

PEOPLE ANALYTICS

How Social Sensing Technology Will Transform Business and
What It Tells Us about the New World of Work



BEN WABER

Praise for *People Analytics*

“*People Analytics* is a watershed book in advancing the understanding of human dynamics. No longer must we rely solely on intuition when it comes to behavior; we now have hard measures for soft skills. These advances bring what used to be nuance to the forefront in driving performance.”

—**Michael Arena**, Head of Global Talent & Organization Capability, General Motors

“This is one of those rare books that combines engrossing examples, practical advice, and counter-intuitive research. Ben Waber convincingly shatters orthodoxies of team and workplace design. A must-read.”

—**Scott Anthony**, Managing Partner, Innosight; author of *The Little Black Book of Innovation*

“In *People Analytics*, Ben Waber presents a thought-provoking comparison between formal organizational structures and how work actually gets done. In doing so, he provides numerous examples to illustrate how social analytics could help transform business operating practices in the future. It’s a fascinating area of study.”

—**Paul Mascarenas**, Chief Technical Officer, Ford Motor Company

“In *People Analytics*, Ben Waber provides us with a fresh and breathless look at how we might better design work and organizations if we were to take into account what people actually do in and out of their respective cubicles, teams, projects, and work units. This is entirely imaginable science fiction that rests on the striking results of a set of ingenious, practical, and rather persuasive field experiments that bring big data to bear on the social world. A worthy and rousing read.”

—**John Van Maanen**, Professor of Organization Studies, MIT; author of *Tales of the Field*

“This is more than a required read—this is must-have workforce survival knowledge for all leaders and individual contributors. Dr. Waber takes us on an exciting journey that ends in showing how sociometric data can help all of us, from CEO to front line manager to the shop floor technician, deliver consistent winning results.”

—**Gene Fraser**, Corporate Vice President, Programs, Quality and Engineering, Northrop Grumman Corporation

“Human connection is all-important and *People Analytics* gives great insight on how businesses can strengthen that connection.”

—**John Hesselmann**, Bank of America Merrill Lynch,
Specialized Industries Executive

“*People Analytics* is a terrific book that provides real and important insight into ways to maximize the value of the new work environment and helps us see over the horizon to understand what can be done to create the optimum enterprise of the future.”

—**Tracey Edwards**, Global Chief Knowledge Officer, Deloitte

“Ben Waber follows a new trail of ‘digital breadcrumbs’ to see the world with fresh perspective. We know our technology shapes us; ...a clearer vision may enable us to design with purpose and take a human-centered approach. A fascinating read.”

—**Sherry Turkle**, Professor, MIT; author, most recently of *Alone Together: Why We Expect More of Technology and Less from Each Other*

People Analytics

This page intentionally left blank

People Analytics

How Social Sensing Technology Will
Transform Business and What It Tells
Us about the Future of Work

Ben Waber

Vice President, Publisher: Tim Moore
Associate Publisher and Director of Marketing: Amy Neidlinger
Executive Editor: Jeanne Glasser Levine
Editorial Assistant: Pamela Boland
Development Editor: Russ Hall
Operations Specialist: Jodi Kemper
Marketing Manager: Megan Graue
Cover Designer: Chuti Prasertsith
Managing Editor: Kristy Hart
Senior Project Editor: Lori Lyons
Copy Editor: Paula Lowell
Proofreader: WriteOrWrong Proofreading Services
Indexer: Ken Johnson
Compositor: Nonie Ratcliff
Manufacturing Buyer: Dan Uhrig

© 2013 by Ben Waber
Pearson Education, Inc.
Publishing as FT Press
Upper Saddle River, New Jersey 07458

FT Press offers excellent discounts on this book when ordered in quantity for bulk purchases or special sales. For more information, please contact U.S. Corporate and Government Sales, 1-800-382-3419, corpsales@pearsontechgroup.com. For sales outside the U.S., please contact International Sales at international@pearsoned.com.

Company and product names mentioned herein are the trademarks or registered trademarks of their respective owners.

All rights reserved. No part of this book may be reproduced, in any form or by any means, without permission in writing from the publisher.

Printed in the United States of America

First Printing May 2013

ISBN-10: 0-13-315831-4

ISBN-13: 978-0-13-315831-1

Pearson Education LTD.
Pearson Education Australia PTY, Limited.
Pearson Education Singapore, Pte. Ltd.
Pearson Education Asia, Ltd.
Pearson Education Canada, Ltd.
Pearson Educación de Mexico, S.A. de C.V.
Pearson Education—Japan
Pearson Education Malaysia, Pte. Ltd.

Library of Congress Cataloging-in-Publication Data is on file.

To Becca and Josh

This page intentionally left blank

Contents at a Glance

	Preface	xix
Chapter 1	Sensible Organizations: Sensors, Big Data, and Quantifying the Unquantifiable	1
Chapter 2	Evolution, History, and Social Behavior: Our Wandering Road to the Modern Corporation	21
Chapter 3	The Water Cooler Effect: Why a Friendly Chat Is the Most Important Part of the Work Day	57
Chapter 4	The Death of Distance? Measuring the Power of Proximity	89
Chapter 5	I'm the Expert: Why Connections Are More Important Than Test Scores	109
Chapter 6	You Look Like the Creative Type: The Importance of a Diverse Network	123
Chapter 7	Tough It Out versus Stay At Home: Modeling Disease Spread Through Face-to-Face Conversations	137
Chapter 8	Why We Waste \$1,200,000,000,000 a Year: Mergers and Acquisitions, Corporate Culture, and Communication	151
Chapter 9	Attach Bolt A to Plank Q: Matching Formal Dependencies with Informal Networks	161
Chapter 10	The Future of Organizations: How People Analytics Will Transform Work	177
Chapter 11	Where We Go from Here: Face-to-Face Interaction, New Collaboration Tools, and Going Back to the Future	193
	Endnotes	203
	Index	207

This page intentionally left blank

Contents

Chapter 1	Sensible Organizations: Sensors, Big Data, and Quantifying the Unquantifiable	1
	Telescopes, Microscopes, and “Socioscopes”	4
	Unbiased?	6
	Digital Breadcrumbs	7
	“Socioscope”	8
	Enter the Badge	14
	Big Data = Big Brother?	17
	Trust and Transparency	20
Chapter 2	Evolution, History, and Social Behavior: Our Wandering Road to the Modern Corporation	21
	Back to the Future	22
	In the Shadow of Man	22
	You Say “Groups,” I Say “Organizations”	26
	Individual < Tribe < City-State	28
	Do as the Romans Do	30
	Talkin’ ‘Bout a Revolution	31
	New Information, New Communication	35
	The Organization of Today	37
	(In)formal Processes	39
	Informally Important	48
	The Social Network	50
	Organizing the Path Ahead	55
Chapter 3	The Water Cooler Effect: Why a Friendly Chat Is the Most Important Part of the Work Day	57
	Talk Your Ear Off	58
	Cohesion versus Diversity	59
	Blue-Collar versus White-Collar Water Coolers	70
	Banking on Change	71
	Peanut Butter Jelly Time	74
	Break Value	77

Chapter 4	The Death of Distance? Measuring the Power of Proximity	89
	So, Should I Stay at Home and Work in My Pajamas?	92
	Co-Located Offices: The Gold Standard?	96
	More Than a Tape Measure	100
	Distance Makes the Heart Grow Fonder?	102
	Long Table, Short Table	104
	So, Where Should I Sit?	106
Chapter 5	I'm the Expert: Why Connections Are More Important Than Test Scores	109
	The (Electric) General	114
	The IT Firm Study	115
	IT Firm Study Results	116
	Expert Puzzle	117
	Being an Expert Expert	118
Chapter 6	You Look Like the Creative Type: The Importance of a Diverse Network	123
	Cartoon Wars	125
	Lessons from South Park: The Roots of Creativity	130
Chapter 7	Tough It Out versus Stay at Home: Modeling Disease Spread Through Face-to-Face Conversations	137
	Corporate Epidemiology	140
Chapter 8	Why We Waste \$1,200,000,000,000 a Year: Mergers and Acquisitions, Corporate Culture, and Communication	151
	I'll Call, and Raise	152
	Fixing the Problem	155
Chapter 9	Attach Bolt "A" to Plank "Q": Matching Formal Dependencies with Informal Networks	161
	Big Projects, Big Problems	164
	Congruence, Distance, and Software	169
	Don't Fall into the Gap	171
	Keeping in Contact	174

Chapter 10	The Future of Organizations: How People Analytics Will Transform Work.	177
	Badges, Badges Everywhere?	179
	Moving Toward the People Analytics System.	181
	Augmented Social Reality	188
	All Around the World	189
	The Next Big Thing	192
Chapter 11	Where We Go from Here: Face-to-Face Interaction, New Collaboration Tools, and Going Back to the Future	193
	Back to the Future 2	200
	Endnotes	203
	Index.	207

This page intentionally left blank

Acknowledgments

A major point in this book is that we need others to succeed, and in that sense I have been luckier than most. Nearly all of the work in this book was done in close collaboration with a number of people who have inspired me and profoundly shaped my thinking.

The genesis of this book actually began when I joined Sandy Pentland's group at the MIT Media Lab. Since then, Sandy has been a tremendous advisor and mentor. Not only did he have a tremendous impact on me intellectually, but the opportunities that he helped create have also been life changing.

It was also in Sandy's group where I was paired up with Taemie Kim and Daniel Olguin. Together with Sandy, we collaborated on most of the experiments I discuss in this book. It was through our collaboration and friendship that we were able to push the boundaries of science and sensing during our time at MIT and beyond.

Other people at MIT were also huge influences, and I can't possibly thank them all. Still, I wanted to give a shout out to some people in particular: Nadav Aharony, Anmol Madan, Wen Dong, Ankur Mani, Wei Pan, Coco Krumme, Akshay Mohan, Riley Crane, Manuel Cebrian, Yves-Alexandre de Montjoye, Joost Bonsen, Lanthe Chronis, Miki Hayakawa, Koji Ara, Yasuhiro Ono, Juan Carlos Barahona, Nathan Davis, Margaret Ding, Inna Lobel, Laura Freeman, Alex Speltz, Lynn Wu, Erik Brynjolfsson, Nicole Freedman, Hiroshi Ishii, Mirei Rioux, Lily Fu, Joe Paradiso, Josh Lifton, Cesar Hidalgo, Marta Gonzalez, Amy Sun, and Everett.

My collaborators from other institutions have also been a pleasure to work with: Sinan Aral, Kazuo Yano, Norihiko Moriwaki, Daniel Oster, Peter Gloor, David Lazer, Leon Danon, Ellen Pollock, Kate Ehrlich, and Tuomas Jaanu.

My time in Japan was also transformational for me, and for that I have to thank the Kitabatakes and KCJS for giving me a new perspective on life and for creating a second home on the other side of the world.

Outside of academia, it's been amazing to work with the entire Sociometric family (the "badgers"). I can't wait to see what else we create together.

Big thanks go to my cousin, Geoff Livingston, for connecting me with Katherine Bull and eventually to Jeanne Glasser Levine, who's been an absolute pleasure to work with on this book. Additional thanks to all the people at Pearson, particularly Lori Lyons, Russ Hall, Megan Graue, and Paula Lowell. When I look back at how much you helped shape this book, I'm again reminded of how much we need others, and how we can create great things when we work with great people.

Finally, I want to thank my family: my parents, who put up with me when I was being obnoxious (always); my brother Andrew and his fiancé Ressa, who did the same; and my grandparents and extended family, who provided a stable grounding for me and always kept me focused on what really mattered.

To my wife Becca, my son Josh, and Rufus: Nothing makes me happier than to spend my time with you. Everything I've done, everything I will do, is because of you guys. I'm so lucky to have a family that likes to goof off as much as we do, debate as much as we do, and still speak so respectfully to each other. ;-)

About the Author

Ben Waber is President and CEO of Sociometric Solutions, a management services firm that uses social sensing technology. He is also a visiting scientist at the MIT Media Lab, where he received his Ph.D. He was previously Senior Researcher at Harvard Business School.

Waber's work has been featured in *Wired*, the *New York Times*, on NPR, and he has given invited talks at Google, EMC, and Samsung. His research was selected for the *Harvard Business Review's* List of Breakthrough Ideas and the *Technology Review's* Top 10 Emerging Technologies.

This page intentionally left blank

Preface

People analytics is simultaneously an extremely old and new phenomenon. When we use data to uncover the workplace behaviors that make people effective, happy, creative, experts, leaders, followers, connectors, early adopters, and so on, we are using people analytics. Thousands of years ago, this data came from humans' observations of the world. By watching their collaborators interact with other people and react to changing conditions, people were able to make educated guesses about what makes them effective and happy. Later, we augmented our senses using surveys and interviews. These methods allowed us to obtain responses from thousands of people, establishing new metrics that were a bit more quantitative, but this did not herald any radical change in the way people run companies.

Today, people analytics is poised for a revolution, and the catalyst is the explosion of hard data about our behavior at work. This data comes from a wide variety of sources. Digital traces of activity from e-mail records, web browsing behavior, instant messaging, and all the other IT systems we use give us incredibly detailed data on how people work. Who communicates with whom? How is IT tool usage related to productivity? Are there work styles that aren't well-supported by current technology? Although this data can provide amazing insights, it's only the digital part of the story.

Data on the physical world is also expanding at a breakneck pace thanks to the rapid development of wearable sensing technology. These sensors, from company ID badges to cell phones to environmental sensors, provide reams of fine-grained data on interaction patterns, speaking patterns, motion, and location, among other things. Because most communication and collaboration happens face to face, this data is critical for people analytics to take that next leap forward and become a transformative organizational tool. By combining precise data from both real and virtual worlds, we can now understand behavior at a previously unimaginable scale.

In this book, I use this data in a series of case studies to illuminate a new kind of people analytics. In particular, we'll see how slight changes in behavior, from changing when you take breaks to what

lunch tables you sit at, can make you happier, healthier, and more productive. This book shows how people analytics transforms our understanding of socialization in the workplace, the impact of office layout, and even concepts as “soft” as creativity.

Coupled with this new sensing and data mining technology, the findings in this book can help us imagine what organizations could be. I’ll take a quick tour through history to help you understand all the different ways people have organized themselves since humans first formed tribes millennia ago. Looking to the future, we can use this knowledge to create fundamentally new ways of organizing people that will radically improve the way we work. Office layouts that respond to social context and real-time feedback on communication patterns and interaction styles are new levers enabled by people analytics that no one could have imagined.

This book is by no means the final say on the topic of people analytics—rather, it is a beginning. The years ahead will offer many new opportunities for people analytics that cannot possibly be anticipated. The following pages explore some of those limitless possibilities, their foundations in history, and some paths to the future.

Index

A

accelerometers, 9-11
acquisitions. *See* M&A (mergers and acquisitions)
aggregating data, privacy and, 19-20
airplanes
 Boeing 787 Dreamliner, 124-125, 162-163, 175
 jet engine project, complexity of, 164-165
ALS (Lou Gehrig's disease), accelerometers and, 9
Amazon.com, Kindle and disruptive innovation, 124
AOL/Time Warner merger, 151
Apple Inc, iPhones, 9-10, 124
Aral, Sinan (MIT), merger integration, 155-156
Aristotle, telescope development, 5
Arizona State University, R&D (research and development) labs study, 131-135
Asimov, Isaac, three laws of robotics, 21
assumptions
 cohesive networks, 68
 complex projects, 168
augmented cubicle project, 185-186
Augmented Social Reality, 188-189

B

badges
 batteries, 179
 evolution of, 179
 People Analytics system, moving to, 181-184
 privacy and data gathering, 179-181
 Sociometric Badges, 15-20
 UberBadges, 15
Banana Time principle, 74
Barkley, Charles, cohesive networks, 63
baseball, moneyball method, 1
basketball teams as cohesive networks, 60-63
batteries, ID cards, 179
behaviors, influencing (Target Corporation), 2-4
benchmarks (organizational), democratization of, 189-192
betweenness centrality (social networks), 54-55
bias, gathering unbiased data, 6-7
Bidi Screen, 194-195
birth predictions as analytics, Target Corporation and, 2-4
Blackberry (RIM), assumptions in cohesive networks, 68

BoA (Bank of America) call center
 burn-out study, 77-87

- break structure, changing, 86
- demographic information, 79
- deployment of, 82-83
- Hawthorne effect, 81
- performance metrics, 79
- phases of study, 80-82
- survey data, 79

Boeing 787 Dreamliner airplane,
 124-125, 162-163, 175

bonobos society, 24

bonuses and commissions,
 organizational management, 41-44

Bosh, Chris, cohesive networks, 60-63

Brahe, Tycho, telescope
 development, 5-6

breaks, taking, 73-74

- Banana Time principle, 74
- BoA call center burn-out study,
 77-87
- call centers, 72-73
- corporate reduction of, 59-76
- ideas, exchanging, 74-75
- stress, relieving, 75
- value of, determining, 77-87

Brown, Hubie, cohesive networks, 62

Burleson, Win (Arizona State
University), R&D lab study, 131-135

burn-out, BoA (Bank of America) call
center burn-out study, 77-87

business models (organizations),
 future of, 200-201

C

call centers

- BoA burn-out study, 77-87
- breaks, taking, 72-73
- efficiency versus productivity, 70-71
- lunch, taking, 73
- stress in, 72
- telecommuting, 90
- turnover, 72, 76-77

campuses (workplace layouts), 97-99
careers and relationships, two-body
problem, 37-39

Cebrian, Manuel (MIT), corporate
epidemiology study, 140-149

cell (mobile) phones

- accelerometers and, 9-10
- apps, creativity and, 123
- Blackberry (RIM), assumptions in
 cohesive networks, 68
- evolution of organizations (social
 behaviors), 35-36
- iPhones (Apple Inc.), 9-10, 124

centrality (social networks), 54-55

chimpanzee society, 25

Cisco Systems

- TelePresence, 194-195
- video conferencing, 36-37

city-states, evolution of organizations
(social behaviors), 29-30

cohesive networks, 54, 59-60, 64-65

- assumptions in cohesive
 networks, 68
- common language, developing,
 66-67

Dallas Mavericks, 62-63

diversity versus, 69-70

job satisfaction, 65-66

lies in cohesive networks, 63-64

Miami Heat, 60-63

personal information, sharing, 65

stress in cohesive networks, 64-65

supportive effect of, 64-65

collaboration

- communication, collaborating
 without, 58
- offshoring's effects on, 94-95
- water coolers, importance of, 57-58
- workplace layouts, designing for
 collaboration, 96-100

co-located/distributed teams, software
development, 171-174

commissions and bonuses,
 organizational management, 41-44

common languages, developing for
 cohesive networks, 66-67

communication, 59
See also cohesive networks.
 breakdowns (email-related), 102-104
 collaboration without
 communication, 58
 complex projects, 165-168, 174-175
 diversity, 59-60, 69-70
 email and distance, 102-104
 merger integration, 155-160
 People Analytics, the future of,
 186-187
 video conferencing, 194-196

complexity, formal dependencies and
 informal networks, 161-164, 168-169
 Boeing 787 Dreamliner, 162-163
 communication, 165-168, 174-175
 computer errors, 164
 computers, 161-162
 coordination teams, 166
 gaps, determining, 165
 interactions, determining, 165
 interfaces, managing, 165
 jet engine project, 164-165
 organizational boundaries, 165-166
 software development, 169-174

computers
 building, 161-162
 errors, 164
 programmer job posting
 comparisons, 110

congruence, software
 development, 170-175

coordination teams (complex
 projects), 166

Copernicus, telescope
 development, 5-6

Crane, Riley (MIT), corporate
 epidemiology study, 140-149

creativity, 123
 disruptive innovation, 123-124
 hackathons, 135
 incremental innovation, 124-125
 lone geniuses, 135, 199-200
 mobile (cell) phone apps, 123
 R&D labs study, 131-135
Simpsons, The, 126-129
South Park, 125-131

cubicles
 augmented cubicle project, 185-186
 office layouts, the future of, 197

D

Dallas Mavericks, cohesive
 networks, 62-63

Danon, Leon (Harvard School
 of Public Health), corporate
 epidemiology study, 140-149

data
 aggregating, privacy and, 19-20
 controlling, privacy and, 18-19
 electronic records, flaws of, 8
 gathering
accelerometers, 9-10
ID cards, 8-9
IR transceivers, 9
microphones, 10
privacy, 17-20
RFID chips, 8-9
Sociometers, 10-12, 14-15
Sociometric Badges, 15-16
transparency and, 19-20
trust and, 19-20
UberBadges, 15
unbiased data, 6-7

dating (speed), predicting
 outcomes, 11-12

degree (social networks), 52

democratization of organizational
 benchmarks, 189-192

dependencies (formal), informal networks and, 161-164, 168-169
 Boeing 787 Dreamliner, 162-163
 communication, 165-168, 174-175
 computer errors, 164
 computers, 161-162
 coordination teams, 166
 gaps, determining, 165
 interactions, determining, 165
 interfaces, managing, 165
 jet engine project, 164-165
 organizational boundaries, 165-166
 software development, 169-174

desks, workplace layouts and, 96, 104-107

disease response strategies, corporations and, 140-149

disruptive innovation, 123-124

distance
 offshoring, 91-95
 telecommuting, 89-94
 workplace layouts, designing for
 collaboration, 96, 107-108
campuses, 97-100
communication breakdowns, 102-104
decreasing interaction, 107
distance between desks, 96
email and distance, 101-104
furniture, 104-107
probability of interaction, 101
quality of interaction, 100
separate floors, vertical distance, 96-97
Space-Organisation Relationship, The, 100
types of distances between people, 100

distributed/co-located teams, software development, 171-174

diversity, 59-60, 69-70

divisional management style (reporting relationships), organizational management, 46-47

Dreamliner 787 airplane (Boeing), 124-125, 162-163, 175

Dunbar number, 26, 29

E

eBay, 28, 152-155

efficiency versus productivity, 70-71

Ehrlich, Kate (IBM) co-located/ distributed teams and software development, 171-174

electronic records, flaws of, 8

email
 communication breakdowns, 102-104
 distance and (workplace layouts), 101-104
 evolution of organizations (social behaviors), 35
 Google's storage and transmission of, 7-8

employee evaluations, organizational management, 41

epidemiology, corporations and disease response strategies, 140-149

ESPN campuses (workplace layouts), 98-99

evaluations (employee), organizational management, 41

evolution, social behaviors and groups, 22-26
 organizations, 29-30, 35-37
cell (mobile) phones, 35-36
city-states, 29-30
email, 35
factories, 32-35
governments, 29
IM, 36
industrial revolution, 31-32

Internet and the Web (World Wide), 35

IT systems, 35

management/labor, 32-35

mass production, 32

military, 30

modern organizations, 37-39

Roman empire, 30-31

transportation, 31-32

video conferencing, 36-37

expertise, 109-110

computer programmer job postings,
1958 to 2012 comparisons, 110

IT firm study, 115-121

skilled employees, developing versus
hiring, 110

training employees, 114-115

eye gaze problem, 194-195

F

factories, evolution of organizations
(social behaviors), 32-35

families (social behaviors), 28, 38.

See also groups, organizations

formal dependencies, informal
networks and, 161, 163-164, 168-169

Boeing 787 Dreamliner, 162-163

communication, 165-168, 174-175

computer errors, 164

computers, 161-162

coordination teams, 166

gaps, determining, 165

interactions, determining, 165

interfaces, managing, 165

jet engine project, 164-165

organizational boundaries, 165-166

software development, 169-174

formal/informal practices,

organizational management, 39-50

functional management style
(reporting relationships), 46

furniture (workplace layouts), 104-107

Future of Work, The, 27

G

gaps (complex projects), 165, 171-175

GE (General Electric) employee
training, 114-115

global organizational benchmarks,
189-192

Google

campuses (workplace layouts),
97-98

gmail, storage and transmission of,
7-8

Google Hangouts, 196

People Analytics team, 159-160

gorilla society, 23

governments, evolution of

organizations (social behaviors), 29

Gracie Films, *The Simpsons*, 128

Granovetter, Mark, cohesion versus
diversity, 69

groups (social behaviors), 26, 28.

See also families; organizations

Dunbar number, 26

evolution of, 22-26

organizations versus, 26-27

working in groups, advantages of, 22

H-I

hackathons, 135

Harvard School of Public Health,
corporate epidemiology study,
140-149

Hawthorne effect, 81

health and productivity, 137

Helander, Mary (IBM), co-located/
distributed teams, software
development, 171-174

Hirsch, Matt (MIT), Bidi Screen,
194-195

Honest Signals, 10-11

I, Robot, 21

IBM, software development, 171-174

ID cards, 8-9

batteries, 179

evolution of, 179

microphones and, 10

People Analytics system, moving
to, 181-184

privacy and data gathering, 179-181

RFID chips, 8-9

illness and productivity, 137-149

study, 140

IM (Instant Messaging), evolution of
organizations (social behaviors), 36

Immelt, Jeffrey (GE), employee
training, 114

incentives, organizational
management, 41, 118-121

incremental innovation, 124-125

industrial revolution, evolution of
organizations (social behaviors),
31-32

informal networks, formal

dependencies and, 161-164, 168-169

Boeing 787 Dreamliner, 162-163

communication, 165-168, 174-175

computer errors, 164

computers, 161-162

coordination teams, 166

gaps, determining, 165

interactions, determining, 165

interfaces, managing, 165

jet engine project, 164-165

organizational boundaries, 165-166

software development, 169-174

informal/formal practices,

organizational management, 39-50

information, 7-8

aggregating, privacy and, 19-20

controlling, privacy and, 18-19

electronic records, flaws of, 8

gathering

accelerometers, 9-10

ID cards, 8-9

IR transceivers, 9

microphones, 10

privacy, 17-20

RFID chips, 8-9

Sociometers, 10-12, 14-15

Sociometric Badges, 15-16

transparency and, 19-20

trust and, 19-20

UberBadges, 15

unbiased data, 6-7

innovation, 123

disruptive innovation, 123-124

hackathons, 135

incremental innovation, 124-125

lone geniuses, 135

mobile (cell) phone apps, 123

R&D labs study, 131-135

Simpsons, The, 125-130

SPS, 125-131

integration, M&A (mergers and
acquisitions), 155-160

interfaces, managing (complex
projects), 165

Internet and the Web (World Wide),
evolution of organizations (social
behaviors), 35

iPhones (Apple Inc.), 9-10, 124

IR (infra-red) transceivers, 9-11

IT (Internet Technology) systems

evolution of organizations, 35

People Analytics, the future of,
177-178

J-K-L

James, LeBron, cohesive networks, 60-63

jet engine project, complexity of, 164-165

job satisfaction in cohesive networks, 65-66

Kepler, Johannes, telescope development, 5-6

Khan, Imran (JP Morgan), eBay's attempted acquisition of Skype, 153

Kim, Taemie (MIT)
BoA call center burn-out study, 77-87
Meeting Mediator, 183-184

Kindle (Amazon.com), disruptive innovation, 124

Krackhardt, David, cohesion versus diversity, 69

labor/management, evolution of organizations (social behaviors), 32-35

languages
common languages, developing for cohesive networks, 66-67
lingua franca and organizational management, 40

layouts (workplace)
collaboration, designing for, 96, 98, 107-108
campuses, 97-98
communication breakdowns, 102-104
decreasing interaction, 107
desks, distance between, 96
email and distance, 101-104
ESPN, 98-99
furniture, 104-107
Google, 97, 98
interaction, 100-101
people, distances between, 100

separate floors, vertical distance, 96-97

Space-Organisation Relationship, The, 100

future of, 197

People Analytics, the future of, 185

lies in cohesive networks, 63-64

lingua franca, organizational management, 40

Linux development communities as organizational example, 27-28

lone geniuses, 135, 199-200

Lou Gehrig's disease (ALS), accelerometers and, 9

lunch, taking, 73, 198-199

M

M&A (mergers and acquisitions), 151-152

AOL/Time Warner, 151
integration, 155-160

Skype, 152-155

Malone, Tom, organizations and social behaviors, 27

"management in a box" systems, 189-192

managing organizations

bonuses and commissions, 41-44
employee evaluations, 41

incentives, 41-44

lingua franca, 40

management/labor, evolution of organizations (social behaviors), 32-35

reporting relationships, 45-48

workflow management, 44-45

mass production, evolution of

organizations (social behaviors), 32

matrixed management style (reporting relationships), organizational management, 47

MBTA (Massachusetts Bay Transportation Authority), communication in complex projects, 167

Meeting Mediator, 183-184

mergers. *See* M&A (mergers and acquisitions)

Miami Heat, cohesive networks, 60-63

microphones, 10-11

Microsoft's attempted acquisition of Skype, 155

military, evolution of organizations (social behaviors), 30

MIT (Massachusetts Institute of Technology)

- augmented cubicle project, 185-186
- Bidi Screen, 194-195
- BoA call center burn-out study, 77-87
- corporate epidemiology study, 140-149
- Meeting Mediator, 183-184
- merger integration, 155-156
- offshoring's effects on collaboration study, 94-95
- salary negotiations experiment, 12-14
- Sociometers, 10-12
- speed-dating, predicting outcomes, 11-12

mobile (cell) phones

- apps, creativity and, 123
- Blackberry (RIM), assumptions in cohesive networks, 68
- evolution of organizations (social behaviors), 35-36
- iPhones (Apple Inc.), 9-10, 124

mobility within organizations (social behaviors), 37-39

moneyball method, baseball and, 1

Mortensen, Mark (MIT), offshoring's effects on collaboration, 94-95

N

NBA (National Basketball Association), cohesive networks, 60-63

negotiations (salary), MIT experiment, 12-14

Nielsen ratings, 129-130

networks

- cohesive networks, 59-60
 - assumptions*, 68
 - benefits of*, 60
 - common language development*, 66-67
 - Dallas Mavericks*, 62-63
 - diverse networks versus*, 69-70
 - job satisfaction*, 65-66
 - lies in cohesive networks*, 63-64
 - Miami Heat*, 60-63
 - sharing personal information*, 65
 - stress in cohesive networks*, 64-65
 - supportive effect of*, 64-65
- diverse networks, 59-60, 69-70
- informal networks, formal dependencies and, 161-164, 168-169
 - Boeing 787 Dreamliner*, 162-163
 - communication*, 165-168, 174-175
 - computer errors*, 164
 - computers*, 161-162
 - coordination teams*, 166
 - gaps, determining*, 165
 - interactions, determining*, 165
 - interfaces, managing*, 165
 - jet engine project*, 164-165
 - organizational boundaries*, 165-166
 - software development*, 169-174
- social networks, organizations and, 50-55

Nirma Institute of Technology,
India, 91
Nokia Corporation, disruptive
innovation, 124
Nowitzki, Dirk, cohesive networks,
62-63

O

Oakland Athletics, moneyball
method, 1
office layouts
collaboration, designing for, 96,
107-108
campuses, 97-98
communication breakdowns,
102-104
decreasing interaction, 107
desks, distance between, 96
email and distance, 101-104
ESPN, 98-99
furniture, 104-107
Google, 97, 98
interaction, 100-101
people, distances between, 100
*separate floors, vertical
distance*, 96-97
*Space-Organisation
Relationship, The*, 100
future of, 197
People Analytics, the future of, 185
offshoring, 91-92, 94-95. *See also*
telecommuting
O'Leary, Michael (MIT), offshoring's
effects on collaboration, 94-95
Olguin, Daniel, BoA (Bank of
America) call center burn-out study,
77-87
O'Neal, Shaquille, cohesive
networks, 61
opting in/out, data gathering and
privacy, 18
organizations, 26, 28, 177-178. *See
also* families; groups

boundaries (complex projects),
165-166
business models, future of, 200-201
Dunbar number, 29
eBay merchants, 28
evolution of, 29-30, 35-37
cell (mobile) phones, 35-36
city-states, 29-30
email, 35
factories, 32-35
governments, 29
IM, 36
industrial revolution, 31-32
*Internet and the Web (World
Wide)*, 35
IT systems, 35
management/labor, 32-35
mass production, 32
military, 30
mobility within, 37-39
modern organizations, 37-39
Roman empire, 30-31
transportation, 31-32
video conferencing, 36-37
global organizational benchmarks,
189-192
groups versus, 26-27
Linux development communities,
27-28
managing
bonuses and commissions,
41-44
employee evaluations, 41
formal/informal practices,
39-50
incentives, 41-44
lingua franca, 40
reporting relationships, 45-48
workflow management, 44-45
need for, 28-29
social networks, 50-55
virtual organizations, 90-91
WoW communities, 27

P

- Parker, Trey (SPS), creativity, 125-130
- Parkinson's disease, accelerometers and, 9
- Pentland, Sandy, Sociometers, 10-11
- People Analytics team (Google), 159-160
- People Analytics, the future of, 177-192
 - augmented cubicle project, 185-186
 - Augmented Social Reality, 188-189
 - communication tools, 186-187
 - global organizational benchmarks, 189-192
 - ID cards, 179-184
 - IT and, 177-178
 - "management in a box" systems, 189-192
 - Meeting Mediator, 183-184
 - office layouts, 185
- performance
 - BoA call center burn-out study, 77-87
 - burn-out, 76
 - telecommuting, 93-94
- personal information, sharing in cohesive networks, 65
- pharmaceutical industry, incremental innovation, 125
- Pollock, Ellen (Harvard School of Public Health), corporate epidemiology study, 140-149
- pregnancy predictions as analytics (Target Corporation), 2-4
- priorities, defining (complex projects), 167-168
- privacy and data gathering, 17-20
- productivity
 - BoA call center burn-out study, 77-87
 - burn-out, 76
 - efficiency versus, 70-71
 - illness and, 137-149
 - lone geniuses, 199-200

R

- R&D (research and development) labs study, creativity and, 131-135
- radical innovation. *See* disruptive innovation
- recognizing/rewarding expertise, IT firm study, 118-121
- records (electronic), flaws of, 8
- relationships and careers, two-body problem, 37-39
- remote controls (TV), IR (infra-red) transceivers as, 9
- remote work. *See* telecommuting
- reporting relationships, organizational management, 45-48
- rewarding/recognizing expertise, IT firm study, 118-121
- RFID (radio frequency identification) chips, 8-9
- RIM (Research in Motion), cohesive networks, 68
- robots, Isaac Asimov and, 21
- Rocco, Elena (University of Michigan), telecommuting and team performance, 94
- Roman empire, evolution of organizations (social behaviors), 30-31

S

- Sailer, Kirsten, *The Space-Organisation Relationship*, 100
- salary negotiations, MIT experiment, 12-14
- sensors
 - accelerometers, 9-10
 - ID cards as, 8-9
 - IR transceivers, 9
 - microphones, 10
 - privacy and data gathering, 17-20
 - RFID chips, 8-9
 - Sociometers, 10-11, 14-15

- Sociometric Badges, 15-20
 transparency and data gathering, 19-20
 trust and data gathering, 19-20
 UberBadges, 15
- separate floors, vertical distance (workplace layouts), 96-97
- sharing
 expertise, IT firm study, 117-118
 personal information in cohesive networks, 65
- Shih, Jack (SPS), creativity, 127
- shopping behavior, influencing (Target Corporation), 2-4
- sickness and productivity, 137-149
- Simpsons, The*, 126, 129
- SIR (Susceptible-Infected-Recovery) model, corporate epidemiology study, 141-142
- skilled employees, developing versus hiring, 110, 115-121
- Skype, 152-155, 194-195
- social behaviors
 Augmented Social Reality, 188-189
 Dunbar number, 26, 29
 evolution of, 22-26
 families, 28
 groups, 22, 26-27
 lunch, taking, cultural changes in, 198-199
 mingling, cultural changes in, 198-199
 organizations, 35-37
cell (mobile) phones, 35-36
city-states, 29-30
eBay merchants, 28
email, 35
evolution of, 29-37
factories, 32-35
governments, 29
groups versus, 26-27
IM, 36
industrial revolution, 31-32
Internet and the Web (World Wide), 35
IT systems, 35
Linux development communities, 27-28
management/labor, 32-35
managing, 39-48
mass production, 32
military, 30
mobility within, 37-39
modern organizations, 37-39
need for, 28-29
Roman empire, 30-31
social networks, 50-55
transportation, 31-32
video conferencing, 36-37
WoW communities, 27
- social networks, organizations and, 50-55
- social sciences
 data gathering, 6-7, 19-20
 measuring tools
accelerometers, 9-10
ID cards, 8-9
IR transceivers, 9
microphones, 10
need for, 4-5
RFID chips, 8-9
Sociometers, 10-12, 14-15
Sociometric Badges, 15-20
UberBadges, 15
 privacy, 17-20
- Sociometers**, 10-12, 14-15
- Sociometric Badges**, 15-20
- socioscopes, 4-5
 accelerometers, 9-10
 ID cards, 8-9
 IR transceivers, 9
 microphones, 10
 RFID chips, 8-9
 UberBadges, 15
- software development, dependencies and congruence, 169-174

Sosa, Manuel (INSEAD), jet engine project, 164-165
South Park, 125-130
Space-Organisation Relationship, The, 100
 speed-dating, predicting outcomes (Sociometers), 11-12
 Speltz, Alex (MIT), augmented cubicle project, 185-186
 Spoelstra, Erik, cohesive networks, 62
 SPS (South Park Studios), *South Park*, 125-131
 Stofega, Will (IDC), eBay's attempted acquisition of Skype, 153
 Stone, Matt (SPS), creativity, 125-130
Strength of Weak Ties, The, 69
 stress
 BoA call center burn-out study, 77-87
 breaks, taking, 75
 call centers, 72
 cohesive networks, 64-65
 Hawthorne effect, 81
 quality of work and, 76

T

Target Corporation, influencing shopping behavior, 2-4
 Taylorism, division of labor and, 32-33
 teams, reporting relationships, 47-48
 telecommuting, 89-90, 92-93, 193-194. *See also* offshoring
 call centers, 90
 expansion of, 90
 performance, 93-94
 principle of, 92
 virtual organizations, 90-91
 TelePresence (Cisco Systems), 194-195
 telescopes, development of, 4-6
Three Laws of Robotics (Asimov, Isaac), 21

Time Warner/AOL merger, 151
 TPS (Toyota Production System), division of labor and, 34-35
 training employees, IT firm study, 114-121
 transparency, data gathering and, 19-20
 transportation, evolution of organizations (social behaviors), 31-32
 Tripathi, Pia (Arizona State University), R&D lab study, 131-135
 trust, data gathering and, 19-20
 turnover, call centers and, 72, 76-77
 TV remote controls, IR (infra-red) transceivers as, 9
 two-body problem (careers and relationships), 37-39

U-V

UberBadges, 15
 unbiased data, gathering, 6-7
 University of Michigan, telecommuting and team performance, 94
 University of New South Wales, call centers and tenure study, 76
 U.S. (United States), illness and productivity, 139-140
 video conferencing
 Bidi Screen, 194-195
 evolution of organizations, 36-37
 eye gaze problem, 194-195
 future of, 194
 Google Hangouts, 196
 TelePresence (Cisco Systems), 194-195
 time differences, 196
 virtual organizations, 90-91
 Vocera Communication, ID cards with microphones, 10

W-X-Y-Z

- Wade, Dwayne, cohesive networks, 60-63
- Wallace, Catriona (University of New South Wales), call centers and tenure study, 76
- water coolers, importance of, 57-58, 70-71
- Web (World Wide) and the Internet, evolution of organizations (social behaviors), 35
- Whitman, Meg (eBay), eBay's attempted acquisition of Skype, 152-153
- workflow management, 44-45
- workplace layouts
- collaboration, designing for, 96, 107-108
 - campuses, 97-98*
 - communication breakdowns, 102-104*
 - decreasing interaction, 107*
 - desks, distance between, 96*
 - email and distance, 101-104*
 - ESPN, 98-99*
 - furniture, 104-107*
 - Google, 97-98*
 - interaction, 100-101*
 - people, distances between, 100*
 - separate floors, vertical distance, 96-97*
 - Space-Organisation Relationship, The, 100*
 - future of, 197
 - People Analytics, the future of, 185
- WoW (World of Warcraft)
- communities, 27



In an increasingly competitive world, it is quality of thinking that gives an edge—an idea that opens new doors, a technique that solves a problem, or an insight that simply helps make sense of it all.

We work with leading authors in the various arenas of business and finance to bring cutting-edge thinking and best-learning practices to a global market.

It is our goal to create world-class print publications and electronic products that give readers knowledge and understanding that can then be applied, whether studying or at work.

To find out more about our business products, you can visit us at www.ftpress.com.