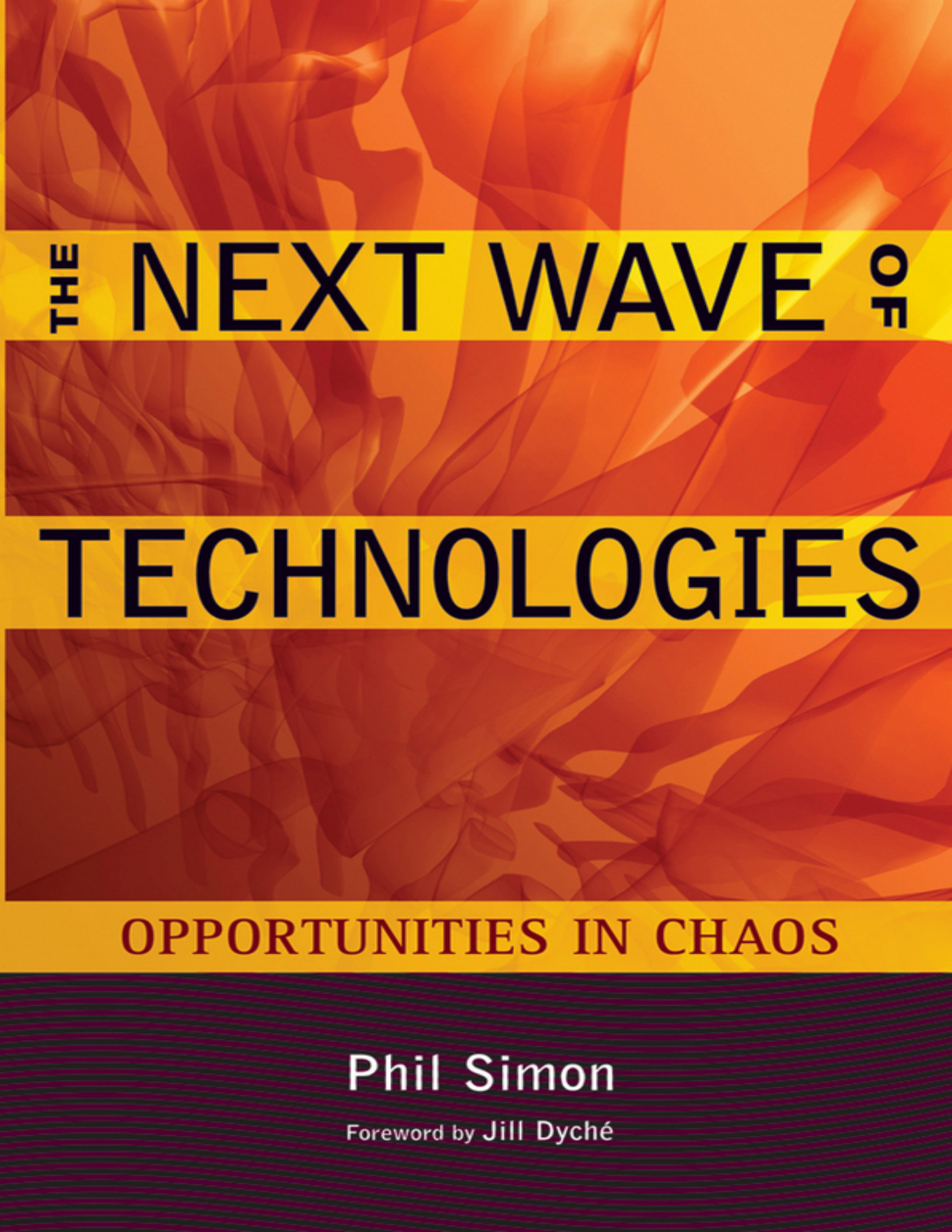




THE NEXT WAVE OF TECHNOLOGIES

OPPORTUNITIES IN CHAOS

Phil Simon

Foreword by Jill Dyché

CONTENTS

[Cover](#)

[Title Page](#)

[Copyright](#)

[Foreword](#)

[Preface](#)

[Acknowledgments](#)

[About the Contributors](#)

[Part I: Introduction, Background, and Definitions](#)

[Chapter 1: The Changing Landscapes of Business and Technology](#)

[Introduction](#)

[Enterprise 2.0: What's in a Name, Anyway?](#)

[Understanding the Caution](#)

[Electronic Health Records: A Case in Point](#)

[Summary](#)

[Chapter 2: How the Game Has Changed](#)

[Introduction](#)

[The Typical Enterprise 1.0 Project](#)

[Comparing Enterprise 1.0 and 2.0 Projects](#)

[Three Requirements for Successful Enterprise 2.0 Projects](#)

[Scopes, Scales, and Reaches](#)

[Unstructured Development and Alternatives to the Waterfall](#)

[Summary](#)

[Next Steps](#)

Chapter 3: The Role of IT in an Enterprise 2.0 World

Introduction

Collins's Model

IT's Traditional Charter

Considerations

Three Viewpoints

The Changing Role of the CIO

Summary

Next Steps

Part II: Architecture, Software Development, and Frameworks

Chapter 4: Cloud Computing

A Brief History of Cloud Computing

Consumers and Small Office, Home Office (SOHO) versus the Enterprise

A Cloud of One's Own

What Is a Cloud?

Definitions of Cloud Computing

Cloud Manifesto

Cloud Architecture

The Private Cloud: When Is a Cloud Not a Cloud?

Cloud Economics

Vendor Strategies

Customer Strategies

Standards and Interoperability

Security

The Future of Clouds

Summary

Next Steps

Chapter 5: Open Source: The War That Both Sides Won

Introduction

A New Geography for Software

When UNIX Walked the Earth

Co-opted by the System

What Is Open Source?

The Costs of Free Software

Is It a Virus? Legal Risks to Using Open Source

The New Green

The Future of Open Source

Summary

Next Steps

Chapter 6: Software as a Service (SaaS)

Introduction

What Is Software as a Service?

Nothing's New: SaaS's Historical Precedents

What's Different This Time?

Case Study: Southern Oak Insurance Company

Case Study: Webalo

Summary

Next Steps

Chapter 7: Service-Oriented Architecture

Introduction

What Is Service-Oriented Architecture?

Business Benefits of SOA

Technical Benefits of SOA

Essentials of SOA

[SOA in Practice](#)

[Lessons Learned](#)

[Best Practices](#)

[Summary](#)

[Next Steps](#)

[Chapter 8: Managing Mobile Business](#)

[Introduction](#)

[An Introduction to Mobility](#)

[The Mobile Enterprise](#)

[Risks and Considerations](#)

[Business Expectations from Mobile Technologies](#)

[The Mobile Enterprise Transition Framework](#)

[Phases of Mobile Enterprise Transition](#)

[Business Value of Mobile Technologies](#)

[Metrics](#)

[Mobile Organizational Structures](#)

[Mobile Content and Services](#)

[Mobile Business Application Considerations](#)

[Balancing Personal Services with Privacy](#)

[Summary](#)

[Next Steps](#)

[Chapter 9: Social Networking](#)

[Introduction](#)

[Why Social Networking? Why Not Just Use the Public Forums?](#)

[Benefits of Social Networking](#)

[Impediments, Solutions, and Resolutions to Progress](#)

[Examples of Social Networking Tools](#)

[Summary](#)

[Next Steps](#)

[Part III: Data, Information, and Knowledge](#)

[Chapter 10: Enterprise Search and Retrieval](#)

[Introduction](#)

[What Is ESR?](#)

[Search and Information Architecture](#)

[The Business Case for ESR](#)

[Total Cost of Ownership](#)

[Forms of ESR Deployment](#)

[ESR in Action](#)

[Best Practices](#)

[Summary](#)

[Next Steps](#)

[Chapter 11: Enterprise 2.0 Business Intelligence](#)

[What Is Business Intelligence, and Why Do We Need It?](#)

[BI 2.0](#)

[Measuring BI Maturity](#)

[BI Challenges](#)

[The Data Warehouse](#)

[Key Factors](#)

[Recent BI Trends](#)

[Too Much BI?](#)

[Summary](#)

[Next Steps](#)

[Chapter 12: Master Data Management](#)

[Introduction](#)

[The State of the Union](#)

[The Business Case for Master Data Management](#)

[MDM Approaches and Architectures](#)

[Selecting the Right MDM Approach](#)

[MDM Services and Components](#)

[Summary](#)

[Next Steps](#)

[Chapter 13: Procurement in Chaos](#)

[Introduction](#)

[Does Procure-to-Pay Matter?](#)

[What Is Procure-to-Pay Automation?](#)

[Benefiting from P2P Automation](#)

[Procure-to-Pay Leadership](#)

[Automation Risks and Challenges](#)

[Leveraging Your ERP](#)

[Technology Overview](#)

[Vendor Portals](#)

[Summary: Rethinking Procurement](#)

[Next Steps](#)

[Note](#)

[Part IV: Management and Deployment](#)

[Chapter 14: Agile Software Development](#)

[Introduction](#)

[Limitations of the Waterfall Method of Software Development](#)

[Benefits of Agile Methods](#)

[Alternative Engineering Models](#)

[Agile Process in a Nutshell](#)

[The Agile Landscape](#)
[The Benefits of Simplicity](#)
[The Manager's Perspective](#)
[Limitations of Agile](#)
[Achieving Enterprise Agility](#)
[Summary](#)
[Next Steps](#)

[Chapter 15: Enterprise Risk Management](#)

[The High-Risk Society](#)
[Information Technology and the High-Risk Society](#)
[Additional Risks Stemming from IT Mismanagement](#)
[Enterprise Risk Management Overview](#)
[ERM and IT](#)
[ERM, Innovation, and Entrepreneurship](#)
[Who Owns ERM?](#)
[Who Is Doing ERM?](#)
[Case Study: Rockwell Collins](#)
[The Limits of ERM](#)
[Summary](#)
[Next Steps: Are You Ready for ERM?](#)

[Chapter 16: Implementing Open Source Software](#)

[Introduction](#)
[A Different Software Model](#)
[Getting into Open Source](#)
[OS and Digital Presence](#)
[OS and Managing Your Business](#)
[Appearances Can Be Deceiving](#)

[Product Development Agility](#)

[Support](#)

[Product Types](#)

[Crowdsourcing](#)

[Niche Markets](#)

[Summary](#)

[Next Steps](#)

[Chapter 17: Global Engineering](#)

[Introduction](#)

[Distributed Teams: An Integral Part of Enterprise 2.0](#)

[Room for Improvement](#)

[Preconditions and Reasons for Distributing Technology Projects](#)

[Drivers of Global IT](#)

[Why International Distributed Projects Sometimes Fail](#)

[Case Study: An International Project Gone Awry](#)

[Global Engineering 2.0](#)

[Summary](#)

[Next Steps](#)

[Chapter 18: Enterprise 2.0 IT Project Failure](#)

[Introduction](#)

[Enterprise 2.0: An Evolving Concept](#)

[Understanding Traditional IT Failure](#)

[Enterprise 2.0 Failure](#)

[Reasons Enterprise 2.0 Projects Fail](#)

[Case Study: Social CRM](#)

[Preventing Failure through Measurement](#)

[Summary](#)

[Next Steps](#)

[Chapter 19: Readyng the Troops for Battle](#)

[Introduction](#)

[Know Your Organization's Limitations from the Get-Go](#)

[Insist on Maximum Collaboration with External Parties](#)

[Bridge the Gap between Functional and Technical End Users](#)

[Prepare for Sudden, Unexpected Growth](#)

[Recommit to Employee Training](#)

[Embrace Uncertainty to Foster Innovation](#)

[Flip the Switch: Reverse Mentoring](#)

[Summary](#)

[Next Steps](#)

[Chapter 20: Sustainability and Green IT](#)

[Introduction](#)

[Growing Impact on Organizations](#)

[The Green Fad](#)

[Organizational Response to Sustainability](#)

[Case Study: Great Duck Island](#)

[The Future of Green IT](#)

[Summary](#)

[Next Steps](#)

[Part V: Conclusion](#)

[Chapter 21: Finding Opportunity in Chaos](#)

[Introduction](#)

[Summary of Book](#)

[Where Are We Now?](#)

[Enterprise 2.0 Drivers](#)

[Where Are We Going?](#)

[Bibliography](#)

[About the Author](#)

[Index](#)

[End User License Agreement](#)

List of Tables

[Table 2.1](#)

[Table 2.2](#)

[Table 2.3](#)

[Table 4.1](#)

[Table 5.1](#)

[Table 6.1](#)

[Table 6.2](#)

[Table 10.1](#)

[Table 10.2](#)

[Table 11.1](#)

[Table 11.2](#)

[Table 11.3](#)

[Table 11.4](#)

[Table 11.5](#)

[Table 12.1](#)

[Table 16.1](#)

[Table 18.1](#)

[Table 19.1](#)

[Table 19.2](#)

List of Illustrations

[Figure 1.1](#)

[Figure 3.1](#)

[Figure 4.1](#)

[Figure 4.2](#)

[Figure 4.3](#)

[Figure 4.4](#)

[Figure 4.5](#)

[Figure 7.1](#)

[Figure 7.2](#)

[Figure 7.3](#)

[Figure 7.4](#)

[Figure 8.1](#)

[Figure 8.2](#)

[Figure 9.1](#)

[Figure 12.1](#)

[Figure 12.2](#)

[Figure 12.3](#)

[Figure 13.1](#)

[Figure 14.1](#)

[Figure 14.2](#)

[Figure 14.3](#)

[Figure 18.1](#)

[Figure 18.2](#)

[Figure 18.3](#)

[Figure 18.4](#)

[Figure 20.1](#)

The Next Wave of Technologies

Opportunities in Chaos

Phil Simon

WILEY

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Library of Congress Cataloging-in-Publication Data:

Simon, Phil.

The next wave of technologies : opportunities in chaos / Phil Simon. p. cm.

Includes bibliographical references and index.

eISBN : 978-0-470-61308-5

1. Information technology-Management. 2. Technological innovation-Management. 3. Computer systems-Management. 4. Cloud computing. I. Title.

HD30.2.S577 2010

004.068-dc22

2009046294

Foreword

A primary lesson of history is that periodically, and often at the most inconvenient times, society needs to make a sharp break with old habits and deliberately learn new ways of behaving.

Nicholas Imparato and Oren Harari, *Jumping the Curve*

In his May 2003 *Harvard Business Review* article, “Why IT Doesn't Matter,” editor-at-large Nicholas Carr proclaimed that information systems had become a commodity. You could almost hear the teeth of chief information officers (CIOs) grinding en masse as they read Carr's assertion that “the most lavish spenders on IT rarely post the best results.” Carr went on to quote Oracle founder Larry Ellison, who in a rare moment of circumspection admitted that “most companies spend too much [on information technology] and get very little return.”

That same year Nucleus Research, a small Massachusetts market research firm, contacted 66 reference customers of Siebel Systems to discover the true business benefits of Customer Relationship Management (CRM) software. These customers had been quoted in various Siebel marketing testimonials as satisfied reference customers. But when Nucleus contacted them, 61 percent admitted that they had yet to realize any significant return on investment from CRM.

Fast forward to 2009, and you would think that the glory days of information technology would be a distant memory. But think again. Corporate boards continue to pressure executive teams to drive revenues and contain costs. Executives are up at night dreaming of new ways to innovate. Business people are being asked to do more with

less. And IT people know in their gut that there are better ways of working and that there are emerging technologies that can help.

In my work as a management consultant for Global 2000 firms, I listen to business and IT executives wring their hands and bemoan shrinking budgets and increased expectations. Here are some examples that might sound familiar:

- ‘I've got too many balls in the air. I'm trying to get more organized and get my arms around some of these new technologies that will supposedly show me how to work smarter. But I haven't even had time to load new music onto my iPod. So how am I supposed to have time to research emerging technologies?’
- “The CEO (chief executive officer) keeps telling me that marketing should lead the firm's innovation initiatives. He says that as the CMO (chief marketing officer) I need to keep differentiating the company through new ways of doing business. But I'm being measured on my P&L (profit and loss), not on my Big Ideas—which, by the way, haven't really been rolling up to my doorstep.”
- “Between you and me, I'm afraid for my job. Our two largest competitors have just cut their IT budgets by sending key functions ‘into the cloud,’ and my boss has asked me twice about my SaaS software as a service strategy. I'm not even completely sure what the cloud is, let alone what to send to it. Where do I start?”
- “I've begun quantifying the value of business intelligence for my company. It could save us thousands of staff hours of data collection. It could get our line managers the reports they've been begging for. And it could actually help us collect more information about our best customers. But if I can't show how it directly

drives revenues, no one wants to hear about it. I'm not going to bother."

- "At every executive team meeting someone's talking about social networking. If I had a dime for every time the word 'community' was used around here I could just quit right now. The irony about all the social media buzzwords is how political this company is. Half the executives won't even speak to the other half. Communities? Give me a break! Trying to adopt social media in this place would be hypocrisy!"
- "You're going to think I'm crazy, but could you just get me someone who will come in once a week and talk to me about what other companies are working on?"

Each of these is a true story. And each story reflects the desperation for time and knowledge that's confronting managers across geographies, industries, and corporate cultures. We not only have to do more with less. We have to find the time to innovate new ways of doing more with less. The paradox is almost palpable.

It turns out that rumors of IT's demise might have been greatly exaggerated. Nicholas Carr's argument, with its focus on commodity hardware and keep-the-lights-on infrastructure, was that IT was just table stakes. As soon as one company adopted a new technology, its competitors would follow suit, in effect continuing an environment of functional parity. Cynical? By half. Subversive? Perhaps. Accurate? It depends.

In the preface to his subsequent book, *Does IT Matter?* Carr does nod his head to the fact that how technology is actually used does make a difference. "Indeed," he says, "as the strategic value of the technology fades, the skill with which it is used on a day-to-day basis may well become even more important to a company's success." Carr is in

fact making what should have been his central point: that while IT in a vacuum is indeed inconsequential, it's the application of the technology that provides the edge.

True, sometimes the best CRM is a friendly greeting when the shopper enters the store. But sometimes it's the fact that the coupons she carries in her recyclable tote are the result of her propensity to buy a certain set of high-margin products and fill her basket with profitable merchandise mix. Maybe we sent her a link to download those coupons via social media, and maybe we keep information about her preferences and purchase behaviors as part of our business intelligence program. The essence of our customer retention strategy is to get the customer back into the store (or to the casino, the branch, the hotel, the airplane, the web site, the catalog, or the agent's office). We don't need technology to greet our customer with a warm hello. But we do need it to beat our competitors to the punch.

Indeed, any strategic value from IT will blossom as it's used to enable unique and innovative business initiatives. In a rebuttal to Carr's article in the *Harvard Business Review*, authors John Seely Brown and John Hagel III wrote, "In short, many executives have started to view IT as a commodity because they have not thought aggressively enough about how IT can bring about new business practices. The differentiation is not in IT itself but in the new practices it enables."

To that end, Phil Simon and his contributors have written a timely and important book. *The Next Wave in Technologies: Opportunities in Chaos* is a veritable toolbox of the solutions our companies will be using to enable the next set of competitive and strategic business practices.

The voices in these pages are no less authoritative than their messages. Indeed, Phil has assembled a virtual panel of the best experts on the hottest IT topics, and they weigh

in with practical, real-world advice about adoption and execution. Experts like Dalton Cervo ([Chapter 12](#)), established in my field of data integration and business intelligence, is an old friend. And I'm a recent convert to Michael Krigsman's blog and a fan of his writing on project failures ([Chapter 19](#)). Because of Phil, though, there are now some fresh points of view in my field of vision, like Heather Meeker's trenchant take on open source ([Chapter 5](#)) and Jay Miletsky's fresh perspective on the piping-hot topic of social media ([Chapter 10](#)).

They'll take your hand and guide you toward a fuller understanding their technical specialties, often with a refreshing and eminently readable irreverence. (Phil's own sections are ripe with fun references, and I love the title of one Amy Wohl section, "A Cloud of One's Own.") Ultimately, Phil and his contributors will help you make the pitch, secure the commitment, and move forward with a solution that's not only useful but transcends the buzzwords, the noise, and yes, the chaos to drive business value.

As with local branch banking, insurance agents, the family farm, and doctors who make house calls (aka home health care), IT is being taken seriously once again. Maybe, just maybe, it matters after all.

Jill Dyche
October 2009

Preface

Any sufficiently advanced technology is indistinguishable from magic.

Arthur C. Clarke (1917-2008), *Profiles of the Future*, 1961 (Clarke's third law)

In February 2009, I published my first book, *Why New Systems Fail*. For a variety of reasons, I felt that the time was right for the book. Having worked on so many poorly conceived and terribly run projects in my career, it was painfully clear to me that there was something fundamentally wrong with most organizations' attempts to implement enterprise systems. My 11 years working on different information technology (IT) projects in different countries and industries almost invariably resulted in the same outcome each time: some type of failure.

However, in a way the title was a bit of a misnomer. The book referenced systems that were, for the most part, actually very mature; they were only new to the organizations implementing them. *Why New Systems Fail* addressed systems, software vendors, consultancies, and implementation methodologies that have, in large part, been in existence for over 20 years. Indeed, nascent Enterprise Resource Planning (ERP) organizations such as SAP and PeopleSoft were founded in 1972 and 1987, respectively, although Gartner Research is credited with introducing the term *ERP* in 1990.

Twenty years is an eternity in the world of technology. Still, many enterprise system implementations failed. I found this vexing. There are many attributes conducive to success: generous IT budgets, relatively mature applications, consulting firms with significant expertise,

and thousands of previous projects to serve as examples and cautionary tales.

Against this backdrop, I could no longer claim that I just had a string of bad luck as a consultant. Something was broken, and I wanted to see if I could write a jargon-free, generally well-received book demystifying a process plagued by a 60 percent failure rate. While the first edition of the book was certainly not perfect, I believe that I succeeded in that regard.

Reviews for the book were largely positive. On his well-regarded Deal Architect blog,^{[1](#)} Vinnie Mirchandani agreed with the general tenets of the book but asked a number of completely valid questions: “Where are the newer issues with mobile interfaces? Where are RSS feeds? How will clouds affect ERP infrastructure planning?”

Admittedly, *Why New Systems Fail* largely ignored these newer technologies. Without being defensive, the book focused for the most part on enterprise systems. I told Vinnie that it is hard to imagine a book of any reasonable length that addresses every conceivable type of technology.

I started thinking about why organizations have been so reluctant to embrace these technologies. (I had a decent amount of time, as consulting work in 2009 had dropped off.) Yes, many organizations had reduced their IT budgets and head counts as a result of the Great Recession. Still, I suspected that something else was going on. I didn't see the economy as the major factor in explaining why so many organizations have dragged their feet on clearly beneficial technologies. Many of these technologies were readily available and relatively mature well *before* the meltdown.

While exceptions abound, the answer was that the burnt hand teaches best. In other words, many organizations' attempts to implement and utilize new technologies have

failed—and spectacularly at that. As a result, they are hesitant to adopt new ones—even when the benefits of these new technologies are so significant.

Technologies such as software as a service (SaaS), social networking, open source (OS), and cloud computing are relatively recent phenomena. Most suffer from a dearth of implementation methodologies and (successful) examples from which to learn. A high failure rate on these types of projects can be understood, if not expected, at least for the near future. Against this backdrop, what does this say about the ability of most organizations to successfully implement newer, much less understood technologies? In many ways, these technologies are the antitheses of the ones discussed in *Why New Systems Fail*. It shouldn't be surprising that many organizations aren't exactly waiting in line to fall on their faces.

I started thinking about the need for a book that would address the essentials, best practices, and pitfalls of these exciting new technologies. Wouldn't a book like this be beneficial to C-level executives unsure about what to do and how to do it? A busy chief information officer (CIO) could read this book and walk away with a much deeper, practical understanding of these new concepts. That same CIO might walk into work the next day and ask, “Why aren't we doing this?”

It sounded great, but I could not write such a book alone—and I consider myself a pretty smart guy. (With age comes wisdom, I suppose.) It would take me at least a solid year to research each one of these topics and write a succinct and penetrating chapter on each. Writing for C-level executives, this wouldn't be an easy task. Technology changes so quickly these days that what I wrote one day would, in all likelihood, be very different in a few years.

Time wasn't the only factor, though. I put myself in the shoes of a CIO hesitant about using OS applications, for instance. It was entirely reasonable for that CIO to want to know my OS credentials before reading what I had to write, much less trusting my recommendations and making key business decisions based on them. If I were going to do this book the right way, I would need help and lots of it. Why not surround myself with really smart people?

I started contacting friends who had expertise in these very technologies. Not all of my friends work in the technology world, so I started networking online. God bless LinkedIn. Most people thought that I had a good idea for a book and signed on, some within a few minutes. More than a few were willing to contribute, but they had other commitments and my time frame was a deal breaker. By June 2009, though, I realized that this book was going to become a reality.

My primary challenge on this book would be much different than that of its predecessor—mainly writing thousands of words and organizing them in a logical fashion. Prolific author Bob Charette (who wrote [Chapter 15](#) on enterprise risk management) told me that survey books like this tended to suffer from a number of problems. (Always stubborn, I was convinced that I could avoid or at least minimize them.) First, the messages and writing styles of each contributor are usually very different. I have taken great pains to ensure that there is a good deal of flow and consistency throughout the book, even though the contributors' backgrounds, native languages, and areas of expertise are hardly identical.

Second, many compilation books lack integration. Make no mistake here: Because many of the book's technologies are completely independent of one other, each chapter certainly does *not* overlap with all of the others. By the

same token, however, themes such as IT management, data integrity, enterprise architecture, and the like are not confined to any one chapter; they permeate the book. As such, the book's chapters are anything but islands.

More than content overlap, however, I felt the need to ensure a generally consistent message throughout the book. In selecting the contributors for this project, I ensured that everyone was on the same page with regard to the book's overall philosophy. Everyone understood that this is a management book first and an IT book second. Cool technology is fine and dandy, but I did not want chapters rife with unrealistic, pie-in-the-sky recommendations. The material had to be rooted in the day-to-day realities of the current business world. This book is a practitioner's guide, not an academic text.

Third, many survey books leave readers wondering, “Now what do I do?” In that vein, the end of each chapter provides “next steps.” These are key points and questions designed to help the reader ask the right questions within the organization.

Finally, this book knows its limitations. It does not aim to be a how-to guide for implementing any specific technology, much less every one. Rather, because each subject is written by a very knowledgeable practitioner, the book distills the best practices and identifies the pitfalls and land mines of each topic. Those looking for more detail can pick up more comprehensive texts, often written by the very same people who wrote that chapter.

Objectives of This Book

The goal of the book is to help organizations understand the intersection of people, business, and these new technologies in a concise manner. It collates a number of

independent points of view on emerging technologies from prominent senior executives, authors, IT practitioners, journalists, thought leaders, and pundits. Specific technologies and topics include:

- Agile software development (SD)
- Business intelligence (BI)
- Cloud computing
- Enterprise 2.0 project failure
- Enterprise risk management (ERM)
- Enterprise search and retrieval (ESR)
- Green IT
- Master data management (MDM)
- Mobile applications
- Open source (OS) software
- Procure-to-pay (P2P)
- Service-oriented architecture (SOA)
- Social networking
- Software as a service (SaaS)

The book endeavors to provide extensive insights, advice, and best practices regarding promising technologies that have yet to be fully understood—much less utilized—in most organizations. More than a theoretical text, it examines how organizations can and should introduce these new technologies, with specific emphases on lessons learned and people and management issues.

Book Layout

The chapters in this book are grouped into five parts.

Part I: Introduction, Background, and Definitions

The first few chapters lay the foundation for the rest of the book, providing a background against which these massive changes can be viewed. This part provides a framework in which organizations can assess the threats and opportunities created by these disruptive technologies.

Part II: Architecture, Software Development, and Frameworks

The second part of the book deals with the vast changes taking place in the way in which organizations develop, run, and integrate their core applications. This is hardly the first tectonic shift in technology, nor will it be the last.

Twenty years ago, client-server applications gradually began to replace bulky mainframes, allowing for distributing computing. In the late 1990s, the Internet and virtual private networks (VPNs) allowed end users to access corporate information from a browser, whether they were in the office or not. Now seismic shifts in system architecture and application developments are taking place with the advent and increasing adoption of SOA, cloud computing, mobile computing, SaaS, and the like.

Part III: Data, Information, and Knowledge

Corporate applications, databases, and systems have always existed—in large part—to create, store, and retrieve data information. While this *raison d'être* has not changed in recent years, there have been sea changes in the past

five years with regard to the information stored in these systems.

The types of information generated today no longer exclusively fit neatly into orderly databases (if they ever did). The massive growth of the Internet, mobile phones and applications, blogs, social networks, wikis, mashups, videocentric sites such as YouTube, and email have led to a vast increase in the amount of unstructured data. In fact, an estimated 80 percent of all business data is unstructured.² These new types of data (along with cheap storage) have resulted in an absolute explosion in the sheer quantity of data available.

Structured data is much easier to store, interpret, and retrieve than unstructured data. Think about the following two questions:

- “How much in travel expenses have we paid this year?”
- “Are our customers satisfied with the quality of our products?”

The first question typically can be answered with a simple report or database query. The second is a much different story. Surveys are helpful, but insightful comments and feedback are typically difficult to analyze. Adding social media and blogging to the mix only complicates matters further.

To the extent that web services create massive amounts of unstructured data, organizations need to employ powerful tools to turn raw data—structured and unstructured—first into information and then, ideally, into knowledge.³

Unfortunately, few companies have deployed effective tools to organize, interpret, and act upon this surfeit of data. This part of the book addresses the challenges, best

practices, and tools available with respect to managing enterprise data.

Part IV: Management and Deployment

Faced with new, powerful, and malleable technologies and a seemingly insurmountable array of data, what is an organization to do? The fourth part of the book focuses on organizations' efforts to make these immense technological changes operational, on seizing opportunity in chaos. While “moving the rock” is important, this part also addresses avoiding undesirable yet common outcomes on IT projects. Insights and best practices are provided for averting IT project failures, minimizing enterprise risk, adopting agile and green IT methods, and overcoming the challenges associated with implementing different types of Enterprise 2.0 technologies.

Part V: Conclusion

The final part briefly summarizes the major themes of the book with an eye on successful adoption of these new technologies. It does not provide all of the answers to any one technology, but summarizes the questions that readers should be asking themselves.

Who Should Read This Book?

I have yet to read an IT management book that can be everything to everybody (and I read quite a bit). This book certainly is no exception. While this book has no one intended audience, I have written it with three in mind.

First, this is a book aimed at IT professionals of all levels. CIOs and chief technology officers (CTOs) thinking about utilizing an Enterprise 2.0 technology would be wise to read the corresponding chapter before making the