# MEASURING CHANGE READINESS FOR IMPLEMENTING A PROJECT MANAGEMENT METHODOLOGY: AN ACTION RESEARCH STUDY

**Abdelouahab Errida, Hassan 1st University**
**Bouchra Lotfi, Hassan 1st University**

## ABSTRACT

*The main purpose of this paper is to measure the readiness for change when implementing a Project Management Methodology (PMM) within a Moroccan construction company. Based on a review of literature and on the experimentation of the change through an action-research, a model for assessing change readiness was proposed and then applied within this company. This model allows change managers to assess change readiness for adopting a PMM by considering four main dimensions: organizational readiness, individual readiness, project management maturity and change management maturity.*

*The findings of this study provided insights related to the readiness level for adopting a PMM within the studied company. These include: (a) lack of individual readiness of some categories of employees namely site managers and support functions employees because they think they lack the necessary knowledge and they are undecided about management support. (b) Lack of organizational readiness in terms of process adaptability, organizational system, people ability, time availability and skill development. (c) Low level of project management maturity because main processes and good practices are poorly defined and documented. (d) Lack of change management activities and lack of a formal approach for managing the human side of change.*

*Based on the findings of this study, some activities that could assist in building change readiness for implementing a PMM have been proposed. These include communication, empowerment and coaching, training, executive engagement, development of project management culture and building capacity of change.*

**Keywords:** Change Management Readiness, Change Readiness Assessment, Change Management Maturity, Project Management Methodology, Project Management Maturity.

## INTRODUCTION

The complexity and dynamism in today's business environment has the effect of requiring many organizations to change their practices and methods in dealing with performance issues. In the particular case of construction companies, considered as project based organizations which conduct the majority of their activities as projects and/or privilege project mode over other management models (Thiry, 2008), significant change is necessary in the way projects are managed. This would enable these companies to avoid many problems related to project performance such as late delivery, cost overruns, lack of resources, inaccurate estimations, quality defects, etc. (Pitagorsky, 2001). In this context, it is suggested to use Project Management Methodologies (PMMs) for avoiding these problems, thus improving overall project performance (Wells, 2012). A project management Methodology (PMM) is a structured

approach that aims to ensure that all projects are conducted in the most organized and efficient manner by using a set of standardized processes, procedures, practices, methods, and rules (Vaskimo, 2015). The apparent link between the following of a PMM and the success of projects has been demonstrated by many authors (Joslin & Müller, 2015) and has been considered as one of the factors that encourage organizations to implement PMMs. However, it is not always easy to achieve an effective implementation of a PMM (Burgan & Burgan, 2014) because of the complex nature of the adoption of a new management methodology that may presents numerous risks such as: organizational resistance, communication breakdown and lack of commitment (Burgan & Burgan, 2012). Indeed, implementing a PMM is not only a technical exercise, but it is considered as an organizational change that will change the way projects are done and affect several components of the organization such as processes, people, organizational structures, culture, resources, etc. Managers therefore need to build the readiness of these components for a smooth transition to the new way of managing projects (IMA, 2018). If one of these components is unready for transition, there will be an increased risk that people will fail to adopt the new methodology and the implementation of the latter will therefore be unsuccessful (APMG, 2015). For this reason, failure to prepare readiness has been identified as a possible cause of failure to implement a new PMM (Burgan & Burgan, 2014). Thus, before starting to invest its resources and time in such a change project, it is appropriate for a company to assess whether these components are ready for supporting and adopting this methodology (PMI, 2014).

While the assessment of readiness on the people side has attracted the interest of several researchers, the assessment related to other components has been very little studied and needs further development  on both theoretical  and empirical  grounds (Combe,  2014).  This reveals that there is a lack of an integrated and a completed model for measuring organizational change readiness (Combe, 2014). In this context, this paper tries to propose and apply an integrated model for assessing organizational change readiness in the case of a change aiming at implementing a PMM within a Moroccan construction company.

The structure of this paper is organized into six sections. After the introduction, the second section describes the research methodology. The third section presents the key concepts underlying our research. The fourth section presents a model for assessing the readiness to implementing a PMM, based on four dimensions: individual readiness, organizational readiness, project management maturity and change management maturity. The fifth section is devoted to the application of this model for measuring change readiness within the studied company. The last section concludes about main findings with recommendations for further research.

## RESEARCH METHODOLOGY

The model was essentially developed based upon a review of literature related to disciplines, change management and project management. To refine and apply this model, an action research methodology was conducted within the subject company during all phases of the PMM implementation. This methodology is inspired from the constructivist epistemology and promotes an understanding of complex processes in a learning or organizational change perspective (Chanal et al., 2015). It is based on the hypothesis that, on the one hand, actors in organizations have practical knowledge and experience and researchers, on the other hand, have theoretical knowledge about organizational change process (Werkman & Boonstra, 2013). Thus, this methodology emphasizes collaboration and interaction between practitioners and researchers, in the purpose of generating specific learning and knowledge. Furthermore, the researcher plays a capital role as an organizational engineer who will build a tool, set it up,

evaluate it with practitioners and modify it as needed (Lotfi & Benchekroun, 2010). In addition to that, to apply this model and assess some aspects related to the individual and organizational readiness for implementing a new PMM, a qualitative approach was also used, by drawing inspiration from Actor Representation of Change method. Indeed, in depth interviews were conducted by using a structured questionnaire, followed up with several focus group discussions with the actors of change for deeper analysis of issues identified during the interviews.

In the case of a change project aimed at implementing a PMM, studied in this paper, the actors of change selected include senior project managers, junior project managers, site managers and some employees in support functions (purchasing and supply chain, quality, finance and accounting). More details about the participants are presented in the Table 1 below.

| Category | Number of participants (a) | Number of employees (b) | Percentage of respondents (%) 100×a/b | Average professional experience ( years) | Academic degree | Age (years) |
|---|---|---|---|---|---|---|
| Department Director | 3 | 5 | 60% | 10 < | engineer's degree + MBA | $30 < x < 40$ |
| Senior project Managers | 8 | 12 | 66% | $5 < x < 10$ | engineer's degree | $25 < x < 35$ |
| Junior project managers | 12 | 21 | 57% | $2 < x < 5$ | engineer's degree | $22 < x < 28$ |
| Site managers | 21 | 32 | 65% | $10 < x < 15$ | Technician certificate | $30 < x < 45$ |
| Support functions | 6 | 8 | 75% | $2 < x < 5$ | Bachelor/Master | $22 < x < 28$ |

Table 1
INTERVIEWEE PROFILES

## Theoretical Background

This section presents a literature review on project management methodologies, change management, project management maturity, change management maturity and change readiness.

## Project Management Methodologies

The objective of a Project Management Methodology is to provide standardized methods, tools, and techniques to ensure that all projects are conducted in the most organized and efficient manner. It is considered as a strictly defined combination of logically related practices, methods and processes that determine how best to plan, develop, manage, control and deliver a project throughout the continuous implementation process until successful completion and termination (McConnell, 2010). Joslin & Muller (2015) found that there is a positive relationship between the use of a PMM and the success of projects. PMMs have been developed specifically to help organizations improve their project success rates, through the routine use of standardized processes and tools. The literature has identified various benefits related to the use of a PMM within an organization. Some of these benefits are presented below:

1. PMMs provide standardized terminology, guidelines, pre-established templates and checklists to be followed and to be tailored to specific contexts. This allows stakeholders to share a common project management language and, thus, helps facilitate communication between them (McHugh & Hogan, 2011).

2. Standardization allows project team to use approved best practices, instead of taking risks and spending time for deploying other practices under experimentation (Garcia, 2005).
3. PMMs contribute to ensure projects' success regarding the aspects of knowledge management, quality, ongoing improvements, repeatability and comparability (Ozmen, 2013)
4. PMMs provide several elements that will facilitate decision making during all project phases (McConnell, 2010).

Examples of worldwide recognized PMMs include PRINICE 2 *"Projects in Controlled Environments"* (Axelos, 2017), OpenPM² (CoEPM, 2016), and PMBOK *"PMI Project Management Body of Knowledge"* (PMI, 2017).

According to (Karaman & Kurt, 2015), PMBOK and PRINCE 2 are the most widely used methodologies (MMP) in the world. In Morocco, PMBOK remains the most used and its technical implementation is easier, thanks to the availability of many training and consultancy firms that assist companies in implementing this methodology.

## Project Management Body of Knowledge

The Project Management Body of Knowledge (PMI, 2017) determines 49 processes to manage effectively and efficiently a project. All these processes are organized into five Process Groups (Initiating, Planning, Executing, Monitoring and Controlling, Closing). In addition to that, ten knowledge areas are identified and integrated in all the phases throughout the project life cycle: Project Integration Management, Project Scope Management, Schedule Management, Cost Management, Quality Management, Human Resource Management, Communication Management, Risk Management, Stakeholder Management and Procurement Management. For each process, the PMBOK (PMI, 2017) determines the input elements, output elements, the tools and techniques to be used. For example, to manage successfully project cost, the PMBOK (PMI, 2017) proposes to implement four processes: plan cost management, estimate costs, determine budget and control costs. In addition to that, various deliverables (checklists, plans…) that require the pre-implementation of some procedures and methods, must be established for each process. For example, the key deliverables concerning the quality management area include quality assurances procedures, quality plan, quality checklists, procedures and measurements, and process improvement plan. Implementing the PMBOK methodology requires the following activities:

1. Definition and formalization of project management processes in accordance with the models proposed by PMBOK (PMI, 2017);
2. Standardization of documents by creating templates and artefacts (e.g. Work control sheet template, project cost estimation template, task and change trackers, etc.);
3. Implementation of good practices associated with the processes (e.g. use of project planning software, use of risk analysis tools, use of documents to track changes, etc.).

Furthermore, the full implementation of a PMM is a long-term endeavour, which requires patience, time, and effort to establish a mature project management culture (Plewinski, 2014). Therefore, a successful implementation of a PMM necessitates the development and the implementation of a tailored project management culture.

## Project Management Maturity

In general, the term *"maturity"* is used to refer to a state of full natural or maximum development, or also to indicate a state of perfection. In organizational context, maturity refers to a state that provides perfect conditions for an organization to achieve its objectives (Andersen & Jessen, 2003). Moreover, it can be considered as a measure to assess the capabilities of an

organization regarding to a certain domain (Rosemann & Bruin, 2005). In the particular domain of process management, the assessment of an organization's process maturity allows to identify the degree to which processes are explicitly defined, managed, measured, controlled and effectively used (Paulk et al., 1993).

The use of the process maturity concept as a way of organizational capabilities assessment has become popular since 1990s, when the Software Engineering Institute (SEI) of Carnegie Mellon University developed the Capability Maturity Model (CMM) (de Boer et al., 2015). This model served as a foundation for many other assessment models of the process maturity, which provide frameworks enabling organizations to assess and improve their processes. In addition to that, they propose evolutionary paths that lead organization's processes through different states towards full maturity (Radosavljević, 2014). Many models have been proposed in the literature such as MMPM (Sliż, 2018), BPMMM (Rosemann & Bruin, 2005) and BPMM-Fisher (Fisher, 2004). Typically, the models measure the progress according to five levels of maturity, evolving from the lowest level of maturity (basic capabilities) to the highest level of maturity (highly sophisticated capabilities) (Gonzalez et al 2007).

Because of an increasing primacy of projects in organisational structures, engendered by the projectification of the firm and the society (Jensen et al., 2016), research related to process maturity placed emphasis and more importance on the assessment of project management process maturity (Packendorff & Lindgren, 2014). In the field of project management, the term *"maturity"* might refer to a state where an organization is in a perfect condition to deal successfully with its projects (Andersen & Jessen, 2003). Furthermore, "*Project management maturity"* might be used as an indication of or a measurement of the organization's ability to manage successfully its projects. In this context, by applying the basic concepts of process maturity to project management processes, many authors (Crawford, 2001; Cooke-Davies, 2004; Tahri & Drissi-Kaitouni, 2015) have developed specific maturity models that take into account the specificities of project management discipline. These models provide frameworks that can be used to assess an organization's project management capabilities and propose paths for progressive improvement in project management systems and processes (Pennypacker & Grant, 2002). Many of these models have received attention in the literature, such as Kerzner Project Management Maturity Model (K-PMMM) (Kerzner, 2002), Organizational project Management Maturity Model (OPM3) (PMI, 2003), PM Solutions' Project Management Maturity Model (PMS'PMMM) (Crawford, 2014). For example, PM Solutions' Project Management Maturity Model (PMS'PMMM) proposes five levels for assessing the organization's maturity according to each of the ten Project management knowledge areas of PMBOK. These levels are: Level 1: Initial process, Level 2: structured process and standards, Level 3: organizational standards and Institutionalized process, Level 4: Managed process, Level 5: optimizing process.

While the improvement of project management maturity will positively affect the performance of projects, such an improvement requires changes at various levels of the organization. For this, implementing a PMM should be undertaken using a supporting change management approach that will determine the steps to be taken for managing organizational change (PMI, 2014).

## Organizational Change Management

Jones (2007) defined organizational change as the process by which organizations move from a current state to a desirable future state to increase their effectiveness. Organizational Changes can occur at the individual, at the group or at the organizational level (Gareis, 2010).

They can affect processes, job roles, responsibilities, competencies, behaviours, management style, culture and performance indicators (Autissier & Moutot, 2013). Change management is defined as the application of a set of tools, processes, skills and principles for managing the people side of change to achieve the required outcomes of a change project or initiative (Prosci, 2012). Given that organizational change is a complex process, many companies continue to struggle with its management (Rick, 2012) and therefore fail to ensure the realization of its expected benefits. Balogun & Hailey (2004) and other authors show that 70% of all change projects fail in all organizations because of various reasons such as: insufficient training, poor leadership, lack of commitment, improper planning, lack of resources and competencies, resistance, and lack of organizational readiness (Mosadeghrad & Ansarian, 2014; Ján & Veronika, 2017).

One of the early steps to be carried out to reduce failure rate is assessing readiness for change (APMG, 2015). This aims to measure the reality of the current organization in relation to the future state (PMI, 2013) by evaluating whether organizational resources are ready and able to deliver a successful implementation of change and consequently improving readiness in the areas where it is insufficient.

**Organizational Change Readiness**

Assessing change readiness in the early phases of change process aids the change team to make the adequate decision by choosing one of both decisions: to carry out the change process or to postpone it because of the high risk associated with it at a point in time (Combe, 2014). On the other hand, failing to assess change readiness may result in managers spending significant time and energy dealing with resistance to change (Susanto, 2008).

According to PMI (2013) organizational change readiness need to be assessed at two levels: Organizational systems and people (individuals).

1. Organizational systems (structures, processes, resources, culture, etc.) that may need improvements or that will support change.
2. People (individuals) are the real source of change and they are the ones who will either embrace or resist change (Smith et al., 2014). Their knowledge, perceptions, beliefs, skills, behaviours and motivations are factors that can either lead to the change success or contribute to the change failure.

In a more detailed way, Combe (2014) proposes to assess organizational change readiness by evaluating three key elements, namely:

1. Cultural readiness: The degree of alignment between the change initiative and cultural norms and values.
2. Commitment readiness: refers to the degree of commitment of the organization and its leaders to change. To measure this degree, six elements considered as contributors to commitment should be assessed namely: value alignment, involvement, people ability, time availability, skill development, and perceived value.
3. Capacity readiness: refers to the degree to which the organization is able to support the implementation of change by establishing work processes, bringing knowledge, experience, skills, abilities, and providing the necessary resources. A capacity assessment takes into account the review of five crucial elements: people, processes, technology, physical resources, and organizational systems.

Furthermore, Holt et al. (2017) proposes to assess *"individual change readiness"* by evaluating four beliefs among employees, namely:

1. Individuals' belief in the change-specific efficacy: refers to change recipients' belief in their capabilities to execute the tasks necessary for implementing a change.
2. Appropriateness of the change: refers to the belief that this change is appropriate for the organization and it is necessary to reach the desired future state.
3. Management support for the change: refers to the belief that there is support from senior leaders and managers for implementing an organizational change.
4. Personal valence: refers to the individuals' belief that the change would be beneficial for them.

## Organizational Change Management Maturity

In a similar way to other maturity models, the objective of a Change management maturity model is to describe the varying levels of change management capability across organizations (Prosci, 2012). Being aware of these levels will enable organizations to have a good understanding of the effort that will be required for managing change (APMG, 2015). Moreover, Clausen & Andersen (2016) stated that there is a clear relationship between the change management maturity of an organization and its ability to succeed with change projects.
The literature proposes various models for assessing the maturity of change management process. One of the most popular of these models is Prosci's Change Management Maturity Model (Prosci, 2012), developed by the American consulting firm *"Prosci"* specialized in change management research and training. This model identifies five levels of maturity in change management, evolving from level 1 (adhoc or absent) to level 5 (change management is considered as an organizational competency).

## RESULTS AND DISCUSSION

## Proposal of a Model

In order to assess the change readiness for implementing a PMM (PMBOK), we propose here a model based on the literature and on our experience within the host company. This model integrates four main dimensions: individual readiness, organizational readiness, change management and project management maturity.

If the first dimension is already widely considered by researchers, the second one has not been subject to sufficient theoretical study or empirical analysis, except some researches, such as the one of Combe (2014). The two last ones are often neglected when assessing change readiness, in spite of their greatest importance in ensuring successful change. Indeed, according to (Creasey, 2017), an organizational change must be managed on both the technical side and people side of change by integrating two main processes: project management and change management. The project management discipline provides the processes and tools to make change happen from a technical point of view, whereas change management theory provides tools and practices that will help people to embrace and adopt change. Therefore, to implement properly an organizational change, the organization must be ready in terms of capability of these processes. They must be conceived and used in a way that they will be capable of delivering the expected outputs of change reliably and predictably (Sadatsafavi & Walweski 2011). To consider these processes when assessing change readiness, two dimensions were integrated into our model for assessing whether these processes are working and are able to deliver the expected results of change, namely change management maturity and project management maturity.

### Individual readiness

The first dimension of the proposed model is *"individual readiness"*, which addresses the readiness for change at the individual level. The readiness of individuals and stakeholders who can influence the adoption and use of the PMM methodology, including practitioners, technical staff, managers and executives is considered as a major factor that contributes to the successful implementation of the PMM (PMI, 2014). Like other organizational changes, underestimating the central role individuals play in the change process may cause the failure of change when implementing a new project management methodology (Choi & Ruona, 2011). For this, prior to implementing the project management methodology it is necessary to assess and build the readiness of people for supporting and adopting the new organizational model (PMI, 2014). This means assessing skills, perceptions and the beliefs of individuals in order to equip them with the motivations, knowledge and attitudes to engage with the new methodology and make it work.

In order to assess individual readiness, we propose to evaluate four beliefs of the employees about this change (change efficacy, appropriateness, management support and personal valence), according to the work done by (Holt et al., 2007). The assessment will be carried out by means of a questionnaire proposed by these authors after its adaptation to the context of project management methodology. The adapted questionnaire consists of 25 items on a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. By way of example, we present in the Table 2 below an extract of our adapted questionnaire (items related to management support factor).

| Table 2<br>EXTRACT FROM THE ADAPTED QUESTIONNAIRE FOR ASSESSING INDIVIDUAL READINESS | | | | | |
|---|---|---|---|---|---|
| Statements ( Factor : Management support) | 1 | 2 | 3 | 4 | 5 |
| Our senior leaders have encouraged all of us to adopt the new PMM. | | | | | |
| Our senior leaders have put all their support for implementing the new project management methodology. | | | | | |
| All senior leaders are committed to this change. | | | | | |
| All managers are aware of the importance of the new PMM and they have stressed the importance of this change. | | | | | |
| Executive Management has sent a clear signal that the company is going to implement the new methodology. | | | | | |

### Organizational readiness

The second dimension of the proposed model is *"organizational readiness"*, which focuses on the organizational readiness for change. Implementing a PMM for improving PM processes is a complex organizational change that may have a wide impact across the organization by affecting organizational structures, responsibilities, culture, business processes, policies and procedures (Pitagorsky, 2001). Furthermore, Supplemental researches have provided additional evidence that the adoption of a project management methodology within an organization may require new processes, tools, technical systems, and behavioural patterns (Burgan & Burgan, 2012). Thus, without the assessment of the organization throughout its systems and components prior the implementation of a PMM may results in loss of time and efforts necessary for dealing with resistance and renewing existing processes or even worst may result in change failure. To avoid this, it is essential to assess the impact of the new methodology, and assess whether the components of the organization are ready for its adoption.

To assess organizational readiness, we propose to use the model developed by (Combe, 2014), taking into account the following elements : processes, technology, physical resources, organizational system, culture, value alignment, involvement, people ability, time availability, skill development and perceived value. The assessment will be carried out by using the questionnaire developed by (Combe, 2014) after its adaptation to the context of Project management methodology implementation.

**Change management maturity**

According to (PMI, 2014), change management is one of the three critical success factors for implementing project management, in addition to sustained leadership and continuous improvement. It's obvious that the higher the level of change management maturity, the greater the likelihood that there will be a dedicated process for managing change including the use of best practices such as communication, training and motivation (APMG, 2015). Consequently, the chance of implementation success would be increased. Also, the lower the level of change management maturity, the greater the likelihood of implementation failure. Based on the assessment of Change management maturity level, the organization will be able to know whether or not the process applied for managing change is mature or it necessitate improvements. The company will be thus able to assess its readiness for implementing a PMM in terms of Change management process capability.

**Project management maturity**

As an organizational change, implementing a PM methodology involves and requires the use of practices and tools of project management. The assessment of project management maturity allows evaluating how the company applyies project management principles and assesses therefore the degree to which it can apply project management for managing the technical side of change. In other terms, Project management maturity assessment allows to measure the readiness in terms of availability and use of adequate processes and best practices for managing the technical side of change.

Furthermore, in our particular case of change that aims implementing a project management methodology, assessing the maturity constitutes an opportunity for a more understanding of the current state of the organization before implementing the methodology. The assessment will permit to identify what are the efforts that will be required to improve the PM maturity (that is, what are the efforts to be deployed to successfully implementing the PM methodology) (PMI, 2003).

**Assessment of Readiness by using the Proposed Model**

In the following, we present the results of the change readiness assessment regarding the four dimensions:

**Individual readiness assessment**

The executive management had the highest score in appropriateness, management support and personal valence. Regarding project managers, the scores are almost equal to those of the executive management.

Support functions employees had the lowest score for all four beliefs. Similarly, the site managers scored low on change efficacy, appropriateness and management support. In contrast, they scored high personal valence (Table 3).

**Table 3**
**INDIVIDUAL ASSESSMENT RESULTS (MEAN SCORE)**

| Category | Change efficacy | Appropriateness of the change | Management support | Personal valence |
|---|---|---|---|---|
| Executive Management | 3,8 | 4,04 | 4,29 | 4,52 |
| Project managers | 3,46 | 3,51 | 3,87 | 4,22 |
| Site managers | 2,79 | 2,74 | 2,75 | 4,34 |
| Support functions employees | 2,05 | 2,5 | 2,23 | 2,94 |

To understand these differences across the four categories, many focus group discussions were conducted allowing us to reveal the following:

1. Executive and project managers believed that the implementation of the PMBOK project management methodology would be an appropriate change for ensuring project success and improving the competitiveness of the company. They also thought that this change would make their daily job a lot easier.
2. Executive managers and project managers stated that training and coaching would be necessary for all employees before implementing PMBOK practices and principles.
3. Site managers and support functions employees stated that they are undecided about management support and wanted assurances from senior managers that they would assist them in implementing the project management methodology.
4. Support functions employees stated that they would not have the capability to apply correctly the PMBOk because they lack the necessary knowledge. They believed that ensuring implementation success would depend on having the necessary knowledge and expertise on project management principles and best practices.
5. Site managers believed that the change would be beneficial for them, as they are motivated to learn and improve their way of work by changing management practices.

**Organizational readiness assessment**

The Table 4 below presents the results of the survey dedicated to organizational readiness assessment:

**Table 4**
**ORGANIZATIOANL ASSESSMENT RESULTS**

| Organizational readiness drivers | Elements of organizational readiness | Mean score |
|---|---|---|
| Capacity readiness | Processes | 1,94 |
| | Technology | 4,08 |
| | Physical resources | 3,68 |
| | Organizational system | 2,23 |
| Cultural readiness | Culture | 2,5 |
| Commitment readiness | Value alignment | 3,66 |
| | involvement | 3,10 |
| | people ability | 2,31 |
| | time availability | 2,6 |
| | skill development | 2,27 |
| | Perceived value | 3,65 |

The interviewers revealed that organizational readiness must be further improved in terms of process adaptability, organizational system readiness, people ability, time availability and skill development.

### Time availability

The majority of participants expressed the view that there is a lack of a clear understanding regarding the time needed for developing the required knowledge. Furthermore, the majority of interviewed individuals thought that the involvement in managing multiple projects might alter their ability to commit the necessary time to implement effectively the new methodology. Indeed, some managers have a sentiment that the organization was already operating at its full capacity because of a heavy workload created by day-to-day operations of multiple on-going projects.

### Process and organizational system

The participants considered that the lack of a clear vision and a plan regarding how the methodology will be implemented might make the implementation more difficult and risky. In addition, they observed that the most of existing project management processes are poorly documented and formalized and it would be necessary to deploy very significant efforts in order to renew them.

It should also be noted that other elements must be reviewed to encourage employees committing to this change, such as clarification of the procedures concerning compensation for overtime, reviewing other current processes and procedures (especially those of support functions) and aligning them with requirements of the new methodology. In addition to that, the executive managers acknowledged that the lack of a coherent and relevant system of indicators might also constitute a barrier for tracking the progress of change.

### Skill development and people ability

The majority of the participants noticed that there is a need for developing and improving the knowledge and skills necessary for ensuring the success (e.g. team management, negotiation skills, cost control, etc.). Moreover, several project managers stated that lacking of a human resources development plan might hinder the development of required skills and delay the improvement of people's ability to adopt the new methodology.

### Culture

The executive managers and some projects managers have expressed their beliefs about the necessity of establishing a culture of project management. In focus group discussions, the executive managers have stressed the need to improve this culture by developing its characteristics within the company, namely anticipation, responsiveness, performance control, professional commitment, respect for deadlines and autonomy.

### Project management maturity assessment

To assess the current state of project management maturity within the host company, the PM Solution' Project Management Maturity Model (PMS-PMMM) was used, as presented

below in Figure 1. Based on the questionnaire provided by this model (Crawford, 2010), it was found out that the level of maturity in some areas (human resources management, communication management, stakeholder management, integration management) is still at its initial level. As a result, the overall level of maturity, which corresponds to the minimum of the levels assessed over the ten knowledge domains, is also considered to be at its initial level. This level corresponds to an ad hoc status where managers are aware of the usefulness of project management processes, but procedures and good practices are not established or are poorly defined.
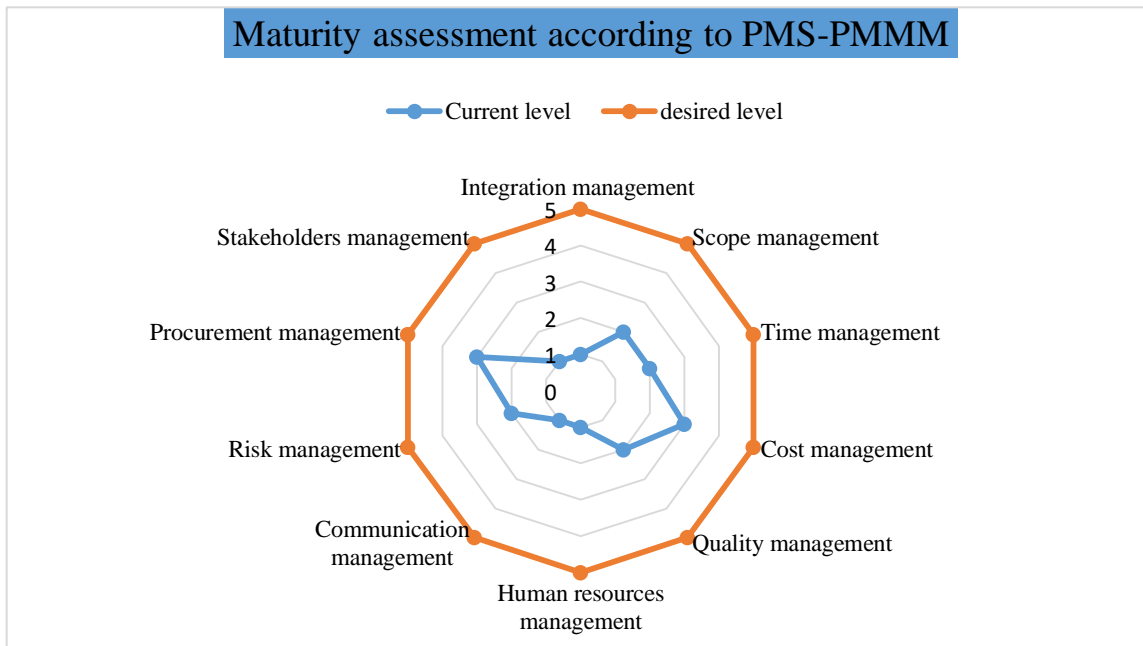


**FIGURE 1**
**PROJECT MANAGEMENT MATURITY MODEL (PMS-PMMM)**

## Change management maturity assessment

To assess the current state of change management maturity, the Prosci's Change Management Maturity Model was applied. It was found during the implementation process that:

1. Executive managers have focused only on the *"concrete"* or technical part of the change including funding, scheduling, preparing documents, and tracking.
2. Managers and supervisors did not have a formal change management training to coach their employees through the change process.
3. There was no formal approach for managing the people side of change projects;
4. There was very little change management activities applied;
5. The majority of managers are not aware of change management benefits.

According to Prosci's Change Management Maturity Model, we can confirm that change management was at its initial level (ad hoc or absent change management).
The lack of a structured approach for managing change, illustrated by a low level of change management maturity may constitute a major obstacle for successfully implementing PMBOK. For this, it will be very interesting to establish a change management plan that will identify the steps and change management activities to be carried out during all the phases of the PMBOK

implementation. In addition, to improve the maturity level it will be necessary to establish a strategy for building organizational change readiness.

## RECOMMENDATIONS

In order to improve change readiness within the studied company, it is required to develop a readiness strategy that will focuses on the actions and activities to be carried out at the four identified levels: Individual, organizational, project management maturity, and change management maturity.

Based on the results of the assessment and on focus group findings, seven activities have been identified, including empowerment and coaching, executive engagement, communication, training and skills development, motivation, development of project management culture and change capacity.

### Communication

Implementing change projects requires an effective and open communication with the various stakeholders, as communication is considered as one of the key success factors of change management. By communicating, the company can create the belief among employees that implementing the new methodology will be beneficial for them ( personal valence) and it can convince them that the necessary support will be provided including appropriate training and education (management support and efficacy). Additionally, the role of the communication is to justify that change is appropriate for the company and it is necessary to achieve its strategic goals (appropriateness), by providing the needed information and by eliminating uncertainty and ambiguities. It is therefore very important to develop a communication management plan that will help to mobilize employees, to evaluate and gather feedback and consequently to contribute to increase change readiness.

### Empowerment and coaching

Filipkowski et al. (2018) shows that the coaching of employees through change is an intervention that may help to build change capabilities and increase change readiness. The coaching process aims to liberate the full potential of the employees by helping them to develop intrapersonal skills such as self-awareness and self-motivation (Grimson, 2008). The coaching process must be part of an integrated approach for empowering employees, thus building readiness and getting buy-in from them.

Duck (1993) described empowerment as *"setting the context for change by preparing the players, understanding what they do and don't know, working with them, watching their performance, giving them feedback, creating an ongoing dialogue with them".* To implement this approach of empowerment we propose to plan a series of coaching sessions by holding one-on-one meetings and group meetings between employees and their immediate managers. This environment allows employees to explain their beliefs and their specific worries and concerns about the new methodology. It can also be an opportunity to gather feedback about the change progress and to be aware of the obstacles and difficulties encountered when implementing the new methodology.

## Training

Many authors highlighted the specific importance of training as a facilitator of change efforts. They argued that developing technical capabilities and influencing the mind-set of the employees is required for building change readiness. The objective of training is to provide employees with the needed knowledge to acquire these capabilities and therefore successfully implement and apply the new methodology. The training program proposed consists of two main parts: The first one allows employees to get a deeper understanding of the new project management processes and areas of knowledge as well as the new tools that are created by the implementation of the new methodology. The second one aims to build knowledge about change management in the company and constitutes a part of an organizational effort to increase change management maturity.

## Motivation

Luecke (2003) highlighted that the motivation is a critical condition for change readiness. For this, it important for managers to create short-term wins to maintain employees 'motivation during the process of change (Kotter, 1996; Kanter et al., 1992).

As stated by managers during focus groups discussions, employees involved in the change should be recognized for their effort to implement properly the new methodology, through performance evaluation and compensation. If not, employees may give up and cease to be involved in change.

## Executive Engagement

The involvement of employees and stakeholders is clearly necessary for any successful change effort. Moreover, Prosci (2012), as one of the top contributors to change success, identifies the engagement of managers and executive. Indeed, executive engagement can engender sentiments supporting change readiness (Armenakis & Bedeian, 1993). For this, it is recommended to mobilize the commitment of executives and managers, since the earlier steps of the implementation until the establishment of the new methodology.

## Building Change Capacity

As mentioned previously, organizational readiness is highly dependent on the capacity for change. Therefore, to build this, it is necessary to develop managerial and organizational capabilities that allow the company to develop and implement appropriate changes to adapt constantly to environmental and organizational evolutions. Among the proposed actions, we cite the following:

1. To provide the necessary funding and resources: funding for training and consultancy, funding for certification preparation, project management software, etc.
2. To improve change management maturity by Implementing a constructed change management methodology such as PROSCI (PROSCI, 2012), IMA (IMA, 2018), ACMP (ACMP, 2014);
3. To improve business process management maturity by applying a constructed methodology such as MMPM (Sliż, 2018).

## Development of Project Management Culture

In order to improve project management maturity, the company must build and adopt the project management culture (Knutson, 2001). It is recommended to conceive a roadmap and action plan to implement the eleven elements that determine this culture, namely open communication, commitment, flexibility, risk management, performance rewards, team orientation, learning, conflict tolerance, interdependence, results orientation, control and discipline (Hoole & Du Plessis, 2002).

## CONCLUSION

In this paper, a model to assess the change management readiness for implementing a project management methodology was proposed by integrating four main dimensions: individual readiness, organizational readiness, change management maturity and project management maturity. Our contribution consists of suggesting adding the two last dimensions to the existing models for assessing change readiness and the adaptation of these latter to the context of project management implementation.

Through an action research study, the proposed model was applied for measuring the readiness for change when implementing a new project management methodology (PMBOK) in a Moroccan construction company. The assessment revealed that the readiness needed further improvement regarding several areas, as described below:

1. The interviewees emphasized the importance of training, coaching, management support in building individual readiness, especially for site managers and support function employees.
2. Executive and project managers were more ready to adopt the new methodology as they were convinced that this change was appropriate for the company, beneficial for them and, they were confident in their capability to perform the tasks necessary for implementing this methodology.
3. There was a need for building organizational readiness regarding some aspects where the readiness level was insufficient, such as process adaptability, organizational system, people ability, time availability and skill development.
4. The maturity of processes involved in managing change namely project management and change management was not yet enough to ensure successful implementation of change, as there was a lack of processes and of tools for managing change at both technical and people side.

Based on the findings of this study, it was proposed to develop a strategy for building change readiness by developing seven activities: communication, empowerment and coaching, training, executive engagement, development of project management culture and building capacity of change.

This study serves both a practical and scientific purposes. At the scientific purpose, it can contribute to understanding the aspects of organizational change readiness and may become a basis for a further research about organizational change management success and measurement. At the practical purpose, it aims at enabling a company to evaluate its readiness rigorously for implementing planned change initiatives. Consequently, it would allow change team to identify the main areas on which it is necessary to act for building change readiness.

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