During the past two decades, information technologies have provided many organizations new opportunities in managing their resources more effectively. Computer technologies combined with telecommunication technologies brought properties to many organizations during the decades of the '80s and '90s. These technologies also led to the development of many newer industries such as electronic commerce and knowledge management.

Despite technological advancements of the past several decades in information and telecommunication technologies, not all organizations have been successful in the overall utilization and management of these organizations. Some have been very effective in the adaptation and management of various technologies in their perspective organizations, and some have not been not too successful and had to deal with many pitfalls of these technologies. Many lessons can be learned from both types of experiences by information technology managers to adopt the best practices of the success cases and to avoid the pitfalls of the others.

In order to provide a broad understanding of the success and pitfalls of information technology utilization in organizations, scholars and managers from all over the world were invited to share their experiences with their colleagues and peers. This publication is a compilation of 14 cases out of many cases submitted for inclusion in this collection. These cases report many success and failure stories in regard to different managerial and organizational issues of information technology utilization and management in organizations around the world. The following paragraphs provide summaries of cases included in this publication.

**From Pilot to Practice — Streamlining Procurement and Engineering at Lawrence Livermore National Laboratory** by Judith Gebauer University of California, Berkeley (USA) and Frank Färber, Darmstadt University of Technology (Germany).

This case study reports on how Lawrence Livermore National Laboratory (LLNL) is utilizing emerging technologies to support engineering and procurement processes. In the context of a major construction project, the National Ignition Facility (NIF), scope, complexity, and tight budget and time restrictions required streamlined business operations and improved collaboration between engineering and procurement. In order to establish unified information technology (IT) architecture, LLNL is integrating formerly isolated systems and enhancing them through internal development as well as commercial products. The result is highly customized to LLNL’s needs and allows the Lab to meet the requirements of NIF-related engineering and procurement processes in terms of cost, time, quality and complexity. The project also serves as a test bed for a lab-wide, integrated IT infrastructure.

**Deploying Distributed Computing: Parking Gets a New System** by Steve Sawyer, Pennsylvania State University (USA) and William Gibbons, Syracuse University (USA).

This case describes the efforts of one department in a large organization to migrate from an internally developed, mainframe-based; computing system to a
system based on purchased software running on client/server architecture. The case highlights issues with large-scale software implementations such as those demanded by enterprise resource package (ERP) installations. Often, the ERP selected by an organization does not have all the required functionality. This demands purchasing and installing additional packages (known colloquially as “bolt-ons”) to provide the needed functionality. These implementations lead to issues regarding oversight of the technical architecture, both project and technology governance, and user department capability for managing the installation of new systems.

**Learning Technology Management While Teaching Technology Management: A Trial of Distance Learning in Higher Education** by Linda L. Brennan and Victoria E. Johnson, Mercer University (USA).

This case study presents an evaluation pilot of a technology-enabled service, specifically a distance learning program at a university. The primary intent of the case is to illustrate the management of a trial evaluation of an information technology and the need for explicit criteria considering multiple technical and organizational factors. The secondary purpose of the case is to share the learning specific to the administration and delivery of a distance learning program using various media. The distance learning program was conducted on a trial basis with 16 students in a 13-course, 18-month Master of Science in Technology Management (MSTM) program. Compressed video and Internet-based technologies were used for course delivery, in addition to limited on-site instruction. The case study describes the motivation and progression of the trial, up to the point when a decision had to be made about continuing the program beyond the trial. The experience is considered from multiple perspectives, specifically those of the school administration, faculty, and students. Positive and negative aspects are highlighted to lay the groundwork for analysis at the decision point.

**Laurier IT Priorities** by Ron Craig, Wilfrid Laurier University, Ontario (Canada).

The newly appointed IT officer at a smaller Canadian university must reassess her priorities. Given her mandate by a president who has just left, she wonders what the direction of the new president will be. With two months on the job, she has found things to be quite different from what she had originally understood. In particular, the administrative computing system has serious problems and is not Year 2000 compliant. Furthermore, it is heavily customized and there is no documentation of the changes. Resources are an issue, as there is little slack for new initiatives. She has identified many problem areas requiring attention. At this time she is unsure of the seriousness of these problems and how much effort will be required to resolve them. How can she quickly prioritize these issues so she can start dealing with the most important ones?

**Network Implementation Project in the State Sector in Scotland: The Influence of Social and Organizational Factors** by Ann McCready and Andrew Doswell, Glasgow Caledonian University (Scotland)

This case study, about the introduction of networked PCs in a local government
office in Perth, Scotland, focuses on the importance of organizational and social factors during the implementation process. The implementation of the network in this case study is not a straightforward progression from one stage to the other, as may be inferred from the systems development life cycle “waterfall” model but a circular, stop-and-start process with moves back to previous stages and more like a “spiral” approach of dynamic and unfolding processes. The case study highlights the links between technical and non-technical aspects of implementation and the complicated process of project management in which a balance is continually being sought between technical and non-technical issues. But although social processes may reduce technical as well as social problems, not all problems can be solved by attention to social factors. Organizational constraints may limit the success of the implementation process, and there are also dangers in including users who, if their views are disregarded, may become disillusioned and adversely affect future development of the network.

Isobord’s Geographic Information System (GIS) Solution by Derrick Neufeld, University of Western Ontario (Canada) and Scott Griffith, Tell Us About Us, Inc. (Canada).

Isobord, a startup company that is setting up a new strawboard production plant in Manitoba, Canada, is facing critical operational problems that threaten its future. Isobord’s product is a high quality particleboard substitute that uses straw, rather than wood, as the main raw manufacturing material. To achieve viability, Isobord must develop processes to carefully coordinate and manage its straw baling, stacking and hauling operations. Through effective information systems, Isobord has the potential to reduce the amount of equipment it needs to purchase to meet straw harvest requirements. A small investment in optimization technology could yield considerable cost savings if the efficiency of capital equipment can be improved. A geographic information system (GIS)/relational database management system (RDBMS) solution is being explored, but budget and time constraints, as well as organizational inexperience, seriously threaten the project. An information technology decision must be made immediately if there is to be any hope of implementing technology to manage the first year’s straw harvest.

The Value of Coin Networks: The Case of Automotive Network Exchange® by Andrew Borchers and Mark Demski, Lawrence Technological University (USA).

As a response to strong competitive pressures, the U.S. automotive industry has actively employed Electronic Data Interchange in communications between suppliers and carmakers for many years. This case reviews the recent development of ANX®, a COIN (Community of Interest Network) intended to provide industry wide connectivity between carmakers, dealers and their suppliers. The authors identify technical and business challenges to the success of ANX®.

Reorganizing Information Technology Services in an Academic Environment by Marcy Kittner, The University of Tampa (USA) and Craig Van Slyke, Ohio University (USA).

Primarily due to ongoing changes in available technology and financial constraints at a four-year, private university, the Information Technology Department
has gone through several iterations of organizational restructuring over the last ten years. The need for IT supports for both the academic side of the University and the administrative side has been met by two different structures during this time. At times, one common department that reports directly to the President has supported the technology needs for the entire University. At other times, the support has been provided by two separate departments—the academic side reporting to the Chief Academic Officer (CAO) and the administrative side reporting to the CFO. Because of advantages and disadvantages of each of these structures and turnover of the President, CFO and CAO positions, the use of these two structures has alternated several times. The most recent president has emphasized a technology-friendly and up-to-date campus as one of his primary goals. This emphasis precipitated an analysis of the existing systems with recognition of the need to keep IS strategies in line whether supported by one department or two.

**Evolution of an Executive Information System: The Replenishment Data Warehouse at JeansWear** by Hamid Nemati, The University of North Carolina (USA) and Keith Smith, VF Corporation (USA).

This case is a description of how a successful executive information system evolved into a data warehouse at VF Corporation, the largest publicly held apparel manufacturer in the world (www.vfc.com). The case discusses the forces that necessitated the development of this data warehouse and the challenges that the development team faced in achieving its goals. The data warehouse project occurred in a very volatile corporate environment. VF Corporation was reorganizing, which included the merger, splitting, and reassignment of all of its divisions. The data warehouse was conceived before the reorganization mandate, but occurred during it. This data warehouse has been very successful. It is estimated that about $100 million in 1998 alone could be attributed to the improved decision making due to the data warehouse. In the context of the changing corporate landscape, it is pertinent that businesses be able to run important I/S projects with longer timeframes well. How VF handled this problem would be an important learning tool to IS students as well as IS practitioners who want to learn more about developing an enterprise-wide data warehouse. This case is a useful teaching tool intended for an upper-level undergraduate course in IS or an MBA course in management of IT projects, as well as a graduate course in IS that covers topics in data warehouse design and development.

**Implementation Failure of an Integrated Software Package: A Case Study from the Far East** by Suprateek Sarker and Saonee Sarker, Washington State University (USA).

This case study describes the process of implementation of an integrated software package at the Thai subsidiary (SMTL) of a Hong Kong based multinational company (SMHK) engaged in the manufacturing of electronic equipment. Several factors—such as a poor fit between the business processes implicit in the software and the business processes in SMTL, poor leadership at different levels, cultural clash between the headquarters and the Thai subsidiary, organizational politics, and poor human resource management—contributed to the confusion in the organization, project delays, budget over-runs, and ultimately, to the “failure” of the systems implementation project. The case study is likely to be valuable for
illustrating issues related to managing IS implementation in a multinational context.

The Information Plan for Celerity Enterprises, Inc. by Laurie Schatzberg, University of New Mexico (USA).

Celerity Enterprises competes in the semiconductor manufacturing industry. At the start of the case, business conditions are favorable for them to launch a new production facility to manufacture flash memory. The new facility must achieve exceptionally ambitious productivity and cost goals. A facility-level strategic planning process reveals opportunities to substitute information for other more-expensive resources. By the end of the case, just a few months later, worldwide economic conditions change radically and the future of the new facility is in jeopardy. The case describes the participants, the planning process and findings. It provides a rich setting to discuss aligning information and business planning, realities of the volatile industry, outsourcing for IS planning leadership, and using a combination of top-down and bottom-up planning.

The Application of IT for Competitive Advantage at Keane, Inc. by Mark R. Andrews, State of Arizona (USA) and Raymond Papp, Central Connecticut State University (USA).

This case focuses on Keane’s approach to Project Management and how they provide this service to their clients. This includes not only how Keane is hired for Project Management, but also how they train their clients on how they too can implement the Keane philosophy of Productivity Management. Instead of focusing on any one client of Keane, their overall technology strategy will be highlighted, from their early days through the present, to illustrate how Keane has successfully incorporated information technology and Project Management to become a major player in the software service and consulting field. The goal of this case is to provide the student with an example of business-technology strategy in action and allow them to explore future paths that Keane may take based on how they use technology today and in the decade to come.

Big-Bang ERP Implementation at a Global Company by Nava Pliskin and Marta Zarotski, Ben-Gurion University of the Negev (Israel)

Dead Sea Works is an international multi-firm producer of Potash and other chemicals whose sales for 1998 were about $500 million. In 1996, the Information Systems group convinced top management to pursue a big-bang ERP implementation of SAP R/3. To reduce project risk, risk management was practiced. First, only modules that matched the functionality of the then-existing systems were targeted, avoiding as much as possible software modifications and process reengineering. Second, a steering committee was set up to handle conflict resolution and set priorities throughout the project and top users were given responsibility with implementing modules within their respective functions. R/3 went into production on July 1, 1998, six months ahead of schedule and without exceeding the $4.95 million budget.
An Innovative Adaptation of General Purpose Accounting Software for a Municipal Social Services Agency by Andrew Schiff and Tigineh Mersha, University of Baltimore (USA).

Organizations with unique characteristics and transaction processing requirements, such as government agencies, often satisfy these requirements by (a) acquiring software from vendors who have developed applications for that particular type of organization, or (b) developing software internally from scratch. When either of these approaches is taken, the development costs are spread over a relatively small number of organizations, and the resulting system can be very expensive. Also, due to the uniqueness of the application and the relatively small number of users, it may take a long time to identify and correct any processing errors. An alternative is to acquire general-purpose software that has been developed for a wide range of organizations, and to adapt it for the agency in which it will be installed. However, this alternative approach is frequently not undertaken because it is often believed that general purpose software is unable to provide all of the information required by the organization. When the required information can be provided, though, general purpose software can be less expensive and less time-consuming to implement.

I hope that the cases included in this publication will become instrumental in better understanding of issues and challenges of information technology utilization and management in modern organizations.

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Editor
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