CONTENTS

PREFACE xi

1 UNDERSTANDING SUCCESS AND FAILURE 1
1.0 INTRODUCTION 1
1.1 SUCCESS: HISTORICAL PERSPECTIVE 2
1.2 EARLY MODIFICATIONS TO TRIPLE CONSTRAINTS 3
1.3 PRIMARY AND SECONDARY CONSTRAINTS 4
1.4 PRIORITIZATION OF CONSTRAINTS 6
1.5 FROM TRIPLE CONSTRAINTS TO COMPETING CONSTRAINTS 6
1.6 FUTURE DEFINITIONS OF PROJECT SUCCESS 8
1.7 DIFFERENT DEFINITIONS OF PROJECT SUCCESS 11
1.8 UNDERSTANDING PROJECT FAILURE 12
1.9 DEGREES OF PROJECT FAILURE 13
1.10 OTHER CATEGORIES OF PROJECT FAILURE 16
1.11 SUMMARY OF LESSONS LEARNED 17

2 CAUSES OF PROJECT FAILURE 19
2.0 INTRODUCTION 19
2.1 FACTS ABOUT PROJECT FAILURE 19
2.2 CAUSES OF PROJECT FAILURE 20
2.3 SCHEDULE FAILURE 22
2.4 FAILURES DUE TO UNKNOWN TECHNOLOGY 23
2.5 PROJECT SIZE AND SUCCESS/Failure RISK 24
2.6 FAILURE DUE TO IMPROPER CRITICAL FAILURE FACTORS 25
2.7 FAILURE TO ESTABLISH TRACKING METRICS 26
2.8 FAILING TO RECOGNIZE EARLY WARNING SIGNS 26
2.9 IMPROPER SELECTION OF CRITICAL TEAM MEMBERS 27
2.10 UNCERTAIN REWARDS 29

2.11 ESTIMATING FAILURES 31
2.12 STAFFING FAILURES 32
2.13 PLANNING FAILURES 34
2.14 RISK MANAGEMENT FAILURES 36
2.15 MANAGEMENT MISTAKES 37
2.16 LACKING SUFFICIENT TOOLS 38
2.17 FAILURE OF SUCCESS 39
2.18 MOTIVATION TO FAIL 41
2.19 TRADEOFF FAILURES 42
2.20 SUMMARY OF LESSONS LEARNED 43

3 BUSINESS CASE FAILURE 45
3.0 INTRODUCTION 45
3.1 CHANGING STAKEHOLDERS 45
3.2 REVALIDATION OF ASSUMPTIONS 46
3.3 MANAGING INNOVATION 47
3.4 EXAMPLES OF CHANGING BUSINESS CASES 48
3.5 PROLOGUE TO THE IRI DIUM CASE STUDY 52
3.6 RISE, FALL AND RESURRECTION OF IRI DIUM 52
Naming the Project “Iridium” 55
Obtaining Executive Support 55
Launching the Venture 56
Iridium System 58
Terrestrial and Space-Based Network 58
Project Initiation: Developing
Business Case 59
“Hidden” Business Case 61
Risk Management 61
Collective Belief 63
Iridium’s Infancy Years 64
Debt Financing 67
M-Star Project 68
A New CEO 69
Project Management at Motorola (Iridium) 69
Satellite Launches 70
Initial Public Offering (IPO) 71

vii
4 SPONSORSHIP/GOVERNANCE FAILURES 87

4.0 INTRODUCTION 87
4.1 DEFINING PROJECT GOVERNANCE 88
4.2 PROJECT VERSUS CORPORATE GOVERNANCE 88
4.3 ROLES, RESPONSIBILITIES AND DECISION-MAKING AUTHORITY 90
4.4 GOVERNANCE FRAMEWORKS 91
4.5 GOVERNANCE FAILURES 93
4.6 WHY PROJECTS ARE HARD TO KILL 94
4.7 COLLECTIVE BELIEF 96
4.8 EXIT CHAMPION 97
4.9 WHEN TO GIVE UP 98
4.10 PROLOGUE TO THE DENVER INTERNATIONAL AIRPORT CASE STUDY 101
4.11 DENVER INTERNATIONAL AIRPORT 101
   Background 101
   Airports and Airline Deregulation 102
   Does Denver Need a New Airport? 103
   Enplaned Passenger Market 108
   Land Selection 109
   Front Range Airport 109
   Airport Design 110
   Project Management 112
   Baggage-Handling System 114
   Early Risk Analysis 115
   March 1991 115
   April 1991 116
   May 1991 116
   August 1991 117
   November 1991 117
   December 1991 118
   January 1992 118
   June 1992 118
   September 1992 119
   October 1992 119
   March 1993 119
   August 1993 120
   September 1993 120
   October 1993 121
   January 1994 121
   February 1994 121
   March 1994 121
   April 1994 122
   May 1994 122
   June 1994 123
   July 1994 124
   August 1994 124
   September 1994 127
   October 1994 128
   November 1994 128
   December 1994 130
   Airline Costs per Enplaned Passenger 131
   February 28, 1995 132
   APPENDIX A 133
   Introduction 133
   Agreement between United and the City 134
   APPENDIX B JOKES ABOUT THE ABBREVIATION DIA 138
4.12 DENVER INTERNATIONAL AIRPORT BAGGAGE-HANDLING SYSTEM: ILLUSTRATION OF INEFFECTIVE DECISION MAKING 142
   Synopsis 142
   Background 142
   System at a Glance 142
   Chronology of Events 143
   Basic Mode of Failure 145
   Key Decisions That Led to Disaster 145
   Other Failure Points 151
   Conclusion 152
4.13 SUMMARY OF LESSONS LEARNED 153

5 PROJECT POLITICS AND FAILURE 155

5.0 INTRODUCTION 155
5.1 POLITICAL RISKS 156
5.2 REASONS FOR PLAYING POLITICS 156
5.3 SITUATIONS WHERE POLITICAL GAMES WILL OCCUR 157
5.4 GOVERNANCE COMMITTEE 158
5.5 FRIENDS AND FOES 159
5.6 ATTACK OR RETREAT 159
5.7 NEED FOR EFFECTIVE COMMUNICATIONS 161
5.8 POWER AND INFLUENCE 162
5.9 MANAGING PROJECT POLITICS 163
5.10 PROLOGUE TO THE SPACE SHUTTLE CHALLENGER DISASTER CASE STUDY 163
5.11 SPACE SHUTTLE CHALLENGER DISASTER 164
   Background to Space Transportation System 166
   NASA Succumbs to Politics and Pressure 167
   Solid Rocket Boosters 169
   Blowholes 171
   O-Ring Erosion 173
   Joint Rotation 173
   O-Ring Resilience 174
   External Tank 175
   Spare Parts Problem 175
   Risk Identification Procedures 175
   Teleconferencing 176
   Paperwork Constraints 176
   Politics and O-Rings 178
   Issuing Waivers 178
   Launch Liftoff Sequence Profile: Possible Aborts 180
   O-Ring Problem 184
   Pressure, Paperwork and Waivers 189
   Mission 51-L 191
   Second Teleconference 194
   Ice Problem 199
   The Accident 202
   NASA and Media 205
   Findings of Commission 205
   Chain-of-Command Communication Failure 209
   Epilogue 210
   Potential Cover-Up 211
   Senate Hearing 213
5.12 SUMMARY OF LESSONS LEARNED 214

6 SOFTWARE FAILURES 217
6.0 INTRODUCTION 217
6.1 IT’S BIGGEST FAILURES 217
   IBM’s Stretch Project 217
   Knight-Ridder’s Viewtron Service 218
   DMV Projects—California and Washington 218
   Apple’s Copland Operating System 219
   Sainsbury’s Warehouse Automation 220
   Canada’s Gun Registration System 220
   Three Current Projects in Danger 221
6.2 SOFTWARE BUGS 222
6.3 CAUSES OF FAILURE IN SOFTWARE PROJECTS 224
6.4 LARGE-SCALE IT FAILURE 225
   Reader ROI 225
   Out with the Old 227
   Seeds of Failure 228

Early Warnings 230
Call for Help 232

6.5 WORST POSSIBLE FAILURE: FOXMEYER DRUGS 234
   Case Study: FoxMeyer Drugs’ Bankruptcy: Was It a Failure of ERP? 235

6.6 LONDON HEATHROW TERMINAL 239
   History 240
   Construction 240
   Main Terminal Building 241
   Satellite Terminal Buildings 241
   New Heathrow Control Tower 242
   Opening Day 242
6.7 SUMMARY OF LESSONS LEARNED 243

7 SAFETY CONSIDERATIONS 245
7.0 IMPORTANCE OF SAFETY 245
7.1 BOEING 787 DREAMLINER BATTERY PROBLEMS 245
7.2 AIRBUS A380 PROBLEMS 250
   Configurations 251
   Brief History 251
7.3 SUMMARY OF LESSONS LEARNED 255

8 SCOPE CREEP 257
8.0 UNDERSTANDING SCOPE CREEP 257
8.1 CREEPING FAILURE 258
8.2 DEFINING SCOPE 259
8.3 SCOPE CREEP DEPENDENCIES 261
8.4 CAUSES OF SCOPE CREEP 261
8.5 NEED FOR BUSINESS KNOWLEDGE 263
8.6 WAYS TO MINIMIZE SCOPE CREEP 263
8.7 SYDNEY OPERA HOUSE 265
   Performance Venues and Facilities 266
   Construction History 267
8.8 SUMMARY OF LESSONS LEARNED 273

9 PROJECT HEALTH CHECKS 275
9.0 NEED FOR PROJECT HEALTH CHECKS 275
9.1 UNDERSTANDING PROJECT HEALTH CHECKS 276
9.2 WHO PERFORMS HEALTH CHECKS? 278
9.3 HEALTH CHECK LIFE-CYCLE PHASES 278
9.4 PROJECT MANAGEMENT FAILURE WARNING SIGNS 279
   “Instant Amnesia” and “Da Nial Ain’t In Egypt” 280
   Project Cost 280
   The Lone Ranger Rides Again! 281
9.5  SUMMARY OF LESSONS LEARNED  286

10  TECHNIQUES FOR RECOVERING FAILING PROJECTS  289
10.0  UNDERSTANDING TROUBLING PROJECTS  289
10.1  ROOT CAUSES OF FAILURE  290
10.2  DEFINITION PHASE  292
10.3  EARLY WARNING SIGNS OF TROUBLE  292
10.4  SELECTING RECOVERY PROJECT MANAGER (RPM)  294
10.5  RECOVERY LIFE-CYCLE PHASES  295
10.6  UNDERSTANDING PHASE  295
10.7  AUDIT PHASE  296
10.8  TRADEOFF PHASE  298
10.9  NEGOTIATION PHASE  300
10.10  RESTART PHASE  300
10.11  EXECUTION PHASE  301
10.12  PROJECT RECOVERY VERSUS PROJECT RESCUE  302
10.13  RECOVERY DECISION  302
10.14  SUMMARY OF LESSONS LEARNED  304