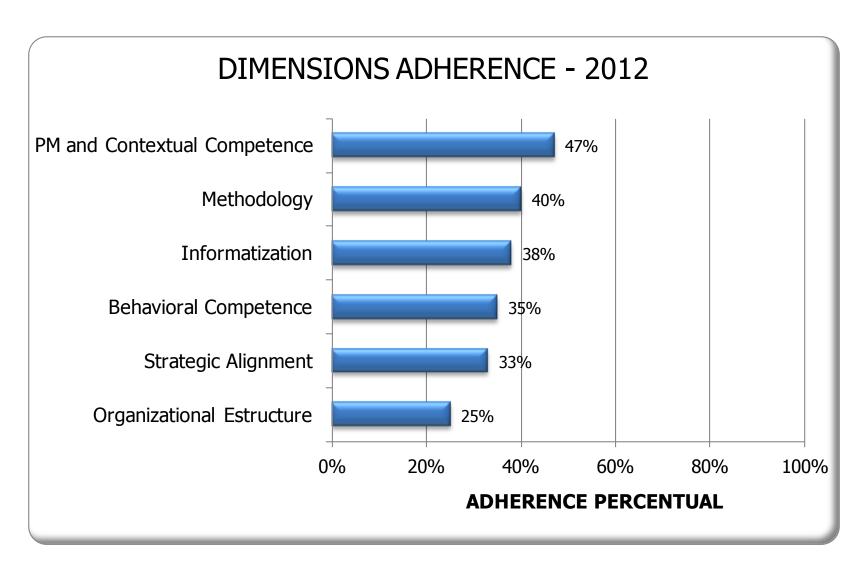
Comments

- For 50.0% (levels 1 and 2) of the participant organizations, Project
 Management still does not bring results to their business in the way they wish.
 (3, 4 and 5);
- Highlight for level 3 with 37.5% of participation;
- Only 12.3% of the participant organizations are in levels which allow work domain and optimization (levels 4 and 5).



Adherence to Dimensions

Organizational Structure is the main weak point of the organizations





Representativeness

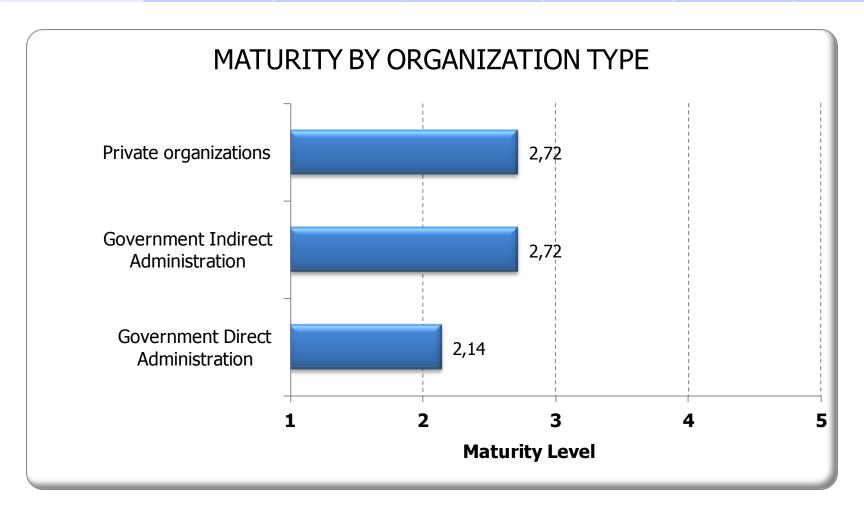
Considering that, because it is a survey where stratifications are made and different sizes samples are used, they have different representativeness. Thus, if the total number of respondents for a given sample is high, it is also high the representativeness of the data relating to that amount of respondents. The interpretation of the representativeness of the data is completely governed by STATISTICAL and, for now, we believe it is sufficient to inform the reader about representativeness indications for different values of the total number of respondents.

Total Number of Respondents	Representativeness
Above 30	Good representativeness
Between 17 and 29	Average representativeness. Analyze data with discernment.
Below 19	Low representativeness. Analyze data with discernment

Note: The warning "data analysis with discernment" is related to the fact that some populations are **finite** and therefore the representativeness criteria are differentiated. For example, for the line of business "Refractories" we have only 5 companies in Brazil and all of them participated in the survey, the shown results would be total representativeness.



Maturity by Organization Type



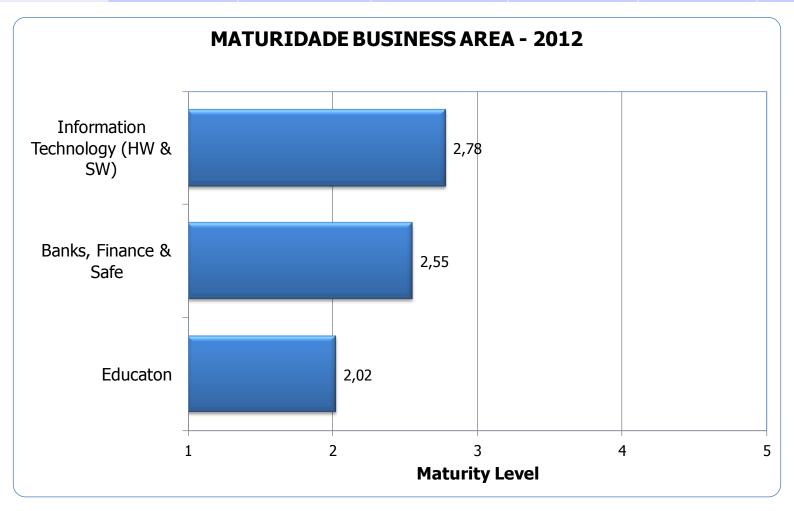
Samples size:

Private sector: 49

Government – Indirect Adm.: 6 Government – Direct Adm.: 9



Maturity by Business Area



Samples size:

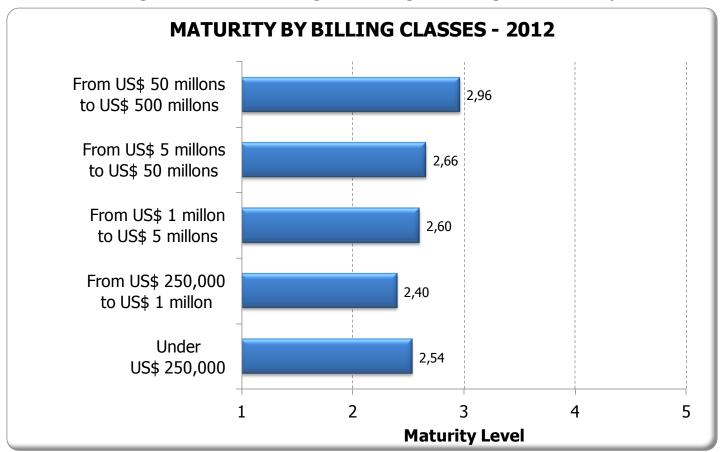
Information Technology: 26 Banks, Finance & Safe.: 6

Education.: 5



Maturity by Billing Classes

Organizations with higher billing have higher maturity.



Samples size:

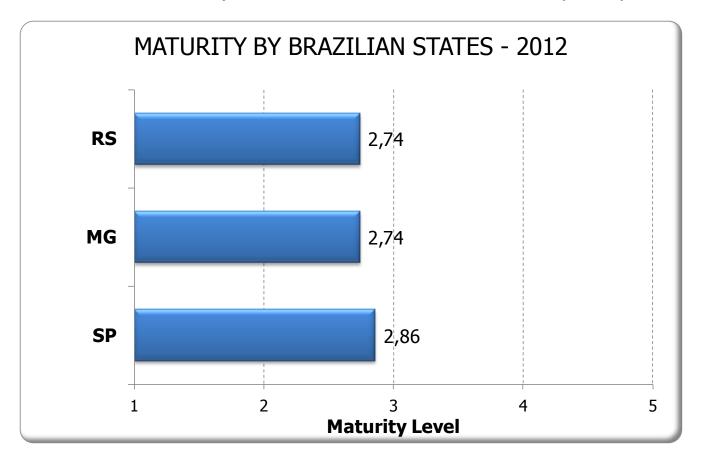
Over R\$ 1 billion: 18

Between R\$ 100 millions and R\$ 1 billion: 7 Between R\$ 10 millions and R\$ 100 millions: 16 Between R\$ 2 millions and R\$ 10 millions: 12 Between R\$ 500 thousand and R\$ 2 millions: 8



Maturity by Brazilian State

Here are shown only the states which had more than 5 participants.



Samples size:

RS: 8

MG: 11

SP: 26



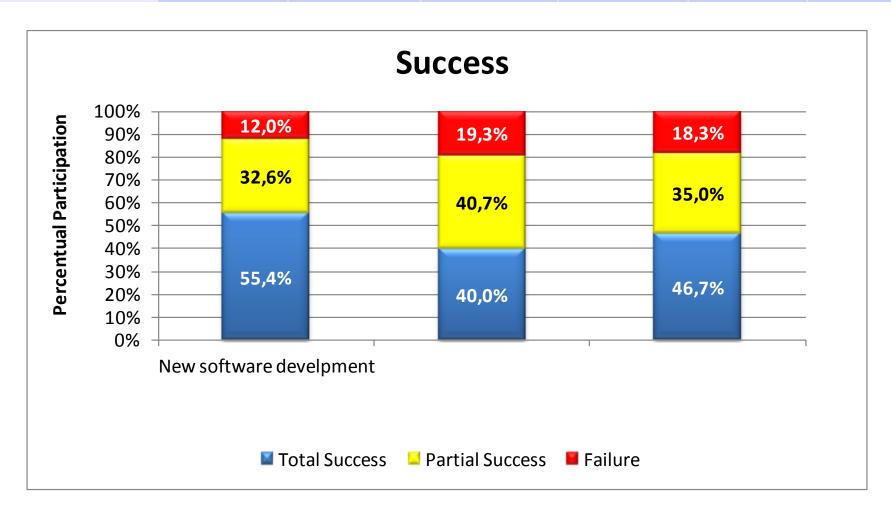
2012 RESULTS INDICATORS

This part of the report contains:

- Mean values obtained for :
 - Success (Total Success, Partial Success and Failure)
 - Delay
 - Cost Overrun



Average Values for Success



Samples size:

Private Organizations: 49
Gov – Direct Adm.: 9

Gov - Indirect Adm: 6

Obs.: the samples above are of low high and low representativeness

The participants used the following concepts of success:

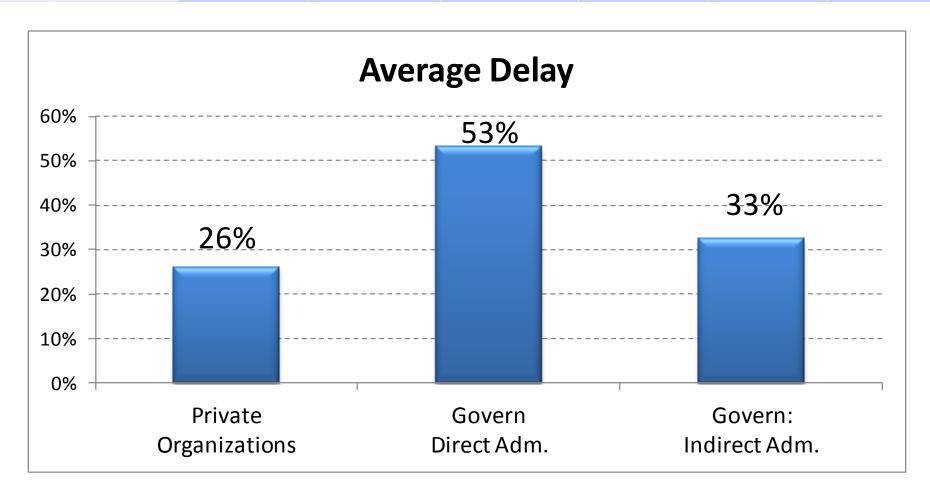
Total Success: the project was completed with almost no variations of the planned time, scope and budget (insignificant differences are accepted). The end user was fully satisfied, as the delivered product/service is being used and has effectively brought value to his or her work.

Partial success or compromised: the project was closed and the software is being used. However, compromising events happened (significant delay and/or significant cost overrun) and/or the end user satisfaction is only partial, as the product/service do not present all the expected and necessary functionalities and/or do not bring the expected value to his or her work.

Failure: tha project was interrupted or the delivered product/service is not being used because it does not meet the end user expectations or the delay was such that resulted in losses to the business. The user/client was deeply dissatisfied.



Average Values for Delay



Samples size:

Private Organizations: 49

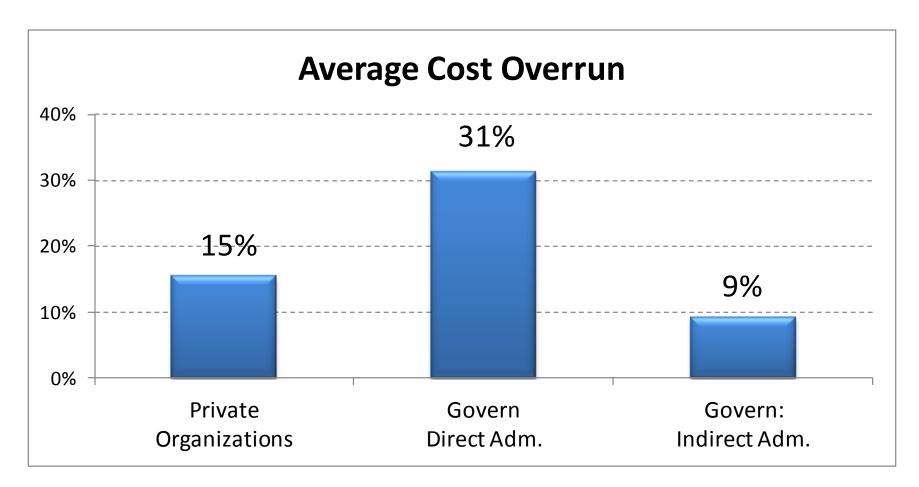
Gov – Direct Adm.: 9

Gov – Indirect Adm: 6

Obs.: the samples above are of low high and low representativeness



Average Values for Cost Overrun



Samples size:

Private Organizations: 49

Gov – Direct Adm.: 9

Gov - Indirect Adm: 6

Obs.: the samples above are of low high and low representativeness



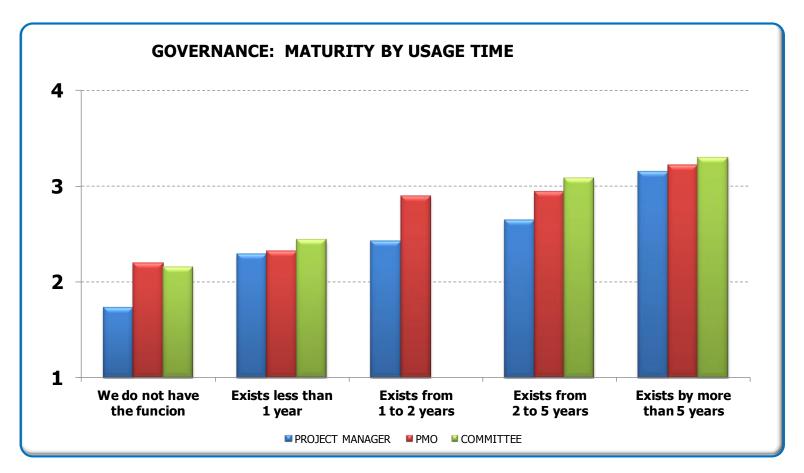
Governance Aspects

In this part of the report are presented data about the importance and acceptance of the following governance aspects:

- Project Manager
- PMO
- Committee

MPCM Importance of the Governance Elements

Organizations that use the governance elements for longer time have greater maturity. The graph shows the relationship between the average maturities of the participating organizations and time of use of governance elements.

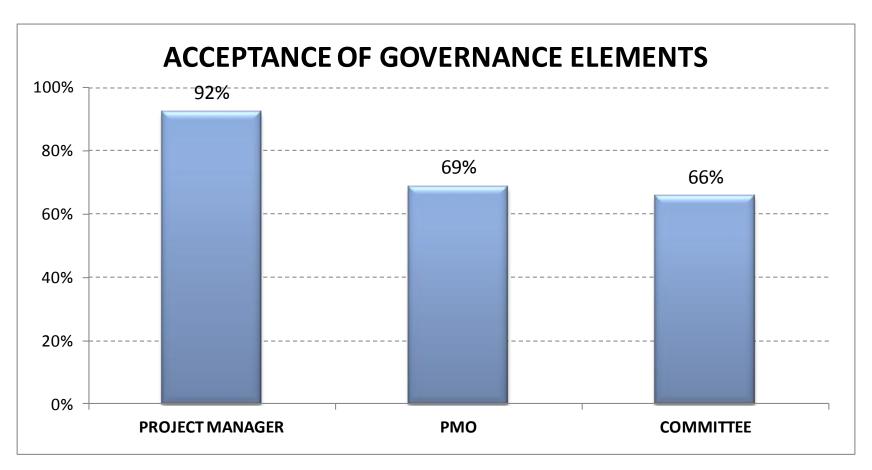


Samples smaller than 5 participants were not cosidered.



Acceptance of Governance Elements

The graph below shows the usage of the governance elements by the respondents. The project manager function is frequently used, however PMO and Committee are still not in every organization. It does not necessarily mean a non-acceptance beacause there are situations where those elements are not needed.





The Maturity Model Value

As in the General Report, in this part of the report an analysis about the value of the Maturity Model-PMMM Prado, using data obtained in the research, is made. The data are:

- Senior management perception
- Maturity versus Indicators :
 - Success
 - Delay
 - Cost Overrun
- Conclusions



Perception of Value Agregation of the Project Management Practice

The answers to the 21st and 22nd questions of the questionnaire allowed to conclude that companies in senior management and leadership believe that the project management adds more value are those that:

- Have the greatest values for "Total Success" (or smaller values for "Failure");
- They have the lowest values for delay;
- They have the lowest values for cost overrun;
- Have the highest values for maturity.

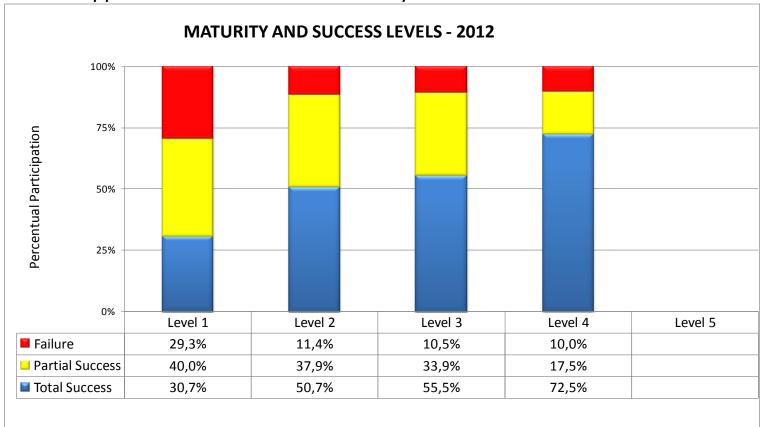
AGREGATION OF VALUE BY PROJECT MANAGEMENT (PM)	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
We do not have PM	3	4,7%						
PM agregates small value	6	9,4%	2,19	35,0%	25,8%	39,2%	42%	33%
PM agregates some value	24	37,5%	2,47	47,2%	39,4%	13,4%	34%	14%
PM agregates much value	31	48,4%	2,89	63,2%	30,7%	6,1%	26%	15%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%



Maturity vs. Success

The data-cross allowed the following conclusions:

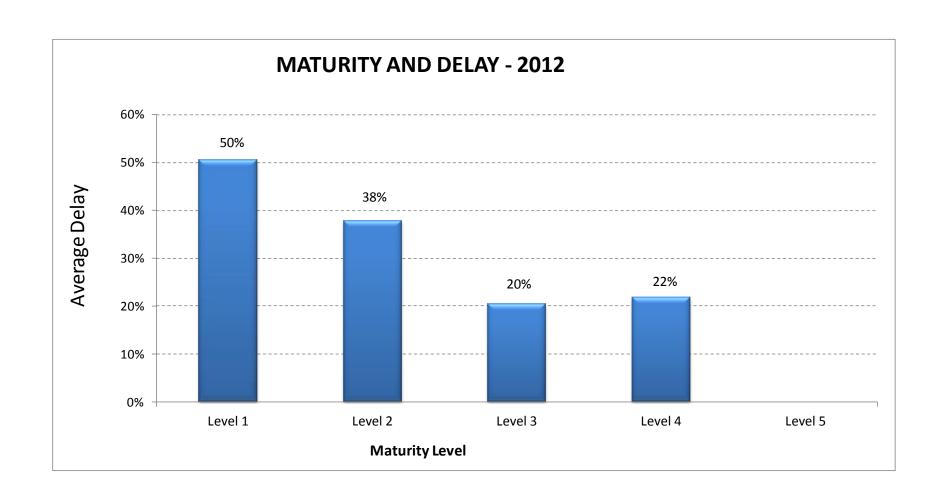
- ✓ There is a positive relation between maturity levels and total success.
- ✓ There is a positive relation between maturity levels and the sum of total success and partial success
- There is an opposite relation between maturity levels and failure.





Maturity vs. Delay

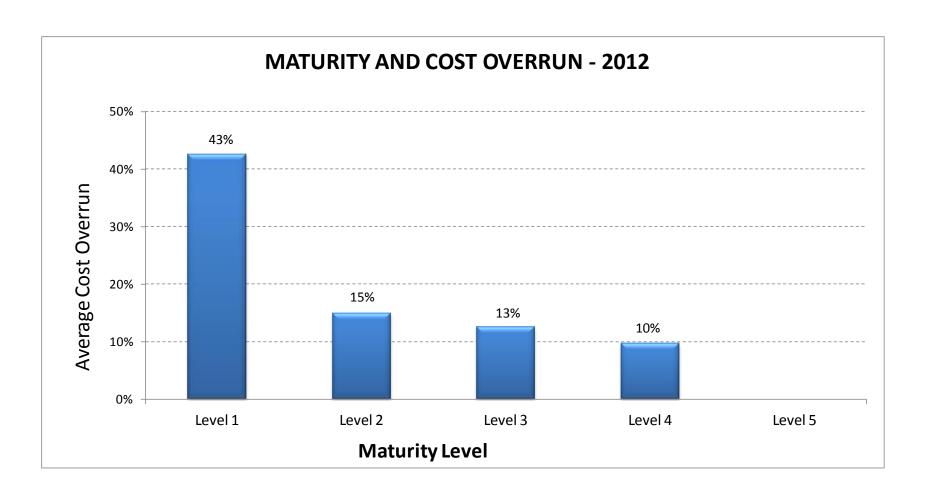
There is an opposite relation between maturity levels and average delay.





Maturity vs. Cost Overrrun

There is an opposite relation between maturity levels and average cost overrun.





Conclusions

Value perception of project management best practices by senior management and leaders is directly related to the existence of good results from these practices.

The Maturity Model Prado-PMMM was created to evaluate the existence of project management best practices. .

The data presented along this text allow the conclusion that the Maturity Model Prado-PMMM is a good tool to measure na organization stage in the adoption of project management best practices and is a good indicator to reflect projects success and the perception of good results aggregation (or value aggregation) by senior management. In other words, the higher the maturity:

- ✓ The higher the total success (or the higher the sum of total success and partial success)
- ✓ The lower the failure
- ✓ The lower the cost overrun
- ✓ The higher the value perception of project management best practices.



CONSOLIDATED: Main Results

In this part of the report are presented the data obtained for Development of New Applications – Software, **with 64 participants**, which form the basis for the analysis shown here

It is important to observe the aspect of the confidenciality of the small samples and data of samples smaller than 5 participants are not presented.



TYPE OF ORGANIZATIONS	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
Private organizations	49	76,6%	2,72	55,4%	32,6%	12,0%	26%	15%
Government - Direct Administration	9	14,1%	2,14	40,0%	40,7%	19,3%	53%	31%
Government - Indirect Administration	6	9,4%	2,72	46,7%	35,0%	18,3%	33%	9%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%



BUSINESS AREAS	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
Agriculture, Cattle Raising, Silviculture and Forest Exploration	1	1,6%					·	
Banking, finance and insurance	6	9,4%	2,55	31,7%	48,3%	20,0%	48%	29%
Trading	3	4,7%						
Construction	1	1,6%						
Consulting	4	6,3%						
Education	5	7,8%	2,02	56,3%	26,3%	17,5%	55%	34%
Eletroeletronics	1	1,6%						
Electrical Energy (Production and/or Distribution)	1	1,6%						
Engineering	1	1,6%						
Pharmaceutical	1	1,6%						
Oil and Gas	1	1,6%						
Health	1	1,6%						
Information Technology (Hw and Sw)	28	43,8%	2,78	57,4%	32,1%	10,5%	27%	14%
Telecommunications	1	1,6%						
Tourism & Sports	1	1,6%						
Automotive & Automotive Parts	1	1,6%						
Other	7	10,9%	2,45	46,7%	38,3%	15,0%	28%	2%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%



BILLING	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
Under US\$ 250,000	3	4,7%						
From US\$ 250,000 to US\$ 1 millon	8	12,5%	2,54	50,8%	36,7%	12,5%	31%	16%
From US\$ 1 millon to US\$ 5 millons	12	18,8%	2,40	59,5%	23,6%	16,8%	31%	22%
From US\$ 5 millons to US\$ 50 millons	16	25,0%	2,60	54,5%	33,5%	12,0%	28%	19%
From US\$ 50 millons to US\$ 500 millons	7	10,9%	2,66	25,0%	51,7%	23,3%	35%	10%
Above US\$ 500 millons	18	28,1%	2,96	52,1%	36,4%	11,4%	29%	15%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%
EMPLOYES	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
Lesss than 19	4	6,3%						
From 19 to 99	17	26,6%	2,73	60,7%	27,9%	11,4%	26%	9%
From 100 to 999	16	25,0%	2,41	43,5%	33,5%	23,0%	39%	29%
From 1,000 to 4,999	9	14,1%	2,52	35,8%	54,2%	10,0%	31%	13%
From 5,000 to 9,999	5	7,8%	3,13	53,3%	35,0%	11,7%	23%	12%
Greater than 10,000	13	20,3%	2,75	55,0%	32,5%	12,5%	29%	16%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%



STATE	#	Percentual	Maturity	Total	Partial	Failure	Average	Cost
SIAIE	Respondents	Percentual	iviaturity	Success	Success	railure	Delay	Overrun
AL	1	1,6%						
BA	3	4,7%						
DF	4	6,3%						
ES	1	1,6%						
MG	11	17,2%	2,69	66,3%	28,8%	5,0%	18%	10%
PB	1	1,6%						
PE	2	3,1%						
PR	3	4,7%						
RN	2	3,1%						
RS	8	12,5%	2,40	42,5%	40,0%	17,5%	40%	22%
SC	1	1,6%						
SE	1	1,6%						
SP	26	40,6%	2,69	51,4%	35,7%	12,9%	27%	18%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%



USAGE OF PROJECT MANAGER	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
We do not have				Juccess	Juccess		Delay	
Project Managers	5	7,8%	1,72	40,0%	35,0%	25,0%	47%	14%
Exists less than 1 year	5	7,8%	2,29	76,7%	23,3%	0,0%	17%	8%
Exists from 1 to 2 years	12	18,8%	2,42	36,4%	46,4%	17,1%	36%	29%
Exists from 2 to 5 years	25	39,1%	2,64	54,7%	29,7%	15,5%	28%	15%
Exists by more than 5 years	17	26,6%	3,15	55,0%	35,8%	9,2%	28%	12%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%
USAGE OF PMO	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
We do not have PMO	20	31,3%	2,19	48,8%	40,0%	11,2%	31%	19%
Exists less than 1 year	11	17,2%	2,32	49,2%	38,3%	12,5%	33%	27%
Exists from 1 to 2 years	6	9,4%	2,90	45,8%	29,2%	25,0%	26%	16%
Exists from 2 to 5 years	18	28,1%	2,94	61,9%	25,4%	12,7%	30%	10%
Exists by more than 5 years	9	14,1%	3,21	50,0%	39,3%	10,7%	27%	11%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%
USAGE OF COMMITTEE	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
We do not have Committee	22	34,4%	2,15	50,4%	33,6%	16,1%	25%	14%
Exists less than 1 year	16	25,0%	2,44	49,2%	37,9%	12,9%	36%	27%
Exists from 1 to 2 years	3	4,7%						
Exists from 2 to 5 years	13	20,3%	3,09	66,0%	23,0%	11,0%	33%	6%
Exists by more than 5 years	10	15,6%	3,30	42,5%	45,8%	11,7%	25%	17%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%



AGREGATION OF VALUE BY PROJECT MANAGEMENT (PM)	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
We do not have PM	3	4,7%						
PM agregates small value	6	9,4%	2,19	35,0%	25,8%	39,2%	42%	33%
PM agregates some value	24	37,5%	2,47	47,2%	39,4%	13,4%	34%	14%
PM agregates much value	31	48,4%	2,89	63,2%	30,7%	6,1%	26%	15%
Total	64	100,0%	2,64	52,4%	34,0%	13,6%	30%	16%
AGREGATION OF VALUE BY PMO	# Respondents	Percentual	Maturity	Total Success	Partial Success	Failure	Average Delay	Cost Overrun
We do not have PMO	14	21,9%	2,23	50,8%	37,9%	11,3%	31%	21%
PMO does not agregate value	1	1,6%						
PMO agregates small value	7	10,9%	2,26	35,0%	36,0%	29,0%	27%	10%
PMO agregates some value	25	39,1%	2,67	49,7%	38,3%	12,0%	28%	12%
PMO agregates much value	17	26,6%	3,14	67,5%	25,0%	7,5%	28%	16%
Total								



2012 PARTICIPANTS

In this part of the report we present:

- Profile of the 64 participants
- Who are the benchmarks
- Complete list of the participant organizations

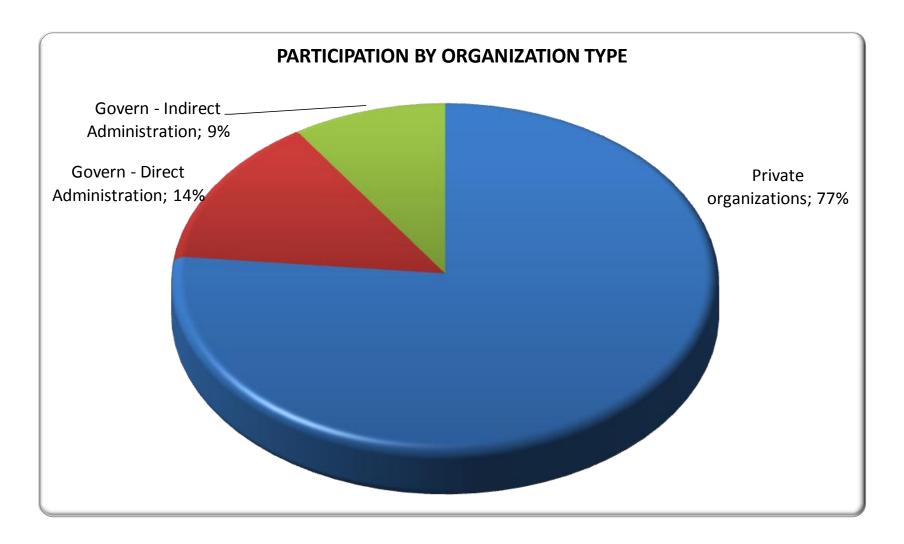


PARTICIPANTS PROFILE



Participants profile: Organization Type

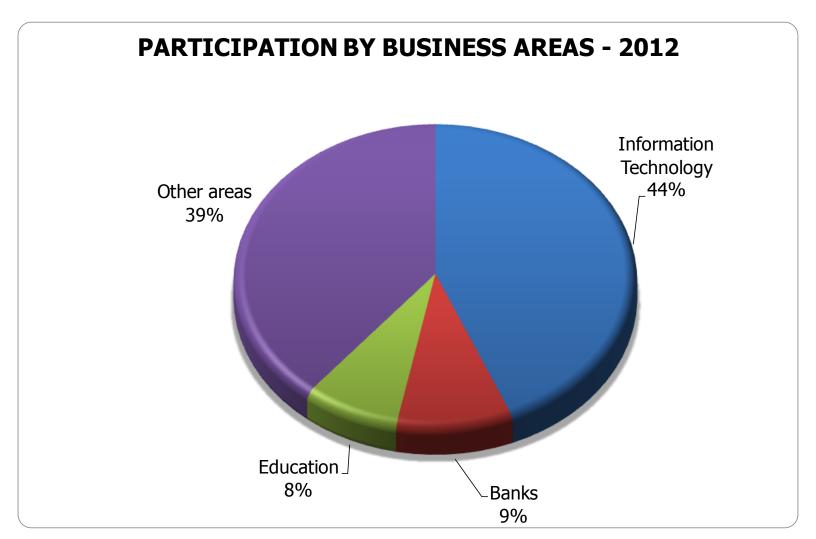
The private sector leads the participation in the research, with a contribution of 76%.





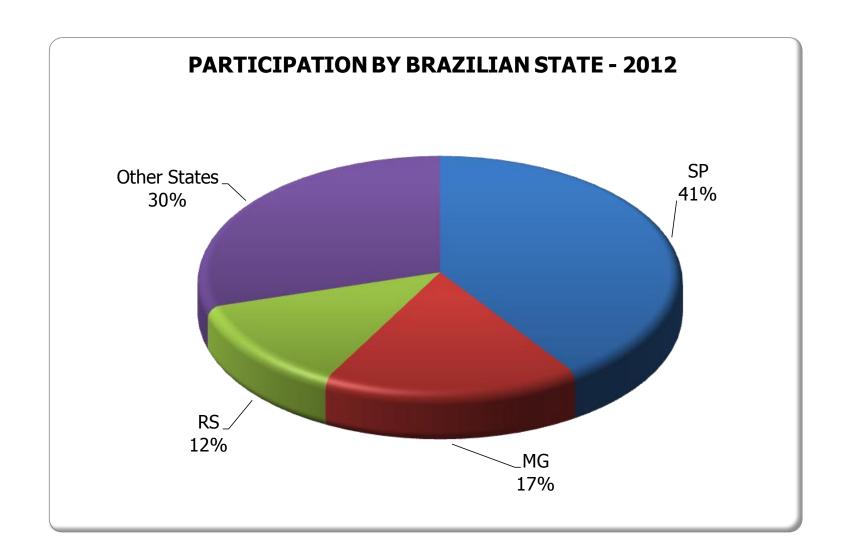
Participants profile: Business Area

As expected, Information Technology organizations lead the research





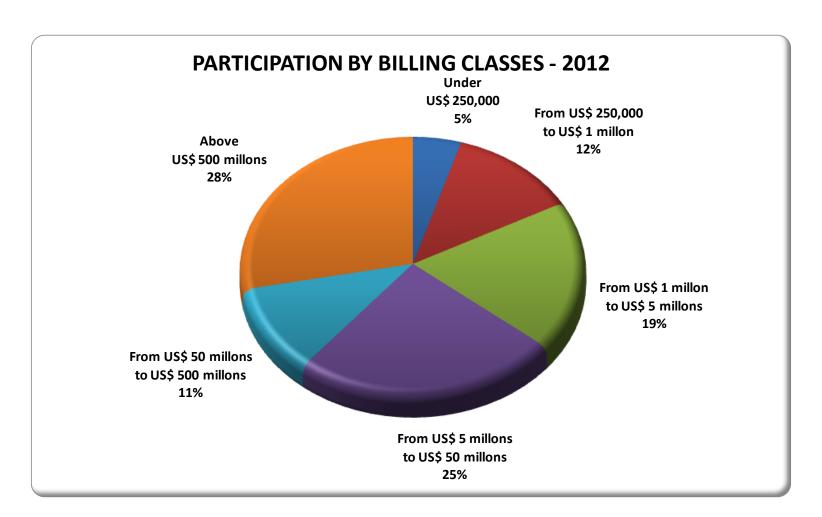
Participants profile: Brazilian States





Participants profile: Billing Classes

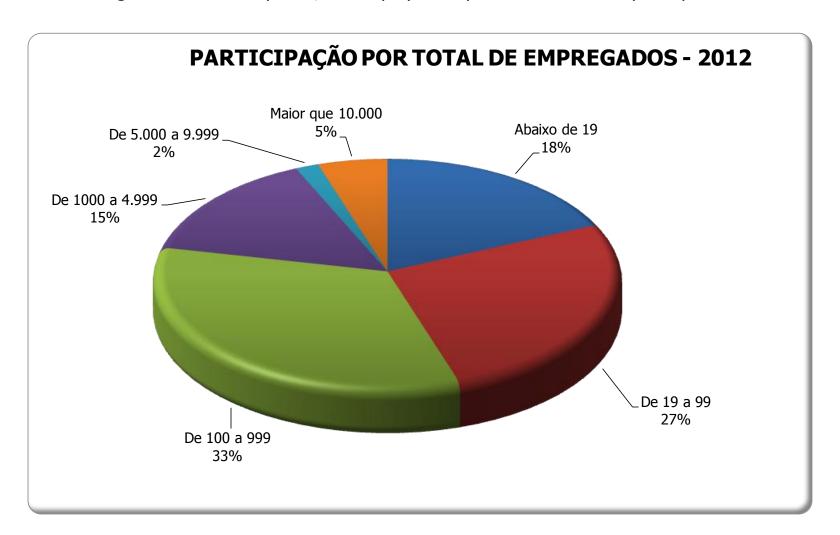
Organizations with billing up to R\$ 100 millions represent 61% of the participants.





Participants profile: Employees number

Organizations with up to 1,000 employees represent 78% of the participants.





Who are the benchmarks?



2012 Benchmarks

Who are the 8 organizations that reached a maturity level of 4 or 5?

- By Brazilian State: 4 organizations are in São Paulo, 2 in Minas Gerais,
 1 in Rio de Janeiro and 1 in Rio Grande do Sul.
- By organization type: 6 organizations are from the private sector, 1
 from Government Direct Adm. and 1 from Government Indirect Adm.
- **By business area**: Information Technology Banking (1), Health (1), Construction (1) e Other Areas (1)



Participants List

Note: If more than one department of the same organization in the same state participated, only one reference to the company is provided in the following list.



Participants List (1)

NAME	STATE				
Alfama Web					
Amil Saúde					
Avansys Tecnologia Ltda					
Banco Bradesco S.A.					
BRC - Biagione Rangel Consultoria					
Chesf	PE				
Consciência Soluçõess e Tecnologia					
Control informática LTDA					
Credimóeis	PE				
CVC Brasil SA	SP				
DASA	SP				
DEPARTAMENTO DE POLÍCIA FEDERAL	DF				
DETRAN - AL	AL				
Digicade Tecnologia Aplicada	MG				
Drogaria Araujo S/A					
Fivecom Sistemas e Consultoria	ES				
Geoambiente Sensoriamento Remoto					
Grupo Pão de Açcuar					
InCode Software Ltda	MG				
Indra Company - Contrato DETRAN Bahia	BA				
ITAU - Unibanco	SP				
ITLab	SP				
IUNEX Soluções	MG				
JMT	SP				
Kayros IT Consultoria	SP				
Landis+Gyr Equipamentos de Medição Ltda	PR				
Landix Sistemas	MG				
Leega	SP				
Localiza Rent a Car	MG				
Mirante Tecnologia					
MRV Engenharia e Participações S/A					



Participants List (2)

NAME	STATE			
Ola	SC			
Own				
PROCERGS				
Raizen				
Randon				
Secretaria da Fazenda - RS	RS			
SEDNA	SP			
SEFAZ-RS	RS			
SERPRO	MG			
Serpro	MG			
SESCOOP	DF			
Shift	SP			
Shift Consultoria e Sistemas	SP			
SMARAPD Informática LTDA	SP			
Softpharma	PR			
STN - Coordenação Geral de Sistemas e Tecnologia da Informação				
Tecnocred Soluções Tecnológicas				
Telefonica / Vivo				
Tesouro do Estado do Rio Grande do Sul				
Todo soluções em software				
TRIBUNAL DE JUSTIÇA DO PARANÁ				
Tribunal Regional Eleitoral de Minas Gerais	MG			
Unifacs - Universidade Salvador	ВА			
Unimed	PB			
UNIRITTER	RS			
UNISANTOS	SP			
Universidade Anhembi Morumbi	SP			
Universidade Potiguar - UnP	RN			
VGC Desenvolvimento de Software LTda	SP			



Prado-PMMM Model

In this part we present a review of the Prado-PMMM model:

- Conception Criteria
- Levels
- Dimensions



Maturity

What is a maturity model?

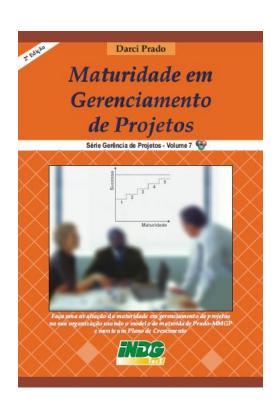
- A form of measuring the status of an organization regarding its ability to manage projects successfully
- A resource to assist in obtaining a growth plan.



Prado-PMMM© Model

Model characteristics

- Developed between 1999 and 2002
 - Based on vast practical experience;
 - Published in December 2002.
- Actual status: Version 1.7
 - Used by several organizations (see the "Testimonials" page at www.maturityresearh.com)
 - Good consolidation level;
 - Refer to the book shown at the right (or go to www.indgtecs.com.br) for more information.



2nd Edition November, 2010



Prado-PMMM® Model

Criteria used for conception

- Address the full well lifecycle (product, service ou result), involving finalistic and support processes.
- Reflect the use of **Best Management Practices** (especially those practices that really add value).
- Try to relate organizational maturity with its ability to successfully execute projects.
- Utilize the same levels of the SW-CMM model (1 to 5) developed by Carnegie-Mellon University for software development.
- Be **simple** (questionnaire with 40 questions) and **universal** (able to be applied to every kind of organization and project category).



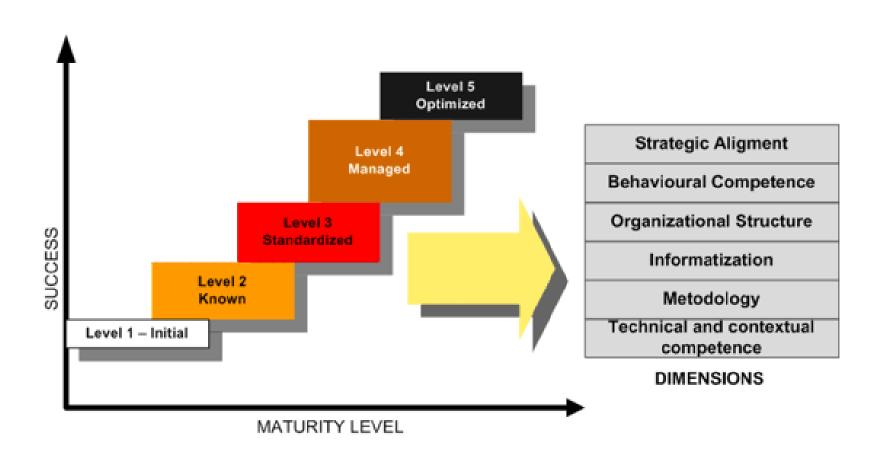
Prado-PMMM© Model

	Levels	Dimensions	
1.	Initial	1.	Technical, context-based competence
2.	Known	2.	Use of methodology
3.	Standardized	3.	Informatization
4.	Managed	4.	Use of adequate organizational structure
5.	Optimized	5.	Alignment with corporate business
		6.	Behavioural competencies



Prado-PMMM© Model

SECTORIAL PMMM: LEVELS vs. DIMENSIONS





Prado-PMMM[©] Model

The levels

1) Initial

- Low knowledge about the subject
- No methodology or management models
- Projects managed by intuition

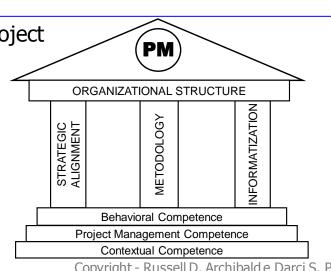
2) Known

Beginning of a new culture oriented to skill development Isolated initiatives.

3) Standardized

Implementation of a standardized Project Management platform:

- Organizational structure
- Methodology
- Informatization
- Strategic alignment
- Development of competencies





Prado-PMMM© Model

The levels

4) Managed

- Platform enhancements: the standards are working
- Anomalies identified and eliminated
- Efficient human relations
- Consolidated alignment with corporate business

5) Optimized

- Optimized performance indicators (deadlines, scope, quality and costs)
- Optimized management processes.
- Wisdom
- Low stress
- Low interference
- Somewhat natural



The team who developed this work



2012 Team: Leadership



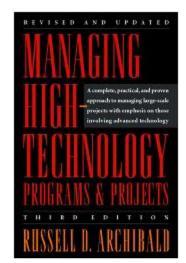
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- MSC, PhD
- PMP, IPMA
- One of the PMI-USA founders
- Global consultant
- Listed in "Who is Who"



Darci Prado

- PhD
- *Qualis* member of IPMA-Br
- One of the PMI-MG, PMI-PR e Clube IPMA-BH founders
- Associate Consultant at FALCONI







2012 Team - MPCM

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Carlos Eduardo Andrade and Darci Prado

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NEW APPLICATIONS DEVELOPMENT (SOFTWARE) REPORT

Darci Prado and Carlos Eduardo Andrade

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END