



Contents

Acknowledgments	xiii
About the Authors	xv
Foreword	xvii
Part 1 Introduction to Mobile and Wireless Technologies	1
Chapter 1 Wireless and Mobility Defined	3
Introduction	3
What Is Mobility?	4
What Are Wireless Applications?	6
Real-Time Quoting Engines	7
Location-Based Services	7
Wireless Portal/Commerce	7
Sales Force Automation (SFA)	8
Global Positioning Systems (GPS)	8
Telematics	8
Attributes of Mobility and Wireless Services	12
Always On	13
Remote Access	13
Localization	15
Ubiquity	15
Personalization	15
Proactive Push	16
Summary	17
Chapter 2 The Driving Forces of Mobile's Growth	19
Introduction	19
Consumer Drivers	21
The Quest for Convenient Communication	22
Right Here, Right Now—Consumer Expectations	25

The Device as a Personality Extension	26
Fun and Games	27
A New Channel for Existing Entertainment	29
New Types of Entertainment	30
Business Drivers	31
Cost Efficiencies	32
Wirelessly Enabled Employees	34
Reduced Traveling	34
Revenue Growth	41
Wireless as a Revenue Driver: m-Commerce	41
Process Improvement Opportunities	43
Enabling Technologies	44
Wireless Industry Trends	47
Summary	48
Chapter 3 Mobile Devices Showcase	49
Introduction	49
Merging Computers and Phones	50
Laptop Computers	51
Personal Digital Assistants (PDAs)	52
Palm Family (Palm OS)	53
Pocket PCs (Windows CE)	54
Two-Way Pagers	55
Cellular Phones	56
Smartphones	56
Imode Phones	57
Phones Using Java	58
Handheld Gaming Platforms	59
Future Devices	59
Summary	60
Chapter 4 Wireless Networks Overview	61
Introduction	61
The Generations of Wireless	62
First Generation: Analog	62
Second Generation: CDMA, TDMA, and GSM	63
CDMA	64
TDMA	65
GSM	66
2.5 Generation: GPRS, EDGE, and CDMA 2000	67
Third Generation: wCDMA, UMTS, and iMode	69
Fourth Generation Wireless—What’s Next?	69
WLANs and PANs	70
IEEE 802.11	70
Bluetooth	71
Infrared	73
Radio Frequency Identification	73

	Satellite and Fixed Wireless	74
	Securing a Wireless Network	75
	Wireless Equivalent Privacy	76
	Summary	76
Part 2	Opportunity Identification and Case Studies	77
Chapter 5	The Value Web Framework	79
	Introduction	79
	Defining the Value Web Framework	79
	What Is a Value Web?	80
	The Web's Anatomy	82
	Why Use the Framework?	85
	Constructing a Value Web	88
	Step #1: Defining the Solution and Competitive Space	89
	Step #2: Identifying and Evaluating Market Segments	90
	Step #3: Mapping Customer Needs and Value Web	
	Constituents Along the Customer Experience Life Cycle	91
	Identify	93
	Research	93
	Purchase	94
	Receive	94
	Support	95
	Evaluate	95
	Step #4: Defining Value Transactions	95
	Leveraging the Value Web	97
	Step #1: Analyzing Value and Sustainability to Define	
	Relative Power	97
	Creating a Value Index	97
	Assessing the Sustainability Index	102
	Putting It All Together—The Power Grid	103
	Step #2: Defining Strategic Focus Based on Power Shifts	104
	Step #3: Developing Strategic Initiatives	
	and Quantifying Impacts	106
	Summary	108
Chapter 6	The Wireless Value Web	109
	Introduction	109
	The Wireless Value Web's Origin	110
	Today's Wireless Value Web	110
	Taxonomy	111
	Industry Segments	115
	Customers/End-Users	116
	User Devices	120
	Content	123
	Connectivity	128
	Technology Enablers	131
	Environmental Enablers	136
	Summary	139

Chapter 7	The Three Functional Domains	141
	Introduction	141
	Communication	142
	Consumer Applications	143
	Enterprise Processes	144
	Information	145
	Consumer Applications	145
	Enterprise Processes	146
	Information Available to Your Customers	146
	Information Available to Your Employees	147
	Commerce	147
	Consumer Applications	148
	Enterprise Processes	149
	Enhanced Processes with Your Customers	149
	Enhanced Processes with Your Employees	149
	Summary	150
Chapter 8	Communication	151
	Consumer Applications	151
	Voice, E-mail, Paging, SMS/EMS, and Video	151
	Voice	152
	E-mail and Unified Messaging	153
	Pagers and BlackBerrys	154
	SMS/EMS/MMS	155
	Video	155
	Office Applications and Internet/Intranet Access	155
	Office Applications	156
	Internet/Intranet Access	156
	Enterprise Processes	157
	Voice, E-mail, Paging, SMS/EMS, Video	157
	Filtering	158
	Office Applications and Internet/Intranet Access	159
	Summary	160
Chapter 9	Information	161
	Consumer Applications	161
	Sports, News, Weather, Maps, and Traffic	162
	Sports	162
	News	163
	Weather	163
	Maps	164
	Traffic	164
	Entertainment: E-books, Music, Gambling, and Multiplayer Games	165
	E-Books	165
	Music	166
	Gambling	167

Multiplayer Games	168
Education	168
Emergency and Disaster Services	169
Enterprise Processes	170
News	170
Weather, Maps, and Traffic	170
Management Dashboard	171
Summary	173
Chapter 10 Commerce	175
Applications in Different Sectors	175
Communication with Your Clients	175
Advertising	176
Financial Services	178
Description of the Customer Value Proposition	178
Expected Technology Evolution	179
Phone-Based Applications Using SIM Cards	179
Browser-Based Applications for PDAs	180
Manufacturing	180
Telecom Sector	182
Media Sector	183
Retail Sector	184
Healthcare and Life Sciences Sectors	185
Energy and Utilities Organizations	186
Commerce and Enterprise Processes	187
Calculating Value Generated from Mobile Functionalities	190
Quantitative Benefits	191
Qualitative Benefits	191
Presenting the Benefits of Mobile Technologies	192
Field Service	193
Sales Force Automation	195
Telemetry: Remote Monitoring	199
Transportation	200
Dispatching and Routing	201
Summary	202
Chapter 11 Microsoft and CGE&Y Case Studies	203
Introduction	203
Wireless Field Service Automation	204
The Solution	205
The Process	206
Identify Work	207
Plan Work	207
Perform Work	208
Report Work	208
Follow up on Work and Create Invoice	209

What's the Business Value?	209
Quantitative Benefits	210
Qualitative Benefits	211
Wireless Commodity Exchange	212
Conceptual Business Scenario	214
Defining the Solution	216
Wireless Sales Force Automation	221
Conceptual Business Scenario	222
Defining the Solution	226
Mobile Management Information Dashboard	229
Conceptual Business Scenario	231
Defining the Solution	234
Mobile Financial Services Application	236
The Situation	237
The Solution	238
The Benefits	240
Streamlined Data Capture and Reporting	241
More Meaningful Business Intelligence	241
Improved Customer Service	241
Reduced Frequency of Errors	241
Robust, Easy-to-Use Development Platform	242
The Far-Reaching Possibilities	242
Summary	242

Part 3 Strategy Formulation and Implementation Methodology 243

Chapter 12 Developing a Mobile/Wireless Solution 245

Introduction	245
Following a Structured Approach	246
Phase I: Mobile/Wireless Strategy Formulation	248
Stage 1: Developing a Vision	248
Formulation	249
Ownership	250
Communication	251
Stage 2: Setting the Direction	252
Internal Assessment	254
External Assessment	256
Value Web Analysis	258
Stage 3: Creating an Initiative Portfolio	259
Functionality Definition	259
Technology / Architectural Requirements	260
Cost-Benefit Analysis	260
Organizational Impact	260
High-Level Deployment Roadmap	261
Implementation Workplan	262
Alliance Approach	262

Marketing Approach	264
Risk Mitigation	264
Creating the Proof of Concept	264
Functionality Refinement	266
User Experience Confirmation	266
Cost-Benefit Validation	267
Phase II: Strategy Implementation	267
Phase III: Strategy Monitoring	268
Summary	268
Chapter 13 Methodology for Building the Solution	271
Adaptive Technology Architecture	
Definition (ATAD)	272
The Purpose of Architecture	276
Aspect Areas	277
Specialized Views	279
Levels of Contemplation	279
Logical Scenarios	284
Physical Scenarios	285
Migration Strategy	286
Security Strategy	286
Governance Strategy	287
Software Best Practices	288
Putting It All Together	289
Appendix A Industry Associations	291
Appendix B Useful URLs	295
Appendix C Glossary	301
Index	307