



OPM3 Portugal

Assessing Project Management Maturity on Portuguese Organizations

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Abstract

Nowadays, it's getting harder and harder for many organizations to keep their sustainability and remain being market leaders, or just to keep following the market evolution. The concurrency and competency that exists today in the market in each sector is very high and tends to keep growing over the years, resulting in a need for organizations to create and further develop competitive advantages. To be able to keep their sustainability and develop new and improved services and products, associated with the development of competitive advantages, as needed, organizations need to implement Project Management processes, aligned with the top management perspective of what is the definition and how to manage the organizational strategic objectives.

The OPM3 Portugal project started at the beginning of 2011, designed by a Project Management expert consultant organization that also does research and development – Ambithus. It was designed to evaluate the Project Management Maturity in Portuguese organizations, applying the Organizational Project Management Maturity Model (OPM3®) standard from Project Management Institute (PMI) (PMI 2013b).

In order to improve their processes, organizations needed to be assessed on their processes and methodologies in such a way that the applied tools and techniques could be evaluated from a quantity and quality perspective. By doing this, it became possible for an organization to identify which processes were not implemented or were not being established or followed, making this inside knowledge an important and definitive part for the understanding of which strategic implementations were needed to manage the organizational projects, programs, portfolios, activities and the needed resources and it's management.

Over the recent years, all kinds of organizations have attempted to define with more precision their goals and objectives for their short and long term and at the same time specific actions – projects – to organize the strategies to achieve them. However, very often, the strategies outlined do not allow us to achieve the results for which they were designed (Demir & Kocabas, 2010). In order to address this problem, Project Management (PM) emerged as a powerful management system, which is increasingly popular in several industries (Shi, 2011), such as the Information Systems and Technologies (IST) industry.

To improve their maturity in Project Management, organizations need to obtain a total control and measurability of their organizational processes and to use maturity models so they can test and compare their current performances against Best Practices, if possible the Best Practices that were established by the industry where they operate (Andersen & Jessen, 2003) (Jugdev & Thomas, 2002). One of the most recognized and used standardized maturity model in project management is the Organizational Project Management Maturity Model (OPM3®), organized and managed by the Project Management Institute (PMI) (PMI 2013b). This model, besides providing a method for assessment and systematic improvement for the organization from a simple project to

a portfolio of projects, introduces, for the first time, the Best Practices for each one of the processes (Pazderka & Grechenig, 2007).

This document explains the OPM3 Portugal project environment and evolvement, the data revision and team development done, the main steps of the investigation and the main concepts applied. To understand the OPM3 Portugal project it is necessary to understand the OPM3® standard principles and the way it has been developed and applied all over the world. In this document it is also presented some of the other models and the reasoning to choose this one is explained. The OPM3 Portugal Project planning and organizing processes, the individual organizational assessments, the country Project Management level, the benefits of the methodology and its main phases are explained. The OPM3® Methodology is also fully explained and also the way it was adapted to the OPM3 Portugal project.

This document also addresses the project key results: the scientific project results, the one hundred planned organizations that were addressed and their sectors and dimensions, the cluster processes that were studied by the project team, the several different ways of analyzing the data, the result organization and its cluster association processes.

The sectorial maturity is presented for each of the sectors, as it is also presented the improvement plans for those sectors.

Jose Angelo's participation on the project is fully explained.

The conclusions and future work are also addressed.

Project Theoretical Background

Project management is seen as a key capability enabling firms to adapt to changing circumstances (Cooke-Davies, Crawford, & Lechler, 2009). Improvement in the ability to deliver projects is critical to the survival in the actual dynamic global environment (Pache & Santos, 2010). In addition to firms, it may also be a useful capability for a country, supporting the successful implementation of new initiatives (Rodrik, Grossman, & Norman, 1995). However, before improvement interventions can be designed, an evaluation needs to take place to determine the current level of performance. While these tools are available at the individual organizational level (Andersen & Jessen, 2003), no process exists to evaluate project management capability at the country level.

There is an ample discussion about methodology to develop a country level evaluation of project practices (Pinto & Williams, 2012, 2013). First, a range of organizations was selected, drawn from economic sectors that were, at the time, important or had the potential for economic growth. Next, OPM3[®] was used to evaluate multiple organizations within each sector. The findings were synthesized first, within and then across sectors to create a country level measure of Project Management processes. The outcomes had several benefits for a range of stakeholders. For policymakers, it provided a useful indicator of the type of projects that could be feasibly implemented. For investors or business owners, a country level measure might become a major input for choosing the economic activities.

Portugal's Development Challenge

Country resource environments vary by their ability to support organizational activity as distinctive resource allocations. All infrastructure and institutions influence the development of firms at a particular location (Mariotti & Piscitello, 2001). Environments rich on resources have higher opportunities for organizations to implement strategic actions by affecting the quantity and quality of resources available to them (Covin & Slevin, 1989). While Portugal is currently experiencing economic and financial difficulty, it exhibits positive trends. The country is in a strategic region and its wealth of historical, cultural and diplomatic linkages can generate value in the new era of globalization. OPM3 Portugal project was organized in such a way that it was fully aligned with the country goals at the time it was initiated:

1. Positioning Lisbon internationally as an intermediary space, taking advantage of its accessibility to the metropolis road, rail, sea and air, actual or projected.
2. Strengthen institutional cooperation to ensure sustainable development of the region. This problem is particularly acute at the level of inter-municipal cooperation without which a dynamic region cannot be sustained.
3. To build a dynamic R & D system. Currently, cooperation between the various entities involved in the R & D system is rather weak, particularly in terms of business-university partnerships.

4. Combat pronounced deficits in human resource development. The region suffers from high dropout rates and failure remains a persistent problem in the school system.

To meet these challenges, the region requires active agents, ie, public entities, associations and private organizations to cooperate around the key issues of development.

However, governance is a major strategic challenge of modernization in Portugal (Syrett & Silva, 2001). There is an extensive suburban and urban concentration along with a persistent tradition of irrational decision-making, poor public oversight and weak civil society (Fidélis & Pires, 2009). In a scenario like this, good projects do not take off by their own merit and require a supporting context (Besner & Hobbs, 2008). Nonetheless, before this system can be developed, there needs to be an assessment of the current capacity of the region to execute and deliver projects. The next section looks at tools for assessing project management capabilities.

Literature Review

In order to improve the efficiency and effectiveness of activities, organizations have adopted maturity models. These frameworks evaluate aspects of organizational activities through identification and comparison to an external standard or benchmark. While the use of maturity models has been established in the operations field, they are relatively new to project management, only having emerged in the last 20 years (Andersen & Jessen, 2003).

The origin of these frameworks is in the quality management domain of operations management. Their usage was subsequently expanded to business processes and software and more recently, project management. Figure 1 provides an overview and identifies 3 paradigms of maturity models: the Process control, system and integrated organization and system perspective:

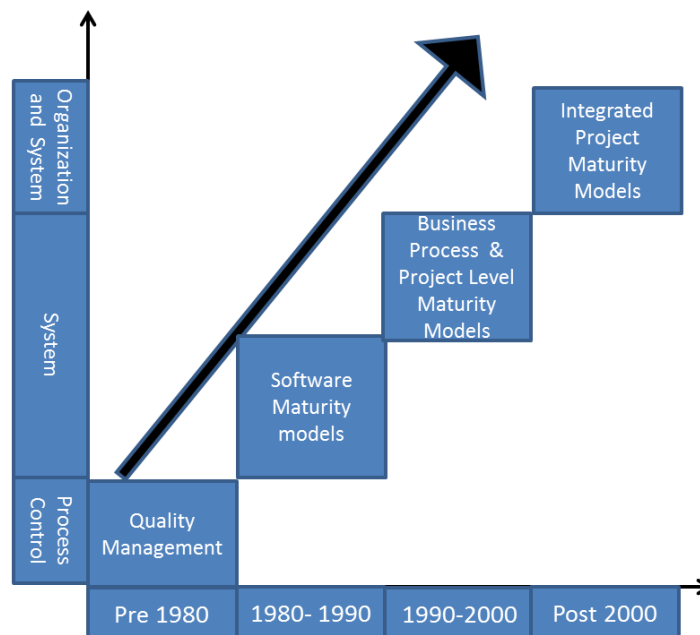


Figure 1: Overview of maturity models

Preliminary approaches to maturity management were drawn from the quality management domain. The focus at that time was the identification, documentation, control and optimization of production processes. The intended outcome was the reliable and efficient performance of operations.

As software systems increased in complexity, the production process approach faced limits to improving outputs. The Software Engineering Institute expanded the view of maturity beyond process only to entire systems (Cleland & Ireland, 2007). This perspective was expressed using the domains of process improvement and process integration. The former had similar goals to earlier quality models while the latter examined the degree to which processes are consistently applied.

Organizational Perspective

More recently, integrated maturity models have emerged. They evaluate processes, systems and contextual organizational factors (Zwikael, Levin, & Rad, 2008). They have particular strengths in assessing practices and performance measures in organizations and provide a means of evaluation beyond the process and its system perspectives (Yazici, 2009).

Organizational Project Management Maturity Models

The following maturity models were examined:

P2M (Japan)

P3M3 (UK)

Maturity by Project Category Model (Brazil)

Project Excellence Model (Europe)

P2M

The Japanese project management association has created a Project Maturity Management within the P2M framework (Ohara, 2005). In this process model, maturity is classified into the following five levels:

Level 1 Haphazard

Projects are managed informally with a high failure rate

Level 2 Systematic

Dedicated project teams are formed, improved success rate for familiar projects.

Level 3 Scientific

Quantitative data is used to support project planning and delivery.

Level 4 Integrated

Companywide systems are implemented to manage multiple projects in a systematic manner

Level 5 Optimization

Projects are aligned with corporate strategies and the company is recognized as an industry leader in Project Management.

P3M3

The UK Government, through the Office for Government Commerce, has also created a framework for managing project activities in organizations, the Portfolio, Program and Project Management Maturity Model or P3M3 (Snowden, 2010). This integrative framework contains three components:

Portfolio Management Maturity Model (PfM3)

Program Management Maturity Model (PgM3)

Project Management Maturity Model (PM3)

P3M3 evaluates each component using a 9-question instrument to classify organizational activities into five levels of maturity:

Level 1 Awareness of Process

Organization recognizes the existence of Projects, Programs and Portfolios and attempts to run them in a different manner to operations.

Level 2 Repeatable Processes

Organization ensures that individual programs and projects are run with their own processes to a specified standard.

Level 3 Defined Processes

Organization wide process implemented for Projects, Programs and Portfolios.

Level 4 Managed Processes

Data is used to improve Organization wide process.

Level 5 Optimized Process

Continuous improvement of organization wide processes.

Maturity by Project Category Model

This model has been used to evaluate firms from Brazil (Prado, 2011). Using a 40-question instrument, it also classifies project maturity into 5 levels using 6 project dimensions (Table 1).

| | Technical and Contextual competence Industry and cultural expertise of team | Methodology Degree to which a formal methodology is employed | Informatization Degree to which data is used to make decisions | Organizational Structure Degree to which a formal structure is adopted | Strategic Alignment Degree to which strategy and projects are integrated | Behavioural Competence Degree to which cultural issues are managed |
|-------------------------|--|---|---|---|---|---|
| Level 1 Initial | Projects are conducted by intuition, little planning, no standardized procedures | | | | | |
| Level 2 Known | Company begins to adopt PM tools and processes | | | | | |
| Level 3 Standardized | Company adopts a formal project methodology | | | | | |
| Level 4 Managed | Improvement processes are put in place for methodology | | | | | |
| Level 5 Optimized | Methodology is optimized and best practice database is implemented. | | | | | |

Table 1: Maturity by Project Category Model

IPMA Project Excellence Model (Europe)

The IPMA Project Excellence Model (IPMA, 2010) is a maturity model inspired by Total Quality Management (TQM). The framework consists of two elements:

The project management element examines the type of project and the methods used in Project Management and the project results element assesses the outcomes and benefits derived from the project.

The framework allocates 1000 points according to the scheme below (Figure 2):

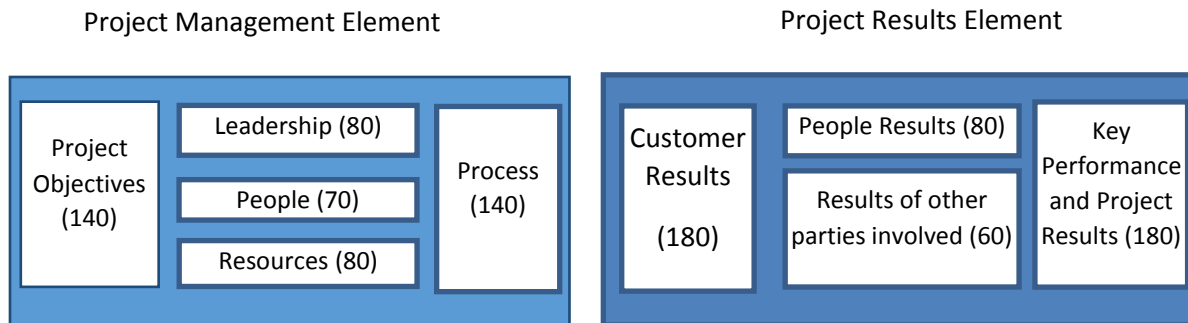


Figure 2: IPMA Project Excellence Model

In contrast to the distinct stages of previous models, the Project Excellence Model can rank organizations based on points out of 1000.

The OPM3® Standard

At the end of 2003, PMI launched the first edition (PMI 2003) of the OPM3® standard which is a model that helps organizations to develop capabilities that underpin the management processes of all their projects, connecting them with the corporate strategy (Cooke-Davies et al., 2001) (Schlichter et al., 2009). The model started its development in May 1998. It took almost 5 years and the involvement of more than 700 contributors, from all over the world, to develop this new standard (Grant & Pennypacker, 2006).

This model was designed to support organizations to assess their state of organizational maturity in Project Management, allowing them to plan and select the improvements needed to achieve a higher level of maturity (Fahrenkrog et al, 2003).

The Standard Beginnings

There was the need to set up a team to conduct a deep review of the research made on the main models of maturity existing in the market, in order to analyze if there was any model appropriate to be a basic step into the development of OPM3®, and also to evaluate the range and variety of available approaches to organizations who seek to know the maturity of their processes (Cooke-Davies et al., 2001) (Zaguir & Martins, 2007).

Investigators were also concerned about how to effectively realize what should be included in the model, that is, the content that it should cover. They used an approach predominantly based on the critical realism, recognizing both a socially constructed reality element on the capabilities developed in each organization, as well as some external physical relational elements (Cooke-Davies et al., 2001).

The main end result of this development program happened in late 2003, when PMI released the first edition (PMI 2003) of the OPM3® standard.

OPM3® provides a method to evaluate and improve systematically the organization of a single project to a portfolio of projects (Zhang et al., 2012).

The first edition of OPM3® (PMI, 2003) consisted in an evaluation questionnaire with 151 questions. In 2008 the model was updated with the publication of the second edition (PMI, 2008b), and the number of questions was reduced to 125 (Berssaneti et al., 2012). The main change from the first to the second edition was that the latter assessed the organizational facilitators criteria (structural, cultural, technological and human resources) as well as its suitability with the standard from Project Management Institute for portfolio management (PMI 2006) launched in 2006 (Berssaneti et al., 2012). The third edition (PMI 2013b) was released in 2013. The most important restructuring point of this third edition was the harmonization with the structure of other PMI standards such as the PMBOK Guide (5th edition) (PMI 2013a), the 3rd edition of The Standard of Program Management (PMI 2013c) and The Standard for Portfolio Management (PMI 2013d). Another important improvement is beyond the application of the “Lexicon of Terms for Project Management 2.0” to ensure that all the basics are described in the same way (PMI 2012).

Main Concepts

One of the main characteristics of OPM3® is the measurement of maturity, through the existence of a standardized set of Best Practices (PMI 2013b). According to PMI (Berssaneti et al., 2012), Best Practices “refer to the methods, currently recognized within a given industry or discipline, to achieve a stated goal or objective”. In OPM3® context, Best Practices are achieved when an organization demonstrates consistent organizational PM processes. Each Best Practice is dependent on a set of Capabilities (specific competency that must exist in an organization to perform PM processes and deliver PM products and services) that need to be developed for a Best Practice to be recognized as implemented. The existence of a Capability, in its turn, is demonstrated by the existence of one or more Outcomes, which are tangible or intangible result of performing a Capability (PMI 2013b).

One of the main differences of the OPM3® to other maturity models is the fact that it is a multidimensional model, being possible to determine the maturity of an organization under different perspectives (Lima & Anselmo, 2004). One of these perspectives is the exhibition of Best Practices and respective Capabilities through the progression in four stages of processes maturity: Standardize, Measure, Control and Continuously Improvement (SMCI). Another perspective is associated with the progression of Best Practices and respective Capabilities within three domains: Project Management, Program Management (set of projects with common goal) and Portfolio Management (set of organizing all projects and programs of an organization). In addition to these two dimensions, OPM3® incorporates the five PM process groups (Initiating, Planning, Executing, Monitoring and Controlling, and Closing), designated by the PMBOK Guide (PMI 2013a), and identifies the Capabilities and the Best Practices having regard to its association with these five processes (Berssaneti et al., 2012) (Lima & Anselmo, 2004) (Jia et al., 2008).

There is also another Best Practice category in OPM3®, the Organizational Enablers. The Organizational Enablers are Best Practices that support and sustain the implementation of SMCI Best Practices (Berssaneti et al., 2012). The presence of an Organizational Enabler indicates that an organization has matured to the point of establishing a stable organizational project management practice environment and has adopted the disciplines of project, program and portfolio management, to achieve this.

In summary, OPM3® was created for organizations of any size, geographical location or sector of activity. It aims to identify the maturity in the management of their projects and the practices established by their project managers, possessing a set of Best Practices as a basis of comparison, recognized and accepted throughout the world (Lima & Anselmo, 2004).

There is also the need to set up a team to conduct a review of research of the main models of maturity in existing project management markets, to see if there was any model that is appropriate for the purpose of OPM3®, and also to evaluate the range and variety approaches available to organizations who seek to know the maturity of their processes (Cooke-Davies et al., 2001; Zaguir & Martins, 2007).

In its essence, OPM3® model basic components are based on project, program and portfolio management standards from PMI and on organizational capabilities.

The best way to measure results is through Key Performance Indicators (Fahrenkrog et al., 2003); but for an organization to design itself in preparing to improve itself may only be achieved if the organizational improvements are made in such a way that the strategic objectives are possible to achieve considering the organizational culture and its capabilities.

One of the main OPM3® characteristic is its ability to measure project, program and portfolio management Best Practices in a structured set of best practices (Lima & Anselmo, 2004).

Project Management Institute (PMI, 2008b) defines Best Practices as the optimal method recognized inside an industry to reach a goal or objective. In OPM3® context, Best Practices are achieved when an organization has consistent organizational project, program and portfolio processes and successful results.

Each Best Practice depends on a set of capabilities that need to be individually implemented so organizational Best Practices are achieved (Lima & Anselmo, 2004; Zaguir & Martins, 2007).

Capabilities are specific competencies that should exist in an organization in such a way that execution of the project, program and portfolio processes is made to deliver proper products, services and results. They should be incremented (PMI, 2008b) in such a way that organization is improved through a logical set of defined processes. This should be fully aligned with strategy and culture. Outcomes and capabilities are strongly connected but each capability may deliver multiple results (Lima & Anselmo, 2004) (PMI, 2008b).

In the figure 3 this relationship is fully explained through an example. Best Practice (BP) 2630 – Improve Develop Project Charter Process depends on 3 capabilities, and each one depends on the existence of one outcome. If one of these outcomes is not present then OPM3® will consider that its capability is not there, thus BP 2630 is not achieved. In OPM3® model, it is only possible to achieve a capability after its connected predecessors are reached, thus the scoring system is conceptually very strong (Lima & Anselmo, 2004).

The relationship model between Best Practices, Capabilities, Outcomes and Key Performance Indicators is an additional very strong OPM3® characteristic (Fahrenkrog et al., 2003; Lima & Anselmo, 2004).

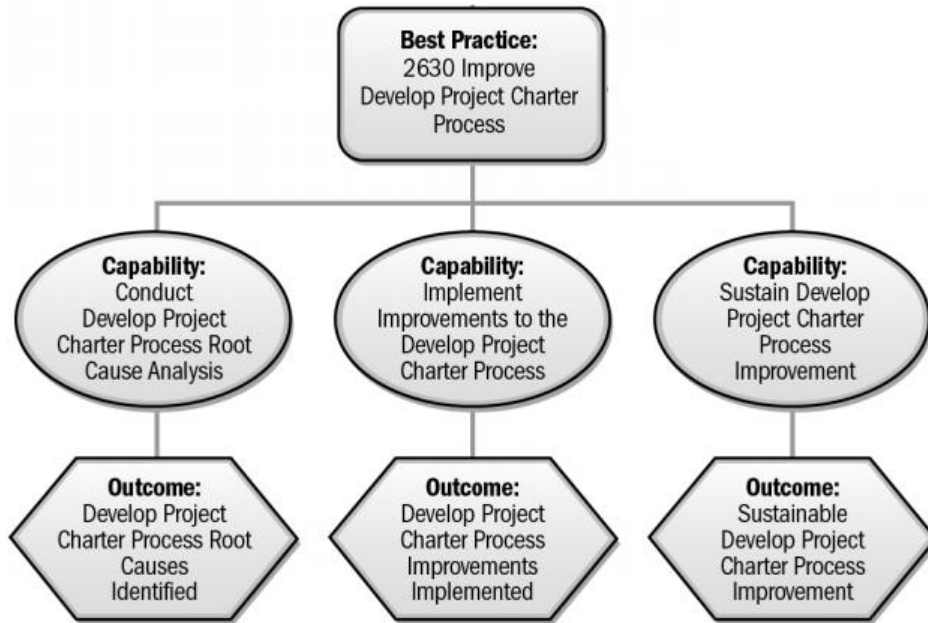


Figure 3: Relationship between Best Practices, capabilities and outcomes

(Adapted from PMI, 2013b)

Each BP depends on the existence of the capabilities. Many of those depend on other capabilities. Those dependencies are a unique characteristic of the OPM3® model when comparing to other maturity models (Fahrenkrog et al., 2003) (Lima & Anselmo, 2004).



Figure 4: Dependencies relationship between best practices, capabilities, results and KPI

(Lima & Anselmo, 2004)

Another OPM3® difference towards other maturity models is its multi dimensions perspectives, (Jia et al., 2008) making it possible to assess the project, program and portfolio management maturity in those several different perspectives. One of those perspectives is the exhibition of Best Practices and Capabilities using four stages of maturity: Standardize, Measure, Control and Continuously Improvement.

Standardize is to establish proper process definition in such a way that they are used by all the organization in a similar way. Measure consists in evaluating the results of the processes to know what is being delivered and if it is what was defined. Control consists in analyzing results of the processes against the proper defined limits. Continuously improvement is to have plans defined in such a way to make processes better trough time.

SMCI (Standardize, Measure, Control and Improvement) is an acronym that designates these four stages of maturity and designates the set of these four stages of maturity.

Other perspective is connected with the progression of the Best Practices and their capabilities in the three (Project, Program and Portfolio - PPP) management domains.

OPM3® also incorporates the five project management process groups – Initiation, Planning, Executing, Control and Closing and its concepts as they are defined in the PMBOK Guide® (PMI 2008a) (PMI 2013a) (Jia et al., 2008) (Zaguir & Martins, 2007).

In each dimension, the defined sequence must be respected when improving organizational maturity processes. This means that the ability to “control” depends if it exists not only itself but also if the “standardize” and “measure” exists (Lima & Anselmo, 2004).

Another key concept in OPM3® is the Organizational Enabler (OE) concept. OE's are based on general management best practices. Knowing those best practices that are in place provides an assessment and analyses of how the organization behaves. Those may be coming from several different management points: they may be structural, cultural, technological, human resources, amongst others, but all are facilitators towards implementation of the processes and of the best practices suitable and towards making the improvements sustainable (PMI, 2008b) (PMI 2013b).

For example, implementing capabilities connected with the best practice “recognize the PM value” will help any organization in making its maturity objective achievable, even if it doesn't directly connected to that path. When an Organizational Enabler (OE) is present it means that the organization has become mature, since their practices are sustained by a stable environment and that the adoption of project, program and portfolio management disciplines are being establish so that could be reachable (PMI, 2008b) (PMI, 2013b).

An organization is influenced by various systems and cultural factors that are part of your business environment (PMI, 2008b) (PMI 2013b). These factors are made of Best Practices around training, implementation methodologies, project management techniques and other practices that do not appear directly in the standards published by PMI, but that are part of the organizational context of each domain of the organization. In short, a Best Practice may exist within one or more areas,

and do not belong to any group of processes. They are the contextual framework of each domain and support the achievement of the organization's SMCI Best Practices (PMI, 2008b).

The OPM3® certified consultants have a database with about 600 Best Practices and 2,600 Capabilities, which allow assessing, comparing and evaluating organizational maturity. The improvements implemented according to the OPM3® are also based on the data collected and analyzed in project, program, and portfolio management and the aforementioned Best Practices (Fahrenkrog et al., 2003). Unlike most of the other maturity evaluation models, OPM3® evaluates organizations in a continuous mode with a score of 0% to 100%.

The OPM3® Implementation

The implementation of OPM3® pattern cycle is described in five stages (Figure 5):

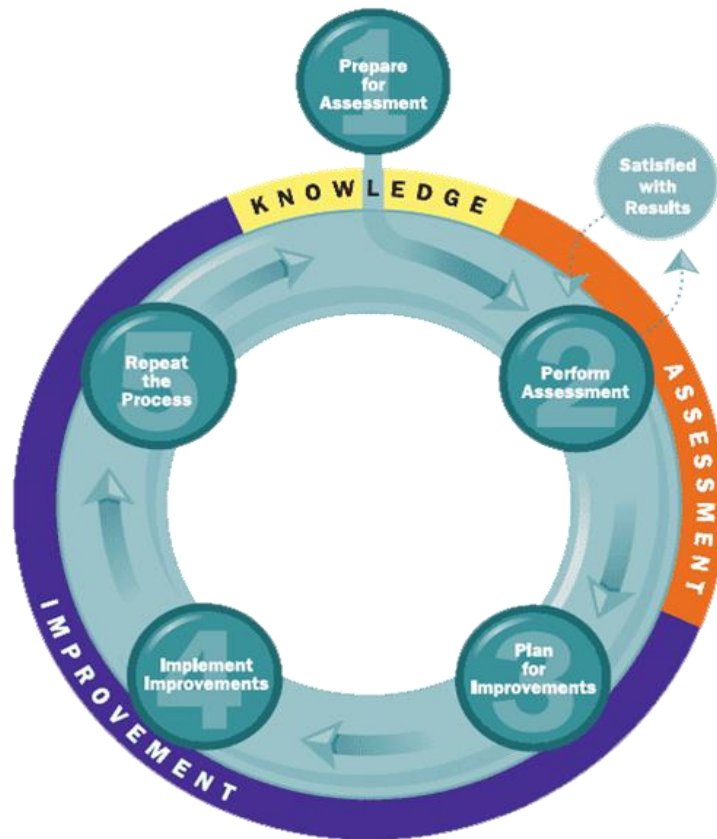


Figure 5: OPM3® Implementation Cycle (PMI, 2008b, p. 18)

- 1- Preparation for assessment, which seeks to ascertain the model fundamentals, familiarization with the tools available for the evaluation and knowledge of the organization that is going to be assessed (Lima & Anselmo, 2004);
- 2- Assessment, which can be done on two levels: High Level - completing a questionnaire that indicate which Best Practices apparently the company does not have or; Detailed -

detail of the Best Practices that the company has no checking Capability, Results and Key Performance Indicators (Lima & Anselmo, 2004);

- 3- Improvement Plan, consists in the development of an improvement plan based on the Best Practices and capabilities identified by setting implementation priorities, responsible areas and deadlines, considering the reality of available resources, strategic interests and the cost / benefit of each Best Practice and respective capabilities (Lima & Anselmo, 2004) (Zaguir & Martins, 2007);
- 4- Improvements Implementation, that is the implementation of the identified improvements in the organization, in order of its priority;
- 5- Repeat the process, review at least in the highest level, at what time lessons learned are taken into account and once a new OPM3® implementation cycle can (should...) be made (Lima & Anselmo, 2004).

Of all the steps, evaluation is the most demanding on consultant's effort and a special attention is necessary. This is the basis to make improvements in an organization, resulting in an increase in the number of skills and consequent greater maturity. During this step, OPM3® users can choose from several tools to conduct an assessment: OPM3® Online, OPM3® ProductSuite® Desk Assessment and OPM3® ProductSuite® Rigorous Assessment, listed here in ascending order of effectiveness (Schlichter et al., 2009).

The Application tools

The OPM3® Online is less effective because of its options: it does not make questions that allow users to determine whether an organization has achieved the capacity and the results that constitute the OPM3® standard. In addition, OPM3® Online does not require the participation of an OPM3® consultant certified by PMI, an expert with experience in different types of organizational design and cultural factors and so results from OPM3® Online may be very different from the reality (Schlichter et al., 2009).

OPM3® ProductSuite®, available only to OPM3® certified consultants, is a robust assessment tool that allows the user to determine if an organization has achieved the capacity and the results that make up the standard OPM3®, thus producing the necessary information to carry out improvements. An OPM3® ProductSuite® Desk Assessment is limited to interviews with process owners who speak on behalf of the entire organization, for example, the Project Management Office managers. An OPM3® ProductSuite® Rigorous Assessment is based on the evidence of having capabilities from both the process owners and other professionals, for example, project managers, project teams and other members of the organization (Schlichter et al., 2009).

The Organizational Benefits

Some reasons are presented (Ghoddousi et al., 2011) to explain why an organization should choose the OPM3® to assess their maturity in GP. Here are the main ones:

- Continues approach, with a percentage score, unlike most models using a process divided into five levels;

- Excellent credibility of PMI as a sponsor of the model;
- It is applied in all lines of business;
- It was subject to results based industry feedback for a long time and has been modified repeatedly;
- It gives great emphasis to the determination of weaknesses and continual improvement.

However, despite the many reasons towards the model usage, there are studies that presented critics to the model.

Alleman (2006) (in Zaguir & Martins, 2007) questions whether the project managers community really needs the OPM3®, as the CMMI (CMMI 2002a) (CMMI 2002b) model presents nine subsections geared especially for Project Management and considers significant the technical aspects and business in which it operates the Project Management practices. He strongly argues that the OPM3® should be separated into three parts because of the different nature of its activities: the first should address the "organizational" aspects, the second the "project management" and the third the "maturity model". To address the "organizational" part he proposes to use the Balanced Scorecard (BSC), a recognized method to define, manage and raise the business strategy and align it with the actions in the operations. To address the "project management", he proposes the use of a Project Management Handbook, such as CMMI (CMMI 2002a) or the PMBOK Guide (PMI 2013a) and to the process maturity, proposes the implementation of CMMI itself (Zaguir & Martins, 2007).

Soler (2005) (in Zaguir & Martins, 2007) presents some direct criticism on the OPM3® saying:

- Interpretation of the Best Practices to the program and portfolio areas is repetitive and meaningless;
- The assessment questionnaire is considered repetitive and bureaucratic;
- Absence of a measurable degree of maturity assessment, as set other models, which hinders the understanding, internal communication and establishing measurable goals for improving organizational maturity through OPM3®.

Hillson (2003) (in Zaguir & Martins, 2007), in his work on organizational skills in project management, comments that potential users have been strongly discouraged to apply the OPM3® and that the great breadth of its scope and extremely complex structure are the reasons.

Why OPM3®?

In short, the OPM3® was produced for organizations of any size, geographic location or practice area, and attempts to identify the maturity to manage organization projects and practices established for their project managers, having a set of Best Practices, recognized for comparative purposes and accepted throughout the world. Despite the criticism, it is more complete than any other model of maturity in Project Management. It is based on the relationship of the Best Practices in its three dimensions: SMCI stages, PPP areas and process groups. It focuses on

continuous improvement of organizational Project Management and creatively develops a continuous structure through logical relevance (Jia et al., 2008).

The OPM3 Portugal Project

With the purpose of assessing the current state of maturity of the Portuguese Industry in the adoption of project, program and portfolio management practices, Ambithus, a Portuguese organization of consulting, training, research and development in project management, conceived the OPM3 Portugal Project. This project was based on the PMI's OPM3® standard (PMI 2008b). The main objective of the project was to evaluate 100 organizations, from various sectors of activity, and perform an analysis of organizational PM maturity, presenting an improvement plan for each one of them.

Initial Concept

The project began in 2011, it was financed by European Union research funds, thus the individual results for each participating organization – the assessment of PM maturity and the Improvement Plan – did not represent a cost for the participating organizations (Pinto, 2013). OPM3 Portugal Project was based on the second edition of the OPM3® standard (PMI, 2008b), which is aligned with the fourth edition of PMBOK Guide® (PMI, 2008a), with the second edition of The Standard of Program Management (PMI, 2008c) and second edition of The Standard for Portfolio Management (PMI, 2008d). At the OPM3 Portugal project starting date these were the latest versions of the PMI core standards.

The project followed an approach in four main steps: Planning and Organizing, Company Assessment, Sectorial Assessment and Country Level Assessment.

In the first step all generic procedures were defined, management structures and control processes for the project, as well as more detailed planning activities and processes. Particular attention was given to documentation of lessons learned, identifying areas of good practice and opportunities to improve future projects (Zaguir & Martins, 2007). In addition, it was created a management information system, designed by Ambithus researchers, with the contribution of the academic partners, for consolidating the organizations assessment work and data analysis. This system was complementary to the PMI's OPM3® ProductSuite® (the OPM3® information system certified by PMI) and overcame some of its limitations, such as it could only be used by OPM3® certified consultants, or only allowing the introduction of the overall result of the organization and not the individual results (Pinto, 2013) (Zaguir & Martins, 2007).

The second step began, for each participating organization, with the signing of a cooperation protocol, between the party that would be assessed and Ambithus. The initial process of intervention included meetings and a series of interviews with different profiles within the organization. Being concluded this phase, data gathering was accomplished to assess the current maturity of the organization in project management.

Two documents were used: the Assessment Report and the Improvement Plan. In the first one, the organization maturity results in its project management maturity were expressed in several ways. The improvement plan intended to give the organization an indication of the path that it needed to make to increase their maturity. These two documents were written in English, being

draft generated through the PMI’s OPM3® ProductSuite®, and improved by an Ambithus defined improvement process. After its completion they were presented and delivered to the organization.

The third step was related to the Sectorial Assessment. The results of the various assessments performed in the organizations were summarized to create measures of sectorial capacity in project management, by industry. After the analysis and validation of the obtained results, it would be presented and discussed an Improvement Plan for the industry sector (Pinto, 2013) (Zaguir & Martins, 2007).

In the final step, the results of the sectorial assessments were compared to identify areas of strengths and weaknesses, and the final result in each sector was used to create general indicators.

In summary, this project created several benefits for the Portuguese organizations, such as the identification of the Best Practices that could support the organizational strategy for the implementation of projects with success and identify specific Capabilities that could increase Best Practices for the organization (Pinto, 2013).

OPM3 Portugal Project was chartered based on the need that Ambithus felt to improve the way Portuguese industry start, choose, manage, control and close projects. Ambithus took the opportunity to take advantage of the System of Incentives for Research and Technological Development (R&D) projects supported by European Union founding, under the concept of taking to the creation of new products, processes or systems or towards the introduction of significant improvements in products, processes or systems, which is conceptually fully aligned with the project ideas.

The OPM3 Portugal Project consisted in a comprehensive analysis of the state of the Portuguese Industry with regard to the degree of maturity in the adoption of project, program and portfolio management methodology using OPM3® PMI® maturity model. Throughout the research, the study was also able to produce impacts on the case studies, because organizational improvement plans, built and validated by the research, could be adopted by the participating organizations: The companies, associations, institutes and others that were the subject of the study.

The project intends to follow a four-step approach as shown in figure 6:

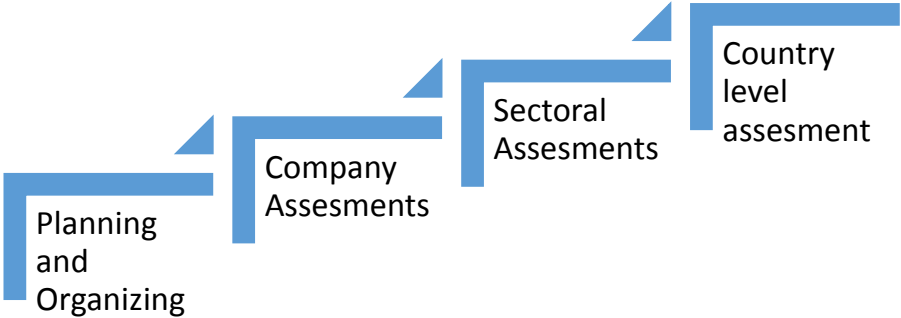


Figure 6: Four-Step Approach for OPM3 Portugal

Planning and Organizing

In this stage all generic procedures and structured management and control of the project were defined, as well as more detailed planning activities and processes. A cross-functional team consisting of representatives from Academia, OPM3® consultants and company representatives was formed to manage project delivery. Particular attention was paid to documenting lessons learned, identifying areas of good practice and possible ways to improve future projects.

The team also created specific information systems for this project. A Management Information system was created for company Assessments and a site was created for registration and online management of all research. This was necessary to be able to properly structure and organize the research work, increasing the efficiency of the 28 researchers directly involved. This system was designed by project researchers and is an essential collaborative tool that brings together researchers, academics and professionals working in the project.

Company Assessment

For the company assessments, Organizational Project Management Maturity Model (OPM3®) was selected (PMI, 2008b) (PMI, 2013b). The advantage of OPM3® was its flexibility and comprehensiveness as it contained hundreds of organizational best practices, assessed current capabilities of the organization and mapped the steps needed to improve organizational performance. OPM3® also enabled the generation of useful outputs to owners and managers at an early stage of research. As a maturity model, OPM3® provided a method for organizations to understand their processes and measure the skills as they prepare to improve their internal procedures. It also enabled organizations to develop a vision of the way forward to improve performance, whether in project management, portfolio management or in program management. These outputs from OPM3® could help to maintain organizational commitment to the project and supported subsequent data collection by researchers.

Organizations that engaged in either a large number of projects, or had to deliver products and services that were the output of complex projects were selected. Another important condition was that the company's top management must fully support the study. The process began with the signing of a cooperation protocol, where it were specified the objectives and the deliverables. This protocol specified the name of the internal promoter (Project Manager) within the company or organization involved, the entity name of the organization from the scientific and technological system who participated, as a partner; and the name of the OPM3® consultant appointed by Ambithus.

The initial intervention process was:

Preliminary meeting between the managers and the project sponsor

Meeting with Top Management

Meeting with Program Manager (or who defines strategy)

Meeting with the Portfolio Manager (or whoever decides to devote resources)

Meeting with the Manager of the PMO (or who appoints the Project Managers)

Meeting with other organizational enablers, like Commercial Managers, Financial Managers, Marketing Managers and others

Meetings with Project Managers

Following this fieldwork, a status report for the OPM3® maturity was generated and was presented to the directors and top managers of each organization participant. The presentation of the report was the working basis for the design of the improvement plan, which was presented and delivered to the company management and top directors, and it was mandatory that top management should participate in this process.

Sector Level Assessment

On completion of the company assessment, workshops were conducted to disseminate and discuss interim results by industry sector. This was being done in such a way that both the companies participating in the study and the overall market were having information on the overall development of the study. It would also serve to confirm research findings and identify additional organizations to apply the research process.

Once company level assessments were completed, the findings were summarized to create industry sector level measures of project management capability. Following the analysis and validation of the results achieved, an industry sector improvement plan was presented and discussed during 7 to 9 thematic workshops. The integrated improvement plans were validated in these events through discussion with sector stakeholders and key influencers.

Benefits of Proposed methodology

Overall, this assessment exercise was meant to create multiple benefits to country stakeholders. For organizations, the intent was to improve the relationship between strategic planning and execution, extending the results of projects, making them more predictable, reliable, and consistent. Other benefits included the identification of best practices that could support organizational strategy for implementing successful projects and the identification of specific skills that the organization had and which could be "best practices". For policymakers, a country level measure of maturity could assist the design of future interventions. Sectors with a low level of maturity were able to receive additional support for executing projects and could be encouraged to form partnerships with more mature sectors. Several other benefits were identified:

Development of a specific methodology for intervention in organizations, regarding the verification of the organizational maturity level.

Development of an information system to manage OPM3® administration of interventions at a country level. The data could be used to assess the effectiveness of improvement actions as well as to be shared with countries seeking to perform a similar exercise.

Lessons learned from the project could be applied in a similar manner to the information system discussed earlier.

Development of an Information system that integrates the methods of intervention and might be exploited commercially.

The project was designed to assess the Project Management Maturity level from different industries, featuring private and public organizations and considering the organization dimension (large, small or medium).

The Project Specific Plan

The project was designed to assess the Project Management Maturity level from different industries, featuring private and public organizations, considering large as well as small or medium enterprises. This Project had the objective to assess organizations and presenting the maturity results together with an improvement plan, and at the final of the project share the results for each sector described above. The organizations that decided to participate did not incur in any direct cost for any service provided for the assessment and improvement plan.

The organizations requirement to participate on OPM3 Portugal was to implement projects using project management processes and being inserted on at least one of the following industries:

Government – Organizations that establish an important factor on the Portuguese business environment.

Multinational – A group of organizations that don't limit their operations and services in Portugal.

Information Systems – Being a fast-growing sector in Portugal, there was a higher interest demonstrated by the organizations in this sector, which resulted in dividing this group in two subgroups: Information Systems services in large and in small organizations.

Construction – One of the sectors more affected by the instability of Portuguese economy.

Knowledge – These organizations develop new and high-margin products and services, supported by research and development projects.

Financial – Institutions directly managing a number of organizations.

Information & Telecommunications – Composed by relatively large organizations that are directly connected with a group of companies.

Defense – Government institutions of public defense.

City Councils – Group of public sector which have a restricted area to operate.

Tourism – A sector of organizations that has been favorable to operate in Portugal.

The maturity assessment for each organization consisted on the evaluation of the domains presented on the strategic management of those organizations. The OPM3® was developed to assess the domains of Project Management, Program Management and Portfolio Management, together with the Organizational Enablers. One key requirement of the organizations that participated was being operating in an environment where projects are a reality. Project management was always considered part of the study as well as Organizational Enablers, as this domain did not require any implementation of processes for methods by the organization. On the other hand, Program Management was not found on any of the organizations that participated on the project, and consequently was only considered part of the study in the beginning.

The OPM3 Portugal Project was created because of the need that Portuguese organizations have to improve the way they initiate, choose, manage, control and close their projects, concerning the degree of maturity in the adoption of project, program and portfolio management along with organizational enablers. The Project Management research and development organization, Ambithus, is the leader of this project, which integrated a group of reputed partners with origins in the scientific and technological organizations.

The preparation of the project involved the description of scope, structure and schedule of work. The requirements were developed for the intervention plan and the logistic processes of the core research facility.

The Planning Phase started at the end of 2011, defining all generic and structured management and control of the project, as well as more detailed planning activities and processes. The assessments of organizations required a management information system and the development of an online management to store all research undertaken.

The management information system certified by PMI® is called OPM3® Product Suite®. The Product Suite® is a tool which empowers the collected and evaluated information on OPM3®. It is a tool that takes the organizational data, collected by the auditors, and that puts it in order to produce a stronger and enriched assessment and improvement plan. This tool has the following advantages in the assessment stage:

- Manage OPM3® assessment Process;

- Evaluate organizational status and needs;

- Report organizational maturity;

- Secure data for improvement.

In the improvement stage the advantages are:

- Manage OPM3® improvement Process;

- Analyze organizational maturity;

- Guide improvement planning;

- Link to the business goals.

The online management platform designed by Ambithus was developed to complement some debilities of Product Suite®, such as that it can only be used by PMI's OPM3® certified consultants, it only offers the possibility of introducing the final result for each answer and it was not designed to support the information collection process. With this platform, auditors store all the answers collected during the assessments and use those answers to analyze and achieve the final result. This platform, based on the OPM3® Methodology, was developed with 9 different organization roles, associated with 9 questionnaires.

The OPM3® assessment was primarily based on interviews with people who had roles at different levels of the organization. The roles interviewed included Executives (Leadership), Portfolio Managers, Program Managers Project Managers, Process Owners, Training Process Owners, Line Managers, HR representatives, and Project Team Members.

The assessment execution comprised the following steps:



Figure 7: The assessment process

A key characteristic of the assessment process was that evidence of best practices had to be provided. The OPM3® consultant would not confirm that a process existed if there was not tangible evidence to substantiate it. The scoring of the assessment was based on the processes in the various standards. A range of values was assigned to each process based on the level of implementation of the specific process in the organization. After the communication of results and improvement plan, the process with the client ended with the evaluation of the fieldwork from the auditors, filled by the interviewees. This process was developed to evaluate the aspects with margin to improve, identifying methods or routines that were not efficiently applied which could be applied in future cases. This way, the project was keeping record of the evaluation of auditors, monitoring and controlling the fieldwork.

Fieldwork

The Development Phase started on the last trimester of 2012 with the Organization Assessments. The Assessments Process started with the protocol signature by the two parts, signed by an internal sponsor of the organization to be assessed and the OPM3® consultant from Ambithus. The differences found between the organizations that participated on the project resulted on a different number of individuals interviewed as well as a number of different questionnaire roles applied.

The OPM3® senior consultants started to assess the current capabilities of the organizations. The assessment started with a preliminary meeting between managers and project sponsor, followed by several meetings including top management, portfolio manager, PMO manager, other organizational enablers (e.g. commercial managers, financial members, marketing managers, and others), project managers and team members. During the intervention process sequence, it was guaranteed the maintenance of privacy for each answer, as the results of the assessment were always presented as a global perspective and never as individual results, all being guaranteed by the storage of the data in a secure information system. The elimination of interviewer bias was also always implemented by establishing quality control process which would work preventively by assuring that all collected data was properly recorded in the information system and that there was always a set of people evolved in getting the final organizational answer to each question.

Assessment Report

Following this fieldwork, a status report for the OPM3® maturity was generated and presented to directors and top managers. This report presentation was then the working basis for the design of the improvement plan, which would be presented and delivered to the company management. The assessment report showed the result of the maturity achieved, reporting the organization's relative maturity, details about capabilities and best practices achieved on the domains, which were part of the research. The illustrations attached on the report highlighted the results, identifying results of the different stages, phases or knowledge areas. After the results were presented, and the reality of the organization could be identified on the results, it was possible to move forward to the next project stage, Improvement Stage.

Improvement Report

The improvement report was the final handover to the organization, consisting in a detailed plan that documented a recommended group of best practices, chosen by the auditors, to be implemented in the organization, according to the reality and mission of the organization.

Sector and Country Evaluation

Once organization level assessments and improvement plans were all completed and presented, the findings would be grouped in industry sectors. In a similar method undertaken for the organizations, the industry sectors would be analyzed and a specific improvement plan was built for each cluster. With the results, OPM3 Portugal revealed a global assessment for each cluster, providing specific average results of each sector (produced by an internal developed mathematical model) and demonstrating the reality of Portuguese organizations at Project Management, Portfolio Management and Organizational Enablers. In the same way, the project provided a guideline of Best Practices each cluster should implement on the organization facing the need, and of the respective cluster. Both reports were presented and discussed in all clusters involved. On completion of the sector assessments and improvement plans, a country level assessment would be produced.

Finishing the Project

At the end of the project, all the work performed was evaluated, analyzed and discussed. The internal performance of the auditors and how the project evolved during its different phases was also evaluated.

During the closing phase of the project, the Lessons Learned were documented and analyzed, together with the feedback received from all the participating organizations of the auditors' performance.

The outcome did not end with the presentation and discussion of assessment results and improvement plans for each sector. In OPM3 Portugal we were able to consider an additional project phase after Closing, named Legacy. The project would own and concede Legacy, as some of the outcomes of the fieldwork would only rise after the organizations implemented the improvement plans and consequently result in a gradually Portuguese maturity improvement.

This project had much to offer to Portuguese industry, from individual organizations to industry sectors. The implementation of the appropriate best practices to each organization and cluster would guide the organizations to implement successful projects.

First Findings: a Master Thesis Conclusion

One of the most important decisions in OPM3 Portugal project was how to organize and group the participating organizations in sectors or in clusters so that it was possible to make strong and useful sector results. This issue was addressed in the early stages of the project and a researcher from Minho University – David Silva – with the help of more than ten other researchers and University professors addressed this problem, using early results from the initial participants in the project to test the groupings and advanced theoretical models for clusters like the Fuzz theory (Budayan, 2009) (Cheng et al., 2011). The main objectives of the study (Silva et al., 2013) were to classify the state of project management maturity of some organizations, to identify and compare the project management and portfolio management processes and organizational enablers areas and, more significantly, for the different dimensions of organizations and its sectors. The small size of the sample did not allow the results to have statistical validity, but the individual tests we did on the developed model allowed us to have a very strong confidence on the developed model.

This work was summarized in a master thesis that David Silva authored and defended on this subject. The presentation of this work was published on youtube.com:

<https://www.youtube.com/watch?v=02lwRD9y18I&feature=youtu.be>

Information Systems and Telecommunication large organizations were standing out statistically from the other two dimensions, since they exhibited the best individual results.

Like David Silva explained in his thesis, being a pioneer study in this area in the world, it was difficult to compare results or say whether the results were good or bad, especially taking into account the reality of the Portuguese organizations. In fact, he concluded that there was a significant opportunity to improve the implementation of project management procedures and practices in the Portuguese organizations. David ended his thesis explaining that as future work, it would be interesting, in parallel with a study more representative of the population, to create a model that would simplify the selection of priority practices, for groups of organizations, on the basis of the OPM3 Portugal Project, and that could also serve as a tool for benchmarking between Portuguese organizations with similar activities.

First Findings: General positive and negative factors

OPM3 Portugal project research allowed to identify “general” positive and negative factors that were common in the assessed organizations and to understand the linkage between those factors and the strategic objectives. Some of the strategic objectives of the organizations that were being analysed were common and it would have been very interesting to observe the evolution of the strategic thinking for the organizations involved.

Most of the participating organizations had started or were going to start international operations and many of them considered the internationalization processes as a project. Other important and

common worries were in the definition of an appropriate program for the training and mentoring, especially on the more technical and difficult to get areas, like engineering. Most of the OPM3 Portugal cases recognized the importance of standardization, throughout the entire organization. But even being recognized as very important, it was not a trait followed and it had a low degree of appliance in some of the assessed organizations.

Most of the organizations had a huge difficulty in the detailed plan of project activities and in the risk management processes, as planning, analysis, control and monitoring risks. Risk management was clearly the weakest point throughout the organizations the team had been working with. Besides that, some of the organizations did not follow processes at all; there was a lack of processes standardization, and a huge lack in the record and report of hours spent on each project activity. There was also a general need to create Project Management support Offices (PMO's), particularly in the organizations with multiple business units. Other common organizational difficulties were: the alignment between management and engineering; the empowerment of the project managers; documenting the closed projects; sharing lessons learned; managing internal and external stakeholders; insufficient or inappropriate communication of the government bodies, especially in the dimension on what is the strategy to be followed by project managers and team members; control and reporting of the projects performance; in quality assurance processes; in tailoring training to the functions; and allocating the right resources to the right activities.

Improvement Plans

Most of the OPM3 Portugal improvement plans were consequent to the problems found. Most of the preliminary improvement plans were presenting solutions for the most important organizational problems, like lack of detailed planning and inadequate risk management processes. There was a strong emphasis on the standardization processes, since, for most of the organizations, being analysed was the first big step for improvement and organizational maturity. Many improvement plans suggested standardizing the main documents of the projects and to fully implement detailed cost and work oriented plans so it would be possible in the future to implement control processes. Some improvement plans took considerable effort towards the need to implement record systems for the report of project time. PMO's establishment or development was also proposed many times. Training and on the job mentoring, not only for project managers but also to other key stakeholders like team members and top management, was also frequently stated. Some organizational changes were frequently proposed, like giving more detailed role definition and defined ground rules for the project managers, in such a way that either the organization and the professionals knew what they could do and what they could not do. Communication improvement and consequent changes on the project management information systems issues were also very frequent. One of the proposed measures that usually caused many organizational discussions was the proposed improvements in the way strategy was communicated to the project teams, most of the time there was a lack of mutual understanding between top management and team members. Staffing and the connection between activities and resources were usually other key parts in the improvement plans. In the improvement plans

proposed measures were divided in governance; portfolio management; program management; initiating; planning; executing, monitoring, and controlling; closing.

Governance

Measures that would impact the way the organization behaves as a whole were usually under this grouping. Some of them were proposals to define policies describing the standardization, measurement, control, and continuous improvement of organizational project management processes and making frequent reviews of the methodologies to meet the organization's needs.

Even for organizations that did mainly projects, those projects were what brought money in, the adoption of the organizational project management concepts and practices was not seen as the means of achieving organization's goals and objectives. OPM3 Portugal Improvement plans usually addressed this by suggesting a change in the organizational drivers in such a way that project management concepts and practices became recognized as being essential and necessary for the organization to be successful. Measures for continuous performance observation were also part of this category.

In the governance section, the improvement plans also considered the main standardization needs, like "define scope" processes for example. Some of the processes that needed to be standardized were so important and with so many organizational impact that it was mandatory that this change might be seen as a general governance measure.

Knowledge, experience, sponsorship and other human resources subjects like selecting and personal engagement were so important that they were also considered in the PM3® Portugal as governance measures. This also included more subjective measures like having a common project management language or others much more objective like getting project managers certification. Other examples were: making sure that there was education for the executives on the benefits of organizational project management.

Training, oriented for project managers and prepared towards the PMP certification, was usually proposed. But other areas and professionals were also sought after by the specific training proposed. The objective was to ensure project manager development, providing project management training appropriate for all roles within the project hierarchy. Specific measures for training in the use of tools, methodology, and deployment of knowledge were included. Less straight to the point measures were also presented, like identification of future training needs and subsequent establishment of training programs, to ensure that in the near future every project role had adequate training. Revisions and improvement measures for the training policies were also regularly considered.

The appropriate organizational structure to support the projects, programs and portfolio is one of the most endeared issues. This is a direct consequence from the establishment of strong executive support to the project management process and from the establishment of career paths for all organizational project management roles.

Metrics and project controls are very important. Estimating and standardizing had to be done in such a way that there was a consistency between projects and programs and that projects in each portfolio might also be compared, with strong foundations for similar metrics, collected in a standardized way during and after project execution were usual advices in the OPM3 Portugal improvement plans.

Project Management Information Systems (PMIS) were usually implemented in the analysed organizations. Advices in the improvement plan were oriented towards operational functions, like velocity and availability of the system for team members. It was less frequent that improvement plans addressed more strategic functions in the PMIS part of the report. This was due to the fact that most of the systems solved had many more functions and capabilities than those needed by the organizations. But what happened, in most cases, was that project information was lacking, and even with the more advanced, updated and recognized PMIS the improvement plan addresses the development of a mechanism for the storage, retrieval, dissemination and reporting of the organizational project management information. This was due to the fact that many organizations did not use the full capabilities of the information system they had implemented and to the fact that many organizations used the information system without applying the methodology and the standards. But PMIS speed and its availability for all team members were usually things that had to be improved.

Standardization of methodology based on best practices was also usual in the implementation plans, as well as customization of generally accepted methodology, adapted to meet organizational requirements.

In governance it was also becoming normal to advice the organization towards including explicit strategic goals in addition to time, cost, scope or quality in the project objectives. This included strategic goals into the project objectives.

The standardization of some specific processes was usually included in this part of the improvement plan: staffing oriented process; like developing project team process; manage project team process standards; developing human resource plan process standards. Other processes that appeared habitually were standardize project distribute information; project estimate activity resources process, estimate costs; project plan communications; report performance.

Some more strategic measures were connected with the involvement of the organization executives in shaping the business change management program that had to be common across the organization. Making sure the executives know about the organizational project management and its impact to the organization and involve them in business change management.

Metrics were also very important. A good example in an improvement plan was: “Define process to collect, organize, analyse, take proper action based on defined metrics for projects performance – planned investment and returns against actual and final investment and returns oriented to the business results. Define range of objectives for investment and return and define project success based on those. The accepted variance, per period, in project returns for each project have to be

defined. In the formal state reports, project managers had to review goals and plans, explain the differences between plan and actuals and propose solutions.” Another one: “Define an independent process to evaluate documents, metrics, systems, procedures and applied policies in every critical project; in most of the big projects and in some of the smaller ones.”

Portfolio

Portfolio management processes were in their early stages in most of the organizations under the study. So the improvement plan usually focused on standardization of the most important processes, like “portfolio identify components” or “portfolio categorize components”. One of the most important was the connection between environment, the organizations and its strategy, so usually “portfolio monitor business strategy changes” standardization was advised.

Initiation

Specific advices for projects or programs initiation were to improve the develop project charter process and to communicate it to all necessary stakeholders. Many organizations involved in the project charter only very high organization placed persons and did not take into account several risks and even facts that might have made the project charter very different – improving the odds of the project not being approved or vice versa. This meant that many times project GO/NO GO decisions were being made without the full organizational knowledge in the decision. So, this was a very important and definitive process that many times organizations needed to improve. To achieve this, it was also mandatory that the process “project identify stakeholders” be fully aligned with those principles. This process should be known and used by all the organization, incorporating the relevant information into the project charter document. In many organizations, it was necessary from the early stages of the project, to define the “project manage stakeholder expectations” Process.

Planning

Planning was the thing project managers were good at. That was one of the main reasons why organizations hired project managers – so the organizational planning improved. But organizations were not good on planning, especially on detailed planning. So, to have proper process in place was very important. OPM3 Portugal found in many organizations a strong need to make team members and other stakeholders more aware of what was happening, improving the prevision of what were the actions in the projects. This came with staffing plans, that, to be properly implemented, had to considerer the communication with the stakeholders of a project develop human resource plan process.

Project management plan process. This proves, since it should have integrated all the planning information, in such a way that it should have been a point of analysis in the future, so this was a very important process. Surprisingly, the research indicated that many organizations did not kept a formal project plan database for their projects, either the information was spread through some

information system or it was not organized in such a way that there was a simple, defined, comparable plan for each project that might be found.

Other more detailed planning processes usually needed improvement plans for their standardization. Examples were “determine project collect requirements”; “project estimate activity durations”; “project create WBS”; “project estimate costs process”; “project develop schedule”; and “project plan quality”.

Other planning process like “project plan risk management” or “project plan communications” were many times referred in the improvement plans.

The incorporation of the detailed plans in the “project management plan” was also a strong point for improvement.

Executing, Monitoring and Controlling

Some of the process that were usually found in OPM3 Portugal improvement plans, with a strong advice to further standardize, and that belonged to this two process groups were: “establish monitor and control project work”; “project develop schedule process”; “direct and manage project execution”; “project report performance”; “project verify scope”; “project control scope”; “project control costs”; “monitor and control project work process”; “project determine budget”; “project perform integrated change control”.

Stakeholder’s management processes also appeared in many improvement plans, as well as other strategic oriented, like, for example to establish the revision of the project goals and plans as necessary.

Team management processes were also needed. Specially “acquire project team”.

Quality was very important and to have had processes like “project perform quality control” and “perform quality assurance” standardized was very important.

Other more specific examples might be stated, like “development and analysis of requirements for a mechanism for the storage, retrieval, dissemination and reporting of organization project management information” or “Include always in the formal reports and in the project meetings a point about risk changes” or even “make mandatory identify risks at least in three categories”.

Closing

One good example of closing: “Define a close project process that makes sure the project is reviewed by the appropriate governing bodies, to make critical decisions on organizational process improvement goals and plans and to have proper approved lessons learned and final results of the project”. An example of advice from the improvement plan for the closing processes was about the caption and sharing of lessons learned from projects, programs and portfolios.

Preliminary Results – Advices to Organizations

The OPM3 Portugal methodology was based on the PMI's OPM3® standard. Ambithus took much further the appliance of the standard, developing a consultancy methodology, which made the consultants involved in each case produce specific orientations for the organization.

Some of those special notes were presented in this section as examples, since most of them were only useful in the organization where the measure was proposed. But from these examples, it was possible to understand the value that organizations were taking from the participation in the project:

Clarifying the company's strategy, that sometimes was not clear. This made each business unit running on different directions.

Creating a position of leadership and specific governance for project management, common to all business units, such as the PMO (Project Management Office). A PMO had the authority to act as an integral stakeholder and was a key decision maker in the beginning of each project to make recommendations and may have been involved in the selection, management and deployment of shared or dedicated project resources to centralize, to coordinate the management of projects, methodologies, risk/opportunity and to support project managers in a variety of ways which may have included: managing shared resources across all projects; Identifying and developing project management methodology, best practices and standards; Coaching, mentoring and training; Monitoring compliance with project management standards, policies, procedures and templates; Developing and managing project policies, procedures, templates and other shared documentation; Coordinating communication across projects.

Improving the investment on training in critical organizational areas such as project management, including other subjects as budgeting, foreign languages, innovation and general management.

Increasing the number of certified project managers.

Promoting the empowerment of project managers.

Making Biannual 360° HR evaluation.

Creating a profile responsible for Quality Assurance/Quality Control, to ensure independent quality processes in project management.

Improving the assessment of the customer satisfaction at the project level, to improve account management ability and impacts on new business.

Creating templates and guidelines that must be common to all business units

Creating a systematic process for registration of work hours, applicable to all personnel.

Creating a process to make clear the career paths for PM's, team members and other key project roles.

Creating rules for managing the contents of the existing projects on the file server – ensure that everyone registers the information related to the projects in the most appropriate way, to improve future reuse of the contents.

Creating a process for sharing throughout the organization the actual state, objectives and other relevant information about the on-going projects, (for example workshops or pechakucha meetings).

Creating a welcoming manual for new employees.

Creating internal procedures for transversal organization processes.

Generalizing the use of the CRM system.

Improving the exploitation of project results for the marketing activities.

Improving the alignment of Human Resources selection processes with the strategic vision of the organization.

Creating structures that will allow management competency-based Human Resources compensation system.

Increasing the contribution of project managers in the evaluation of their team members.

Quick Guide for the Project

The project was designed to assess the project management maturity level from different industries, featuring private and public organizations, considering large as well as small or medium enterprises. This project had the objective to assess organizations and to present the maturity results, together with an improvement plan and, at the final stage of the project, to share the results for each sector described. The organizations, which decided to participate, did not have any direct cost for any of the individualized services provided for the assessment and improvement plan.

The organizational requirement to participate on the OPM3 Portugal was mainly that they implement projects using project management processes.

The organizations that were invited initially to participate in the OPM3 Portugal were inserted on one of the following industries:

- Government – Organizations that establish an important factor on the Portuguese business environment.
- Multinational – A group of organizations that do not limit their operations and services to Portugal.
- Information Systems – Being a fast-growing sector in Portugal, there was a higher interest demonstrated by the organizations in this sector, which resulted in dividing this group in two subgroups: Information Systems services in large and small size organizations.
- Knowledge – These organizations develop new and high-margin products and services, supported by research and development projects.
- Information & Telecommunications – Composed by relatively large organizations that are directly connected with a group of companies.
- Agile Information Systems – Information system organizations that use agile methodology to develop their projects.

The maturity assessment for each organization consisted on the evaluation of the domains presented on the strategic management of those organizations. The OPM3® was developed to assess the domains of Project Management, Program Management and Portfolio Management, together with the Organizational Enablers. As the requirement of the organizations to participate was being operating in a project reality, the Project Management was always considered part of the study as well as Organizational Enablers, as this last domain did not require any implementation of processes for methods by the organization. On the other hand, Program Management was not found on any organization that participated on the project, and consequently was never considered part of the study.

Initiating

The OPM3 Portugal Project originated from the need Portuguese organizations had to improve the way to select, initiate, plan, control and close their projects, concerning the degree of maturity in the adoption of project, program and portfolio management along with organizational enablers.

The Project Management research and development organization Ambithus was the leader of this project, which integrated a group of reputed partners with origins in the scientific and technological organizations.

The partners assisted, during the research, to identify the needs of the project as well as to develop the tools and methods to field and to the work use. At this initial phase it was designed the needs of the project to achieve the objectives of analyzing the Project Management Maturity on Portuguese organizations.

The human and material resources estimation was needed to find the best path to execute the conduction of the project. To become successful, the project required a strong and cohesive cooperation between the project leader and all the allocated partners. From the beginning, the project was being developed in a very ambitious manner, requiring this cooperation to enable coordinated work to flow in an effective way without delays.

Preparation and Planning

The preparation of the project involved the description of scope, structure and schedule of work. It was developed the requirements collection for the intervention plan and the logistic processes of the core research facility.

The Planning Phase started at the end of 2011, defining all generic and structured management and control of the project, as well as more detailed planning activities and processes. The assessments of the organizations required a management information system and the development of an online management to store all research undertaken.

The OPM3® Product Suite® was the OPM3® tool which empowered the collected and evaluated information, from the organizations by the auditors, to a stronger and enriched assessment and improvement plan. This tool had the following advantages on both:

- Assessment Stage:
 - Manage OPM3® assessment Process;
 - Evaluate organizational status and needs;
 - Report organizational maturity;
 - Secure data for improvement.
- Improvement Stage:
 - Manage OPM3® improvement Process;
 - Analyze organizational maturity;
 - Guide improvement planning;
 - Link to business goals.

The online management platform was developed to fight some debilities of OPM3® Product Suite®, as it could only be used by OPM3® PMI® certified consultants.

The scoring of the assessment was based on the processes defined in the various standard documents and a range of values was assigned to each process based on the level of its specific

implementation in the organization. After the communication of results and improvement plan, the process with the case study ended with the evaluation of the fieldwork from the auditors, filled by the interviewees. This process was developed to evaluate the aspects with margin to improve, identifying methods or routines that were not efficiently applied and could be applied in future cases. This way, the project was keeping record of the evaluation of the auditors, this way it was monitoring and controlling the fieldwork.

Execution

The Development Phase was mainly the fieldwork. As already stated, it started on the last trimester of 2012 with the Organization Assessments. The Assessments Process started with the protocol signature by the two parts, signed by an internal sponsor of the organization to be assessed and the OPM3® consultant from Ambithus. The differences found between the organizations that participated on the project resulted on a different number of individuals interviewed as well as a number of different questionnaire roles applied.

The defined process, as explained before, consisted on OPM3® senior consultants assessing the current capabilities of the organizations. The assessment started with a preliminary meeting between managers and project sponsor, followed by several meetings including top management, portfolio manager, PMO manager, other organizational enablers (e.g. commercial managers, financial members, marketing managers, and others), project managers and team members. During the intervention process sequence it was guaranteed the privacy maintenance for each answer, as the results of the assessment were always presented as a global perspective and never as individual results, being guaranteed by the storage of information being in a secure information system. Also the elimination of interviewer bias was always implemented by establishing quality control process that would work preventively by assuring that all collected data was properly recorded on the information system.

Following the project fieldwork, a status report for the OPM3® maturity was generated and presented to directors and top managers. This presentation of the report was the working basis for the design of the improvement plan, which would be presented and delivered to the company management.

The Assessment report showed the result of the maturity achieved, reporting the organization's relative maturity, details about capabilities and best practices achieved on the domains, which were part of the research. The illustrations available on the report highlight the results, identifying results of the different stages, phases or knowledge areas. After the results were presented, and the reality of the organization could be identified on the results, it was conceded to forward to the next project stage, Improvement Stage.

The improvement report was the final handover offered to the organizations that participated, consisting in plans documenting a recommended group of best practices, chosen by the auditors, to be implemented in the organization, according to the reality and mission of the organization.

After a deep individual analysis to each case, the information regarding the processes that were implemented, the strategy that the organization was adopting and to face the challenges and to create competitive advantage on the market, the auditors selects the Best Practices recommended and feasible, always with the presence of a OPM3® certified.

Sector Evaluation

Once the organizational level assessments and improvement plans were all completed and presented, the findings were grouped in industry sectors. In a similar method undertaken for the organizations, the industry sectors were analyzed and revealed specific improvement plans for each cluster.

With this result, OPM3 Portugal revealed a global assessment for each cluster, providing an average result of each sector and demonstrating the reality of Portuguese organizations at Project Management, Portfolio Management and Organizational Enablers. In the same way, the project provided a guideline of which Best Practices each cluster should implement on the organization facing the needs and specificities of the respective cluster. Both reports were presented and discussed for all clusters involved.

Once the completion of the sectors assessments and improvement plans were developed, the result analysis and recommendations for each was shared with general public through video presentations, with the purpose to offer to the wide public target a sector analysis and reveal the processes that were recommended to be implemented on the organizations of its respective sector.

Closing

At the end of the project, all the work performed was evaluated by analyzing and discussing the internal performance of the auditors and how the project evolved during its different phases.

During the closing phase of the project, the Lessons Learned were documented and analyzed, together with the feedback received from all the participating organizations of the auditors' performance.

The project outcomes did not end with the presentation and discussion of assessment results and improvement plans for each sector. In OPM3 Portugal we were able to consider an additional project phase after Closing, named Legacy. The project would own and concede Legacy, as some of the outcomes of the fieldwork would only rise after the organizations implement the improvement plans and consequently result in a gradually Portuguese maturity improvement.

In conclusion, this project had much to offer to Portuguese industry, from individual organizations to industry sectors. The implementation of the appropriate best practices to each organization and cluster would guide the organizations to implement successful projects.

OPM3® Methodology

Maturity Models became an essential tool in assessing organization's current capabilities and helping them to implement change and improvements in a structured way. Due to the strength of

impact and importance at assessing and improving Project Management organizational maturity, maturity models were becoming more recognized in industry.

The development of OPM3® (PMI, 2003) (PMI 2008b) (PMI 2013b) had a background experience of hundreds of project managers and subject matter experts, it was based entirely on PMBOK Guide® (PMI, 2008a) (PMI, 2013a) and on more than 30 models, making this a reliable and valuable tool. OPM3® is a standard maturity model designed by PMI® which contains all the best practices from all the processes defined on the PMBOK Guide® - The Project Management Body Of Knowledge Guide (PMI, 2013a), on The Standard for Program Management (PMI, 2013c) and on the standard for Portfolio Management (PMI, 2013d).

These Best Practices defined how to achieve a consistent implemented process and increase the maturity for any given organization. This model evaluated the existence organization capacities and guides into an improved organizational performance. The OPM3® inception was meant to avoid overruns and failures on projects. The Project Management researchers identified a number of best practices that organizations had to follow considering its strategy and portfolio of projects, to overcome barriers to success. This model was intended to be implemented internally at the organizations, to assess their own capacity of strategic implementation.

This maturity model includes tools and methods, which enables a continuous process of assessment, uses diagnostic techniques that identify potential problems and deficiencies within the projects aligned with a detailed improvement plan. The OPM3®, as an organized guide list of the best practices considered in Management, contains detailed information of ways to assess the state of Organizational Project and a glossary with the detailed capabilities catalogue, best practices and all the information necessary to assist the Organization to develop an improvement plan for their processes.

OPM3® acts comparing the organizational activities with the Best Practices, assessing them in project, program and portfolio management by analyzing Capabilities and Outcomes, respectively the presence of specific organizational activities that have been identified as part of Best Practices and the beneficial results that organizations obtain from performance of those activities.

For each process area at the Project, Program and Portfolio levels, the organizations can be classified into 4 stages

- Standardize: Structured processes are adopted;
- Measure: Data is used to evaluate process performance;
- Control: Control plan developed for measures;
- Continuously Improve: Processes are optimized.

The organization maturity is stronger as the existence of more number of projects implemented with standardized processes, execute a verification of the processes, executing the evaluation of the processes and implementing a continuous improvement of the processes.

There are the four maturity domains defined on OPM3®, being the consultant responsibility to define which domains were assessed for each organization.

- Project Management domain evaluated knowledge, competencies, tools and techniques, which were applied on the activities during the different project stages: Initiating, Planning, Execution, Monitoring and Control and Closing. The OPM3® led the organizations to focus on these stages together with the domains and processes to achieve the strategic objectives through adoption of Best Practices. The OPM3® evaluated the processes of Project Management, designed and structured by PMI® (PMI, 2013a).
- Program Management domain consisted on the coordination of the strategic alignment management of the programs, benefits management of programs, Stakeholders engagement management, government policies decisions and program life cycle management. The OPM3® evaluated the processes of Program Management, designed and structured by PMI® (PMI 2013c).
- Portfolio Management domain was assessed at an organizational strategic level, integrating how the mission and strategy was implemented at the organization current portfolios. Furthermore, it was evaluated the methods how the organization identifies, prioritizes, assesses and selects the Portfolio components for its management. At last, it was evaluated the way the organization monitored the strategic changes, kept record and evaluated the Key Performance Indicators for alignment, portfolio authorization and advantages verification for the organization through Portfolio. The OPM3® evaluated the processes of Portfolio Management, designed and structured by PMI® (PMI 2013d).
- To conclude the domains, and beyond the Standardize, Measure, Control and continuous Improve (SMCI) stages, the Organizational Enablers were structural practices, cultural, technological and human which could be influenced on the support and developing the implementation of Best Practices on Projects, Programs and Portfolios. The organization and its environment could be influenced by different cultural and automatized factors. The OPM3® assessment reflected this in training and implementation of methodologies and techniques. The OPM3® evaluated the 17 Organizational Enablers categories which supported the implementation of SMCI best practices.

Summarizing the definition and importance of OPM3®, this tool was recommended for any organization, not matter the size, geographical area or industry, which aimed to know the maturity of the projects being implemented at the organization. OPM3® used best practices to easily identify organizational needs during the assessment and to work as benchmarking to determine which were more appropriate and critical for being implemented during the improvement.

Project Results

In a more specific perspective through the different clusters, the project offered the result from each cluster that represented the picture of Project Management Maturity on those clusters.

Final Project Benefits

Final Project Benefits were:

1. Making public the awareness of developing an internal processes analysis in order to find which processes must face an improvement and identify key processes that must be standardized.
2. Increasing the importance of implementing organizational processes, using Project Management methodologies. To improve organization maturity it was recommended to follow the standards of Project Management. This project tended to encourage the implementation of processes in order to increase Project Management Maturity of the organization.
3. The results served as a bridge for the gap between strategy and individual projects, ensuring the new best practices to be implemented were aligned with the strategy outlined by the organization.
4. It also benefited the industry sectors of the industries analyzed by offering results that could be used for Benchmarking by the group of organizations.
5. Allowing future research related with the Portuguese project management maturity. The project results could be used as a case study for forthcoming research related with project management and more specifically for research linked with the different sectors analyzed.
6. The application of OPM3® enabled the opportunity to analyze the human perspective and contribution to the development of the organizations from the Organizational Enablers domain (this last domain was important to realize the culture and the strategy of the organization to help construct the improvement plan).
7. It was possible to study different sectors from the initially planned, which were not previously considered to be evaluated due to largest interest to participate by the information systems sector, bringing an opportunity to analyze this cluster by the number of employers (less and more than 100 employers) and also by the ones applying agile methodologies.

Industry Results

Government

There were clearly two areas which Portuguese Government Institutions putted their priorities on – Government policies and Procurement processes.

The Portuguese Government institutions enabled process improvements of all the project phases processes by authorizing the appropriate governing bodies to make critical decisions on process improvement goals and plans. The Process-oriented bodies have been established, and the appropriate people have been assigned to them. These improvements are indispensable for

Government institutions to enable greater transparency and clarity around the overall cost and investment involved in creating and maintaining given processes.

Also the Procurement processes, Planning, Conducting, Administering and Closing Procurements were processes not only important but also essential as public institutions could conduct the procurements processes with transparency and with the highest control as possible. Still, some of these processes had a margin to improve which should be addressed.

The Planning Phase also registered some good percentages on Collect Requirements, Define Scope and Define Activities, demonstrating a priority to strictly define the requirements, the importance to define, from the beginning, the scope and with more detail the activities where the project would be involved.

The downside for the Government Institutions were the main processes of each phase, weak results on Project Charter and Direct and Manage processes together with the inexistent processes of Project Management Plan and Close Project (these processes should have a higher priority to at least standardize, but preferable implement these processes across all stages).

Multinational

The Portuguese Multinational organizations achieved perfect results on implementation of Project Management policies, as the processes to Define Scope, Procurement processes (except on planning stage) and Monitor and Control Project Work. These type of organizations also achieved quite satisfactory results on Project Charter and Project Management Plan. Also the activities, schedule and cost were well defined, estimated and controlled.

The improvement priorities were for implementing processes such as the Project Charter, the Project Management Plan, Collect Requirements, Direct and Manage, Project Perform Integrated Change, Verify and Control Scope and Close Project at all stages, together with the remaining stages for the processes that already achieved some Best Practices.

Information Systems

The organizations that develop information systems usually embraced large and complex projects, as the great majority of Project Management Processes became essential for their implementation. Besides the processes related with policies and procurements this cluster registered positive results on Definition and Estimation of Activities, Change Management and Distribute Information processes.

This cluster needed a strict management – a rigorous planning phase and a continuous monitoring phase. The Planning Phase had to ensure a focused analysis with a Project Management Plan and Collect Requirements process – these processes should've been a priority to implement at all stages. As the requirements and Scope were frequently dynamic during Execution, Monitor and Control Phase, the processes for verifying and controlling scope together with a Report Performance had to be fully implemented. Risk Management is an area which was not being used by Portuguese organizations but should've been encouraged to implement, especially at these

organizations as the occurrence of some events could drastically impact the cost, duration and even the feasibility of the project.

Information Systems of Small Size Enterprises

The Information System of Portuguese Small Size enterprise's was not implementing so accurately the processes as the other clusters of non-small size. The main difference was that it weren't found any signs of capabilities of Integrated Change Management on these small size enterprises. The only concern was about changes, mainly on schedule variances. This cluster was also demonstrating less concern on Estimating Costs, Determine Budget and Procurements processes.

Knowledge

This organizations develop new products or services, requiring additional processes to respond to the innovation challenges. This cluster results were only satisfactory at project management policies, definition of scope and procurement processes. Besides the support processes of Project Charter and Project Management Plan that should have been implemented at all stages due to their importance through the project, there were three areas requiring attention to research and development projects – Change Management, Risk Management and Quality Management.

It was important to implement change management, as change would be certain to occur during the development phase for being extremely hard to design the final scope and objectives of these projects. For the same reason, Risk Management and Quality Management assumed an important role on Knowledge cluster, as the development of innovative projects was extremely complex and demanding. The identification of risks and quality metrics was usually necessary to be a process repeated multiple times for the nature of R&D projects, using dynamic project requirements.

Information & Telecommunication

The Portuguese organizations developing Information and Communication Technologies (ICT) projects demonstrated strong capacities Defining Scope and Activities as its Estimates processes (Resources, Durations and Costs) and Procurement processes, along with setting project management policies. Nevertheless, there were some important processes that could not be ignored due to their influence to empower all the processes, and consequently the outcomes.

The organization that developed ICT projects needed to have a great knowledge of the market trends, as their opponent's business and client's biggest priorities on this respective sector. This fact raised the importance of the Identification of Stakeholders process, as it would be the support for other non-less important areas: Human Resources (including Communication and other project team processes) and Risk Management. Communication and Risk Management assumed a higher importance on this cluster as the market was in a permanent development and being highly competitive, it became important to structure communication channels and analyze the probability and impact of the risks that might come across from these high competitive projects.

Agile Information Systems

The results from Portuguese Information Systems organizations adopting Agile methodology showed that it was being implemented a satisfactory number of processes well implemented during the planning phase as the requirements collection, definition and estimation of activities, human resource development and communications. Another important aspect on the project was only satisfactory during the execution phase, as the scope and schedule, which represented lower percentages at the definition and development respectively during planning. It was also important to highlight the importance of these organizations to manage the stakeholders during the execution phase, in spite of demonstrating a low percentage at the stakeholder identification process (at initiation), this was another aspect where this specific organizations putted more effort during execution phase than at the previous phases.

Project Results Details

All project results were published in Ambithus web site:

<http://www.ambithus.com/index.php/comunicacao/opm3-portugal>

The results were organized in 7 main chapters. All the public results were shared with everybody that wish to use these results, either to compare individual organizations or to have a broader information on how OPM3 Portugal project ended and what were the presentation and distribution of its full results.

A set of videos and podcasts were produced, in Portuguese and English and inserted in an OPM3® Chanel on YouTube.

All the detailed sector document results that represented the OPM3® Assessment reports and Improvement Plans for the sectors represented by the 70 cases were analyzed.

The first and second chapters presented the project and its context and technical background.

In the Third and Fourth chapters the detailed results were divided by sectors. For each sector you have the assessment report, its slides, the improvement plan and its slides. There is also a set of videos that present this documentation, either in Portuguese or in English.

In the fifth and sixth chapters you can see some samples of the international project recognition, either in the academic, scientific and application domains in the Project Management representative institutions.

Introduction and context explanation

Video in Portuguese

https://www.youtube.com/watch?v=ap_M7q6HKN4

Video in English

https://www.youtube.com/watch?v=b45O_Xsapvk&feature=youtu.be

Technical Project explanation

Video in Portuguese

<http://youtu.be/IS-Ovq4A-2E>

Video in English

<https://www.youtube.com/watch?v=z45yJ-r3SAc&feature=youtu.be>

Assessment Reports

Information Systems – Medium and Big sized

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.1_ISMBS_AR_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.1_ISMBS_AR.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=IOmdxfBdltU>

Video in English

<https://www.youtube.com/watch?v=ly2njdsOxXM&feature=youtu.be>

Information Systems – Small sized

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.2_ISSMA_AR_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.2_ISSMA_AR.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=2USBpPX4fi8>

Video in English

<https://www.youtube.com/watch?v=mjOS5bhB7xw&feature=youtu.be>

Government

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.3_GOVER_AR_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.3_GOVER_AR.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=vOE3JaFM4yU>

Video in English

https://www.youtube.com/watch?v=f_V5yY-7Ns

Multinational

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.4_MULTI_AR_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.4_MULTI_AR.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=M-J3jagzwDo>

Video in English

<https://www.youtube.com/watch?v=JtqNJ3PYzCc>

Knowledge

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.5_KNOWL_AR_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.5_KNOWL_AR.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=mgDIESIYTx0>

Video in English

<https://www.youtube.com/watch?v=9VH3FSwRh2Y>

IT & Telecommunications

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.6_ITTEL_AR_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.6_ITTEL_AR.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=F3feKdvLAoQ>

Video in English

<https://www.youtube.com/watch?v=1smdgVLDYlg>

Agile

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.7_AGILE_AR_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.7_AGILE_AR.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=-Zj2Jfc4gUo>

Video in English

<https://www.youtube.com/watch?v=ncMXjOT0OcY>

Improvement Plans

Information Systems – Medium and Big sized

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.1_ISMBS_IP_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.1_ISMBS_IP.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=DpeUijBt300>

Video in English

https://www.youtube.com/watch?v=lwJ_nl-7RBo

Information Systems – Small sized

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.2_ISSMA_IP_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.2_ISSMA_IP.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=VXa77z5Ydz4>

Video in English

<https://www.youtube.com/watch?v=6T4tCvcerlw>

Government

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.3_GOVER_IP_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.3_GOVER_IP.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=-GglsGTUhw>

Video in English

https://www.youtube.com/watch?v=c_vyvOUbvU

Multinational

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.4_MULTI_IP_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.4_MULTI_IP.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=SuxIVNNhDFE>

Video in English

<https://www.youtube.com/watch?v=6-dlFieIOo>

Knowledge

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.5_KNOWL_IP_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.5_KNOWL_IP.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=koAqIO82vbE>

Video in English

<https://www.youtube.com/watch?v=koAqIO82vbE>

IT & Telecommunications

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.6_ITTEL_IP_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.6_ITTEL_IP.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=qu6ndc-WadM>

Video in English

<https://www.youtube.com/watch?v=4luEFnZcH4>

Agile

Slides

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.7_AGILE_IP_SLIDES.pdf

Report

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_3.7_AGILE_IP.pdf

Video in Portuguese

<https://www.youtube.com/watch?v=fWXhuypvwxU&feature=youtu.be>

Video in English

<https://www.youtube.com/watch?v=UdhpqeaOANU>

Academic & Research results

Dissertation

"OPM3 Project Portugal - Sector Analysis Results Applied to Research Organizational Maturity in Project Management"

Master thesis presentation video in Portuguese:

<https://www.youtube.com/watch?v=02lwRD9y18I&feature=youtu.be>

Papers

"Country Project Management Maturity" 2012

<http://www.pmi.org/learning/country-project-management-maturity-6100>

"Country Project Management Maturity" 2013

<http://www.pmi.org/learning/country-project-management-maturity-capability-5804>

"OPM3 Versus Other Project Management Assessment Methodology In An EVM Implementation" 2013

<http://www.pmi.org/learning/project-management-assessment-methodology-5845>

"OPM3 Portugal Project: Analysis of Preliminary Results" 2014

<http://www.sciencedirect.com/science/article/pii/S2212017314002849>

"100 Organizational Improvements Using OPM3®" 2013

<http://www.pmi.org/learning/organizational-improvements-using-opm-5898>

Project Presentations

<http://pt.scribd.com/doc/68598751/EMBAGP2011-2%C2%AA-Conferencia>

<http://www.dps.uminho.pt/print.aspx?tabid=17&pageid=530&lang=pt-PT>

<http://connect.inesctec.pt/events-pt/corporate-bip-ambithus>

<https://sites.google.com/site/conferenciascmmpportugal/home/programa/programa-detalhado>

<http://www.ah-ha-moments.net/2012/06/vi-pmi-portugal-chapter-conference.html>

http://bpmlisbon2013.ogirt.com/conferencia2013_2#angelopinto_abstract

http://www.pmisc.org.br/congresso2013_joseap/

<http://www.associationhq.com/pmi/e-link/emeaelink120.html>

<http://www.ah-ha-moments.net/2012/06/vi-pmi-portugal-chapter-conference.html>

<http://ogerentedeprojetos.com/2013/06/24/melhores-momentos-do-viii-congresso-brasileiro-de-gerenciamento-de-projetos-do-pmi/>

http://www.apg.pt/downloads/file585_pt.pdf

<http://projectcontrolsonline.com/Portals/0/eva17/EVA17InformationPack.pdf>

Related Videos

<http://www.projectmanagement.com/videos/286179/OPM3-Portugal--PPP-triggering-organizational-change>

<https://www.youtube.com/watch?v=OnGBwlkviLg>

<http://pmi.adobeconnect.com/p5dxtqe71p3/>

<https://www.youtube.com/watch?v=AfLNeAcUsv0>

Project International Recognition

The Organizational Project Management Maturity Model (OPM3®) Knowledge Foundation Third Edition presents OPM3 Portugal as one example of the model appliance:

http://www.ambithus.com/docs/OPM3/OPM3_Portugal_OPM3_Standard_Appendix_Statement.pdf

Others:

<http://www.associationhq.com/pmi/e-link/emeaelink120.html>

http://www.pmisc.org.br/congresso2013_joseap/

<http://pontogp.wordpress.com/2012/01/17/webinar-opm3-portugal-gratis-em-portugues-e-valendo-1-pdu/>

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Project Management Maturity in Portugal

This section had the purpose to describe the Portuguese Maturity Level from the assessments made during OPM3 Portugal.

During the development of OPM3 Portugal it was verified that organizations were not implementing Program Management in their organizations' projects, as none of the assessments included Program Management into its domains.

In the OPM3® maturity model, Organizational Project Management Maturity was reflected by extent to which the identified Best Practices were achieved. OPM3® scoring was based on the percentage of Best Practices, Capabilities and Capability Outcomes which have been fully achieved, relative to the number of each which were assessed. The percentage results of the Maturity achievement for the Best Practices, Capabilities and Outcomes that were covered by the Assessments, gave a measure of the degree of maturity of the organizations in terms of Organizational Project Management.

The assessment results could be analyzed and compared with and without reaching successfully fulfillment of the Capabilities and Outcomes, demonstrated respectively on the results of Continuum Global Score and Relative Score. In spite of when an organization demonstrated achievement of all the aggregated Capabilities except one, it could not claim achievement of all the Best Practices but that didn't mean that it hasn't been taking benefits from that specific Best Practice. In fact, collecting Capabilities results in benefits that met organization's needs, as the collection of people, processes and technology facilitated the delivery of organizational project management.

Figure 8 represents organizational maturity with all the requirements and dependencies that exist on the Capabilities to achieve Best Practices, which consequently affects the Maturity Level. From the OPM3® assessment results it was possible to compare the organization maturity results considering only the achievement of Best Practices with the results considering all the Capabilities found in the organization.

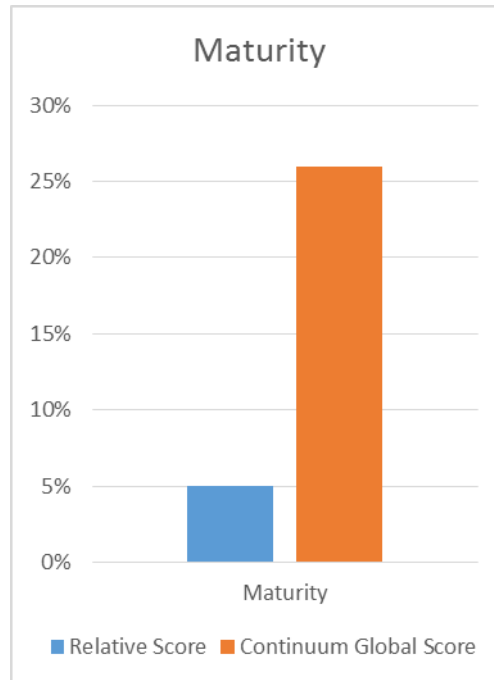


Figure 8: Relative Score and Continuum Global Score

The results presented in Figure 8 considered all the organizations assessed as part of OPM3 Portugal. This results were illustrated the high contrast between both Maturity Scores, as the Continuum Global Score was nearly five times higher than the Relative Score. This graphic supported the indication that the organizations in general have implemented many Capabilities that are being used but are not taking the maximum advantage of them as there were a few capabilities and outcomes missing which is the reason for the score discrepancy.

Considering the scoring of OPM3®, the overall result of the organizations was low and far from a desirable score. However, the average results of OPM3® Continuum Global Score were significantly superior and demonstrated a result closer to a desirable score.

The results demonstrated that the organizations in general did not need a significant effort to implement some processes as the organizations have already Capabilities implemented that would support those processes implementation.

The following figure compares and supports the analysis of Relative and Continuum Maturity globally at all organizations assessed at all domains, limited to Project Management domain, Portfolio Management and Organizational Enablers. Program Management is not being referred on the figure, since this domain is not part of the study.

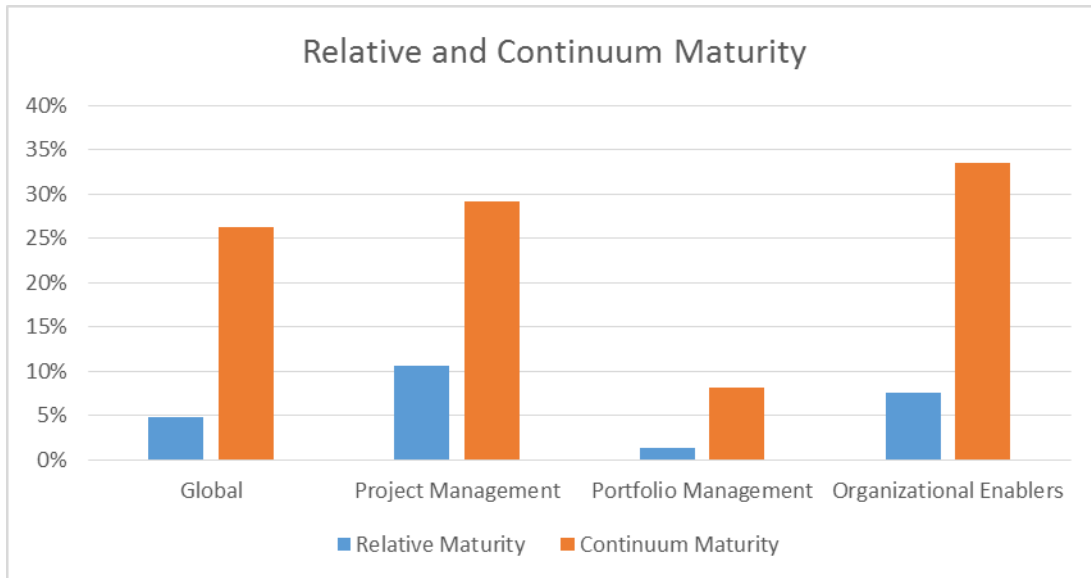


Figure 9: Relative and Continuum Maturity

The main conclusion from this analysis was the substantial difference between Relative Maturity from Continuum Maturity at all domains and the low results of Portfolio Management.

On the global results, the differences between both Maturities were highly expressed. This result demonstrated the low number of processes implemented on different stages. However, the figure also showed considerable high continuum results demonstrating a solid existence of Capabilities. The low Global result of Relative Maturity was a consequence of the results from the domains considerable part of OPM3® Assessment.

From all the domains, Project Management achieved the higher relative maturity result from the three, followed by Organizational Enablers.

In figure 10 it is represented the same Maturity Score strictly to Project Management, spread on the project stages: Standardize, Measure, Control and Improve (SMCI). Similarly to the results previously shown, the Relative Maturity Scores for SMCI are considerably low and do not suffer significant discrepancies between them. In contrast, the Continuum Maturity Scores suffer more variations across the project stages.

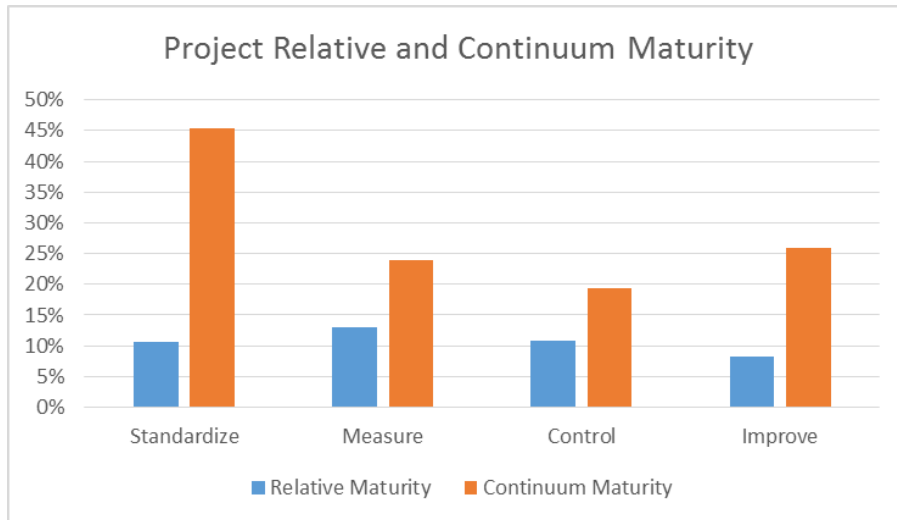


Figure 10: Relative and Continuum Maturity in Project Management

Project Stages

- Standardize** – To standardize a process was necessary to ensure a process governing body was in place, develop and document the process, communicating the process to the responsible and applying the process consistently across the organization.

The main reason why the relative maturity was considerably lower than the continuum maturity was because many of the organizations assessed had process governing body, develop, document and communicate the process but the process was not applied consistently across the organization which resulted in not achieving the Best Practice and lower result of Project Management Maturity (at standardization stage, and consequently on the global result).
- Measure** – The processes could be measured by quantifying the quality and the inputs of them. The Continuum Maturity bar showed the significant decreasing from the Standardize stage, reflecting the lower number catalogue of capabilities – less project practices found on Measure stage.
- Control** – The process could stay under control by collecting information to observe it operating within plan boundaries consistently over time. Comparing with the latest phase, this third stage was a small decrease of project practices on Portuguese organizations.
- Improve** – The process could be improved by updating the process by identifying root problems, focus effort on process improvements with solutions and implement it. In spite of this stage having the lower result on Relative Maturity, it reached an interesting score on Continuum Maturity (more the double value of Relative Maturity). These results showed that organizations preferred to improve the critical processes that they have implemented than widen the standardization of new processes to be implemented across organizations.

The Organizations can be classified for their size, considering the number of employees and annual revenue into three group sizes: Large, Medium and Small. The following tables will present the results of relative maturity, continuum maturity and best practices achieved by these groups.

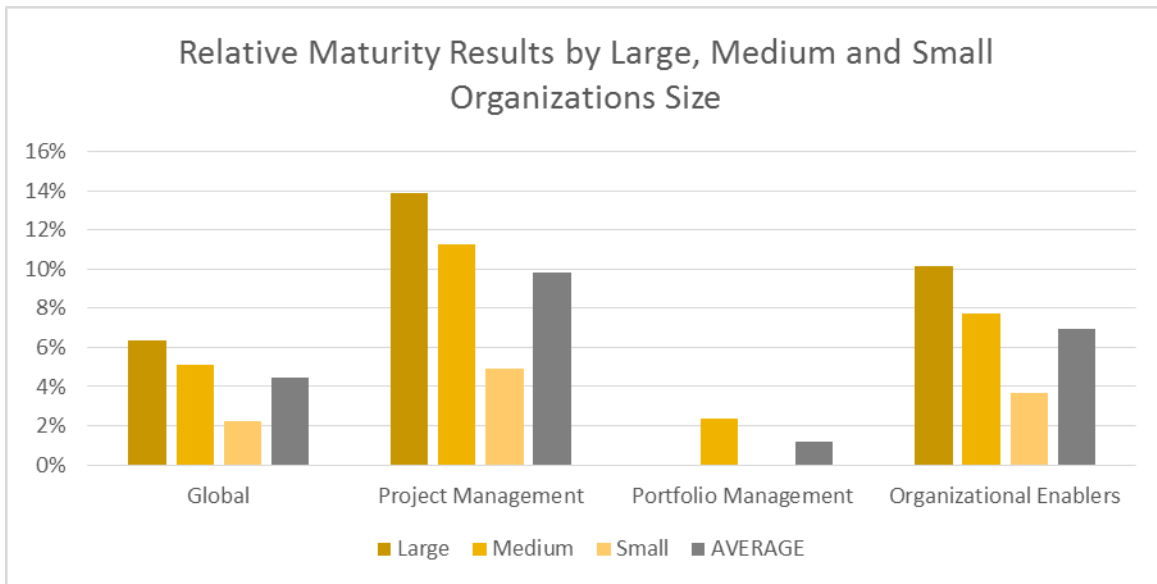


Figure 11: Relative Organizational Maturity by Organization Size

From figure 11, on global results, Project Management and Organizational Enablers showed that, in Portugal, the bigger the organization was in size, the better the results achieved were - as it could be found a higher number of processes implemented. On the global maturity level, the large and medium sized organizations had achieved a maturity higher than the average results, revealing that these two sizes were efficient in a global perspective. The small size organizations achieved a considerable lower global result, leading the average result to a lower Portuguese relative maturity. More specifically, at Project Management, the small size organizations could not achieve a maturity result close to the other two remaining sizes. At Portfolio Management it was not found any process implemented at large and small sized organizations and regarding medium size organizations some had few processes implemented. We found an explanation for this when we analyzed individual organizations – the medium sized were the ones who needed more portfolio processes – oriented towards selling the products resulting from the projects. At the last domain, the Organizational Enablers results registered similar maturity levels variances to Project Management domain results, but with lower percentages.

Moreover, all the different organization sizes achieved better results on Project Management, followed by Organizational Enablers and had the weakest relative maturity result at Portfolio Management domain.

Figure 12 illustrates the continuum maturity results by the same division of organizations size.

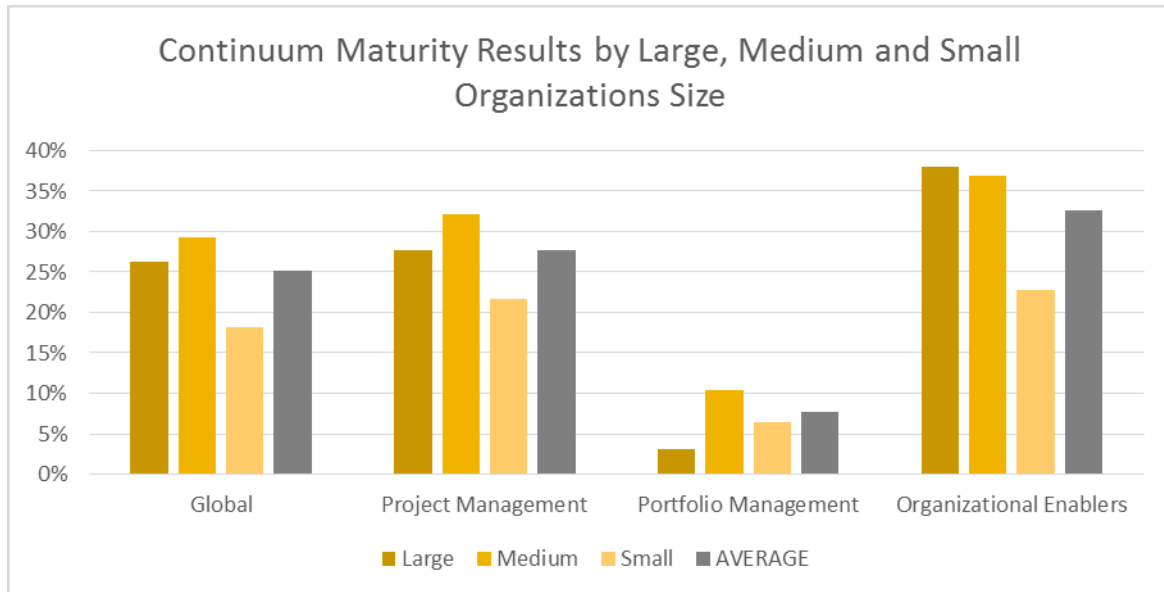


Figure 12: Continuum Maturity by Size

It was clearly identified the significant improved results at all domains, as per consequence on global maturity result. Unlike the relative maturity results where it achieved the best results at all the organization sizes on Project Management, the continuum maturity achieved for the same sizes on Organizational Enablers domains. At continuum maturity level, the medium size organizations assessed achieved better results on Project Management and Portfolio Management. Only on Organizational Enablers domain did the large size organizations achieved a slightly better continuum maturity results. The greater discrepancies between all organization group sizes were found at Portfolio Management where there was a larger existence of capabilities and outcomes at medium size organizations comparing with large size organizations, and on the other hand, these large size organizations had a significant greater existence of the same indicators than small size organizations.

Jose Angelo Pinto's participation in the project

This was an amazing project. Personally, I feel very happy that it reached its end and have a huge satisfaction of having fulfilled all technical obligations under the OPM3 Portugal Project, the largest research ever made in the world with the application of the standard of the Project Management Institute (PMI®) Organizational Project Management Maturity Model (OPM3®).

All structuring documents and respective presentations of sectorial results are completed and validated.

It was a project whose project charter was written during January and February 2011, with investment since May that year and allowed to have a complete vision of the state of maturity of some important sectors of activity. Initially it was planned to be done on an individual work with about 100 organizations and the areas that were to be investigated were projects, programs, portfolios and organizational enablers.

We could only reach about 70 cases in the computer system that was applied - the PMI® Product Suite® - and we did not carried out the investigation of the program management domain, because we didn't find, in any of the about 70 organizations that we analyzed, any evidence that there are different processes for managing programs and projects in Portugal. This is compatible with all the informal information we have about what happens in other countries, so the conclusion we draw is that the standard for program management is too advanced for most organizations. From a technical point of view, these are the two major differences between what we design and what we did. The 70 cases with which we finished the project in late 2014 is a fantastic number, when compared to the evolution since we started the field work until beginning 2014. The pace has always been increasing exponentially. We didn't end up with the 100 cases referred because funding agencies did not approved a term extension request that would allow to fund the project until March 2015 but, as this was not granted, we had to make a brutal effort to do as much as possible, even without financing terms from April 1, 2014 - awaiting the decision of the deadline extension request since December 2013 and that only in September 2014 we knew that the decision had been negative.

It was only possible to finish with full success the OPM3 Portugal Project with the effort and selfless dedication of the team that finished the project and that I lead. Cristina Matias took over the project's technical management from the beginning of this year, bringing a much more dynamic organization and far above what is normal in research and development projects and the effort and dedication of Marco Duarte, who was responsible from earlier this year for all the technical research work.

From the first moment we thought that the OPM3 Portugal project only made sense with the active participation of universities and recognized research centers. We invited the most reputable Portuguese Universities and research centers to participate and so we had the participation of many other people, company employees and researchers from our partners. At a pick, we had 28 people involved in the project.

I have to clearly distinguish the participation of INESC Porto and Lisbon INOVA, which scrupulously fulfilled all the work assigned to them and were exceptional in demand and in the raising of

representative companies, organizations that could have, from our technical point of view, interest to the research.

From a pure research point of view, I have to distinguish the University of Minho and especially the “Production and Systems Department”, because from that department the project originated a master's thesis, three scientific papers and the participation in various conferences and congresses, because of the special interest that the theme OPM3® there caused and the fact that there were researchers, in that department, available to permanently support the OPM3 Portugal project. Noteworthy are also positively INESC Porto for their participation opened space for writing the chapter of a scientific book and the development of models and evaluation methods that will allow new developments.

Researchers say that their projects are very complex and it is true. In this we had thought to have 7/8 organizational clusters to perform the sector analysis work we promise to do. This was not declared in the project, because we did not know what we were going to find. In an enlarged meeting with the participation of all researchers involved, we agreed that we would work together government, multinational companies, information systems, construction, knowledge organizations, financial institutions and telecommunications. These were the ones we used when we were asked that the OPM3 Portugal project figured in the updated version of the standard OPM3® and these were the ones we published in the Annex of the world standard OPM3®.

The truth is that within some of this sectors we did not had the needed individual cases, which would allow the clustering we settled up. And we strongly supported the scientific research from David Silva who sought to find a clustering model that we could use. After all the research and analysis we did, we ended up doing differently from the originally expected rating. We have several cases from banking and construction, as well as from tourism, cultural, defense and municipalities and municipal companies, some of those we had not anticipated. But we had some cases that were analyzed from various perspectives and with different statistical tools. Either because the collected cases were not representative of the sector or because the number of individual cases was insufficient to make a significant analysis and characterization we decided not to use these cases, after carefully reviewing the preliminary results. We considered them out of the research process. We have also decided not to consider the case from a company in the information systems area because the individual data was validated too late, and we would need to repeat the data analysis work and this would lead to a delay of about 3 months more, situation that was completely impossible to realize given the circumstances.

In the case of business information systems, we still had to deal with another difficulty because the sectorial data was very scattered and inconsistent. After a validation work, we established that there is a very significant difference between the small scale information systems company (less than 100 employees) and large-scale, so we decided to work these two groups in this sector as independent sectors.

Thus, sectorial studies were developed to 7 clusters: information and large systems (more than 100 people); small-scale Information Systems (less than 100 employees); Government or Public Entities; Multinational organizations; Organizations working in the field of knowledge and information and telecommunications organizations and organizations of agile information systems.

What we did was to consider that each of these sectors is like a virtual company and create the assessment report and the improvement plan for this virtual company. This method allows participating companies to make their comparisons because the individual reports are complete, direct and absolutely compatible with this way of presenting and enable organizations to these sectors know what measures an expert consultant and certified in OPM3® advises for their companies.

As promised, these results are free and public. Detailed reports are also free and public.

We think the work we have done in more than 20 international presentations, in more than 70 individual presentations and detailed explanations and in more than 2,000 individual interviews is amazing. But this was only possible due to the organization and discipline of the project. More than 2,500 meetings were scheduled for various purposes and only ONE was canceled due to the responsibility of the project's researchers witch is something extraordinary.

I was the initiator of the project in 2010. I wrote all the initiation documents that got the project founded by the European Union. I was the mentor of the organization that supported the project. I was the project director in the company. I was the Research & Development director in the company. I managed 28 persons, including top researchers, professors, consultants and all the administrative aspects of this amazing and extraordinary project that I feel to be one of the most demanding and fulfilled achievements of my life.

Conclusions and Future Work

The outcome does not actually end with the presentation and discussion of assessment results and improvement plans for each sector. In OPM3 Portugal we were able to consider an additional project phase after Closing, named Legacy. The project will own and concede Legacy, as the some of the outcomes of the fieldwork will only rise after the organizations implement the improvement plans and consequently result in a gradually Portuguese maturity improvement.

The OPM3 Portugal Project offers benefits from different perspectives. First, it is offered an internal analysis on the project management processes to the organizations that participated, and together with the results and improvement plan it will reveal or increase the awareness to implement specific processes improvements. Secondly, it benefits the industry sectors of the country. Moreover, it can also allow future research related with the Portuguese project management maturity.

As in Portuguese organizations implement program management the same method as they implement project management the program domain was taken out from scope. On the other hand, the application of this maturity model enables the opportunity to analyze the human perspective and contribution to the development of the organizations from the Organizational Enablers domain. This last domain is important to realize the culture and the strategy of the organization to help construct the improvement plan.

The project could not meet all the sectors initially defined, as there was not enough participation of organizations from those sectors to enable a representative sectorial analysis. Nevertheless, it was possible to study other sectors which were not previously considered to be evaluated due to largest interest to participate by the information systems sector, bringing an opportunity to analyze this cluster by the number of employers (less and more than 100 employers) and also by the ones applying agile methodology.

The organizations who took part in the project can compare their results directly against the sector, because reports and improvement plans are all standardized documents.

In conclusion, this project has much to offer to Portuguese industry, from individual organizations to industry sectors. The implementation of the appropriate best practices to each organization and cluster will guide the organizations to implement successful projects.

For future work, either to reexamine the involved organizations to realize the project impacts or to do a bigger European or Global project would be very interesting.

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