

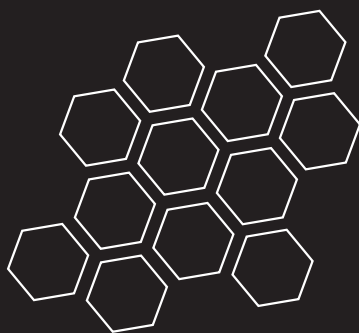
CROWDSOURCING

DAREN C. BRABHAM



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CROWDSOURCING



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DAREN C. BRABHAM

The MIT Press | Cambridge, Massachusetts | London, England

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This book was set in Chaparral Pro by the MIT Press. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Brabham, Daren C., 1982–
Crowdsourcing / Daren C. Brabham.
pages cm. — (The MIT Press essential knowledge series)
Includes bibliographical references and index.
ISBN 978-0-262-51847-5
1. Human computation. 2. Human-computer interaction. I. Title.
QA76.9.H84B73 2013
004.01'9—dc23
2012045907

10 9 8 7 6 5 4 3 2 1

CONTENTS

Series Foreword vii

Preface ix

Acknowledgments xiii

Introduction xv

- 1 Concepts, Theories, and Cases of Crowdsourcing 1
- 2 Organizing Crowdsourcing 41
- 3 Issues in Crowdsourcing 61
- 4 The Future of Crowdsourcing 99

Glossary 117

Further Readings 119

Bibliography 125

Index 131

SERIES FOREWORD

The MIT Press Essential Knowledge series offers accessible, concise, beautifully produced pocket-size books on topics of current interest. Written by leading thinkers, the books in this series deliver expert overviews of subjects that range from the cultural and the historical to the scientific and the technical.

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Bruce Tidor

*Professor of Biological Engineering and Computer Science
Massachusetts Institute of Technology*

PREFACE

A friend of mine turned me on to Threadless T-shirts in early 2005 when I was a master's student at the University of Utah. I was a big fan of the shirts and bought a lot of them. Threadless became a staple in my wardrobe, and I loved the concept of how the business worked. As a member of the online community, I could submit T-shirt designs (although I never did), vote on the designs in the gallery, and participate in the vibrant forum discussions on the site.

Friends in Salt Lake City used to ask me about my shirts, and I always overshared my enthusiasm for the site. Pretty soon, they too were buying multiple Threadless shirts, and I felt like an evangelist. I never ran into anyone in Salt Lake City who had already heard of the company before I told them the good word.

Wondering if anyone in the Utah media had written about the company, I searched "Threadless Utah" late one night in early June 2006. At the top of the search results was an article in *Wired* that featured Threadless prominently. Jeff Howe called Threadless's business structure *crowdsourcing*. I suddenly had a word to describe how the company worked, and I learned of similar companies in Howe's article.

After finishing my master's degree with a strong critical-cultural studies focus, I started wondering about how this genius business model could be used for other purposes, particularly in the areas of social justice, democratic participation, and environmental activism. I was about to begin my doctoral work a few months later, and my then-girlfriend, Annie, who is much better at connecting dots than I am, suggested that crowdsourcing—and the pursuit of crowdsourcing to serve the public good—should be the focus of my doctoral work.

I spent my entire doctoral career studying how crowdsourcing worked and crafting arguments for how it could be used as a problem-solving model for public good. My work culminated in a grant-funded project from the Federal Transit Administration, with the generous guidance of Thomas W. Sanchez, to test crowdsourcing in a public-participation program for transit planning. I have enjoyed a research career and a series of consulting engagements focused on crowdsourcing ever since.

In my research, I have watched the term *crowdsourcing* permeate discussions about problem solving. People have planted flags and declared boundaries around crowdsourcing, but few back their claims with empirical data or with rigorous standards for categorization. The empirical research on crowdsourcing is untidy because it is developing within various disciplinary silos that are not in conversation with one another. And when untidy scholarly

discourses mix with arbitrary popular media usage about crowdsourcing, the result is unkempt theory and practical crowdsourcing applications with shaky foundations.

This book is an attempt to bring together the big, wandering conversations on crowdsourcing in an easy-to-digest form that is nuanced enough to serve as a springboard for future research and application yet simple enough to serve as an introduction for someone who has just begun to learn about crowdsourcing's promise.

ACKNOWLEDGMENTS

A small crowd of people is to thank for helping move my thinking on crowdsourcing forward. Jeff Howe's original article in *Wired*, his blog, and a few conversations with him over the years were invaluable. I am also grateful for the insights of Karim Lakhani, Hector Postigo, Tom Sanchez, Joy Pierce, Cassandra Van Buren, Tim Larson, and Kurt Ribisl. I have had many opportunities over the years to present my work on crowdsourcing to scholars and practitioners, and the tough questions these groups asked of me sharpened my perspective.

I also acknowledge the support of my wonderful editors at the MIT Press, Marguerite Avery, Deborah Cantor-Adams, and Katie Persons, whose expert eyes made this book much more readable and fair. I also owe a huge debt to supportive family, friends, and my colleagues at UNC-Chapel Hill. And most of all, this book is for Annie Maxfield, my wife and strongest supporter, who is always right about what's worth studying.

INTRODUCTION

One of the most remarkable things to have come out of the so-called Web 2.0 era is not the tools themselves but the ways that new media technologies have redesigned the relationships we have with one another and with organizations. The Internet has long been a place for participatory culture to flourish, but in the early 2000s, we saw for the first time a surge of interest on the part of organizations to leverage the collective intelligence of online communities to serve business goals, improve public participation in governance, design products, and solve problems. Businesses, nonprofit organizations, and government agencies regularly integrate the creative energies of online communities into day-to-day operations, and many organizations have been built entirely from these arrangements. This deliberate blend of bottom-up, open, creative process with top-down organizational goals is called *crowdsourcing*.

Online communities, it turns out, are fertile sources of innovation and genius, and scholarly research on how and why crowdsourcing works has boomed in recent years. Despite this growth in empirical research about crowdsourcing, however, journalists and scholars continue to write about the phenomenon without incorporating these important findings. Part of this has to do with the differing definitions and interpretations of crowdsourcing, and

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part has to do with the interdisciplinary nature of crowdsourcing research. It is not easy to tap into what empirical researchers have learned about crowdsourcing. This book aims to tie together these far-flung studies and put forth a single, coherent overview of crowdsourcing that is grounded in research. It is my hope that establishing a solid conceptual foundation for crowdsourcing will focus future research and applications of crowdsourcing on solving some of the world's most pressing problems, accelerating innovation for businesses, and strengthening democratic participation.

Birth and Buzz

In the June 2006 issue of *Wired* magazine, contributing editor Jeff Howe first coined the term *crowdsourcing* in his article "The Rise of Crowdsourcing." He also launched a companion blog around the same time called *Crowdsourcing: Tracking the Rise of the Amateur*. Building on the spirit of James Surowiecki's 2004 book *The Wisdom of Crowds* and other works, Howe described in this article and early blog posts that followed a new organizational form. Companies took functions that once were performed by employees and outsourced the work to others by making an open call to online communities. *Crowdsourcing* was a fitting portmanteau because it morphed two

concepts—outsourcing and a crowd of online laborers—to produce an entirely new word. In the article and on his blog, Howe illustrated the phenomenon of crowdsourcing with a number of cases. Four of these cases—Threadless.com, InnoCentive.com, Amazon’s Mechanical Turk, and iStockphoto.com—have become early exemplars of the crowdsourcing model in research on the topic.

Like many new terms that appear in a magazine like *Wired*, *crowdsourcing* took off quickly and within days became widely used. Howe wrote on his blog that a Google search for the term *crowdsourcing* went from turning up three results related to the forthcoming article on one day to more than 180,000 results a week later. Today, more than 16,000 results appear in Google Scholar alone, signifying a rapid proliferation of scholarly research on the topic in the span of just six years.

The term *crowdsourcing* was quickly adopted by the popular press and bloggers. Suddenly, new media examples that structurally had nothing to do with crowdsourcing—such as *Wikipedia*, YouTube, Flickr, *Second Life*, open-source software, and blogs—were all called crowdsourcing. Historical examples (such as the Alkali Prize in the 1700s and the *Oxford English Dictionary* in the 1800s) and marketing gimmicks (such as DEWmocracy and Mars’s contests to choose new colors of M&Ms) were all conflated with the term. Soon anything that involved large groups of people doing anything was called crowd-

sourcing. Many of these loud but misguided voices—including *Forbes*, *BusinessWeek*, and countless social media gurus—spread a confusing message about what exactly crowdsourcing was.

What Crowdsourcing Is and Is Not—Strictly Speaking

For the purposes of this book, I define *crowdsourcing* as an online, distributed problem-solving and production model that leverages the collective intelligence of online communities to serve specific organizational goals. Online communities, also called *crowds*, are given the opportunity to respond to crowdsourcing activities promoted by the organization, and they are motivated to respond for a variety of reasons. This precise definition is employed to aid in empirical research on the subject of crowdsourcing and its derivative concepts, though many will continue to blur these distinctions into a single label of “crowdsourcing” to suit their purposes.

Threadless was featured in Jeff Howe’s original *Wired* article, and it is celebrated as a powerful example of the crowdsourcing model. Threadless is a clothing company that sells primarily silk-screened graphic T-shirts on its Web site, Threadless.com. Threadless’s shirts begin as ideas from members of the Threadless online community, who create their designs within downloadable Photoshop

or Illustrator templates available on the Threadless site. These members then upload their designs to a gallery on the Threadless site, and the rest of the Threadless community scores designs in the gallery on a simple zero to five-point scale. After a week in the scoring gallery, some of the designs with the highest scores are printed in Threadless's Chicago headquarters and sold back to the community through a typical online storefront on the site. The winning designers are awarded a \$2,000 cash prize and a \$500 Threadless gift certificate. For Threadless, this crowdsourcing arrangement is profitable and low-risk. The company draws its product offerings from the crowd and also folds a market-research activity into the process, never printing a shirt to sell without knowing that there is already demand for it among its consumer base.

Crowdsourcing is not limited to graphic design work. At InnoCentive, another crowdsourcing exemplar, companies can post difficult scientific research and development challenges online and offer cash bounties for solutions. Members of InnoCentive's online community offer solutions to the scientific puzzles, and the companies quickly and cheaply gain valuable insights that their in-house scientists might have struggled to attain. And Amazon's Mechanical Turk service lets organizations farm out tasks to an online community of workers cheaply and efficiently, tapping into a workforce that provides language translations, survey responses, information gathering, and other

tasks that humans are better qualified to perform than computers.

In crowdsourcing, the locus of control regarding the creative production of goods and ideas exists *between* the organization and the public, a shared process of bottom-up, open creation by the crowd and top-down management by those charged with serving an organization's strategic interests. This sharing of power between an organization and the public makes crowdsourcing distinct from similar creative processes. At Threadless, clothing is designed and produced by an open creative process that the crowd undertakes under the guidance of Threadless's contest rules and requirements, all to serve Threadless's business interests while rewarding the contributions of winning designers. At InnoCentive, an open call for solutions to tough scientific challenges is combined with challenge-specific rules and solution parameters provided by InnoCentive and the companies that post the challenges in pursuit of their strategic interests. And at Mechanical Turk, workers respond to open tasks that are managed by requesting organizations and designed to serve the organization's needs while paying a small amount of money to the worker.

By my definition, then, *Wikipedia* and open-source software projects are not technically crowdsourcing because the commons is organized and produced from the bottom up and its locus of control is in the community. This definition also means that marketing efforts to en-

gage consumers in the selection of a new beverage flavor or candy color by soliciting simple votes do not count as crowdsourcing either, as these practices situate the locus of control primarily within the organization, making minimal use of a community's talents or labor. And I argue in this book that although the underlying concepts of crowdsourcing have existed for centuries, what we today know as crowdsourcing and what we enjoy as the fruits of crowdsourcing did not truly come into being until the widespread adoption of the Internet in the late 1990s and the spread of high-speed connectivity and the cultivation of online participatory culture in the 2000s.

Outline of the Book

This book unfolds in four parts. Chapter 1 defines what crowdsourcing is and what it is not, looking at some related online phenomena that involve online communities and public engagement but that do not meet the requirements for crowdsourcing. An examination of the concepts and theories that drive crowdsourcing follows. I discuss collective intelligence, the wisdom of crowds, problem solving and innovation, and participatory culture and explore some of the best-known cases of crowdsourcing. The chapter concludes with a discussion of the growing interest in crowdfunding as a method for bringing products to

market through distributed fundraising and microsponsorship. Crowdfunding and crowdsourcing share many things in common, but crowdfunding, I argue, is best understood as a stand-alone concept.

Chapter 2's organizing typology makes sense of crowdsourcing as a versatile problem-solving model and classifies a number of cases into four primary types. The remainder of this chapter charts the contours of crowdsourcing research across disciplinary boundaries, including the technology focus of crowdsourcing in the computing disciplines, the performance-driven work on crowdsourcing in the business disciplines, the focus on crowds and motivations in the social sciences, and speculative and case-driven work on crowdsourcing across many professional disciplines.

In chapter 3, I survey the major issues of crowdsourcing that have attracted scholarly attention and confronted practitioners engaged in crowdsourcing. These issues include motivations for crowds to participate in crowdsourcing and misconceptions about who actually participates in crowdsourcing applications demographically and professionally. Also discussed in this section are issues of law and ethics, with an emphasis on the efficiency of crowdsourcing and the question of whether crowds are unfairly exploited for their labor.

The final chapter confronts the future of crowdsourcing, both practical applications and future research di-

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