WILEY FINANCE

Optimizing & Assessing Information Technology

Improving Business Project Execution

+ WEB SITE

K. Scott Proctor

Optimizing and Assessing Information Technology

Improving Business Project Execution

K. SCOTT PROCTOR, CFA

WILEY

John Wiley & Sons, Inc.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.
Published simultaneously in Canada.

Library of Congress Cataloging-in-Publication Data:

Proctor, K. Scott.
Optimizing and assessing information technology : improving business project execution / K. Scott Proctor.
p. cm. – (Wiley finance Series)
Includes index.
ISBN 978-1-118-00001-4 (hardback); 978-1-118-10261-9 (ebk); 978-1-118-10262-6 (ebk); 978-1-118-10263-3 (ebk)
1. Information technology–Management. 2. Project management. I. Title.
HD30.2.P75615 2011
658.4′038–dc22 2011011000

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

DISCLAIMER

Every effort has been made to make this book as complete and accurate as possible. No warranty, however, is implied. The information provided is on as "as is" basis. The author and the publisher shall have neither liability nor responsibility to any person or entity with respect to any loss or damages arising from the information contained in this book. The names of individuals, companies, and products used in this book are fictitious and are not based on real entities. No association with any real company, organization, product, person, place, or event is intended or should be inferred.

For Kimmell, Page, Harris, and Jazz

Preface

This book is a guide—its purpose is to aid you in optimizing and assessing information technology (IT). *Optimizing and Assessing Information Technology: Improving Business Project Execution* is designed to be both easy to use and immediately useful. Put simply, this book is focused on improving business project execution through effective IT optimization and assessment.

I wrote this book based on, among other things, my experience working across the field of IT at companies both small and large, ranging from start-up enterprises on one extreme, to General Electric (GE) and AstraZeneca Pharmaceuticals, at the other extreme.

IT is a field and a discipline with a variety of meanings and interpretations. The working definition of IT that I will use for this book comes from the Information Technology Associations of America and is, "the study, design, development, application, implementation, support or management of computer-based information systems, particularly software applications and computer hardware."[1]

This book is focused on both assessing and optimizing IT. According to the Merriam-Webster dictionary, to optimize something is to make it as "effective or functional as possible," and to assess something is to "determine its importance or value."

As a guide, this book offers a framework for optimizing and assessing IT. It does not focus in on specific technologies per se—given the rapid and increasing pace of technical change across the world today, any such focus is likely to be out of date as soon as it is published. My focus is on a framework whose principles are designed to stand the test of time and rapid technical development.

After reading this book, you will be able to (1) generate an accurate and reliable assessment of a company's IT operations and (2) identify areas on which to focus to optimize IT. Topics such as "against what to assess operations" and "optimized as compared to what" are addressed over the course of this book.

In the interest of clarity and simplicity, please note that my coverage of IT in this book extends beyond "technology" itself. I cover various aspects

of the People, Process, and Technology components associated with IT as a whole.

Confusion often arises around the differences between the labels of "information technology (IT)" and "information systems (IS)." Opinions vary on how and why the IT and IS labels differ. While it is perhaps an oversimplification, IT is traditionally thought of as a subset of IS. As a discipline, IS can encompass a broad range of topics, including how various technologies combine and interact, and can include disciplines such as sociology or psychology.

For the purposes of this book, my focus is on optimizing and assessing how various components of IT, including people, processes, and technology, support and work with broader business strategies and operations. Some academic definitions of IT and IS may differ from the ones that I employ here; my aim in clearly articulating a definition and scope for IT is to focus on meaningful and impactful topics as opposed to labels and definitions.

NEED FOR THIS BOOK

This book addresses a significant and real problem in a large market. Despite the massive scale and scope of the IT market—global IT spending stood at $3.9 trillion in 2009[2]—and ample evidence that few IT projects actually succeed or turn out well,[3] no other useful, reputable, or easy-to-use guide exists.

As a market, IT consists of spending across the IT services, software, computer hardware, and telecommunications areas. A research report from Gartner published in 2008 suggests that IT services spending far outweighs IT products spending. At the time of publication of the Gartner report, IT services and telecommunication services accounted for 70 percent of total IT market spending.

This book is focused on helping anyone optimize and assess IT. IT projects typically are not executed to plan and often represent a large set of costs. Doing a better job of optimizing and assessing IT offers the potential to improve business project execution.

For the sake of context, some recent examples of failed IT projects include Ford's abandonment of a purchasing system after deployment in 2004 (costing around $400 million) and Sainsbury's abandonment of a supply-chain management system after deployment in 2004 (costing around $527 million).

IT problems have also led to a number of high-profile failures. The crash and loss of NASA's Mars Polar Lander in 1999 has been attributed to a software bug in a single line of computer code.[4] In 1997, software

specification and design errors led to the explosion of the $350 million Arianespace 5 rocket.

In contrast to these failures, there are a number of IT project success stories that underscore the value of good IT optimization and assessment. One such example is Enterasys Networks's implementation of Salesforce CRM (Customer Relationship Management) Service Cloud. This implementation increased customer satisfaction for technical support to 95 percent while driving cost savings of 10 percent.[5]

In addition to these underlying drivers, Gartner predicted that "by 2015, most external assessments of enterprise value and viability will include explicit analysis of IT assets and capabilities."[6] Thus, there is a compelling need for this book and its underlying IPM framework to meet the coming demand from, among other areas, external assessments of enterprise value and viability.

TARGET AUDIENCE FOR THIS BOOK

Individuals and teams working across all phases of IT project management represent the primary market for this book. Included in this market are both typical project management functions, such as project managers, business analysts, and the like, as well as functions related to more specific IT assessment areas, such as investment due diligence, mergers and acquisitions due diligence, and other functions.

Secondary markets for this book include business and finance professionals with an interest in IT, consultants working in the IT space, and students interested in IT.

Typical reader profiles for this book might include: a project manager working on projects with some element of IT; a business analyst responsible for mapping and/or understanding how certain IT elements relate to an overall process; a business development professional assessing the IT operations of a partner or potential partner company; and an investment manager assessing a company's IT operations.

SUMMARY OF CONTENTS

Optimizing and assessing IT involves a step-by-step process whereby various aspects of IT are evaluated. This book is organized into four discrete sections. In addition to the book itself, a companion web site offers templates, checklists, and related materials for your reference and use.

Part One of the book introduces the concept of the IT Pillars Model (IPM) for optimizing and assessing IT. This framework is explained in detail and compared to other common frameworks currently used in a variety of ways across IT. The IPM consists of three "pillars"—Strategy, Project Management, and Operational Excellence—as well as three "components"—People, Process, and Technology.

Part One provides a solid foundation for the reader in terms of where and how the IPM fits into the overall operations of a business. Concepts ranging from strategic direction to enterprise architecture are contextualized and covered.

The topic of how a business's strategic direction relates to its IT operations is covered in Part One as well. The relationship between a company's strategic direction and how it manages and utilizes IT is a critical area for consideration and analysis.

Finally, Part One covers the process involved in quantifying the IPM. Each area of the IPM is assessed and the manner in which these assessments can be quantified and summarized is described in detail.

Parts Two and Three of the book examine each aspect of the IPM in the context of case studies. Using fictitious (but realistic) company information, each of the components of the framework (People, Process, and Technology) is evaluated across each of the framework's pillars (Strategy, Project Management, and Operational Excellence).

Part Two covers the IPM as it relates to a large and mature organization. Part Three covers the IPM as it relates to a midsize and growing organization.

In essence, Parts Two and Three of the book offer a detailed, hands-on user's guide to the principles and practice of the IPM. Part One offers up some important ideas and principles for strategy and IT, while Parts Two and Three present step-by-step guidance for how a company's IT operations should be assessed and optimized.

The final section of the book, Part Four, covers tools and reporting. Analytical tools such as ROI (return on investment), benchmarking, and metrics are covered in this section. In addition, Part Four discusses a series of useful reports for IT optimization and assessment.

Finally, a companion web site is available for this book at www.wiley.com/go/proctorit. This web site complements the book and offers a variety of materials, including templates, checklists, and figures, that are referenced throughout the book itself.

Contents

PART

One

Introduction to the IT Pillars Model

CHAPTER 1

IT Fundamentals

Information technology (IT) is a label that is used in many ways in today's increasingly technically focused world. Such wide and varied usage of the "information technology" or "IT" label can lead to confusion and unnecessary complexity. For that reason, I begin this book with an explanation of the context in which I am addressing IT.

IT is more than a function within a business and more than a technical discipline. As noted in the Preface, IT may be characterized as "the study, design, development, application, implementation, support or management of computer-based information systems, particularly software applications and computer hardware."[1]

Parsing even further into the formal definition of IT, the Merriam-Webster dictionary defines "information" as "knowledge obtained from investigation, study, or instruction," and "technology" as "the practical application of knowledge, especially in a particular field." Information may also be characterized as data, or "raw symbols," that have been given meaning by relational connections.[2]

Reading into the formal definitions of IT, one interpretation is "the practical application of information in commerce and industry." This is the definition that I will use throughout this book for IT.

This is but one way of contextualizing IT—while the term can take a variety of meanings, it is important to ground any IT-related conversations in a common definition and understanding of IT itself.

Beyond any formal definition, however, IT may be characterized as having three "components": People, Process, and Technology. Put another way, the practical application of information in commerce involves three components: (1) People, or the individuals and teams involved in work; (2) Process, or the manner in which certain tasks and activities are accomplished; and (3) Technology, or the systems and tools utilized to accomplish work.

While the purpose or role of IT may vary across industries, companies, and geographies, a lowest common denominator may be that of IT serving as an "enabler," or a vehicle for facilitating action. There may well be exceptions to this characterization, but IT regularly serves as an aid or a tool that facilitates an activity, such as, for example, processing order transactions quickly or processing large volumes of data efficiently and accurately.

As noted in the Preface, confusion can arise related to the differences between the labels of information technology (IT) and information systems (IS). My focus in this book is on IT—specifically on optimizing and assessing how various components of IT support and function with broader business strategies and operations.

IT represents a large market—global spending reached $3.9 trillion in 2009.[3] Despite the size of the global market, a large number of project examples indicate that few IT projects actually succeed or turn out well.[4] These dynamics—a large market with poor delivery results—underscore the need for this book and the IT Pillars Model (IPM).

OPTIMIZING AND ASSESSING IT

As noted in the Preface, the Merriam-Webster dictionary defines "optimize" as making something as "effective or functional as possible," and "assess" as to "determine its importance or value." This book is focused on optimizing and assessing IT.

In order to generate an IT assessment and an idea of what "optimized" might look like, a goal, or desired end state, for how IT should work across an organization is needed. In other words, we need to define our target in order to properly assess and optimize IT.

While the goal of IT may vary across companies, one common theme heard from chief information officers across a large number of surveys sponsored by the Center for Information Systems Research (CISR) of the Massachusetts Institute of Technology (MIT) is that their most important concern is "alignment with business strategy."[5] Part of the IPM entails evaluating how well the goals of an IT organization align with the rest of a business's operations.

An overarching goal of the IPM, and of this book, is to seek simplicity. IT can be a complex field and topic—a focus of mine is to distill the important, or "vital," aspects of IT out of the otherwise often complex IT landscape. To paraphrase Oliver Wendell Holmes, there is power in "simplicity on the other side of complexity."