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Case Study: How McCormick Uses SAP Templates For Accurate Overhead Management

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McCormick & Company, Inc.

McCormick is a global leader in flavor. Founded in 1889 and headquartered in Maryland, McCormick has over 10,000 employees worldwide. We spread our passion for flavor to the entire food industry by manufacturing, marketing and distributing spices, seasoning mixes, condiments and other flavorful products. Our customers range from retail outlets and food manufacturers to food service businesses.

- Brands sold in 110+ countries
- 2013 Net Sales - $4.1 billion
- 10,000+ employees worldwide

Introduction

- **The majority of companies using SAP apply overhead using Overhead Costing Sheets**
- **Activity-Based Costing provides a way to apply overhead in a more detailed fashion**
- **ABC Overheads can be applied in many areas**
- **This presentation describes how McCormick uses ABC in Product Cost Controlling**

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Topics

- **About ABC**
- **ABC at McCormick**
- **ABC Master Data**
- **Functions**
- **ABC Templates**
- **Supporting Transactions**
- **ABC at Month-End**
- **Some Caveats**
- **Summary**

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About ABC

- **What is ABC?**
- **Why Should I Use It?**
- **Push vs. Pull**

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What Is ABC?

- **ABC, or Activity-Based Costing, is, as its name suggests, a method of allocating costs based on specific activities, or processes.**
- **Almost any activity or process may be used as a cost driver.**

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The Advantages of Using ABC

- ABC allows costs to be traced back to the actual business processes
- This is more precise than the overhead rate on the overhead costing sheet, which is location-oriented, rather than process-oriented
- Example: Material A and Material B are both made on the same manufacturing line, and the planned total output for each is the same. However Material B must be made using an order quantity half that of Material A. To achieve the same total output, twice as many process orders of Material B must be created. The cost of Material B should reflect the higher cost of order creation.

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"Push"

- Overheads may be "pushed" through the process of assessment
- This method is most useful when the composition of the costs is not important for the receiver

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"Pull"

- Costs are not just allocated
- The system also determines the quantities that the receiver objects consume or utilize
- Costs are calculated based on the quantities times the prices and are therefore more accurately determined

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ABC History at McCormick

- McCormick has used ABC to apply overhead since going live with SAP in 2002
- The legacy system had a basic ABC for the industrial business
- Management goals
  - To be able to analyze what was actually driving costs, with the goal of making better decisions
  - To be able to better price products
  - To be able to analyze variances
  - Plan developed by implementation consultant

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ABC History at McCormick

- Plants in the US were the first to go live with product costing and ABC overheads
- Plants in Canada went live in 2008
- Plants in Europe went live in 2010 and 2013 with a simplified model

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ABC Master Data

- · **Overhead Cost Elements**
- · **Standard Hierarchy**
  - · **Business Process Groups**
  - · **Business Processes**

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Overhead Cost Elements

- · These are allocation cost elements
- · They are secondary cost elements of Category 43 (Internal Activity Allocation)
- · They are time-dependent
- · McCormick has just over 30 cost elements

Join of CSKB(A) and CSKU(B)

CO Area	Cost Elem.	to	Valid From	CElem cat.	Language	Chrt/Accts	Name	Descriptn
MC01	00009010000	12/31/9999	01/01/1999	43	E	MC01	ABC - Purchase Raw M	ABC - Purchase Raw Materials
MC01	0000910100	12/31/9999	01/01/1999	43	E	MC01	ABC - Planning & Sch	ABC - Planning & Scheduling
MC01	0000910200	12/31/9999	01/01/1999	43	E	MC01	ABC - Inventory Mana	ABC - Inventory Management
MC01	0000910300	12/31/9999	01/01/1999	43	E	MC01	ABC - Material Handl	ABC - Material Handling
MC01	0000910400	12/31/9999	12/01/2008	43	E	MC01	ABC - Material Trans	ABC - Material Transfer
MC01	0000911000	12/31/9999	01/01/1999	43	E	MC01	ABC - Engineering	ABC - Engineering
MC01	0000911100	12/31/9999	01/01/1999	43	E	MC01	ABC - Regulatory Com	ABC - Regulatory Compliance
MC01	0000911200	12/31/9999	01/01/1999	43	E	MC01	ABC - Fac. Main.-Pro	ABC - Fac. Main.-Production Related
MC01	0000911300	12/31/9999	01/01/1999	43	E	MC01	ABC - Fac. Main.-Non	ABC - Fac. Main.-Non Production Related

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Standard Hierarchy

- Transaction CPH4N allows for central creation of the following:
  - Standard Hierarchy of Business Process
  - Business Process Groups
  - Business Processes

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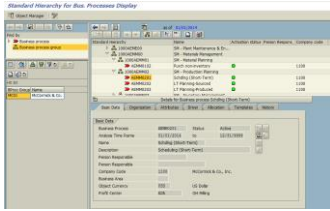
Business Process Groups

- Business process groups link related business processes
- Business process groups may in turn be combined into higher-level groups
- Business process groups are nodes in the business process hierarchy

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Business Processes

- The business process itself is the lowest level in the standard hierarchy
- A business process must be assigned to a group in the standard hierarchy
- There are multiple tabs for business process master data
- Tabs used depend upon the use of the business process
- They are plant- and cost center-specific

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Business Process Master Data

- Business process master data comprises several tabs

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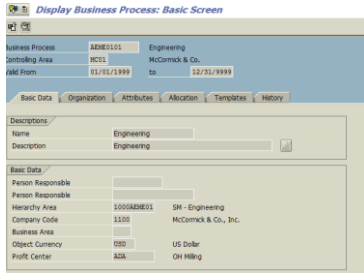
Business Processes at McCormick

- McCormick has about 1200 Business Processes
- McCormick uses the Basic Data tab
  - Name, Description, Hierarchy Area, Company Code, Profit Center
- McCormick uses the Organization Tab
  - Plant Only
- McCormick uses the Allocation Tab
  - UOM, Allocation Category, Allocation Cost Element
  - Price Indicator and Actual Price Indicator
- The History Tab defaults

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Environments and Function Trees

- **The environment determines what information can be accessed from SAP or from an external system**
- **Transaction Code CTU6 or IMG > Controlling > Activity-Based Costing > Templates > Define Environments and Function Trees**

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Environments

- **SAP provides a wide selection of environments**
- **The screen shot below shows some of these environments**

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Environments at McCormick

- **McCormick uses Environments 001 and 009**

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Function Trees

- **Below the environment is the Function Tree**
- **Under the Function Tree are nodes**
  - **In Function Tree SAP1, the nodes are equivalent to sub-environments**

Object	↑	Function Text	Enviro
001 Cost estimate/production orders			001
SAP1 Cost estimate/production order	✓		001
Cost estimate/production order			
Sender processes			101
Order data			102
Materials			103
Bill of material			104
Routing			105
General data			107
Mathematical functions			115
Production campaign			116
Send CCTR/Acty Type			125

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Function Nodes

- **Grouped under the nodes of the Function Tree are the function nodes**

| Object	↑	Function Text	Environm
Bill of material			104
AverageOfBomItems		Average of BOM Item Formulas	104
BOMItemCoProduct		Co-Product Indicator Selected on BO...	104
BomCheckMaterialClass		Checks for Material with Class in BOM	104
BomItemAlternativeQuantity		Alternative Qty Factor for BOM Item	104
BomItemCheckCharacteristic		Checks for Material with Characteristic ...	104
BomItemComponents		Material Number of BOM Item	104
BomItemConsumedQuantity		Withdrawn Quantity of the Material in ...	104
BomItemDummyAssemblyGroup		Dummy Assembly Group in BOM	104
BomItemMaterialGroup		Material Group of the Material in BOM I...	104
BomItemPlant		Plant of Material in BOM	104
BomItemPurchasingGroup		Purchasing Group of the Material in BO...	104
BomItemRequiredQuantity		Requirement Quantity of the Material i...	104
BomItemStorageLocation		Storage Location of the Material in BO...	104
BomValueForBomItem		Value from BOM Item if BOM Field Has...	104
BomValueIfMaterialCharac		Value from BOM if Material Characteristic	104
BomValueIfMaterialInClass		Value from BOM if Material Is in Particu...	104
CheckFieldValueInBom		Checks Whether Field of BOM Has Par...	104
ConfMatQtyForBomItemChar		Requirement Quantity of the Material i...	104
ConfirmMatQtyForBomItem1		Confirmed Mat. Qty for BOM Item for ...	104
ConfirmMatQtyForBomItem2		Confirmed Mat. Qty for BOM for Materi...	104
MsegQuantity		Quantity from MSEG	104
MultipleOfBomItems		Multiple of BOM Item Formulas	104
NumberOfBomItems		Number of Items in BOM	104
NumberOfMaterials		Number of different Materials	104
TotalOfBomItems		Total of BOM Item Formulas	104

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Functions

- **Functions are evaluation procedures with which you can call up the value of a field or the results of a function module within a Template.**
- **There are many standard functions available**
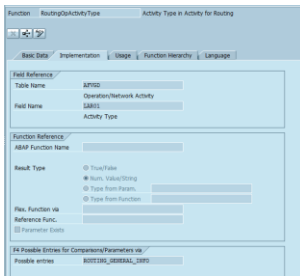- **You may create your own functions**

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Functions (cont.)

- Double-click on a function to see how it is configured

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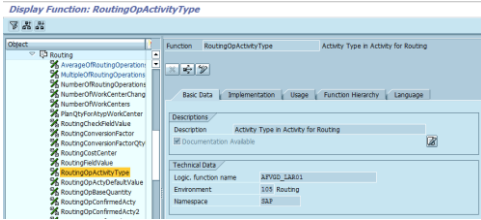
Table-based Function

- The source of the function data may be a table field

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Function using a Function Module

- Or an ABAP function module

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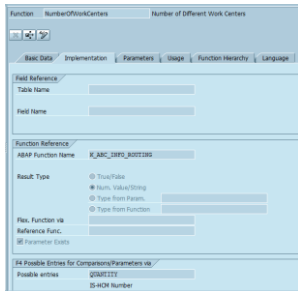
Function Usage

- The Usage tab determines on which types of rows and in which types of columns the function may be used

34   2014 CONTROLLING
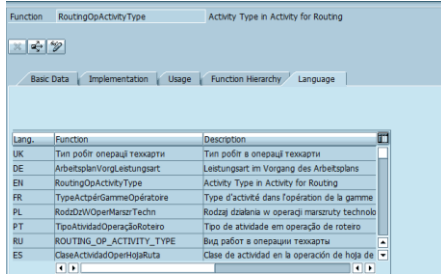
Function Usage (cont.)

- (Right side of screen)

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Function Hierarchy tab

- Entries on the Function Hierarchy tab determine which environments the function can be used in

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Language Tab

- The language tab provides descriptions of the function in the languages you have installed


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Creating New Functions

- New functions can be created either with a new ABAP function, or by reading an additional field from one of the tables that are valid for environment maintenance
- Check in table COTPLTABLE for a list of available tables for each environment
- McCormick has created several new functions

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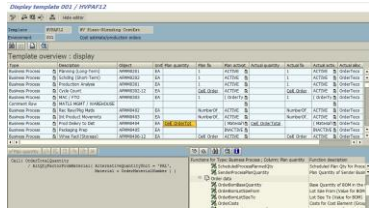
38

Custom Functions

- Here's an example of a new function modeled after function RoutingOpActivityType


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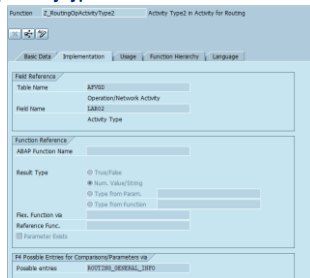
Functions and Formulas

- Different types of functions may be combined in a formula
- The illustration below shows a formula combining a mathematical function with a function from the order data group and one from the materials group

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More Functions and Formulas

- A similar function bases the quantity on pounds, rather than pallets


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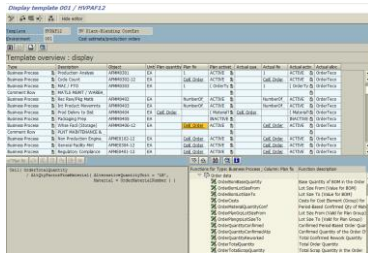
The Flexible Function

- SAP also provides functionality called "Flexible Functions"
- The flexible function combines a condition with a formula to further narrow its usage
- Flexible functions are highlighted on the function menu
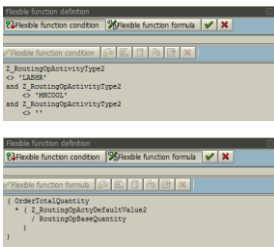- There are flexible functions designed around average, multiple, and total calculations

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Template with a Flexible Function

- Here's an example of a template that uses a flexible function

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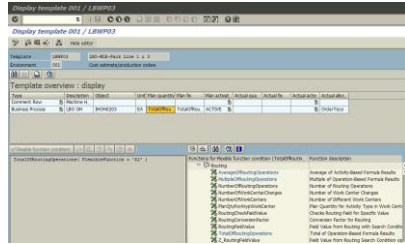
Flexible Functions - Example

- A flexible function has a condition and a formula

- Condition

- Formula

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Flexible Functions – Where It's Useful

- The flexible function is useful in situations such as the one below, where operation 20 is cost relevant, but there should be no overhead applied

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ABC Templates

- Once you have all of your tools, creating the template itself isn't difficult
- Create/Maintain/Display Templates using Transaction Codes CPT1/CPT2/CPT3, or by following the menu path IMG > Controlling > Activity-Based Costing > Templates > Maintain Templates
- The rows and columns that are available depend upon the template environment

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Testing the Template

- The template can be tested quickly and easily with the simulation icon

which brings up an entry screen for test parameters

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McCormick Templates

- McCormick uses Comment Rows and Business Process Rows
- The actual allocation event for all of our templates is the Order Teco

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Evolution of McCormick's ABC Templates

- When SAP Product Costing and Manufacturing went live in the US, the ABC templates were fairly complex
- Quality Inspection processes are extremely complex
- A more complex model was used also in Canada
- A simpler model was developed for the expansion into EMEA
- In the simpler environment, all overheads are based upon machine time

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Costing – Environment 001

- Example of simple template in Environment 001

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Process Order – Environment 009

- Here's the equivalent template for Environment 009, the actual process order

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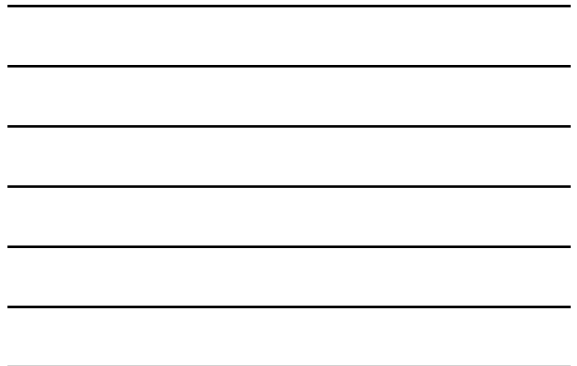
Assigning the Template

- When your template is complete, it must be assigned to an Overhead Key using transaction code KTPF, or by following the menu path IMG > Controlling > Activity-Based Costing > Templates > Assign Templates for Cost Objects and Costing

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Overhead Keys and Overhead Groups

- Using Transaction OKZ2, the Overhead Key is linked to the valuation area and the overhead group, which is then in turn entered on the Costing 1 tab of the material master
- When the material is costed, the Overhead Group points to the Overhead Key, which in turns points to the correct ABC template for overhead application

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Supporting Transactions

- In order to apply ABC overheads to process orders, each business process must have a rate
- Transaction CP26 handles creation or change of Business Process Planning Quantities and Prices
- Transaction CP27 displays them
- McCormick uses only fixed prices

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Statistical Key Figures

- Transaction CP46 handles creation or change of Business Process Planning Statistical Key Figures
- Transaction CP47 displays them
- McCormick uses the SKF for various FTE (Full Time Equivalents)

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Rate Calculation

- **Each plant controller has a set of Excel templates for use in calculating rates**

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ABC at Month-end

- **Template allocation**
- **Assessment**
- **Analysis**

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Template Allocation

- **Using transaction CPTD, Supply Chain Finance performs template allocation as part of period-end close**

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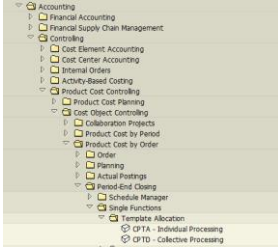
Results After Template Allocation

- **Using transaction COR3 or KKBC_ORD, we can view the results of the individual order**

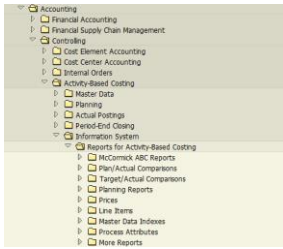62   2014 CONTROLLING

Assessments at Close

- **As part of Period-end close, McCormick also run assessment cycles using transaction KSU5**
- **Most assessments are based on Headcount, FTE (Full time equivalents) or Square Feet**

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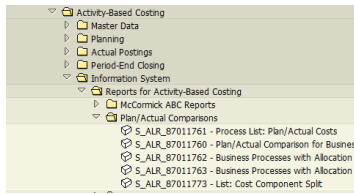
ABC Analysis

- SAP provides a number of reports for ABC analysis

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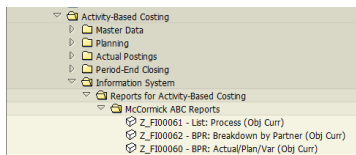2014 CONTROLLING

Standard Reports

- McCormick Supply Chain Finance group uses S_ALR_87011762 and S_ALR_87011760

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Custom Reports

- Custom Reports can be created with Report Painter/Report Writer

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Practical Caveats

- **Evaluate the need**
  - **ABC overhead is probably of more use when the cost of processes exceeds the cost of raw materials**
- **Don't Overdo It!**
  - **If your business processes are too granular, the data become meaningless**
  - **If there are too many business processes, it may be that no one will analyze them**

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Technical Caveats

- **And on the technical side…**
  - **Don't forget to round (CEIL function)**
  - **Don't forget to regenerate templates**
  - **Don't assume that non-cost relevant check applies to overhead**

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Summary

- Activity-Based costing offers an alternate method of determining overhead
- Activity-Based Costing is an extremely flexible way to apply overhead
- Properly planned and configured, Activity-Based Costing can be an invaluable tool for analysis of the true cost of a product and for the analysis of over- or under-absorption
- ABC templates can be very simple or highly customized
- Many new functions are easily created and tested

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Resources

- Rogerio Faleiros and Alison Kreis Ryan, Configuring Controlling in SAP ERP (SAP PRESS, 2012).
  - ISBN-10: 978-1-59229-401-5
  - http://www.sap-press.com/products/Configuring-Controlling-in-SAP-ERP
  - John Jordan, 100 Things You Should Know About Controlling with SAP (SAP PRESS, 2011).
  - ISBN-10: 1-59229-341-4 (978-1-59229-341-4)
  - www.sap-press.com/products/100-Things-You-Should-Know-About-Controlling-with-SAP

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Resources (cont.)

- Dawn J. Sedgley and Christopher F. Jackiw, The 123s of ABC in SAP: Using SAP R/3 to Support Activity-Based Costing (John Wiley & Sons, 2001).
  - ISBN: 978-0-471-39700-7
  - http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471397008.html
- http://help.sap.com
  - SAP ERP ➡ SAP ERP Central Component (select version) SAP ERP Central Component ➡ Financials ➡ Controlling (CO) ➡ Product Cost Controlling (CO-PC) ➡Activity-Based Costing (CO-OM-ABC)
- http:// www.bfsgroup.us/FB/FB/EN/PDF/ABC/16254_02.PDF
  - Integrated ABC in R/3

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Questions

- **Now:**
  - **Ask questions now for immediate answers**
- **Later:**
  - **Kay_Sencabaugh@mccormick.com**

Q&A

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