ENTERPRISE 2.0

NEW COLLABORATIVE TOOLS FOR YOUR ORGANIZATION'S TOUGHEST CHALLENGES

ANDREW MCAFEE

Harvard Business Press

Boston, Massachusetts

Copyright 2009 Andrew P. McAfee

All rights reserved

Printed in the United States of America

13 12 11 10 09 5 4 3 2 1

No part of this publication may be reproduced, stored in or introduced into a retrieval system, or transmitted, in any form, or by any means (electronic, mechanical, photocopying, recording, or otherwise), without the prior permission of the publisher. Requests for permission should be directed to permissions@hbsp.harvard.edu, or mailed to Permissions, Harvard Business School Publishing, 60 Harvard Way, Boston, Massachusetts 02163.

Library of Congress Cataloging-in-Publication Data

McAfee, Andrew.
Enterprise 2.0 : new collaborative tools for your organization's toughest challenges / Andrew McAfee.
p. cm.
Includes bibliographical references and index.
ISBN 978-1-4221-2587-8 (hbk. : alk. paper) 1. Information technology—Management. 2. Technological innovation—Management. 3. Web 2.0. 4. Online social networks. I. Title.
HD30.2.M387 2009
658.4'038—dc22

2009019373

The paper used in this publication meets the requirements of the American National Standard for Permanence of Paper for Publications and Documents in Libraries and Archives Z39.48-1992.

1

Introduction

Skinheads are behind this book.

Before I explain how and why this is, let me talk a bit about this book and its goals. It's a book about how businesses are using a new set of technologies that appeared over the past few years on the Internet. To many people, these tools seemed so novel and important that they merited a whole new version number for the Web; *Web 2.0* was created to describe them, and to highlight their impact on the Internet.

I coined the term *Enterprise 2.0* to describe how these same technologies could be used on organizations' intranets and extranets, and to convey the impact they would have on business. This book is devoted to that topic. It has four main purposes. First, it's an overview and description of a bunch of new and (to many people) strange technologies and technology-based communities: blogs, Facebook, Wikipedia, Twitter, wikis, prediction markets, the PageRank algorithm, Delicious, social networking software, and others. It'll describe what each is, concentrating not on its technical details but instead on what

it's used for—what tasks it accomplishes and what needs it's designed to fill. If you've heard about these entities but aren't sure what they are and what purpose they serve, these descriptions should be valuable.

Second, and much more importantly, I'll show that these technologies are not simply a random assortment. Though they do differ in significant ways, they also all share some deep similarities, similarities that make them all part of the same broad trend. As I'll describe in chapter 3, this trend is the use of technology to bring people together and let them interact, without specifying how they should do so. While this sounds like a recipe for chaos, it's actually just the opposite; the technologies of Web 2.0 and Enterprise 2.0 have the wonderful property of causing patterns and structure to appear over time, even though they're not specified up front.

Third, this book will illustrate how companies and other organizations are applying these technologies to critically important areas. I'll use case studies, supported with both well-established theories and new frameworks, to show how and where the tools of Enterprise 2.0 are being deployed and generating results. These examples will show how leaders are applying new tools, new approaches, and new philosophies to challenges such as accurately predicting the future (in domains where traditional forecasting methods have a poor track record); creating, gathering, and sharing knowledge; increasing rates of innovation; locating answers and expertise; and identifying and solving problems more quickly. For most organizations that I'm familiar with, these issues are not peripheral; they're central. I know that the subtitle of this book—*New Collaborative Tools for Your Organization's Toughest Challenges*—is a bold one, but I honestly believe it's warranted. The tools and techniques

described in this book can help you with some of your most vexing problems (and I make that claim without knowing anything about your organization!).

The fourth and final purpose of this book is to provide guidance about how to succeed with Enterprise 2.0. As we'll see, it is not enough simply to deploy the new technologies of interaction and collaboration and then sit back and wait for the benefits to accrue. That strategy will almost certainly lead to disappointment and failure. I'll present a road map for success, concentrating on the roles played by business leaders—managers and executives outside the IT department. These leaders are the most important constituency for successful use of the newly available technologies of Enterprise 2.0; this book will reveal why this is, and how and where business leaders can most effectively intervene in order to gain access to the benefits offered by these tools.

Now, about those skinheads. They're behind this book because they helped me overcome my deep initial skepticism about the new tools and the communities built on top of them.

I'm not a skeptic about information technology in general. I've been studying IT's impact on how businesses perform and how they compete since 1994, when I started my doctorate at Harvard Business School. And one thing that's clear from a large and growing body of research is that IT as a rule significantly enhances productivity. Technology helps a company do more with less. What's more, IT helps companies keep doing even more with even less year after year. In other words, it doesn't just offer productivity benefits at one point in time, but keeps offering them over time.

This sustained benefit is due in part to the incredible rates of invention and innovation in the high-tech sector—the hardware,

software, networking, and Internet industries. As part of my research I tried to familiarize myself with this fascinating sector of the economy. If I was going to try to understand how technology is consumed, I reasoned, I had better also understand something about how it is produced.

I came to two broad conclusions about the technology-producing industries. First, they are hotbeds of innovation. They turn out new offerings at an astonishing pace, many of which are profoundly novel and beneficial. My off-the-top-of-the-head list of important new technologies that have appeared just during my own academic career includes Web browsers, PDAs, XML, modern Enterprise Resource Planning (ERP) systems, RSS, the Blackberry, the iPod and iPhone, Java, wikis, and Google's PageRank algorithm. Large and influential companies, many of them founded since the mid-1990s, have either generated or profited from these innovations. A quick list of such companies includes Amazon, eBay, Google, SAP, Oracle, Cisco, Microsoft, Salesforce.com, Apple, Facebook, and RIM.

Most of these technologies and companies were as distant as Neptune when I was an undergraduate at a very tech-friendly school (MIT) only twenty five years ago. Whenever I stand still and look back over the history of the high-tech sector, I am simply astonished at the pace and volume of innovation.

My second conclusion about this sector, though, is less positive. I've noticed that technology producers and the industries that surround them are at least as good at talking about innovation as they are at actually innovating. The vendors themselves carry on a constant monologue about their latest offerings, and about the even further advances that will be incorporated into their next versions. This monologue is echoed and amplified by a set of "helper industries" that include marketing and public

relations companies, trade publications, and technology analysts. Without questioning the objectivity of any of these functions, it's fair to say that none of them is really in the business of telling their audience, "There's nothing new here" or, "Things are relatively quiet at present" or, "We believe that this trend is largely hype and can safely be ignored." Instead, their interests are largely aligned with those of the vendors; they all have a stake in portraying the high-tech sector as ceaselessly interesting and innovative, and one that can't be safely ignored even for a short time.

In the early years of the new millennium I found myself much less willing to accept this image of high-tech industries, simply because it had so clearly been wrong in important instances. Many of the key segments of the "new economy," including consumer Internet portals and B2B exchanges, had collapsed entirely during the dot-com meltdown, and in retrospect the volume of uncritical enthusiasm and praise for these businesses seems bizarre. Similarly, the dire warnings in the late 1990s about the looming "Y2K crisis" were clearly overblown, often to the point of absurdity: the *Wired* magazine cover story for April 1999, for example, stated that, "Whatever the Y2K crisis turns out to be, it is already unprecedented: We have never before anticipated the simultaneous breakdown of a significant fraction of the world's machinery . . . maybe, just maybe, a lot of things—say, most things—will fall apart. Contrary to what the Social Security Administration has promised, pensioners in the US won't get their Social Security checks after all, but that won't matter much, because we won't have a financial system that knows what to do with checks."[1]

As it turned out, the Y2K crisis was not averted because all companies fixed every line of code that contained a two-digit

year; it was averted because there was not much of a crisis to begin with.

So I resolved in the early years of the millennium not to buy the tech sector's hype, and instead to be skeptical of its claims of constant novelty. When I started to hear talk of "Web 2.0," then, I was immediately on guard. The phrase made the extraordinary claim that a new version number for the Web was warranted—that instead of incremental improvements, a great leap forward had taken place, and that a new World Wide Web was out there.

"Oh, give it a rest, would you?" I thought to myself.

When I first started hearing "Web 2.0" I was studying corporate technologies rather than consumer ones, and didn't really want to switch. In fact, I wanted to spend as little time as possible investigating Web 2.0 because I was so convinced that it was nothing more than a new marketing buzzphrase invented by a vendor or member of one of the helper industries, and that it was yet another example of the tech sector's tendency to put old wine in new bottles. I felt I needed to familiarize myself with Web 2.0, if for no other reason than to say to my MBA and executive education students that they could (and should) ignore it. Essentially, I just wanted to confirm my jaundiced hypothesis and move on.

So I fired up Wikipedia and thought about which of its articles to look at first. By early 2005 Wikipedia was receiving large amounts of media attention, and was often held up as a prime example of Web 2.0. Which, I thought, made this the perfect time to watch it break down. I knew from my cursory reading that Wikipedia was a collaboratively produced, highly egalitarian encyclopedia. Virtually anyone could start a new article, edit an existing one, or reject someone else's edits. I believed that

although this approach was commendable in many ways, it was also doomed, especially as the number of people aware of Wikipedia mushroomed.

I knew enough about the history of online communities, both from my reading and from firsthand experience in Usenet groups, to know that they usually don't scale well. This failing is especially true if they're open to everyone and inherently utopian—based on the assumption that all members will work together with good will and in good faith. Reality is unpleasant to such communities because some people don't work this way: they post spam, spew hate speech and other vile content, bait other members into endless arguments, and generally act in ways that decrease the value of the community for other members.

Even a small number of members who act negatively can greatly harm an online community, and most communities attract such members as they grow. The two most common responses to their presence are to appoint gatekeepers to review all contributions before they appear online, or to close the community, that is, to impose entry criteria and keep many people out. Yet I knew from my initial reading that Wikipedia had taken neither of these steps. It had remained radically open, even as it grew to be quite large and well publicized.

So in early 2005 I thought that Wikipedia must be breaking down in predictable ways. I visited the site for the first time with the goal of watching this breakdown take place and then moving on to other things (or, to be honest, going back to previous things). To accomplish this goal, the first word I typed into Wikipedia's search box was *skinhead*.

I have a shaved head, but it's not a political statement; I'm not a skinhead. In fact, I knew almost nothing about skinheads at the time. I had heard, though, that there are two broad categories

of skinhead. The first is the type that most of us all too aware of: the violent, racist jingoists, often neo-Nazi, who stomp on immigrants in their leisure hours. The second category consists of people who have very similar haircuts and clothes (at least to the untrained eye), but exactly the opposite political philosophy; these skinheads practice and preach love, tolerance, and racial equality.

This surface-level knowledge of skinheads convinced me that the Wikipedia page devoted to them would be a great place to watch this online encyclopedia come apart. I thought that if hate speech and venomous arguments would be especially visible, nasty, and counterproductive anywhere, it would be on that page. I typed the word *skinhead,* hit "Go," and sat back to enjoy the fireworks.

I was taken to an article that began, "Skinheads, named after their shaven heads, are members of a subculture that originated in Britain in the 1960s, where they were closely tied to the Rude boy of the West Indies and the Mods of the UK."[2]

Contents

* 1 Categories
    - 1.1 In-fighting and Hostilities
* 2 History
* 3 Style
    - 3.1 Laces & Braces
* 4 Music
* 5 Glossary of terms

* 6 See Also

* 7 External Links

The article was over twenty-five hundred words long, and although in places it was roughly written and edited, it was the best short summary of all things skinhead I had come across. It was concise, informative, objective, apparently thorough, and extensively referenced—everything a good encyclopedia article should be. Nowhere in the text of the article did I see arguments, hate speech, or flame wars break out. Instead, I saw Wikipedia working as advertised in an area where I had expected to see just the opposite.

After I finished reading the article, I said to myself, "There's something new under the sun here" and began to suspect that Web 2.0 was in fact not just blind hype—that it was in fact useful shorthand for what was then taking place on the Internet.

However, I'm not interested in the Internet for its own sake, and my research doesn't center on the Web, virtual communities, or online business models. I'm fascinated by the Internet, Moore's Law, Metcalfe's Law and the Network Era (wouldn't be?), but I'm even more interested in how companies in "boring" industries deploy and exploit technology to do exciting things—things that make their executives and shareholders happy. In short, I'm more interested in how technology is consumed than in how it is produced.

My research also doesn't focus on entrepreneurs, venture capitalists, coders, or CIOs. These are all vitally important constituencies in the tech sector and I interact with all of them. I'm most interested, however, in what technology means for line managers, those people responsible for developing valuable offerings, getting them out the door, and getting paid for them.

These managers have frequently been left out of IT discussions, which in my view is a serious mistake. I believe that general managers are the single most important constituency for technology success or failure within an organization; yet very few books or other materials are written especially for them.

This book is an attempt to fill that gap. It summarizes the work I've done over the past few years to understand what recent developments on the Internet mean for corporate intranets and extranets, to describe the exciting new capabilities offered by these novel technologies, and to identify how best to harness their power. It's written for general managers, and as such it assumes little to no prior familiarity with the technologies it covers.

This book has one broad message for this audience: the story of how businesses use technology is about to become a lot more interesting.

After the Y2K "crisis" passed and the Internet stock bubble burst in the spring of 2000, the tech sector calmed down for a while. Companies continued to spend money on hardware, software, and networks, of course, but it seemed as if the toolkit of information technologies available to help businesses accomplish their goals was largely stable, and no longer changing as quickly as it had been doing.

For many people, this stability was welcome. The late 1990s were a time of incredible technology innovation and change, and decision makers both inside and outside IT departments frequently felt overwhelmed. Executives and managers were confronted with the Internet and the Web; eCommerce and eBusiness; large-scale enterprise systems such as ERP, Customer Relationship Management, and Supply Chain Management, and the looming threat that everything would stop working on January 1, 2000.

These developments were particularly unsettling, not only because they appeared so suddenly and in such rapid succession but also because they were all related to IT, a domain well outside the comfort zone of most business decision makers. For many, if not most, managers the world of technology—which includes IT departments, equipment and software vendors, and specialized consultants and analysts—is a closed one. Its members seem almost to speak a different language, and to be in some ways hostile to outsiders. It's easy to believe that it would require years of study and apprenticeship to break into the world of IT. Since the mid-1990s I've taught hundreds of business executives, and they have often displayed levels of "tech anxiety" that remind me of high school students' math anxiety.

Still, these executives tried. In the late 1990s managers in virtually every industry made sincere efforts to educate themselves about the newly available technologies and their impact on business practices and competitive strategies. They also invested significant amounts of time, money, and effort in deploying the new tools and harnessing their power. Many of these efforts were perceived as successes, but many others weren't. So the calmer environment of the first years of the new century was welcomed by many managers and companies in technology-consuming industries. It meant that they had less to absorb, understand, and deploy.

An article about corporate IT in the May 2003 issue of *Harvard Business Review* was also welcomed in many quarters, although it was also widely derided. Written by HBR editor-at-large Nicholas Carr, it was titled simply "IT Doesn't Matter." Carr's argument was straightforward: IT, he wrote, was "becoming [a cost] of doing business that must be paid by all but provide[s] distinction to none." Because of this commoditization,

"the greatest IT risk facing most companies is . . . overspending" and "IT management should, frankly, become boring." Carr's article and subsequent book on the same topic were, to put it mildly, not well received in the high-tech sector, but they found many receptive readers within organizations that had invested heavily in IT but remained uncertain as to what they had received in return.

In this environment of lower spending and lowered expectations, few people anticipated the appearance of a new and powerful set of information technologies for corporations (I know I didn't). And even fewer were expecting that these new digital tools would originate not in a university research center or lab at Microsoft, IBM, SAP, or Oracle, but rather in a group of online collaborative communities, some of which were explicitly not for profit.

Yet this is what happened. A suite of technologies developed to support communities on the Web is entering companies and having a large impact on them. This book aims to describe these tools, show why and where their impact will be felt, and offer advice and guidance to decision makers about how to select and deploy them effectively.

In a spring 2006 article in the journal *Sloan Management Review* I introduced the term *Enterprise 2.0* as shorthand for the use of Web 2.0 technologies by businesses in pursuit of their goals. It caught on, and is now in fairly common use. At about the same time the article appeared, I started a blog about my work, and most of my blog posts have been about Enterprise 2.0.

So is this book. Although it's about IT, it's not written for programmers, systems analysts, CIOs, gadget freaks, or other technophiles. Rather, it's written for businesspeople, in particular the managers and executives responsible for setting and

achieving their organization's goals. If you're part of this population of business decision makers, I hope to show you that no matter what industry you're in, the new technologies I'll describe can be highly beneficial and help you address longstanding challenges in new ways. I also hope to show that no matter what kind of organization you're part of—young or old, big or small, cutting-edge or mainstream—these new technologies are accessible and appropriate, as are the new approaches to collaboration and interaction that make use of them. As we'll see, the phenomenon I call Enterprise 2.0—business use of the new tools of collaboration—is not confined to "new economy" companies, nor to those full of Gen Y workers: the benefits of Enterprise 2.0 are available to any organization.

These benefits, however, are not automatic. Experience shows that it's surprisingly difficult for people and organizations to move away from their current collaborative tools and habits and adopt new ones. Managers must involve themselves in this transition if they want it to be successful, and the chapters that follow show where, when, and how they can most effectively intervene.

This book should also be useful and relevant to other groups involved in developing IT and deploying it within organizations. High-tech vendors and entrepreneurs, consultants and analysts, and of course people working within corporate IT departments should find its topics worthwhile and its content informative.

The content is divided into two parts: part I explains what Enterprise 2.0 is and why it's valuable, while part II offers guidance for managers about how to deploy the new tools and practices of collaboration successfully. Chapter 2 kicks off part I by presenting four recent case studies of organizations facing

familiar challenges; these case studies are not resolved in the chapter, but instead left hanging. Chapter 3 then takes a short step backward in time to describe how a group of new collaborative technologies and communities appeared on the Internet over the past few years; this chapter stresses how these were not just incremental improvements over what was in place before, but were instead radical departures that addressed the shortcomings of previous approaches. Chapter 4 then returns to the case studies, discussing how each of the organizations adopted new technologies and collaborative practices and benefited greatly from them. This chapter also places the case studies within a broader framework that illustrates the value of Enterprise 2.0 for four different categories of user: strongly tied colleagues (in other words close ones), weakly tied colleagues, potential collaborators who are not yet working together, and "professional strangers." Chapter 5 concludes part I by discussing the concrete business benefits provided by successful Enterprise 2.0 deployments.

Part II explains how to successfully apply the new technologies of collaboration and the work practices that make use of them. Chapter 6 begins by listing the most common concerns that deter organizations and their leaders from embarking on an Enterprise 2.0 effort. These concerns appear daunting at first, but experience and evidence reveal that they're actually not insurmountable—and that most of them are not serious impediments at all. This chapter then shows how the most serious barrier to Enterprise 2.0 is the unwillingness of many individuals to give up their existing collaborative tools and practices, even though these are clearly inferior in important ways, and reveals the deep-seated reasons for this reluctance. Chapter 7 builds on this understanding to offer both technologists and general

managers guidelines for overcoming this hesitation and succeeding in the use of Enterprise 2.0 initiatives. These guidelines apply to both technologists and general managers. Chapter 8 concludes the book by making some grounded projections about the future of collaborative work, taking into account both the largest threats and the greatest opportunities associated with the tools now available.

The story of how businesses use technology is about to get much more interesting because Enterprise 2.0 offers significant improvements, not just incremental ones, in areas such as generating, capturing, and sharing knowledge; letting people find helpful colleagues; tapping into new sources of innovation and expertise; and harnessing the "wisdom of crowds." These are critical activities, yet many organizations feel that they're currently stumbling rather than excelling at them. There's also a widespread perception that the technologies currently in place to support these activities are weak, primitive, and unpopular.

Because of Enterprise 2.0, this situation is already changing at some organizations. As the case studies and examples in the chapters that follow illustrate, leading companies are deploying the new tools of collaboration and interaction; changing established norms, practices, and processes; and reaping rewards. As the science fiction writer William Gibson observed, "The future is already here—it's just not evenly distributed." Case studies of early adopters offer us a glimpse of Enterprise 2.0's exciting future, and this book includes case studies of organizations as different as Google and the CIA.

The adjective *social* is often applied to the technologies discussed in this book. This label is accurate, but unfortunate. When some managers hear talk of social technologies, they immediately think of technologies that facilitate activities like

happy hour, fantasy sports league drafts, and office gossip. They hear "social," in short, and think it means not work-related, or time wasting, or productivity-draining.

Because of this tendency, I rarely if ever use the word *social* when discussing Enterprise 2.0. I prefer instead *collaborative,* a term that has largely positive connotations for business leaders. People collaborate in order to get work done and solve problems, and these days there's no shortage of problems to solve. As I write (in early 2009), the worldwide economy is beset by a severe recession, and companies must figure out how to keep innovating and pleasing their customers while at the same time slashing costs and improving efficiency.

This is a daunting task, and it makes great sense to harness all available brainpower for it. As the open source software proponent Eric Raymond says about fixing computer programs, "With enough eyeballs all bugs are shallow." With enough brains, many, if not most, business challenges can be met, and Enterprise 2.0 is all about using technology to bring brains together effectively. Now more than ever, this seems a smart thing for organizations to be doing.

One more note on terminology. My professional home is a business school, so the bulk of my research has been conducted in the private sector rather than within government and nonprofit agencies. As a result, I more often use the nouns *business* and *company* and the adjective *corporate* rather than the broader terms *organization* and *organizational.* I don't mean to imply, though, that Enterprise 2.0 is limited to the private sector, or that it should be. All of this book's content is applicable to both public and private organizations, and I hope readers from outside the corporate world will forgive me for frequently talking about "companies."

I also hope that as a result of reading this book you'll join the ongoing conversation around Enterprise 2.0. I participate in this discussion via my blog (andrewmcafee.org/blog), my Facebook profile (http://www.facebook.com/people/Andrew-McAfee/509738234) and my Twitter identity @amcafee. If you don't yet know what blogs, Facebook, or Twitter are, don't worry; they're all explained in the pages that follow. Sign up, subscribe, leave a comment, send a message, and just generally join in on my emergent social software platforms (another term explained in the text). You'll find that it's a great way to educate yourself about Enterprise 2.0. I look forward to hearing from you.

No one is more surprised than I am by this book. I had no plan a few years ago to investigate any new Internet technologies or online communities, and certainly no idea that I would make use of the "2.0" suffix myself. The only credit I give myself is for being just open-minded enough to test my initial skepticism about Web 2.0. The rest, I guess, I owe to skinheads . . .