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BUTTERWORTH
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Breakthrough Technology Project Management

Second Edition

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HEINEMANN

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**Breakthrough
Technology
Project
Management**

Second Edition

E-Business Solutions

Bennet P. Lientz and Kathryn P. Rea

Series Editors

The list of titles in this series includes:

Start Right in E-Business

Dynamic E-Business Implementation Management

Breakthrough Technology Project Management, 2nd ed.

Grow Your E-Business for Success

Preface

INFORMATION TECHNOLOGY (IT) PROJECTS FAIL TOO OFTEN

Studies repeatedly point out that 30 to 45% of systems projects fail prior to completion. Over half of all systems projects overrun their budgets and schedules by 200% or more. Combined costs of failure and overruns total in the hundreds of billions of dollars. Failures and problems continue, despite improved tools and technology. Data also indicate that the failed projects were viewed as critically important by management.

FAILURE STATISTICS ARE STAGGERING

The results of several surveys were published in *Computerworld*, a leading systems magazine. Here are some of their results:

- Failed systems projects cost more than \$100 billion per year.
- One of every two projects overruns its budget by 180% or more.
- A survey of what was missing in the project management process indicated the following:
 - Project office—42%
 - Integrated methods—41%
 - Training and mentoring—38%
 - Policies and procedures—35%
 - Implementation plans—23%
 - Executive support—22%

WHY ARE IT PROJECTS DIFFERENT FROM PROJECTS OF THE PAST?

Many of the methods and techniques of the past are still being used today, even though the technology, methods, management, and entire environment have changed. Some of the differences are listed in the following table.

Factor	Traditional	Modern
Focus	Single project	Multiple projects
Management attention	Critical path	Management; critical path focusing on risk and issues
Staffing/resources	Full time/dedicated	Part-time/full-time mix; shared
Project	Side by side to business	Processes and systems are linked
Staffing	Best people	Average people with energy
Milestones	Assume that they can be reviewed	Reviews must be selective due to time and resources
Project status	Budget versus actual; % complete	Unresolved issues; future tasks with risk and issues
Large projects	Divide by organization	Divide by risk
Small projects	Often not treated as project	Include as projects
Risk	Often treated in a fuzzy way	Treated tangibly through issues
Lessons learned	Each project treated as unique so that lessons learned are not stressed	Major emphasis on lessons learned
Management expectations	Moderate	High
IT projects	Critical to departments	Critical to the enterprise

There is a need to update the project management approach to reflect the modern environment.

Systems and technology implementation and support are complex and involve many elements, necessitating planning and project management. Management for these projects is different from that for some standard projects in industries such as construction and engineering. The projects often involve new technology with which the project team is unfamiliar. The projects include interfaces with existing systems and other, incompatible technologies. Integration is often required. Given that many people treat software development and programming as an art, it is easy to see why systems projects become even more complex. Nor are the requirements for the systems stable. Business, technology, and externally generated changes can arise in the middle of the project. Systems projects require extensive cooperation between business units, information technology, and management.

Therefore, it is not surprising that half of client-server projects fail or that almost as many reengineering projects suffer the same fate. Managers at more than 60% of the firms in one survey thought that they had implemented purchased software packages incorrectly and had achieved little or no benefit. Firms indicate that when a failure occurs, the direct losses can be in the millions of dollars and the total

indirect losses in business are often much more (because the firm was depending on the results of the completed projects for revenue or for cost reductions).

E-BUSINESS FAILURE IS SIGNIFICANT

There is no doubt that e-business is a major force and trend for the early 21st century. The benefits of e-business are well known in all of the media. However, many don't want to discuss the dark side—e-business failures. Most of these are not publicized. After all, what would happen to a company's stock price if the failure were widely known? Some of the causes of e-business failure are the following:

- E-business implementation is treated like a traditional project—a bad idea.
- The scope of the e-business effort is defined as IT only. Business process and organizational change are not included.
- There is an inadequate provision for change in direction. The project is inflexible to change.

This book addresses these issues and more. Most chapters include a section with e-business guidelines.

WHY DO MANY TECHNOLOGY PROJECTS FAIL?

Why do so many technology and systems fail? Why don't people learn from their mistakes and those of others? Complexity is part of the answer. Also, people get caught up in their work. They move from one project or piece of work to the next. Although they continue to use many of the same tools, they do not gather or apply lessons learned. Were this not enough, management and the business depend on technology today as never before. Technologies not only must be implemented correctly but also must be integrated. The bars of standards and expectations have been raised.

Failure also occurs because people manage technology projects the same way they manage other projects. However, technology projects are different. The duration of the project can be long. During that time, the technology advances and can affect the project. The requirements of the business can change. Typically, technology projects are not carried out from scratch. The new project must always be integrated into the fabric of the current systems and technology—called the *architecture* in this book. As part of the project, the project team members may have to learn the technology as they go. These characteristics are different from what one encounters when building bridges, launching new products, or undertaking other, more common projects. On the other hand, many of the lessons learned from the project management can be applied to systems and technology projects.

Another reason for failure is that projects are managed singly—like disjoint construction projects. This does not work for technology because (1) the projects

are often interdependent, (2) many projects depend on the same technology and resources, and (3) issues that cross many projects are resolved in contradictory or conflicting ways between projects. A fundamental theme of this book is that technology projects must be managed as a whole, not as individual projects.

WHAT ARE THE BENEFITS OF PROJECT SUCCESS?

With all of this talk about failure, why do projects at all? There are many reasons, including complexity, duration of the work, and the need for organization of the work. If you are successful in better managing single and multiple projects, experience and lessons learned point to the following benefits:

- There are greater benefits to the business, because the purpose and scope are set and supported to provide tangible business benefits.
- Risk can be minimized and managed better because all projects are being managed collectively as well as individually.
- Resources are better managed, utilization increases, and critical resources can be spread across multiple projects.
- There are fewer surprises in project work and schedules, allowing more predictability.
- You get more productivity and results from investment in technology and systems.

PURPOSE AND SCOPE OF THE BOOK

The purpose of this book is to answer the following questions:

- How can the overall technology project management process be improved?
- Which systems projects should be given resources and approved for action?
- How can you better manage all systems and technology projects together?
- How can individual projects be better managed and more successful?
- What are specific guidelines for managing different types of projects?

The scope of the book includes these and other technology areas and addresses these questions:

- What projects should be approved?
- How do you formulate and start projects effectively?
- How do you manage single and multiple projects?
- How do you identify, analyze, and address specific project issues?
- How do you communicate effectively with management, team members, staff, and vendors to obtain results?

WHY USE THE TERM *BREAKTHROUGH*?

This book focuses on a project management approach that differs from the single project monolithic methods of the past (which addressed single projects, assumed that there were dedicated resources to the project, and assumed that purpose, scope, and requirements were fixed). We don't think that this world ever existed in IT, but if it did, those days are long gone. Modern project management methods have to succeed in a new world with the following characteristics:

- Technology is changing rapidly.
- Management changes business direction in response to pressures.
- Competition and industry change create more stress.
- There is limited staff to work on projects.
- People who work on projects also must do their normal nonproject work.

The book uses a commonsense approach. It is a breakthrough in that it is different from the normal project management methods. This approach has the following themes:

- You have to manage multiple projects, not single projects.
- You derive benefit by having the project team use modern software tools for project management.
- Team members on the project work in a collaborative way in which they participate in defining and updating their work and working on issues.
- Risk management is a major focus through identifying, addressing, and tracking issues.
- A high-level structure through project templates and standardization supports cumulative improvement in project performance. Standardization supports analysis and management reporting. However, at the detailed level of all projects, there is flexibility to accommodate the individual characteristics of the project.
- Lessons learned are gathered throughout the projects and applied to project templates so that projects are improved.

All of these themes must be self-reinforcing across the life of the projects. This is shown in the following table. Here the rows are some of the major activities involved in a project. The columns are three elements of the focus of this book. Note how the themes are mutually reinforcing across all of the areas.

Area	Templates	Issues/lessons learned	Collaborative work
Getting started	Project template needed to start	Project concept	Concept analysis
Meetings	Updating areas of the template	Subject of the meetings	Each person defines and updates
Presentations	Structure	Format defined	Joint presentations

Area	Templates	Issues/lessons learned	Collaborative work
Getting the people	Standardization for what is needed	Use issues as a way to get people; use lessons learned for retention	Joint tasks where participants can make friends
Vendor management	Templates fit with our schedule	Common database; vendors participate in lessons-learned meetings	Joint tasks between vendor staff and internal staff
Changes to the plan	Fit within template	Manage through issues	Joint definition of the change

THE AUDIENCE AND WHAT YOU WILL GET OUT OF THE BOOK

Who can use this book? Anyone who is involved in any type of systems and technology project in either private or public sectors—organizations large and small. We do mean organizations of all sizes. The methods developed in this book have been applied to companies with 10 to more than 45,000 employees. Although this seems very general, the lessons learned have been applied in a variety of companies and industries. In addition, the materials have been tested and employed in project management, software, and technology classes in business and management, engineering, computer science, library and information science, architecture, public policy, and medical schools. We have taught these techniques to more than 4500 people in more than 20 countries.

You will obtain guidelines that can help you achieve greater success and reduce the risk of problems and failure in projects. These guidelines are lessons learned from more than 100 projects over the past 25 years. Lessons learned are a part of knowledge management, in which a firm attempts to leverage from its experience, expertise, and knowledge for competitive advantage.

This book has specific advantages and features over others:

- The book addresses the “how” in systems and technology project management. Most other books address the “what.”
- Many specific examples from different industries are featured, including such industries as banking, insurance, manufacturing, distribution, transportation, government, retailing, medical services, and energy and natural resources.
- The book is written in an easy-to-use style. Many books are very dry. The style here is intended to make the material more interesting and useful.
- More than 300 individual guidelines and lessons learned are provided, along with ways you can employ them to be more effective.
- Projects involving software acquisition, development, operations, maintenance, enhancement, and technology are addressed in depth.

HOW IS THE BOOK ORGANIZED?

The book is divided into four logical parts:

- Part I: What should your project management strategy be and how should you address multiple projects?
- Part II: How do you establish projects and project plans?
- Part III: How do you successfully manage software development (client-server, intranet, data warehousing), operations, maintenance, and enhancement, software package implementation, and technology (including networking) projects?
- Part IV: How do you cope with specific issues related to personnel, management, technology, and vendors/contractors?

Part IV also contains a chapter on implementation of the approach and tips on how to overcome 30 potential points of resistance. Many of these actions can be taken by an individual project leader; others require wider support. More than 70 organizations have implemented these actions with success.

Chapters are generally organized in the same manner.

- *Introduction.* This lays the groundwork for the chapter and discusses what has been attempted in the past.
- *Approach.* This is the core of the chapter, which gives detailed methods.
- *Examples.* One or more examples are included.
- *Guidelines.* These are specific suggestions and lessons learned that have been developed from experience.
- *Action items.* These are steps that you can take after reading the chapter.
- *Summary.*

Throughout the book, examples are presented that employ specific technologies involved in various industries, including retailing, distribution, manufacturing, banking, and transportation. These are not your typical successful case type examples. Often, those are not of the real world. Here we deal with the dysfunctional, struggling, and failing companies as well as successful organizations. As you might guess, you often learn more from failure than success.

WHAT IS NEW IN THE SECOND EDITION?

The second edition has the following features:

- There is an expanded discussion of risk management, which extends over several chapters.
- There is a new chapter on management issues.

- Existing chapters on issues have been expanded.
- There is more in-depth discussion of estimation, budgeting, and tracking.
- Quality assurance is addressed in more depth.
- Most chapters now have specific guidelines on how to apply the material to your e-business projects.
- There is a major new chapter on implementing the techniques in the book and how to overcome potential resistance.
- A new appendix serves as an issues checklist at the start of a project.
- Useful Web sites for project management, lessons learned, and collaborative effort have been included.

To make the material more accessible, we have included a section called “The Magic Cross Reference.” We gave the feature this title because we wanted to draw your attention to it. It is useful for finding one or several of the more than 200 guidelines in the book. The term “magic” is tongue in cheek, but reflects the fact that searching through an index is often not the best way to find materials in a book.

About the Authors

Bennet P. Lientz is Professor of Information Systems at the Anderson Graduate School of Management, University of California, Los Angeles (UCLA). Dr. Lientz was previously Associate Professor of Engineering at the University of Southern California and department manager at System Development Corporation, where he was one of the project leaders involved in the development of ARPANET, the precursor of the Internet. He managed administrative systems at UCLA and has managed over 70 projects and served as a consultant to companies and government agencies since the late 1970s.

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Kathryn P. Rea is president and founder of The Consulting Edge, Inc., which was established in 1984. The firm specializes in e-business, information technology, project management, and financial consulting.

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