

Contents at a Glance

1	The Maintenance Health Assessment	21
2	SAP PM Basic Knowledge	43
3	SAP PM Education	81
4	Successful SAP PM Techniques	99
5	Technical Object Structure Functionality – Setting the Foundation	125
6	Capturing the Reliability History Needed To Improve	163
7	Effective Planning, Execution, and Improvement of Maintenance Work	209
8	Implementing an Effective SAP Plant Maintenance Preventive Maintenance Strategy	269
9	Getting the Most Out of Your SAP Plant Maintenance Data	303
10	Measuring SAP Plant Maintenance Performance Health	341
A	The Authors	363

Contents

Acknowledgments	15
Preface	17

1 The Maintenance Health Assessment 21

1.1	Maintenance Needs a Computerized Maintenance Management System	22
1.1.1	The 21st Century Role of Maintenance	22
1.1.2	We Are Deemed to Repeat History If We Do Not Use It ...	23
1.2	The Required Mindsets for Reliability Success	25
1.2.1	The Passion for Improvement and the Culture of Accountability	25
1.2.2	Being Able to "Take One for the Team"	26
1.2.3	The Production and Maintenance Partnership	27
1.2.4	Equipment Does Not Have to Fail	27
1.2.5	The Only Two Success Parameters that Really Matter	27
1.2.6	Data-Based Decision-Making	28
1.3	The Methodology of Reliability Success	29
1.3.1	Roles and Responsibilities	29
1.3.2	Organization and Accounting of the Asset	31
1.3.3	Work Identification and Control	32
1.3.4	Planning	32
1.3.5	Scheduling	33
1.3.6	Managing Change	33
1.4	The Skills that Drive Reliability Success	34
1.4.1	Craft Skills	34
1.4.2	Computer Skills	35
1.4.3	Process Knowledge	36
1.4.4	Equipment Knowledge	36
1.4.5	Common Sense	36
1.5	Testing for SAP PM Readiness	38
1.5.1	Maintenance Best Practices Assessment	39
1.5.2	Organization Readiness Assessment	39

1.5.3	Converting Maintenance Best Practices to SAP PM Configuration	40
1.5.4	SAP PM Readiness to Go-Live	40
1.6	Summary	41

2 SAP PM Basic Knowledge 43

2.1	The True Return on Investment of SAP PM	43
2.1.1	The Age of Computerized Maintenance Management	44
2.1.2	Where SAP PM Returns the Investment	45
2.2	SAP Overview from a Plant Maintenance Perspective	48
2.2.1	The Bigger SAP Picture	49
2.2.2	SAP Plant Maintenance Structure	51
2.2.3	Plant Maintenance Process Overview	52
2.2.4	Linking the PM Component to the Rest of the Enterprise ...	54
2.2.5	Following the Money Trail	56
2.2.6	SAP Overview Summary	57
2.3	Beginning with an End in Mind	57
2.3.1	The Phased Implementation Approach Barriers	58
2.3.2	Diving into the Deep End of the Pool	59
2.3.3	Weaning off of the Legacy System	60
2.4	The SAP Software Hierarchy	61
2.4.1	The SAP "Operating System"	62
2.4.2	SAP PM Configuration	63
2.4.3	User Configuration	71
2.4.4	SAP Permissions and Role Definition	72
2.5	Evolving from the Newspaper Culture to the Internet Culture	72
2.5.1	Custom Reporting	73
2.5.2	Daily Information Needs	74
2.6	Envision an Effective Implementation	77
2.6.1	Solidify the Maintenance Business Practices	78
2.6.2	Understand the SAP Tool	78
2.6.3	Understand and Lead the Organization Mindsets	78
2.6.4	Make SAP PM Reflect your Maintenance Business Practices	78
2.6.5	Plan for a Smooth Operating Transition	79
2.6.6	Educate the Organization to Succeed	79
2.7	Summary	79

3 SAP PM Education 81

3.1	How Ineffective Training Will Manifest Itself	81
3.1.1	Divergent Methodologies	82
3.1.2	The Illusion of Good Reporting	82
3.2	Dealing with Audience Diversity	82
3.2.1	How to Deal with Different Learning Styles	83
3.2.2	Dealing with the Lack of Computer Skills	83
3.2.3	Difference in Knowing SAP and Teaching SAP	83
3.2.4	Managing the Pace of Learning	84
3.3	How to Educate and Train at the Same Time	84
3.3.1	Teach What They Want To Know	85
3.3.2	What's in It for Me?	85
3.3.3	Training on the Maintenance Best Practices	86
3.3.4	Leadership Participation	87
3.3.5	Working in "Perfectville"	87
3.3.6	Teaching the Plant Information	88
3.4	SAP PM Teaching Tools	88
3.4.1	Lesson Plans	89
3.4.2	Training Manuals	90
3.4.3	Cheat Sheets	92
3.5	Train the Trainer Methodology	92
3.5.1	Barriers in the Train the Trainer Concept	93
3.6	Testing for and Expecting Knowledge	94
3.6.1	How to Test	94
3.6.2	Making Sure the Organization Understands the Training ...	95
3.7	Summary	96

4 Successful SAP PM Techniques 99

4.1	What Systems Require Continuous Support	99
4.1.1	Identifying What Needs "SAP PM" Preventive Maintenance	99
4.1.2	The SAP PM Champion	105
4.1.3	Plant Leadership	107
4.2	Managing the Pace of Effective Support	110
4.2.1	Important to Teach in the Beginning	110
4.2.2	Process to Feed the Need for More over Time	111
4.2.3	Validate the Education Investment	111

4.2.4	Training Environment for Users	112
4.2.5	Education on a Fully Functional System	112
4.2.6	Proving the Value	113
4.3	This Is a Healthy SAP PM Installation	113
4.3.1	Phased Success	113
4.3.2	SAP PM Health Checks	115
4.3.3	The Renewal Process	120
4.4	Job Descriptions and Skills Needed	121
4.4.1	Craftsman	122
4.4.2	Maintenance Planner	122
4.4.3	Maintenance Supervisor	122
4.4.4	Production Leader	122
4.5	Summary	123

5 Technical Object Structure Functionality — Setting the Foundation **125**

5.1	Dependable Technical Object Structure Benefits	125
5.1.1	Process-Based Reliability Information	126
5.1.2	Equipment-Based Reliability Information	126
5.1.3	Cost Tracking	130
5.1.4	Automatic Administrative Data Downloading (Data Transfer)	131
5.2	Technical Object Functionality	131
5.2.1	The Difference Between Functional Locations and Equipment	132
5.2.2	Functional Locations	132
5.2.3	Equipment	133
5.2.4	Materials, Serialization, and Bills of Materials	142
5.2.5	Technical Object Support Functionality	145
5.3	Common Application and Configuration Opportunities	151
5.3.1	Equipment Classification System	151
5.3.2	Catalog Profiles and Catalogs	152
5.3.3	Document Attachment	154
5.3.4	ABC Indicators	155
5.3.5	Work Center CO Activity Types	156
5.3.6	Planner Group Assignment Issues to Specific Equipment — Electrical versus Mechanical	157
5.3.7	Functional Location / Equipment Structure Design	158

5.3.8	Work Center Hierarchy	159
5.3.9	Lack of Equipment Detail	160
5.3.10	Bills of Material	160
5.3.11	Lack of Understanding of Data Transfer Process	161
5.4	Summary	162

6 Capturing the Reliability History Needed To Improve 163

6.1	Why Having a Dependable Notification Process is Important	163
6.1.1	Supporting Work Execution with a Notification	164
6.1.2	Capturing Notification History	165
6.1.3	The Notification versus the Order	166
6.2	Notification Functionality	166
6.2.1	Notification Design and Configuration Overview	167
6.2.2	Notification Structures	169
6.2.3	Notification Content and Defining and Utilizing the Partner Function	180
6.3	Notification Application Design and Configuration Overview	187
6.3.1	Entering Data on the Notification	187
6.3.2	Capturing Failure Information	196
6.3.3	Notification Types	201
6.3.4	Notification Screen Layout	202
6.3.5	Notification Priorities	203
6.3.6	Defining the Long Text	203
6.3.7	Quality of Descriptions	204
6.3.8	Object Information Box	205
6.3.9	Creating User Statuses	205
6.4	Summary	206

7 Effective Planning, Execution, and Improvement of Maintenance Work 209

7.1	How the Maintenance Order Contributes to the Reliability Improvement Effort	209
7.1.1	Link to the Notification Reliability History	210
7.1.2	Maintenance Order Administration	210
7.1.3	Detailing the Work Plan	210
7.1.4	Coordination and Scheduling of the Resources	211
7.1.5	Following the Money Trail	211

7.2	Order Design and Configuration Overview	211
7.2.1	The Order Link to Reliability Failure History	213
7.2.2	The Maintenance Order Header	215
7.2.3	Detailing the Work Plan in the Order Operations	229
7.2.4	Setting up the Scheduling Process	232
7.2.5	Setting up the Confirmation Process	234
7.2.6	Setting up the Cost Tracking in Plant Maintenance	235
7.3	Order Application Overview Work Order Application	238
7.3.1	Creating the Work Order	238
7.3.2	Work Order Header Data	239
7.3.3	Work Order Operations	243
7.3.4	Work Order Scheduling	252
7.3.5	Time Confirmation Process	255
7.3.6	Maintenance Costing	258
7.4	Common Application and Configuration Opportunities	259
7.4.1	Lack of Documented Manual Processes and Role Descriptions	260
7.4.2	The Absence of Maintenance Best Practices Influence in the Order Configuration Process	261
7.4.3	The Difficulty of Implementing the Confirmation and Feedback Process	262
7.4.4	Isolated SAP PM Installations	263
7.4.5	Work Order Types	263
7.4.6	PM Activity Types	264
7.4.7	System Condition	265
7.4.8	CO Activity Types	266
7.4.9	User Statuses	266
7.4.10	Detailing Orders and Operations	267
7.5	Summary	268

8 Implementing an Effective SAP Plant Maintenance Preventive Maintenance Strategy 269

8.1	Why Having a Good Preventive Maintenance Process Tool is Important	269
8.1.1	The Definition of Preventive Maintenance Success	270
8.1.2	The Basic Preventive Maintenance Operating Principles	270
8.2	SAP Preventive Maintenance Functionality	271

8.2.1	Plant Maintenance Task Lists	273
8.2.2	Time-Based versus Performance-Based Preventive Maintenance	276
8.2.3	Maintenance Plans	277
8.2.4	Maintenance Packages	280
8.2.5	Maintenance Strategies	281
8.3	SAP Preventive Maintenance Application	283
8.3.1	Task List Application	283
8.3.2	Application of the Maintenance Plan	286
8.4	Common Configuration and Application Barriers	296
8.4.1	Understanding SAP Preventive Maintenance Functionality	296
8.4.2	Assigning Confirmable Steps to Preventive Maintenance Routes	297
8.4.3	Task List Design and Numbering Conventions	298
8.4.4	Applying Effective Scheduling Parameters	298
8.4.5	Deadline Monitoring Application	299
8.4.6	Defining Preventive Maintenance Success	300
8.5	Summary	300

9 Getting the Most Out of Your SAP Plant Maintenance Data .. 303

9.1	The Value of Data in SAP PM	303
9.1.1	Organizational Alignment of Getting the Work Done	304
9.1.2	Practical Usages of Basic Information	306
9.1.3	The Skill of Improvement Opportunity Identification through Pattern Recognition	307
9.2	Customized SAP Reporting Available to SAP PM	309
9.2.1	SAP Custom Reporting	309
9.2.2	Business Warehouse	310
9.2.3	Queries	310
9.3	The Plant Maintenance Information System	312
9.3.1	Standard Analysis	313
9.3.2	Multi-Level List Displays	317
9.3.3	List Reporting and Navigation	318
9.4	Reporting Application of Selection Screens and List Displays	322
9.4.1	Building a Reporting Framework for the Reliability Stakeholder	322
9.4.2	Standard List Reporting Creation and Usage	325

9.4.3 Creating Variants 326
9.4.4 Selection Screen Skills Sets 332
9.4.5 Layout Screen Skill Sets 336
9.4.6 Tips and Tricks to Personalizing Selections 339
9.5 Summary 340

10 Measuring SAP Plant Maintenance Performance Health 341

10.1 You Get What You Measure 341
10.2 SAP Effectiveness Metrics 342
 10.2.1 Technical Object Assessment 343
 10.2.2 Notification Assessment 348
 10.2.3 Work Order Assessment 352
 10.2.4 Preventive Maintenance 356
10.3 Summary 360

A The Authors 363

Index..... 365