

Contents

Preface: A Guide to This Book	xiii
Introduction: Managing in a Complex World	xvii

Section One: The Complexity Advantage

Chapter One

The Complexity Advantage	3
The Main Point: Self-Organization	4
The Information Age: Competing in a Complex World	7
Maximizing Your Return from The Complexity Advantage	8

Chapter Two

Key Complexity Advantage Concepts	11
The Complexity Advantage Concepts	11
The Complexity Advantage Business Team: Working in a Natural Hierarchy	18
Business Performance and the Fitness Landscape	19

Chapter Three

Developing Competitive Fitness	21
Internal and External Fitness	21
A Leader's Quick Reference Guide to Nested Levels of Corporate Self-Organization	23
A Leader's Overview of Internal Corporate Self-Organization	27
A Leader's View of External Corporate Self-Organization	30
Before You Start: When Changing Direction, History Matters	33

Chapter Four

Old and New Models	35
WYSIWYG	35
Practical Ways to Succeed in an Evolving Web	36
Complexity Science and Citibank: Understanding the External and Internal Environments	37
So, What's Wrong with Traditional Quality and Management Programs?	39
Developing the Complexity Advantage	41

The Software CMM: A Good Base from Which to Start	42
An Important Postscript: Mathematics and Complexity	43

Section Two: So What if Businesses Are Self-Organizing Systems?

Chapter Five

Surviving in Fear	49
Behavior Emerging from High Change, Complexity, Fear, and "Control" Management	49
Dysfunctional Closed Behavioral Loops	53
Vicious Cycles	61
Commanding and Controlling a Vicious Cycle	61

Chapter Six

Thriving on Trust	65
Behavior Emerging from High Change, Complexity, Trust, and Leadership Influence	65
Encouraging Functional Closed Behavioral Loops	67
Hypercycles	78

Chapter Seven

Fourteen Steps for Success	81
Step 1: Adopt the New Sciences	81
Step 2: Create Urgency of Purpose for Sustaining the Global Enterprise	82
Step 3: Develop a Web of Diverse Agents and Visionary Leaders	83
Step 4: Count on Closed Loops to Achieve Unity	84
Step 5: Drive Out Fear and Grow Trust	85
Step 6: Build Commitment Across Stakeholder Boundaries	86
Step 7: Improve Constantly and Forever Every Process Supporting Co-evolution	87
Step 8: Institute Open Learning for Everyone	89
Step 9: Do Business on the Basis of Synergy and Collaboration to Maximize Customer Satisfaction	90
Step 10: Generate Social Capital by Offering Employability and New Possibilities to the Workforce	92
Step 11: Adopt Statistical Thinking, Nonlinear Mathematics, and Complexity Models for Insight	93

Step 12: Encourage People to Take Pride in Product and Service Delivery and the Enterprise to Benefit from Human Capital	95
Step 13: Seed Innovation and Harvest Intellectual Capital from Everyone	97
Step 14: Sustain and Enjoy Conscious, Competent Co-evolution	98
Applying the Fourteen Steps in Business Already Using Total Quality Management Programs	99
Chapter Eight	
Introducing Evolutionary Fitness Models	103
The Complexity Advantage Evolutionary Fitness Model	104
Uneven Playing Fields: Little League Through Pro Teams	106
Stages in the Complexity Advantage Evolutionary Fitness Model	110
System Characteristics in the Complexity Advantage Fitness Model	111
Chapter Nine	
The Complexity Advantage Evolutionary Fitness Model	115
Fitness Level 1: Unconscious Self-Organization	115
Fitness Level 2: Conscious Self-Organization	121
Fitness Level 3: Guided Self-Organization	128
Fitness Level 4: Quantitatively Guided Self-Organization	132
Fitness Level 5: Consciously Competent Autopoiesis	136
Moving from Level to Level of the Complexity Advantage Evolutionary Fitness Model	137
Summary: Points of Focus for the Complexity Advantage Fitness Levels	141
 Section Three: Working in a Living System	
Chapter Ten	
Autonomous Agents	145
Businesses Need Agents Who Are Willing to Be Respectful, Honest, and Trusting	146
Businesses Need Agents Who Are Able to Understand Their Capabilities and Fitness Levels	149
Businesses Need Agents Who Take Seriously Commitment to What Must Be Done	151
Businesses Need Agents Who Can Make Visible How Things Are Really Done	153

Autonomous Agents Within Business Enterprises 155
 The Risks in This Brave New World 157
 Resiliency 158

Chapter Eleven

Leaders 159
 Changing Leadership Fitness Landscapes 159
 Self-Organizing Leadership Techniques 161
 Engaging Agents, Catalysts, and Eco-Technicians 168
 A Hypercycle Story: Citibank's Corporate Technology Office 171
 Stop, Look, and Listen 178

Chapter Twelve

Catalysts 179
 Local and Global Catalysts 179
 Quicksand and Increasing Returns 182
 Five Key Ingredients Enabling Group Evolution 183
 The Citibank Software Initiative 186
 The Self-Sustaining Software Initiative 194
 And What Would I Do Differently? 195
 Testing Change Models Against the New Sciences 196
 The Tricks of the Trade 197

Chapter Thirteen

Eco-Technicians 201
 Ecologists and Technicians . . . and Artists 201
 Examples of Some of the Tools Eco-Techs Use 203
 So if I Want to Be—or to Hire—an Eco-Tech, What Do I Look For? .. 205
 An Interview with a Rare Species: Real Live Eco-Technicians 208
 Save Your Money: Be Sure You've Attained Fitness Level 3 Before
 Focusing on Level 4 213

Section Four: The New Breed of Business

Chapter Fourteen

Experiencing the Advantage 217
 Simple Rule 1: Trust 218
 Simple Rule 2: Share Information 220
 Simple Rule 3: Align Choices 221
 Simple Rule 4: Coordinate Co-evolution 223

Chapter Fifteen

The Citi Never Sleeps: Persistence and Paradox	227
The Citi in a Changing Landscape	228
Using Complexity Science to Explain Experience at Citibank	229
Citibank Today	236
The Next 4 Billion Years	238
Here Is the Story	239
Living the Story	239
Part 1: Engage the Four Simple Rules to Remove Vicious Cycles and Install Hypercycles	240
Part 2: Use the 14 Steps to Ascend the Complexity Advantage Evolutionary Fitness Model	240
Part 3: Use Your Complexity Skills to Trigger External Selection	243
In Conclusion	244
Notes	245
Bibliography	249
Index	251