Contents

Preface	15 more land \$1.5
Chapter 1: Data Management	cate a poloved \$1.5 17
1. Introduction	lev meniorios (L.S. 17
2. Essential Concepts	18
2.1 Data	18
2.2 Data and Information	20
2.3 Data as an Organizational Asset	20
2.4 Data Management Principles	8880(1) 8890(1) 10 3 3 21
2.5 Data Management Challenges	23
2.6 Data Management Strategy	shaki inomused + 6 31
3. Data Management Frameworks	33
	33
3.2 The Amsterdam Information Model	nn nodespassiel 1.2 34
3.3 The DAMA-DMBOK Framework	35 Manual Manual 35
3.4 DMBOK Pyramid (Aiken)	20/19/01/239
3.5 DAMA Data Management Framework Evolved	40
4. DAMA and the DMBOK	43
5. Works Cited / Recommended	46
Chapter 2: Data Handling Ethics	49
1. Introduction	49
	190/1100 Injuries 24 6 1 51
3. Essential Concepts	52
3.1 Ethical Principles for Data	52
5.2 Filliciples Bellillu Data Filvacy Law	
3.3 Online Data in an Ethical Context	56
3.4 Risks of Unethical Data Handling Practices 3.5 Establishing an Ethical Data Culture	56 60
5.5 Establishing all Ethical Data Culture	64
3.6 Data Ethics and Governance	65
	03 09(017 0/373211.5 1.4
Chapter 3: Data Governance	67
1. Introduction	67
1.1 Business Drivers	70
1.2 Goals and Principles	71
1.3 Essential Concepts	72
2. Activities	79
2.1 Define Data Governance for the Organization	79
2.2 Perform Readiness Assessment	79
2.3 Perform Discovery and Business Alignment	80
2.4 Develop Organizational Touch Points	0.1
2.5 Develop Data Governance Strategy	82
2.6 Define the DG Operating Framework	82
2.7 Develop Goals, Principles, and Policies	
2.8 Underwrite Data Management Projects	84
2.9 Engage Change Management	85

2.10 Engage in Issue Management	86
2.11 Assess Regulatory Compliance Requirements	87
2.12 Implement Data Governance	88
2.13 Sponsor Data Standards and Procedures	88
2.14 Develop a Business Glossary	90
2.15 Coordinate with Architecture Groups	90
2.16 Sponsor Data Asset Valuation	91
2.17 Embed Data Governance	91
3. Tools and Techniques	92
3.1 Online Presence / Websites	92
3.2 Business Glossary	92
3.3 Workflow Tools	93
3.4 Document Management Tools	93
3.5 Data Governance Scorecards	93
4. Implementation Guidelines	93
4.1 Organization and Culture	93
4.2 Adjustment and Communication	94
5. Metrics	94
6. Works Cited / Recommended	95
Chapter 4: Data Architecture	97
1. Introduction	97
	mail staff C soton 99
1.2 Data Architecture Outcomes and Practices	99
400	101
	108
2.1 Establish Data Architecture Practice	
2.2 Integrate with Enterprise Architecture	113
3. Tools	ACCUPATION OF THE PERSON AS A PARTY OF THE PER
3.1 Data Modeling Tools	111
3.2 Asset Management Software	114
3.3 Graphical Design Applications	
4. Techniques	114
4.1 Lifecycle Projections	114
4.2 Diagramming Clarity	
5. Implementation Guidelines	115
5.1 Readiness Assessment / Risk Assessment	116
5.2 Organization and Cultural Change	117
6. Data Architecture Governance	118
6.1 Metrics	110
7. Works Cited / Recommended	440
Chapter 5: Data Modeling and Design	121
1. Introduction	name of molecular 121
1.1 Business Drivers	
1.2 Goals and Principles	
1.3 Essential Concepts	
2. Activities	149
2.1 Plan for Data Modeling	1/10

2.2 Build the Data Model	150
2.3 Review the Data Models	Primaz era O alamahi r.S. 155
2.4 Maintain the Data Models	rinina2 Med author 9.5 155
3. Tools	155 Reference Sala Security
3.1 Data Modeling Tools	155
3.2 Lineage Tools	and the second s
3.3 Data Profiling Tools	<u>24779.08</u> 156
3.4 Metadata Repositories	Commercial with a children 156
3.5 Data Model Patterns	
3.6 Industry Data Models	<u> 157 157 168 168 168 178 </u>
4. Best Practices	marker of stablets Mark 157
4.1 Best Practices in Naming Conventions	round Various Mars 0 V E 157
4.2 Best Practices in Database Design	158
5. Data Model Governance	enasti xintati dilifa 1.4 158
5.1 Data Model and Design Quality Management	158 A. Z. tromediate Security
5.2 Data Modeling Metrics	
6. Works Cited / Recommended	Plus shook values 2.2
Chapter 6: Data Storage and Operations	
1 Introduction	lesidines transpool VA 165
1.1 Business Drivers	
1.2 Goals and Principles	167
1.3 Essential Concepts	
2 Activities insulations in the second secon	188 188 188 188
2.1 Manage Database Technology	188
2.2 Manage Databases	190
3. Tools	202
3.1 Data Modeling Tools	202
3.2 Database Monitoring Tools	202
3.3 Database Management Tools	202
3.4 Developer Support Tools	203
4. Techniques	203
4.1 Test in Lower Environments	203
4.2 Physical Naming Standards	203
4.3 Script Usage for All Changes	203
5. Implementation Guidelines	204
5.1 Readiness Assessment / Risk Assessment	204
5.2 Organization and Cultural Change	204
6. Data Storage and Operations Governance	regard and golden 205
6.1 Metrics	205
6.2 Information Asset Tracking	206
6.3 Data Audits and Data Validation	206
7. Works Cited / Recommended	207
Chapter 7: Data Security	
1. Introduction	209
1.1 Business Drivers	1001 gn00001 1260 0 211
1.2 Goals and Principles	
1.3 Essential Concepts	214

2. Activities		235
2.1 Identify Data Security Requirements	Review the Data Models	235
2.2 Define Data Security Policy	A Maintain the Date Models	231
2.3 Define Data Security Standards	alec	238
3. Tools		246
3.1 Anti-Virus Software / Security Software	alga i agesmil i	240
3.2 HTTPS	Start Problem Teels	246
3.3 Identity Management Technology	A Matalana Repositories	246
3.4 Intrusion Detection and Prevention Software		246
3.5 Firewalls (Prevention)	6 Industry Data Models	247
3.6 Metadata Tracking		247
3.7 Data Masking/Encryption	1 Best Prairiees in Naming Conven	247
4. Techniques	2 Best Proctices in Batabase Beage	_ 247
4.1 CRUD Matrix Usage	sanemsyoù labaM eta	247
4.2 Immediate Security Patch Deployment		247
4.3 Data Security Attributes in Metadata		248
4.4 Metrics 4.5 Security Needs in Project Requirements	ories (ited / Recommended	248
4.5 Security Needs in Project Requirements		250
4.6 Efficient Search of Encrypted Data	ier 6: Data Storage and Open	250
	anifest and anifest and anifest and anifest an	251
5. Implementation Guidelines	1 Enginees Drivers	
5.1 Readiness Assessment / Risk Assessment	2 Coals and Principles	251
5.2 Organization and Cultural Change	3 Essential Concepts	252
5.3 Visibility into User Data Entitlement	anitivity and anitivity	252
5.4 Data Security in an Outsourced World	Vanishmer sandalati ananeM. I	252
5.5 Data Security in Cloud Environments	2 Manager Databases	253
6. Data Security Governance	slex	_ 254
6.1 Data Security and Enterprise Architecture	t flata Modeline Looks	
7. Works Cited / Recommended	2 Batabase Monitorina Tools	_ 255
Chapter 8: Data Integration and Interoperabili	itv	257
1. Introduction	· apuratorina	257
1.1 Business Drivers	1 Tues is Laure Employmentable	258
1.2 Goals and Principles	uPrachmet2 vintered Newsyland C	260
1.3 Essential Concepts		260
2. Data Integration Activities		273
2.1 Plan and Analyze	1 Paddiage Agreement I Blek Age	273
2.2 Design Data Integration Solutions		276
2.3 Develop Data Integration Solutions	ata Staragacia de Perceptana Casa	278
사이트 아이들은 경기 경기에 가는 살아지다. 그는 사람들은 이 경기에 가는 사람들은 사람들이 되었다면 하는데 사람들이 되었다면 하는데	zornatki f	280
•	2 Information Asset Tracking	280
3.1 Data Transformation Engine/ETL Tool	policina vieta por stipe A escal C	280
3.2 Data Virtualization Server		281
2.2 Entampias Compias Dus		281
	officional staff V and	
3.4 Business Rules Engine 3.5 Data and Process Modeling Tools 3.6 Data Profiling Tool		281
3.6 Data Profiling Tool		282
3.7 Metadata Repository	zolożania baz Sladk	282
4. Techniques	- stanna Uranaa 1 r	282

5. Implementation Guidelines	282
5.1 Readiness Assessment / Risk Assessment	282
5.2 Organization and Cultural Change	283
6. DII Governance	
6.1 Data Sharing Agreements	284
6.2 DII and Data Lineage	284
6.3 Data Integration Metrics	
7. Works Cited / Recommended	
Chapter 9: Document and Content Management	287
1. Introduction	287
1.1 Business Drivers	200
1.2 Goals and Principles	289
1.3 Essential Concepts	
2. Activities	305
2.1 Plan for Lifecycle Management	
2.2 Manage the Lifecycle	
2.3 Publish and Deliver Content	311
3. Tools	312
3.1 Enterprise Content Management Systems	
3.2 Collaboration Tools	995 auchideM = 315
3.3 Controlled Vocabulary and Metadata Tools	315
3.4 Standard Markup and Exchange Formats	315
3.5 E-discovery Technology	0.10
4. Techniques	318
4.2 Litigation Response Data Map	318
5. Implementation Guidelines	
5.1 Readiness Assessment / Risk Assessment	319
5.2 Organization and Cultural Change	
6. Documents and Content Governance	322
6.1 Information Governance Frameworks	322
6.2 Proliferation of Information	
6.3 Govern for Quality Content	323
6.4 Metrics	324
7. Works Cited / Recommended	326
Chapter 10: Reference and Master Data	327
1. Introduction bases as a second base as a second bases as a second bases as a second base as a s	327
1 1 Business Drivers	
1.1 Business Drivers 1.2 Goals and Principles 1.3 Forestick Consents	329
1.3 Essential Concepts	330
2 4 11 11 -	349
2.1 MDM Activities	349
2.2 Reference Data Activities	
0 m 1 1m 1 :	252
4. Implementation Guidelines 4.1 Adhere to Master Data Architecture	354
4.2 Monitor Data Movement	354

4.3 Manage Reference Data Change	354
4.4 Data Sharing Agreements	355
5. Organization and Cultural Change	355
6. Reference and Master Data Governance	356
6.1 Metrics	356
7. Works Cited / Recommended	
Chapter 11: Data Warehousing and Business Intelligence	359
1. Introduction	359
1.1 Business Drivers	361
400 1 10:1	361
1.3 Essential Concepts	362
2. Activities	372
2.1 Understand Requirements	372
2.2 Define and Maintain the DW/BI Architecture	
2.3 Develop the Data Warehouse and Data Marts	373
2.4 Denvilate the Date Week and	374
2.5 Implement the Business Intelligence Portfolio	375
2.6 Maintain Data Products	376
2 Tools	378
3.1 Metadata Repository	
3.2 Data Integration Tools	
3.3 Business Intelligence Tools Types	
4. Techniques	***
4.1 Prototypes to Drive Requirements	383
4.2 Self-Service BI	384
4.3 Audit Data that can be Queried	
5. Implementation Guidelines 5.1 Readiness Assessment / Risk Assessment	385
5.2 Release Roadmap	385
5.3 Configuration Management	
5.4 Organization and Cultural Change	
6. DW/BI Governance	387
6.1 Enabling Business Acceptance	
6.2 Customer / User Satisfaction	388
6.3 Service Level Agreements	388
6.4 Reporting Strategy	388
6.5 Metrics	389
7. Works Cited / Recommended	390
Chapter 12: Metadata Management	
1. Introduction	393
14 D : D:	205
1.1 Business Drivers	
1.3 Essential Concepts	397
2. Activities	100
2.1 Define Metadata Strategy	
2.2 Understand Metadata Requirements	The state of the s
2.3 Define Metadata Architecture	110

2.4 Create and Maintain Metadata	hobinarios sull'international 412
2.5 Query, Report, and Analyze Metadata	414
3. Tools	ising significant and all and 414
3.1 Metadata Repository Management Tools	and the second s
	415
	991moning S.A. 415
	atrasmo) ichnocol (417
5. Implementation Guidelines	<u> </u>
5.1 Readiness Assessment / Risk Assessment	418 A Define Rusbaux Strategy and Bushne
5.2 Organizational and Cultural Change	418
6. Metadata Governance	200 Report of the Community of the Commu
6.1 Process Controls	dia M. has zezedogy H. stoff golevet. A.C. 419
6.2 Documentation of Metadata Solutions	419
6.3 Metadata Standards and Guidelines	alsooM anial) stationally 20 420
6.4 Metrics	Names setting Mobile Volge 0 VX 420
	124 Tools 3.1 MPP Shared-nothing Technologies a
	423
1. Introduction	Annual Annual State of the Annual State of Ann
1.1 Business Drivers	anomios muio mail alla 8 426
1.2 Goals and Principles	426
1.3 Essential Concepts	2001 nottsatistiziV 646-646-427
2. Activities	29400181007 446
2.1 Define High Quality Data	Santistical playlants La 446
2.2 Define a Data Quality Strategy	300 500 M 600 M 800 M 447
2.3 Identify Critical Data and Business Rules	29mlabro1 notestramolium 447
2.4 Perform an Initial Data Quality Assessment	448
2.5 Identify and Prioritize Potential Improvements	449
2.6 Define Goals for Data Quality Improvement	<u> </u>
2.7 Develop and Deploy Data Quality Operations	450
3. Tools	namagam M. alenmod 3 nobacilio e/V 1 a 457
3.1 Data Profiling Tools	maste and valuable to be expected as 457
	<u>vibuose and E.o.</u> 457
3.3 Modeling and ETL Tools	457
3.4 Data Quality Rule Templates	<u> </u>
3.5 Metadata Repositories	<u> </u>
4. Techniques	458
4.1 Preventive Actions	458
4.2 Corrective Actions	459
4.3 Quality Check and Audit Code Modules	460
4.4 Effective Data Quality Metrics	460
4.5 Statistical Process Control	palmining has slead to 461
[last and a support and a fine a fine and a	462
5. Implementation Guidelines	462
5.1 Readiness Assessment / Risk Assessment	463
5.2 Organization and Cultural Change	
6. Data Quality and Data Governance	465
	466
6.2 Metrics	466

7. Works Cited / Recommended	46
Chartes 44 Pin Pot and I Pot Colors	2.5 Queup E.
Chapter 14: Big Data and Data Science	469
1. Introduction	469
1.1 Business Drivers	200000000000000000000000000000000000000
1.2 Principles	47
1.3 Essential Concepts	47
2. Activities	48:
2.1 Define Big Data Strategy and Business Needs	48:
2.2 Choose Data Sources	48
2.3 Acquire and Ingest Data Sources	48
2.4 Develop Data Hypotheses and Methods	48
2.5 Integrate / Align Data for Analysis	
2.6 Explore Data Using Models	
2.7 Deploy and Monitor	48
3. Tools	48
3.1 MPP Shared-nothing Technologies and Architecture	
3.2 Distributed File-based Databases	49
3.3 In-database Algorithms	
3.4 Big Data Cloud Solutions	49
3.5 Statistical Computing and Graphical Languages	49
3.6 Data Visualization Tools	
4. Techniques	49:
4.1 Analytic Modeling	49
4.2 Big Data Modeling 5. Implementation Guidelines	49.
5.1 Strategy Alignment	
5.2 Readiness Assessment / Risk Assessment	
5.3 Organization and Cultural Change	
6. Big Data and Data Science Governance	
6.1 Visualization Channels Management	49
6.2 Data Science and Visualization Standards	49
6.3 Data Security	49
6.4 Metadata	49
6.5 Data Quality	49
6.6 Metrics	49
7. Works Cited / Recommended	291010dos 49
Chantar 15: Data Managament Maturity Assassment	50
Chapter 15: Data Management Maturity Assessment	
1. Introduction selection selection and the state of the	50
1.1 Business Drivers	50
1.2 Goals and Principles	50
1.3 Essential Concepts	50
2. Activities	508
2.1 Plan Assessment Activities	50
2.2 Perform Maturity Assessment	51
2.3 Interpret Results Supplies Translated Programme Control of the	512
2.4 Create a Targeted Program for Improvements	513
/ 5 KD-3CCOCC MIDTIITITY	THE RESERVE THE PARTY OF THE PA

3. Tools	514
4. Techniques	514
4.1 Selecting a DMM Framework	514
4.2 DAMA-DMBOK Framework Use	515
5. Guidelines for a DMMA	515
5.1 Readiness Assessment / Risk Assessment	515
5.2 Organizational and Cultural Change	516
6. Maturity Management Governance	516
6.1 DMMA Process Oversight	517
6.2 Metrics	
7. Works Cited / Recommended	518
Chapter 16: Data Management Organization and Role Expectations	519
1. Introduction	519
2. Understand Existing Organization and Cultural Norms	519
3. Data Management Organizational Constructs	
3.1 Decentralized Operating Model	521
3.2 Network Operating Model	522
3.3 Centralized Operating Model	522
3.4 Hybrid Operating Model	523
3.5 Federated Operating Model	524
3.6 Identifying the Best Model for an Organization	525
3.7 DMO Alternatives and Design Considerations	
4. Critical Success Factors	526
4.1 Executive Sponsorship	526
4.2 Clear Vision	521
4.3 Proactive Change Management	527
4.4 Leadership Alignment	527
4.5 Communication	
4.6 Stakeholder Engagement	
4.7 Orientation and Training	
4.8 Adoption Measurement	
4.9 Adherence to Guiding Principles	529
4.10 Evolution Not Revolution	
5. Build the Data Management Organization	529
5.1 Identify Current Data Management Participants	529
5.2 Identify Committee Participants	530
5.3 Identify and Analyze Stakeholders	530
5.4 Involve the Stakeholders 6. Interactions Between the DMO and Other Data-oriented Bodies	
	531
6.1 The Chief Data Officer	531
6.2 Data Governance	532
6.3 Data Quality	533
6.4 Enterprise Architecture	533
6.5 Managing a Global Organization	534
7. Data Management Roles	534 535
7.1 Organizational Roles	535
7.2 Individual Roles	537
8. Works Cited / Recommended	331

2. Laws of Change 3. Not Managing a Change: Managing a Transition 4. Kotter's Eight Errors of Change Management 4.1 Error #1: Allowing Too Much Complacency 4.2 Error #2: Failing to Create a Sufficiently Powerful Guiding Coalition 544 4.3 Error #3: Underestimating the Power of Vision 4.4 Error #4: Under Communicating the Vision by a Factor of 10, 100, or 1000 545 4.5 Error #5: Permitting Obstacles to Block the Vision 4.6 Error #6: Failing to Create Short-Term Wins 4.7 Error #7: Declaring Victory Too Soon 4.8 Error #8: Neglecting to Anchor Changes Firmly in the Corporate Culture 547 5. Kotter's Eight Stage Process for Major Change 5.1 Establishing a Sense of Urgency 5.2 The Guiding Coalition 551 5.3 Developing a Vision and Strategy 5.5 Communicating the Change Vision 6. The Formula for Change 7.1 The Challenges to be Overcome as Innovations Spread 7.1 The Challenges to be Overcome as Innovations Spread 7.2 Key Elements in the Diffusion of Innovation 556 7.3 The Five Stages of Adoption 557 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8. Sustaining Change 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 569 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communication 9.73	Chapter 17: Data Management and Organizational Change Management	539
3. Not Managing a Change: Managing a Transition 4. Kotter's Eight Errors of Change Management 5.43 4.1 Error #1: Allowing Too Much Complacency 5.43 4.2 Error #2: Failing to Create a Sufficiently Powerful Guiding Coalition 5.44 4.3 Error #3: Underestimating the Power of Vision 5.45 4.4 Error #4: Under Communicating the Vision by a Factor of 10, 100, or 1000 5.45 4.5 Error #5: Permitting Obstacles to Block the Vision 5.46 6. Error #6: Failing to Create Short-Term Wins 5.47 6. Error #7: Declaring Victory Too Soon 5.48 6. Error #8: Neglecting to Anchor Changes Firmly in the Corporate Culture 5. Kotter's Eight Stage Process for Major Change 5. It Establishing a Sense of Urgency 5. Establishing a Sense of Urgency 5. Developing a Vision and Strategy 5. Developing a Vision and Strategy 5. A Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7. Diffusion of Innovations and Sustaining Change 7. Elements in the Diffusion of Innovation 5.65 7.2 Key Elements in the Diffusion of Innovation 5.65 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 8.2 Framing the Vision 8.3 The Guiding Coalition 5.68 8.4 Relative Advantage and Observability 5.68 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 5.71 9.4 Communication Plan 9.5 Keep Communicating 5.72 Acknowledgements 5.75	1. Introduction	539
4. Kotter's Eight Errors of Change Management 4.1 Error #1: Allowing Too Much Complacency 543 4.2 Error #2: Failing to Create a Sufficiently Powerful Guiding Coalition 544 4.3 Error #3: Underestimating the Power of Vision 544 4.4 Error #4: Under Communicating the Vision by a Factor of 10, 100, or 1000 545 4.5 Error #5: Permitting Obstacles to Block the Vision 546 4.6 Error #6: Failing to Create Short-Term Wins 547 548 547 Error #7: Declaring Victory Too Soon 548 54.8 Error #8: Neglecting to Anchor Changes Firmly in the Corporate Culture 549 540 541 542 543 544 545 545 546 547 548 547 548 548 548 549 549 540 540 540 540 540 540 540 540 540 540	2. Laws of Change	540
4. Kotter's Eight Errors of Change Management 4.1 Error #1: Allowing Too Much Complacency 543 4.2 Error #2: Failing to Create a Sufficiently Powerful Guiding Coalition 544 4.3 Error #3: Underestimating the Power of Vision 544 4.4 Error #4: Under Communicating the Vision by a Factor of 10, 100, or 1000 545 4.5 Error #5: Permitting Obstacles to Block the Vision 546 4.6 Error #6: Failing to Create Short-Term Wins 547 548 547 Error #7: Declaring Victory Too Soon 548 54.8 Error #8: Neglecting to Anchor Changes Firmly in the Corporate Culture 549 540 541 542 543 544 545 545 546 547 548 547 548 548 548 549 549 540 540 540 540 540 540 540 540 540 540	3. Not Managing a Change: Managing a Transition	540
4.1 Error #1: Allowing Too Much Complacency 4.2 Error #2: Failing to Create a Sufficiently Powerful Guiding Coalition 544 4.3 Error #3: Under estimating the Power of Vision 544 4.4 Error #4: Under Communicating the Vision by a Factor of 10, 100, or 1000 545 4.5 Error #5: Permitting Obstacles to Block the Vision 545 4.6 Error #6: Failing to Create Short-Term Wins 547 547 547 547 547 547 548 548 549 549 549 549 540 540 540 540 540 540 540 540 540 540		543
4.2 Error #2: Failing to Create a Sufficiently Powerful Guiding Coalition 4.3 Error #3: Underestimating the Power of Vision 544 4.4 Error #4: Under Communicating the Vision by a Factor of 10, 100, or 1000 545 4.5 Error #5: Permitting Obstacles to Block the Vision 546 4.6 Error #6: Failing to Create Short-Term Wins 4.7 Error #7: Declaring Victory Too Soon 546 4.8 Error #8: Neglecting to Anchor Changes Firmly in the Corporate Culture 547 5. Kotter's Eight Stage Process for Major Change 548 5.1 Establishing a Sense of Urgency 5.2 The Guiding Coalition 551 5.3 Developing a Vision and Strategy 5.4 Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 562 7. Diffusion of Innovations and Sustaining Change 563 7.1 The Challenges to be Overcome as Innovations Spread 565 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 567 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 572 10. Works Cited / Recommended 575 Acknowledgements 575		543
4.3 Error #3: Underestimating the Power of Vision 4.4 Error #4: Under Communicating the Vision by a Factor of 10, 100, or 1000 545 4.5 Error #5: Permitting Obstacles to Block the Vision 4.6 Error #6: Failing to Create Short-Term Wins 545 4.7 Error #7: Declaring Victory Too Soon 546 4.8 Error #8: Neglecting to Anchor Changes Firmly in the Corporate Culture 547 5. Kotter's Eight Stage Process for Major Change 548 5.2 The Guiding Coalition 551 5.3 Developing a Vision and Strategy 5.4 Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 562 7.1 The Challenges to be Overcome as Innovations Spread 563 7.1 The Challenges to be Overcome as Innovations Spread 564 7.2 Key Elements in the Diffusion of Innovation 565 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 568 8. Sustaining Change 569 8.1 Sense of Urgency / Dissatisfaction 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 568 9. Communications Principles 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 575 Acknowledgements 575		544
4.4 Error #4: Under Communicating the Vision by a Factor of 10, 100, or 1000 4.5 Error #5: Permitting Obstacles to Block the Vision 5.45 4.6 Error #6: Failing to Create Short-Term Wins 4.7 Error #7: Declaring Victory Too Soon 5.44 4.8 Error #8: Neglecting to Anchor Changes Firmly in the Corporate Culture 5. Kotter's Eight Stage Process for Major Change 5.1 Establishing a Sense of Urgency 5.2 The Guiding Coalition 5.3 Developing a Vision and Strategy 5.5 A Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7.2 Key Elements in the Diffusion of Innovation 5.65 7.3 The Five Stages of Adoption 5.65 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 5.68 8.2 Framing the Vision 5.68 8.3 The Guiding Coalition 5.68 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 5.71 9.5 Keep Communicating 5.72 Acknowledgements 5.75 Acknowledgements 5.75		544
4.5 Error #5: Permitting Obstacles to Block the Vision 4.6 Error #6: Failing to Create Short-Term Wins 5.45 4.6 Error #7: Declaring Victory Too Soon 5.46 4.8 Error #8: Neglecting to Anchor Changes Firmly in the Corporate Culture 5. Kotter's Eight Stage Process for Major Change 5.47 5. Kotter's Eight Stage Process for Major Change 5.47 5.1 Establishing a Sense of Urgency 5.2 The Guiding Coalition 5.3 Developing a Vision and Strategy 5.5.4 Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 5.65 7.2 Key Elements in the Diffusion of Innovation 5.65 7.3 The Five Stages of Adoption 5.65 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 5.68 8.2 Framing the Vision 5.68 8.3 The Guiding Coalition 5.68 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 5.71 9.4 Communication Plan 9.5 Keep Communicating 5.72 10. Works Cited / Recommended 5.75 Acknowledgements 5.75		545
4.7 Error #7: Declaring Victory Too Soon 4.8 Error # 8: Neglecting to Anchor Changes Firmly in the Corporate Culture 5.47 5. Kotter's Eight Stage Process for Major Change 5.1 Establishing a Sense of Urgency 5.2 The Guiding Coalition 5.3 Developing a Vision and Strategy 5.4 Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 7.2 Key Elements in the Diffusion of Innovation 5.65 7.3 The Five Stages of Adoption 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 8.2 Framing the Vision 5.68 8.3 The Guiding Coalition 5.68 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 5.73 Acknowledgements 5.75 5.75 5.75 5.75 5.75 5.76 5.77 5.78 5.77 5.78 5.78 5.78 5.79		545
4.8 Error # 8: Neglecting to Anchor Changes Firmly in the Corporate Culture 5. Kotter's Eight Stage Process for Major Change 5.1 Establishing a Sense of Urgency 5.2 The Guiding Coalition 5.3 Developing a Vision and Strategy 5.5 A Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 7.2 Key Elements in the Diffusion of Innovation 5.3 The Five Stages of Adoption 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 8.2 Framing the Vision 5.68 8.3 The Guiding Coalition 5.68 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 575 575 575 575 576 577 578		545
5. Kotter's Eight Stage Process for Major Change 5.1 Establishing a Sense of Urgency 5.2 The Guiding Coalition 5.3 Developing a Vision and Strategy 5.4 Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 565 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 6.2 Framing the Vision 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 568 8.4 Relative Advantage and Observability 569 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.5 Keep Communicating Plan 9.5 Keep Communicating 10. Works Cited / Recommended 575 Acknowledgements 575	4.7 Error #7: Declaring Victory Too Soon	546
5. Kotter's Eight Stage Process for Major Change 547 5.1 Establishing a Sense of Urgency 548 5.2 The Guiding Coalition 551 5.3 Developing a Vision and Strategy 555 5.4 Communicating the Change Vision 558 6. The Formula for Change 562 7. Diffusion of Innovations and Sustaining Change 563 7.1 The Challenges to be Overcome as Innovations Spread 565 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 565 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 566 8. Sustaining Change 567 8.1 Sense of Urgency / Dissatisfaction 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 568 9. Communicating Data Management Value 569 9.1 Communications Principles 569 9.2 Audience Evaluation and Preparation 570 9.3 The Human Element 571 9.4 Communication Plan 571 9.5 Keep Communicating 1572 10. Works Cited / Recommended 575 Acknowledgements 575	4.8 Error # 8: Neglecting to Anchor Changes Firmly in the Corporate Culture	547
5.2 The Guiding Coalition 5.3 Developing a Vision and Strategy 5.4 Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 567 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 68 8.2 Framing the Vision 68 8.3 The Guiding Coalition 68 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.1 Communication Plan 9.5 Keep Communicating 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 575 Acknowledgements 575		547
5.2 The Guiding Coalition 5.3 Developing a Vision and Strategy 5.4 Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 567 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 68 8.2 Framing the Vision 68 8.3 The Guiding Coalition 68 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.1 Communication Plan 9.5 Keep Communicating 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 575 Acknowledgements 575		548
5.4 Communicating the Change Vision 6. The Formula for Change 7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 565 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 8.2 Framing the Vision 8.3 The Guiding Coalition 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 575 Acknowledgements 576 577 578 578		551
6. The Formula for Change 562 7. Diffusion of Innovations and Sustaining Change 563 7.1 The Challenges to be Overcome as Innovations Spread 565 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 565 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 566 8. Sustaining Change 567 8.1 Sense of Urgency / Dissatisfaction 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 568 9. Communicating Data Management Value 569 9.1 Communications Principles 569 9.2 Audience Evaluation and Preparation 570 9.3 The Human Element 571 9.4 Communication Plan 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 575 Acknowledgements 575	5.3 Developing a Vision and Strategy	555
7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 565 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 566 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 569 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 575 Acknowledgements 575		558
7. Diffusion of Innovations and Sustaining Change 7.1 The Challenges to be Overcome as Innovations Spread 565 7.2 Key Elements in the Diffusion of Innovation 565 7.3 The Five Stages of Adoption 566 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 569 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 575 Acknowledgements 575	6. The Formula for Change	562
7.1 The Challenges to be Overcome as Innovations Spread 7.2 Key Elements in the Diffusion of Innovation 7.3 The Five Stages of Adoption 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 8.2 Framing the Vision 8.3 The Guiding Coalition 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 575 Acknowledgements 575 575 575		563
7.2 Key Elements in the Diffusion of Innovation 7.3 The Five Stages of Adoption 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 8.2 Framing the Vision 8.3 The Guiding Coalition 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 575 Acknowledgements 565 566 567 568 569 575 575		565
7.3 The Five Stages of Adoption 7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 8.2 Framing the Vision 8.3 The Guiding Coalition 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 565 566 567 568 569 569 570 571 572 575 575		565
7.4 Factors Affecting Acceptance or Rejection of an Innovation or Change 8. Sustaining Change 8.1 Sense of Urgency / Dissatisfaction 8.2 Framing the Vision 8.3 The Guiding Coalition 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 575 Acknowledgements 566 567 568 568 569 569 569 570 571 571 572 573		565
8. Sustaining Change 567 8.1 Sense of Urgency / Dissatisfaction 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 568 9. Communicating Data Management Value 569 9.1 Communications Principles 569 9.2 Audience Evaluation and Preparation 570 9.3 The Human Element 571 9.4 Communication Plan 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 575		566
8.1 Sense of Urgency / Dissatisfaction 568 8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 568 9. Communicating Data Management Value 569 9.1 Communications Principles 569 9.2 Audience Evaluation and Preparation 570 9.3 The Human Element 571 9.4 Communication Plan 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 575	O Containing Change	567
8.2 Framing the Vision 568 8.3 The Guiding Coalition 568 8.4 Relative Advantage and Observability 568 9. Communicating Data Management Value 569 9.1 Communications Principles 569 9.2 Audience Evaluation and Preparation 570 9.3 The Human Element 571 9.4 Communication Plan 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 575		568
8.3 The Guiding Coalition 8.4 Relative Advantage and Observability 9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 10. Works Cited / Recommended 573 Acknowledgements 588 569 569 570 571 571 572 573		
8.4 Relative Advantage and Observability 568 9. Communicating Data Management Value 569 9.1 Communications Principles 569 9.2 Audience Evaluation and Preparation 570 9.3 The Human Element 571 9.4 Communication Plan 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 575		568
9. Communicating Data Management Value 9.1 Communications Principles 9.2 Audience Evaluation and Preparation 9.3 The Human Element 9.4 Communication Plan 9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 569 569 569 570 571 571 572 573		568
9.1 Communications Principles5699.2 Audience Evaluation and Preparation5709.3 The Human Element5719.4 Communication Plan5719.5 Keep Communicating57210. Works Cited / Recommended573Acknowledgements575		569
9.2 Audience Evaluation and Preparation 570 9.3 The Human Element 571 9.4 Communication Plan 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 575		569
9.3 The Human Element 571 9.4 Communication Plan 571 9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 575		
9.4 Communication Plan 9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 575		-
9.5 Keep Communicating 572 10. Works Cited / Recommended 573 Acknowledgements 575		571
10. Works Cited / Recommended 573 Acknowledgements 575		572
Acknowledgements 575	10. Works Cited / Recommended	573
Index September 2010 and 1910		_ 575
	Index Index DMO and Other Data-colepted Bodies	579