

Contents

List of contributors	xv
Foreword	xix
Introduction	xxi
1. Project management guidelines/frameworks in the era of agility and complexity	1
<i>Vyron Damasiotis and Panos Fitsilis</i>	
1.1 Introduction	1
1.2 Project management standards	2
1.2.1 International project management association individual competence baseline guide	2
1.2.2 Project IN controlled environment	3
1.2.3 The ISO21500:2012	5
1.2.4 The project management body of knowledge guide	6
1.2.5 Project management standards' comparison	11
1.3 Project complexity and project management	12
1.3.1 Types of complexity	13
1.3.2 Approaches to complexity	13
1.3.3 Software project complexity	15
1.4 Conclusion	16
About the authors	17
References	17
2. The smart city of Évora	21
<i>J. Seixas, S.G. Simoes, J.P. Gouveia and L. Dias</i>	
2.1 Introduction	21
2.2 Background	23
2.2.1 Évora InovCity	23
2.2.2 Integrated city planning toward Évora Action Plan for sustainable energy	25
2.2.3 "Smart cities" memorandum of understanding	26
2.3 Research methodology: case study	27
2.3.1 Scope	28
2.3.2 Integration	29
2.3.3 Organization	34
2.3.4 Time	39
2.3.5 Cost	39

2.3.6	Risks	43
2.3.7	Discussion—the fringes	44
2.4	Conclusions	46
	Acknowledgments	47
	About the authors	47
	References	48
	Further reading	50
3.	The smart city of Torino	51
	<i>Chiara Delmastro, Rocco De Miglio, Alessandro Chiodi, Maurizio Gargiulo and Paola Pisano</i>	
3.1	Introduction	51
3.2	Background	53
3.3	Research methodology: the case study	53
3.3.1	Scope	56
3.3.2	Integration	57
3.3.3	Organization	59
3.3.4	Time	60
3.3.5	Cost	65
3.3.6	Quality	67
3.3.7	Risks	70
3.3.8	Procurement	74
3.3.9	Discussion—the fringes	75
3.4	Conclusion	77
	Acknowledgments	77
	About the authors	77
	References	78
	Further reading	81
4.	The smart city of Leuven	83
	<i>Roel Heijlen and Joep Crompvoets</i>	
4.1	Introduction	83
4.1.1	Objective and structure of the chapter	84
4.2	Background	85
4.2.1	Context	85
4.2.2	Focus areas	86
4.3	Analysis of the case	87
4.3.1	Scope	89
4.3.2	Integration and organization	90
4.3.3	Time	92
4.3.4	Costs and funding channels	92
4.3.5	Criteria regarding quality and procurement	94
4.3.6	Risks and anticipation	94
4.4	Discussion	99
4.4.1	Strategy	100

4.4.2	Multidisciplinarity (and cocreation)	100
4.4.3	Appropriation	101
4.4.4	Road map	101
4.4.5	Technology	101
4.5	Conclusion	102
	Acknowledgments	102
	About the authors	102
	References	103
5.	The smart city of Vienna	105
	<i>Vasja Roblek</i>	
5.1	Introduction	105
5.2	Background	106
5.3	Research methodology: case study	118
5.3.1	Scope	118
5.3.2	Integration	120
5.3.3	Organization	123
5.3.4	Time	123
5.3.5	Discussion—the fringes	125
5.4	Conclusions	126
	About the author	126
	References	126
6.	A smart city needs more than just technology: Amsterdam's Energy Atlas project	129
	<i>Zulfikar Dinar Wahidayat Putra and Wim van der Knaap</i>	
6.1	Introduction	129
6.2	Background	130
6.2.1	Theoretical approach for Amsterdam Smart City	132
6.2.2	Organization of Amsterdam Smart City	135
6.3	Research methodology: case study	136
6.3.1	Scope	136
6.3.2	Integration	137
6.3.3	Organization	138
6.3.4	Timescale	140
6.3.5	Cost	140
6.3.6	Quality	141
6.3.7	Risks	141
6.3.8	Procurement	142
6.3.9	Discussion	142
6.4	Conclusions	144
6.5	Remarks	145
	About the authors	145
	References	146
	Further reading	147

7. The smart city of Trikala	149
<i>Leonidas Anthopoulos</i>	
7.1 Introduction	149
7.2 Background	152
7.3 Research methodology: case study	158
7.3.1 Project mission statement	158
7.3.2 Resource-based motivation	163
7.3.3 Life-cycle management	164
7.3.4 Project coalition management	166
7.3.5 Discussion—the fringes	167
7.4 Conclusion	169
Acknowledgments	170
About the author	170
References	170
Further reading	171
8. The evolution of smart city policy of Korea	173
<i>Jae Yong Lee and Ji-in Chang</i>	
8.1 Introduction	173
8.2 Background	175
8.3 Research methodology: a case study	176
8.3.1 Scope	177
8.3.2 Integration	179
8.3.3 Organization	181
8.3.4 Time	184
8.3.5 Cost	186
8.3.6 Quality	187
8.3.7 Risks	188
8.3.8 Procurement	188
8.3.9 Discussion—the fringes	189
8.4 Conclusion	192
Acknowledgment	192
About the authors	192
References	193
9. The smart city of Hangzhou, China: the case of Dream Town Internet village	195
<i>Iraklis Argyriou</i>	
9.1 Introduction	195
9.2 Background	196
9.2.1 The Dream Town smart project in Hangzhou: a designated space for promoting innovation-based urbanization	196
9.2.2 Theoretical context and organization schemas	198

9.3	Research methodology: case study	200
9.3.1	Scope	201
9.3.2	Integration	203
9.3.3	Organization	203
9.3.4	Time	205
9.3.5	Cost	208
9.3.6	Quality	208
9.3.7	Risks	209
9.3.8	Procurement	210
9.3.9	Discussion—the fringes	210
9.4	Conclusions	214
	Acknowledgments	216
	About the author	216
	References	216
	Appendix A: Actors interviewed for the Dream Town smart city case	218
10.	The smart city of Changsha, China	219
	<i>Qiaomei Yang</i>	
10.1	Introduction	219
10.2	Background	222
10.2.1	National strategy: informationization development in China and electronic government	222
10.2.2	The organizational scheme of smart city construction	223
10.2.3	The outline for construction of new smart city and optimization of public service modes	225
10.2.4	The impacts of urbanization step onto the era 3.0 and Changsha is practicing to construct smart city	228
10.2.5	Huawei internet of things (IOT) platform development tendency in the arena of smart city	228
10.3	Research methodology: case study	229
10.3.1	Scope	229
10.3.2	Time series for the diffusion of smart city evolution	231
10.3.3	Discussion—the fringes	235
10.4	Conclusions	237
	Acknowledgment	239
	About the author	239
	References	239
	Further reading	240
11.	Smart city evolution in India: the cases of Dehradun, Nagpur, and Allahabad	243
	<i>Vinay Kandpal</i>	
11.1	Introduction	243
11.2	Background	244

11.3	Research methodology	246
11.3.1	Dehradun	246
11.3.2	Nagpur city	249
11.3.3	Allahabad	252
11.4	Conclusions	256
	Acknowledgment	257
	About the author	257
	References	257
	Further reading	258
12.	The smart city of Pune	261
	<i>Zeenat Rehena and Marijn Janssen</i>	
12.1	Introduction	261
12.2	Background	263
12.3	Major challenges	265
12.4	Smart city of Pune	267
12.4.1	Scope	269
12.4.2	Integration	269
12.4.3	Organization	272
12.4.4	Cost	273
12.4.5	Quality	275
12.4.6	Risks	276
12.4.7	Procurement	277
12.4.8	Discussion—the fringes	279
12.5	Conclusion	280
	About the authors	280
	References	281
	Further reading	282
13.	The smart city of Nara, Japan	283
	<i>Narutoshi Sakano</i>	
13.1	Introduction	283
13.2	Background	285
13.3	Research methodology: case study	286
13.3.1	Utilizing renewable energies in the three major projects	286
13.3.2	Evaluation	287
13.4	Conclusion	290
	About the author	291
	Reference	293
	Further reading	293
14.	A smart city case study of Singapore—Is Singapore truly smart?	295
	<i>Marianna Cavada, Miles R. Tight and Christopher Rogers, D.F.</i>	
14.1	Background	295
14.2	Singapore's vision—a smart nation	296

14.3	Research methodology: the Smart Model Assessment Resilient Tool	296
14.3.1	Introduction to assessment of Smart Model Assessment Resilient Tool	296
14.3.2	Integration	298
14.3.3	Organization	298
14.3.4	Timescale	299
14.3.5	Singapore's smart initiatives	300
14.3.6	Reach—star ratings of Singapore's initiatives	303
14.3.7	Risks	304
14.3.8	Procurement	304
14.3.9	Benefits of Singapore's initiatives on liveability actions	304
14.3.10	Direct impact on lenses	306
14.3.11	Indirect impact on lenses	307
14.4	Conclusions and recommendations	308
	Acknowledgments	310
	About the authors	310
	References	311
	Further reading	314
15.	The smart city of Newark, NJ: data analytics platform for economic development and policy assessment	315
	<i>Soon Ae Chun, Kevin Lyons and Nabil R. Adam</i>	
15.1	Introduction	315
15.2	Smart city data analytics platform	317
15.2.1	Smart city platform architecture	317
15.3	Case studies: analytics for information needs and decision support	318
15.3.1	Analysis for Newark industrial manufacturing	318
15.3.2	Anchor institution analysis	319
15.3.3	Smart city governance analytics	320
15.3.4	Anchor Institution—Beth-Israel Medical Center	321
15.3.5	City government—economic impact analysis	321
15.4	Discussions	324
15.4.1	Scope	324
15.4.2	Integration	326
15.4.3	Organization	327
15.4.4	Time	327
15.4.5	Cost	328
15.4.6	Quality	328
15.4.7	Risks	328
15.4.8	Procurement	329
15.5	Conclusion	329
	Acknowledgments	329
	About the authors	330

References	331
Further reading	331
16. The case of Quayside, Toronto, Canada	333
<i>Pamela Robinson and Steven Coutts</i>	
16.1 Introduction	333
16.2 Background	335
16.2.1 History	335
16.2.2 Theoretical context	337
16.3 Research methodology: case study	338
16.3.1 Scope	338
16.3.2 Integration	339
16.3.3 Organization	340
16.3.4 Time	341
16.3.5 Cost	342
16.3.6 Quality	342
16.3.7 Risks	342
16.3.8 Procurement	343
16.3.9 Discussion—the fringes	344
16.4 Conclusions	345
Acknowledgment	346
About the authors	346
References	347
17. The Brazilian smart cities: a national literature review and cases examples	351
<i>Luiz Pinheiro Junior</i>	
17.1 Introduction	351
17.2 Smart cities—background theoretical	353
17.3 Research methodology: literature review and cases cited	356
17.3.1 Brazilian literature and cases about smart cities	356
17.3.2 Smart cities discussion in the Brazilian context	358
17.4 Conclusions	360
Acknowledgments	361
About the author	361
References	362
Further reading	365
18. Porto Alegre, Brazil: the smart health case of Gerint	367
<i>Paulo R. Miranda, Clarice S. Porciuncula and Maria A. Cunha</i>	
18.1 Introduction	367
18.2 Background	369
18.2.1 The Brazilian health service	370
18.2.2 The regulation of access to health services	371
18.2.3 Dimensions of the regulation of health services	371

18.3	Research methodology: case study	372
18.3.1	Porto Alegre Smart City	372
18.3.2	Scope	375
18.3.3	Integration	381
18.3.4	Organization	382
18.3.5	Time	383
18.3.6	Cost	383
18.3.7	Quality	384
18.3.8	Risks	384
18.3.9	Procurement	385
18.3.10	Discussion—the fringes	385
18.4	Conclusions	386
	Acknowledgments	387
	About the author	387
	References	388
	Further reading	390
19.	Smart city of Algiers: defining its context	391
	<i>Kamila Ghidouche Ait-Yahia, Faouzi Ghidouche and Gilles N'Goala</i>	
19.1	Introduction	391
19.2	Background	392
19.2.1	Concept evolution	392
19.2.2	Definitions and dimensions	393
19.2.3	Smart city limits	393
19.3	Project definition methodology	394
19.3.1	Study area	394
19.3.2	Integration and organization	395
19.3.3	Schedule	396
19.3.4	Funding	396
19.4	Research methodology: the case of Algiers	397
19.4.1	Methodological approach	397
19.4.2	Emerging results and discussion	398
19.5	Conclusion	403
	About the authors	403
	References	404
	Further reading	405
20.	The smart city of Johannesburg, South Africa	407
	<i>Kelvin Joseph Bwalya</i>	
20.1	Introduction	407
20.2	Background	409
20.3	Research methodology: case study	411
20.3.1	Scope and timeline	412
20.3.2	Integration	413
20.3.3	Organization	413

20.3.4	Time	414
20.3.5	Cost	414
20.3.6	Discussion—the fringes	415
	Conclusions	416
	Acknowledgments	417
	About the authors	417
	References	418
21.	The smart city of Tunisia	421
	<i>Aroua Taamallah, Maha Khemaja and Sami Faiz</i>	
21.1	Introduction	421
21.2	Background	422
21.3	Research methodology: case study	423
21.3.1	Scope	423
21.3.2	Integration	426
21.3.3	Organization	428
21.3.4	Time	429
21.3.5	Cost	429
21.3.6	Quality	430
21.3.7	Risks	430
21.3.8	Procurement	430
21.3.9	Discussion	430
21.4	Conclusions	431
	Acknowledgments	431
	About the authors	432
	References	432
	Conclusions: putting “sustainable” in smart cities	435
	Author index	439
	Subject index	447