

## Preface

This book presents the latest concepts in competition, strategy, and modern enterprise information systems. Sixteen articles discuss topics in enterprise resource planning and enterprise productive planning. In the first section, ten chapters discuss the state of the art issues and technologies in enterprise resource planning.

Per Svejvig and Jan Pries-Heje, in their chapter entitled “Enterprise Systems Outsourcing ‘Behind the Curtain’: A Case Study Showing How Rational and Institutional Explanations Coexist and Complement Each Other” show how rational and institutional explanations co-exist and complement each other. They present findings from a complex outsourcing study in SCANDI, a large Scandinavian high-tech organization. Although outsourcing is a feasible mean for enterprise systems (ES) cost savings, it does however increase the complexity of coordination substantially when many organizations are involved. Per Svejvig and Jan Pries-Heje set out to study ES outsourcing in a case setting with many inter-organizational partners and try to answer the question: Why does SCANDI engage in these very complex outsourcing arrangements? To answer this question they analyzed documents, observed meetings, and gathered data from interviews in four parts of SCANDI. The first data analysis found just the rational front stage cost-saving explanation; but then, with a more careful analysis focusing on institutional factors, other backstage explanations “behind the curtain” were uncovered, such as management consultants with a “best practice” agenda, people promoting outsourcing, thereby being promoted themselves, and a belief in outsourcing as a “silver bullet”: a recipe to success, solving everything. Other researchers have used an institutional perspective to obtain insights into outsourcing. In contrast to these (primarily macro) studies, Svejvig and Pries-Heje’s research also applied a micro view on outsourcing. This resulted in significant new insights; they found institutional explanations, such as trade union agreements and benchmarking across organizations at the macro level, as well as career-motivated thinking and habits in play at the micro level. Another significant insight from their study is that the actors involved – managers, consultants, people being outsourced – would potentially benefit from “opening the curtains” and looking behind them for institutional explanations that are hidden by convenient rational platitudes.

Cliff Cartman and Angel Salazar in their chapter entitled “The Influence of Organizational Size, Internal IT Capabilities, and Competitive and Vendor Pressures on ERP adoption in SMEs,” argue that recent studies have demonstrated the rapid increase in ERP adoption within small and medium sized enterprises, but have failed to identify which factors specifically affect ERP adoption within the SME market. Consequently, there is a lack of research focusing on SMEs specifically and so this study examines some of the key factors influencing ERP adoption within SMEs. The aim of their study is to contribute to theoretical understanding by focusing on the moderating factors which may affect an SME’s decision to adopt an ERP system. More specifically, this empirical study investigates the influence of

organizational size, moderated by internal IT capabilities and external factors, such as competitive and vendor pressure, on ERP adoption within SMEs. Existing research on ERP adoption has identified some of the potential factors affecting SMEs, such as organization size as one of the most significant ones. Yet none of this previous research has looked at organizational size, internal IT capabilities and external pressures in a unified framework and in context to SMEs. More specifically, this study focuses on the direct and moderating relationships which may affect an SME's decision to adopt an ERP system. An analysis of a sample of 229 SMEs shows clear direct and moderating relationships amongst the above factors. Concrete recommendations are provided to accelerate the rate and success level of ERP adoption within SMEs.

Ana L. Rosado Feger, in her chapter entitled "Improving Internal Supply Chain Collaboration by Increasing Information-Processing Capacity: The Role of Enterprise Information Systems," argues that the current business environment is characterized by a high level of uncertainty. Organizational Information Processing Theory (OIPT) first proposed that the primary task of a firm is to manage this uncertainty in order to both survive and thrive. Firms manage this uncertainty by deploying mechanisms that either reduce the need to or increase the capacity of the firm to process information. The study by Rosado Feger uses this theoretical lens to explore the use of Enterprise Information Systems in fostering collaboration between internal supply chain functions in manufacturing firms. Implementing Enterprise Information System is by all accounts a significant investment on the part of the firm. Smaller firms have understandably lagged behind large firms in adoption and implementation of this new technology. From the point of view of OIPT, however, it is no resources that determine the choice of mechanisms, but instead, the level of uncertainty faced by the firm. The study highlights the importance of Enterprise Information Systems to firms that report high levels of demand uncertainty, either in product mix or in product volume. These firms also tend to be smaller and thus could be expected to have fewer resources. However, the results suggest that these firms also gain proportionally higher benefits from implementing these systems, in the form of improved collaboration between internal functional departments. Improved collaboration has been proven to lead to improved firm performance. The study provides a justification for small firms to invest in Enterprise Information Systems. This study is the first to look at supply chain coordination through an OIPT lens and specifically consider how information systems can contribute to improving organizational processes in uncertain environments. The author has done a thorough analysis of data gathered at the height of global economic disruption. Moreover, the relationships hold regardless of industry, providing support for an analysis that transcends the geographic limitations of the sample. In an environment where every investment is closely evaluated, this chapter accomplishes two things: providing smaller firms or those facing large uncertainty in demand with justification for investment in Enterprise Information Systems, and providing larger firms or those facing less uncertainty with a wake-up call regarding their under-utilization of their Enterprise Information Systems. This significant investment can only provide benefits when it is undertaken with intent and strategy.

Magdy Abdel-Kader and Thu Phuong Nguyen in their chapter entitled "An Investigation of Enterprise Resource Planning Implementation in a Small Firm: A Study of Problems Encountered and Successes Achieved," investigate the implementation process of ERP in a small firm. Using an exploratory case study approach the authors conducted semi-structured interviews and participative observations. Their investigation focused on two perspectives of ERP implementation: successes achieved and problems encountered. The case is based on a Dutch Recycling Company (DRC), which was in the process of preparation to implement an ERP system. The authors discovered some issues related to the implementation of ERP in small organizations. For example, due to the small size of organizations, they may un-

derestimate the complexity of business processes and may not recognize problems in early stages such as software modification and development. Further, vendor selection process may be another problem of ERP implementation in small organizations. They are easily influenced by external factors such as depending on an external consultant and the promotional presentation of ERP vendors. There were also some mistakes in the project management such as lack of deliberate planning, no project group, no control of evaluation system etc. These critical issues are likely to result in seriously operational problems in ERP implementation in small organizations. The authors also found out that expectations for ERP system success in small organizations may not be as ambitious as in large organizations. Most companies expect ERP to reduce their operating costs, increase process efficiency, standardize processes, improve customer responsiveness, and provide integrated decision information. DRC case showed unexpected satisfaction of employees and managers despite the slow progress of the implementation of ERP system. Furthermore, it is recognized that available resources and capabilities in small organizations play an important role in keeping the system alive. First, small organizations are more flexible to adapt for change and to sort out problems and working hard to handle manual tasks. Second, financial healthy is a very important for success. Although DRC is a small organization, its turnover is more than the standard turnover of a medium size organization. With such healthy finance, they were able to afford the development of their own ERP system and deal with technical problems during the implementation process. DRC chose an in-house ERP development, in which they self-developed the system with relevant functionality. For instance, they focused on logistic parts. One of reasons that they were satisfied with the system was perhaps because ERP performed their key business tasks. DRC took also advantage of some new technology, i.e., remote data management. Thus, in small organizations, it is not necessary to develop the whole ERP packages as they can take advantages of in-house ERP development. In brief, the authors argue that ERP can be a good solution for small organizations with proper selection of software development and taking advantages of advanced technology such as remote data services. The implementation of ERP can be considered as a process of learning, especially for small organizations that have ambitions of expansion. Furthermore, a deliberate planning should be made and the feasibility should be considered well in advance of the planning process.

Long Pham and Jeffrey E. Teich in their chapter entitled “A Success Model for Enterprise Resource Planning Adoption to Improve Financial Performance in Vietnam’s Equitized State Owned Enterprises,” show the importance of the profound economic reform carried out by the Vietnamese government in 1986, aiming to transform Vietnam from a command economy into market oriented economy. They have also indicated that one of the main purposes of such a reform is to restructure Vietnam’s state-owned enterprises (SOEs) via the equitization (privatization) process in attempts to convert un-profitable SOEs into more dynamic, fast growing private enterprises, injected with a stronger entrepreneurial spirit. They go further to analyze that the financial performance of these SOEs lagged since they lacked incentives to be more efficient and profitable. The reasons for un-profitability and inefficiency of SOEs are innumerable, but mainly from the SOEs management mechanism. This kind of mechanism, largely influenced by the subsidy system, did not motivate managers to be more responsible and open minded as actually practiced in a market economy. The authors state that the equitization program has been transforming a significant number of SOEs into equitized SOEs (ESOs), and the Vietnamese government hopes that these ESOs will operate their business activities under market conditions, and perform better than their former SOEs. However, their belief is different from traditional ones in that what makes an enterprise effective is not only its financial and human resource but also enterprise-wide information technology applications. Indeed, evidence has shown that firm performance is positively related to investment in

enterprise-wide information technology applications, such as ERP systems. Thus, ESOEs have recently begun to implement their ERP systems, ubiquitous in the developed countries, in order to improve their operational and financial performance. However, ESOEs in Vietnam are really lacking a model for ERP adoption that can guide them to successfully implement ERP systems. To overcome this void, the authors have, based on theories on innovation adoption, trust and the TOE (technology - organization – environment) framework, constructed an integrated success model for Vietnam’s equitized state-owned enterprises’ ERP adoption. They believe that such a model is unique in the sense that it takes into account all the facets (many are ignored by the literature) of one organization that can have impacts on its ERP adoption.

Mohamed A. Nour and Samar Mouakket in their chapter entitled “A Classification Framework of Critical Success Factors for ERP Systems Implementation: A Multi-Stakeholder Perspective, ” argue that ERP systems are considered some of the most complex organizational information systems ever developed, and current research shows a growing dissatisfaction with ERP systems arguing that they have failed to deliver the anticipated benefits. Therefore, their successful implementation has been fraught with a myriad of issues, difficulties, and uncertainties; and predicting the success of their implementation is likewise considerably complex. Hence, it is not surprising that intense research efforts have been directed to exploring the critical factors that determine or predict the success or failure of ERP systems implementation. A better understanding of ERP implementation success is one of the key issues which many studies have investigated. One of the best known methods used to define and measure ERP implementation success has been the critical success factors method. Prior studies have applied the critical success factors (CSFs) method to analyze ERP systems implementation, but few have focused on identifying CSFs from the perspectives of key stakeholders. Thus, their study is designed to fill this gap by providing more depth to the mechanisms determining CSFs for ERP project implementation and consequently its outcome. Because organizations can be considered social structures consisting of different stakeholders whose interests can converge or diverge based on their roles and values, the researchers propose a new integrative classification framework of CSFs for ERP systems implementation based on the following three key dimensions: stakeholders, stakeholder roles, and project phases. First, six fundamental stakeholders with divergent perspectives on ERP implementation success have been identified, each stakeholder with a different perspective or definition of the notion of implementation success. Second, the ERP project lifecycle has been divided into three macro phases. Third, five different roles which each stakeholder may play during each phase are identified: consultation, support, participation, authorization, and fulfillment. The CSFs are categorized according to each stakeholder and mapped to the three phases of the ERP systems project lifecycle. The combination of the three primary dimensions provides for a conceptualization that unites the CSFs into a single integrated lens for identifying, classifying, and influencing these factors to ensure the success of an ERP implementation project. The significance of this framework lies in its theoretical and practical contributions. The proposed framework contributes to the literature by drawing attention to the significant role of the stakeholders in defining and determining the success of an ERP implementation project. Moreover, the study is particularly suitable for the analysis of ERP projects because it includes the influence of the different factors on the different stages of ERP systems lifecycle. Also, the proposed classification framework will guide managers in the development of an implementation strategy to ensure that all relevant success factors from each underlying perspective and dimension have been identified and taken into account to assess the success of an ERP system project. Similarly, those making decisions for the first time on an ERP system implementation in any

enterprise could take advantage of the proposed classification framework to better anticipate possible problems and to assess the chances of a successful implementation.

Michelle Antero and Philip Holst Riis in their chapter entitled “Strategic Management of Network Resources: A Case Study of an ERP Ecosystem,” argue that the use of an Enterprise Resource Planning (ERP) has been regarded as a staple in every business since the early ‘90s and the ERP industry has undergone a period of consolidation in the past decade in order to obtain new market shares. As such, the ERP vendors are consistently challenged to create a product that will give them to have a competitive advantage. Researchers in the field have looked into how the use of strategic alliances can spread risk and lead to competitive advantage through effective combination of resources. This chapter attempts to investigate how an ERP vendor is able to do the same. In this particular case study, the authors provided a thorough case study of an ERP vendor and its partners in the midst of a strategy change. In their chapter, the authors have chosen to apply a resource-based view (RBV) as a lens to analyze the resources of a vendor and complementary resources of partners who participate in an ecosystem of development and implementation. They focused on the firm’s attributes in analyzing competitive advantage and subsequently extended the analysis to include resources that are accessible within the ERP ecosystem that it has created by asking: What are the key complementary resources available in an ERP ecosystem; how are they distributed; how do they enable the ecosystem to obtain competitive advantage; and what is impact of the current business development strategy on the resources? In order to provide a comprehensive understanding of this particular phenomenon, the authors have used multiple levels of analysis and extend RBV to include other resources available to the firm. Their chapter examines the ERP vendor’s resources before considering the partner ecosystem’s resources. By doing so, they were able to verify whether the sustainability of the ERP product lie with the ERP vendor, the partners, or the ERP Ecosystem. The analysis drills further down into each resource and how these resources can lead to sustainable competitive advantage by virtue of being valuable, rare, inimitable, immobile, and non-substitutable. One of the unique contributions of this particular case study is that the authors were able to capture the potential impact of the changes in an ERP vendor’s business development strategy to the sustainability of its competitive advantage. They were also able to capture insights from various partners to suggest that a successful implementation of the strategy maintains competitive advantage for the entire ERPCorp ecosystem because of the strong lock-in and network effects.

Babak Sohrabi and Iman Raeesi Vanani in their chapter entitled “Collaborative Planning of ERP Implementation: A Design Science Approach,” argue that planning for enterprise-wide system implementation requires all of the stakeholders to integrate views on considering a strategic approach toward a unified vision on how to develop and improve the collaborative ERP implementation planning process. Although introducing ERP to an organization has enormous benefits, it may entail new hazardous challenges if it cannot be well managed. The implementation of ERP systems has also grown rapidly, but limited research has been conducted to investigate the implementation quality and utilization of ERP systems. These systems are widely implemented as the backbone of many manufacturing and service firms. They further argue that the implementation of an ERP does not come without significant technical and managerial challenges, huge financial investments, and a great deal of organizational change. A considerable number of projects have been reported to fail or take longer than it was initially planned. The failure of the fundamental goals in these projects has imposed huge amounts of costs on investors. The authors of the chapter have fundamentally focused on this major challenge. They attempted to devise an approach with which the process of implementation can be well collaborated and evaluated according to the seven rules of design science approach. With the usage of this methodology, the implementa-



tion process can be kept under close scrutiny from various viewpoints. The provided framework can significantly address the most important areas in which there might be causes of failures. For covering the purpose, the authors provide the interested readers with a comprehensive framework with which the total value generation system of implementation process can be viewed through the technological and organizational factors. Accordingly, a set of comprehensive factors are gathered and discussed. A very useful view of the process is also being discussed in the chapter. The authors discuss about an integrative view for the total value system of ERP utilization throughout the value chain. The Design Science approach to collaborative implementation takes the ERP implementation as an artifact which needs to be carefully planned, designed for the organization, and collaboratively put to use so as to add value to the business. The provided framework considers the implementation process as a value generation attempt. The authors deliberately point out to the research and contribution of documentations for the next projects and most important of all, they concentrate on the direct relevance of system deployment measurement attempts toward the major organizational problems. The relevance and rigor of measurement process for a collaborative implementation among the stakeholders (suppliers, assemblers and manufacturers, distributors, and sales terminals) are of great importance and the energy put to the measurement should academically and practically address the main roots of possible deficiencies and shortfalls. The chapter fully attempts to address the issue by providing a comprehensive set of implementation factors as well as a framework of planning. The framework uses a practical approach by taking the advantages of Design Science method as a major mind map for evaluating the collaborative implementation for the significant aspects of ERP implementation process.

Payam Hanafizadeh and Ahad Zare Ravasan in their chapter entitled “A McKinsey 7S Model-Based Framework for ERP Readiness Assessment,” argue that the implementing ERP systems is a complex, lengthy and expensive process which usually faces serious challenges and failures. One of the main reasons of the high failure rate of ERPs is the lack of pre-implementation studies at the initial stage of an ERP implementation project which has received little attention in the literature. Hanafizadeh and Zare Ravasan in their work, as a potential contribution to current knowledge, consider the subject of ERP Readiness Assessment (ERA) and introduce a new framework. Such an assessment framework determines the current state of organization’s readiness to implement an ERP system besides identifying the weakness areas which may encounter the project with failure and must be improved prior to later stages. They propose their framework based on McKinsey 7S model. This model was developed in the early 1980s by Tom Peters and Robert Waterman, which has 7 dimensions, namely “structure,” “strategy,” “systems,” “skills,” “style/culture,” “staff,” and “shared values/ superordinate goals.” It is believed that for long-term benefit, these so called soft and hard variables should be changed to become more congruent as a system. Regarding the high capability of the 7S model to give a comprehensive view of every organization, authors exploit the model in developing their conceptual framework with 7 main dimensions and 21 factors. In order to enhance the applicability of the model, 85 questions are extracted from the literature for assessing the associated factors in the readiness model. The proposed framework is capable of determining the current situation of the organization and through this, necessary changes can be identified and made prior to system implementation. Hanafizadeh and Zare Ravasan demonstrate the application of their framework in 2 real Iranian banking cases and with regard to the readiness assessment results, it is suggested that the both cases are better to do some preliminary projects to increase the probability of project success. It should be noted that the cost of conducting such readiness assessments is justifiable for an enterprise compared to the huge costs of implementing an ERP system and even probable costs of the project failure. The unique framework introduced by Hanafizadeh

and Zare Ravasan can be customized and applied to a wide range of organizations and the results of the assessment can be used in making managerial decisions on initiating the ERP project. The result of the comparisons among available frameworks and the proposed one is shown that the framework has some superiority over available frameworks such as comprehensiveness, multi-dimensionality, and higher applicability. Also, one of the main contributions of the work is that it incorporates McKinsey 7S model with the concept of ERP readiness assessment.

Mohammad Nazir Ahmad, Nor Hidayati Zakaria, and Darshana Sedera in their chapter entitled “Ontology-Based Knowledge Management for Enterprise Systems,” argue that ontologies, as formal representations of knowledge, are currently widely in use in many fields including information systems, computer science, software engineering, and knowledge management (KM). Their approach in looking at the subject of ontology and knowledge management is influenced by the “processes-oriented” perspective. In this perspective, KM comprises a range of KM processes (e.g., creation, application, integration, sharing, etc.) used in an organization in order to identify, create, represent, distribute, and enable adoption of insights and experiences. Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizations, and ontology is seen as a methodology for supporting the KM processes. Knowledge management is recognized as being a prominent mechanism for managing knowledge; concomitantly, ontologies are becoming an increasingly important methodology to support a diversity of knowledge management processes. In this chapter, KM processes are referred to as mechanisms for managing knowledge such as knowledge transfer, creation, dissemination, and storage. They use the term ontology-based KM here to refer to the use of ontologies for supporting KM processes. Ontology-based KM is employed as a method solution to overcome the problems arising in many application areas. With this approach, the chapter motivates the role of ontology-based KM in the context of enterprise systems (ES), including pre-implementation of ES, during its implementation as well as post-implementation. It is a first attempt to throw light on the role of ontology-based KM for ES (OKES) and, subsequently, to investigate the possible integration of ontology-based KM and ES. A wide range of academic and practitioner literature related to ontology-based KM and ES has been reviewed. On the basis of this review, they have developed a proposal of taxonomy as a framework for understanding OKES research. The work shows the potential application of ontology-based KM for ES and analyses future research directions. In order to achieve the objective of this study, a systematic review of the existing literature is conducted. Based on a theoretical framework of the ES lifecycle, KM, KM for ES, ontology and ontology-based KM, and also guided by their framework of study, they have established taxonomy for OKES. To illustrate the usefulness of the taxonomy, they discuss a number of suggestions and related examples of ontology-based KM from other studies that can help to fulfill the proposed framework. On the basis of the review, it is proposed that OKES can be based on taxonomy of ES sub-domains as a framework. Further research into ways to exploit OKES still needs to be done. Existing examples of applications of OKES are extremely limited. They also find that experiences from ontology development in related domains can be reused for the ES context. However, a detailed investigation of ontology-based KM specifically for ES needs to be carried out. They suggest that extensive development of OKES would give more promising benefits in order to ensure the survival of ES in the pre-implementation, implementation, or post-implementation phase. Ontology-based KM for ES would provide a solid methodology for managing ES-related knowledge, which can, in turn, be further researched as an important line of enquiry. In conclusion, this chapter is a first attempt to initiate the focusing of serious attention on the use of ontologies as a prominent tool for facilitating the KM process of structuring, sharing and managing ES-related knowledge within the complete context of the

ES lifecycle. In this regard, the chapter confirms that the current uses of ontologies throughout the ES lifecycle are still at a stage of infancy.

In the second section, six chapters discuss the latest trends in strategic productivity planning. Mohan P. Rao and Purnendu Mandal in their chapter entitled “Linking the Impact of IT Investments to Productivity and Profitability,” argue that annual worldwide investments in IT (Information technology) has surpassed three trillion dollars in recent years. There is also tremendous growth in the implementation of ERP (enterprise resource planning) systems. These systems require huge investments, and the management is always under pressure to justify the investments. They want to see the bottom line results. There is a general understanding that IT investments lead to productivity improvements, but profitability improvement is a different matter. Many studies have failed to show the direct relationship between IT investments, organizational productivity and profitability, a phenomenon known as productivity paradox. The failure might have been due to problems with the measurement techniques. This chapter describes a measurement model, known as the PPP model (“Profitability = Productivity + Price Recovery”), which can fill the gap and show a link between IT investments, productivity, and profitability. The model devises a procedure whose calculations and theory are readily understandable by financially oriented managers. The attraction of this model to the business community is that it uses readily available accounting data, and provides performance results in dollars as opposed to abstract indexes. The model is implemented in Microsoft Excel for the simple reason that it is widely available, easy to use and has powerful built-in features for data analysis and optimization, and is very popular with business managers and planners. The spreadsheet-based implementation of the PPP model, using multi-period data, can generate performance trend charts of productivity, price recovery and profitability. The use of multi-period data involving inputs and outputs minimizes measurement errors, revealing trends that give a better perspective on firm performance, and therefore, lags, if any, between costs and benefits. The use of PPP model reveals the benefits and, therefore, provides the ability to managers to judge IT investments better. This model will be useful to managers considering investments in IT as well as for managers interested in assessing the impact of other resources or strategy implementations on their organizational performance. The model leads to identifying problem areas whether they are productivity related or price-recovery related and from the macro (organization) level to the micro (resource) level. This information would be very valuable for management to take corrective actions in a timely manner.

Chun Meng Tang and Govindan Marthandan in their chapter entitled “An Analytical Model to Measure IS-Enabled Organizational Effectiveness,” put forward a model depicting the key dimensions of information systems (IS) enabled organizational effectiveness. One important contribution of the model is that it has helped to answer an enduring question on the business value of IS, which has been a topic of discussion among IS specialists and business managers for years. Using enterprise resource planning (ERP) systems as a surrogate of IS and following a stringent scale development process, the authors designed a survey questionnaire to collect data from 147 companies that have implemented ERP systems. Both exploratory and confirmatory factor analysis were then performed to validate the model. By decoding how ERP systems have contributed to improvements in organizational effectiveness, the question of the business value of IS, at least to a degree, has been answered. Originally conceptualized based on the balanced scorecard (BSC) framework, the model suggests that the business value of IS can be found in the form of organizational effectiveness. In the model, IS-enabled organizational effectiveness is a third-order construct, which is manifested by three second-order constructs (business sustainability, organizational competence, market responsiveness), and in turn, ten first-order constructs (customer management, customer preferences, financial returns, cost savings, production efficiency, administrative



efficiency, product innovation, process innovation, organizational change, and firm competitiveness). The model will be a boon to ERP consultants and business managers in planning, designing, implementing, and evaluating ERP systems. When planning for an ERP system, questions are asked about why the company should invest in such a system and what the returns of investment are. The model provides clear empirical evidence of ERP benefits. While designing an ERP system, questions are asked about what key features the system should have and where the design focus is. The model becomes a blueprint for discussion on systems development between ERP consultants and business managers. During implementation of an ERP system, questions are asked about ways of determining whether the system has been implemented successfully and what the key success factors are. The model reveals that within the organizational facet of ERP success, there are ten vital areas in which success can be measured. In the course of evaluating an ERP system, questions are asked about methods for appraising the performance of the system and what the performance criteria are. The model gives a list of organizational effectiveness improvements that can be useful as evaluation criteria. The model presents a clear picture of the organizational facet of a multi-faceted construct of ERP success. There are several key implications for theory in such areas as organizational effectiveness, IS-business alignment, systems development, and IS evaluation. Moving forward, the authors suggest several directions for future research, looking into other facets such as system quality, information quality, user impact, and so on.

Zijad Pita, France Cheong, and Brian Corbitt in their chapter entitled “A Maturity Model of Strategic Information Systems Planning (SISP): A Comprehensive Conceptualization,” pave the way for the adoption of the novel approach to Strategic Information Systems Planning (SISP). SISP is of paramount importance to any organization but still the industrial surveys show considerable dissatisfaction with SISP. The authors have offered improving our understanding of the concept of SISP, and a means of structured evaluation and reformulation of SISP. They have developed comprehensive taxonomy of SISP maturity in organization that adopts and reorganize the different empirical and theoretical facts previously identified. The literature is concern with the planning evolution, plan implementation but not with the plan itself. This study has addressed that gap by providing a thorough framework for SISP process alone that bridge the gap of the complex and implicit meaning of the concept of SISP. Segregation between SISP maturity and IS/IT departmental maturity is also provided. The maturity levels of SISP as well as the criteria for the assessment of each SISP maturity level are conceptualized. A five-stage SISP maturity model is proposed. This model is based on the ‘Integral SISP Engineering’ approach, which emerged as result of the authors’ exploration of various theories such as control and systems engineering, soft system dynamics, and organizational cybernetics. This provided a means to model SISP in a systems engineering context. The main characteristic of the developed model is its robustness. The proposed model can be applied to all types and sizes of organizations. The model uses scales that enable measurement of intangible qualities and it enables analytic thinking and measurement based on natural language. The Integral SISP Engineering Maturity Model has enabled identifying, understanding, and assessing the interactions of the SISP system as a whole. The model provided: a method for gaining more qualitative insights into the relationships of the factors influencing the SISP process; a tool for organizations to evaluate their SISP planning practices and define improvements for them; an effective way of testing hypotheses for SISP before acting on them, thus providing support for decision makers and, a foundation for development of the fine-tuned model for specific type of organizations.

Zijad Pita, France Cheong, and Brian Corbitt in their second chapter, entitled “A Maturity Model of Strategic Information Systems Planning (SISP): An Empirical Evaluation Using the Analytic Network Process,” have done pioneering work in opening the way for Strategic Information Systems Planning

(SISP) thinking beyond the conventional approaches. They have introduced the Analytic Network Process (ANP) and the Analytic Hierarchy Process (AHP) methods to reduce complexity of SISP measurement and assessment. The challenge was to overcome a problem of result synthesis measured by different scales to obtain a single overall measure of SISP maturity. They achieved this by adopting the AHP/ANP theory, which is an advanced multi-criteria decision making theory based on relative measurements. The application of ANP/AHP enabled both, a comprehensive assessment of individual planning constructs and aggregation of individual assessments into an overall measure of SISP levels of maturity. This study has empirically validated the use of these methods in the Australian environment. The use of the scales that enables measurement of intangible qualities based on natural language, which can be built on top of the intuition, experience and knowledge of experts is a valuable contribution to the SISP theory. A capability to simultaneously use any type of scale is of a great importance, as different scales are needed for the investigation of the SISP constructs. The authors have extended their previous work that introduced a five-stage SISP maturity model and a model for assessment of SISP. They described a research instrument used to determine the degree of SISP maturity in Australian organizations. The relative ranking of each SISP stage is obtained by judging the importance of the SISP structure elements with respect to the relevant criteria for every maturity stage. While empirical test of the five-stage SISP model has only confirmed the existence of three levels of SISP maturity, statistical methods confirmed the adequacy of the establishment of the SISP assessment model as a third-order system.

Providing the SISP assessment model with prioritized criteria and sub criteria against each SISP maturity stages is a contribution to the SISP theory. Also, these findings are even more important for SISP practitioners. They can help an organization position itself in terms of stage of SISP maturity. That can help in the identification of areas that may need improvement, thus providing support for SISP planners to rationalize and refine the process of planning, to move to a higher maturity level or to consolidate the current level. Thus, SISP assessment and measurement can link knowledge and action and can enable corrective measures to be taken to prevent or reduce the number of failures or to improve return on IS/IT investments.

Schubert, Williams, and Wölflé in their chapter entitled “Sustainable Competitive Advantage in E-Commerce and the Role of the Enterprise System” investigate the factors that lead to sustainable competitive advantage in business-to-consumer (B2C) retailing. Using empirical data from an in-depth, longitudinal case study they examine how a pioneer in the area of web-based grocery retailing (LeShop) has evolved and has maintained a competitive advantage. This chapter is particularly interesting, as few e-commerce studies have studied a company over a timespan of more than 10 years. In addition, their study examines a company that is operating in the highly competitive online grocery market. Achieving competitive advantage in this sector is particularly challenging, as it is typified by low margins, high volumes, and sophisticated supply nets. The sector has seen many similar companies fail in recent years. To identify whether LeShop possesses resources or capabilities that are valuable, rare, inimitable, and non-substitutable, the authors apply the Mata’s framework, which uses a resource-based view as the basis for examining how the application of IT (and other factors) provides a competitive advantage. The chapter reveals the role that IT and IT skills have played in developing a sustainable competitive advantage. LeShop’s business software was individually developed because standard software offered no acceptable solutions and because LeShop sees its strengths precisely in the agile and accurate organization of its range and its processes. The role of history is significant, LeShop’s skills and capabilities all show signs of a development over time. LeShop’s operational excellence is derived from the efficiency of their business processes – especially the processes in the internal warehouse. Decisions had to be revised and

the scope of business activities was incrementally extended and functionality and responsibility were gradually insourced while the company was maturing. Causal ambiguity is also a source of sustainable competitive advantage for LeShop. Their background processes are not fully known or even visible to the competitors and cannot easily be copied. Social complexity was found to be important; a key issue for LeShop has been the building up of strong ties with partners. These range from key partnerships for advertising, logistics and payments to close bonds with their suppliers. This development of mutual trust has provided further resources in the form of network wide business intelligence. The chapter provides an excellent and rare insight into the history and development of an organization successfully navigating the complexities of B2C e-commerce. Rather than providing a snapshot at a point in time the longitudinal case study provides the opportunity to examine not only what factors have contributed to achieving competitive advantage but also how, over time, business process change and decisions about technology sourcing and partner network development have led to sustaining that competitive advantage.

Przemysław Lech, in his chapter entitled “Is it Really so ‘Strategic’? Motivational Factors for Investing in Enterprise Systems: A Survey,” talks about the continuous debate in IS literature on the role and business value of IT. He argues that many authors take a stance that investments in IT should yield substantial benefits, and that those benefits can be achieved only when IT enables the achievement of the enterprise’s strategic goals. Following that assumptions the ‘productivity paradox’ was announced, as no significant correlation could be observed between IT investments and enterprises’ performance. This chapter contributes to this debate by investigating the motivational factors that drive the decision to invest in IT. The critical literature review ends up with the conclusion that enterprises may consciously and purposefully carry out some of their IT investments with no expectation that they will lead to significant increase in financial performance, and even if there is a competitive advantage behind the investment, it has to be temporary. The results of the survey study on the motivation to invest in Enterprise Systems (ES) are then presented. They show that enterprises make investments in ES mostly to increase operational efficiency, provide managers with more accurate information and, which is interesting, to be able to continue the operations on the current level. The results also show that the most common primary reason for undertaking an investment in ES is “to replace the inefficient IT infrastructure.” This leads to an interesting conclusion, made by Przemysław Lech in this chapter, that there is a group of enterprises which perform ‘must-do’ IT investments and thus do not expect them to yield any substantial benefits besides allowing the operations on the current level. If this group is as large in the whole population, as it is in the research sample of this chapter, the productivity paradox may be explained. The value of this chapter is that it indicates a trend of commoditizing of IT largely omitted in the IS literature and gives plausible explanation of the productivity paradox.

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