Materials Management with SAP® ERP: Functionality and Technical Configuration
Contents at a Glance

1 Materials Management Overview .................................................. 35
2 Materials Management Organizational Structure ............................. 43
3 Master Data in Materials Management ......................................... 65
4 Material Master Data – Part 1 .......................................................... 89
5 Material Master Data – Part 2 .......................................................... 141
6 Vendor Master Data ....................................................................... 189
7 Purchasing Information Data ......................................................... 221
8 Batch Management Data .............................................................. 237
9 Material Master Record ................................................................. 261
10 Vendor Master Record .................................................................. 281
11 Purchasing Overview ................................................................. 301
12 Purchase Requisition .................................................................. 327
13 Request for Quotation .................................................................. 343
14 Quotation ....................................................................................... 361
15 Purchase Order .............................................................................. 371
16 External Service Management (ESM) ........................................... 411
17 Consumption-Based Planning ....................................................... 429
18 Material Requirements Planning .................................................. 441
19 Forecasting ...................................................................................... 451
20 Inventory Management Overview ................................................ 463
21 Goods Issue .................................................................................... 489
22 Goods Receipt ................................................................................ 505
23 Physical Inventory .......................................................................... 521
24 Invoice Verification .......................................................................... 537
25 Balance Sheet Valuation ............................................................... 559
26 Material Ledger ............................................................................. 577
27 Classification System ..................................................................... 589
28 Document Management .................................................................. 611
29 Conclusion ....................................................................................... 621
A Bibliography ..................................................................................... 625
B Glossary ........................................................................................... 627
C List of Materials Management Transaction Codes ........................... 633
D The Author ....................................................................................... 641
# Contents

Preface ........................................................................................................................................... 29

1 Materials Management Overview ................................................................................. 35

1.1 Materials Management as a Part of SAP ERP .................................................. 35
   1.1.1 SAP History .............................................................................................. 35
   1.1.2 Core SAP ERP Functionality .................................................................. 36
   1.1.3 Business Suite Functionality .................................................................. 37

1.2 Materials Management as Part of Logistics .......................................................... 38
   1.2.1 Definition of Logistics and Supply Chain ........................................... 38
   1.2.2 Management of the Supply Chain ....................................................... 38
   1.2.3 SAP and Logistics .................................................................................. 38

1.3 MM Integration ........................................................................................................... 39
   1.3.1 The Material Flow of the Supply Chain ............................................. 40
   1.3.2 The Information Flow of the Supply Chain ........................................ 40
   1.3.3 The Financial Flow of the Supply Chain ............................................ 41

1.4 Summary ..................................................................................................................... 42

2 Materials Management Organizational Structure .................................................. 43

2.1 Client Structure .......................................................................................................... 43
   2.1.1 What Is a Client? ....................................................................................... 43
   2.1.2 Creating the Client Landscape .............................................................. 44
   2.1.3 Defining a Client ...................................................................................... 45
   2.1.4 Correction and Transport System (CTS) ............................................. 45

2.2 Company Code .......................................................................................................... 46
   2.2.1 What Is a Company? ................................................................................ 46
   2.2.2 Creating a Company Code .................................................................... 47
   2.2.3 Assigning a Company Code ................................................................... 48

2.3 Plants ........................................................................................................................... 48
   2.3.1 What Is a Plant? ......................................................................................... 48
   2.3.2 Prerequisites for a Plant .......................................................................... 48
   2.3.3 Defining a Plant ....................................................................................... 49
   2.3.4 Valuation Level ....................................................................................... 50
   2.3.5 Assigning a Plant .................................................................................... 51
2.4 Storage Locations ................................................................. 51
  2.4.1 What Is a Storage Location? ........................................... 51
  2.4.2 Defining a Storage Location .......................................... 52
  2.4.3 Automatic Creation of Storage Locations .................... 53
2.5 Warehouse and Storage Types ............................................... 55
  2.5.1 Assign a Warehouse to a Plant and Storage Location ...... 56
  2.5.2 Storage Type ............................................................... 56
  2.5.3 Storage Sections and Storage Bins .............................. 57
2.6 Purchasing Organization ...................................................... 57
  2.6.1 What Is a Purchasing Organization? ............................ 58
  2.6.2 Types of Purchasing Organizations ............................... 58
  2.6.3 Create a Purchasing Organization ............................... 59
  2.6.4 Purchasing Groups .................................................... 60
2.7 Business Examples — Organizational Structure .................... 61
  2.7.1 Client Structure .......................................................... 61
  2.7.2 Plants .................................................................... 61
  2.7.3 Storage Locations ..................................................... 62
  2.7.4 Warehouse Management ............................................ 63
  2.7.5 Purchasing Organization ............................................ 64
2.8 Summary ............................................................................. 64

3 Master Data in Materials Management ................................. 65
  3.1 Material Master ............................................................... 65
  3.1.1 Material Master Overview ........................................... 65
  3.1.2 Material Master Tables ................................................ 65
  3.1.3 Material Numbering ................................................... 66
  3.1.4 Material Number Range ............................................. 68
  3.1.5 Material Type ............................................................ 69
  3.2 Vendor Master ............................................................... 70
  3.2.1 Definition of a Vendor ................................................ 70
  3.2.2 Vendor Master in SAP ................................................. 70
  3.2.3 Vendor Account Groups ............................................ 71
  3.2.4 Vendor Number Range ............................................. 74
  3.3 Purchasing Information Data .............................................. 76
  3.3.1 Purchasing Information Record ................................... 76
  3.3.2 Purchasing Information Record for a Non-Stock Material .................................................. 76
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5 Purchasing Data</td>
<td>109</td>
</tr>
<tr>
<td>4.5.1 General Data</td>
<td>110</td>
</tr>
<tr>
<td>4.5.2 Purchasing Value Key</td>
<td>112</td>
</tr>
<tr>
<td>4.5.3 Other Data/Manufacturer Data</td>
<td>114</td>
</tr>
<tr>
<td>4.5.4 Manufacturer Parts</td>
<td>116</td>
</tr>
<tr>
<td>4.5.5 Foreign Trade Data</td>
<td>117</td>
</tr>
<tr>
<td>4.5.6 Origin/EU Market Organization/Preferences</td>
<td>118</td>
</tr>
<tr>
<td>4.5.7 Legal Control</td>
<td>119</td>
</tr>
<tr>
<td>4.6 Forecasting Data</td>
<td>120</td>
</tr>
<tr>
<td>4.6.1 General Data</td>
<td>121</td>
</tr>
<tr>
<td>4.6.2 Number of Periods Required</td>
<td>122</td>
</tr>
<tr>
<td>4.6.3 Control Data</td>
<td>123</td>
</tr>
<tr>
<td>4.7 Work Scheduling Data</td>
<td>124</td>
</tr>
<tr>
<td>4.7.1 General Data</td>
<td>125</td>
</tr>
<tr>
<td>4.7.2 Tolerance Data</td>
<td>126</td>
</tr>
<tr>
<td>4.7.3 In-House Production Time in Days</td>
<td>127</td>
</tr>
<tr>
<td>4.8 Sales Organizational Data</td>
<td>128</td>
</tr>
<tr>
<td>4.8.1 General Data</td>
<td>129</td>
</tr>
<tr>
<td>4.8.2 Tax Data</td>
<td>130</td>
</tr>
<tr>
<td>4.8.3 Quantity Stipulations</td>
<td>131</td>
</tr>
<tr>
<td>4.8.4 Grouping Items</td>
<td>132</td>
</tr>
<tr>
<td>4.8.5 Material Groups</td>
<td>133</td>
</tr>
<tr>
<td>4.8.6 Product Attributes</td>
<td>134</td>
</tr>
<tr>
<td>4.9 Sales General Data</td>
<td>134</td>
</tr>
<tr>
<td>4.9.1 General Data</td>
<td>135</td>
</tr>
<tr>
<td>4.9.2 Shipping Data</td>
<td>135</td>
</tr>
<tr>
<td>4.9.3 General Plant Parameters</td>
<td>136</td>
</tr>
<tr>
<td>4.10 Business Examples – Material Master Data</td>
<td>137</td>
</tr>
<tr>
<td>4.10.1 Material Type</td>
<td>137</td>
</tr>
<tr>
<td>4.10.2 Classification Data</td>
<td>138</td>
</tr>
<tr>
<td>4.10.3 Purchasing Data</td>
<td>139</td>
</tr>
<tr>
<td>4.10.4 Sales Data</td>
<td>139</td>
</tr>
<tr>
<td>4.11 Summary</td>
<td>140</td>
</tr>
</tbody>
</table>

### 5 Material Master Data – Part 2

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Production Resources/Tools (PRT) Data</td>
<td>141</td>
</tr>
<tr>
<td>5.1.1 General Data</td>
<td>141</td>
</tr>
<tr>
<td>5.1.2 Default Values for Task List Assignment</td>
<td>142</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>5.2 Plant Data/Storage Location</td>
<td>144</td>
</tr>
<tr>
<td>5.2.1 General Data</td>
<td>144</td>
</tr>
<tr>
<td>5.2.2 Shelf Life Data</td>
<td>147</td>
</tr>
<tr>
<td>5.3 Warehouse Management Data</td>
<td>149</td>
</tr>
<tr>
<td>5.3.1 General Data</td>
<td>149</td>
</tr>
<tr>
<td>5.3.2 Storage Strategies</td>
<td>150</td>
</tr>
<tr>
<td>5.3.3 Palletization Data</td>
<td>153</td>
</tr>
<tr>
<td>5.3.4 Storage Bin Stock</td>
<td>154</td>
</tr>
<tr>
<td>5.4 Quality Management Data</td>
<td>155</td>
</tr>
<tr>
<td>5.4.1 General Data</td>
<td>155</td>
</tr>
<tr>
<td>5.4.2 Procurement Data</td>
<td>157</td>
</tr>
<tr>
<td>5.5 Material Requirements Planning Data</td>
<td>158</td>
</tr>
<tr>
<td>5.5.1 General Data</td>
<td>159</td>
</tr>
<tr>
<td>5.5.2 MRP Procedure</td>
<td>160</td>
</tr>
<tr>
<td>5.5.3 Lot Size Data</td>
<td>161</td>
</tr>
<tr>
<td>5.5.4 Procurement</td>
<td>164</td>
</tr>
<tr>
<td>5.5.5 Net Requirements Calculations</td>
<td>165</td>
</tr>
<tr>
<td>5.5.6 Forecast Requirements</td>
<td>167</td>
</tr>
<tr>
<td>5.5.7 Planning</td>
<td>168</td>
</tr>
<tr>
<td>5.5.8 Availability Check</td>
<td>169</td>
</tr>
<tr>
<td>5.5.9 Bill of Materials Explosion/Dependent Requirements</td>
<td>171</td>
</tr>
<tr>
<td>5.5.10 Discontinued Parts</td>
<td>172</td>
</tr>
<tr>
<td>5.5.11 Repetitive Manufacturing/Assembly/Deployment Strategy</td>
<td>172</td>
</tr>
<tr>
<td>5.5.12 Storage Location MRP</td>
<td>174</td>
</tr>
<tr>
<td>5.6 Accounting Data</td>
<td>175</td>
</tr>
<tr>
<td>5.6.1 General Data</td>
<td>175</td>
</tr>
<tr>
<td>5.6.2 Current Valuation</td>
<td>176</td>
</tr>
<tr>
<td>5.6.3 Determination of Lowest Value</td>
<td>178</td>
</tr>
<tr>
<td>5.6.4 LIFO Data</td>
<td>179</td>
</tr>
<tr>
<td>5.7 Costing Data</td>
<td>180</td>
</tr>
<tr>
<td>5.7.1 General Data</td>
<td>180</td>
</tr>
<tr>
<td>5.7.2 Quantity Structure Data</td>
<td>181</td>
</tr>
<tr>
<td>5.7.3 Standard Cost Estimate</td>
<td>182</td>
</tr>
<tr>
<td>5.7.4 Planned Prices</td>
<td>183</td>
</tr>
<tr>
<td>5.8 Business Examples – Material Master Data</td>
<td>183</td>
</tr>
<tr>
<td>5.8.1 Plant and Storage Location Data</td>
<td>184</td>
</tr>
<tr>
<td>5.8.2 Warehouse Data</td>
<td>184</td>
</tr>
<tr>
<td>5.8.3 Quality Management Data</td>
<td>185</td>
</tr>
</tbody>
</table>
## Contents

7.3 Business Examples – Purchasing Information Data ........................................... 233
  7.3.1 Standard Purchasing Information Record ........................................... 233
  7.3.2 Subcontracting Purchasing Information Record ............................. 234
7.4 Summary ........................................................................................................... 235

8 Batch Management Data .................................................................................. 237
  8.1 Batch Management Overview ..................................................................... 237
    8.1.1 Batch Definition ............................................................................. 237
    8.1.2 Pharmaceutical Industry .................................................................. 238
  8.2 Batch Master Record .................................................................................... 239
    8.2.1 Creating a Batch ............................................................................. 239
    8.2.2 Changing a Batch ........................................................................... 245
    8.2.3 Deleting a Batch ............................................................................. 246
  8.3 Batch Determination ...................................................................................... 248
    8.3.1 Batch Determination Condition Tables .......................................... 248
    8.3.2 Batch Determination Access Sequences .......................................... 249
    8.3.3 Batch Strategy Types ....................................................................... 249
    8.3.4 Batch Search Procedure .................................................................. 251
  8.4 Batch Information Cockpit .......................................................................... 252
    8.4.1 Batch Information Cockpit Overview ............................................ 252
    8.4.2 BIC Standard Configuration .......................................................... 253
    8.4.3 BIC User-Defined Configuration .................................................... 255
  8.5 Business Examples – Batch Management Data ............................................. 257
    8.5.1 Batch Management Record ............................................................ 257
    8.5.2 Batch Determination ....................................................................... 258
  8.6 Summary ......................................................................................................... 258

9 Material Master Record ..................................................................................... 261
  9.1 Creating a Material Master Record .............................................................. 261
    9.1.1 Create a Material Master Record Through a Schedule ................... 261
  9.2 Changing a Material Master Record .............................................................. 262
    9.2.1 Change a Material Master Record – Immediately ......................... 262
    9.2.2 Change a Material Master Record – Schedule .............................. 264
    9.2.3 Change a Material Master Record – Activate ................................ 265
  9.3 Material Master Deletion .............................................................................. 267
    9.3.1 Flag for Deletion – Immediately ...................................................... 267
    9.3.2 Flag for Deletion – Schedule ............................................................ 268
Contents

9.3.3 Flag for Deletion – Proposal List ........................................ 269
9.3.4 Material Master Archiving ................................................. 269
9.3.5 Remove a Material-Deletion Flag ...................................... 270
9.4 Loading Material Master Records .......................................... 270
9.4.1 Loading Material Master Records via Direct Input .......... 270
9.4.2 Distribution of Material Master Records via ALE .......... 272
9.5 Production Versions .............................................................. 272
9.5.1 Production Version Overview .......................................... 272
9.5.2 Creating a Production Version ......................................... 273
9.5.3 Production Versions – Mass Processing ......................... 276
9.6 Revision Levels ................................................................. 276
9.6.1 Revision Level Overview .............................................. 276
9.6.2 Revision Level Configuration ......................................... 277
9.7 Business Examples – Material Master Record .................... 277
9.7.1 Creating and Changing a Material Master Record ........... 278
9.7.2 Material Master Deletion .............................................. 278
9.7.3 Version Control .......................................................... 279
9.8 Summary ............................................................................ 280

10 Vendor Master Record .......................................................... 281

10.1 Creating the Vendor Master Record ..................................... 281
10.2 Changing the Vendor Master Record .................................. 285
10.2.1 Change Vendor Master Record – Current ...................... 285
10.2.2 Change Vendor Master Record – Planned .................... 286
10.2.3 Display Planned Changes to Vendor Master Records ...... 287
10.2.4 Activate Planned Changes .......................................... 287
10.2.5 Change Vendor Account Group .................................... 288
10.3 Deleting Vendor Master Record .......................................... 289
10.3.1 Flag a Vendor Master Record for Deletion .................... 289
10.3.2 Deleting Vendor Records via Archiving ....................... 290
10.4 Display Vendor Master Record .......................................... 291
10.4.1 Display Vendor Master Record – Current ...................... 291
10.4.2 Display Vendor Master Record – Per Key Date ............. 291
10.4.3 Display Vendors – Purchasing List ............................. 292
10.5 Blocking Vendors ................................................................. 292
10.5.1 Block a Vendor – Purchasing ..................................... 292
10.6 One-Time Vendor .............................................................. 294
Contents

12 Purchase Requisition ................................................................. 327

12.1 Indirectly Created Requisition ............................................... 327
  12.1.1 Purchase Requisition Created by Production Order .......... 327
  12.1.2 Purchase Requisition Created by Plant Maintenance Order .......................................................... 328
  12.1.3 Purchase Requisition Created by Project Systems .......... 328
  12.1.4 Purchase Requisition Created by Materials Planning ...... 328

12.2 Directly Created Requisition ..................................................... 329
  12.2.1 Create a Purchase Requisition with a Material Master Record ............................................................... 329
  12.2.2 Create a Purchase Requisition without a Material Master Record ............................................................... 334

12.3 Processing a Purchase Requisition .......................................... 335
  12.3.1 Change a Purchase Requisition ................................... 335
  12.3.2 Display a Purchase Requisition ................................... 335
  12.3.3 Close a Purchase Requisition ...................................... 337
  12.3.4 Follow-On Functions .................................................. 338

12.4 Business Examples – Purchase Requisitions ......................... 341
  12.4.1 Indirectly Created Purchase Requisition .................... 341
  12.4.2 Directly Created Purchase Requisition ...................... 341

12.5 Summary .............................................................................. 342

13 Request for Quotation .............................................................. 343

13.1 Creating a Request for Quotation ........................................... 343
  13.1.1 RFQ Type ..................................................................... 343
  13.1.2 RFQ Date ..................................................................... 345
  13.1.3 Quotation Deadline .................................................... 345
  13.1.4 RFQ Document Number .............................................. 345
  13.1.5 Organizational Data ..................................................... 345
  13.1.6 Default Data for Items ............................................... 345
  13.1.7 Collective Number ...................................................... 347
  13.1.8 Validity Start/Validity End .......................................... 347
  13.1.9 Apply By ..................................................................... 347
  13.1.10 Binding Period .......................................................... 348
  13.1.11 Reference Data ......................................................... 348
  13.1.12 RFQ Item Detail ........................................................ 348
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.2 Maintaining a Purchase Order</td>
<td>374</td>
</tr>
<tr>
<td>15.3 Blocking and Canceling a Purchase Order</td>
<td>375</td>
</tr>
<tr>
<td>15.3.1 Block a Purchase Order Line Item</td>
<td>375</td>
</tr>
<tr>
<td>15.3.2 Canceling a Purchase Order Line Item</td>
<td>376</td>
</tr>
<tr>
<td>15.4 Account Assignment in a Purchase Order</td>
<td>377</td>
</tr>
<tr>
<td>15.4.1 Account Assignment Overview</td>
<td>377</td>
</tr>
<tr>
<td>15.4.2 Account Assignment Categories</td>
<td>377</td>
</tr>
<tr>
<td>15.4.3 Single Account Assignment</td>
<td>379</td>
</tr>
<tr>
<td>15.4.4 Multiple Account Assignment</td>
<td>380</td>
</tr>
<tr>
<td>15.5 Outline Purchase Agreement</td>
<td>381</td>
</tr>
<tr>
<td>15.5.1 Outline Purchase Agreement Overview</td>
<td>381</td>
</tr>
<tr>
<td>15.5.2 Outline Purchase Agreement Types</td>
<td>381</td>
</tr>
<tr>
<td>15.6 Scheduling Agreement</td>
<td>382</td>
</tr>
<tr>
<td>15.6.1 Scheduling Agreement Overview</td>
<td>382</td>
</tr>
<tr>
<td>15.6.2 Create a Scheduling Agreement Manually</td>
<td>382</td>
</tr>
<tr>
<td>15.6.3 Create a Scheduling Agreement with Reference</td>
<td>384</td>
</tr>
<tr>
<td>15.7 Contracts</td>
<td>386</td>
</tr>
<tr>
<td>15.7.1 Contract Overview</td>
<td>386</td>
</tr>
<tr>
<td>15.7.2 Centrally Agreed Contract</td>
<td>386</td>
</tr>
<tr>
<td>15.7.3 Creating a Contract</td>
<td>387</td>
</tr>
<tr>
<td>15.7.4 Release Order Against a Contract</td>
<td>389</td>
</tr>
<tr>
<td>15.8 Vendor Confirmation</td>
<td>390</td>
</tr>
<tr>
<td>15.8.1 Vendor Confirmation Overview</td>
<td>390</td>
</tr>
<tr>
<td>15.8.2 Confirmation Configuration</td>
<td>391</td>
</tr>
<tr>
<td>15.8.3 Enter a Manual Confirmation</td>
<td>392</td>
</tr>
<tr>
<td>15.9 Messages and Outputs</td>
<td>394</td>
</tr>
<tr>
<td>15.9.1 Message Overview</td>
<td>394</td>
</tr>
<tr>
<td>15.9.2 Message Creation</td>
<td>394</td>
</tr>
<tr>
<td>15.9.3 Message Output Definition</td>
<td>395</td>
</tr>
<tr>
<td>15.9.4 Output Messages</td>
<td>395</td>
</tr>
<tr>
<td>15.10 Pricing Procedures</td>
<td>396</td>
</tr>
<tr>
<td>15.10.1 Pricing Conditions</td>
<td>396</td>
</tr>
<tr>
<td>15.10.2 Condition Types</td>
<td>397</td>
</tr>
<tr>
<td>15.10.3 Condition Tables</td>
<td>398</td>
</tr>
<tr>
<td>15.10.4 Access Sequences</td>
<td>399</td>
</tr>
<tr>
<td>15.10.5 Calculation Schema</td>
<td>400</td>
</tr>
<tr>
<td>15.10.6 Price Determination</td>
<td>401</td>
</tr>
<tr>
<td>15.10.7 Standard Pricing Condition Type PB00</td>
<td>401</td>
</tr>
<tr>
<td>15.10.8 Calculation Schema for Condition Type PB00</td>
<td>401</td>
</tr>
</tbody>
</table>
## 15.11 Reporting
- **15.11.1 Reporting Overview**

## 15.12 Release Procedures
- **15.12.1 Introduction to Release Procedures**
- **15.12.2 Release with Classification for a Purchase Requisition**

## 15.13 Business Examples – Purchase Orders
- **15.13.1 Blocking a Purchase Order**
- **15.13.2 Outline Purchase Agreement**
- **15.13.3 Scheduling Agreement**
- **15.13.4 Contracts**
- **15.13.5 Releasing a Purchase Order**

## 15.14 Summary

## 16 External Service Management (ESM)

### 16.1 Service Master Record
- **16.1.1 Activity Number**
- **16.1.2 Service Category**
- **16.1.3 Material/Service Group**
- **16.1.4 Tax Indicator**
- **16.1.5 Valuation Class**
- **16.1.6 Formula**
- **16.1.7 Graphic**

### 16.2 Standard Service Catalog (SSC)
- **16.2.1 Overview**
- **16.2.2 Creating a SSC Entry**

### 16.3 Conditions in ESM
- **16.3.1 Total Price Condition**

### 16.4 Procurement of Services
- **16.4.1 Using a Purchase Order**

### 16.5 Entry of Services
- **16.5.1 Service Entry Sheet**

### 16.6 Blanket Purchase Order
- **16.6.1 Creating a Blanket Purchase Order**

### 16.7 Business Examples – External Service Management
- **16.7.1 Service Master Record**
- **16.7.2 Procurement of Services**
- **16.7.3 Blanket Purchase Order**

### 16.8 Summary
17 Consumption-Based Planning ................................................. 429
17.1 Master Data in CBP .............................................................. 429
  17.1.1 Material Master Record .................................................. 429
  17.1.2 Planning Calendar .......................................................... 430
17.2 Planning Process ............................................................... 432
  17.2.1 Planning at the Plant Level ............................................. 432
  17.2.2 Planning at the Storage Location Level ........................... 432
17.3 Planning Evaluation ........................................................... 434
  17.3.1 MRP List .................................................................. 434
  17.3.2 Stock/Requirements List ................................................. 435
17.4 Procurement Proposal .......................................................... 436
  17.4.1 Purchase Requisitions ................................................. 437
  17.4.2 Schedule Lines ............................................................ 437
  17.4.3 Planned Orders ............................................................ 437
17.5 Business Examples – Consumption-Based Planning ............... 437
  17.5.1 Planning Process ........................................................ 437
  17.5.2 Planning Evaluation ........................................................ 438
17.6 Summary ............................................................................ 439

18 Material Requirements Planning ............................................. 441
18.1 Reorder-Point Planning .......................................................... 441
  18.1.1 Manual Reorder-Point Planning ...................................... 442
  18.1.2 Automatic Reorder-Point Planning ................................. 442
18.2 Forecast-Based Planning ....................................................... 443
18.3 Time-Phased Planning .......................................................... 444
18.4 Business Examples – Material Requirements Planning .......... 446
  18.4.1 Reorder Point Planning .................................................. 446
  18.4.2 Forecast-Based Planning ................................................. 447
  18.4.3 Time-Phased Planning .................................................... 448
18.5 Summary ............................................................................ 449

19 Forecasting ........................................................................... 451
19.1 Forecast Models .................................................................. 451
  19.1.1 Constant Model .......................................................... 451
  19.1.2 Trend Model ............................................................... 452
20 Inventory Management Overview .............................................. 463

20.1 Goods Movements ................................................................. 463
  20.1.1 Stock Overview ................................................................. 464
  20.1.2 Material Document ............................................................ 465
  20.1.3 Movement Types ............................................................... 466

20.2 Goods Issue ............................................................................. 467

20.3 Goods Receipt ........................................................................... 468

20.4 Physical Inventory .................................................................... 468

20.5 Returns .................................................................................... 469
  20.5.1 Introduction to Returns ..................................................... 469
  20.5.2 Creating a Return ............................................................... 469
  20.5.3 Configuring Reason for Movement ..................................... 470
  20.5.4 Material Documents .......................................................... 472

20.6 Reservations ............................................................................. 474
  20.6.1 Introduction to Reservations .............................................. 474
  20.6.2 Creating a Manual Reservation .......................................... 475
  20.6.3 MRP and Reservations ...................................................... 476
  20.6.4 Reservations Management Program .................................. 477

20.7 Stock Transfers ......................................................................... 480
  20.7.1 Stock Transfer and Transfer Posting .................................... 480
  20.7.2 Transfer Between Storage Locations Using Transaction MB1B ....................................................... 480
  20.7.3 Transfer Between Plants Using Transaction MB1B ............ 483
  20.7.4 Transfer Between Storage Locations Using MIGO_TR ....... 484
  20.7.5 Transfer Between Plants Using MIGO_TR ........................ 485
  20.7.6 Transfer Between Company Codes .................................... 485
# Contents

20.8 Business Examples – Inventory Management ................................................. 486  
  20.8.1 Physical Inventory ............................................................................. 486  
  20.8.2 Returns ......................................................................................... 487  
  20.8.3 Reservations ................................................................................... 487  
20.9 Summary ................................................................................................. 488  

## 21 Goods Issue .................................................................................................. 489

21.1 Goods Issue to a Production Order ................................................................. 489  
  21.1.1 Planned Goods Issue Using MB1A ..................................................... 489  
  21.1.2 Planned Goods Issue Using Transaction MIGO_GI ......................... 491  
  21.1.3 Unplanned Goods Issue Using Transaction MB1A ....................... 492  
  21.1.4 Backflushing ....................................................................................... 493  
21.2 Goods Issue to Scrap .................................................................................... 494  
  21.2.1 Goods Issue to Scrap Using Transaction MB1A .................................. 495  
  21.2.2 Goods Issue to Scrap Using Transaction MIGO_GI ............................ 496  
21.3 Goods Issue for Sampling .............................................................................. 497  
  21.3.1 Goods Issue for Sampling Using Transaction MB1A ....................... 497  
  21.3.2 Goods Issue for Sampling Using Transaction MIGO_GI .................. 498  
21.4 Goods Issue Posting .................................................................................... 498  
  21.4.1 Material Document ............................................................................ 499  
  21.4.2 Accounting Document ....................................................................... 499  
  21.4.3 Goods Issue Slip ................................................................................. 499  
  21.4.4 Stock Changes .................................................................................... 499  
  21.4.5 General Ledger Account Changes ..................................................... 499  
21.5 Goods Issue Reversal ................................................................................... 500  
  21.5.1 Goods Issue Reversal with Reference to a Material Document ............ 500  
21.6 Business Examples – Goods Issue ................................................................. 501  
  21.6.1 Goods Issue to Scrap ........................................................................ 501  
  21.6.2 Goods Issue to Sampling ................................................................. 502  
  21.6.3 Backflushing ...................................................................................... 503  
21.7 Summary ..................................................................................................... 503  

## 22 Goods Receipt .................................................................................................. 505

22.1 Goods Receipt for a Purchase Order ............................................................... 505  
  22.1.1 Goods Receipt with a Known Purchase Order Number .................... 505
Contents

24 Invoice Verification ................................................................. 537
24.1 Standard Three-Way Match .............................................. 537
24.1.1 Entering an Invoice ..................................................... 537
24.1.2 Simulate Posting ......................................................... 540
24.1.3 Invoice Posting ........................................................... 541
24.2 Evaluated Receipt Settlement ............................................ 542
24.2.1 Benefits of ERS .......................................................... 542
24.2.2 Running the Evaluated Receipt Settlement ................. 543
24.3 Document Parking ............................................................ 544
24.3.1 Benefits of Document Parking .................................... 544
24.3.2 Parking an Invoice ....................................................... 544
24.4 Variances ........................................................................ 545
24.4.1 Variances Overview .................................................... 545
24.4.2 Tolerance Limits .......................................................... 545
24.5 Blocking Invoices .............................................................. 548
24.5.1 Blocking Invoices........................................................ 548
24.5.2 Manual Block .............................................................. 548
24.5.3 Stochastic or Random Block ....................................... 550
24.5.4 Block Due to Amount of an Invoice Item ................... 551
24.5.5 Block Due to Variance of an Invoice Item ................... 553
24.6 Releasing Invoices ............................................................. 554
24.6.1 Releasing Invoices Automatically ............................... 554
24.7 Business Examples – Invoice Verification ......................... 555
24.7.1 Evaluated Receipt Settlement .................................... 555
24.7.2 Variances ................................................................. 556
24.7.3 Blocking Invoices ........................................................ 557
24.8 Summary ....................................................................... 558

25 Balance Sheet Valuation ....................................................... 559
25.1 LIFO Valuation ................................................................. 559
25.1.1 Configuration for LIFO ................................................ 560
25.1.2 Preparation for LIFO ................................................... 562
25.1.3 Running a LIFO Valuation .......................................... 563
25.2 FIFO Valuation ................................................................. 565
25.2.1 Configuration for FIFO .............................................. 565
25.2.2 Preparation for FIFO ................................................... 566
## Contents

25.2.3 Running a FIFO Valuation ....................................................... 567  
25.3 Lowest Value Determination .................................................. 568  
25.3.1 Lowest Value Determination Based on Market Prices .... 568  
25.3.2 Lowest Value Determination Based on Range of  
    Coverage ........................................................................ 570  
25.3.3 Lowest Value Determination Based on Movement Rate ... 572  
25.4 Business Examples – Balance Sheet Valuation .................... 574  
25.4.1 LIFO Valuation .............................................................. 574  
25.4.2 FIFO Valuation ............................................................... 575  
25.4.3 Lowest Value Determination .......................................... 575  
25.5 Summary ............................................................................. 576  

### 26 Material Ledger .................................................................. 577  

26.1 Material Ledger Overview ...................................................... 577  
26.1.1 Activating the Material Ledger and Actual Costing .......... 578  
26.1.2 Benefits of Using the Material Ledger ......................... 578  
26.2 Material Ledger Data ............................................................ 579  
26.2.1 Material Master Record .................................................. 579  
26.2.2 Data for the Material Ledger .......................................... 581  
26.3 Material Price Determination ................................................. 582  
26.3.1 Material Price Analysis ................................................... 582  
26.3.2 Single-Level Material Price Determination ................. 583  
26.3.3 Multi-Level Material Price Determination ................. 585  
26.3.4 Transaction-Based Material Price Determination .......... 585  
26.4 Business Examples – Material Ledger ................................ 586  
26.4.1 Material Ledger Overview .............................................. 586  
26.4.2 Material Price Determination ......................................... 587  
26.5 Summary ............................................................................. 587  

### 27 Classification System ............................................................ 589  

27.1 Classification Overview ......................................................... 589  
27.1.1 What Is the SAP ERP Classification System? ............... 589  
27.1.2 Describing an Object ..................................................... 590  
27.2 Characteristics .................................................................... 591  
27.2.1 Create Characteristics .................................................. 591  
27.2.2 Configuring Characteristics .......................................... 592
## Contents

### 27.3 Classes
- 27.3.1 Create Classes ............................................................... 596

### 27.4 Class Type
- 27.4.1 Class Type Overview ................................................... 597
- 27.4.2 Configuring a Class Type ............................................. 598

### 27.5 Class Hierarchies
- 27.5.1 Creating a Class Hierarchy ........................................ 601
- 27.5.2 Inherited Characteristics ............................................. 601

### 27.6 Object Dependencies
- 27.6.1 Object Dependency Overview .................................... 602
- 27.6.2 Dependency Creation ............................................... 602

### 27.7 Finding Objects Using Classification
- 27.7.1 Classifying Materials .................................................. 603
- 27.7.2 Classifying Objects .................................................... 604
- 27.7.3 Finding Objects ......................................................... 606

### 27.8 Business Examples – Classification
- 27.8.1 Characteristics and Classes ....................................... 607
- 27.8.2 Finding Objects Using Classification ............................ 608

### 27.9 Summary ................................................................. 608

### 28 Document Management ...................................................... 611

#### 28.1 Document Management Overview .................................. 611

#### 28.2 Document Information Record ....................................... 611
- 28.2.1 Document Number ...................................................... 612
- 28.2.2 Document Type .......................................................... 612
- 28.2.3 Document Part ........................................................... 613
- 28.2.4 Document Version ...................................................... 613
- 28.2.5 Document Status ....................................................... 613

#### 28.3 Creating a Document ..................................................... 614
- 28.3.1 Create a Document ...................................................... 614

#### 28.4 Linking an Object to a Document ..................................... 615
- 28.4.1 Configuration for Linking Documents ......................... 616
- 28.4.2 Linking a Document to a Material Master Record ........... 616
- 28.4.3 Linking a Document to a Vendor Master Record .......... 617

#### 28.5 Documents and Classification ........................................... 618
- 28.5.1 Using Classification for Documents ............................... 618

#### 28.6 Business Examples – Document Management ..................... 619


Contents

28.6.1 Document Information Record ....................................... 619
28.6.2 Linking an Object to a Document ................................... 620
28.7 Summary ............................................................................... 620

29 Conclusion ............................................................................... 621

29.1 Lessons Learned ................................................................. 621
29.2 Future Direction ................................................................. 623

Appendices ................................................................................. 625

A Bibliography .............................................................................. 627
B Glossary ..................................................................................... 629
C List of Materials Management Transaction Codes ..................... 635
D The Author ................................................................................ 643

Index ............................................................................................ 645
The Materials Management functionality includes a number of important master data files. The Material Master and Vendor Master files are at the core of Procurement, Inventory Management, and Invoice Verification.

3 Master Data in Materials Management

A number of master data files in Materials Management require a significant amount of understanding, not only on the part of the SAP consultant but also on the part of the SAP customer. When implementing SAP, customers are generally transitioning from one or more legacy systems. A key aspect of any implementation is the conversion of data to the master data files in SAP.

A fundamental indicator of a successful implementation is the level to which the data has been correctly converted into the SAP master data files. In this chapter, we will examine the master data files that are integral to the practice of materials management.

3.1 Material Master

The Material Master is the repository of the data used for a material. The Material Master is more than a single file for each material, it is where all information on a material is entered and accessed from. It is used throughout the SAP system.

3.1.1 Material Master Overview

When customers implement SAP, they are often overwhelmed by the information contained in the Material Master file. When customers examine their existing systems, such as BPICS, JDEdwards, or Lawson, they find that their product or material files contain a fraction of the data contained in the Material Master in the SAP system.

3.1.2 Material Master Tables

The Material Master transaction allows the users to enter all of the information relevant to a particular item of material into the correct tables. The Material Master isn’t just a single file but a number of tables of information that combined reflect all of the information for that material.
Many tables are updated when information is entered into the Material Master transaction. The Material Master transaction is structured so that there are entry screens for different functional information such as Purchasing, Sales, or Accounting, but there is also an organizational dimension to data entry. The material information can be entered at each level of the organization, for example, at the levels of plant, storage location, or sales organization.

3.1.3 Material Numbering

An issue that SAP customers can face when converting their item files over to the Material Master is whether to keep their legacy numbering scheme. This means they would continue entering their own material numbers. They have the option of allowing SAP to automatically assign material numbers.

Often, legacy systems have meaningful material numbering. This numbering has usually been in place for some time, and staff members are familiar with the numbering. For the simplicity of maintenance, automatic assignment of material number is the best choice. When working with your client, be aware that there are arguments to use and not to use a meaningful numbering scheme in SAP.

The material number field is defined in configuration. Use Transaction OMSL or the navigation path IMG • LOGISTICS – GENERAL • MATERIAL MASTER • BASIC SETTINGS • DEFINE OUTPUT FORMAT FOR MATERIAL NUMBERS.

Figure 3.1 shows the configuration screen for defining the output format for material numbers.

![Configuration Screen for Defining Output Format](image)

**Figure 3.1** Configuration Screen for Defining Output Format
This configuration screen does not have many input fields but is extremely important when initially defining the Material Master. After your customer has decided upon the Material Master numbering scheme, you can first enter the length of the material number.

Then the customer may decide that it needs the automatically assigned material numbers in a certain format that can be defined. In this case, you can define the template and the special characters required. Figure 3.2 shows the template defined for internally assigned material numbers.

In this case, the customer requires the material numbers to appear as this example 123@45678901@23456. The only character that cannot be used in the template is the underscore because that is used to signify a non-template field.

The two other fields in the OMSL transaction have to do with how the material number is stored and how SAP determines what the number is.

The Lexicographical indicator is only relevant for numeric material numbers, either internally or externally defined. In Figure 3.2, the indicator is not set, which means that the numbers are stored with leading zeros that are right-justified. For example, if a user enters the number 12345678, the number will be stored as 000000012345678, for example, with 10 leading zeros.

If the indicator is set, then the numeric number is not right justified and not padded with zeros. The field acts more like a character string, where a leading zero becomes as valid character.

In the following example, the indicator is now set. A user entering material 12345678 would find that the material number would be stored as 12345678,
with no padding. If the user then entered 0012345678, it would be stored in that way, and this would be a different material number in SAP. However, an internally assigned material number would be padded with the leading zeros, 00000000012345678. Therefore, there would be three separate material numbers.

Remember that this indicator cannot be changed after there are numeric material numbers in the system, so it must be defined before any tests are run in the system.

The other field in Transaction OMSL is the Leading Zeros indicator. If this indicator is set, then the material number is shown with the leading zeros. However, if the Lexicographical indicator is set, then the Leading Zeros indicator is ignored by the system.

### 3.1.4 Material Number Range

When the definition of the material number has been decided upon, the configuration for the material number range can be completed.

The material number ranges can be configured in Transaction MMNR or via the navigation path IMG • LOGISTICS – GENERAL • MATERIAL MASTER • BASIC SETTINGS • MATERIAL TYPES • DEFINE NUMBER RANGES FOR MATERIAL TYPES.

The transaction allows a range of numbers to be entered and the option to make that range either external or internally assigned. Figure 3.3 shows the number ranges defined for internal and external number assignment.
3.1.5 Material Type

A material type is a definition of a group of materials with similar attributes. A material type must be assigned to each material record entered into the Material Master.

The transaction for the material type definition is OMS2. The transaction can be accessed using the navigation path, IMG • LOGISTICS – GENERAL • MATERIAL MASTER • BASIC SETTINGS • MATERIAL TYPES • DEFINE ATTRIBUTES OF MATERIAL TYPES.

The material type is configured so that fields in the Material Master are predefined for the materials assigned to that material group, as shown in Figure 3.4. For example, you can configure the price control for a material type to be Standard Price, and all materials assigned to that material type will be standard price.

![Material Types and Descriptions](image)

Figure 3.4 Material Types and Descriptions

After the material type has been created, the attributes can be defined. Figure 3.5 shows the attributes that can be assigned to each material type. After the material type has been defined, then the number range can be assigned.

Now we have looked at the details that go into making up the Material Master. The next section will explain the functionality of another important element in the Materials Management functionality, the Vendor Master.
3.2 **Vendor Master**

The Vendor Master is an important master file that contains the information on a supplier required for purchasing any material or service.

3.2.1 **Definition of a Vendor**

We define a vendor as a person or company who supplies materials or services to the person or company requiring those materials or services. For SAP customers, every supplier that they need to convert from their legacy systems will require a Vendor Master record in SAP.

3.2.2 **Vendor Master in SAP**

The Vendor Master in SAP holds details about each vendor used by the customer. The Vendor Master has three distinct sections. These are discussed in some detail in the following subsections.
General Data
The general data is, as the name suggests, general information about the vendor that can be entered into the system by the group identified to create vendor records. The basic data entered at this level includes name, search terms, address, telephone, and fax. After this data is entered, further information can be added to the Vendor Master record by Accounting and Purchasing. This data can be entered using Transaction XK01.

Accounting Data
The accounting data is the financial data that is entered at the company code level. This data includes tax information, bank details, reconciliation account, payment terms, payment methods, and dunning information. The transaction used in Financial Accounting to enter this information is FK01.

Purchasing Data
The purchasing data is entered for the vendor at a purchasing organizational level. We will discuss the purchasing organization later in the book. The data entered is relevant for one purchasing organization and may be different between purchasing organizations. The data entered includes control data required in purchasing, partner functions, purchasing default fields, and Invoice Verification indicators. This data can be entered using Transaction MK01.

3.2.3 Vendor Account Groups
When you create a vendor, you must assign an account group to that vendor. Therefore, these account groups must be defined in configuration before vendor creation.

The account group is defined using the navigation path IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • DEFINE ACCOUNT GROUPS WITH SCREEN LAYOUT (VENDORS).

In Figure 3.6, you can see the existing account groups. If you need to define another account group, click on the New Entries icon. The screen shown in Figure 3.7 will appear.
On this screen, you can specify whether an account group is just for one-time vendors. For vendors that you only deal with once, their data is entered into the document and not as master data. After you have entered the account group and description, you can then modify the field status as needed. This transaction allows you to configure the system to show or to not allow users to enter information into certain fields. Highlight the field status for the general, company code, or purchasing data, and then click on the Edit Field Status icon.
Figure 3.8 shows the specific field groups that are available to configure. For the
general data screen, these are the **ADDRESS**, **COMMUNICATION**, **CONTROL**, **PAYMENT**
**TRANSACTIONS**, and **CONTACT PERSON** groups. Double-click on the group you want
to configure.

![Field Groups for the General Data Screen](image)

This configuration screen, shown in Figure 3.9, allows you to make certain fields
either a required entry or an optional entry because they all are in this figure; display only, or suppressed. This configuration becomes specific to the account group
that is entered when a Vendor Master record is created.

The screen layouts can also be modified for company code using the navigation
path, **IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • DEFINE SCREEN LAYOUT PER COMPANY CODE.**

The screen layout can also be modified by the particular activity. In other words,
the screen for creating a vendor can be modified to appear different from the
screen for modifying a vendor. The transaction is accessed using the navigation
path, **IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • DEFINE SCREEN LAYOUT PER ACTIVITY.**
3.2.4 Vendor Number Range

When defining the vendor number range, it is important to remember that vendor numbers, like material numbers, can be externally or internally assigned. Many SAP customers decide to create different number ranges for each of their account groups. This requires careful consideration when defining number ranges to prevent the number ranges from overlapping.

The transaction to create vendor number ranges is XKN1, or you can use the navigation path, IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • CREATE NUMBER RANGES FOR VENDOR ACCOUNTS. Figure 3.10 shows the configuration for vendor number ranges.

For this transaction, you should enter a unique number for the range, defined by a two-character field, and then the range for the numbers for your defined number range. The CURRENT NUMBER field allows you to define the current number. The Ext. field allows you to define whether the number range is externally, or user, defined.
After the number range is defined, it can be assigned to a vendor account group using the navigation path, IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • ASSIGN NUMBER RANGES TO VENDOR ACCOUNT GROUPS.

The number range can be assigned to many vendor account groups, as shown in Figure 3.11. Therefore, if your SAP customer decides to use just one number range for all its vendors, the configuration would show one number range assigned to all account groups.
3.3 Purchasing Information Data

The purchasing information record allows additional information to be held on a specific material that is purchased from a specific vendor.

3.3.1 Purchasing Information Record

The purchasing information record is where information specific to a material and a vendor is held. This can then be further specified for a particular purchasing organization.

The purchasing information record is used in the purchase order (PO) where information from the record is defaulted into the PO. Information such as purchasing group, net price, Invoice Verification indicators, and delivery tolerances all can be entered into the purchasing information record.

Four categories of purchasing information records can be created:

- Standard
- Pipeline
- Consignment
- Subcontracting

It is important to identify the correct category before creating a purchasing information record.

3.3.2 Purchasing Information Record for a Non-Stock Material

The purchasing information record usually applies to a vendor and a specific material that it supplies. However, the vendor occasionally may be supplying a service to a non-stock material. For example, there may be an operation in a production order where material is sent out for a treatment. There is no material number at that point for the material in the production order, but there is a purchase information record for a group of materials, that is, a specific material group such as certain raw materials or semi-finished non-stock items. In the system, it is possible to create a purchasing information record for a vendor and a material group. This contains the same information that a vendor/material purchasing information record would have.

3.3.3 Purchasing Information Record Numbering

The fact that there are different types of purchase information records makes number ranges necessary. The number ranges for the purchase information record can be assigned either externally or internally.
The number ranges for the purchase information records can be predefined in SAP ERP, and SAP recommends that the customer accept the given number ranges. The system does allow the number ranges to be changed if the customer requires it.

The transaction to define the purchasing information record number ranges is OMEO, or you can use the navigation path, IMG • MATERIALS MANAGEMENT • PURCHASING • PURCHASING INFORMATION RECORD • DEFINE NUMBER RANGES.

The predefined number ranges for the purchase information records are the following:

- Stock material – internally assigned 5300000000 to 5399999999
- Stock material – externally assigned 5400000000 to 5499999999
- Non-stock material – internally assigned 5500000000 to 5599999999
- Non-stock material – externally assigned 5600000000 to 5699999999

### 3.3.4 Purchasing Information Record-Screen Layout

The screens in the purchasing information record transactions can be modified to allow field changes. The navigation path for this transaction is IMG • MATERIALS MANAGEMENT • PURCHASING • PURCHASING INFORMATION RECORD • DEFINE SCREEN LAYOUT.

The screen shown in Figure 3.12 allows you to choose the modifications for each transaction. To select a transaction, double-clicking on the transaction will take you to a screen where you can modify the screen layout, found in Table T162. You then can select one of the field-selection groups to modify the individual fields.

![Change View "Screen Layout: Info Record"](image)

*Figure 3.12 Record Transactions and Screen-Layout Modifications*
Figure 3.13 shows the field selection groups available to select from for the purchasing information record transaction. Figure 3.14 shows the individual fields of the QUANTITIES field selection group for Transaction ANZE.

![Field Selection Groups Available for the Purchasing Information Record Transaction](image1)

![Quantities Field-Selection Group for Transaction ANZE](image2)
3.4 **Batch Management Data**

A batch of material is an important feature that allows a group of one material to have the same characteristics, identified by the batch number. This may be due to production or purchasing.

### 3.4.1 What Is a Batch?

A batch is a quantity of material that is grouped together for various reasons. It is often determined that the materials have the same characteristics and values. For instance, in the chemical industry, a certain number of containers of a certain product may be considered a batch because they were produced at the same time and have the same physical and chemical characteristics. These characteristics may differ from those of another batch of material produced on the same day.

The pharmaceutical industry is one sector where material batches are extremely important. Each batch of material is recorded throughout the product and distribution process. In the case of product recall, the batch number stamped on the pack or bottle of material is the identification that is needed.

To understand how important batch recording has become, consider the regulations within the European Union. The EU requires that each batch of pharmaceutical material imported into the EU must be accompanied by a batch certificate. This must contain the testing specifications of the product, analytical methods and test results, statements that indicate that it conforms to current Good Manufacturing Procedures (cGMP), and sign-off by a company official.

### 3.4.2 Batch Level

In the SAP system, the batch number can be determined at different levels. This determination needs to made early in any implementation project. Batches can be determined at client level, plant level, and material level.

**Client Level**

If the batch level is configured at the client level, then the batch number can only be assigned once throughout the whole client. One batch number will exist for one batch regardless of material or location. There is no issue when batches are moved from plant to plant because the batch number would not exist in the receiving plant. This is a level where, in some countries, batch numbers are unique to a company and not to a material.
Plant Level
Batch level at the plant level is the SAP default. This means that the batch is unique to a plant and material but not applicable across the company. Therefore, a batch of material at a different plant within the company could have the same batch number with different characteristics. When transferring batch material from one plant to another, the batch information is not transferred, and the batch information needs to be re-entered at the receiving plant.

Material Level
Batch level at the material level means that the batch number is unique to a material across all plants. Therefore, if a batch of material is transferred to another plant, the batch information will be adopted in the new plant without re-entering the batch information because that batch number could not have been duplicated for that material in the receiving plant.

3.4.3 Changing the Batch Level
The batch level should be decided on early in any implementation. However, due to unforeseen circumstances, you may need to change the batch level.

The batch level can be changed using Transaction OMCE. The navigation path is IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • SPECIFY BATCH LEVEL AND ACTIVATE STATUS MANAGEMENT • BATCH LEVEL.

In this transaction, the level can be changed between client, plant, and material. When changing the batch level, and prior to configuration, be aware of the following:

- To change the batch level from plant level to material level, the material has to be batch-managed in all plants.
- Any change in batch level requires significant testing before transporting the change to a production system.
- Batch-level configuration affects batch-status management functionality.

3.4.4 Batch-Status Management
Batch-status management is simply the ability to make a batch either restricted or unrestricted. The transaction for this configuration is OMCS, or you can use the navigation path, IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • SPECIFY BATCH LEVEL AND ACTIVATE STATUS MANAGEMENT • BATCH STATUS MANAGEMENT.
The configuration is simply an option to make batch-status management active or not active. However, the batch-level configuration does affect the way in which batch-status management works, as described here:

- If the batch-level configuration occurs at the material or client level, then the batch-status management is effective for all plants in the client.
- If the batch-level configuration is at the plant level, then you can configure the system to determine at which plant you require batch-status management to be active. The transaction to configure this is OMCU and can be accessed using the navigation path, IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • SPECIFY BATCH LEVEL AND ACTIVATE STATUS MANAGEMENT • PLANTS WITH BATCH STATUS MANAGEMENT.

### 3.4.5 Initial Batch Status

After defining the batch-status management, there is additional configuration that may be important to an SAP customer. If you have configured that batch-status management is active and that each batch will have a restricted or an unrestricted status, it is possible to configure the system to set the initial status when a batch is created.

This transaction code to set the initial status of a batch to restricted or unrestricted status is OMAB. The navigation path is IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • SPECIFY BATCH LEVEL AND ACTIVATE STATUS MANAGEMENT • INITIAL STATUS OF NEW BATCH.

The configuration for this is based on the material type. For example, it is possible to configure for all semi-finished goods, material type HALB, to have a batch status of restricted when the batches are created for materials with that material type.

### 3.4.6 Batch-Number Assignment

The batch number range is predefined in SAP. The predefined range 01 is defined as 0000000001 to 9999999999. The number range object for this is BATCH_CLT. This can be changed in configuration using Transaction OMAD or by using the navigation path, IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • BATCH NUMBER ASSIGNMENT • MAINTAIN INTERNAL BATCH NUMBER ASSIGNMENT RANGE.

There are two configuration steps that can be carried out if the customer requires it. First, you can allow the batch number to be assigned internally using the internal number range. To configure this, use Transaction OMCZ or the navigation path, IMG •
Second, you can configure the system to allow the automatic numbering of batches on a goods receipt with account assignment. The navigation path for this transaction is IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • BATCH NUMBER ASSIGNMENT • ACTIVATE INTERNAL BATCH NUMBER ASSIGNMENT • ACTIVATE BATCH NUMBER ASSIGNMENT.

3.5 Serial Number Data

As we have just discussed, some materials are grouped in batches. If we want to identify a single unit of material uniquely, then the unit would have to be identified by a serial number.

3.5.1 What Is a Serial Number?

A serial number is given to a unique item to identify it and to record information about it. The serial number is different from a batch number: While a batch number is given to a number of items, a serial number is unique to one. The serial number is most often found to refer to equipment, such as motors, lathes, drills, or vacuums. For the SAP customer, there may be many areas where serial numbers need to be addressed. If the SAP customer produces items that should be uniquely defined, then serial numbers may be used. If that customer uses machines in production, it may regularly purchase maintenance items that are serialized. The Plant Maintenance functionality frequently uses serial numbers because the functionality includes use data for equipment that is most often serialized.

3.5.2 Serial Number Profile

The serial number profile is created to define attributes for the serial number. The serial number profile is a four-character alphanumeric field defined in Transaction OIS2. The transaction can also be accessed using the navigation path, IMG • PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • TECHNICAL OBJECTS • SERIAL NUMBER MANAGEMENT • DEFINE SERIAL NUMBER PROFILES • SERIAL NUMBER PROFILE.

The fields in Figure 3.15 show what is needed for configuring serial number profiles. The first field is the Profile, the four-character field, followed by a profile description. The ExistReq indicator, when not set, allows the user to create the serial number master record during a business transaction. If the indicator is set, the serial number master record must exist before the transaction can take place.
The Cat field is for the equipment category, a Plant Maintenance item, which defines the type of equipment for which this serial number profile is used. For example, A is for machines, while S is for customer equipment.

The StkChk field is used to indicate whether the system should perform a stock check when the serial number is assigned.

The configuration of the serial number profile should be performed with the aid of a Plant Maintenance consultant, who will ensure that the customer's requirements for Plant Maintenance are taken into account.

### 3.5.3 Serializing Procedures

Serial numbers are used in many areas of SAP. Using Transaction OIS2, you can define whether a serial number is optional, required, or automatic for a number of serializing procedures. The navigation path for this transaction is **IMG • Plant Maintenance and Customer Service • Master Data in Plant Maintenance and Customer Service • Technical Objects • Serial Number Management • Define Serial Number Profiles • Serializing Procedures**.

In Figure 3.16, the serial number profile 0001 is assigned a number of procedures. For each of these procedures, there are configuration items for serial number usage. The SerUsage field can be configured to be none, optional, obligatory, and automatic. The other field, EqReq, enables serial numbers to be allowed with or without Plant Maintenance equipment.
Serializing Procedures for Serial Number Profile 0001

The procedures that can be assigned to each serial number profile are defined in SAP. Table 3.1 identifies the procedure and its business meaning with relation to serial numbers (SN).

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Business Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUSL</td>
<td>Enables SN to be assigned in Handling Unit Management</td>
</tr>
<tr>
<td>MMSL</td>
<td>Enables SN to be assigned in Goods Receipt, Goods Issue, Stock Transfers, Stock Transport Orders, and Physical Inventory</td>
</tr>
<tr>
<td>PPAU</td>
<td>Enables SN to be assigned in Production &amp; Refurbishment orders</td>
</tr>
<tr>
<td>PPRL</td>
<td>Enables SN to be assigned in Production &amp; Refurbishment orders when they are released</td>
</tr>
<tr>
<td>QMSL</td>
<td>Enables SN to be assigned when entering the original value in a QM Inspection Lot</td>
</tr>
<tr>
<td>SDAU</td>
<td>Enables SN to be assigned in Sales Orders, Inquiries, and Quotations</td>
</tr>
<tr>
<td>SDCC</td>
<td>Enables SN to be assigned when performing completeness checks for deliveries</td>
</tr>
<tr>
<td>SDCR</td>
<td>Enables SN to be assigned when performing completeness checks for return deliveries</td>
</tr>
<tr>
<td>SDLS</td>
<td>Enables SN to be assigned for deliveries</td>
</tr>
<tr>
<td>SDRE</td>
<td>Enables SN to be assigned for return deliveries</td>
</tr>
</tbody>
</table>

Table 3.1 Business Procedures and Meaning for Serial Number Profiles
3.6 Business Examples – Master Data in Materials Management

In MM, there are a number of master data files that are fundamental to the functionality. The Material Master contains all of the information that is required for a material with regards to each area the material is used, for example, sales, finance, manufacturing, quality, and so on. The Vendor Master contains the information that is required for purchasing any item or service. The purchasing information record is used when purchasing specific items for a vendor. Batch data is held for each batch of material that is defined in the system. That data can be used to determine which batch is used or sold. Serial number data is used for items that need to be uniquely identified, for example, if each piece is purchased with a warranty.

3.6.1 Material Master Data

The Material Master data is comprised of data that relates to a number of different areas. For materials to be used successfully, the data has to be collected and entered into the Material Master record. Not only does the data have to be entered for those areas but also for the specific organizational areas: plants, storage locations, sales organizations, and so on. For example, a material cannot be purchased without the relevant purchasing data being entered.

Example

Prior to its SAP ERP implementation, an Irish beverage company had developed a process for creating new materials. When a finished good was developed, it had to be approved by a product board. After approval, the finished good then passed on to a product manager who collected all of the relevant information required for the manufacturing, inventory, sales, and finance systems. This process often took longer than expected, and goods had to be shipped without being recorded in all of the systems because information was still missing. When SAP ERP was implemented, the process was changed as management realized the product would not be shipped until the Material Master was created and that the current process was too slow. The company kept the role of the product board for approvals, but instead of the product manager entering the data, the individual departments entered the data relevant to their areas. Using this method, the departments became responsible if data was missing and the product could not be shipped.

3.6.2 Vendor Master Data

The Vendor Master record contains data that is used in purchasing. The Vendor Master has three distinct sections: general data, purchasing data, and accounting data. The general data has basic information on the vendor such as name, address,
and telephone number. The purchasing data is entered for the vendor at a purchasing organizational level and includes control data required in purchasing, partner functions, and purchasing defaults. The accounting data is the financial data that is entered at the company code level. This data includes tax information, bank details, and payment methods.

Example
A specialty chemicals manufacturer in New Mexico operated a simple production process where it produced five finished goods. The purchasing process was also simple with fewer than 50 items purchased. There were fewer than 40 vendors, and each vendor’s information was kept on an index card in the purchasing clerk’s office. The purchasing process was not automated, and POs were handwritten on carbonated preprinted forms. A larger specialty chemicals company from Alabama purchased the New Mexico manufacturer. As an SAP customer, the company deployed its standard functionality at the New Mexico location, which meant that the purchasing data had to be re-created in SAP ERP. The information on the index cards was so sparse that the company sent a questionnaire to vendors to get enough basic information to create Vendor Master records in the SAP ERP system.

3.6.3 Purchasing Data
The Material Master will contain some purchasing data at the purchasing organization level, which means that the material data may be different for one purchasing organization to the next. However, it is the purchasing information record that contains data to a unique combination of vendor and material. This means that the same material can be purchased from two different vendors, and the price offered by each vendor may be different.

Example
The headquarters for an oil company in Texas implemented only the Finance and Purchasing components, rather than the full suite that was deployed at the oil facilities. At the head office, the majority of purchases were for services, office equipment, and office supplies. Before the SAP ERP implementation, the purchasing function at the head office was performed by two purchasing clerks who filled in POs once a week after collecting requisitions from employees. Vendors offered no price incentives, and purchasing clerks made no attempt to shop around different vendors for better prices. As part of the implementation, the purchasing clerks were asked to review every material purchased at the head office and identify whether it was a material that could be offered out for a competitive bid. The review found that 80% of items purchased at the head office could be put out to bid. Over the next six months, the company sent out RFQs and then selected the
top two vendors for each item. The company created purchase information records with pricing information for the vendor and material combination, including price discounts and scale discounts.

### 3.6.4 Batch Management

Batch Management is used when items of the same material number have the same attributes and can be identified using those attributes. For example, for a chemical company, a batch of chemicals will be made at one time and that batch will have values for a number of attributes that will be different from a different batch. The batch values can determine whether a batch is suitable to be used, sold, or stored in a certain way.

**Example**

A New Jersey manufacturer of paint additives had used a desktop-based program to record information about the batches. As a part of the SAP ERP implementation, the company moved the information from the desktop program to Batch Master records as the product was produced. The additives manufacturer won business with a new customer and started supplying product to the customer. However, the product was returned because the company failed to identify an expiry date for the batch. This was one data element that had never been recorded for each batch, so to keep the new customer, the company had to develop a formula to determine an expiry date for each batch. The company developed the formula, which was calculated and entered by production personnel at the end of each batch run.

### 3.6.5 Serial Numbers

A serial number is used to uniquely distinguish items of the same material number. This is important for companies that use materials that are purchased with a warranty or materials that must be uniquely identified. For example, aircraft parts are serialized so that maintenance personnel can record data against that serialized part and replace it when it has performed a certain number of cycles.

**Example**

A Spanish vacuum cleaner manufacturer used a motor in its machines that was made by a subsidiary company. The vacuum cleaners were of good quality and had a high level of customer satisfaction for many years. The company implemented SAP ERP in its Spanish plants, and a year later, sold its motor manufacturing plant to a Chinese company who moved production overseas. The vacuum cleaner manufacturer continued to source its motors from China because the price per unit was less than 50% of what it was costing from its own subsidiary. After
a few months, the company found that customer complaints had increased dramatically. Consumers complained that the vacuum would lose suction and then stop completely. The vacuum manufacturer examined the returned machines and found that the motors were defective. After contacting the vendor, the company found that motors within a certain serial number range could be subject to overheating. The problem for the vacuum manufacturer was that it did not serialize the motor in its system, so the manufacturer could not identify which vacuum had the defective motor. After this incident, the company started to serialize a number of key components to ensure that if it had defective parts in the future, the company would be able to quickly pass on the information to consumers.

3.7 Summary

This chapter has described the major elements that define the master files of the Material Master. Many companies use batch management and serial numbers, so it is important that if you are involved with these that you understand how each works. Both batches and serial numbers are important to industries such as pharmaceutical and chemical, where each batch or serial number may have very different characteristics.

Let's move on to Chapter 4, Part 1 of the Material Master Data coverage.
Index

A

ABAP, 357
ABAP/4, 43
ABC functionality, 147
ABC indicator, 160, 214
Absolute Discount, 313
Absolute limit, 545
Absolute Surcharge, 313
Access sequence, 229, 248–250, 312
Account, 47
  Code, 189, 199, 377
  Group, 189, 199, 200, 282, 284, 288, 292, 295
  Holder, 197
  Number, 208
  Posting, 581
Account assignment, 82, 331, 334, 377–380, 382, 409
  Asset number, 332
  Category, 332, 334, 378
  Cost center, 331, 332
  Cost object, 331
  GL account number, 332
  GL accounts, 331
  Group, 133
  Production order, 332
  Project, 332
  Sales order, 332
Account group, 71–75
Accounting, 66, 176, 189, 192, 193, 199, 203, 218, 261, 277, 580
  Clerk, 208
  Data, 71, 175
  Department, 175, 177, 178, 186, 189, 196, 197, 199, 201, 204, 205, 208, 220, 298
  Document, 463, 483, 485, 489, 490, 499, 508
  Element, 497
  Entry, 533
  Principle, 463

Screen, 199
Accounts payable, 189, 424
  Department, 204, 537, 555, 558
  functions, 41
  Process, 537, 555
Account Statement Indicator, 208
Acknowledgement, 213, 392
Action control, 173
Action key, 173
Actual costing, 577, 578, 583, 587
Actual days' supply, 432
Additional items, 94
Adobe Form Designer, 357, 367
Advance Ship Notice, 195
Advance Shipping Notification (ASN), 390, 391
Advertising material, 94
Agreement type, 382, 387
Alpha factor, 457
Alternative
  BOM, 171
  Payee, 218
  Source, 308
American National Standards Institute (ANSI), 106
Analytical methods, 79
Annual reports, 576
Annual seasonal pattern, 453
APICS, 441
Apparel, 94
Application date, 347
Approval, 403
Approved Batch Record, 135
Apportionment structure, 275
Approval, 403
Approved Batch Record, 135
Archived purchasing documents, 402
Archiving, 269, 270
  Process, 247
  Program, 247
ASN, 392
Assembly, 162, 171
  Operation, 500
  Scrap, 162
Asset accounts, 200
Associations, 304
Authorization, 46
Authorization group, 156, 200
Autocorrelation test, 458
Automatic
  Batch Determination, 164
Criteria, 321
  Evaluated Receipt Settlement, 213
Model selection, 455
Payment, 198, 203
Purchase Order, 112, 213
Release, 554
Reorder-point planning, 442
Availability check, 135, 169, 170
Available quantity, 476
Available stock, 434, 443, 445, 447
Average price, 363

B
Backflush, 489, 493, 494, 503
  Indicator, 494
  Relevant for, 493
Backward consumption, 168, 169
Balance sheet, 47, 559, 565, 574
  Account, 200
  Valuation, 559
Bank
  Account, 197
  Control key, 197
  Details, 196, 197
  Identification, 197
  Routing number, 197
  Sort code, 197
Base
  Layer, 562
Base Quantity, 128
Base unit of measure, 102, 110, 150, 154, 155, 414
Basic Data, 89, 101
Basic Material, 106
BASIS, 247
  Batch number, 237
Certificate, 79
Changing, 245
Characteristics, 237
Control, 237
Creation, 242
Definition, 237
Deletion Flag, 246
Information, 80, 252, 253, 259
Level, 79, 80
Number, 79, 80, 82
Number range, 81
Pipeline, 238
Record, 238, 239, 241, 243, 245, 246, 612
Search procedure, 251
Selection, 250
Split, 251
Status, 241
Strategy type, 249, 250
Worklist, 252
Batch determination, 241, 248, 249, 251, 258
  Access sequence, 249
  Condition table, 248
  Functionality, 242
  Process, 248
  Strategy types, 248, 258
Batch entry, 164
  Key, 164
Batch Information Cockpit (BIC), 252, 253, 255
  Layout, 253
  User-defined, 255
Batch-level configuration, 81
Batch-managed, 80, 565
Batch Management, 39, 79, 88, 237, 258
  Requirement Indicator, 112
Batch-management indicator, 238
Batch number, 238–241, 465, 481
  Assignment, 81
Batch object, 242
Batch-status, 81
  management, 80, 81
Batch Status indicator, 241
  Restricted, 241
  Unrestricted, 241
Best-of-breed, 36
Best practice, 204, 213, 301, 308, 620
Beta factor, 457
Beverages, 94
Index

Billing address, 305
Bill of exchange, 206
  Limit, 206
Bill of material (BOM), 93, 169, 171, 275, 327, 489, 493, 500
  Characteristics, 164
  Definition, 500
  Usage key, 500
Binding period, 348
Blanket purchase order, 423, 424, 426
Block, 554
  Indicator, 561
  Invoice, 546
  Purchase order, 375
  Quantity, 522
Random, 550
Stochastic, 550
Vendor, 292
Blocked, 548, 554, 557
  For payment, 548
  Indicator, 548
  Invoices, 554
  Status, 292, 521
Stock, 241, 495, 497, 502, 507, 512, 514
Book inventory, 523, 527, 533
  Balance, 523
Book quantity, 528, 529
BPICS, 65
Bulk material, 151, 165, 494
  Indicator, 165
Bulk Storage, 151
  Indicator, 151
  Placement strategy, 151
Bundesgesundheitsamt, 238
Business address, 190
Business Framework Architecture (BFA), 272
Buyer, 305, 307, 312, 313, 323, 333, 371
Buying group, 304
By-product, 475, 513–515

C

CAD drawing, 611, 619
Calculation
  Schema, 211, 312
  Type, 229
CAP Product Group, 119
CAP Product List Number, 119
Cash
  Discount, 313, 365
  Outflow, 204
Cash Management, 200, 204
CENTrally agreed contract, 386, 388
Central purchasing organization, 386, 387
Certificate types, 157
Certification, 196
cGMP, 79
Change document, 156, 613
Change Number, 262, 265, 613, 615
  Engineering, 262, 263
Change request, 46
Characteristic, 79, 80, 88, 109, 602
  Status, 593
  Value, 242, 243, 594, 602, 606
Chart of accounts, 47
Check-cashing time, 204
Check digits, 197
Checking account, 197
Chemical, 88
Chemical industry, 79, 90
Class, 242, 250, 403, 404, 590, 595–598, 601–604, 606, 618
  Hierarchy, 601
  Name, 606
  Structure, 600
Type, 108, 109, 242, 404, 590, 598–600, 607, 618
Classification, 89, 242, 355, 403, 404, 589, 590, 600, 602, 603, 608, 618
  Materials, 603
  Method, 403
  Objects, 604
  Searches, 242
  System, 403, 589, 606, 608, 618
Classification Data, 138
Clearing account, 485
Client, 43, 44, 45, 46, 368
  dependent, 45
Client level, 79, 81
Client/server enterprise, 35
Collective
  Number, 347
  Requirements, 171

647
Index

Slip, 499
Commercial Price, 178
Commission Group, 133
Communication field, 192
Company, 46, 47, 58, 59, 64, 70, 79, 80, 157, 178, 189, 190, 193, 194, 196, 204, 218, 239, 284, 302, 309, 325, 343, 355, 370, 411, 453, 463, 464, 468, 499, 503, 505, 507, 513, 516, 572, 590, 591
Company code, 43, 46–48, 50, 51, 58, 59, 71–73, 86, 178, 199, 480, 546, 553, 560, 566, 570
Comparison value criteria, 364
Competitive bid, 359
Competitive Products, 94
Component, 171
  Material, 585
  Scrap, 171
  Stock, 171
Composition, 165
Condition, 59, 227, 312, 313, 314, 324, 362, 404, 417
  Class, 229
  Table, 229, 248, 249, 258, 312
  Type, 227, 228, 229, 250, 312
Configurable Material, 92
Configurator, 318, 331
Configure, 43, 194
Confirmation, 390
  Category, 391
  Control, 392
Consignment, 76, 223, 331, 382, 584
  Stock, 521
Consolidation, 193, 577
Constant
  Forecast model, 451, 459
  Mean value, 451
Constant model, 455
  Smoothing factor adjustment, 455
Construction, 90
Consumption, 169, 427, 429, 430, 451, 457, 459, 475
  Cost center, 377
  Criteria, 160
  Data, 442
  Mode, 168
  Planning, 35, 328, 427, 429, 432, 439
  Taxes, 118
  Values, 429
Contact address, 218
Container requirement, 146
Continuous inventory, 521, 534
  Number, 389
Control, 577, 581
  Key, 142, 157
  Quantity, 154
  Reason, 466
Control Data, 123
Control screen, 192
Conversation factor, 169
Conversion of data, 65
Co-product, 165, 275
Correction and transport, 44, 45, 64
Correction Factor Indicator, 124
Correspondence, 208
Cost center, 200, 378, 475, 495, 497
Costing, 50, 273
  Data, 180
  Department, 180, 182
  Information, 180
  Lot size, 182
  Overhead group, 181
  Sheet, 181
Count
  Date, 524
  Differences, 536
  Document, 523, 524, 530
  Error, 536
  Procedures, 521
  Quantity, 528, 533
Country, 191
  Code, 191, 197
Country key, 48
Country of Origin, 118  
Coverage profile, 166  
Creative pricing, 366  
Critical Part, 114  
Cross-border  
   Account number, 197  
   Payments, 197  
Cross-client, 249  
Cross-Distribution Chain, 130  
Cross-Plant Material Status, 104  
Cross-Project Material Indicator, 170  
Current assets, 559  
Current liabilities, 559  
Current stock, 435  
Customer, 40, 52, 65, 66, 67, 70, 74, 75, 77, 81, 82, 193, 200, 206, 217, 220, 221, 259, 325, 370, 371, 381, 382, 386, 441, 463, 537, 541, 542, 555, 559  
   Delivery, 463  
   Field, 193  
   Location, 521  
   Master records, 194  
   Number, 193  
   Satisfaction, 235  
   Service, 463, 486  
   Service level, 521  
Customized report, 402  
Customizing, 44, 45  
Cycle  
   Count indicator, 146  
   Counting, 147, 468, 521  
Cyclic element, 457

D

Dangerous Goods, 106  
Data Type, 591  
Data conversion, 89  
Date of delivery, 330  
Date To, 121  
Date variance, 546  
Days of inventory, 41  
Days of working capital, 41  
Days payables outstanding, 41  
Days sales outstanding, 41  
Deadline Monitoring, 113  
Reminders, 113  
Default supply area, 164  
Deletion flag, 270  
Deletion indicator, 353, 476, 477, 480  
Delivering Plant, 130  
Delivery, 507, 515  
   Address, 371  
   Block, 293  
   Cost, 314, 364  
   Date, 40, 328, 335, 346, 348, 353, 371, 390, 392  
   Note, 509, 537  
   Note number, 470  
   Of goods, 390  
   Quantity, 506  
   Schedule, 310  
Delivery tolerance, 76  
Delivery Unit, 131  
Delta factor, 457  
Dependency, 602  
   Editor, 602  
Dependent requirements, 172, 429  
Design Drawing, 107  
Detailed planning, 275  
Devaluation, 570  
   Indicator, 178  
   Materials, 579  
   Percentage, 178, 570, 572  
Dewey Decimal, 589  
Difference quantity, 530  
Difference value, 530  
Dimensions, 105  
Discontinuation indicator, 172  
Discontinued, 172  
   Material, 172  
   Part, 172  
Discount, 228, 229, 312, 313, 362, 364, 417  
   In kind, 214  
Distribution  
   Center, 483  
Distribution Profile, 137  
Distribution requirements planning (DRP), 174  
Division, 104  
Document, 609, 611, 613, 618  
   Date, 356  
   Index, 214
Index

Number, 345, 612, 614
Parking, 544
Part, 245, 613, 614
Record, 614, 616, 618
Required indicator, 156
Status, 613, 615
Version, 613
Document information record, 611, 613, 619
Document Management (DMS), 245, 609, 611, 613, 616–620
For batches, 245
System, 245
Document type, 245, 330, 331, 343, 344, 395, 423, 612, 614, 616
Configuration, 330
External number range, 330
Double Invoices, 204
Downward trend, 452
Drugs Controller General of India, 238
Dunning, 71, 206, 208
Block, 207
Clerk, 208
Notice, 207
Procedure, 206, 207
Run, 207
Duty
Levied, 364
Payment, 314

E

EAN, 214
Economic justification, 308
Effective-out date, 172
Electronic data interchange (EDI), 40, 194, 195, 206, 213, 304, 306, 374–376, 390, 391, 394, 463, 537
Transaction set, 304
Electronic signature, 403
Email, 375, 390
Address, 192
Employee, 590
Employer Identification Number (EIN), 193
Empties, 92
Empty storage bin, 154
End user, 606
Engineering change, 265
Number, 276
Record, 276
Engineering Change Management, 39, 261, 277
Engineering drawing, 243, 245, 612, 613
Environmentally Relevant, 107
Equal Opportunity Act, 366
Equipment, 82, 83, 328, 608
Equipment category, 83
ERP, 36
European Article Number (EAN), 106, 617
Evaluated Receipt Settlement (ERS), 213
Indicator, 542
Evidence of internal control, 611
Exception message, 432
Exchange rate difference, 577, 581, 582, 583
Exemption certificate, 202
Expected delivery, 476
Expected value, 419
Expiring stock, 259
Expiry date, 494, 565
Export/Import Group, 118
External
Assignment, 343
Category, 391
Confirmation, 391, 392
Document, 403, 611, 614, 619
File name, 611, 619
Model, 455
Number assignment, 68, 189, 199
Number range, 282
Tax system, 191
External service management (ESM), 411, 425, 427

F

Factory calendar, 48, 431
Fair Share Rules, 174
Fast-moving stock, 521
Fax numbers, 192
FDA, 238, 239
FDA 21 CFR Part 11, 238
Field group, 73
Field-selection group, 77, 78
Field status, 72
Final assembly, 169
Final entry indicator, 423
Final issue, 476
Finance department, 548
Financial Accounting, 71
Financials, 47
Accounting, 193, 197, 290, 468, 541, 581
Movement, 499, 509
Posting, 489
Statement, 559, 574
Finished
Goods, 91, 239, 441, 489, 510, 513, 515, 521, 559
Goods receipt, 514
Material, 171
Product, 261, 493, 494, 503, 514
First in, first out (FIFO), 179, 565, 567, 576
Valuation, 566, 567
Fiscal year, 167
Fiscal Year Variant, 121
Fixed
Agreement, 437
Assets, 559
Lot size, 162
Period, 455
Source, 309
Flag for Deletion, 267, 524
Float
Time, 146
Follow-up material, 172
Food, Drug and Cosmetic Act, 239
Food except perishables, 94
Calculation, 455
Data, 453
Initialization, 455
Model, 449, 451, 455, 456, 457, 458, 459
Parameter, 453
Periods, 168
Planning, 168, 441, 443
Profile, 453, 457
Requirements, 167, 443, 445
Screen, 457
Value, 443, 456
Forecasting, 89, 165, 451, 461
Method, 461
Forecasting data, 120
Forecast Model, 121
Forecast Profile, 100
Foreign Trade, 117, 118, 214
Foreign vendors, 202
Formula field, 413
Forward consumption, 168, 169
Forwarding agent, 195
Framework, 590
Free
Delivery of goods, 584
Goods, 513
Of charge, 214, 515
Free goods discount, 93
Freeze Book Inventory, 523
Freight
Charge, 314
Cost, 195, 312, 313, 362, 364
Forwarder, 195
Group, 195
Funds section, 559
Future price, 177
Future requirements, 443

G
Gamma factor, 457
General Data, 110, 121, 125, 135
General Item Category Group, 105
General ledger (GL), 176, 199, 200, 499, 505, 515
Account, 176, 199, 378, 413, 541
Account number, 332
Bar code, 194
Global Location Number, 194
Global percentage (GP), 344
Good Manufacturing Procedures, 79
Goods
Free promotional items, 515
Sample products, 515
Zero value, 515
Index

Goods issue, 56, 467, 488–502, 533
   For sampling, 497
   Posting, 498
   Reversal, 499, 500
   Slip, 499
   To production, 503
   To production order, 490
Goods movement, 54, 55, 152, 177, 463, 464, 468, 471, 476, 477, 479, 480, 486, 488, 523, 577, 585
Goods receipt, 56, 82, 148, 157, 172, 294, 316, 375, 421, 468–470, 473, 475, 505–508, 515, 516, 519, 533, 537, 542, 546, 553, 555, 556, 559, 583
   Definition, 505, 517
   Document, 147, 306
   Inspection, 156
   Note, 509
   Posting, 508
   Reversal, 509
   Slip, 147
   Without production order, 514
Government, 307
   Regulation, 302
Graduated pricing scale, 313
Gross price, 313
Gross requirements planning, 169
Group
   Counter, 181
   Key, 193
   Task list, 181
Grouping Items, 132

H

Handling Unit Management, 39
Hazardous material number, 146
Head office, 200
Highly Viscous, 107
HIPAA, 611
Historical
   Material consumption, 443
   Period, 455
   Value, 455
Holding company, 45
House bank, 206

I

IBAN, 197, 198
IDoc, 272
Immediate payment, 206
Implementation, 64, 65, 79, 141, 270, 588
Implementation Guide (IMG), 48, 57, 153, 228, 229, 248, 253, 293, 343, 395, 403, 412, 431, 551, 612
Inbound delivery, 390, 391
Income tax, 202
Incomplete status, 243
Incoterms, 210
Independent requirement, 166
Individual Payment Indicator, 206
Industry key, 194
Industry Sector, 89, 90
Industry Standard Description, 106
Information flow, 38
Inheritance, 601
In-House Production Time, 127, 128, 170, 328, 505, 516
Initial batch status, 81
Initial entry of inventory, 511
Initialization, 122
   Indicator, 123
Initial status, 81
Inspection
   Interval, 156
   Lots, 156
   Setup, 156
   Stock, 156
   Text, 617
   Type, 156
Inspection Stock, 114
Instance, 43
Integration
   with other components, 35
Interest calculation, 199
Interim storage
   Area, 164
   Type, 152
Interim storage type, 56
Internal
   Assignment, 343
   Confirmation, 391
   Document, 403
**Index**

*Number assignment, 412, 614*

Transfer, 463

International Bank Account Number, 197

International Chamber of Commerce, 210

International Organization for Standardization (ISO), 106

Internet, 301

Interoperation Time, 128

Inventory, 187, 466, 468, 470, 473, 476, 477, 495, 505, 511, 521, 522, 527, 529, 565

Accuracy, 468

Adjustments, 522

Balance, 512, 523, 533

Control, 509

Costs, 521

Count, 522, 523, 527

Count sheet, 527

Department, 492

Difference, 523, 529, 530, 533

Document, 530

Inaccuracies, 522

Initial load, 512

Movement, 464

Record, 577

Reduction, 497

Sampling, 521, 534

Status, 522

Turns, 41

User, 471

Inventory Management, 65, 144, 151, 248, 430, 463, 486, 488, 581


Amount, 548

Block, 555

Blocked, 550

Date, 538

Manual release, 555

Posting, 545

Prices, 177

Receipt, 331, 583

Review, 555

Invoice Verification, 41, 65, 71, 76, 537, 542, 555, 558, 581

Good Receipt-Based, 212

Invoicing, 189

Inward goods movement, 53

ISO

9000, 611

Certification, 196

Issuing material to scrap, 503

Item category, 331, 346, 348, 373, 378, 379, 419, 423

Item number, 371

J

JDEdwards, 65

JetForm, 367

Just-in-time (JIT), 519

Delivery schedule, 165

Inventory, 463

K

KANBAN, 164

Containers, 90

Key performance indicator (KPI), 41

Keyword, 596

L

Label, 147

Form, 147

Type, 147

Laboratory/Design Office, 104

Last in, first out (LIFO), 179, 559, 560, 562, 564, 565, 574, 576

Method, 564

Pool, 179

Relevant, 179

Valuation, 559, 560, 562, 563, 565

Lawson, 65

Layer, 562

Quantity, 562

Value, 562

Leading zeros, 67

Indicator, 68

Lean WM, 145

653
<table>
<thead>
<tr>
<th>Legacy, 65, 66, 187</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data, 65</strong></td>
</tr>
<tr>
<td><strong>Files, 89</strong></td>
</tr>
<tr>
<td><strong>Numbering, 66</strong></td>
</tr>
<tr>
<td><strong>System, 70, 141, 511</strong></td>
</tr>
<tr>
<td>Legal Dunning Procedure, 207</td>
</tr>
<tr>
<td>Legal entity, 43</td>
</tr>
<tr>
<td>Legal jurisdiction, 371</td>
</tr>
<tr>
<td>Lexicographical indicator, 67, 68</td>
</tr>
<tr>
<td>Link documents, 243, 245</td>
</tr>
<tr>
<td>Loading Group, 136</td>
</tr>
<tr>
<td>Logistics, 38, 39, 41</td>
</tr>
<tr>
<td><strong>Definition, 38</strong></td>
</tr>
<tr>
<td><strong>Function, 38</strong></td>
</tr>
<tr>
<td><strong>Material Management, 39</strong></td>
</tr>
<tr>
<td>Logistics Information System (LIS), 41</td>
</tr>
<tr>
<td>Long-term agreement, 381</td>
</tr>
<tr>
<td>Long-term forecast, 463</td>
</tr>
<tr>
<td>Lot size, 161, 171, 181, 182, 275, 444, 445, 449</td>
</tr>
<tr>
<td><strong>Calculation, 161, 162, 432</strong></td>
</tr>
<tr>
<td><strong>Data, 161</strong></td>
</tr>
<tr>
<td><strong>Key, 162</strong></td>
</tr>
<tr>
<td><strong>Lot-for-lot, 445</strong></td>
</tr>
<tr>
<td><strong>Procedure, 161, 444</strong></td>
</tr>
<tr>
<td><strong>Sizing, 445</strong></td>
</tr>
<tr>
<td>Lower tolerance, 548</td>
</tr>
<tr>
<td>Lowest mean absolute deviation, 459</td>
</tr>
<tr>
<td>Lowest price quotation, 364</td>
</tr>
<tr>
<td>Lowest value, 569</td>
</tr>
<tr>
<td><strong>Determination, 178, 567, 573</strong></td>
</tr>
<tr>
<td>Lowest value principle (LVP), 567, 573</td>
</tr>
<tr>
<td>LVP, 567, 568, 573, 574, 575</td>
</tr>
</tbody>
</table>

**M**

| Maintenance Assembly, 92 |
| Maintenance order, 143, 144, 328 |
| Manual |
| **Block, 548** |
| **Initialization, 456** |
| **Reorder-point planning, 442** |
| **Reservation, 475, 476** |
| Manual Batch Determination, 164 |
| Manufactured product, 165 |
| Manufacturer, 116, 239 |
| Manufacturer Data, 114 |
| Manufacturer Part, 92 |
| **Number, 116** |
| Manufacturing, 441, 488, 503, 510, 519 |
| **Operation, 514** |
| **Process, 237, 514** |
| Market price, 568, 575 |
| Master data file, 65 |
| Master production scheduling, 429 |
| Master record, 611 |
| Matchcode, 197, 245, 352, 353, 606 |
| **Acceptance, 505, 517** |
| **Account, 499** |
| **Balance, 559** |
| **Batch, 238** |
| **Counts, 526** |
| **Defect, 469** |
| **Discrepancy, 529** |
| **Flow, 38, 40** |
| **Group, 69, 76, 214, 322, 330, 335, 346, 348** |
| **Incorrect, 469** |
| **Issue, 499, 500** |
| **Ledger, 176** |
| **Level, 80** |
| **Movement, 176, 463, 465, 466, 489, 501, 523** |
| **Overdelivery, 469** |
| **Posting, 238** |
| **Price, 568** |
| **Quality, 497** |
| **Receipt, 509** |
| **Requirements, 328, 429, 451** |
| **Samples, 497** |
| **Shortage, 165** |
| **Status, 464** |
| **Stock, 179, 522** |
| **Tolerance, 240** |
Type, 176, 178, 261, 412, 562, 569, 579
Valuation, 576, 579
Value, 177, 559
Value change, 562
Material Authorization Group, 156
Material Description, 102
Material Group, 103, 133, 221, 224, 225
Freight, 111
Material ledger, 577–581, 584–588
Material Master, 65–67, 69, 88, 89, 101, 141,
143, 147, 149, 155, 158, 175, 178, 180, 187,
226, 261, 263, 270–273, 276, 277, 280, 334,
411, 413, 429, 433, 444, 445, 453, 457, 562,
585, 588, 590, 603, 604, 616
Deletion, 267
Fields, 187
Files, 261
Transaction, 261
Material Master Record, 89, 97, 100, 189,
218, 238, 329, 334, 429, 430, 442, 445, 453,
494, 499, 579, 580, 583, 616
Schedule, 98
Special, 98
Material number, 66–68, 74, 76, 214, 263,
329, 348, 371, 412, 429, 465, 490
Automatically assigned, 66, 67
Range, 68
Material price, 542
Analysis, 582
Determination, 581, 582
Material Pricing Group, 133
Material requirements planning (MRP), 40,
116, 141, 158, 171, 273, 276, 310, 327, 341,
441, 443, 448, 449, 475, 476, 489
Area, 494
Controller, 161, 265, 328, 335, 434, 437
Fields, 433
Group, 159
Indicator, 434
List, 434, 435, 437, 438, 476
Parameter, 160
Profile, 99
Requirement, 166, 171
Type, 160, 161, 442, 443, 445, 449
Materials, 69, 70
Materials deployment, 174
Materials Management (MM), 43, 51, 52, 55,
57, 65, 69, 83, 249, 269, 281, 298, 409, 449,
488, 489, 503, 577, 603
Material service group, 413
Material Statistics Group, 133
Material Type, 69, 81, 90, 94, 137
Changing, 96
Standard, 90
Maximum bin quantity, 154
Maximum lot size, 162
Maximum storage period, 148
Mean
Absolute deviation, 457
Price, 364
Quotation, 363, 365
Value, 451, 453
Mechanical engineering, 90
Medicines and Healthcare Products Regulatory
Agency, 238
Message, 540
Creation, 394
Log, 540, 541
Queue, 394
Military Goods, 120
Minimum
Bin quantity, 154
Lot size, 162
Remaining shelf life, 148
Safety stock, 165
Value quotation, 364
Minimum Delivery Quantity, 131
Percentage, 114
Minimum Order Quantity, 131
Minority
Indicator, 201
Owned, 590
Owned business, 366
Vendor, 201
Minority-owned business, 201
Miscellaneous goods receipt, 513
Mixed MRP, 169
Model Selection, 123
Field, 456
Mode of transport, 214
Monitoring confirmation, 402
Monthly consumption, 430
Movement, 177
Index

Indicator, 476, 479
Rate, 572
Reason for, 471, 472
Moving average model, 455
Moving average price, 177, 500, 585
Control, 586
MSDS, 616
File, 611, 619
Multi-level price determination, 583, 585
Multi-national groups, 577
Multiple account, 380
Multiplier, 122

O

Dependency, 602
Type, 598
Obsolete, 452
Occupational category, 589
Office of entry, 214
Offsetting adjustment, 529
Old Material Number, 103
One-step procedure, 480–483
One-step removal, 152
One-time vendor, 72
On-time
Delivery, 316
Performance, 304
Operating Supplies, 92
Operation, 76, 141, 164, 327, 328, 429, 493, 494, 503, 521
Time, 494
Optimization level, 124, 456
Optimum lot-sizing procedure, 162
Order, 213
Acknowledgement, 390, 391, 392
Currency, 210
Settlement, 581
Type, 373
Ordering address, 218
Ordering costs, 162
Order-to-delivery, 463, 486
Order Unit, 111
Organization, 66
Organizational Levels, 99, 100, 429
Organizational structure, 45, 47, 51, 55, 64
Origin group, 181
Outline agreement, 309–313
Outline purchase agreement, 381, 382, 407
Out of tolerance, 239
Output format, 395
Output message, 394
Overall functionality, 35
Overall limit, 419
Over-Delivery Tolerance, 113, 127
Overhead cost, 181

N

National account number, 197
National Motor Freight Traffic Association, 194
Negative seasonal trend, 453
Negative Stock in Plant, 136
Negotiated price, 305, 306
Net price, 76
Net price field, 362
Net-requirement
Calculation, 432
Quantity, 432
Network, 475, 611, 619
Non-batch managed, 238
Non-food items, 94
Non-moving item, 178
Non-stock
Item, 76, 327
Material, 328
Non-Stock Material, 76, 93
Non-Valuated Material, 93
Non-variant part, 169
Non-working day, 431
Number assignment, 345, 612
Number range, 68, 69, 74, 75, 76, 77, 81, 282, 284, 288
Numeric material numbers, 67

656
Packing, 147
Packaging Material, 94
Palletization, 152
Parameter Optimization, 124
Parked, 544
partner
Bank type, 198
Function, 217, 218
Partner functions, 71, 86
Payment
Block, 205
Block keys, 205
Instructions, 196
Method, 71, 205
Period, 204
Process, 541
Program, 541
Rules, 541
Slip, 194
Term, 71, 204
Transaction, 196, 197
P-card, 42
Percentage
Assignment, 380
Basis, 364
Discount, 570, 573
Limit, 545
Value, 548
Performance capability, 365, 369
Period, 577, 582, 583
Indicator, 121, 148, 167, 430
Periodic unit price, 577
Periods
Fixed, 122
Forecast, 122
Historical, 122
Perishables, 94, 106
Personnel number, 203
Pharmaceutical, 88, 90
Products, 118
Industry, 79, 237, 238, 239
Physical count, 526, 527
Document, 527, 532
Document number, 529, 530
Physical inventory, 146, 147, 468, 519, 521–524, 526, 529, 534, 536
Account, 533
Count, 522, 523
count document, 523
count sheet, 522, 525, 526
Document, 527
Picking, 52, 55, 145, 154
Area, 145
Quantity, 154
Storage type, 150
Ticket, 499
Pipeline, 76, 222
Material, 93
Placement, 55
Strategy, 52, 151
Planned
Count, 146
Delivery times, 170
Goods issue, 489
Movement, 475
Order, 116, 165, 173, 328, 432, 436
Order reduction, 173
Production, 443, 445, 447
Purchase, 443, 445, 447
Requirement, 168, 444
Planner, 432
Planning, 589
Area, 275
Calendar, 161, 430
Cycle, 161, 445
Department, 160, 161, 162, 165, 169, 170, 173, 310, 328, 390
File, 432
Function, 168
Group, 200
Material, 169
Method, 427, 429
Plant, 169
Procedure, 444
Process, 432, 434, 436
Result, 434, 438
Run, 161, 168, 328, 432, 434, 445
Strategies, 168, 169
Time fence, 161
Index

Type, 275
Engineering, 90
Level, 80, 273
Stock level, 434, 509
Transfer, 483
Plant maintenance
Department, 141, 143
Plant Maintenance (PM), 82, 83, 328, 433
Plant-Specific Material Status, 111
Points, 318
Postal code, 191
Posting
Date, 530, 538
Invoice, 545
Movement type, 531
Period, 167
Posting Block Indicator, 523
Posting difference, 56
Post-office box, 192
Precondition, 602
Preference Status, 119
Price
Actual, 363
Determination, 314, 583, 585
Difference, 581, 583
Discounts, 364
Effective Determination, 367
Fluctuation, 577, 586, 587
Unit, 177
Value, 548
Variance, 542, 546, 553
Calculation schema, 228
Price comparison, 363, 365
Selection criteria, 363
Price control, 177
Pricing, 537, 555
Agreement, 313
Condition, 248, 258, 313
Date Control, 211
Determination, 211
Procedure, 195, 211, 228
Scale, 313
Processing Time, 127, 456
Processing Time/Base Quantity, 136
Process order, 248
Procurement, 40, 65, 157, 162, 164, 441
Cost, 364
Cycle, 157
Proposal, 432, 434, 436, 443–445
Type, 164
Product, 461
Cost estimate, 182
Recall, 239, 241, 259, 469, 487
Product Attributes, 134
Product Hierarchy, 104
Production, 80, 82, 164, 165, 168, 172, 267, 278, 298, 382, 432, 439, 449, 455, 488, 489, 494, 505, 511, 513, 515, 516, 519, 577
Date, 148, 240
Department, 161
Schedule, 40, 390, 529
Storage location, 164
Version, 171, 273, 274, 275, 276
Number, 490, 510
Routing, 327
Settlement, 581
Production Planning (PP), 40, 48, 50, 61, 248, 439, 449, 503, 513
Production process, 164, 165, 181, 239, 409, 468, 492, 494, 495
Production resources/tools (PRT), 91, 141–143
Production Scheduler, 125
Production Scheduling Profile, 126
Production Storage Location, 126
Production Unit, 125
Product recall, 79
Profile description, 82
Profit Center, 136
Project, 368
Segment, 170
Stock, 170, 176
Public safety, 238
Points, 225
Policies, 314, 324
Tolerances, 227
Purchasing document, 211, 214
Category, 356
Purchasing group, 60
Purchasing information record, 221, 222, 224–227, 230–232, 295, 569
Data, 226
Push indicator, 174

Q

Qualify for Free Goods Discount, 111
Quality, 316
Assurance, 157, 238
Certificate, 157
Control, 238
Department, 156, 157, 241
Information, 156
Inspection, 156, 241, 470, 480, 509, 512, 514, 521, 522, 553
Inspection stock, 495
Inspection text, 499
Inspection user, 156
Inspection worklist, 245
Notification, 156
Performance, 304
Requirement, 155
Testing, 245
Testing document, 243
Quality Management, 40, 155–157, 195, 280
Quantity
Contract, 386, 388
Index

Formula, 143
Partial, 509
Variance, 546, 553
Quantity Stipulations, 131
Quota arrangement, 115, 311, 312
Comparison, 364
Deadline, 348, 353
Price comparison, 363
Rejection, 367, 368

R

R/2, 36
Random variation, 457
Range of coverage, 166, 568, 570, 572, 575
Value, 570
Range of values, 590, 591, 607
Rate-based planning, 275
Raw material, 93, 165, 301, 322, 515, 522, 559
Real-time reports, 463
Reason code, 350
Reason for movement, 471, 496
Rebate, 225
Arrangement, 225
Recall, 239
Receipt days' supply, 432
Receipt note
Individual goods, 509
Receipt of material, 505, 516
Receiving dock, 333
Receiving plant, 80, 483, 484
Recipe, 245
Recipient type field, 202
Reconcile, 200
Reconciliation, 200
Account, 71, 199, 200
Recount, 529
Document, 529
Material, 529
Physical inventory document, 529
Transaction, 529
Recycling, 469, 487
Re-engineering, 463

Reference Material, 121
Reference Plant, 121
Reference quotation, 363
Region, 191
Code, 49
Origin, 118
Regression analysis, 458
Regulatory body, 238
Rejection letter, 367
Rejection of RFQ, 395
Release, 36, 37, 243, 386
Code, 355, 404
Condition, 404
For payment, 200
Group, 200, 355, 404
Indicator, 405
Order, 381, 386, 389
Policy, 410
Procedure, 354, 403
Purchase requisition, 403
Status, 243
Strategy, 355, 404, 410, 419
Reminder letter, 206
Removal strategy, 151
Reorder
Level, 433, 442
Point, 429, 441, 442, 449
Point planning, 161
Quantity, 161
Reorder-point planning, 441, 443
Repetitive manufacturing, 172, 275, 382
Indicator, 172
Profile, 172
Repetitive manufacturing profile, 172, 173
Replacement Part, 135
Replenishment quantity, 154, 433
Request for information, 307
Date, 345
Delivery schedule, 348
Document number, 345
Number, 352, 353, 363
Type, 344
Requirement
For confirmation, 391
Quantity, 432
Situation, 435
Tracking number, 336, 346, 352
Requisition, 384
Requisitioner, 304, 307, 308, 327, 329, 333–337
Reservation, 474–477, 479, 480, 487–489
Automatic, 474
Creation, 474
Date, 479
Definition, 474, 487
Line item, 479
Stock transfer, 474
Retention
Days, 478, 480
Period, 479
Return, 267, 467, 473, 488
Agreement, 225
Clause, 469
Delivery, 469, 473
Policy, 366
Process, 488
Returnable Packaging, 93, 469
Return Material Authorization, 469
Revaluate, 577
Revaluate stock, 577
Revaluation, 581
Reverse logistics, 469
Reverse movement type, 481
Revision level, 276, 277, 613
Assignment, 613
Number, 276
RFQ, 230, 304, 308
Right-justified, 67
Rough-cut planning, 150, 275
Rough goods receipt, 391
Rounding error, 177
Rounding Profile, 131
Rounding quantity, 154
Routing, 327, 493, 503

S
Safety
Time, 166
Safety stock, 165, 166, 442
Dynamic, 166
Level, 435, 442
Range, 165
Sales, 134
Order, 377, 475, 522, 536
Order stock, 176
Sales and Distribution (SD), 40, 248, 280
Sales Data, 139
Sales organization, 66, 261, 267, 270, 277, 296
Sales Organization, 89, 128, 129
Sales Unit, 129
Sample
Material for, 497
Test, 497, 502
Sampling, 468, 489, 498, 501
Account, 497
SAP Query, 402
SAP Customer Relationship Management, 45
SAP EarlyWatch, 44
SAP NetWeaver Business Warehouse, 45
SAPscript, 357, 367
Sarbanes-Oxley Act, 611
SCAC code, 195
Scale, 229, 313, 417, 418
Schedule
Date, 553
Delivery, 445
Line, 432, 436
Manager, 541
Variance, 553
Scheduling agreement, 116, 309, 310, 313, 314, 356, 381, 382, 384, 386, 387, 395, 403, 437, 569
Number, 382
Schema group, 211
Scope of list, 356
Scoring
Criteria, 320
Method, 316, 317
System, 320
Scrap, 162, 193, 489, 494–496, 501–503
Account, 495
Costs, 495
Material, 494–496, 502
Quantity, 493, 494, 503
Procedure, 495
Index

Search
Criteria, 606
Parameters, 242
Procedure, 248, 258
Strategy, 248, 258
Term, 190
Tool, 608
Type, 251
Seasonal
Cycle, 122
Elements, 457
Fluctuation, 456
Forecast model, 455
Index, 457
Market, 453
Model, 452, 455, 459
Pattern, 453, 458
Trend model, 453, 459
Second order trend model, 455
Selection
Criteria, 250, 357, 365, 396, 477, 555, 564, 569, 572, 573
Field, 250
Method, 171
Procedure, 123, 456, 458
Type, 250
Sell by batch, 259
Semi-automatic criteria, 321
Semi-finished, 76
goods, 81, 91
Serialized, 82
Serializing procedures, 83
Serial number, 82, 83, 84, 88, 137
Master record, 82
Profile, 82, 83, 84, 137
Usage, 83
Server, 43
Bulletin, 612
Category, 412, 415
Entry sheet, 403, 411, 422
Financial posting, 413
Level, 165
Management, 416, 417
Number, 412, 421
Purchase order, 421
Sheet entry, 421
Specification, 411, 419
Type, 415
Service-agent procedure group, 195
Service-Based Invoice Verification, 214
Service Master, 411, 413, 415
Services, 91
Settlement of production orders, 583
Settlement rule, 275
Setup Time, 127, 136
Shelf life, 148, 240
Characteristics, 144, 184
Data, 147
Date, 240
Shipping Data, 135
Shipping Instructions, 114
Ship-to address, 305
Significance test, 456
Simple algorithm, 197
Simulation, 540
Single account assignment, 379
Single-level
Price determination, 583, 584
Single source, 307, 308, 312, 343
Single sourcing, 307, 308, 463
SLED, 148, 241
Rounding rule, 148
Slow movement, 572
Smallest mean absolute deviation, 456
Smoothing factor, 456, 457, 459
Social Security number, 193
Sole proprietor, 217
Sole Source Justification, 307
Sort key, 200
Sort sequence, 250
Source, 310
Determination, 293, 310, 311
List, 115, 307, 308, 310–312, 323, 374
Of supply, 309, 311, 312, 374
Spare Parts, 91
Special
Characters, 67
Goods movement, 151
Movement indicator, 151
Procurement key, 164

662
Status, 469
Stock, 521
Specification, 245, 613
Splitting indicator, 168
Split valuation, 176
Standard
  Report, 402
  Service Catalog, 415
  Text, 143
Standard Carrier Alpha Code, 194
Standard Occupation Classification System, 589
Standard price, 69, 177, 500, 577, 583, 584
  Control, 583
Statistical data, 232
Status switch indicator, 613
Stochastic, 548
  Block, 550, 551
Stock, 51, 62
  Account, 533
  Available, 474
  Balance, 512, 583
  Blocked, 469, 470
  Check, 83
  Initial creation, 468
  In quality inspection, 469
  In transit, 482–484
  Level, 463, 499, 505, 509, 516, 522
  Movements, 436
  On-Hand report, 522
  Outs, 519
  Overview, 464, 474
  Placement, 151, 482
  Plant, 508
  Posting, 485
  Removal, 151, 154, 482
  Requirements List, 434, 435, 438
  Reserved, 474
  Slow moving, 483
  Special, 481
  Special Stock indicator, 481
  Transfer, 156, 331, 382, 463, 480, 488
  Transport scheduling agreement, 382
  Unrestricted, 469, 474, 482, 484
Storage
  Condition, 146
  Costs indicator, 162
Indicator, 151
Location, 144, 165, 261, 276, 277, 432–434, 463, 464, 474, 475, 480–485, 507, 521, 522, 524
Location Level, 433
Search, 151
Section, 57, 145
Section search, 151
Strategies, 150
Transfer, 483
  Type, 55, 150–152, 154
Unit handling, 152
Storage bin, 52, 55–57, 144, 153, 154
Stock, 154
Storage location, 43, 51–56, 62, 66
  address, 52
Strategic alliances, 366
Strategy
  Group, 168
  Type, 249–251
Street address, 191
Structural organization, 57
Structured framework, 589, 607
Subassemblies
  With final assembly, 169
  Without final assembly, 169
Subcontracting, 76, 222, 331, 346, 382
Subcontractor, 328, 402
Subcriteria, 316, 321
Subledger, 199, 200
Subordinate class, 601
Subsequent settlement, 213
Superior class, 601
Supplier, 70
Supply chain, 38, 39, 41
  management team, 41
Supplying plant, 483, 484
Surcharge, 313, 417
Syntax, 602
T
Takt time, 163
Target
  Dollar amount, 382
  QM, 157
Index

Quantity, 384
Value, 388
Task
Group, 181
Group list, 181
List, 143, 144, 275
Type, 182
Usage, 141
Tax, 194, 229, 417
Amount field, 539
Calculation, 314
Condition, 314
Details, 539
Identification number, 193
Indicator, 413
Information, 192
Jurisdiction code, 191, 194
Price, 178
Rate, 314
Regulations, 468
Type, 193
Taxable service, 413
Tax Data, 130
Tax Indicator for Material, 111
Taxware, 191, 194
Technical specifications, 611, 619
Temperature conditions, 145
Terms and conditions, 359, 381
Terms of delivery, 382
Testing specifications, 79
Three-way match, 41, 306, 537
Threshold value, 530, 531, 550
Time-phased planning, 161, 441, 444
Tolerance, 204, 494, 529, 546
For chemical materials, 497
Group, 204
Indicator, 546
Key, 546, 553
Limit, 545–547
Tolerance Data, 126
Total
Consumption, 430
Planning run, 159
Price condition, 417
Replenishment lead time, 170
Shelf life, 148
Tracking Limit, 123, 456
Trade definition, 210
Trading goods
Partner, 193, 366
Trading Goods, 91
Transaction-based material price determination, 585, 586
Transaction set, 391
Transaction variances, 581
Transfer, 466
Between plants, 483
Company code, 485
Plant-to-plant material, 485
Posting, 475, 480, 522, 583
Transport
Confirmation, 390
Order, 330
Transportation, 308
Transportation Department, 195
Transportation Group, 135
Trend, 456–458
Value, 457
Trend model, 452, 455, 459
Trial posting, 540
Two-step picking, 152
Two-step procedure, 480, 482, 483
Two-way match, 41, 213, 537, 542, 555
Unalterable log, 611
Under-Delivery Tolerance, 113, 127
Unequal weighting, 318
Unique task list, 181
Unit of measure, 150, 169, 225, 334, 421, 617
Unit price, 308, 583
Universal Product Code (UPC), 106
Unlimited Over-Delivery, 127
Allowed, 113
Unplanned
Basis, 492
Consumption, 430
Goods issue, 492
Issue, 489

U
Index

Service, 419, 422
Unrestricted, 470, 521
Stock, 482, 483, 495, 514
Unrestricted status, 81
Urging letter, 225
Usage decision, 156
Usage value formula, 143
U.S. Department of Transportation, 195
User group, 253, 255, 256
View, 253
Use-tax responsibility, 193

V

Validation, 197
Validity date, 227, 275, 310, 382
Range, 347
Validity period, 314, 415, 424
Valuated transaction, 582
Valuation, 175, 177, 179, 186, 559, 567, 577, 579
Area, 560, 566, 572
Category, 176
Class, 176, 413, 569, 579
Method, 567, 568, 573, 574, 575
Valuation level, 50, 51
Valuation-relevant transactions, 581
Value
Actual, 455
Contract, 386, 388
Determination, 564, 568, 575
Limit, 424
Templates, 594
Update, 95
Variable
Order Unit, 111
Sales Unit, 130
Variance, 318, 522, 545, 546, 548, 553
Location, 529
Percentage, 533
Positive, 560
Types, 545
Within tolerance limit, 545
Variant Configuration, 39

VAT, 194
Account, 200
Account group, 75, 218
Acknowledgement, 391
Address, 351
Batch number, 241
Confirmation, 390
Evaluation, 314, 316, 318, 320, 324
Name, 190, 196
New, 302
Number ranges, 282, 284
Numbers, 189, 198–200, 218, 289, 308
One-time, 295, 298
Partner code, 217
Purchasing data, 209
Recipient type, 202
Return material to, 469, 487
Selection, 351
Sole, 189
Vendor Declaration Status, 119
Vendor Evaluation, 114
Vendor Master, 65, 69, 70, 85, 189, 190, 192, 194, 203, 205, 218, 220, 226, 281, 282, 284, 287–290, 292, 295, 296, 298, 617
Purchasing information, 209
Record, 70, 71, 202, 204, 285, 286, 290–292, 295, 542, 617
Renumber, 203
Vendor number, 74
Range, 74
Vendor Sub-Range (VSR), 214, 225, 281, 295
Verification, 195
Level, 196
Version assigned automatically, 613
Version number, 245, 613
Vertex, 191, 194
Volume Rebate Group, 133
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W

Warehouse, 43, 52, 55–57, 144, 151–154, 238, 495, 499, 509, 511, 521, 522, 565
  Number, 267
  Section, 522
  Stock, 432
Warehouse Management (WM), 40, 52, 55, 144, 145, 149, 151, 152, 248
  Movement type, 151
  Unit of measure, 150
WBS element, 616
Weighted moving average model, 455
Weighting Group, 124
Weighting key, 315
Wholesaler, 308
Withdrawal, 467
Withholding tax, 199, 202
Women-owned business, 366
Work
  Center, 493
  In process, 559
  Scheduling, 238, 273
Workflow, 41
Working capital, 559
Work Scheduling, 89, 124

Y

Yearly inventory, 521, 534