
THE NEXT WAVE OF
TECHNOLOGIES
OPPORTUNITIES IN CHAOS
Phil Simon
Foreword by Jill Dyché

# The Next Wave of Technologies

## *Opportunities in Chaos*

**PHIL SIMON**

WILEY

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



***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.
ISBN 978-0-470-58750-8 (cloth)
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

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

# Contents

# 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?"

[1]See http://dealarchitect.typepad.com/deal_architect/2009/05/deja-vu—all-over-again.html.

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.

[2]See http://clarabridge.com/default.aspx?tabid=137&ModuleID=635&ArticleID=551.

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.

[3]Jeff Papows's book *Enterprise.Com: Market Leadership in the Information Age* emphasizes the importance of turning data into knowledge.

## 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 commitment and investment. Below the C-level, IT directors, project managers, and analysts would benefit from the material. Organizations cannot efficiently utilize these technologies without IT staff members effectuating executive decisions.

Second, this is a book many types of students. Specifically, those in MBA and MIS programs will learn a great deal about emerging technologies that they will soon need to learn and use in the workplace.

Finally, management consulting firms and systems integrators can use the insights in this book to assist their clients in optimizing Enterprise 2.0 technologies.

I expect and even encourage readers to read what they like, to use the *New York Times*'s motto. Readers not interested in a particular topic can skip or skim a chapter without fear of missing out. I wrote this book specifically to allow the busy reader to jump around as needed.

—Phil Simon
*Caldwell, New Jersey*
*November 2009*

# Acknowledgments

This book could not have become a reality without the dedicated efforts of the contributors. Not only did I learn a great deal writing this book, I am pleased to have made new friends as well. In particular, Amy Wohl, Bob Charette, and Heather Meeker served as mentors during the project, saving me a great deal of money on psychiatrists. Tim Burgard, Dexter Gasque, and Stacey Rivera at John Wiley & Sons provided essential guidance. Kim Leonard, David Riccardi and Mitzi Koontz, and David Fugate helped me formulate the book's proposal and navigate the publishing waters.

I also would like to thank my longtime Carnegie Mellon friends Scott Berkun, David Sandberg, Michael Viola, Joe Mirza, and Chris McGee. A tip of the hat to Brian Morgan, Craig Heyrman, Scott Erichsen, Greg Dolecki, Thor Sandell, Michael West, Michael DeAngelo, Jason Horowitz, Andrew Botwin Rob Metting, Rosalinda Cifuentes, MJ Stabinski-Heckman, Jeremy Rothschild, Ellen French, Alex Saint-Victor, Marc Paolella, Jenifer Simon, Naynish Jhaveri, Tom Bardzell, Steve Katz, Mark Hayes, John Henley, Shiri Amram, Ben Lewis, Teri Watkins, Wayne McDermott, Bruce F. Webster, Rose Aulik, Jim Harris, Phil Brown, David Cotter, David Clinart, and Jake Wyant.

My heroes from Dream Theater (Jordan, John, John, Mike, and James) and Rush (Geddy, Alex, and Neil) have given me many years of creative inspiration through their music. Keep on keeping on.

Special thanks go to my parents, Linda and Sandy Simon.

Finally, I would like to thank you, the reader, for buying this book. I'm an independent author and consultant without a marketing team getting my name out there. I rely on people like you to make a living. If you enjoy the book, please recommend it to a friend, post your thoughts on Facebook, LinkedIn, Digg, or Twitter, or contact me at www.philsimonsystems.com/contact.

# About the Contributors

**Charlie Bess** is an HP Fellow who has performed various technical and formal leadership roles throughout his career. Currently, Charlie is the owner of the global architecture capability that aligns EDS's architecture activities for clients with industry standards and methods. He has been the chief technologist for the EDS relationship with a number of large clients, including most recently Kraft Foods. He has also been the chief technologist of EDS's global application delivery organization and started the application portfolio. He has numerous patents pending related to the software development process, knowledge management, and information recovery. Charlie received a BS degree in electrical engineering from Purdue University and a master's degree in business administration from Southern Methodist University. He is currently licensed as a professional engineer in the state of Texas. He is active on Southern Methodist University's MBA associate board, where he acts as mentor and coach for MBA candidates and interfaces regularly with Purdue University's Electrical Engineering school on technology direction. He is also on the executive board of the US-FIRST robotics competition in North Texas and is a senior IEEE member.

**Dalton Cervo** is the customer data quality lead at Sun Microsystems. He is part of Customer Data Steward and a member of the Customer Data Governance team responsible for defining policies and procedures governing the oversight of master customer data. Dalton has worked at Sun for over eight years. He started as an information technology (IT) software engineer developing Web applications, then moved into IT project management and eventually into the business area as part of the Market and Business Intelligence team. In the past three years, Dalton has led several customer data management efforts, including data collection, cleansing, standardization, enrichment, and hierarchy classification; master data management conversion, consolidation, standardization, and cleansing; and data quality standards, policies, metrics, and monitors. Dalton is a member of the Customer Advisory Board for DataFlux and spoke at the IDEAS conference in 2008 on the topic of customer data metrics. He is an expert panelist and

a featured blogger for Data Quality PRO. Prior to Sun, Dalton worked for almost ten years as a software and systems engineer in the aerospace industry in multiple international projects. Dalton is PM certified and has a BS in computer science and an MBA.

**Robert N. Charette** is a frequent international lecturer and author with nearly 35 years' experience in a wide variety of software, systems, and management positions. He is an internationally acknowledged authority and pioneer in risk management and its use to increase corporate innovation and risk taking. He serves as a senior adviser to a wide variety of international organizations, high-tech consortiums, as well as government departments on the effectiveness, impacts, and rewards/risks of their high-technology programs and policies. He also acts as chief risk consultant to financial organizations and organizations when investments, mergers, or takeovers are considered. Over his career, Robert has been involved in dozens of risk assessments on projects and programs ranging in cost from several million to several billion dollars each. He co-founded the Decision Empowerment Institute with Dr. Brian Hagen in 2007, and founded the ITABHI Corporation, a risk management consultancy, in 1987. He is also on the advisory board of Foundation Ventures, a New York City–based investment firm. He is a Fellow and director of the Enterprise Risk Management and Governance practice for the Cutter Consortium, a Boston-based IT information and research company. He is also a national award-winning contributing editor to IEEE's *Spectrum* magazine, the flagship magazine of the world's largest professional technical society. In 2009, Robert received the IEEE Computer Society's coveted Golden Core Award, which recognizes IEEE Computer Society members for their long-standing membership and outstanding service to the IT community.

**Roland Cuellar** is vice president at LitheSpeed LLC, a consultancy focused on helping organizations successfully adopt agile and lean methods at the enterprise scale. He has worked with a number of Fortune 500 firms in the deployment of agile methods. He regularly speaks and publishes in a variety of journals and conferences on the topics of enterprise lean and agile, software metrics, and IT portfolio management. Roland has also worked for such organizations as IBM, Lockheed Martin, DHL, and the Baylor College of Medicine. He has a BS in computer science from the University of Houston and an MBA from UCLA, and is a Lean-Six-Sigma Green Belt.

**Tushar K. Hazra**, PhD, is the president, founder, and CTO of EpitomiOne, a strategic consulting company specializing in enterprise architecture, service-oriented architecture (SOA) deployment, portals, Web services

development, model-driven solution delivery, IT governance and service delivery management, and global sourcing strategy facilitation. He is an educator and recognized speaker with 16 years of experience in developing and integrating service-oriented enterprise (SOE) and strategic component–based systems. Before founding EpitomiOne, he served as CTO and vice president of several Fortune 100 companies.

**Jason Horowitz** is a New York City–based business consultant working with organizations in IT and green technology in areas including global operations, product management, and social media. He also serves on the board of directors for Cultural Heritage Imaging, a nonprofit engaged in development and adoption of practical digital imaging and preservation solutions to save humanity's cultural treasures. From 1997 to 2008, he played a key role in expanding Sun Microsystems, Inc.'s global product development activities: as director of business operations for a California-based division with product development at more than a dozen locations spread across four continents, as founder and director of the organization's St. Petersburg (Russia) software development center, managing Sun's Prague operation, and running an outsourced global engineering program. Prior to joining Sun, Jason worked for the U.S. State Department as a career member of the U.S. Foreign Service. Jason has bachelor's and master's degrees from Columbia University and UCLA, respectively.

**Steve King** is the head of consulting and architecture for the DMSBT Group. He leads a team of enterprise and solutions architects to provide design, integration, and consulting services to numerous Global 500 organizations and government organizations. Steve has had a lifelong interest in computer systems and began his career as an application programmer. Since then, he has been responsible for the design, development, and management of multimillion-dollar technology projects across the globe. Steve is considered by many to be one of the foremost experts in the Asia-Pacific region on Google Enterprise technologies and is an active contributor to both the Google Developer Community and Google Support Community. Throughout his career, he has been a regular contributor to a variety of open source (OS) projects, and has been an advocate and pioneer in the delivery of business applications through the browser. Steve collaborates regularly with industry leaders from all over the world, keeping them abreast of the latest trends and developments.

**Michael Krigsman** is the CEO of Asuret, Inc., a consultancy that optimizes organizations' use of technologies. He is a recognized authority on the causes and prevention of IT failures and is frequently quoted in the press

on IT project and related CIO issues. He writes a respected and popular blog called IT Project Failures for ZDNet, a unit of CBS News. He is considered an enterprise software industry influencer and provides advice to technology buyers, vendors, and services firms. Previously, Michael served as CEO of Cambridge Publications, which develops tools and processes for software implementations and related business practice automation projects. He has been involved with hundreds of software development projects, for organizations ranging from small start-ups to Fortune 500 organizations. Michael graduated with an MBA from Boston University and a BA from Bard College. He is a board member of the America's Cup Hall of Fame and the Herreshoff Marine Museum in Bristol, Rhode Island.

**Heather Meeker** is the chair of the IP/IT licensing and transactions group at Greenberg Traurig, LLP. She is one of the leading authorities on legal issues in open source licensing and is a frequent commentator and lecturer on the subject. She is involved in many organizations helping to educate lawyers and set policy in this area: former chair of the Open Source Committee of the SciTech Section of the ABA, Advisory Board Member of Open Bar, and pro bono counsel to Mozilla Foundation. Heather has provided open source counseling to clients ranging from technology start-ups using open source in product development, to public technology organizations conducting open source code releases, to venture capitalists assessing new business models in the software industry. She also served as an adjunct professor at the University of California at Berkeley School of Law and Hastings School of the Law, is a member of the American Law Institute, and in 2005 was selected by the *Daily Journal* as one of the top 30 intellectual property lawyers in California. She is listed in the *Chambers 2008* guide as a leading business lawyer in California. She also worked for many years in the entertainment and computer industries prior to her work as an attorney. Her book *The Open Source Alternative: Understanding Risks and Leveraging Opportunities* was published by John Wiley & Sons in February 2008.

**Jay Miletsky** is CEO and executive creative director at PFS Marketwyse, a leading New Jersey agency specializing in helping midsize to large companies bridge the gap between traditional and Internet marketing. An industry veteran, he heads up a creative team of marketing professionals focused on developing brands and generating awareness through traditional, online, and integrated efforts. His marketing work has included successful consultations and campaigns for companies such as Hershey's, AmerisourceBergen, Emerson Electric, JVC, and the Michael C. Fina Company. He is the author of ten books, including *Perspectives on Marketing* and *Perspectives on Branding*, as well as his new college textbook, *Principles of Internet Marketing*.

**Brian P. Morgan** works as an assistant vice president at a large asset management firm in New York City, where he has spent over seven years implementing business intelligence (BI) systems, starting a business intelligence competency center (BICC), and managing application development in finance. He is a leader in his field, and others look to him for ways to help streamline company solutions. He spent two years at Merck & Company, doing BI/OLAP development on projects around the world. He then worked as an independent consultant implementing BI solutions at organizations in and around the New York tristate area. He graduated from the College of New Jersey (formerly Trenton State College) with a BS in computer science.

**Brian G. Rosenberg** has worked with the implementation and optimization of Enterprise Resource Planning (ERP) software for nearly 18 years. In 1999, after leading multiple ERP and accounting software implementations, he founded RPI Consultants in order to provide cost-efficient solutions that focused on addressing customer-specific business needs. His extensive work on needs analysis, business process redesign, work flow, and custom application development allows a unique perspective on how information technology can be leveraged to increase operational efficiencies and deliver bottom-line results. As an industry leader in procure-to-pay best practices, he has served on executive steering committees for multiple ERP implementations and assisted numerous billion-dollar organizations in moving toward shared services environments. He regularly presents at conferences on topics such as accounts payable (AP) optimization and ERP improvement. He is an active member of International Accounts Payable Professionals (IAPP) and the Association for Healthcare Resource and Materials Management (AHRMM). In addition, he has supported charitable efforts as the founding treasurer of the Baltimore Waterfront Rotary Club.

**Damien Santer** is chief executive officer and chairman of the DMSBT Group, an international business and technology consulting firm operating across the Asia-Pacific region, specializing in Enterprise 2.0 solutions, enterprise search and retrieval, geospatial portals, and software as a service solutions. Damien is a 15-year veteran of the industry, with experience across software development, applications, platforms, network infrastructure, project management, and consulting with Fortune 500 organizations and government departments across the region. Damien began his career as a systems engineer specializing in Novell Netware but more recently has specialized in consulting on the creation of competitive advantage through the application of Web 2.0 technologies within the enterprise (Enterprise 2.0) and the associated organizational change required to implement them. Damien serves as a director and business and technology adviser to numerous organizations and is a recognized industry expert and speaker, having

presented at Singapore Institute of Management, Broadcast Asia, and various CIO, government, and defense seminars and symposia.

**Bhuvan Unhelkar**, BE, MDBA, MSc, PhD, FACS, has 26 years of strategic as well as hands-on professional experience in information and communication technologies (ICT) and their application to business and management. He is the founding principal of MethodScience.com and has notable consulting and training expertise in software engineering (modeling, processes, and quality), as well as in enterprise architecture, project management, collaborative Web services, and mobile business. He earned his doctorate in the area of object orientation from the University of Technology, Sydney, in 1997. Subsequently he designed and delivered course units like global information systems, object-oriented analysis and design, business process reengineering, and IT project management in various universities in Australia, China, and India. He leads the Mobile Internet Research and Applications Group (MIRAG) at the University of Western Sydney, where he is also an adjunct associate professor. He has authored/edited 14 books in the areas of globalization, mobile business, software quality, business analysis, business processes, and the unified modeling language (UML), and has extensively presented and published research papers and case studies. His current research interests include composite software development processes for mobile applications and application of mobile technologies in helping organizations with their environmentally responsible business strategies (ERBS). Dr. Unhelkar is a Fellow of the Australian Computer Society, life member of the Computer Society of India, Rotarian at St. Ives, Discovery volunteer at New South Wales parks and wildlife, and a previous TiE Mentor.

**Amy Wohl** is a noted expert on the computer market, its products, and its dynamics. She has been observing, analyzing, commenting on, speaking and writing about, and consulting to the information industry for nearly 30 years. She is the author of the book *Succeeding at SaaS: Computing in the Cloud*. The focus of her expertise and interest is the commercialization of new technology and the creation of new markets and business models. She has provided guidance to clients seeking to invest in or create and market products in areas ranging from word processing, desktop publishing, and office automation to voice processing, development tools, digital rights management, new operating systems (and their platforms and interfaces), Linux, Java, and Web services. Her current interests include SaaS, SOA, and Web 2.0. Wohl is president of Wohl Associates, a consulting firm established in 1984, whose clients include every major systems and software vendor. She has also consulted to the U.S., state, and foreign governments; to major corporations; and to a number of universities and major hospitals. She is editor and publisher of the blogs Amy D. Wohl's Opinions and Amy Wohl's