Preface

ABOUT THE SUBJECT

"*An enterprise system has the Herculean task of seamlessly supporting and integrating a full range of business processes by uniting functional islands and making their data visible across the organization in real time.*"[1]

For the last decades, it is being recognized that that enterprise computer-based solutions no longer consist of isolated or dispersedly developed and implemented MRP (Material Requirements Planning) and MRP II solutions, CRM (Customer Relationship Management) solutions, electronic commerce solutions, ERP (Enterprise Resources Planning) solutions and other, transposing the functional/technological islands to the so-called 'islands of information'. Solutions must be integrated, built on a single system, supported by a common information infrastructure central to the organization, ensuring that information can be shared across all functional levels and management, so that users can see data entered anywhere in the system in real-time and, simultaneously, seamlessly allow the integration and coordination of most (if not all) the enterprise business processes.

The topic of Enterprise Information Systems (EIS) is gaining an increasingly relevant strategic impact on global business and the world economy, and organizations are undergoing hard investments (in cost and effort) in search of the rewarding benefits of efficiency and effectiveness that this range of solutions promise. But, as we all know, this is not an easy task! It is not only a matter of financial investment! It is much more, as this book shows. EIS are at same time responsible by tremendous gains in some companies and tremendous losses in others. So, their adoption should be carefully planned and managed.

Responsiveness, flexibility, agility and business alignment are requirements of competitiveness that enterprises search for. And we hope that the models, solutions, tools and case studies presented and discussed in this book can contribute to highlight new ways to identify opportunities and overtake trends and challenges of EIS selection, adoption and exploitation.

ORGANIZATION OF THE BOOK

This book integrates the enhanced versions of 31 papers selected from the international conference CENTERIS – Conference on ENTERprise Information Systems held in Ofir, Portugal in October 2009. These selected contributions discuss the main issues, challenges, opportunities and developments related with Enterprise Information Systems from the social, managerial and organizational perspectives, in a very comprehensive way, and contribute to the dissemination of current achievements and practical solutions and applications in the field.

These 31 chapters are written by a group of 80 authors that includes many internationally renowned and experienced authors in the EIS field and a set of younger authors, showing a promising potential for research and development. Contributions came from USA, Canada, Latin America, several countries of Eastern and Western Europe, Africa and Asia. At the same time, the book integrates contributions from academe, research institutions and industry, representing a good and comprehensive representation of the state-of-the-art approaches and developments that address the several dimensions of this fast evolutionary thematic.

"*Enterprise Information Systems Design, Implementation and Management: Organizational Applications*" is organized in eight sections:

- "Section 1: Information Systems Architectures," includes three chapters that focus on IS/IT architectures aiming at its alignment with business regarding management support and increased competitiveness.
- "Section 2: Business Process Modelling" includes four chapters devoted to enterprise/business modeling and supporting representation methodologies and technologies.
- "Section 3: Organizational Knowledge" discusses the management and exploitation of organizational knowledge regarding the needs of business decision-making support.
- "Section 4: EIS Design, Application, Implementation and Impact" address the tremendous challenge associated to the design and implementation of Enterprise Information Systems in organizations.
- "Section 5: EIS Adoption" is concerned with studying and measuring the utilization, impact, and difficulties associated with Enterprise Information Systems adoption.
- "Section 6: EIS Social Aspects" addresses the social and professional side of EIS in EIS adoption.
- "Section 7: IT / IS Management" address the topic of information systems and information technology 8 and management methodologies and tools.
- Finally, "Section 8: Collaborative, Networked and Virtual Organizations," presents collaboration tools and environments regarding the exploitation of the concept of distributed, virtual and collaborative organizational models.

The three chapters of Section 1, "*Information Systems Architectures*," focus on IS/IT architectures aiming at its alignment to business regarding management support and increased competitiveness.

Nowadays, it becomes more and more critical and essential for the vendors in the business-related markets to tailor their products and software to meet the needs of the Small and Medium Businesses (SMB) since their market share has been enormously raised and the issues related to the Business-to-Business (B2B) environment are becoming great challenges to be considered. The semantic Service-Oriented Architecture (SOA)-based model involves Semantic Web Services to be applied in business environments in order to have a consistent framework that makes the data understandable for both humans and machines. The ultimate goal of the model proposed by Mahmoud and Marx Gómez in the first chapter, "*Applying Semantic SOA-Based Model to Business Applications,"* is to transfer the enterprise Web into a medium through which data and applications can be automatically understood and processed. The main components of the proposed model and the vision of applying it to one of the business solutions area illustrated in order to show how these components can work together to overcome the traditional SOA-based solutions weakness.

In the second chapter, "*How to use Information Tecnology Effectively to Achieve Business Objectives,"* Gonçalves, N. Serra, J. Serra and Sousa demonstrate, by using a case study, how it is possible to achieve the alignment between business and Information Technology (IT). They describe several phases of project development, from planning strategy, enterprise architecture, development of businesses supporting tools and keeping dynamic alignment between the business and the IT. The authors also propose a framework, framed under an enterprise architecture that guarantees a high level of response to the applications development or configuration as improves its alignment to business by solving some limitations of traditional software development solutions namely: difficulty in gathering clients requirements, which should be supported by the applications; difficulty to connect the organization processes used to answer the client, which must also be integrated in the applications and the difficulty to develop the applications that can follow the business cycle. To test the approach, this was applied to a real case study consisting in the configuration of an application that manages the relationship with the clients.

In the third chapter , "G*overnance and Management of Information Technology: Decomposing the Enterprise in Modular Building Blocks Based on Enterprise Architecture and Business Oriented Services*," Molinaro, Carneiro Ramos, Abdalla Jr., Silva, Deus & Neto present a proposal for a model that supports organizational governance through the alignment of business with Information Technology - IT. Firstly, it was observed that there are some paradigms which limit the use of enterprise architectures and hinder governance functions. Secondly, it focuses on the IT unit, where IT systems and subsystems are interrelated and the performance levels of the organization are aggregated, creating a macro-structure system capable of supporting corporate governance and IT. Finally, the IBM`s Component Business Model - CBM® was applied to represent relationships of IT unit with the organization, through decomposing the organization into business components that supply and demand services to facilitate their governance and management.

The second section, "*Business Process Modelling*" includes four chapters devoted to enterprise / business modeling and supporting representation methodologies and technologies.

Ontologies, being "an explicit specification of a conceptualization," have tried to capture knowledge within the aspects of concepts (used to represent a domain entity), relations (representing a interaction between the domain concepts), functions (a special case of relations), axioms (which represent true statements) and instances (used to represent domain elements). The Enterprise Ontology can be seen as a collection of terms and definitions relevant to business enterprises that can be used as a basis for decision making. In the fourth chapter, "*Ontology construction: representing Dietz "Process" and "State" models using BPMN diagrams*," Páscoa, Sousa and Tribolet present a new concept of Enterprise Ontology, proposed by Dietz, and defined as the realization and implementation essence of an enterprise proposing a distinction world ontology and system ontology. The traditional way to model processes, like the BPMN, draw events, activities and data in a sequence of symbols that may not represent completely all the actions in presence and, above all, does not detect and identify consistency between actors and actions. However, BPMN diagrams can also be used to represent various actions and models proposed by Dietz as the transaction, "Process" and "State" diagrams. Both ways of representing have advantages and disadvantages and can be used, either isolated or together to give a deep representation of reality.

In Chapter 5 "*Security Management Services Based on Authentication Roaming between Different Certificate Authorities*," Ohashi and Hori propose to incorporate the authentication roaming technology with existing social infrastructures from the perspective of users instead of that of service providers. By conducting experiments in the Business to Consumer (B to C) environment, the authors' research demonstrated and confirmed the effectiveness of the authentication roaming technology to realize a safe

and convenient network society. This technology contributes to the construction of a citizen-centric, reassuring system especially for mobile and transportation by proposing a cooperation system for the mobile information services based on the XML Web Services technology. The aim is to enable mobile users to access a variety of essential information for maintaining safety and comfortable management of networks and enable them to make an educated decision regarding the treatment they may receive in case of trouble.

In Chapter 6, "*Perceived Moderating Ability of Relational Interaction versus Reciprocal Investments in Pursuing Exploitation versus Exploration in RFID Supply Chains*," Rebecca Angeles looks at the perceived ability of two variables, reciprocal investments and relational interaction, to moderate the relationship between the independent variables, components of IT infrastructure integration and supply chain process integration, and two dependent radio frequency identification (RFID) system variables, exploitation and exploration. Using the moderated regression procedure, the study presented seeks to test the ability of both reciprocal investments and relational interaction to moderate the relationship between the independent and dependent variables using data gathered from 87 firms using an online survey. Results show that relational interaction is an effective moderator between the dependent variable, exploitation, and the following independent variables: data consistency, cross-functional application integration, financial flow integration, physical flow integration, and information flow integration. Neither reciprocal investments nor relational interaction effectively moderated the independent variables, IT infrastructure integration and supply chain process integration and the other dependent variable, exploration.

In the current context of globalization and with the increasing need to automate the work, modeling business processes has become essential. Modeling helps not only to understand processes but also to anticipate changes and build a flexible structure. In Chapter 7, "*A Method for Business Process Reverse-Engineering Based on a Multi-view Metamodel*," Cheikh, Front and Rieu adopt from software engineering the concept of reverse-engineering. For organizations with unmodeled BP, reverse-engineering is a way to provide process models ready for improvement or usage in other stages of the business process lifecycle. This chapter proposes a method for business process reverse-engineering fulfilling these requirements. It consists of a multi-view metamodel, covering all perspectives of a process, and a detailed approach to guide the business process modeler. The approach was tested on a web application from the French academic Information Systems.

The five chapters of Section 3, "*Organizational Knowledge*" are concerned with managing and exploiting organizational knowledge regarding the needs to support business decision-making.

Paulo Garrido, in "*Conversation-Oriented Decision Support Systems for Organizations*," proposes concepts for designing and developing decision support systems that acknowledge, explore and exploit the fact that conversations among people are the top-level "supporting device" for decision-making. The goal is to design systems that support, configure and induce increasingly effective and efficient decision-making conversations. The proposal sees the sum total of decisions being taken in an organization as the global decision process of the organization. The global decision process of the organization is structured in decision processes corresponding to organizational domains. Each organizational domain has associated a unit decision process. If the organizational domain contains organizational sub-domains, then its compound decision process is the union and composition of its unit decision process and the unit decision processes of its sub-domains. The proposal can be seen as extending, enlarging and integrating group decision support systems into an organization-wide system. The resulting organizational decision support system, by its conversational nature, may become the kernel decision support system of

an organization or enterprise. In this way, the global decision process of the organization may be made explicit and monitored.

In Chapter 9, "*Representing organizational conservation of information: A Review of Telemedicine and e-Health in Georgia*," Stachura, Astapova, Wood, Tung, Sofge, Grayson, Lawless and Angjellari-Dajci review a model of the conservation of information (COI) applied to organizations. Following this review, the chapter includes a brief review of the mathematics in support of this model and its implications for the development of theory. Then the model is applyed to a review of the status of telemedicine and e-health in Georgia, which the authors had begun to study last year. After the reviews, they discuss future steps and draw conclusions about the model and its benefit to organizational attention and decision-making.

A firm's capability to transfer its existing knowledge to various stakeholders and translate knowledge into action determines its success in today's volatile global business environment. However, while many firms systematically manage data and information, managing knowledge remains a controversial issue. One of the reasons for this is inconclusiveness about what knowledge is and whether it can be managed. In order to more precisely define knowledge and its management, the author proposes a knowledge warehouse conceptual model (KW-CM) for practically and systematically assimilating of knowledge within organizational business processes. This conceptual model presented in Chapter 10, "*A Conceptual Model of a Knowledge Warehouse*" by Levy integrates aspects of knowledge that encompass business processes, stakeholders and other organizational information systems within the existing data warehouse (DW) conceptual model. In addition, the chapter presents a formal architecture, definitions and guidelines that describe the KW components and processes for leveraging data and information into knowledge. The proposed KW-CM is demonstrated with an example of a DW which handles information regarding customer product usage.

Over the years many organizations have invested in Business Intelligence (BI) systems. While BI-software enables organization-wide decision support, problems are encountered in the "fit" between systems' provision and changing requirements of a growing amount of BI (end-) users. In Chapter 11, "*BI-FIT: Aligning Business Intelligence end-users, tasks and technologies*" Tijsen, Spruit, van de Ridder and van Raaij aim at investigating the factors that influence the "fit" between Business Intelligence (BI) end-users, tasks and technologies (BI-FIT). Based on an extensive literature study on the elements of BI-FIT, in this research the BI-FIT Framework is developed that shows the most relevant factors and the interrelationships between BI end-users, tasks and technologies. The framework can be used to help organizations to identify and fulfill the needs of BI end-users, thereby improving adoption and increasing satisfaction of the BI end-user base.

Chapter 12, "*Information Management Process in Continuous Improvement Area at Worldwide Steel Company*," by Alves and Neves, presents specific features concerning information management in the Continuous Improvement area of the Americas Long Carbon sector in ArcelorMittal. The aim is also to learn what the informational resources related to continuous improvement area are and describe how the process of managing information actually happens. The study was based on theoretical models of Davenport (1998) and Choo (2006) and tried to understand how the efficient management of information can aid in decision making at organizations. The result of the documentary research revealed the existence of initiatives throughout the different units in the Americas and also revealed corporate tools for information management. The field research results indicate the need for a structured and formalized model of information management that responds to users in adequate time, while alert to the need for policies that encourage the sharing of information related to the improvement of processes, products and services.

The five chapters of Section 4 "*EIS Design, Application, Implementation and Impact*" address the tremendous challenge associated to the design and implementation of Enterprise Information Systems in organizations.

The new market trends are forcing companies to constantly reorganize their business processes so that they can react quickly to the new economic challenges. Although not always, enterprise information systems provide an appropriate response to these situations due to several reasons, such as technology failure, lack of adaptable configuration tools or even the financial investment required, which makes it unaffordable to companies. Almeida and Azevedo, in Chapter 13, "*The Needed Adaptability for ERP Systems*" present a functional model for ERP systems (called FME) that would guarantee a baseline structure to build solutions which would provide a complete configuration and, therefore, a timely reaction to market fluctuations. This model also summarizes some of the most used functionalities of the available ERP systems

Quality is, in real-life, a multidimensional notion. A schedule is described and valued on the basis of a number of criteria, for example: makespan, work-in-process inventories, idle times, observance of due dates, etc. An appropriate schedule cannot be obtained unless one observes the whole set of important criteria. The multidimensional nature of the scheduling problems leads us to the area of Multicriteria Optmization. Thus considering combinatorial problems with more than one criterion is more relevant in the context of real-life scheduling problems. Research in this important field has been scarce when compared to research in single-criterion scheduling. The proliferation of metaheuristic techniques has encouraged researchers to apply them to combinatorial optimization problems. Chapter 14, "*Multicriteria Flow-Shop Scheduling Problem*" by Mokotoff, presents a review regarding multicriteria flow-shop scheduling problem, focusing on Multi-Objective Combinatorial Optimization theory, including recent developments considering more than one optimization criterion, followed by a summary discussion on research directions.

Research about ERP post-implementation and ERP assimilation is very limited. Similarly, scant research investigated ERP experiences in developing countries. Based on a qualitative research methodology grounded in the diffusion of innovations theory, the study presented by Kouki, Pellerin and Poulin in Chapter 15, "*Beyond ERP Implementation: an Integrative Framework for Higher Success*" aims at investigating the determining contextual factors for ERP assimilation. A cross-case study analysis of four firms in a developed and a developing country suggests that in both contexts, the primary factor for encouraging a successful ERP assimilation is top management support. Other factors such as post-implementation training and education, IT support, organizational culture, managers and users involvement, strategic alignment, external pressures and consultant effectiveness are also identified as factors that influence ERP assimilation. Several assimilation impediments that should be watched are also specified.

A large number of firms worldwide have made major investments in the application of ERP systems to modify their business model and be able to offer better processes. When firms implement ERP systems they try to integrate and optimize their processes in what they consider their key areas. In Chapter 16, "*An Exploratory Analysis for ERPs Value Creation*," C. de Pablos and M. de Pablos offer a view centred on the main reasons why Spanish firms have implemented ERP systems in the last ten years and what have been their main critical success factors and their main failure factors too. For that, the authors apply a model based in 5 main groups of variables. Firms were inquired about their perceptions and final results provided by the variables affecting their change processes in the ERP implementation.

Enterprise systems are becoming more important as they support the efficiency and effectiveness of operations and reduce cost. In Chapter 17, "*Production Information Systems Usability in Jordan*," Abu-Shanab and Al-Tarawneh explore the literature related to production information systems (PIS), enterprise systems, and other applications and their influence in an industrial zone in Jordan. Constructs from the Innovation Diffusion Theory were used, where results indicated that the adoption rate is acceptable and all variables have high means with respect to their evaluation by managers, but only two variable significantly predicted intention to use. In a second study that explored the status of IT usage in manufacturing firms using a different sample, results indicated that accounting information systems were widely used and distribution systems and manufacturing aiding systems were the least used.

Section 5, "*EIS Adoption*" is concerned with studying and measuring the utilization, impact, and difficulties associated with Enterprise Information Systems adoption, along its four chapters.

As the deployment of ERP systems within enterprises is increasing, it is of extreme interest to measure the degree of utilization of ERP systems. One reason for this interest is that no benefits are realized if the systems are not used; since ERPs are massive investments, they need to show benefits, or at least be able to measure the benefits. However, to be able to do so, there is a need to explain ERP systems utilization and the factors that influence ERP utilization. Jonas and Björn in "*Measuring Utilization of ERP Systems Usage in SMEs*" provide an explanation of factors influencing ERP systems utilization by testing a research model building on four dimensions: volume, breadth, diversity, and depth. The contributions of the research are: First, it provides support for the notion of diffusion found in the theory of network externalities where a critical mass is necessary to achieve benefits. This can be used to better understand failures in ERP projects. Second, the use of volume, breadth and depth provide insights for use as a construct and the need to treat it more rigorously. Third, the study contributes to our understanding of the many aspects of use of IT, such as ERPs, and potentially contributes to value and firm performance from ERP utilization.

There has been an increasing interest in ERP systems in both research and practice in the last decade. But unfortunately in many occasions a lot of companies have stopped using these systems after they went-live with the implementation. Chapter 19, "*Factors Influencing Users' Intention to Continue Using ERP Systems*" by Elragal and Birry is an attempt to reveal the factors influencing users' intention to continue using the ERP system. A survey was sent to respondent gaining a number of 223 responses. A hypothesized model was developed based on three theories; TAM, ECT, and TPB. The model was tested using regression analysis of the collected responses. Results showed that users' intension to continue using the ERP systems are affected by: perceived usefulness, satisfaction, subjective norm, and perceived behavior control. Meanwhile, perceived usefulness is affected by confirmation and subjective norm while satisfaction is affected by perceived usefulness and confirmation.

Chapter 20 "*ERP System Selection Criteria: The Case of Companies in Slovenia*" by Pucihar, Lenart and Sudzina, propose a possible model of criteria for ERP system selection. The proposed model consists of four groups of ERP system selection criteria: the ERP systems benefits criteria, the system quality criteria, the vendor related criteria and the ERP system package criteria. The data were collected in companies in Slovenia. Research results have confirmed internal consistency of ERP selection criteria in each group. For each criterion the importance is evaluated by small, medium-sized and large companies. Beside that also company size, implemented information strategy, representation of the IT department on the board level in the company and turnover impact on importance of each criterion is evaluated and presented. The model presented in this chapter could be useful for ERP system providers to better understand companies' needs and to provide systems tailored for individual needs of the company. The

model could also be useful for companies considering ERP system implementation to avoid high costs of failed implementations.

Nowadays, the WWW is playing a vital role in the business world. Most enterprises are becoming digital. Content management systems provide an effective method to improve the development of web applications and make the maintainer's job easier. The purpose of Chapter 21, "*INOVA Framework: A Case Study of the use of Web Technologies for the Integration of Consulting Techniques and Procedures*," by Borrajo Enríquez, Saco, Cotos, Casal and Larsson is to present and discuss the benefits that the use of web technologies can represent for an SME company when they are applied to integrate their work techniques and procedures. The authors have also tried to use it to provide their customers with several services, and to make easier the company expansion process. The framework developed includes a security system for the access to the contents based on the RBAC model. The use of the INOVA framework has provided a benefit as much for INOVA itself, as for its customers, by including in a centralized way document resources and toolkits that can be accessed remotely.

The social and professional side of EIS plays a central role in EIS adoption as demonstrated in the two chapters of Section 6, "*EIS Social Aspects*".

Modern business environments require innovated business concepts. Meeting them in enterprises' functioning depends also on creation and implementation of appropriate information support. In terms of contents, information support and information must be reliable to not be misinformation; information and communication technology is not enough for it because information means impact. Potential errors on the long path from data to information must hence be prevented. A one-sided approach, which belongs to the practices of professionals as narrow specialists, can prevent errors and misinformation rarely – when rather one-sided information is enough. More complex situation and processes require a more holistic approach that, in its turn, requires interdisciplinary creative co-operation of specialists of various interdependent professions. Potocan and Mulej, in "*Crucial Consequences of Un-Holistic Business Information*," contribute to the discussion about reliability of information by thinking how can one tackle the data-to-information-to-decision process in order to diminish dangers of poor reliability of information/decision.

Google, eBay, Amazon, Facebook, Myspace, Craig's List and their foreign equivalents, such as the Chinese QQ and Baidu, for example, are ostensibly complex, and – more troublesome - their attitudes are becoming increasingly contradictory, controversial, and conflicted: For one, Tom Malone's decade-old predictions of a decentralized network of a multitude of small, cooperating firms did not materialize; to the contrary and counter to the spirit of the democratic nature of information and information technology, these e-giants are defining their own industries and defying regulation, submitting the participants in their respective markets to proprietary rules via three central tenets: regulatory capture, regulatory arbitrage, and regulatory opportunism. In Chapter 23, "*The Social Cost of Social Value Creation: An Exploratory Inquiry into the Ambivalent Nature of Complex Information Technology Intensive Firms*," Jelen and Kolakovic criticize and explore these traits of the Complex Information Technology-Intensive firms and formulate elements of a framework for their ambiguous nature that may lead to social cost exceeding their initially glorified social value creation.

The five chapters of Section 7, "*IT/IS Managemen*t" address strategies, processes and tools for information systems and information technology implementation and management.

Contact Centers have experienced exceptional growth over the past decade, and Contact Center's projects are complex because occur in a multidisciplinary area with multiple actors and constraints. Information systems play a decisive role in these projects. However, several studies indicate a low success

level of information and communications technology projects leading to research opportunities for their improvement. In their previous research, authors have identified a framework with the key factors to be considered in these projects. Due to the highly dynamic reality of the Contact Centers, the framework must evolve in order to maintain its usefulness for project managers and other center professionals. Focus groups are interactive discussion groups used for generating knowledge and hypotheses, exploring opinions, attitudes and attributes. In this way, the study presented in "*Information systems projects in contact centers*" by Rijo, Varajão and Gonçalves aims to verify, expand and actualize the existent framework, using a focus group with professionals in the area.

As World economy lingers it is increasingly more important to justify any investment so that available corporate funds are spent wisely. However, estimating the value of ITIL investments is not an easy task, which means that most CIOs do not invest in large-scale ITIL projects as much as it would be desirable. Instead, CIOs prefer to embark on quick win implementations (e.g. solely implement the incident management process). In Chapter 25, "*A Process for Estimating the Value of ITIL Implementations*," Oliveira, Furtado da Silva and Mira da Silva propose an ITIL Value Estimator. This estimator is based on an estimation process that quantifies the project's total cost, along with each process' benefits. The outcome of the ITIL Value Estimator is a Monte Carlo simulation whose result provides CIOs with a justification of the value of large-scale ITIL implementations, which can be used to gain the upper hand during the decision-making process.

Information Systems (IS) Outsourcing has emerged as a strategic option to be considered and has been increasingly adopted by managers. However, many contracts still fail during their initial years, meaning that Outsourcing has also been subject to strong criticism. There are advantages to Outsourcing but also significant risks associated to it, and the assessment of both is therefore of great relevance for informed decision-making. The objective of Chapter 26, "*Information Systems Outsourcing: Risks and Benefits for Organizations*" authored by André and Sampaio, is to determine to what extent a common view about risks and benefits associated to IS Outsourcing is shared by the Portuguese market players – Service Providers, Clients and Opinion Makers. In order to accomplish this, an on-line Delphi study was conducted, combined with the Q-sort technique, which allowed to obtain the perspective of each player on the risks and benefits IS Outsourcing. Comparing these perspectives it was possible to understand that the market players don't share the same point of view.

The main objective of Chapter 27, "*INMATE- Innovation Management Technique: An Innovation Management Tool with Emphasis on IT-Information Technology*" authored by Cavalcanti, is to present an innovative tool for innovation management with emphasis to the information technology-IT management called INMATE. In order to arrive at this tool an analysis on the current market tools was conducted. This analysis observed that none of the existent tools gives the due importance to the role of information technology-IT for the innovation process. The chapter presents a brief discussion of two of these market tools: an international, called TEMAGUIDE, and a Brazilian, called NUGIN. And then it introduces the INMATE tool with its main dimensions and gives detailed account on how the IT management is dealt inside INMATE, which is done via the concept of Enterprise Architecture, a concept from the Computing Science and Engineering. From this concept the chapter presents a methodology, in an analogy to the Structure-Conduct-Performance Paradigm (that is traditionally used on the empirical market analysis), which identifies the firm according to three linear connected approaches: its architecture, its governance, and its growth strategy.

Corporate governance is a key element today in organizations and companies. IT Governance, as a part of corporate governance, plays its role in aligning IT with the business and obtaining the maximum

value, minimizing the risks. Several frameworks and guidelines have been published in order to set the basis for this discipline. The recent release of the ISO 38500 (ISO 2008) ads an effort to standardize the different elements of IT governance. Despite these efforts, none of the different frameworks or guidelines is focused on the specific characteristics of small and medium companies (SMOs), although the authors consider that their conclusions are universal. Furthermore, there is no research so far that analyzed the status of IT governance in Spanish organizations. In Chapter 28, "*Analysis of IT Governance in Spanish Organizations*," Arroyo and Carrillo Verdún present a research to identify the state of the art of IT governance in the Spanish small and medium organizations.

Organizations no longer live inside their four walls. Section 8, "*Collaborative, Networked and Virtual Organizations*" presents collaboration tools and environments regarding the exploitation of the concept of distributed, virtual and collaborative organizational models.

Today, product development is a result of a collaborative networked design process. Taking into consideration this fact, a National Research Network for Integrated Product and Process Engineering (INPRO) has been created. George and Anca Draghici, in Chapter 29, "*Multisite PLM Platform: A Collaborative Design Environment*" present the relevant items for building a PLM multisite platform for collaborative integrated product development based on the common researches developed in the INPRO project and network. The authors discuss this approach by presenting the collaborative distributed design process, the product model and the PLM multisite platform for collaborative integrated product development. Based on these was built a collaborative multisite platform that join together the methodology, methods and tools for Product Lifecycle Management (PLM), Knowledge Management (KM) and Human Resources Management (HRU), examples of good practice. The core of the proposed approach is the product lifecycle model which is the base for the proposed collaborative product development methodology and the multisite PLM platform architecture.

In Chapter 30, "*Virtual Center for Entrepreneurship Development*," Anca Draghici, Izvercianu and George Draghici present a preliminary approach for building a virtual center for entrepreneurship development that will be implemented in a university research network in Romania. The authors argue the most relevant aspects that conduct them to an organizational information system design, implementation and management with double role: education (entrepreneurial skills development in the case of students) and research (new competencies development by a-learning future programs). The following items are presented: (1) the training needs for business creation - based on a preliminary market research developed with subjects with technical and economical background and that allow the identification of the entrepreneurial knowledge; (2) the university entrepreneurial education as a process of knowledge transfer; (3) preliminary design and architecture of the virtual center for entrepreneurship. Finally, some relevant conclusions and the future researches directions are presented.

The focus of manufacturing planning and control has gradually expanded from (in-house) production activities towards all manufacturing and logistics activities in the supply chain. Planning of in-house operations is still very important, but the trends towards increased use of outsourcing and mass customisation require that customers and suppliers are able to exchange information frequently to cut down costs and lead time while quickly adapting their manufacturing and logistics operations to market/customer requirements. Many vendors offer systems to plan and control in-house operations, whereas only a few large vendors (such as Oracle, SAP and I2) offer supply chain planning systems. This limits the ability for SMEs to exploit the supply chain planning options. In Chapter 31 "*Collaborative Demand and Supply Planning Networks*," Hvolby, Steger-Jensen, Alfnes and Dreyer discuss current supply chain planning solutions and presents a more simple and adaptive concept to be used in both SMEs and larger enterprises.

EXPECTATIONS

The book provides researchers, scholars, professionals with some of the most advanced research, solutions and discussions of Enterprise Information Systems design, implementation and management and is targeted to be read by academics (teachers, researchers and students of several graduate and postgraduate courses) and by professionals of Information Technology, IT managers, Information Resources managers, Enterprise managers (including top level managers), and also technology solutions developers.

We strongly hope it meets your expectations!

The Editors,

Maria Manuela Cruz-Cunha
João Eduardo Varajão

Ofir, January 2010

ENDNOTE

[1] Strong, D. M., & Volkoff, O. (2004). A Roadmap for Enterprise System Implementation. *Computer-Aided Design & Applications, 37*(6), 22-29.