

Preface

It was another glad event, in my relationship with IGI Global, when the invitation came to edit this work, *Handbook of Research on Expanding Business Opportunities With Information Systems and Analytics*. The proposed challenge took us to the approach of several already published papers and chapters, welcoming some new works, promoting a better understanding of new technologies fronts, presented by the “analytics” strong trend on automated data collection to produce information and knowledge and their integration with the classical conceptual context of information systems.

Generally, it was understood that this new age of data collection will affect all aspects of businesses, improving and bringing complexity to management. Also, the demand for integration of all resources, managerial principles, processes and people development fit in the theoretical base of information system, a classical, traditional background that was invoked frequently by different scientific fields, as Economy, Management, Production Engineering, Computing Science, Information Science and Technology, among many others, to improve the contextual and complete, integrated studies. As those research fronts were confronted and, eventually, put together to become an analytical prism, this book could receive contributions of researchers from different fields, producing a multidisciplinary content, highly desirable to interpret new waves of technology and management, as those we now face.

This result in a high expectation for contributions of the chapters here presented, when some of older studies were improved, updated – not excluding the old ones, that was an editorial directive – and new ones were added, resulting in a literature that can advance overall comprehension on information and knowledge management. From traditional sectors to new startups arrangement, from classical levels of technological resources, to modern internet-of-the-things components and integration, passing through big data trends, analytics and information systems are two strong concepts which must be addressed carefully, to result in potential competitive advantage offer and managerial knowledge generation. This, among other trends, can affect and develop new ways for decision-making and implementation soon.

In the following, the nineteen chapters of this book are presented.

In Chapter 1, George Jamil, Leandro Rocha and Cecília Carvalho approached market intelligence, developing former studies they already published and practiced for competitive, market sectors. Market intelligence presents itself as a powerful cyclic process for commercial industries, also becoming a process to integrate data and information, spread in market arrangements and sectors, to produce consistent knowledge for decision-making in strategic marketing planning effort. As a robust process for knowledge generation, market intelligence is related to information system concept and its related developments and observed together with analytics, composing an interesting conceptual background which advanced from the previous studies, an evolution for this important and applicable technology-drive process.

Preface

Jorge Magalhães, Marlene Menezes, Zulmira Hart and Adelaide Antunes discussed, in Chapter 2, the relationship of information system conceptualization for healthcare sector. This is strong trend for several years, as this is an undisputable critical sector which presents a constant evolution, based on technology, process management, specialization, continuous development and facing strong challenges, as commercial and regulatory issues. In this study, authors evaluated the modernization of managerial techniques, introducing a new policy as a methodological aspect, improving a previous study, also amplifying the outcomes concerning sectorial capabilities on producing knowledge for strategic decision-making in the new era, facing those growing challenges.

An important area of study which has becoming progressive more impacted by the adoption of new technologies is Project Management. A project, with classical concepts and managerial aspects, is continuously being classified, promoted, integrated, executed and kept with growing usage and adoption of big data, analytics, IoT, among other emerging technologies. George Jamil and Luiz Fernando Magalhães, in Chapter 3, promoted an opportune update in a previous study around these issues, integrating it from knowledge management point of view, adopting information system approach. The association of these conceptual arenas – project management, technology, information system, data science and analysis – results in a powerful and detailed method to understand precisely how projects can be better understood and produced soon, being this chapter a contribution to develop this comprehension.

Eric Costa, Antonio Soares and Jorge Pinho de Sousa, researchers associated with InescTec of Portugal, produced a remarkable view for digital economy in Chapter 4, analyzing the introduction of international business association (IBA) theoretical conceptualization, aiming to understand disruptive events and their associated implications. As a result of a field research held in Portuguese, French and British organizations, this study presents how digital platforms, a context where information is produced and managed dynamically, can promote better conditions for internationalization of small and medium enterprises (SMEs). Another production of this study is a method to evaluate how these platforms can be designed in the future, allowing application of its results by analysts and developers.

In Chapter 5, José Rascão approached one of the richest contexts for applied information management research: marketing planning. Observing the customer satisfaction factor, the author proposed information marketing context for an observation arena, aiming to understand the contours of information management application for marketing decisions, implicating also in assessing of communication, commercialization and overall value positioning and offer through information systems at times of emerging technologies and methods. It is important to develop, as another important result of his reflections, the comprehension on information as a valuable product, both for organizations and for final customers.

As for decision-making processes, Sérgio Lopes, Sérgio Oliveira and Paulo Melo studied, in Chapter 6, how information management can promote a better way of scenarios choosing, approaching a competitive regulatory aspect: patent and licensing systems. As analytics and other emerging technologic resources can be applied, a better condition to promote a precise, efficient and qualitative mechanism can be reached, allowing to analyze the immense content of patents to identify potential industrial standards. This chapter develops a contextual analysis of actual literature, with implications for improved methodologies in adoption by international intellectual property offices and managers.

As discussed in other chapters of this book, healthcare sector became a dramatic scenario for emerging technologies adoption. As this organizational arrangement aims to improve our quality of life and, essentially, our living, technologies and the associated managerial implications must be applied to answer regulation, demand for new medical and related interventions, knowledge development for strategic management, among several other perspectives. Liliane Jamil, Augusto Vieira and Antonio

Xavier offered a study where reflections produced in a previous analysis are updated, taking analytics and the information system context in addition, to evaluate how information management can benefit healthcare business and research in the future. In Chapter 7, authors aimed to develop these thoughts, allowing to compose a base where this discussion can be further researched and practiced in various fields of healthcare services.

Chapter 8, produced by Brenner Lopes and Luander Falcão, assessed the need of a methodology to support public policy planners, to promote strategic investments to foster innovative entrepreneurial arrangements. This study proposes a set of indicators, associated with a collection and analysis process, oriented to produce results that will help evaluate competitive contexts, basic infrastructural issues, capabilities, competences and demands, from primary and secondary sources of information. This way, it gathers innovation, innovation management, information and knowledge composition and its consolidation for practical, public strategic decision-making criterion. At the end, some practical cases are worked, illustrating how this method can be efficiently applied.

Internet of things can become an important data collection and production supporting technology, innovating to bring automation and integrative approach, dynamically configuring networks and objects autonomous connections. To discuss better the introduction of this already successful technology, Cláudio Pessoa, Cássio Bastista and Marco Elísio Marques wrote Chapter 9. Producing a basic conceptual review, a discussion about market perspectives and their overall integration to other systems, from isolated devices to be applied to our routine living actions, ranging to sophisticated cloud supporting connections, this chapter contributes on leveling the knowledge about IoT fundamentals and promotion of a platform for new studies.

Dhouha Jaziri presents a potential association of knowledge management theories with the emerging scenario of data science, emerging technologies, analytics and organizational arrangements, proposed by the book project definition. The author, in Chapter 10, approaches marketing theories, from the customer point of view, who is taken as an active, systemic agent in interactions with value offer positioning by strategic and competitive market players. In her new study, professor Dhouha emphasizes the relationship of customers experiences regarding value offers when producing a set of organizational competencies, relating this continuum to knowledge generation, potentially emerging from new technological scenario.

Researchers Sérgio Lopes, Sérgio Oliveira and Paulo Melo wrote Chapter 11 to contribute about information strategy, as the overall and essential planning abilities to understand and project a set of future actions regarding information management in modern organizations. Authors approached the relevant context of social media usage for business in the digital era with the innovative promising support of emerging technologies. After a contributive association on theoretical fundamentals, which produces a fair base to promote new studies, they also presented a good approach regarding a practical case of a Portuguese company.

In Chapter 12, authors Pedro Anunciação and Antonio Peñalver analyzed the context of organizational intelligence. This remarkable association with a wide and prospective contextual background, announced by intelligence concept, helps define precisely this concept, around some of its practical observations, like competitive intelligence. This presentation of OI relates also to several other conceptual contexts, such as information systems and information architecture, producing a consistent base for conceptual definition, done in the perspectives of technological waves as those studied for the book proposition.

Information science is considered as an active background to observe and produce comprehension around information management phenomena. This lemma is the base of Chapter 13, where authors Jorge Magalhães, Flávia Mendes, Adelaide Antunes and Zulmira Hartz observed the potential of information

Preface

science methodological analysis on an interesting and peculiar organizational case: the proposition of new criterion to select and classify patents from huge public knowledge bases, allowing their application for decision-making in the organizational context where huge industrial complexes compete for healthcare markets and knowledge-propelled profits.

An innovative proposition to comprehend the immense context of information systems, when applied to practical decision situations, is addressed by Pedro Anunciação, Francisco Esteves and Fernando Gonçalves in Chapter 14. In an interesting study, these authors relate the business observation of information systems to organizational urbanism, proposing it as the way of analyzing the integration of information management to all areas of one organization. This conceptual background is developed taking four main axial aspects of study – business performance, information management, systems architecture and information technology positioning – building an interesting and powerful alternative to improve understandings of information science and its methods when comprehending how information can be generated, collected, produced, stored and delivered to main users in a value chain.

In Chapter 15, Sérgio Lopes and Joberto Martins evaluated the rich contemporary arena of cooperative spaces of ideation, regarding innovation production around new projects. Associating the aspects of DIY (do it yourself) to DIWO (do it with others), authors proposed an integrated overview of one evolutionary path towards collaborative project management based on new technologies, information and knowledge management. It is another interesting approach, presented in this book, that observes how innovation concept can be detailed, improved and developed when related to emerging technologies introduction in organizational competitive arrangements.

Chapter 16, authored by George Jamil, reviews the concept of information quality, both as a static pre-definition, to be attributed to informational application of a content, and a dynamic process which will define perspectives for optimal information usage in any organizational process. This chapter also observes how information technology and other emerging trends can potentialize new systems and value offers based on information services and production, which, eventually, can result in quality loss, posing difficulties and disappointments for the applied information management principles. As this last process implies in better technological specifications and adoption, quality becomes a critical issue, deserving the observation and study presented by the author.

Information applied to decision-making is one of the main scenarios intended for the book project development. Investment plans, because of information availability, became a complex decision context, illustrated by Brenner Lopes and Luander Falcão in Chapter 17. Authors analyze a potential method to promote understanding, through information system and management in the state of Minas Gerais, in Brazil. Their approach encompasses one sectorial approach regarding optimal supply chain management in this competitive area of Brazilian territory, serviced for many different players, connecting industrial and service facilities and attractive markets. Information management perspectives are directly related to perspectives of strategic decision-making in a demanding context.

Chapter 18, written by Vishal Mahajan, Renuka Mahajan and Richa Misra, studied how analytics tools and methods are applied in the Indian telecommunications market to prevent customer churn. Telecom industry became a tough competitive market, facing all threats of competition, approached by strategy and marketing authors for several years – as “war on prices”, customer volatility, increasing of customer bargain power – among several others. The application of new, emerging technologies, as analyzed and presented by these authors, relate the new resources, all of them applied to emerging informational trends, to produce advantage in a traditional, competitive sector.

Finally, Chapter 19, proposed and authored by Fábio Gonçalves, Maria Manuela Pinto and Alexandra Xavier, observed how information management can benefit knowledge transferring aspects, from universities to markets, specifically studying the Portuguese business environment. With experience in sponsoring programs and researches regarding innovative industries, startups arrangements and promotion and new technologies application for business, authors analyzed the perspective of comprehension models – as the Quadripolar method – to understand how information can help optimally accomplish this relationship on knowledge transfer, critical for economic systems.

This book enabled us to witness a special moment when emerging technologies start to be intensively applied in business contexts, for decisions that encompass simple, operational, daily tasks, to critical, complex and rare strategic alternatives. During this project, the continuous interaction with authors, themes, topics and several questions that emerge from this fascinating and turbulent context of new technologies and its associated methods, processes and tools, it was possible to observe and understand the complexity around the attractive and risky implementation of new ideas.

Will this new wave of resources result in competitive advantage for the pioneers? Will it be worthy, when observing the huge investments not only for technology adoption, but also with its related supporting structure – personnel, organizational structures, market definitions, and many others? Will information management remain ethical, effectively contributing for humanitarian quality of life promotion, or will it produce a new wave of untreated unemployment, with many undesirable, complex and socially risky factors? Is there any identifiable kind of methodological base to be applied in the adoption of these new technologies? Will the useful, actual and well-constructed set of principles of information system management for organizations be comprehended to allow controlled, planned and qualified plans for emerging alternatives adoptions?

These questions and many others follow the apparent excitation related to analytics, big data, internet of things and other information and knowledge management tools these days. This book intends to promote the questions, scientifically raise precise doubts and initially propose a path for some answers.

Good reading!

George Leal Jamil

Informações em Rede Consultoria e Treinamento Ltda., Brazil