

Preface

Businesses depend upon their information systems for conducting day-to-day tasks, organizing essential information, and providing indispensable functions related to the organizations. Because information systems are essential and often expensive, organizations want to get the most for their investment. In order to optimize information systems' performance, they must be constantly evaluated to ensure that every component is performing at its maximum capacity and all of the parts are working together. Business people, academics and all those who use or study information systems need to have access to the latest information regarding effective evaluation of these essential components. This book provides the most recent findings concerning information systems evaluation. The authors, representing a diverse cultural and organizational background, discuss everything from conceptual models used for IS evaluation and the components need to evaluate to the use of the balanced scorecard. The following chapters represent the best thinking in both the theoretical and practical applications of information systems evaluation.

Chapter 1 entitled, "Perceived Value and Technology Adoption Across Four End User Groups" by Jaak Jurison of Fordham University (USA) explores the role of end user perceptions in information technology adoption from the perspective of innovation diffusion theory. The chapter is based on empirical data from a 3-year study of an information system implementation in an engineering organization. From the data discussed in the chapter, the authors suggest a framework for predicting technology adoption in the long run based on initial adoption rates and user perceptions of technology.

Chapter 2 entitled, "A Case Study Evaluation of the Use of the Viable System Model in Information Systems Development" by P. Kawalek of University of Warwick and D. G. Wastell of University of Manchester (United Kingdom) considers the usefulness of the Viable System Model (VSM) in information systems projects. The chapter presents a case study that focuses on the sales team of a manufacturing company. The authors propose the VSM provides a valuable diagnostic capability that can assist the company in future developments.

Chapter 3 entitled, "Key Issues in IS Management in Norway: An Empirical Study Based on Q Methodology" by Petter Gottschalk of Norwegian

School of Management (Norway) provides an overview of research approaches to information systems management. The chapter presents a three-step procedure for key issues selection and proposes a Q-sort analysis. The author presents his results from the Q-sort survey and analysis and reports that the highest ranked key issue in Norway is improving the connection between information systems strategy and business strategy.

Chapter 4 entitled, “Measuring the Financial Benefits of IT Investments on Coordination” by Chiara Francalanci and P. Maggiolini of Politecnico di Milano (Italy) empirically examines the relationship between greater investments in information technology and lower coordination costs on firm-level data. The authors report the results of an 8-year study of 18 large Italian companies which confirmed the authors’ hypothesis that greater IT investments should be correlated with lower coordination costs.

Chapter 5 entitled, “A Benefits Realization Approach to IT Investments” by John Thorp of The Thorp Network describes a new approach to evaluating IT investments. The author begins by defining value and then proceeds to offer a new approach: the benefits realization approach. This approach requires program management, proactively managing change, portfolio management and full cycle governance with clear accountability. The chapter then describes in detail the steps necessary to undertaking the benefits realization approach.

Chapter 6 entitled, “The IT Evaluation and Benefits Management Life Cycle” by Judy McKay and Peter Marshall of Edith Cowan University (Australia) describes and analyzes a framework known as the IT evaluation and benefits management life cycle. This framework is designed to achieve adequate linkage between IS/IT planning, evaluation of investments on an ongoing basis and also the active realizations of benefits to the organization over time. This framework shows how to integrate planning, evaluation and benefits management activities.

Chapter 7 entitled, “Identifying the Contribution of IT/IS Infrastructure to Manufacturing Agility” by Adrian E. Coronado Mondragon, Mansoor Sarhadi and Colin Millar of Brunel University (United Kingdom) describes the classification of information systems investments in manufacturing organizations and the role of an IT/IS infrastructure. The authors used a survey to identify IT/IS infrastructure as a major component among a set of characteristics of IT/IS for agility in manufacturing. The authors then used a series of issues related to benefits to business processes and manufacturing operations to develop a cascade-like model for evaluation.

Chapter 8 entitled, “Defining Meaningful Measures of IT Productivity With the Balanced Scorecard” by Nancy Eickelmann of Motorola Labs (USA) describes the validation and integration of productivity measures through the application of the balanced scorecard. The author reports on the difficulties of developing measures of IT productivity that are not skewed by methodological or data

collection anomalies. The chapter applies the balanced scorecard as a strategic measurement framework to assist in determining the appropriate matching of what is intended to be measured and what is assigned numerical values.

Chapter 9 entitled, “Conceptual Model for MIS Flexibility Evaluation” by Masaru Furukawa of Toyama University (Japan) defines MIS flexibility as the ability of an MIS to absorb the demands made on it to cope with changes originating from both inside and outside a company. Further, the cost and time required to dispose of these demands is defined as the penalty of change. The authors give some consideration to this concept of penalty on the assumption that it serves as an index for quantitative evaluation of MIS flexibility and will also analyze the relationship between cost and time. Finally, the authors present their evaluation procedure and illustrate it with examples.

Chapter 10 entitled, “A Review of Research Issues in Evaluation of Information Systems” by Vassilis Serafeimidis of KPMG Consulting and University of Surrey (United Kingdom) discusses the role of evaluation in the management of information systems. The chapter offers an extensive literature review and outlines a framework for discussion which provides a framework for analyzing the literature. Finally the chapter offers an interpretive research epistemology that has been adopted by many researchers to provide more valid alternatives to IS evaluations and discusses these alternatives.

Chapter 11 entitled, “Expanding Our View of Information Systems Success” by Barbara Ann Sherman and G. Lawrence Sanders of State University of New York at Buffalo and Edward J. Garrity of Canisius College (USA) bridges socio-technical and information systems success research streams by considering the theoretical underpinnings and relationship of technology’s impact on quality of work-life issues to the task support satisfaction experienced by users. The paper looks at two facets of quality of work life: task control and empowerment, and health concerns. The authors develop and present a research model and model test using structural equation modeling and report their findings.

Chapter 12 entitled, “Actability Evaluation: An Exploratory Study” by Karin Hedström of Örebro University and Stefan Cronholm of Linköping University (Sweden) discusses an evaluation of a computerized information system in an elderly care unit. The evaluation is based on the concept of actability, which is a combination of theories from Human-Computer Interaction and Language Action Perspective. The authors use different theories to obtain a more holistic evaluation model. The findings show that the evaluated system has a low degree of actability and the users had a positive attitude towards the system.

Chapter 13 entitled, “An Information System for Monitoring of Power Quality Disturbances” by J. S. Huang of Edith Cowan University and M. Negnevitsky and N. T. Nguyen of University of Tasmania (Australia) presents a neural-fuzzy-

technique-based classifier for pattern recognition problems with uncertain distributions. Neural networks in the architecture of Frequency Sensitive Competitive Learning and Learning Vector Quantization are first employed to evaluate the decision boundaries separating different patterns to be classified. The output of neural networks is used to activate a fuzzy-associative-memory rule-base to accomplish the classification, instead of being taken directly as the final identification.

Chapter 14 entitled, “Exploring the Role of Expectations in Defining Stakeholders’ Evaluations of IS Quality” by Carla Wilkin, Bill Hewett and Rodney Carr of Deakin University (Australia) explores the role that expectations play in defining stakeholders’ evaluations. The authors conducted a trial with a diverse group of participants in a tertiary institution where each was required to complete two questionnaires that were derived from the SERVQUAL instrument. The first questionnaire was comprised of statements pertaining solely to perceptions, while the second, administered a short time later, contained both expectation and perception statements. This chapter raises a number of questions requiring further exploration.

Chapter 15 entitled, “Research on IS/IT Investment Evaluation and Benefits Realization in Australia” by Chad Lin, Graham Pervan and Donald McDermid of Curtin University of Technology (Australia) review the progress made in the research of IS/IT investment evaluation and proposes a research program incorporating surveys, case studies, and expert focus groups to assess current practice and to develop an approach, model or framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organizations.

Chapter 16 entitled, “Evaluating Evolutionary Information Systems: A Postmodernist Perspective” by Nandish Patel of Brunel University (United Kingdom) discusses the background of business processes and organizational change and applies a postmodernist perspective to their evaluation. The author discusses the need to reevaluate the perspective from which evolutionary information systems are evaluated and the benefits of a new perspective to managers and IT evaluators.

Chapter 17 entitled, “Designing and Implementing an IT Evaluation Program” by Han T. M. van der Zee of Nolan Norton Institute (The Netherlands) describes the series of steps to follow in order to implement an effective IT program. The authors indicate that to launch effective IT measurement and evaluating programs, the programs need to be systematically and cohesively designed, introduced and maintained, matching the right measures with the right purpose in the right context, to attain the long-lasting improvements which are sought.

Chapter 18 entitled, “A Framework to Evaluate the Informatization Level” by Soo Kyoung Lim of University of Wisconsin-Madison (USA) introduces a

framework and metrics to evaluate organizations' informatization level. The framework is designed to provide reasonable information by gathering and analyzing various IT metrics for determining whether organizations have made efficient use of IT and have achieved the organizational goals. The chapter then presents case studies indicating the need for such a framework and discussing the implementation of the framework.

Chapter 19 entitled, "Strategic Human Resource Allocation for an Internal Labor Market: A Human Resource Forecasting Model for the Royal Netherlands Navy" by Wilfred S. J. Geerlings and Alexander Verbraeck of Delft University of Technology and John van Beusekom, Ron P. T. de Groot, and Gino Damen of The Hague (The Netherlands) addresses the design of a simulation model for human resources forecasting, which is being developed for the Chief of Naval Personnel, Royal Netherlands Navy. The aim of this model is to provide the Director of Naval Manpower Planning with tools that give insight into the effects of strategic decisions on personnel buildup and the effects of changes in personnel on reaching the organization's business objectives.

Chapter 20 entitled, "Towards a Model for Architectural Coordination of Business and IT Perspectives" by Håkan Enquist and Thanos Magoulas of Göteborg University presents some essential difficulties from the case project in systems development based on IT products like ERP products. The authors give examples of critical architectural issues where understanding must increase to make a powerful management tool in business/enterprise and IT development. A conceptual model of actors and relations to support coordination of architecture from business perspective and IT supplier perspective is outlined.

The chapters in this book address an issue important to all organizations—how to evaluate the success of an IT investment and how to optimize its performance. Huge sums of money are spent on the implementation and upkeep of information systems—evaluating the benefits of such an investment is a top priority of organizations. The chapters contained in this book provide practical case studies that show how other organizations have optimized their evaluation techniques; they further provide concrete suggestions and models for implementing evaluation methods. More than just a how-to book, the chapters also provide the theoretical background and research on the most current methods in information systems evaluation. This timely book is a must read for all those interested in optimizing their investment in information systems. Academics and practitioners alike will find the timely research findings and case studies an excellent starting point for discussion or supplements to their research.