

IBSA-STUDIES IN MANAGEMENT AND INNOVATION

EDITED BY HELGA MEYER, REBECCA PORTERFIELD, REINHOLD ROTH

Volume

1

# NEW STRATEGIES FOR COMPETITIVE ADVANTAGE

HELGA MEYER | REINHOLD ROTH (EDS.)



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# **New Strategies for Competitive Advantage**

Edited by Helga Meyer, Reinhold Roth

With contribution by

Alexander A. Eberle  
Anahid Shamsi Nejad  
Anirudh Krishen Koul

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**Volume 1**



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## **IBSA-Studies in Management and Innovation Volume 1**

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# Preface

The current pace of advancement in the field of international business has a direct and immediate impact on productivity on the daily decision making process. Consequently young professionals when entering their career have to learn on the job in real time and have to be as well trained as possible. To equip international, innovative students worldwide from diverse cultural, geographical and professional backgrounds with the needed skills and qualification the International Master of Business Administration (IMBA) program was formed in 2003. Studying in two different countries and encountering two cultures gives students in the IMBA program an excellent chance to communicate and live in both environments successfully.

Using our experience resulting from the IMBA program, today we take the opportunity to start a voyage in providing alternative visions and personal suggestions to the study of international business. We offer a new series of books in management and innovation to share our expertise, knowledge and empirical findings from our applied research in this new and exciting field. With the results presented we intend to help young professionals and managers answer the growing challenges in a technology driven global work environment.

This new series of books is an initiative of the University of North Carolina Wilmington (UNCW), U.S.A. and the Bremen University of Applied Sciences (Bremen UAS), Germany. Both universities have formed close partnerships in the International Business School Alliance (IBSA) since 2003. The IMBA program, a dual master award with seven, non-competing specializations is a product of IBSA, a growing network of internationally oriented business schools with presently seven members:

*Bremen University of Applied Sciences, Germany • Universitat de Valencia, Spain • University of North Carolina Wilmington, U.S.A. Institute of International Business Moscow, Russia • University of Hertfordshire, Hatfield near London, U.K. • Universiti Tun Abdul Razak, Kuala Lumpur, Malaysia • Advancia-Negocia, Paris, France.*

University consortia like IBSA are imperative for international qualification. Our graduates from all parts of the globe have made significant contributions as part of their required research projects for strategic improvements of both multinational corporations and small to medium sized corporations.

This new series of books in management and innovation is a new chapter in the development of IBSA. We are convinced that we can continue to offer interesting topics, perspectives and solutions to provide managers and companies the greatest chances of success.

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## Introduction

Teaching in a global classroom, learning in multicultural groups and undertaking research projects with client companies provide a unique view on problem solving. In today's global environment there is no easy way to sustain value creation in highly competitive markets. It is not surprising to learn how much expertise and effort managers have to expend in the search for the optimum business or marketing plan. This is especially true in successful corporate settings where introducing change to optimize opportunities is a very risk taking decision under extreme uncertainties.

The research studies in this first volume of the *IBSA-Studies in Management and Innovation* are offered to individuals and companies who are open to improvements and new ideas. We believe that we can provide valuable insights to the decision making process. The innovative strategies to gain competitive advantage laid out in this edition focus on three important aspects: Standards for implementing project management, identification of lead users for the development of new medical devices in a technology and knowledge driven environment and the comparison of two low cost carrier business models in two different markets.

The first study presented in this book by Alexander A. Eberle helps management to choose between competing standards for implementing project management. It is well documented that project management continues to grow and is now applied in a wide spectrum of business sectors. There are two main professional organizations that operate at the international level fostering the discipline: the Project Management Institute (PMI) and the International Project Management Association (IPMA). PMI is a highly centralized American-based organization offering standardized products and operating from its headquarter in Pennsylvania, U.S.A. Its activities are implemented worldwide through structures called chapters. IPMA instead has a confederate nature, being an umbrella organization that brings together 50 local project management associations with a poly-centric predisposition allowing more local responsiveness and flexibility in implementing a common project management approach. There are many standards available on the market, however, due to their global relevance, only the PMI and IPMA approaches were considered in Alexander A. Eberle's research. The main research questions of his study were: "*Which approach of the main global project management organizations (PMI and IPMA) is better for a given company?*" Or from an applicative perspective:

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*“Which project management standard and certification system (IPMA vs. PMI) should be selected, implemented and supported by an organization?”*

This selection dilemma is not just a strategic question; it is a choice that if taken incorrectly may produce huge costs of change or business failure. Should the PMBOK® Guide of PMI or should the ICB of the IPMA be used? Is an IPMA certification better than a PMI certification? Two steps were undertaken to address the problem. First, an updated and in-depth comparison of the described documents and associated certification systems was developed to provide the management with the required information on the two approaches. Second, the aspects to be considered during the selection process were investigated through interviews carried out with experts and practitioners. As a result Eberle presented a selection model helping management to face the selection dilemma.

The main route to achieve business success in a global setting is the ability to continually innovate and renew. Importantly, new product development need not come just from in-house dynamics, but also from the application of new paradigms, or through input from clients and customers, or perhaps inviting expertise from other companies in highly specialized sections. For example, entrepreneurs who are operating in an evolving setting are dependent on tools like the *lead user method* in order to cope with the innovation risk, particularly in reduction of cost and time of new product development. Anahid Shamsi Nejad, another contributor to the first edition, investigated in her research project how lead users can be effectively identified for the development of new medical devices. Her case study analysis is based on information, empirical data and insights from interviews by Ethicon GmbH, a subsidiary company of Johnson & Johnson Medical in Germany. From her research Anahid Shamsi Nejad draws four major conclusions: *“First, the lead user search process can become complex if there is no clear target profile defined at the beginning. Second, in the study field someone who is able to recognize and communicate ‘future’ problems can already be regarded as a lead user. Third, given the high hurdles to innovation, intrinsically motivated lead users tend to be the source of innovation. Fourth, networking techniques provide the highest potential in order to identify rare lead users but the definition of a clear target profile and the adaption to search field specifics is necessary.”* Indeed, a better understanding of the *lead user method* is essential in maintaining progress to compete and stay ahead of the curve.



A third case in point in this volume is the airline industry. Traditionally the transportation industry, particularly the airline industry, had been highly governmentally regulated. However, with the deregulation of this industry in the United States in the early eighties, and similar policy adopted by the European Union in the nineties traditional carriers (regular and charter airlines) were challenged by a new type of competitor: the low cost carrier (LCC). Consequently, Southwest Airline was established 1971 in the United States, followed by Ryanair 1997 in the European Union and later by AirAsia in the Asia Pacific region in 2000. Based on the concept of innovative cost cutting and strategic marketing, these airlines are able to attract a rapidly growing number of passengers.

In 2010 Anirudh Krishen Koul's research, the third author in our first edition, focused on the strategic approach of AirAsia, the leading LCC in the fastest growing aviation market in the world. He found that AirAsia followed the original LCC type business model of Ryanair, where it relied on an entirely different expansion strategy. Ryanair on the one hand maintained a monopoly strategy by spreading its bases all over Europe. AirAsia on the other hand expanded by establishing subsidiaries in foreign markets and by forming ventures or alliances with existing LCC in Asia. It should be noted that building strategic alliances is not a new concept in the aviation industry. Various full service carriers have created and are nurturing multinational arrangements like Star Alliance, Sky Team, One World, etc. However, AirAsia has been the first airline to create a cost alliance with Jetstar, an Australian airline, in the LCC segment in the Asia Pacific market, demonstrating its capability for strategic innovation to keep and expand its position as a leader in cost in the Asia Pacific air travel industry.

Today, more than ever before, successful companies focus on their ability to develop new strategies and methods within their highly complex and diversified business operations as this seems to be the only chance to turn the constraints of innovation pressure and the fear of missing great opportunities into a competitive advantage.

Our first volume of the *IBSA Studies in Management and Innovation* would not have been possible without the help of the Bremen University of Applied Sciences (Bremen UAS), the University of North Carolina at Wilmington (UNCW), and the participating companies and business professionals. First of all our thanks goes to the authors who carried out these case studies with creativity, commitment and diligence in the final project in their dual degree program, the International Master of Business Administration at

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HELGA MEYER  
REINHOLD ROTH  
BREMEN 2011

Alexander A. Eberle

**A Comparison of PMI and IPMA Approaches:  
Analysis to Support the Project Management  
Standard and Certification System Selection**

# 1 Introduction

The birth of modern project management is often associated with the implementation of NASA's Apollo program (Morris et al. 2006, p. 717). Nowadays, professional project management is applied within a wide spectrum of areas, not just in aerospace. Defence, information and communication technology, banking, energy, pharmaceuticals, construction and government are just some of the project management application areas (Wideman 1995, pp. 71–72).

The importance of project management and its direct relation to profitability were recognized only recently by the business world (Kerzner 2004, p. 3). Probably because of the new context that organizations have observed over the last decade. In fact, they had to face a higher level of competition and higher product, service and process innovation rates. Those trends put more emphasis on the time to market factor (Aubry et al. 2007, p. 328). Project management is now accepted as a well-developed domain for the exercise of professional expertise and an academic research area (White & Fortune 2002, p. 1). The discipline provides methods and tools to get the work done on time, on budget and on specification. Therefore, if project management is applied properly, it can improve the ability of being successful in the current business world.

Standardization is a process that involves many benefits. Also in project management, different standards were developed. They are widely used for training and development of human resources, as support for certification programs and as corporate project methodologies. The latter use bases on the supposition that there is a direct relation between the application of a standard and the performance on the workplace (Crawford & Pollack 2007, p. 87). In fact, by introducing a standard it is expected to improve communication regarding project management issues, especially by harmonizing the project management terminology. Another main expectation is to improve the quality of the processes (Ahlemann 2009, p. 300). Standards diffusion comes along with the spread of project management certifications. The necessity to certify employees' competence and knowledge in project management through important organizations keeps rising.

The certification in fact, has positive aspects for different stakeholders. An individual who is certified obtains some security of his/her job position. In a certification a client sees the guarantee of project management professional competence. For the society, the diffusion of project manage-

ment certifications means standardization of knowledge, and this is seen as a positive outcome (Mosca 2009, p. 1; Wirth & Tryloff 1995, p. 109). The main professional organizations developing project management standards with worldwide focus offer their own certification systems, based on their respective standards. Although it can be disputed on what a standard exactly is, most practitioners do not distinguish between proper standards and guidelines on the one hand and professional bodies of knowledge on the other hand (Ahlemann 2009, p. 292).

Once the management of an organization decides that the benefits of project management exceed the costs of its implementation, it has to face some predominant questions. One of the first questions arising is whether or not to use a standard, and in case this receives a positive answer, which standard should be chosen becomes relevant (Crawford 2000, pp. 2–3). Currently, there are two main professional organizations in project management that operate at an international level. They provide both project management standards and certifications. These are the Project Management Institute – PMI and the International Project Management Association – IPMA. They publish respectively the PMBOK® Guide (PMI 2008) and the IPMA Competence Baseline (IPMA 2006) as sector and project-independent guidelines or standards. The associated certification programs are strictly related to them. The advantage of using such widespread standards with respect to industry- or project-specific ones, is that they can improve synergies in inter-organizational projects; they will be updated and keep their relevance in the future (Ahlemann et al. 2009, p. 301).

### *The selection dilemma*

This research addresses the selection dilemma arising when the management of an organization has to choose between different project management standards and certification systems. In particular, due to their global relevance, only the PMI and IPMA approaches are considered. A recent study on German and Swiss enterprises (Ahlemann et al., 2009) has shown that the PMBOK® Guide and the ICB, together with its local adaptation, are the project management standards most diffused in that region. Within the companies that applied a project management standard, 82.4% used at least one of the described standards (source: further elaboration of the raw survey data of the study, courtesy of Frederik Ahlemann).

In the past, there was a strong interest in developing a common global project management body of knowledge or standard (Crawford 2000, p. 3). However, until now, little progress has been achieved in agree-

ing on an international standard for project management. The main obstacles towards a global standard and a unified project management profession seem to be political issues and vested interests (Crawford et al. 2007, p. 7). The failed attempts of the major players in creating a common global standard and certification system increase the relevance of this research.

According to Garcia (2005, p. 28), the standard should be selected by evaluating the fit of the organization's climate with the standard assumptions related to organizational issues (sponsorship needed, values, skills and strategy). Nonetheless, in the decision making process, the management may also account for other factors such as the stakeholder's acceptance of the standard. Further, Garcia suggested to consider if the standard is a requirement for market entry or to maintain the position in the current market, and if the costs of development, maintenance, etc. will produce a return.

From the presented discussion it turns out that the subject is indeed very topical. As a further indicator of this, an expert seminar took place the 6th of June 2009 in Vienna concluding the Happy Project '09 conference. The international project management approaches of the IPMA, PMI and other organizations were compared in this occasion and explored by experts (Huemann 2009). In conclusion, the choice of the optimal project management standard to implement is apparently quite complex. Moreover, it is of strategic importance since once a standard has been introduced, the costs of change may be considerable or it may be too late for the business to react to the market demands.

### ***The research question***

Money and energy are wasted by individuals and organizations while making choices between competing standards and qualifications in project management (Crawford in: Morris & Pinto 2007, p. 1187). Therefore, this study aims at providing support during the selection process. In particular, the research question is: "Which project management approach between those offered by PMI and IPMA is better for a given company?" that is: "Which project management standard and/or certification system provided by the two main global professional associations should be selected?"

The objective of this research is to help the management of an organization that is facing the described selection dilemma. Two steps were undertaken to address the problem. First, an updated comparison of the described documents and associated certification systems was developed. This was done to provide the management with the required information on the two approaches to take a wise decision. Second, the aspects to be

considered during the selection process were investigated. This was accomplished through interviews carried out with experts and practitioners. Finally, a model for standard selection was developed.

Furthermore, there is no proper analytical comparison between the different standards or bodies of knowledge available on the market. An attempt of comparing project management bodies of knowledge was roughly carried out in 1995 (Wirth & Tryloff 1995). But in the last 15 years there has not been any trace in the literature of an analysis studying differences and commonalities, weaknesses and strengths of project management standards. Moreover, since 1995, the bodies of knowledge have had major changes through the different versions and editions that were issued. Thus, it was decided to present an up to date comparison of the two approaches to support the management during the decision process. This research work was conducted prevalently using secondary data. Due to the fact that the research question was not concretely addressed previously in the literature, the research is an exploratory study and thus of qualitative nature. Starting from the results of this thesis, new studies could be pursued. The following objectives were set:

- To present and compare the IPMA and the PMI
- To develop a comparison of the PMBOK® Guide 4<sup>th</sup> edition and the ICB version 3.0
- To develop a comparison of IPMA and PMI certification systems
- To investigate the main aspects to be considered during the selection between the two approaches
- To provide useful recommendations

The study aims at supporting the management in the decision making process related to the choice between project management standards and certification systems. However, PMI and IPMA are not the only organizations working in these areas. For instance, another standard is gaining popularity and has a consistent market share, especially in information technology: PRINCE2. But since it is not widespread as the other two standards, it is not considered in the present study. Further, all the other myriad of standards available are not taken into account. Often, they only have national relevance or are industry specific.

This work does not address the question if project management should be implemented in an organization, and if this should be done applying a widespread standard. These issues need to be assessed by each company depending on the particular situation. This research assumes that

the management is certain that to implement project management in the company is the right choice and the main issue is now to choose between the two most diffused approaches available on the market.



## 2 Terms and Definitions

Merging the two definitions of PMI and IPMA, it can be appraised that a project is limited in time, has limited resources but has to achieve a determined quality or performance. These are the typical triple constraints of projects. Further, the PMI definition introduces the unique character of projects, which differentiates a project from repetitive tasks. Finally, the work performed in projects is always directed towards an output, which can be an intermediate deliverable or the final result:

“A project is a time and cost constrained operation to realize a set of defined deliverables (the scope to fulfill the project’s objectives) up to quality standards and requirements.” (IPMA 2006, p. 13)

“A project is a temporary endeavor undertaken to create a unique product, service, or result.” (PMI 2008, p. 5)

The same approach is used to define what the “art” of managing projects exactly is. PMI’s definition includes a reference to processes and process groups, which are related to the structure of the PMBOK® Guide document addressed in chapter 4. Again, we have two different definitions, but taking them together, a broader set of aspects related to the project management discipline are considered:

“Project Management (PM) is the planning, organizing, monitoring and controlling of all aspects of a project and the management and leadership of all involved to achieve the project objectives safely and within agreed criteria for time, cost, scope and performance/quality. It is the totality of coordination and leadership tasks, organization, techniques and measures for a project.” (IPMA 2006, p. 128)

“Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the 42 logically grouped project management processes comprising the 5 processes groups.” (PMI 2008, p. 6)

Project management, in fact, is a quite new field that emerged during the 1950s and experienced an extremely fast growth becoming a recognized profession during the 1980s (Wang 2002, p. 7).

Project management is a wide research field that still keeps evolving, both in breadth and depth.

Table 1 The evolution of project management (adapted from Wang 2002, p. 7)

<i>Period</i>	<i>Central theme</i>	<i>Representative development</i>
1960s	Project management associations established in the US and Europe	Network techniques (CPM, PERT, and PDM) pushed into commercial markets with the support of computer technology
1970s	Significant growth of the concern about PM professionalism	PM application expanded; human aspects recognized as important; and the first journal dedicated to PM was published by the PMI (Project Management Quarterly)
1980s	PM becomes a discipline of management and a profession	Body of knowledge integrated with new experiences, degree programs and certifications began in the US, UK and Australia. IPMA starts to publish the International Journal of Project Management
1990s	Professionalism promoted on such aspects as body of knowledge, certification, and education	Body of knowledge refined; PM competency standards developed; membership and professional certification programs of PM association grew rapidly; degree courses offered by many universities.

Table 2 Current evolution of project management (adapted from Bredillet in Cleland &amp; Gareis 2006, p. 3–3)

<i>In breadth is embracing:</i>	<i>In depth is going further into:</i>
<ul style="list-style-type: none"> <li>• Information systems</li> <li>• Human resource management</li> <li>• Change management</li> <li>• Strategic management</li> <li>• Economic value management</li> <li>• Psychology</li> <li>• Management of technology</li> <li>• Quality</li> <li>• Sociology</li> <li>• Multicultural management</li> <li>• Systems thinking</li> <li>• Knowledge management</li> <li>• Organizational learning</li> <li>• Team management</li> <li>• Temporary group</li> <li>• System engineering</li> </ul>	<ul style="list-style-type: none"> <li>• Cost engineering</li> <li>• Finance</li> <li>• Specific aspects of risk management</li> <li>• Earned value management</li> <li>• Scheduling methods</li> <li>• Resource allocation</li> <li>• Project life cycle</li> <li>• Processes</li> <li>• Studying phases</li> <li>• Types of projects</li> <li>• Project portfolio management</li> <li>• Project management maturity</li> </ul>

### ***Project management body of knowledge***

A body of knowledge is the knowledge field or the sum of knowledge that belongs to a profession or management practice (Armstrong 2001, p. 3). Regarding to project management, different definitions for this term are present in the literature.

Widemann (1995, p. 71) describes the project management body of knowledge as the “assembly of the knowledge and experience of practitioners and academics alike”. Snider and Nissen (2003, p. 5) state that the project management body of knowledge “represents generally accepted sets of skills and tools that all certified professionals should possess”.

In general, a body of knowledge establishes the jurisdiction of a profession (Morris et al. 2006, p. 714), for instance, as it is done by the engineering profession. The relative body of knowledge is used by the engineers to maintain under control determined tasks and activities belonging to their profession. In fact, an important element defining a professional group is the ownership of a body of knowledge belonging to that profession (Morris et al. 2006, p. 710).

Crawford (in: Morris & Pinto 2007, p. 1151) presented an interesting model describing the building blocks of the project management profession. The model describes the relationship between most of the terms and definitions described in this chapter. Research is the foundation block on which the body of knowledge is developed and defined. Once the body of knowledge has been defined, standards can be built on top of it and be used to train and educate people for certification purposes.

By definition, since it is made of knowledge, a body of knowledge is an abstract element. However, in the project management field, physical documents, developed by the project management associations, are often addressed as “bodies of knowledge” or representations of the body of knowledge. This use of the term “body of knowledge” in its plural form is in disagreement to the definition of it as a sole unique ensemble of knowledge belonging to a profession. However, although the plural form is fundamentally wrong, its use is widespread. Often, the abbreviation BOK or PMBOK referring to project management “bodies of knowledge” is used. The document published by the PMI, that will be discussed in this study, is very often addressed as PMBOK®, but its real name is “A guide to the project management body of knowledge”, which is a correct interpretation. Wirth and Tryloff (1995, p. 110) describe a “project management body of knowledge” document as “any written material that presents a professional

or standard-setting organization’s interpretation of the sum of project-management knowledge”.

Bredillet (in: Cleland & Gareis 2006, p. 3–3) enumerates several “bodies of knowledge” documents. The listing includes the already mentioned PMBOK® Guide of PMI as well as the IPMA Competence Baseline which is obviously published by the IPMA. Further, the APM BOK of the British Association for Project Management and the P2M of the Project Management Association of Japan belong to Bredillet’s list. Moreover, the various “bodies of knowledge” that professional project management associations publish, differ significantly from each other (Crawford & Pollack 2007, p. 90). Considerable time and effort was put in the development of these documents and the establishment of the associated certifications programs. Over time, they gained a notable popularity (Morris et al. 2006, p. 710).

*Figure 1 Building blocks of a profession  
(adapted from Crawford in: Morris & Pinto 2007, p. 1151)*



As stated previously, the project management field keeps evolving. And this field is the base for the creation of BOKs, standards and certification programs (Bredillet in: Cleland & Gareis 2006, p 3–3). Moreover, project management is still a young research field. Thus, these may be the reasons behind the differences among the various PMBOKs. However, according to Snider and Nissen (2003, p. 5), despite of the static nature of the BOKs and the fact that they should consider new theories, they “remain the principal means for defining project management”.

Thus, the project management “bodies of knowledge” are important, especially to practitioners. They are, in fact, interested in these documents, because they “influence industry views on competence, best practice, and training and development” (Morris et al. 2006, p. 719). Actually, they be-

come de facto standards. From another perspective, a formal body of knowledge can be seen as a promotional tool for project management as a commercialized profession (Morris et al. 2006, p. 714). Nonetheless, some questions still remain open: i.e. can the project management associations act as professional bodies? Or which is the distinctive body of knowledge of the project management profession? (Morris et al. 2006, p. 710)

### *Project management standards*

The ISO (International Organization for Standardization) and the IEC (International Electrotechnical Commission) define a standard as: “a document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context” (ISO/IEC 2004, p.8). From another view, standards can be seen as “socio-economic constructs reflecting a balance of perspectives between stakeholders” (Bredillet 2003, p. 469). They are subject to evolution, but the change again, has to account for balance of stakeholders’ need and perspective (Bredillet 2003, p. 469).

A conflict arises when the standard definition given by the ISO is put in the project management context. As mentioned by Crawford and Pollack (2007, p.89), this conflict derives from the apparent incompatibility of standard’s nature, which tries to uniform processes, tools and techniques, and the unique nature of projects. Further, the standards developed by the ISO satisfy three principles: *consensus* (of all the parties involved), *industry-wide* (they have to be global industry solutions) and *voluntary* (referring to the involvement type of the parties). Through its development an ISO standard experiences six different stages: proposal, preparatory, committee, enquiry, approval and finally the publication stage (Bredillet 2003, p. 465). Those documents that are referred to as standards in project management, have neither passed such a harsh development process nor satisfy all the three principles set by the ISO.

In fact, standardization can occur through market exclusion or joint modification (Bredillet 2003, p. 465). Taking the recording media industry as an example, the standards’ war won by the VHS technology against the Betamax, was a clear market exclusion process. Instead, the development of hardware compatible with both DVD-R and DVD+R technologies was an example of joint modification. The process that project management standards experienced over time, seems to be a market exclusion process. However, many standards still survive on the market. The 1990s were the

decade in which most project management standards were developed and the first certification programs started (Crawford and Pollack 2007, p. 75).

Moreover, to distinguish between the guidelines of project management professional associations and classical standards is often difficult. Although guidelines should be more open to interpretation, and standards should be more objective, robust and definitive; in practice, most practitioners do not make any distinction between them (Ahlemann et al. 2008, p. 293). Furthermore, between the terms “standards” and “bodies of knowledge” there is just a minor difference in project management, sometimes the two terms are used as synonyms. Therefore, in this document the term standard will be used to address classical standards, guidelines as well as the so called “bodies of knowledge”. Thus, again, the documents presented in the section dedicated to the project management body of knowledge, and addressed as “bodies of knowledge”, can be considered project management standards as well.

The main drivers behind the development of standards in project management were identified by Crawford (in: Morris & Pinto 2007, pp. 1150–1151) as being:

- The development and recognition of a distinct profession
- The need to identify the role and tasks of project managers
- The need for a common terminology in project management
- The need for a common basis for employment and deployment of project personnel, collaborative work across teams, organizations and across national boundaries.

If the first two drivers can be explained with the fact that “professions distinguish themselves by emphasizing standards [...] and by ensuring that their membership meets these standards” (Morris et al. 2006, p. 710), the last two are more related to the nature of standards as means to uniform and hence to improve performance.

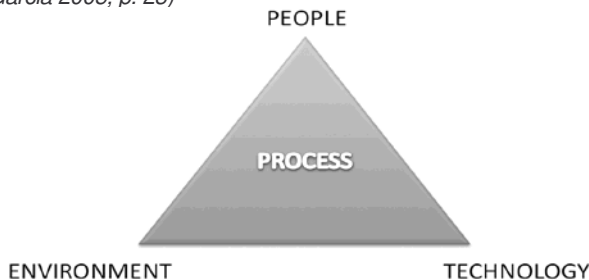
Finally, the standardization should bring some benefits such as (Crawford & Pollack 2007, p. 88):

- An increase of project management profession legitimacy
- A guarantee for career progression for project management personnel
- A sense of confidence for stakeholders
- A greater income for the people and organizations meeting the standard.

According to Garcia (2005, pp. 23–24), project management standards are built to find “ways to stabilize the processes that help to mediate three major factors in project and organizational success”. Those three fac-

tors are (1) people, their skills and motivation, (2) the technologies used to support them and (3) the environment in which the project exists. The process is seen as the integrator of these three elements and is explicitly addressed by the project management standards.

Figure 2 The Garcia model of the role of process in projects and organizations (source: Garcia 2005, p. 23)



Crawford (in: Morris & Pinto 2007, p. 1152) classifies the purposes for which project management standards are developed. These, in turn, define three different focuses on:

- Projects: knowledge and practices for management of individual projects
- Organizations: organizational project management knowledge and practices
- People: development, assessment and registration/certification (credentialing) of people

Figure 3 Project management standards and respective focus (adapted from Crawford in: Morris & Pinto 2007, p. 1153)

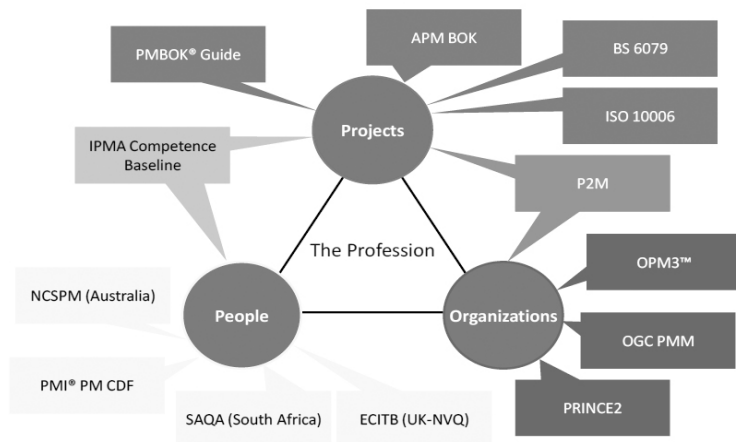


Figure 3 shows the currently available major project management standards and the purpose for which they were developed. The updated list of standards that focus on knowledge and management of individual projects is the following:

- Project Management Institute (PMI). *A Guide to the Project Management Body of Knowledge 4<sup>th</sup> edition* (PMI 2008)
- International Project Management Association (IPMA). *IPMA Competence Baseline v. 3.0* (IPMA 2006)
- Association for Project Management (APM). *APM Body of Knowledge 5<sup>th</sup> edition* (APM 2006)
- British Standards Institution. *BS6079: 2000 Guide to Project Management* (BSI 2000)
- International Organization for Standardization (ISO). *ISO 10006: 2003 Guideline to Quality in Project Management* (ISO 2003)
- Project Management Assn. of Japan (PMAJ). *P2M: A Guidebook of Proj. and Program Management for Enterprise Innovation* (PMAJ 2005)

In this study, PMI and IPMA standards are analyzed in chapter 4. There are many other standards for project management, but often they are industry-specific. Garcia (2005, p. 24) describes the need for specific standards versus generic ones. The author states that it derives from the need practitioners have of using standards that are close as possible to what they are doing or plan to do.

### ***Project management certification***

Project management certifications are granted by project management professional associations and directly by enterprises (internal certifications). A certification usually certifies the knowledge, but can also attest the experience. The examinations, undertaken during the certification process, are supported by reference documents. These documents are usually the standards listed in the previous section. In the mid-1970s, the Project Management Institute and the British Association for Project Management started programs to certify people meeting their standards of project management distinctive knowledge. The first PMBOK® Guide of PMI was designed in 1976 and published in 1983 being the reference work to apply for PMI's certification test (Morris et al. 2006, p. 711).

In 1995, the IPMA, given the impossibility at that time to reach an agreement with PMI, decided to work towards a European-wide or IPMA-wide approach for the development of a certification program (Turner 1996, p. 4). Today, this is IPMA's worldwide four level certification system.



A certification provides benefits to many. Graduates may be interested in acquiring a basic certification in project management to increase their chances when looking for a job, practitioners view certifications as recognitions of their skills. Companies benefit from certifications as they permit them to demonstrate a certain level of staff competence, whereas the purchasers of services obtain some assurance of competence from them (Crawford & Pollack 2007, p. 88). Further, the certification can also be seen as an attempt to establish entry barriers and promote the project management practitioners value (Morris et al. 2006, p. 714). Main consumers of consulting services and trainings on standards and certifications are large multinational enterprises (Morris et al. 2006, p. 716). Some large organizations have also created internal certification programs and centers of excellence (COE) for project management. The role of a Center of Excellence is to benchmark against the best practices worldwide and accelerates learning to achieve excellence (Kerzner 2004, p. 3). The certification programs of PMI and IPMA have a global industry-independent approach and will be discussed in depth in chapter 4.

### ***Project management professional organizations***

There are many associations or organizations fostering project management throughout the world. Many operate locally, while just a few have international scope. The most renowned organizations which operate at an international level are again the IPMA and the PMI (Morris et al. 2006, p. 715). The International Project Management Association (IPMA), formerly known by the acronym INTERNET, is an international umbrella organization representing 50 national project management associations from all over the world on the international level. The association was established in Switzerland and has its main offices in the Netherlands now. The IPMA describes itself as “a world leading non-profit making project management organization”. (IPMA 2009b)

The Project Management Institute (PMI) was founded in the US in 1969 and is nowadays “the world’s largest not-for-profit association serving global project management needs” (Smith 2004, p. 36). The PMI describes itself as a professional association whose primary goal is “to advance the practice, science and profession of project management throughout the world in a conscientious and proactive manner so that organizations everywhere will embrace, value and utilize project management and then attribute their successes to it”. Both organizations, PMI and IPMA, as well as their approaches are discussed further in chapter 4.

### 3 Research Design

The selection of a project management standard is a complex problem for the enterprises, mainly due to the diversity of standards available. Official standard issuing organizations as well as project management associations and others, promote their own standards (Ahlemann et al. 2009, p. 292). At the end, individuals and organizations waste money and energy in making choices between competing standards and qualifications in project management (Crawford in: Morris & Pinto 2007, p. 1187). Hence, the purpose of this research is to support the management during the selection process. When a standard is introduced, it is not just the adoption of a written document. In some way the company espouses the underlying philosophy applied by the publishing organization. Often, also the associated certification system becomes a reference within the company, together with the standard.

A recent study (Ahlemann et al. 2009, p. 294) has shown that also in the developed German economy, project management standards still have not experienced a wide diffusion. Similar results can be expected in other European countries and worldwide, except for the US and UK. Thus, this fact even increases the topicality of the “project management approach” selection dilemma. Due to the exponential growth of project management, in the next future many companies will face the described dilemma. Also Crawford (2000, pp. 2–3) states that both global and local corporations are facing the overriding question which standard and certification process to select. The dilemma of which project management approach to choose is not just a strategic question, but it is a choice that if taken incorrectly, may produce huge costs of change or business failure. Therefore, it should be carefully analyzed which is the most appropriate standard for a given situation (Ahlemann et al. 2009, p. 301).

There are many project management standards on the market, but only a few of them have global relevance and come along with worldwide recognized certification schemes. Different criteria can be used to classify this typology of standards.

Table 3 Morphological classification of project management-relevant standards (adapted from Ahlemann et al. 2009, p. 294)

<i>Criteria</i>						
<b>Industry Relevance</b>	Industry-specific				Industry-independent	
<b>Compliance Certification</b>	Certification available				Certification not available	
<b>Primary Focus</b>	Project Management	Other Discipline				
		Quality Management	New Product Development	Configuration management	Software Engineering	Cost management.
<b>Spreading</b>	Emerging		National		Worldwide	

In this study only the pure project management standards that have independent application from the industry, possess an associated certification system, as well as a worldwide diffusion are considered (shaded boxes in table 3). Thanks to the specific best practices they provide, industry-specific and project-specific standards are usually easier to apply in a particular context (Ahlemann et al. 2009, p. 301). However, the category of standards without a concrete industry focus was chosen in this study. Widespread industry-independent standards in fact, will maintain importance during time, assuring further development, along with allowing greater synergies in extra-organizational projects. Moreover, industry-specific standards do often have their roots in industry-independent ones. Last but not least, this study aims at being a work of wide application. For these reasons industry-independent standards were chosen.

Standards with associated certification have a stronger position on the market. Along with the assurance of future updates, they also provide the benefits of certification, as described in chapter 2 (Ahlemann et al. 2009, p. 301). The only two project management standards satisfying the described criteria are respectively the “IPMA Competence Baseline” (IPMA 2006) of the International Project Management Association (IPMA), shortly ICB, and “A Guide to the Project Management Body of Knowledge” (PMI 2008) of the Project Management Institute (PMI), also known as PMBOK® Guide. In fact, according to Crawford (2000, p. 2), the Global Working Group on Standards identified that the most relevant standards in mainstream project management are:

- The PMBOK® Guide of PMI
- The ICB of IPMA
- The APM BOK of the British Association for Project Management.

However, the APM BOK (APM 2006) does not have an international diffusion as compared to the other two standards and the British Association for Project Management makes use of the IPMA 4-level certification system being a member association of IPMA. Even though not mentioned by Crawford, in recent years, the PRINCE2 standard has gained importance worldwide, especially in the IT sector, but also in other industries. However, its diffusion is not that widespread and thus is not addressed in this work.

The importance of the standards and the overall approaches of the IPMA and PMI are evident. Unfortunately, it is difficult to gather data about their diffusion within businesses. However, as an example, a recent study carried out on German and Swiss companies applying project management (Ahlemann et al. 2009, p. 298), showed that the PMBOK® Guide was applied by 19.2 % of the surveyed enterprises, while the ICB together with the German adaptation of it, accounted for a 22.3% share. The two standards are market leaders in that region. Anyhow, the situation can be very different in other parts of the world. For instance, in North America, where the PMI was born, it can be expected an extremely higher market share of the PMBOK® Guide within businesses.

### ***Research Question, methodology and objectives***

Given the previous explanation, this research considers only the IPMA and PMI approaches as possible solutions for the selection dilemma. Therefore, the main research question of this work becomes:

“Which approach of the main global project management organizations (PMI and IPMA) is better for a given company?”

Or from an applicative perspective:

“Which project management standard and certification system (IPMA vs. PMI) should be selected, implemented and supported by an organization?”

The research question was not yet addressed in the literature, and thus, this work aims at filling in part the knowledge gap. In addition, extensive comparisons that could support the selection of project management standards are not easy to find. The most important academic article on standards comparison, although with another originating purpose, is dated 1995 (Wirth & Tryloff 1995). Wirth and Tryloff wanted to show the existence of a common project management body of knowledge. They analyzed different documents (the ICB was not yet available) expecting them to be just different interpretations of the common body of knowledge. Since then, standards and certification systems have evolved, and until today there is no compari-

son of the currently available versions of the PMBOK® Guide and the ICB. Further, in the literature there are just few and very high level recommendations about which standard to choose. Therefore this research is an initial investigation and has to be of exploratory, predominantly qualitative nature, aiming at a better understanding of the issue. The term qualitative involves “an emphasis on processes and meanings that are not rigorously examined, or measured (if measured at all), in terms of quantity, amount, intensity, or frequency” (Denzin & Lincoln 1998, p. 8).

To break down the research question, a parallel with another kind of problem is introduced. In order to define the electromagnetic field in a given space, it is necessary to *know* the Maxwell equations that describe how electromagnetic fields propagate, as well as the spatial *contour conditions*. Thus, the theory has to be known as well as some additional information.

In order to choose correctly between the PMI and IPMA approaches, first it is necessary to *know* them well (e.g. the respective standards and certifications), and second an understanding of the contour conditions is needed, in this case they are represented by the *main aspects or criteria to be considered* in order to take a wise decision.

Recapitulating, to make a conscious selection, the management has to:

1. *Know the two approaches*: therefore a comparison of the current standards and certification systems has been developed.
2. *Understand the most important aspects* that should be considered during the decision making process: thus a literature review and experts interviews were performed to provide a description of the major aspects to be considered and generate recommendations

These two points establish the basis on which the research approach undertaken in this study was designed. Within this framework the singular tasks performed were:

- To present and compare the International Project Management Association and the Project Management Institute
- To develop a comparison of the PMBOK® Guide 4<sup>th</sup> edition and the ICB version 3.0
- To develop a comparison of IPMA and PMI certification systems
- To investigate the main aspects to be considered during the selection between the two approaches
- To provide useful recommendations

These steps also represent the intrinsic objectives of the research work. Hence, chapter 4 will be structured according to the enumerated steps.

### *Data collection instruments and sources*

The research was carried out using both primary and secondary data. For the comparison of the two documents and the associated certification systems, mainly secondary data were used. To get a deeper insight on the reasons why an organization should choose one approach or the other, primary data were collected through experts' interviews and forums. The secondary data were both of quantitative and qualitative nature, while the primary research provided mainly a qualitative appraisal (Blythe 2006, p. 216).

Desk research involved the analysis of the two most important documents of IPMA and PMI in their most recent versions: the "IPMA Competence Baseline" version 3 (IPMA 2006) and the "A guide to the project management body of knowledge" 4<sup>th</sup> edition (PMI 2008), also known as PMBOK® Guide. Information on the two organizations and their certification systems was found directly on the official websites of the IPMA and PMI ([www.ipma.ch](http://www.ipma.ch) and [www.pmi.org](http://www.pmi.org)) and on published material, like official organizational documents. The main sources of academic literature were the "International Journal of Project Management" and the "Project Management Journal", respectively published by IPMA and the PMI. Of course relevant project management books were taken into consideration as important information sources.

The principal primary data sources were research interviews. The exploratory research nature as well as the time constraints and the limited resources made prefer this qualitative research method over questionnaires or other sources of primary research. One-to-one interviews were preferred over one-to-many for this research. The interviewees were mainly project managers and other professionals dealing with project management standards and certifications. Both face-to-face and telephone interviews were conducted. The selection of the most appropriate approach was taken depending on the availability of the interviewee, the habitual work location, time and the monetary resources needed to reach the respondent. Due to the exploratory nature of the research, semi-structured interviews were chosen. The questions were mainly open-ended in order to get an insight on the reasons why a specific approach was preferred, which were the benefits expected, what did they like or dislike. The interviewees were guided by the interviewer to address the most interesting topics for the research. The literature review, as well as the analysis carried out through desk work and discussions with the supervisor, provided the themes for the interviews.