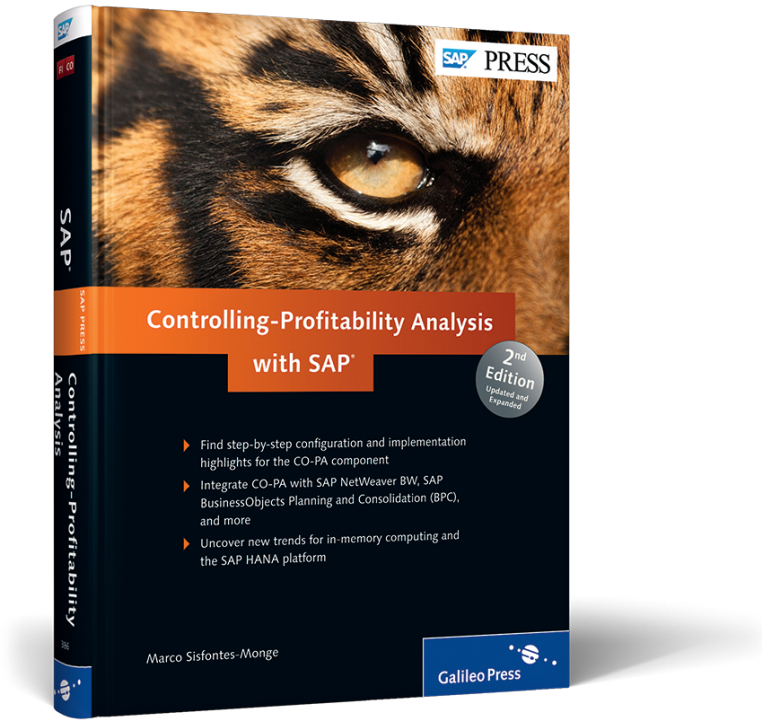
Marco Sisfontes-Monge

Controlling-Profitability Analysis with SAP®



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Contents at a Glance

1	Introduction and Overview	19
2	Basics of Profitability Analysis	27
3	Introducing CO-PA with SAP	39
4	Configuring Costing-Based CO-PA	83
5	Master Data in CO-PA	149
6	Introduction to CO-PA Planning	215
7	CO-PA Planning: Configuration	261
8	Flows of Actual Values: Transferring Actual Data into CO-PA	319
9	CO-PA Reporting: Basics	363
10	CO-PA Reporting: Configuration	391
11	Working with Account-Based CO-PA	435
12	Tips and Tricks with CO-PA	459
13	Enhancing CO-PA with SAP BusinessObjects Tools	479
14	Concluding Remarks	529

Contents

Acknowledgments 15
Preface 17

1 Introduction and Overview 19

1.1 The Purpose of This Book 21
1.2 How This Book Is Organized 23
1.3 Summary 25

2 Basics of Profitability Analysis 27

2.1 Fundamental Principles 27
2.2 Profitability Analysis as Multidimensional Analysis 29
2.3 The Profitability Analysis Process 31
2.4 Break-Even Analysis 33
2.4.1 Revenues, Fixed and Variable Costs 33
2.4.2 Sunken Costs 34
2.5 Cost Classifications 34
2.5.1 Costs Based on Their Function 35
2.5.2 Costs Based on Activity 35
2.5.3 Costs Depending on When They're Charged Against Revenues 35
2.5.4 Costs Depending on the Authority 36
2.5.5 Costs Based on Their Importance to Decision Making 36
2.6 Summary 37

3 Introducing CO-PA with SAP 39

3.1 General Overview of CO-PA 39
3.1.1 OLTP 40
3.1.2 OLAP 40
3.1.3 Linking OLTP and OLAP 41
3.1.4 SAP ERP ECC 6.0—Specific Recommendations 42
3.2 The SAP Profitability Model 43
3.3 Components of CO-PA 47
3.3.1 Accessing the IMG 49

3.3.2 Profitability Analysis Menu Items 49
3.3.3 Master Data 52
3.3.4 Planning 53
3.3.5 Flows of Actual Values 54
3.3.6 Information System 56
3.3.7 Tools 57
3.4 Working with SAP Operating Concern Templates 58
3.4.1 The Quickstart S_GO Operating Concern Template 59
3.4.2 Customizing 61
3.4.3 Application Examples: Prepare Application Examples 75
3.4.4 Application Examples: Perform Application Examples 76
3.4.5 Tools 78
3.5 Manually Activating an Operating Concern and Setting It as Current 78
3.6 Summary 81

4 Configuring Costing-Based CO-PA 83

4.1 General CO-PA Overview 83
4.2 Costing-Based CO-PA versus Account-Based CO-PA 85
4.3 Creating Characteristics and Value Fields 88
4.4 Maintaining an Operating Concern 96
4.4.1 Accessing and Creating Operating Concerns 96
4.4.2 Creating User-Defined Value Fields and Characteristics Within an Operating Concern 101
4.4.3 Specifying the Operating Concern Currency 103
4.5 Defining Profitability Segments and CO-PA Exceptions 104
4.5.1 Profitability Segments Overview 104
4.5.2 Exceptions Overview 105
4.5.3 Automatically Excluded Characteristics 105
4.5.4 Defining Profitability Segment Characteristics 106
4.5.5 Creating Exceptions 107
4.5.6 Exception Recommendations 110
4.6 Operating Concern Attributes Tab 111
4.7 Assigning a Controlling Area to an Operating Concern 114
4.7.1 Reviewing Controlling Area Components and Verifying the Existence of Operating Concerns 114
4.7.2 Assigning a Company Code to a Controlling Area 117

4.8 Activating CO-PA in R/3 or SAP ERP ECC 6.0 121
4.8.1 Checking the Current Profitability Analysis Activation Status 121
4.8.2 Performing the Activation 122
4.8.3 Verifying the Activation 125
4.9 CO-PA: Additional Functionalities 126
4.9.1 Import Operating Concern 128
4.9.2 Copy Operating Concern 129
4.9.3 Copy Specific Objects 130
4.10 Performing CO-PA Transports 132
4.10.1 Automatic Transport or Manual Transport 135
4.10.2 Client-Specific and Cross-Client Settings 136
4.10.3 Transporting Translated Settings 137
4.10.4 Transporting CO-PA Assessment Cycles 139
4.10.5 Transporting CO-PA Layouts 142
4.10.6 Transporting Planning Levels 145
4.11 Summary 146

5 Master Data in CO-PA 149

5.1 Components of Master Data Menus in CO-PA 149
5.2 Maintaining Characteristic Values 151
5.2.1 Define Characteristics Hierarchy 153
5.2.2 Derivation, Derivation Tables, and Rules Overview 159
5.2.3 Creating Characteristic Derivations and Derivation Rules 170
5.2.4 Valuation in CO-PA 186
5.3 Working with Valuation Methods 189
5.3.1 Working with Material Cost Estimates 191
5.3.2 Working with Conditions and Costing Sheets 197
5.3.3 Assigning Condition Types to CO-PA Value Fields 205
5.4 Valuation Strategies 207
5.5 Summary 213

6 Introduction to CO-PA Planning 215

6.1 Overview 215
6.2 The Framework of Corporate Planning: Sales and Profit Planning in CO-PA 218
6.3 Planning with CO-PA or SAP NetWeaver BI 221

6.4 A First Look at the CO-PA Planning Framework 224
6.5 Number Ranges for Planning Data 229
6.6 Maintaining Versions 230
6.7 Planning with the CO-PA Planning Framework 232
6.7.1 Planning Levels 233
6.7.2 Planning Package 234
6.7.3 Working with Planning Methods, Parameter Sets, and Planning Layouts 237
6.7.4 Planning Variables 245
6.8 The Report Painter and CO-PA Planning Layouts 249
6.9 Planning Profiles 254
6.10 Summary 260

7 CO-PA Planning: Configuration 261

7.1 Basic Planning Methods in the CO-PA Planning Framework 261
7.1.1 Enter Planning Data 262
7.1.2 Display Planning Data 262
7.1.3 Copy 263
7.1.4 Forecast 267
7.1.5 Valuation 276
7.1.6 Revaluation 276
7.1.7 Ratios 280
7.1.8 Delete 291
7.2 Planning Sequences 293
7.3 Configuring CO-PA Assessments Cycles 295
7.3.1 Configuring Allocations and Assessment Cycles 298
7.3.2 Creating a CO-PA Assessment Cycle 304
7.4 Top-Down Distribution 311
7.5 Summary 316

8 Flows of Actual Values: Transferring Actual Data into CO-PA 319

8.1 Overview 320
8.2 General Review of the CO-PA Flows of Actual Values Menu 322
8.3 Transfer of Incoming Sales Orders 324
8.3.1 Activating the Transfer of Incoming Sales Orders 328

8.3.2 Correct Errors in Sales Orders 331
8.3.3 Post Existing Sales Orders to CO-PA 334
8.4 Transfer of Billing Documents 338
8.5 Order and Project Settlement 341
8.5.1 Define a PA Transfer Structure for Settlement 342
8.5.2 Assign a PA Transfer Structure to a Settlement Profile 344
8.6 Direct Posting from FI/MM 350
8.6.1 Maintain PA Transfer Structure for Direct Postings 351
8.6.2 Automatic Account Assignment 355
8.7 Settlement of Production Variances 358
8.8 Transfer of Overhead 360
8.9 Summary 362

9 CO-PA Reporting: Basics 363

9.1 CO-PA Reporting Scenarios 364
9.2 Working with Reports in CO-PA 367
9.2.1 Report Types 368
9.2.2 Creating a Basic Report 369
9.2.3 Creating Reports Based on Line Items 380
9.3 Working with Forms 384
9.4 Summary 390

10 CO-PA Reporting: Configuration 391

10.1 Predefining Headers and Footers 391
10.1.1 Frames 393
10.1.2 General Variables 395
10.1.3 Selection Parameters 397
10.1.4 Footers 399
10.2 Defining Variables in Reports 400
10.3 CO-PA Reporting: Best Practices 409
10.3.1 Creating Frozen Reports 411
10.3.2 Key Figure Schemes 421
10.3.3 Improving Performance in Reports and Forms Using Summarization Levels 431
10.4 Summary 434

11 Working with Account-Based CO-PA 435

11.1 Differences between Costing-Based and Account-Based CO-PA 435
11.1.1 Defining Cost Elements for CO-PA 436
11.1.2 Changing the Operating Concern from Costing-Based to Account-Based CO-PA 439
11.1.3 Controlling Areas and Account-Based CO-PA 439
11.1.4 Currencies and Account-Based CO-PA 440
11.1.5 Data Structures and Data Retention 440
11.1.6 Characteristic Derivation and Valuation 441
11.1.7 Actual Data Flow and Data Transfer 441
11.1.8 Profitability Analysis Reports 442
11.1.9 Assessment of Cost Center Costs 443
11.1.10 Order and Project Settlement 443
11.1.11 Internal Activity Allocation 443
11.1.12 Work in Process (WIP) and Results Analysis (RA) 444
11.1.13 Conclusion 455
11.2 Sales and Profit Planning 456
11.3 External Data Transfer 456
11.4 Summary 456

12 Tips and Tricks with CO-PA 459

12.1 Integrate Planning Layouts with Microsoft Excel 459
12.2 Working with Summarization Levels 462
12.3 Performing Report Splitting 469
12.4 Working with the Report-Report Interface (RRI) 471
12.5 Final Tips 476
12.6 Summary 477

13 Enhancing CO-PA with SAP BusinessObjects Tools 479

13.1 CO-PA Integration with SAP Business Analytics 480
13.1.1 Existing Technologies in the Business Analytics Suite 480
13.1.2 SAP BusinessObjects Tools—Activating Pre-Delivered CO-PA Functionality Available in SAP NetWeaver Business Warehouse 483
13.1.3 What Tools Should I Use? 488
13.2 SAP BusinessObjects Integration with CO-PA Structures 489

13.3 Comparing SAP BusinessObjects Planning and Consolidation (BPC) and CO-PA 492
13.3.1 Deciding if SAP BPC is Right for You 494
13.3.2 General Overview of the SAP BPC Extraction and Upload Process 500
13.4 SAP High Performance Analytic Appliance (HANA) and In-Memory Computing 511
13.4.1 Capabilities Overview 512
13.4.2 SAP HANA Architecture 515
13.4.3 A New Platform to Support a Variety of Tools 518
13.4.4 A Quick Scenario: CO-PA and SAP HANA 520
13.5 Summary 526

14 Concluding Remarks 529

Appendices 533

A Glossary 535
B Bibliography 539
C The Author 541

Index 543

Welcome to the world of Profitability Analysis with SAP. This chapter describes the basic objectives and contents of this book, chapter by chapter.

1 Introduction and Overview

We'll start this book with a story. A long time ago, a young engineer was looking for a job right out of school. After studying hard and getting good grades, he had a job offer in hand from a worldwide technology company, to work in the process improvement division (Six Sigma). His future, highly lucrative job was simple—use the latest mathematical and software tools to improve assembly, materials costs, and anything else required to make the best product that money can buy.

The high-tech company was one of the best and biggest technology companies in the world. The human resources manager who interviewed the young engineer assured rapid growth within the company, a close working relationship with the production manager, and that he was the final candidate after many interview rounds. Everything sounded like a dream, and the best part was that a close friend of his was working at the same company and could help him with his training.

Before making a decision, the young engineer also requested a tour of the company to have a look at the systems and processes. He saw the different production lines, packaging, and robotic and manual assemblies scheduled to work 24 hours a day, 7 days a week. One department team had saved over 1.4 million USD improving material usage and flow, making it the most profitable and productive center for the entire corporation, worldwide. Highly impressed with what he saw, and knowing that the name of the company by itself was a boost to his career, the young engineer considered taking the position right away. What more could a young gun want than to join a well-known and profitable company?

However, before accepting the job, the young engineer did one more thing. He went online and checked the company's performance on the New York Stock

Exchange, and what he found was disturbing. The overall corporation inventory turnover was excessively low in comparison with that of the industry, the operating profit was in the red in the last two quarters in comparison to competitors, the yearly demand forecasts were cut in half one week before, and the stock price had gone down more than 30% in less than two months prior to his investigation.

To make things worse, an Asian invention that had been disclosed two weeks before was negatively affecting the demand for the company's main product, and that completely changed the way new technology was provided to the consumer. After reading several news reports about this, the young engineer realized that this invention was threatening almost 40% of the company's product line because it affected the main components of the company's final product. This analysis took a little while, but it was enough to make the young engineer think twice about taking the job and to call the following Monday and kindly decline the offer. He instead decided to join a consulting firm using software that he had never heard of before.

The next month, the young engineer received a call from his friend who had worked at the company, to let him know that he, along with nearly 70% of the workforce of the facility, had been laid off (including the HR manager who had interviewed him). Only one person, the production manager, was left in the department where he was supposed to work. The high-tech equipment was sold as scrap to junk yards or shipped overseas for adaptation to new technology for use in another country. Four additional facilities and research centers around the globe were closed.

After this reality check, the young engineer completely understood that there is more to making a company profitable than massive production, the best technology, and the best qualified individuals. At this point, nobody was interested in the best facility in the world, with the best financial indicators just one month ago, and with the best and most qualified labor force of a technology that was now obsolete. What the young engineer also realized was that profitability, growth, and financial performance were highly interrelated.

Many years have passed since this close encounter with a potentially bitter experience, but from that day forward, and before appearing in front of any client, the engineer always makes sure to completely understand a company's situation—its financials, ethics, shareholder and clients' opinions, and the latest financial news, in order to have a clear picture of the situations he will face. In addition, these

analyses can play an important role in deciding whether to ultimately take on a project, regardless of what a company's reputation is and how wonderful of a place it seems to be.

Hopefully, this short story has drawn your attention to some considerations behind profitability analysis and the vision toward the development and implementation of a profitability system. Profitability analysis requires not only financial transactions that measure a company's success, such as revenues or sales, but also strategic decisions that make the products or services of a company attractive in the marketplace to satisfy the changing demands of customers and keep up with the competition.

1.1 The Purpose of This Book

It is a pleasure to once again be able to partner with SAP PRESS to provide enhancements to the first edition of this publication (first released in 2007) and to provide additional content on the demanding world of SAP Finance.

In this edition, we've worked hard to provide more comprehensive coverage on the following topics:

1. Assessment and distribution in order to support the CO-PA planning process.
2. Expanded coverage on the process of transferring data from the Sales and Distribution component, and validation procedures available within SAP ECC to guarantee that the data was transferred without errors.
3. Moving billing documents into CO-PA using specific criteria to guarantee that the correct information is transferred. We also explore the prerequisites required to perform the transfer.
4. Orders and WBS elements settlements to profitability segments.
5. Greater detail is provided on the theory and background of the Order Manager and settlement of WBS elements to profitability segments.
6. We've revised our discussion on how to make direct postings to the Financial Accounting (FI) and Materials Management (MM) components to better understand the relationship between assignment lines and value fields in SAP CO-PA.
7. We've included a completely new chapter that describes the relationship between SAP CO-PA, SAP NetWeaver BW Business Content, and SAP Business-

Objects, including a brief overview of the functionality of SAP BusinessObjects Planning and Consolidation (SAP BPC). Also included in this chapter is a quick overview of SAP HANA and in-memory computing as part of the new enhancements created by SAP to improve system performance and reduce processing time in implementations with large data volumes.

This book will clarify functional and/or technical questions related to implementing CO-PA in your SAP system that could be followed by any beginner, intermediate, or advanced user. This book is not meant to make you a consultant and/or world expert, but to give you a quick start and reference guide of design, structures, functionality, terminology, procedures, and an overall understanding of the role of SAP CO-PA in the SAP ECC environment.

Also, because CO-PA can be considered an integrator within the SAP Controlling (CO) component, a certain minimum level of expertise in other SAP components is required to fully understand CO-PA's potential. SAP Controlling Profitability Analysis (CO-PA) interacts with nearly all the components of SAP ECC. This means that when you need to transfer data from one particular component (say, FI, Sales and Distribution (SD), or MM), a functional and technical knowledge of that specific component is also required so the information from source to target (CO-PA) is configured, transferred, and validated accordingly.

The same logic applies for SAP NetWeaver Business Warehouse (BW) projects when extracting data from SAP ECC into the SAP NetWeaver BW reporting environment because the project requires an understanding of how the data needs to be transferred, the specifics of the component, and the relationships for each SAP ECC field required to be transferred with the extractor and destination fields in the target. For example, when extracting data from the SAP General Ledger, SAP provides a number of pre-defined extractors for SAP NetWeaver BW such as 0FI_GL_10 and 0FI_GL14, and SAP FI consultants are often required to provide the confirmation that the information is correct. The same situation occurs with SAP CO-PA: when performing transfers from MM, SD, FI, and other components, it's necessary to understand the component where the data resides to confirm and validate the required structures to configure in SAP CO-PA to receive the data accordingly.

Note

We recommend taking advantage of other resources when working with other SAP components. For some ideas, take a look at the following resources, available at *www.sap-press.com*:

- *Actual Costing with the SAP Material Ledger*
- *Optimizing Sales and Distribution in SAP ERP—Functionality and Configuration*
- *Financial Reporting with SAP*
- *The SAP General Ledger*
- *SAP BusinessObjects Planning and Consolidation* (2nd Edition)
- *SAP Financials Expert* magazine: *www.financialsexpertonline.com*

This may seem like a lot of information at once for beginners, but with a little extra work, it's possible to master the basic elements required for a successful CO-PA implementation or to just explore the capabilities of the system. In this book, please note that not every element of the component will be explained. Rather, we'll explore the most important functionalities.

The purpose of this book is to explain CO-PA configuration and techniques with a technical, theoretical, but also hands-on approach. CO-PA is a widely used component in the industry that can simplify the data extraction processes and fulfill reporting requirements. It supports the implementation of a revenue, cost, and expense analysis toward the calculation of measures such as net revenue, contribution margins, cost of goods sold, costs of goods manufactured, and operating profit.

Note

The activities performed or explained in this book use the standard SAP IMG help environment. Therefore, if you get lost or want more information, you can quickly complement your learning process using IMG Help information. Additional places to look for help include *http://help.sap.com* and *http://sdn.sap.com*.

1.2 How This Book Is Organized

As we mentioned, this book has been structured following the IMG CO-PA menus. However, depending on the level of implementation of CO-PA within the SAP system in your organization, you might not need to use all of the CO-PA submenus. Also, because costing-based CO-PA is the more complex implementation model, it has been given priority in the discussion and revision of the associated elements; however, most of the functionalities used with this model can be applied with account-based CO-PA as well. For this reason, we can say that if you

implement costing-based CO-PA you're getting account-based CO-PA for free. Here's a quick overview of what you'll do and learn while reading this book:

- Gain a basic understanding of CO-PA concepts in **Chapter 2**. This should be useful, especially for beginners who require additional clarification of concepts behind Profitability Analysis with SAP.
- Work with Business Content and get an overview of the functionalities and configuration components of CO-PA in **Chapter 3**.
- Explore the configuration settings to define the basic CO-PA components in **Chapters 4 and 5**.
- Configure a planning application using the CO-PA planning framework in **Chapters 6 and 7**.
- Get an overview of how to transfer actual data from other SAP components such as Financials (FI), Sales and Distribution (SD), Materials Management (MM); projects; WBS elements; and others in **Chapter 8**.
- Create reports within the CO-PA environment using the CO-PA Information System menu in **Chapters 9 and 10**.
- Review briefly the general configuration modifications required to change from a CO-PA costing-based analysis to an account-based analysis in **Chapter 11**.
- Review some useful tips and tricks in **Chapter 12** to improve your reporting and system performance.
- Receive a quick overview in **Chapter 13** of the SAP BusinessObjects suite and integration points with SAP NetWeaver BW, a quick overview of the main SAP BusinessObjects tools along with an extensive explanation on SAP BPC, a tool similar to SAP CO-PA that exists in the SAP NetWeaver Business Intelligence (BI) environment. Finally, SAP HANA and in-memory computing is evaluated as another component part of the new updates for high performance and reporting in SAP CO-PA and SAP ECC.
- Review what you've learned in this book in **Chapter 14**.

Each chapter of the book has been written independently, meaning that you should be able to work with it without the need to move back and forth between chapters. However, there are references between chapters to complement your learning, in case an important concept requires additional clarification that

depends on concepts discussed in other chapters. In order to speed up the learning process, SAP-delivered Business Content (CO-PA templates) is used and populated with actual and plan data to get you started with CO-PA tools in no time.

Note that it is not our intention to provide a complete overview of all of the capabilities and configuration steps required to use CO-PA. This component is quite sophisticated, and some of the functions that CO-PA performs are very difficult to replicate with alternative components such as SAP NetWeaver BW, BI, SAP NetWeaver BI Integrated Planning (IP), Business Planning and Simulation (BPS), and others. Only the most significant components are reviewed in this book; however, readers are given pointers to additional documentation, components, transaction codes, and procedures that can support the functionalities reviewed. So, without further delay, welcome to the CO-PA environment!

1.3 Summary

The CO-PA component of your SAP system's CO component is a powerful application with extensive functionality. Although you might not require every single component that we'll review, by reading this book you'll get a broad overview of almost all of the menus available in CO-PA. This will allow you to quickly identify what functionalities you can use and which ones you won't need, which you should make sure to do.

Looking ahead, in Chapter 2 we'll briefly review some general and basic components to consider before initiating your work in CO-PA, as well as the financial and accounting terms to expect during your implementation. It's important to clearly understand the difference, for example, between variable and fixed costs, and what types of documents are available inside the SAP system to accomplish the consolidation.

Chapter 2 will also briefly provide an overview of another key element related to Profitability Analysis in the enterprise: Economic Value Added (EVA). This indicator is often used as the final financial number that many corporate financial officers (CFOs) require that your CO-PA reports deliver.

Costing-based CO-PA is considered the most intensive and common application of Profitability Analysis. However, when you configure costing-based CO-PA, you're also creating an account-based environment at no additional charge.

4 Configuring Costing-Based CO-PA

The most popular type of Profitability Analysis is costing-based CO-PA. It's easy to configure and provides a reasonable level of detail without having to worry about account or cost elements in the system, and it gives meaningful information to decision makers. In this chapter, we'll explore the creation and configuration of a CO-PA costing-based operating concern in detail, as well as the major options required to set it up. In addition, we'll activate all of the account-based CO-PA options along the way so you can review them when we explore account-based CO-PA in more detail in Chapter 11.

4.1 General CO-PA Overview

In general, CO-PA is a component that allows the analysis and combination of different types of documents, such as:

- Invoices from the SD component
- Direct journal entries from FI
- Cost center assessments from CO
- Settlement of production ordersfrom Production Planning (PP)
- Quantity flows from Materials Management (MM)
- Work Breakdown Structure (WBS) elements from Project System (PS), among others

All of this documentation carries information related to customers, billing information, dates, products, variances, cost allocations, and hierarchies, and allows the creation of up to 30 additional user-defined characteristics and up to 120

additional value fields (key figures) to complement the different analyses. Moreover, the creation of CO-PA documents for each line item, sales order, cost assessment, and production order allows creating profitability segments or market segments that identify the data with specific characteristics.

Note

Profitability segments allow CO-PA to perform transactions between controlling objects, such as cost centers or production orders, and the profitability segments. However, once the values have been allocated inside CO-PA, the revenue and cost elements require special processing procedures to be allocated outside this environment.

As you can see in Figure 4.1, the role of CO-PA is to consolidate and access information coming from different areas of the SAP ERP ECC 6.0 system, based on the documents previously discussed. The value flow shown in Figure 4.1 describes the availability of key financial data coming from either Financial Accounting (FI) or Controlling (CO) components, which are the two key elements for any posting inside an SAP system. At the end you can see what management wants to visualize in terms of how each transaction affects financials, while thinking ahead to the balance sheet and the income statement reports.

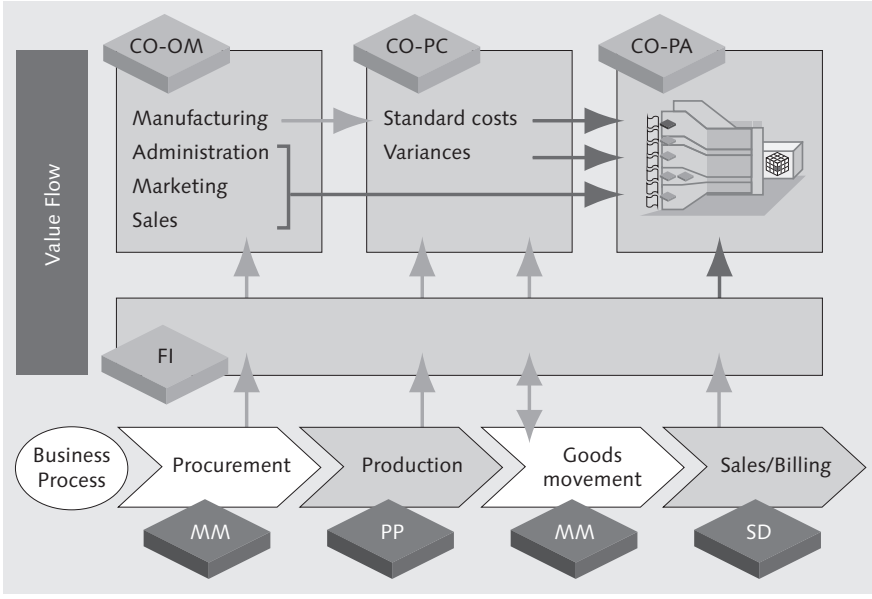


Figure 4.1 CO-PA Value Flow Business Process Model

Note

An operating concern could be understood by SAP NetWeaver BW users as the SAP ERP ECC 6.0 equivalent of an SAP BW InfoCube. Thus, the main function of a SAP CO-PA operating concern is not only storing data, but also creating a door into the SAP ECC tables using a set of pre-defined structures and/or processes that transfer the data from SAP ECC into SAP CO-PA.

4.2 Costing-Based CO-PA versus Account-Based CO-PA

Part of the decisions required to work with CO-PA is how to configure and control how your data flows, which is done using one of two models: costing-based or account-based. Each model allows posting information at different stages of the sales cycle, and the type of information displayed differs slightly. In simple terms, the two basic CO-PA approaches are:

- **Costing-based**: Uses value fields and does not use general ledger (G/L) accounts to perform any type of reconciliation with FI or cost-element accounting. Advantages of costing-based CO-PA include:
  - Contribution margin can be calculated, automatically accessing the standard cost estimates of the product valuation approaches.
  - Variance categories can be mapped to value fields.
  - Flexible reporting capabilities are available for analysis of several characteristics.
  - Standard cost estimate is used to show a split by cost component of the bills information extracted from the product costing component.
- **Account-based**: Is directly related to G/L account posting and for this reason makes it more exact and requires summarization levels to facilitate data consolidation. The advantage of account-based Profitability Analysis is that it is permanently reconciled with financial accounting. However, the fact that it uses accounts to get values makes it less powerful. No contribution margin planning can be done because it cannot access the standard cost estimate in account-based CO-PA and no variance analysis is readily available.

The main difference between the two CO-PA methods, however, is how and when postings are performed inside the system. Table 4.1 provides a description

of these specific differences and how their transactions are posted into the financial and controlling systems, dealing with three major issues:

1. Passing an invoice to accounting updates the revenue, discount, freight, and cost of sales value fields.
2. Settling production order variance updates the variance fields that are related to the cost of goods sold (COGS) cost components.
3. Assessing cost center updates to the cost center variance fields.

Account-Based	Costing-Based
Invoice information and financial postings are performed at the same time when calculating the cost of sales.	Cost of sales captured at the time of invoice but the financial posting is done at the time of delivery, meaning there is a time lag between these two transactions.
The cost of sales is no longer exactly matched with the revenue that is posted at the time of invoicing.	The cost component detail for variances is available for production order settlement and production cost collector hierarchy.
The details of the COGS components are not available.	Cost elements and G/L accounts are not available.
The cost of sales is not captured when invoicing a customer because it was already done when doing the financial entry.	Reconciliation using value fields and high-level characteristics (such as region, business area, and others).
Revenue is posted into CO-PA during billing.	The postings are recorded in a CO-PA document.
Production variances (order settlement and cost collector hierarchy) are not available, but variance is captured via one cost element.	Costing-based CO-PA uses a cost-of-sales approach, where the standard cost of sales is not recognized until a product is sold.
It is more detailed than costing-based because it discloses the different G/L accounts and cost elements.	
The postings are recorded in a standard controlling document.	

Table 4.1 Comparison between Account-Based and Costing-Based CO-PA

Note

If both costing-based and account-based CO-PA are activated, when the settlement to CO-PA takes place, a posting is made to both types of CO-PA. The account-based CO-PA posting is recorded in a standard controlling document and the costing-based CO-PA posting is recorded in a CO-PA document.

If R/3 or SAP ERP ECC 6.0 don't give you the type of information that you want, you can use SAP NetWeaver Business Intelligence (BI). If you want to customize something beyond that, remember the following when using ABAP or another programming language:

- Customization affects system performance, and future system upgrades directly affect it.
- Modifications to the standard system functionalities centralize power in the hands of a few people who might not be around all of the time.
- The lack of documentation generally available during and after a major system customization provides more room for the people who built the system to, under negative circumstances, possibly halt the system.
- Customizations mostly add costs rather than value; consultants love to bill you for a new system and the periodic maintenance, but the SAP system has enough tools to avoid major customizations. Limit yourself to what the system provides and you'll find that you are able to access the information that you need without major customizations.
- Limit the use of ABAP for the following:
  - Major "your boat is sinking" type of scenarios in SAP and other GUI components.
  - Simple queries using an ABAP query with table joins or direct access.
  - Interacting in the SAP NetWeaver BI 7.0 environment on the web.

  Do not use ABAP for:
  - Major customizations that modify default SAP objects.
  - Creating applications that can be easily delivered with alternative methods, such as FOX code and Formula Editor (available in SAP NetWeaver BI 7.0 and CO-PA Report Painter).

- Try to maximize the usage of available standard SAP extractors. SAP NetWeaver BW generic data extraction can be very handy when exporting information outside SAP ERP ECC 6.0 if the capabilities of CO-PA Report Painter or CO-PA Planning are not enough.

With all these practices and tips in mind, we're now ready to start our discussion of extracting information from R/3 or SAP ERP ECC 6.0 using costing-based CO-PA.

4.3 Creating Characteristics and Value Fields

The following is a general rule in SAP Controlling:

> *Company codes are assigned to controlling areas, and controlling areas are assigned to operating concerns.*

A *controlling area* is the highest level of aggregation that covers the activities of Cost Center Accounting, Product Costing, Profitability Analysis, and Profit Center Accounting. An *operating concern* is the highest node in Profitability Analysis that limits the activities and elements that can be accessed and modified inside SAP ERP ECC 6.0 or R/3 and is limited by characteristics and value fields. Figure 4.2 provides an overview of the major components that are part of the Structures menu of the IMG (Transaction SPRO) as part of the Profitability Analysis menu. This is part of the main Profitability Analysis menu that you'll be using to create characteristics and value fields, which provide the backbone of the operating concern.

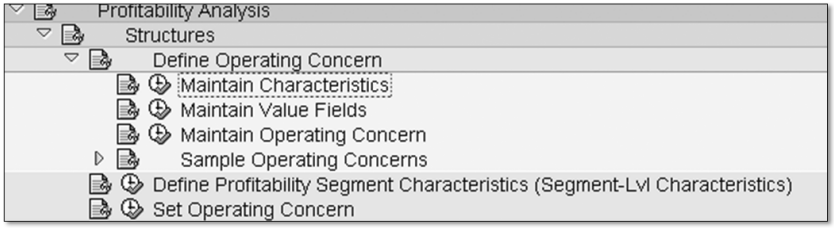


Figure 4.2 CO-PA Structures Menu

The individual configurable items include the following:

- Maintain Characteristics
  Create, modify, or change all available characteristics. Some of the CO-PA characteristics required for reconciliation usually include company code, business area, and cost element. When working with reports, additional characteristics (such as high-level material groups) may also be used or defined as user-defined elements that are part of a derivation rule based on current SAP information to derive new values.
- Maintain Value Fields
  Create, modify, or change all available value fields. You can choose to either store or extract data as amount or quantity. For example, the value *Sales* can be stored with a unit of measure such as U.S. dollars or Euros as a quantity, but *Inventory* can simply be stored as "100," regardless of unit value as an amount or vice versa.
- Maintain Operating Concern
  Create, modify, or change operating concerns. This is where you establish the link between characteristics and value fields to create your operating concern and control the information displayed in reports or planned in CO-PA.
- Define Profitability Segment Characteristics
  These elements are additional "partitions" or pieces of your operating concern and are defined via characteristics. You select which characteristics are available for the information system and later on in planning. The remaining characteristics are considered line items and won't be used to generate any type of classification inside the operating concern.
- Set Operating Concern
  Determines which operating concern is current in the system, and is affected by any operations, reports, extractions, derivations, and so on. The current operating concern carries the information defined inside the system, such as reports and planning layouts. For example, if operating concern A has report X attached, and operating concern B has report XX attached, only X or XX is available to perform the operations over the respective operating concern and the respective data. For this reason, it's important to know in which operating concern you're working, and that operating concern is current in the system until you exit the system or run this option again to change into another current operating concern.

Let's review and learn how to create the structures that define the basic behavior of the information inside CO-PA and that control the access and display of information—namely characteristics and value fields.

Characteristics

To access the characteristics definition:

1. Follow this IMG path (or use Transaction SPRO): CONTROLLING • PROFITABILITY ANALYSIS • STRUCTURES • DEFINE OPERATING CONCERN • MAINTAIN CHARACTERISTICS.
2. Double-click on the EXECUTE icon (clock with the checkmark), next to MAINTAIN CHARACTERISTICS.
3. You'll see the screen displayed in Figure 4.3. You can now click on CREATE/CHANGE, DISPLAY, or CHANGE, depending on what you want to do.

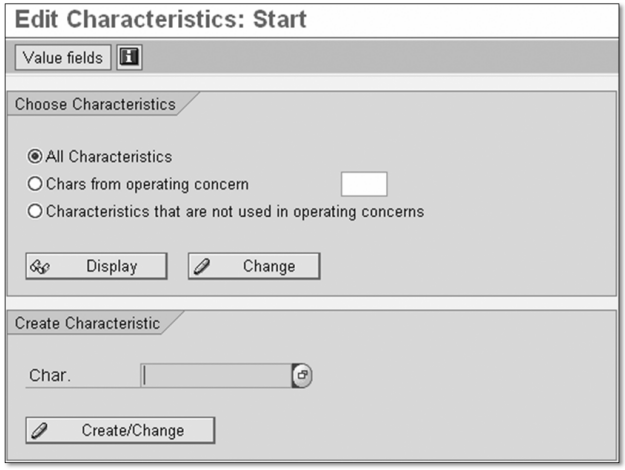


Figure 4.3 Edit Characteristics: Start Screen

4. Click on CREATE/CHANGE. The message CAUTION YOU ARE PROCESSING CROSS-CLIENT DATA STRUCTURES appears.
5. Click on the checkmark icon to accept the message.
6. Review the screen that appears, as shown in Figure 4.4. It displays all of the characteristics available in the system you can allocate to an operating concern. User-defined characteristics are displayed in white and can be modified. SAP standard characteristics extracted from specific SAP tables are grayed out

and can't be modified. For example, BONUS is an SAP default characteristic coming from the origin table MVKE, and EFORM is a user-defined characteristic.

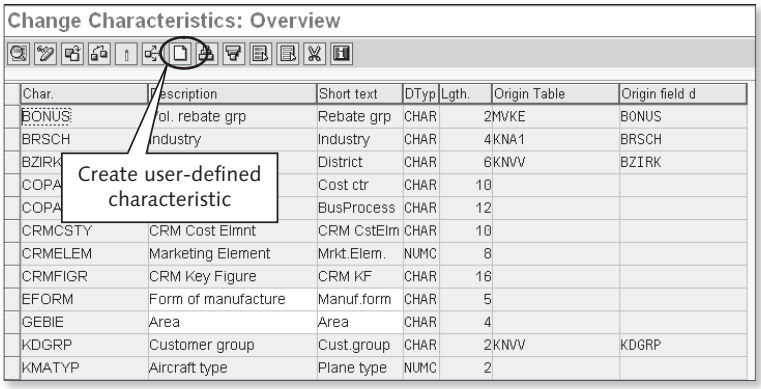


Figure 4.4 Available Characteristics in CO-PA

As discussed in the previous step, SAP default characteristics are clearly identified with their original SAP tables that store the transactional information and data fields. However, you can also create your own characteristics that you will either populate with data or use for different calculations or planning applications later on in the process. To create a user-defined characteristic, follow these steps:

1. Click on the CREATE icon located at the top of the screen shown in Figure 4.4.
2. Select the USER DEFINED radio button, as shown in Figure 4.5.

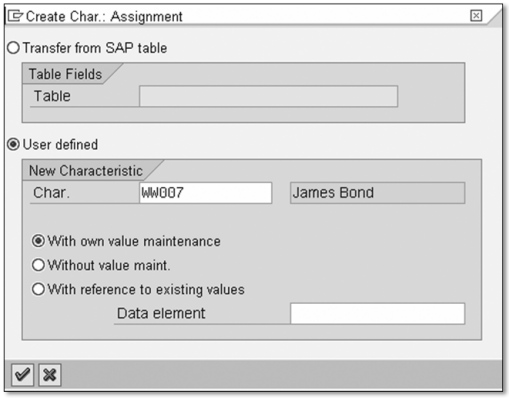


Figure 4.5 Creating a User-Defined Characteristic

3. In the New Characteristic section, configure two input boxes. The first box contains the field name or unique identifier of the characteristic and must begin with "WW," followed by a standard SAP nomenclature to make the system identify these types of characteristics. The second box contains a description. For example, in Figure 4.5, WW007 is a user-defined characteristic. Its name is identifier 007 and the description is James Bond.
4. After configuring the identifier and description, click on the checkmark icon and the screen shown in Figure 4.6 appears. The system now requires the definition of Data type/length. Specify "CHAR" to indicate that 007 is alphanumeric and specify "10" for the character length.
5. Click on the Save icon to save your changes.
6. Click on the checkmark icon to create the characteristic from scratch, and click on Yes, despite the warnings.
7. Click on Automatic, and then click on the Save icon. At the end of this process your screen will look like Figure 4.6. (The system copies the description information from the initial screen shown in Figure 4.5 into the Description and Heading boxes in the Texts section.)
8. To complete the process, click on the Activation icon, which is located at the top of the screen as shown in Figure 4.6.

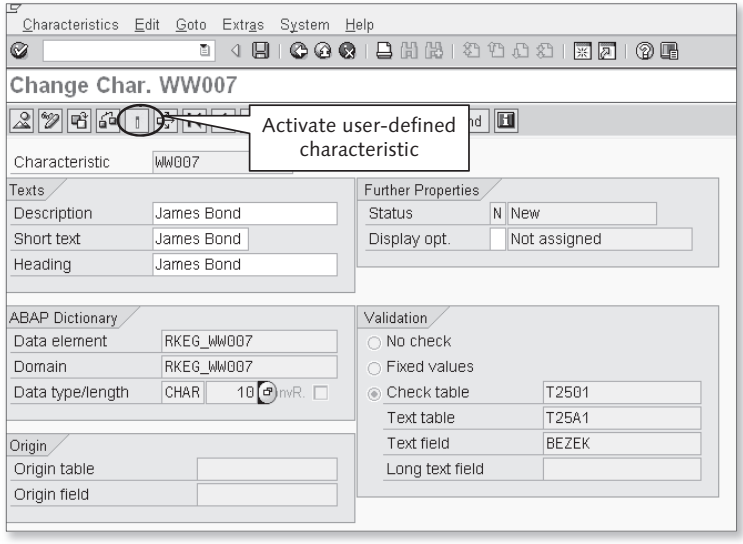


Figure 4.6 Creating a User-Defined Characteristic in CO-PA

This user-defined characteristic is now available for use by different operating concerns.

Note

When creating a user-defined characteristic, a data class can be defined to describe the data format at the user interface. If a table field, structure field, or a data element is used in an ABAP program, the data class is converted to a format used by the ABAP processor. For this reason, when a table is created inside the SAP system, the data class of a table field is converted into a data format of the database system used.

Value Fields

In simple terms, value fields do not store descriptions of data but their results. You can access the information contained in value fields in one of two ways:

- Click on the VALUE FIELDS button, shown earlier in Figure 4.3.
- Follow the IMG path PROFITABILITY ANALYSIS • STRUCTURES • DEFINE OPERATING CONCERN • MAINTAIN VALUE FIELDS.

As a result, the screen shown in Figure 4.7 appears.

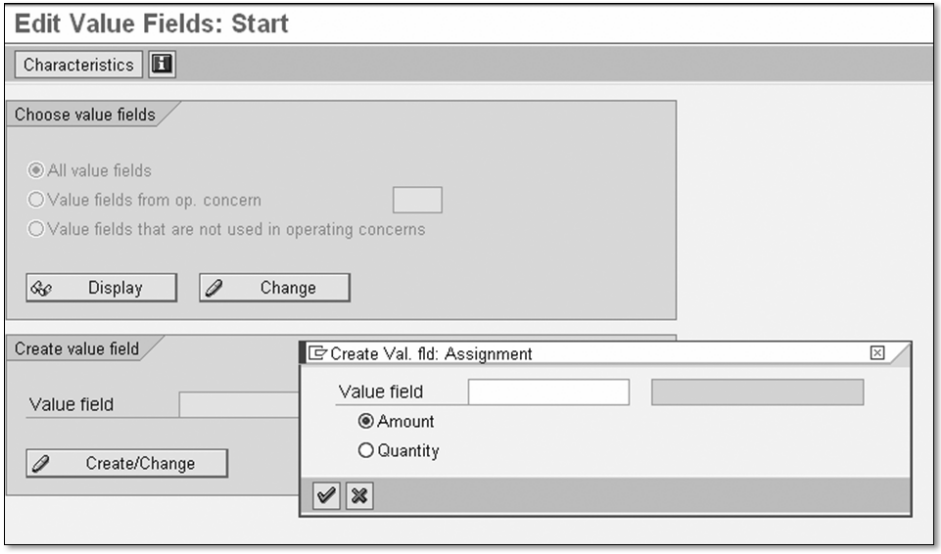


Figure 4.7 Accessing the Edit Value Fields: Start Screen

To create a new value field, follow this procedure:

1. Click on CREATE/CHANGE.
2. Click on the checkmark icon in the dialog box with the message CAUTION YOU ARE PROCESSING CROSS-CLIENT DATA STRUCTURES, and an input box called CREATE VAL. FLD: ASSIGNMENT appears, as shown in Figure 4.7.
3. Select either AMOUNT or QUANTITY, depending on your requirements. We selected AMOUNT for our example.
4. You now need to configure the technical name and a description in the two VALUE FIELD input boxes, as shown in Figure 4.7. The first input box describes the technical name that must start with "VV", followed by xxxx ("VVxxxx"). VV are the initial required letters for the system to identify this field as a value field and xxxx is the name of the value field, which must be either four or five characters long. The second input box is where you enter a description. For our example, we entered "VVTES" in the first box and "test1" in the second box.
5. Click on the checkmark icon to access the change value field screen (CHANGE VAL. FLD VVTES) as shown in Figure 4.8.

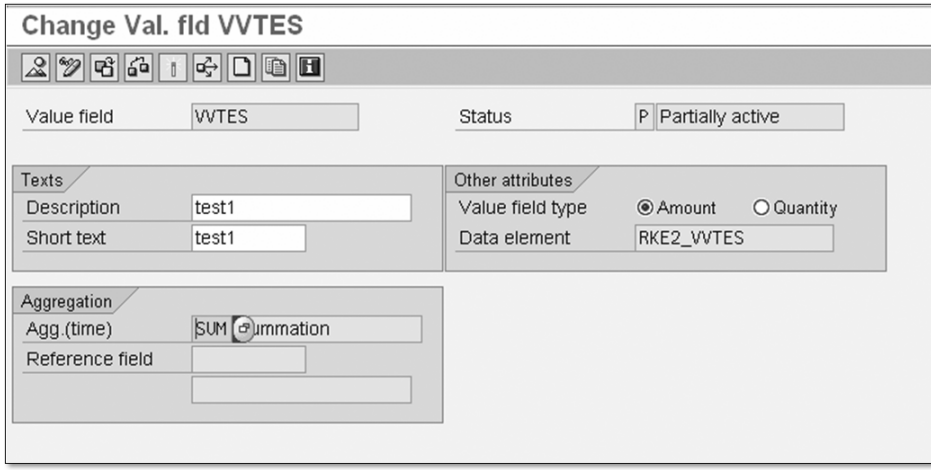


Figure 4.8 Accessing the Change Val. fld VVTES Screen

6. You can now define an aggregation method or leave Summation (SUM) as the default depending on the behavior of the value field during posting.
7. Click on SAVE.

Note

A time-based aggregation rule determines how a key figure is calculated when the reference field is a characteristic with a time dimension with three options:

- Aggregate or Average (AVG) value operation
- Summation (SUM) operation
- Last value (LAS)

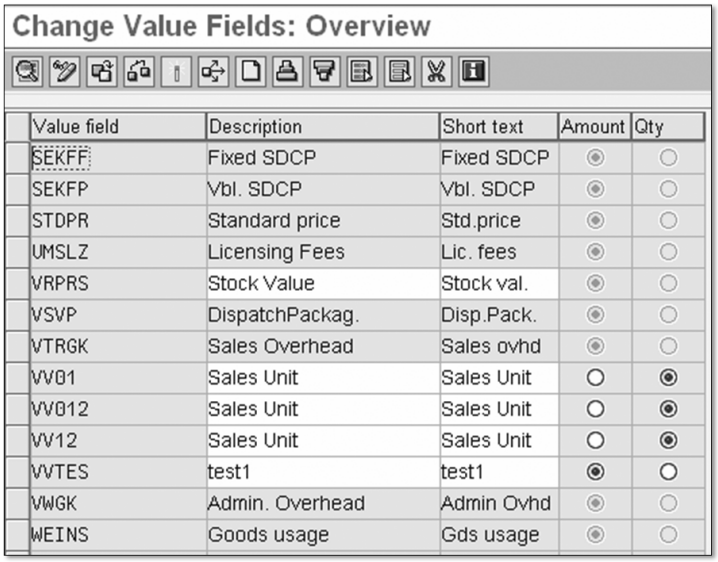
The aggregation rule selected depends on the type of value field defined and its real-life behavior. For example, REVENUE is a SUM value field because you want that to be added all of the time. Employees during a time period can be a SUM or an AVG depending on whether our calculations require total employees or average number of employees. Inventory price can be considered a LAS value field because you may only be interested in having the latest value of the price. We recommend that you review the SAP documentation to fully understand this functionality.

Tips & Tricks

The aggregation rules "Last value" and "Average" are only useful for representing statistical and noncumulative values in value fields. Also, the reference period is always the period of a fiscal year. If your data is planned in weeks, the value fields cannot use the aggregation rules AVG or LAS.

8. Create additional value fields by clicking on the CHANGE/MODIFY icon.
9. Click on NEW ENTRIES.
10. Type the technical name in the VALUE FIELD column, then provide a DESCRIPTION and SHORT TEXT. For our example, use the information for the value fields VV01, VV012, and VV12, as shown in Figure 4.9.
11. Specify for each value field whether it is an AMOUNT or a QTY. (Amount value fields generally carry information, such as currency, and quantity fields carry data with units of measure, such as kilograms or number of produced units.) Once created, the value fields, as shown in Figure 4.9, are ready for use by any operating concern.

Like with characteristics, grayed out and white boxes are used to differentiate default SAP value fields from user-defined value fields. Notice that for the default SAP value fields, the radio buttons in the AMOUNT and QTY (Quantity) columns are also grayed out, meaning you can't change them.


Change Value Fields: Overview

Value field	Description	Short text	Amount	Qty
SEKFF	Fixed SDCP	Fixed SDCP	◉	○
SEKFP	Vbl. SDCP	Vbl. SDCP	◉	○
STDPR	Standard price	Std.price	◉	○
UMSLZ	Licensing Fees	Lic. fees	◉	○
VRPRS	Stock Value	Stock val.	◉	○
VSVP	DispatchPackag.	Disp.Pack.	◉	○
VTRGK	Sales Overhead	Sales ovhd	◉	○
VV01	Sales Unit	Sales Unit	○	◉
VV012	Sales Unit	Sales Unit	○	◉
VV12	Sales Unit	Sales Unit	○	◉
VVTES	test1	test1	◉	○
VWGK	Admin. Overhead	Admin Ovhd	◉	○
WEINS	Goods usage	Gds usage	◉	○

Figure 4.9 Accessing the Change Value Fields: Overview Screen

In the next section we'll explore how to create an operating concern, using value fields and characteristics together to build a common structure that lets you extract or receive information.

Note

An exception exists to the rule that the fields of SAP-defined value fields display in gray: As shown in Figure 4.9, the value field VRPRS is an SAP-defined value field; however, it is possible to change its description and short text. Therefore, the DESCRIPTION and SHORT TEXT fields for this value field display in white.

4.4 Maintaining an Operating Concern

An SAP system requires operating concerns in CO to connect or interact with other structures inside R/3 or SAP ERP ECC 6.0 or external systems, such as SAP NetWeaver BI-IP, SAP SEM-BPS, or SAP BW-BPS.

4.4.1 Accessing and Creating Operating Concerns

To access existing and create new operating concerns, follow these steps:

1. Follow the IMG path Controlling • Profitability Analysis • Structures • Define Operating Concern • Maintain Operating Concern.
2. Click on the Execute icon to display the screen shown in Figure 4.10.

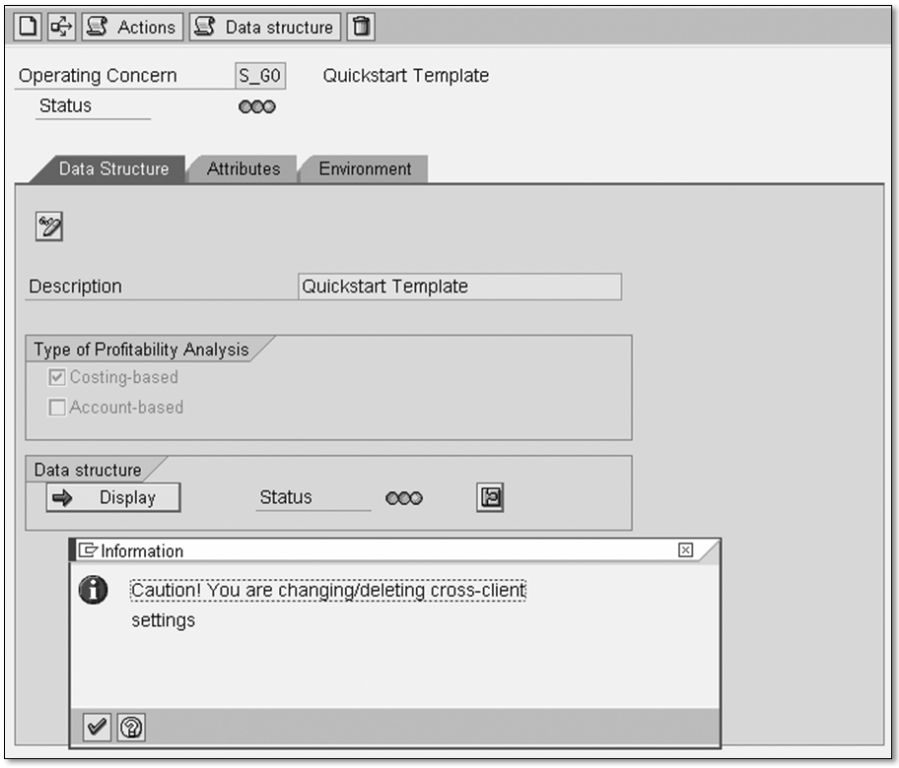


Figure 4.10 Maintain Operating Concern

3. Here you can select any operating concern available in your system. For our example, we selected the S_GO operating concern template. Notice that once you select an operating concern you can check the Status of its configuration to give you an idea if the data structures were correctly defined.
4. Review the different options available, especially those on the Data Structure and Environment tabs. Also, notice that the operating concern requires defining a type of Profitability Analysis: costing-based, account-based, or both.
5. If necessary, select the Data Structure tab shown in Figure 4.10, and click on the change/modify icon (a pencil with glasses), and the message Caution! You are changing/deleting cross-client settings will appear.

6. Click on the checkmark icon to acknowledge the message.
7. Notice that the button located at the lower bottom of the screen in the Data Structure tab has changed from Display in Figure 4.10 to Activate in Figure 4.11.

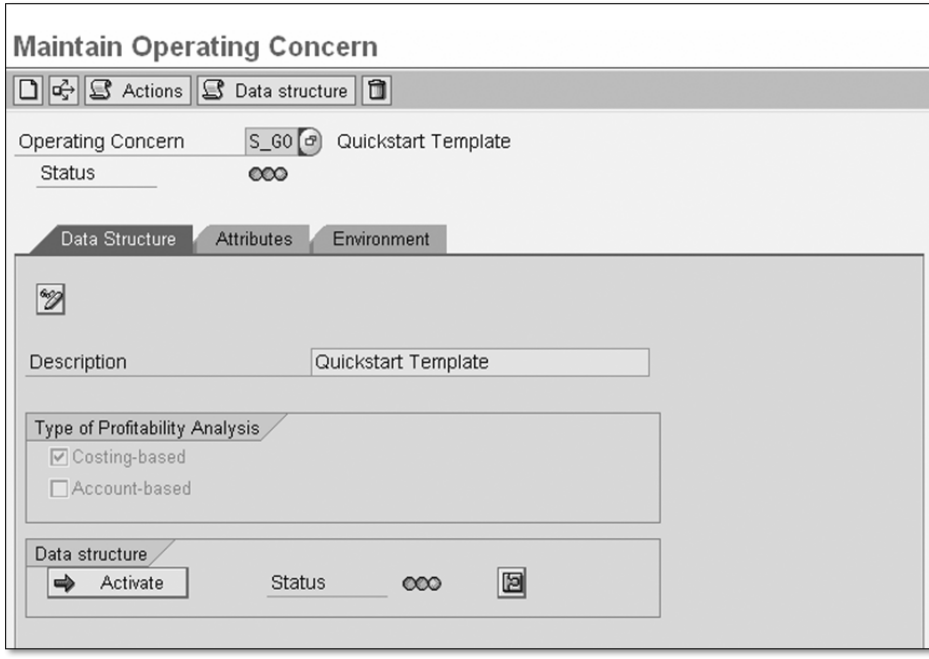


Figure 4.11 Operating Concern in Change Mode

8. Click on Activate to access the configuration of the operating concern displayed in Figure 4.12.
9. Notice that an operating concern structure contains the Chars (characteristics) and Value Fields tabs, as shown in Figure 4.12. You can see here how an operating concern is a collection of predefined objects that you want to have access to from the SAP tables or to store user-defined values. With predefined CO-PA–activated templates, such as S_GO, you're not allowed to make any modifications to the Business Content delivered with R/3. It's only possible to modify the contents of the characteristics and Value Fields tabs on a brand-new operating concern.

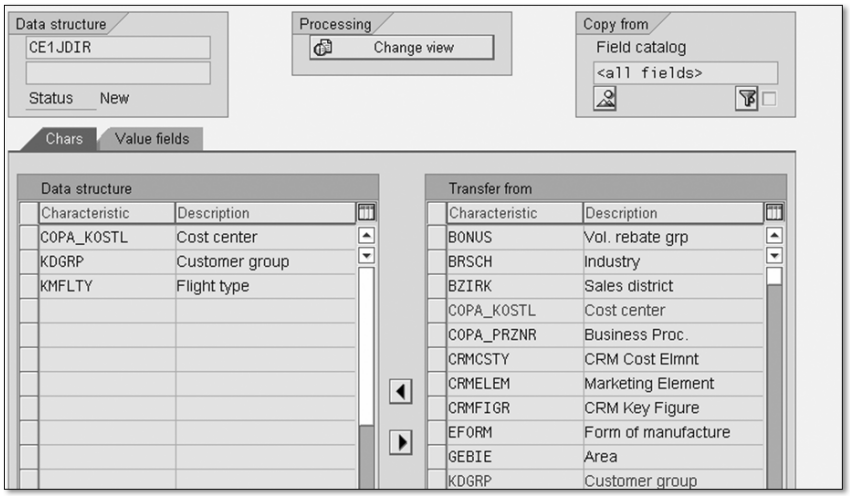


Figure 4.12 Data Structure for an Operating Concern

Now let's create an operating concern from scratch for a company called Jon Dirr Inc., a manufacturer of automotive parts, which is interested in implementing the CO-PA component using both costing-based and account-based CO-PA:

1. Return to the screen shown earlier in Figure 4.11 to start creating an operating concern.
2. Position your cursor in the Operating Concern input box and type the technical name "JDIR" in the field, as shown in Figure 4.13. In the Description field, type "Jon Dirr Inc."

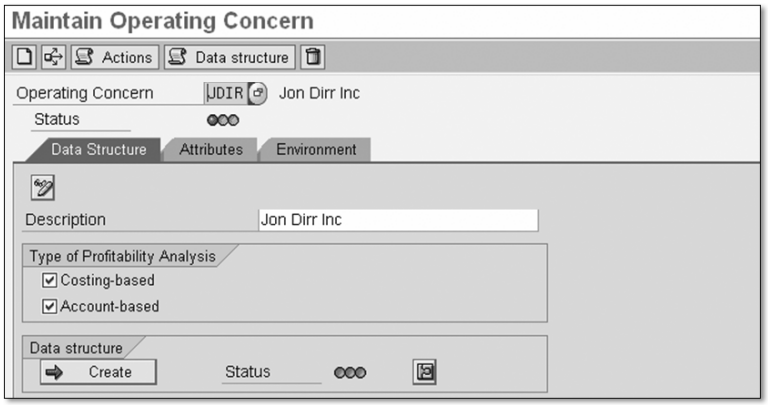


Figure 4.13 Creating a New Operating Concern

3. Select both Costing-based and Account-based checkboxes in the Type of Profitability Analysis section, which allows you to navigate between them later on in the process. We're doing this for our example because Jon Dirr Inc. does not know exactly how it generates revenue and exactly how it is profitable because the results and analysis are based on the final corporate P&L statements each quarter. While each of its plants around the world has its own SAP system, they have not yet been integrated.
4. Click on the standard Create icon (the white page icon). A screen similar to the one shown earlier in Figure 4.12 displays.
5. To include a characteristic or value field in the operating concern, select either the Chars or Value fields tab, then select a line in the Transfer from area and click on the left arrow to move it to the Data structure area.
6. To remove a value field or characteristics from the operating concern, reverse the procedure by selecting a line in the Data structure area and clicking on the right-arrow to move it to the Transfer from area.
7. When you're done, save and activate your structure using the Save and Activate icons. Once completed, a green checkmark will appear at the bottom of your screen to notify you that the update was completed successfully.

At this stage, several tables are created automatically, carrying the name of the operating concern (xxxx reflects the name of the operating concern). For example, if CE1xxxx is created from the SG operating concern, the new table name will carry the information CE1SG. The CO-PA tables generated when you save and activate the operating concern are quite important when performing reporting or extraction operations. Table 4.2 shows the most important tables for costing-based CO-PA and Table 4.3 shows the most important tables for account-based CO-PA.

Table name	Description
CE1xxxx	Actual data, costing-based CO-PA
CE2xxxx	Plan data, costing-based CO-PA
CE3xxxx	Segment level, CO-PA
CE4xxxx	Characteristics table, and also similar to dimension table in SAP NetWeaver BI

Table 4.2 Important Tables for Costing-Based CO-PA

Table name	Description
CE1xxxx_ACCT	Account assignment information, new for release R/3 4.5
K81xxxx	Summarization levels, costing-based CO-PA
TKEBL	Currency of operating concern, costing-based CO-PA
COIX_DATAReport Data	Only converted in costing-based CO-PA
TKEBZ	Exceptions for reports

Table 4.2 Important Tables for Costing-Based CO-PA (Cont.)

Table name	Description
COEJ	Actual/plan line items (by year)
COEP	Actual/plan line items
COSS	Totals records
COSP	Totals records, account-based CO-PA

Table 4.3 Important Tables for Account-Based CO-PA

4.4.2 Creating User-Defined Value Fields and Characteristics Within an Operating Concern

It is also possible to create user-defined value fields and characteristics within an operating concern. To do this:

1. Follow the menu path Profitability Analysis • Structures • Define Operating Concern • Maintain Operating Concern.
2. Select the Chars or Value Fields tab, depending on what type of component you want to create.
3. Select the Create icon (showing a white page), as shown in Figure 4.14, ❶.
4. Type the default "VV" or "WW" initial name, depending on whether it is a value field or a characteristic, and type a description ❷.
5. Click on the Save icon ❸.
6. Activate your new value field or characteristic by clicking on the Activate icon ❹.

Index

A

ABAP, 56, 87
  programs, 161, 420, 430
  report program, 472
  variant, 415
ABAP Data Dictionary, 132
ABAP Dictionary structures, 169
ABC analysis, 374
Access sequence, 201, 535
Account-based, 43
Account-based accounting, 435
Account-based CO-PA, 344, 435, 535
Account-based Profitability Analysis, 331
Accounts payable, 28
Accounts receivable, 28
Actual cost estimate, 194
Actual Data Flows, 320
Additional costs, 45
Administrative costs, 35
Affiliated companies, 365
Aggregation levels, 519
Aggregation rule, 95
Airline Route Profitability S_AL, 58
Allocation, 349, 512
  configure, 298
  types, 358
Archived data, 433
Assessment, 166, 295
Assessment cycle, 295
  configure, 298
  create, 304
Assessment element, 300
Attribute View Editor, 522
Automatic account assignment, 355
Automatic calculation of values, 206
Automatic planning functions, 227
Automatic replacement path, 401

B

Basic formula, 424
Basic report, 369
BEx, 56, 426
BI Content tab, 487
Billing data transfer, 441
Billing documents, 28, 45
  transfer, 165
BPC, 480
Break-even analysis, 33
Business Content, 484
  SAP-delivered, 58
Business Planning and Simulation (BPS), 535
BusinessObjects, 479

C

Calculated key figure (CKF), 69
Calendar weeks, 440
Callup
  chain, 475
  report, 475
Capacity planning, 216
Cash flows, create, 323
Change parameter set, 266
Characteristic, 44, 62, 349, 486, 535
  access level, 281, 285
  create, 88
  currency, 442
  definition, 90
  derivation, 150, 159, 441, 535
  exception, 107
  groups, 367
  hierarchy, 150
  maintain values, 151
  segment level, 290
  user-defined, 90, 101, 173
  values, 52, 150, 182, 199, 371, 432
Characteristics hierarchy
  define, 153
  information, 154
Classification, 377
  groups, 365
Clear, 161
  step, 182
Client-specific settings, 136

COGS, 220, 457
COGS components, 86
Collective order processing, 453
Company code, 88
  assign, 117
  currency, 113
Components
  transfer, 441
Condition, 175, 197, 377
  table, 199
  technique, 197
  types, 203, 205
Constant, 268
Controllable, 36
Controlling area, 88, 117
  assign, 114
  RU01, 330
Conversion, 495
CO-PA, 218
  account-based, 85
  activate, 121
  assessment cycles, 223
  copy functionality, 127
  costing-based, 85
  layouts, 142
  planning environment, 227
  planning framework, 53, 430
  planning structure, 217
  profitability segments, 162
  reporting scenarios, 364
  structures, 88
  transports, 132
  value flow, 84
CO-PA line items, 164
  create, 164
CO-PA planning, 215
  component, 220
  environment, 311
CO-PA Planning framework
  planning methods, 261
CO-PA planning framework, 156, 216, 217, 218, 275, 535
  access, 232
  simplified business model, 218
  strategic planning, 218
CO-PA-specific costing sheets, 198
CO-PC, 196
Copy specific objects, 130
Cost allocation, 223
Cost and value drivers, 31
Cost center, 45, 298
  assessments, 83, 441
  costs, assessment, 443
  variance fields, 86
Cost Center Accounting (CO-CCA), 46, 54, 295
Cost classifications, 34
Cost component structure, 196
Cost drivers, 32
Cost element, 86, 447
  assessment, 443
  assign, 450
  define, 436
  primary, 437
  secondary, 438
Cost Element Accounting (CO-CEL), 46, 436
Cost estimates, 45
Cost object, 105
Cost of goods sold (COGS), 86, 220, 366, 436
  by product, 220
Costing key, 191, 195
Costing sheets, 203
Costing-based, 43, 435
Costing-based CO-PA, 186, 535
Costing-based Profitability Analysis, 111
Costs based on activity, 35
Costs based on their function, 35
Costs of the period, 36
Costs of the product, 36
Credit memos, 28
Cross-client settings, 136
Cumulative curve, 377
Currencies, 440
Currency, 241
Current fiscal year variant, 313
Customer hierarchy, 186
Customizing request, 145
Customizing requests, 136
Cycle code, 297
Cycle header, 301

D

Data class, 93
Data extraction
  simplify, 401
Data mining, 517
Data source, 488
Data source in R/3, 439
Data structures, 51
Data values, adjust, 278
Define number ranges, 323
Definition screen, 226
Delivery unit, 521
Derivation, 52, 151
  applicable objects, 162
  concept, 160
  rule, 52, 161, 170, 535
  steps, 161, 170
  strategy, 159, 170
  table, 159, 173
Differential cost analysis, 28
Direct posting from FI/MM, 55, 322, 350
Display planning data, 262
Distribution or sales costs, 35
Documentation Overview for SAP HANA
  Appliance Software, 514
Drilldown operations, 367
Drilldown reporting, 472

E

Economic Value Added (EVA), 31
End users, 254
Enhancement, 161, 183
Enter planning data, 262
Enterprise Controlling Executive Information System (EC-EIS), 155
Enterprise Performance Management (EPM), 482
Entry at execution, 407
Exception, 105, 107, 378
Execute, 264
External customers, 365
External data transfer, 366
Extraction, 321

F

Field assignment, 523
Fiscal year variant, 112, 118
Fixed and variable costs portions, 306
Fixed costs, 33
Flows of actual values, 319, 322
Footer, 391, 399
Forecast, 267
  constant, 268
  processing, 273
  record type, 273
  seasonal, 268
  trend, 269
Forecasting, 517
Form, 70, 368, 380, 384, 391
  object, 384
Formula Editor, 391, 426
Formula object, 288
Frame, 393
Frozen data, 376, 474
Frozen reports, 411
  configuration, 391
Function automatic account assignment, 356
Function builder, 185

G

G/L account, 452
  posting, 45, 85
General ledger, 435
General variables, 392, 395
Goods issue, 436
Governance & compliance, 482
Graphical report-output, 408
Group profit, 365

H

HANA 1.0, 41
Header, 391
Hierarchies, 367, 401, 442
  alternative, 153
Hierarchy structure, 153
Hierarchy variant, copy, 158
Hotspots, 377

I

IMG, 49
Indirect activity, 166
Individual order processing , 453
InfoCube, 69, 365
InfoObjects, 486, 487
InfoProvider 0COPA_C03, 489
Information system, 56
In-memory computing, 511, 536
In-memory performance, 512
Internal activity allocation, 442
Internal order planning, 218
Internal orders, 28
Inventory movements, 28
Investments, 28
Invoices, 28
Irrelevant costs, 36

K

Key figure, 151, 484
  structures, 384
Key figure schemes, 69, 261, 367, 391, 410, 421, 429
  elements, 421
Key parameters, 297

L

Large data volume environments, 517
Layout, 67
Line ID, 449
Line item data, 223
Line item reports, 442
Line items, 380
Line-item level, 519
Linking OLTP and OLAP, 41
Logistics Information System (LIS), 54, 217

M

Market segments, 363
Master data, 51, 52, 149
Material cost estimate, 150, 191
Material ledger, 45, 192, 351
Materials requirements planning, 216
Metadata structures, 488
Microsoft Excel, 459
MM extraction settings, 351
Model Bank E_B1, 58
Modeling tab, 486
Move, 161
Move step, 180
Multidimensional analysis, 29

N

Network activity, 45
New values, generate, 170
Noncontrollable, 36
Nonvaluated sales order stock, 445
Number range, define, 229

O

Online Analytical Processing (OLAP), 40, 364, 479, 480, 492
Online Transactional Processing (OLTP), 30, 40, 216, 364, 411, 462, 480, 489
  system, 221
Open Administration Console, 514
Open Information Modeler, 514
Open LifeCycle Management, 514
Operating concern, 44, 85, 88, 103, 328, 367, 484, 536
  attributes, 111
  change, 439
  copy, 129
  create, 96
  currency, 111
  current, 152
  import, 128
  maintain, 89
  set, 89
  templates, 58
Operations Planning (SOP), 217
Operative knowledge, 219
Order, 45, 105
Order and project settlement, 442
OutlookSoft, 479
Overhead, 28

Overhead Allocation, methods, 166
Overhead Cost Controlling (CO-OM), 46
Overhead costs, calculation and transferring, 165

P

PA transfer structure, 162, 342
assign, 360
create, 343
define, 352
Package, 503, 521
Parameter
page number, 398
set, 226
Perform assignment, 343
Periodic reposting, 298
Personalization profile, 257
Plan version, 189
Planning
framework, 159
layouts, 67
package, 225, 234, 291
profiles, 254, 255
sequence, 293
strategy, 270
variables, 245
Planning level, 225, 237, 281
transport, 145
Planning method, 225
delete, 291
develop, 245
display planning data, 262, 461
enter planning data, 262, 461
execute, 237
forecast, 267
ratios, 280
revaluation, 276
valuation, 276
Point of valuation (PV), 188
Post existing sales orders to CO-PA, 334
Power users, 254
Pre-delivered Business Content objects, 484
Pre-delivered views, 521
Presummarized data, 433
Pricing procedures, 202
Primary cost elements, 437
Process, 45
Product Cost Controlling (CO-PC), 46
Production costs, 35
Production order, 28, 45, 444
settlement, 83
Production Planning (PP), 358
Profile administrator, 256
Profit and Loss (P&L) information, 320
Profit and Loss (P&L) statement, 224, 435
Profit Center Accounting (CO-PCA), 46
Profit center valuation, 113
Profitability Analysis
accelerator for ERP, 512
menu, 88
Profitability planning, 215
Profitability reports, 72
Profitability segment, 43, 104, 216, 337, 341, 350, 363, 536
characteristic, 106
Profits, 365
Project order settlements, 28
Purchase orders, 28

Q

Quantity discounts, 282
Quantity field, assign, 328
Quickstart Template S_GO, 58

R

Ranking list, 377
Ratio, 280
calculation, 281
calculation formulas, 287
formula components, 289
formula table, 288
relationship, 285
scheme, 281, 282
Real-time data replication, 515
Rebates, 28
Record type, 188, 331
Relevant costs, 36
Replacement type, 401
characteristic value variable, 402

Report, 367, 391
additional functions, 373
based on line items, 368
basic profitability, 368
data, 431
define variables, 400
Edit Menu options, 377
Menu options, 376
profitability, 72
transport, 380
Report Painter, 67, 87, 241, 287, 391, 472
Report portfolio, 472
Report splitting (RS), 222, 410, 469
Report Writer, 472
Reporting characteristics, 223
Reporting components, 442
Reporting templates, 385
Reporting time, 512
Report-Report Interface (RRI), 222, 410, 469, 471, 536
Repost records, 333
Restrict number of accounts, 453
Restricted key figure (RKF), 69
Results Analysis (RA), 444
Retraction, 47, 321
Revaluation, 276
keys, 276
maintain revaluation keys, 276
planning method, 278
Revenue, 216
Revenues, fixed and variable costs, 33
Reviewing detail logs, 510
Rule values, 172
Rules, 159

S

S_GO Quickstart template, 152
Sales, 216
Sales & operational planning, 519
Sales and Operations Planning (SOP), 54
Sales and profit planning, 217, 253, 456
Sales order, 28, 105
correct errors, 331
item, 105
post existing, 335
Sales order, 28, 105 (Cont.)
receipts, 441
Sample structure, 167
SAP BPC, 488, 537
SAP Business Analytics, 480
SAP BusinessObjects, 479
strategic workforce planning, 519
SAP BusinessObjects Explorer, 525
SAP BusinessObjects Planning and Consolidation (BPC), 492, 520
SAP BW, 366
InfoCubes, 493
query, 472
SAP BW-BPS, 96, 216, 222
SAP Crystal Reports, 480
SAP Dynamic Cash Management, 519
SAP ECC, 309
SAP Executive Information System (EIS) transport tool, 133
SAP GUI, 461
SAP HANA, 41, 511, 537
applications, 519
roadmap, 515
SAP HANA Appliance, 512
SAP HANA Information Modeler, 515
SAP HANA Studio, 514
SAP High Performance Analytic Appliance (HANA), 511
SAP in-memory database, 512
SAP NetWeaver BI, 186, 222, 223, 322, 364, 366
environment, 221
SAP NetWeaver BI-IP, 96
SAP NetWeaver Business Intelligence (BI), 87, 426, 436
SAP NetWeaver Business Warehouse (BW), 294
SAP NetWeaver BW 7.0, 53, 309, 364, 426
SAP Note 69384, 436
SAP Profitability Mode, 43
SAP query, 472
SAP SEM-BPS, 96
SAP Smart Meter Analytics, 519
SAP Strategic Planning and Simulation (SEM), 483
SAP Trade Promotion Management, 519

SAP-EIS transport tool, 138
Sarbanes-Oxley (SOX), 482
Seasonal, 268
Secondary cost elements, 438
Selection parameters, 397
SEM-BPS, 216, 222
Sender structure, 168
  define, 169
Settle projects, 349
Settlement of production variances, 55
Settlement profile, 342, 344
Settlement rule, 342
Source fields, 354
Split report, create, 469
SQL relationships, 525
Step
  create, 171
  type, 172
Strategic planning process, 219
Structures, 50
Summarization levels, 411, 431, 433, 462, 537
  characteristics, 467
  populate, 465
  redundant, 467
Sunken costs, 34
Super users, 254
System performance, 409

T

Table lookup, 161, 174, 177
Template
  allocation, 167
  Consumer Goods Ind S_CP, 58
  S_GO, 106
Third-party software, 515
Time of billing, 436
Top-bottom approach, 215
Top-down distribution, 311
  execute, 315
Transaction
  CJ8G, 349
  CMOD, 211
  FB01, 164
  FB50, 295
  KCAU, 298
Transaction (Cont.)
  KE21, 164
  KE23, 223
  KE2C, 334
  KE2D, 332
  KE32, 471
  KE3I, 132, 139
  KE4S, 165, 340
  KEB0, 439
  KEDU, 465
  KEKK, 165, 304
  KEPM, 145, 297
  KEU1, 304
  KEU2, 304
  KEU5, 309
  KO04, 344
  KOAL, 345
  KSU1, 301
  OKG1, 445
  OKG2, 447
  OKG3, 448
  OKG5, 450
  OKKP, 121, 345
  RSA1, 484, 490
  SE10, 130, 134
  SPRO, 49, 88, 149, 334, 349
  SRGN, 349
Transactional data, 40
Transfer external data, 167
Transfer of billing documents, 55, 338
  prerequisites, 340
Transfer of incoming sales orders, 55, 324
  activate, 328
Transfer of Overhead, 360
Transfer of overhead, 55
Transfer rules, 169
Transformation, 495
Translated settings
  transport, 137
Transparent table, 199
Transport
  automatic, 135
  delta, 135
  manual, 135
  Organizer, 134
  request, 132, 380

Transport objects, 132
Trend, 269
Trend analysis, 517
Two axis (matrix), 385

U

Universe, 517
User exit valuation, 190
User-defined characteristic, 91

V

Valuate, 366
Valuated sales order stock, 445
Valuation, 52, 150, 186, 198, 276, 537
  methods, 189
Valuation strategy, 52, 150, 188, 207
  assignment, 209
Value fields, 44, 62, 84, 93, 151, 313, 323, 327, 491
  assign, 326
  create, 88, 94
Value fields, 44, 62, 84, 93, 151, 313, 323, 327, 491 (Cont.)
  user-defined, 101, 327
Variable costs, 33
Variables, 391, 432
Variance analysis, 311
Variant variable, 154
Versions, maintain, 230
Voyager, 480

W

WBS element, 105, 349
Web Intelligence, 480, 496
Work Breakdown Structure (WBS), 45
  elements, 83
Work in process (WIP), 444
  at actual costs, 449
Work in Process/Results Analysis Version (WIP/RA), 231
Workbench request, 136, 145

X

Xcelsius, 479