

Preface

Late in 2008 and throughout 2009 the world plunged into a major economic downturn. Centering in the United States but expanding throughout the world, the downturn has created the need for both reductions in business budgets and a greater need for improved information coordination between businesses in a global environment. How can a firm reduce its information technology budgets while at the same time improve global information flow? The answer is to make wise information technology investments with a limited budget. To make wise investments decision-makers must fully utilize investment methodologies to conserve financial resources while maximizing information technology capabilities. Regardless of the economic environment an organization faces, it is always prudent to minimize costs and maximize investment in the choices of information technology.

Regardless of one's position in an organization, investing in information technology may be the most important decision business firm will face. Unfortunately, investing in information technology is not as easy as common financial investment decisions. Careful consideration of financial and non-financial criteria may have to be included in the analysis to render an optimal solution. To make good decisions on information technology today requires the use of a variety of investment methodologies. These investment methodologies must be able to integrate the complexity of decision criteria in such a way that a decision choice is clear and clearly supported by the analysis. Today, just generating a decision is not enough. Information technology decisions must be supported by comprehensive inclusion of all relevant decision-making criteria.

The purpose of this textbook is to provide an in-depth treatment of a wide-variety of decision-making methodologies focused on the subject of investing in information technology. The methodological procedures as well as computer solutions to basic financial and advanced decision-making methodologies will be presented as tools for investing in information technology.

This textbook has been designed for an upper-level undergraduate course or a graduate business or engineering management course related to technology management for university students. Business faculty in areas of finance might also find this textbook useful for an applied investments course or as supplement. Practitioners who work in information systems can also use this textbook if faced with a technology investment decision-making problem. Other groups of decision-makers might include CEOs, vice presidents of information systems and finance, general managers, plant managers, supervisors, and industrial engineers. Other operations management and engineering faculty, trainers, and graduate students will also find this textbook presents a useful variety of methodologies for managing and aiding information system investment decisions.

This textbook assumes that the reader has had some exposure to general mathematics and the terminology commonly found in business management. A basic technology/operations management or industrial management, and a basic finance course that undergraduate students take for business degree programs, constitutes sufficient prerequisite knowledge to satisfy the background to fully appreciate the content of this textbook. You do not have to be a technology manager or financial analyst to benefit from using this textbook. The terminology necessary to fully utilize this textbook is actually defined in the textbook. Also, throughout this textbook important terms are italicized and are usually followed by a definition. The location of the definitions and supplementary information on terms can be found using the index at the end of the textbook.

The basic contents of this textbook are organized into fourteen chapters consisting of five parts. In Part I, "Introduction to Information Technology Investment Decision-Making Methodology," three chapters are presented that help to define the basic subject and terminology used

in the textbook, as well as briefly identifying the major topics that make up the rest of the textbook. In Part II, “Financial Information Technology Investment Methods,” three chapters are devoted to explaining how basic financial methods are used and should be used in information technology decisions. In Part III, “Multi-Criteria Information Technology Decision-Making Methods” three chapters are presented that describe and illustrate a more complex set of decision-making methodologies that can be used individually or in combination with other methods to render information technology investment decisions. In Part IV, “Other Information Technology Investment Methods” a series of three additional chapters present a variety of other commonly used investment methodologies reported in the information technology literature. Finally in Part V, “Implementing IT Decision-Making” two chapters are presented that offer suggestions from research studies on strategies and conceptual ideas on the best practices to implement IT decision-making methodologies.

Collectively these chapters provide a comprehensive treatment of commonly used and more recently applied methodologies for technology investment decision-making. This textbook ends with an epilogue chapter focused on the issue of making the right decision and how the consequences might be avoided in making a wrong decision.

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