

# Preface

IGI Global offer to update our former publication, “Handbook of Research on Effective Project Management through the integration of knowledge and innovation”, issued on 2015, presented a good opportunity to advance comprehension on matters that were productively addressed at that time and are continuously updated nowadays. As technology and its associated methods tend to contribute and even to revolutionize project management formulation principles, strategic alignment, design and execution, we understand that this is a topic where we have to keep discussions opened, evaluating new trends, tools and emerging scenarios to promote discussions around managerial changes in every production system or market in the world.

With this focus, we approached the former publication, invited authors to review their productions and called for some additional chapters to update our understanding about this almost unlimited matter, project management. The result is the work you have now, which we consider a real advance on considering technologies, from the basic to complex, as one of the main evolutionary sources for project management development.

Our book structure was composed mainly in three different sections. The first bring the views and main messages from editors, the same editorial team who published the former edition on 2015. The second section encompass studies which approach theoretically-focused chapters that attempt to discuss fundamentals, conceptual definitions and relationships and set new levels on understanding how these elements could be addressed by researchers and practitioners to develop further comprehension over changes in the project management field can be analyzed in the future. Finally, the third section opens a reflection space where practical results from field implementations can be detailed, exposed and evaluated by authors, defining an actual point of technological application in real cases, completing a context where theory reaches practices, enabling a deeper understanding about this complex and fast-changing context.

Chapter One, authored by editor George Leal Jamil and researchers Hugo Ferreira Braga Tadeu and Jersone Tasso Moreira Silva, addresses a method – Real Options Theory – to analyze investments and their potential returns in projects, specially Research and development ones, comparing this paradigm to classical ways, inviting the reader to consider ROT as a technique to be applied for new projects estimates and negotiations.

Editors Armando Malheiro da Silva and Fernanda Ribeiro contributed with an updated view on information management for project management, advancing their original view, published in the former 2015 book, adding considerations regarding new technologies influences and implications which are also impacting Information Science fundamental propositions in chapter Two. This chapter development shows how new changes can, potentially, bring phenomena to the context where classical and new theoretical prisms can serve for continuous assessments on these matters.

Ending the first section, chapter Three brings the views and reflections by editor Sérgio Maravilhas Lopes, regarding strategic aspects in the context of projects based on digital technologies. Sérgio Lopes analyze a practical case of a real state company which reacted to the market, implementing without the strategic framework, digital projects. This picture resulted in a challenge on how to integrate information and project management efforts itself. Lessons from this chapter brings light to the lack of strategic context and corporative results cohesion.

Section II, which is dedicated to promoting studies which can help to review theoretical basis for project management under application of emerging technologies, starts with the valuable contribution from authors Aneetha Vilventhan and Rajadurai R., from India in chapter Four. They analyze the growing application of nD BIM (Building information modelling) for architecture engineering and construction projects. In their chapter, authors also present an opportune study of 4D application of these techniques, allowing an open discussion for new project management aspects applying these technology-based elements.

As one remarkable major trend regarding emerging technologies, Industry 4.0 was addressed by Luiz Eduardo Marques Bastos in chapter Five. In this chapter, with a useful fundamental approach, the author observes how industrial pumps, a classical industrial market, presents signals of changes when exposed to the consolidation of technologies, as it is proposed by Industry 4.0 phenomena. Interestingly, the chapter also addressed business models issues for these applications, covering structural aspects which can be translated to favorable innovation enablers.

Pressuring business models' conceptions and, this way, impacting the strategic context for project management, entrepreneurial familiar structures were studied by author Fillipo Ferrari in chapter Six. As a cultural, traditional force in various economies, family-based organizations offer good political, social and economic contexts for project initiatives, although imposing external relationships, behaviors and tacit methods which result in a balance that must be precisely understood for future projects.

Chapter Seven enlightens an interesting study regarding law organizations services and, essentially, projects. As an interesting, globalized context, law firms have to address peculiarities approached by authors José Márcio Diniz Filho and Valéria Rocha da Costa, attempting to implement innovative project management techniques in order to become recognized by customers as competitive and addressing also ethical regulatory aspects.

Authors Jorge Magalhães, Juliana Satie, Adelaide Antunes, Elizabeth Macedo and Zulmira Hartz evaluated, in chapter Eight, the critical project management aspect of risk analysis in this new era of emerging technologies. Observing in the sensible Pharmaceutical sector, authors developed a study case where technologies such as Big Data and Analytics were considered to process and produce from huge sets of data, generated with frequency by any customer – company interaction and their implications with project management tasks.

As an innovative and expanding approach to adopt canvas-based methodologies for project management, authors Manuel Pereira, Miguel Magalhães, Frederico D'Orey, Jorge Figueiredo, Álvaro Cairrão and Antonio Cardoso produced chapter Nine, aiming to apply those methods for a service project: Marketing plans. As a usual planning action for companies, strategic marketing and its associated unfolding are now considered one of the most challenging and pressured tasks, becoming a source of efficient market response, as analyzed in this teamwork chapter.

In an interesting approach, Sérgio Maravilhas Lopes, one of this book editors, present the context of patent and licensing processes information to leverage project management in chapter Ten. As a complex and globalized arena, patent and licensing are strategic for national systems, organizations and,

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obviously, for customers. In this chapter, the author addresses perspectives which help to understand possibilities presented by information management in this context, allowing a perspective of sustainable innovation process.

In chapter Eleven, authors Pedro Anunciação and Nuno Geada present a reflection encompassing powerful conceptual contexts: Information Systems, Project management, Change management and the methodology of Information Technology Infrastructure Library (ITIL). An observation is conducted on how ITIL principles are applied for change management projects that will allow, at last, one organization to better manage its data and information. This chapter introduced, this way, a new perspective for better comprehension, over the relationship between information and project management, as projects demand information, but also contribute for huge information production.

In an additional view on how information management relates to environmental conditions which will favor project management, authors Morjane Miranda, Sérgio Maravilhas Lopes, Ernani dos Santos, Antonio Júnior, Daniela Silva and Platini Fonseca, analyzed the specific phenomena of University – Enterprise interaction, one of the most potential and not precisely addressed contexts for information management, which implicate in better conditions for knowledge production and strategic innovation management. This is for chapter Twelve, which closes the Second Section of our book.

Section III, which aims mainly study and practical cases regarding new technologies applied to project management in modern context, starts with the research produced, in chapter Thirteen, by authors Rabia Durrani and Zainab Durrani, evaluating how inter-project information can benefit the overall project management. Authors opportunely analyzed this fact in a context of startups incubation program, reaching specifically software project management. Information interchange among projects is an opportune context to apply technology, which can, at last, effectively implement propositions of project programs and portfolio management, presented by professional institutions and academic researchers of project management for several years.

The role of competitive intelligence process, as a data, information and knowledge sources which can build up a structure for innovative project management was assessed by authors Maria José Sousa and António Pesqueira in chapter Fourteen. As an applied study case, authors reached the pharmaceutical sector, where those strategic processes have been practiced for decades, showing aspects of complexity related to competitive systems, external factors which will impact project propositions.

As a powerful set of tools and associated methods, Business Intelligence resources emerged in markets some decades ago. But, as a shared concept, sometimes, it is precariously identified and adopted, leading to errors when consolidating information and knowledge for decision-making. As a valuable source for innovation, BI elements and its strategic alternatives for decision-making were addressed by Josenildo Almeida, Manuel Barros and Sérgio Maravilhas Lopes in chapter Fifteen, updating this essential discussion and exploring an event – one emerging technology unbalanced adoption – that can happen again nowadays.

Approaching technology tools, methods and trends, it is undeniable to understand the power of social media contexts for actual projects and overall strategic initiatives. This phenomenon was studied by authors Cíntia Medeiros, Vanessa Rodriguez, Manuel Barros and Sérgio Maravilhas Lopes in chapter Sixteen, when they observed a traditional process in organizational communication and how social media implementations, such as instant messaging, is being increasingly adopted, producing impacts on a well-established conceptual methodology.

In chapter Seventeen, Sérgio Maravilhas Lopes brings back the observation of huge datasets regarding patent information for external environment strategic analysis, based on information management prin-

ciples, analyzing how a theoretical model, which encompasses also social media resources, was applied to design a project for an information system dedicated to allow information dissemination. Interestingly, for the book purposes, this chapter approached technological resources, information management, strategic perspectives and two sides of project management – as a guidance for technological (information system) project and when project management is based on innovative technology.

Chapter Eighteen presents a peculiar project regarding technology over a classical resource – radio – shared through Internet, as a new powerful, global communication alternative. Reflections on how content, schedule and infrastructure are renewed under emergence of new technologies were approached by Kien Truong Tri, about Vietnamese radio stations. This chapter also brings some recommendations for managers, as to guide their communication projects in this new technological paradigm.

Projects to implement strategic to tactical planning remain a demanding challenge for organizations. Considering the important and competitive sector of Logistics and its associated project management demands, authors Eduardo Perez, Jet Castilla and Hernán Rosario evaluated, in chapter Nineteen, cocoa logistics chain in Peru, a newborn economic trend, which requires updated fashion of project management principles to be applied to expand its services as demanded, including the emerging Blockchain-supported mechanisms. As another source of competitiveness experience, as an external factor for strategic planning, this chapter also illustrates how technology and related methods must be applied to define overall management conditions, becoming a source for potential results.

Finally, in chapter Twenty, Agile project management, as a continuously evolving scenario, a fundamental background to offer a competitive alternative for strategic project responses, is studied by authors Rachel Ralph and Patrick Pennefather. Agile trends and efforts are present in the market for several years, demanding studies for their application definition for nowadays complex projects. In this study, from a comparative paradigm, authors contribute on analyzing how agile prospects are being applied for modern competitiveness, using retrospective tools. As a challenge, this tactic must be analyzed comparatively to initial affirmations by agility professionals and institutions.

As a final word, we witnessed how project management evolved in the recent years. Maybe, after being a leading topic for organizations, now this discipline is facing a demand of updating and review fundamentals, due to technological phenomena, posed not only by information and communication applications frequently put available by commercial players. Not only these components, but also their application methods and defined processes must also be rethought, assuring a continuous evolution for this important field.

Our book project, a though one itself, aimed to contribute with this important discussion, publishing studies of academic, researching, consulting and commercial practitioners around project management actual challenges and propositions. From one country to another, one perspective to real implementations, one possibility to challenges, these is our effort to keep the discussion alive and produce new horizons for project management with the strong support of emerging technologies.

Good project initiatives! Good reading!

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