Product Costing: Analyze the Financial Entries in Make-to-Stock

Birgit Starmanns
SAP Marketing
Agenda

Financial Excellence with SAP Solutions
The End-to-End Process
• Plan to Manufacture: The Process
Introduction to the Example
Value Flow
• Product Costs in Period 1
• Month-End Postings for Period 1
• Postings in Period 2
Wrap-Up
Financial Excellence with SAP Solutions

Introduction
Finance: Balancing Efficiency with Being a Strategic Advisor to the Business

Key CFO priorities

- Ensure Regulatory Compliance and Effective Risk Management
- Outperform Financial Objectives and Create Sustainable Value
- Deliver Superior Service at Reduced Cost
SAP Solutions for Finance and How They Are Delivered

Ensure Regulatory Compliance and Effective Risk Management
- Treasury and Financial Risk Management
- Manage Enterprise Risk and Compliance
- Accounting and Financial Close

Outperform Financial Objectives and Create Sustainable Value
- Manage Financial Performance

Deliver Superior Service at Reduced Cost
- Invoice to Pay
- Receivables Management
- Travel Management
- Real Estate Lifecycle Management
- Shared Services

SAP ERP Financials including Controlling modules and Partner solutions
- SAP enterprise performance management (EPM) solutions
- SAP governance, risk, and compliance (GRC) solutions

On premise | On demand | On device | In memory
The Accounting and Financial Close End-to-End Process

Product Costing is part of the Financial Close

- On-going General Ledger entries (sales, manufacturing, etc.) affect product costing
- Entity close includes month-end product costing and valuation processes

Financial Accounting

Entity Close

Corporate Close

Reporting and Disclosure

- General Ledger
- Sub-Ledgers
- Intercompany Reconciliation
- Entity Close Management
- Consolidation
- Notes Management
- Reporting and Analysis
- Disclosure Management

Financial Close Governance

- Internal Controls
- Master Data Governance for Financials
The End-to-End Process

Plan to Manufacture: The Process
Product Costing for Manufacturing Strategies

<table>
<thead>
<tr>
<th>Make-to-Stock</th>
<th>Make-to-Order</th>
<th>Engineer-to-Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Products</td>
<td>Multiple Product Variants</td>
<td>Customer-Specific Design/Engineering</td>
</tr>
<tr>
<td>No Product Variants</td>
<td>Mass-Customization</td>
<td></td>
</tr>
</tbody>
</table>

Product Costing
- Integration of demand (sales) and supply (manufacturing)
- Costing methods in sync with manufacturing strategy
- Real-time update of costing throughout each manufacturing step
- Updates to SAP General Ledger and controlling objects
Plan-to-Manufacture — The Process

**Master Data (Bill of Material, Routing, Work Center)**

- Demand Creation and Planning
- Convert to Planned Order
- Convert to Production Order
- Goods Issues
- Confirmation
- Goods Receipts
- Settlement/Costing Run

**Role of Controlling (CO) in Plan-to-Manufacture Process:**

- Sets **standard costs** for all products to be manufactured (product cost estimate)
- Values **inventory** of unfinished and finished goods, including **work-in-process**
- Includes **activity costs** in inventory values via confirmation step
- Sets standard **activity rates**
- Calculates **scrap** and **variances** at period close
- Assigns production variances to inventory and cost of goods sold at period close (actual costs)
- Calculates **true actual costs** at period close
Plan-to-Manufacture — Requirements Planning

Master Data (Bill of Material, Routing, Work Center)

Demand Creation and Planning → Convert to Planned Order → Convert to Production Order → Goods Issues → Confirmation → Goods Receipts → Settlement/Costing Run

Engineer-to-Order
- MRP run for project

Make-to-Order
- MRP run for sales order item

Make-to-Stock
- MRP run for material

Project Planning - Multi-Level

Make-To-Order Planning - Multi-Level

Single-Item, Multi-Level
Plan-to-Manufacture — Cost Objects During Execution

Master Data (Bill of Material, Routing, Work Center)

Demand Creation and Planning

Convert to Planned Order

Convert to Production Order

Goods Issues

Confirmation

Goods Receipts

Settlement/Costing Run

Engineer-to-Order

Multilevel dependent requirements. Production orders settle to project stock.

Make-to-Order

Multilevel dependent requirements. Production orders settle to sales order stock.

Make-to-Stock

Single-level requirement with settlement to stock

Sales Order Hierarchy

<table>
<thead>
<tr>
<th>Sales Order Hierarchy</th>
<th>Plan detail</th>
<th>Plan Sales DR</th>
<th>Plan VarCost DR</th>
<th>Currency</th>
<th>Name</th>
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<td>0.00</td>
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<tr>
<td>SED 1: 10.006-M1</td>
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<tr>
<td>0002 2000000</td>
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<td>175.95 CAD</td>
<td>F1006-M1</td>
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</table>
Plan-to-Manufacture — Cost Estimates

Master Data (Bill of Material, Routing, Work Center)

- Demand Creation and Planning
- Convert to Planned Order
- Convert to Production Order
- Goods Issues
- Confirmation
- Goods Receipts
- Settlement/Costing Run

Engineer-to-Order

Top-down planning of project budget, and bottom-up planning of operative tasks. Reserves for imminent loss posted to FI if planned costs are greater than planned revenues (results analysis).

Make-to-Order

Create cost estimate based on configuration in sales order. Cost estimate can be used as basis for pricing in SD. Cost estimate for production order created automatically.

Make-to-Stock

Standard costs based on standard cost estimate for material. Cost estimate for production order created automatically. Planning variances can be calculated by comparing the two cost estimates.

- Cost estimate for Production Order before release to Production
Plan-to-Manufacture — Goods Issue

Master Data (Bill of Material, Routing, Work Center)

Demand Creation and Planning → Convert to Planned Order → Convert to Production Order → Goods Issues → Confirmation → Goods Receipts → Settlement/Costing Run

Engineer-to-Order

Goods issued to production order. Multilevel reporting of project and dependent orders. Work-in-Process calculated at period close.

Make-to-Order


Make-to-Stock

Goods issued to production order, and reporting by production order. Work-in-Process calculated at period close.

• Work-in-Process by Production Order
Plan-to-Manufacture — Confirmation

Master Data (Bill of Material, Routing, Work Center)

- Demand Creation and Planning
- Convert to Planned Order
- Convert to Production Order
- Goods Issues
- Confirmation
- Goods Receipts
- Settlement/Costing Run

Engineer-to-Order

Output quantities, scrap quantities, and rework quantities recorded in Production
Operation is linked to a work center – Work center is linked to a cost center
Activities performed by work center are planned as activity types
Activity price is per cost center/activity type determined in Cost Center Accounting
Production quantities are valued with activity price
Production order is debited (value added in production), and cost center is credited

Make-to-Order

Make-to-Stock

Cost Center reporting

Production Order reporting
Plan-to-Manufacture — Goods Receipts

Master Data (Bill of Material, Routing, Work Center)

Demand Creation and Planning ➔ Convert to Planned Order ➔ Convert to Production Order ➔ Goods Issues ➔ Confirmation ➔ Goods Receipts ➔ Settlement/Costing Run

Engineer-to-Order
Deliver to project stock. Stock values are updated based on the production order cost estimates.

Make-to-Order
Deliver to sales order stock. Stock value based on sales order cost estimate, production order cost estimate, standard cost estimate (manual), or user exit.

Make-to-Stock
Deliver to material stock. Stock value based on standard cost estimate. Status “final delivery” required for variance analysis.

- Calculation of target costs based on delivered quantity (goods receipt)
Plan-to-Manufacture — Settlement

Master Data (Bill of Material, Routing, Work Center)

Demand Creation and Planning → Convert to Planned Order → Convert to Production Order → Goods Issues → Confirmation → Goods Receipts → Settlement/Costing Run

Engineer-to-Order

Revenue recognition based on results analysis. Reserves for imminent loss and unrealized costs cancelled. Reserves for warranty costs remain.

Make-to-Order

Work-in-process cancelled. Value of scrap determined. Value of variances calculated, assigned to categories (price, variance, resource usage, etc.), and settled to CO-PA.

Make-to-Stock

Work-in-process cancelled. Value of scrap determined. Value of variances calculated, assigned to categories (price, variance, resource usage, etc.) and settled to CO-PA.

• Variances and Scrap
Plan-to-Manufacture — Costing Run

Master Data (Bill of Material, Routing, Work Center)

Demand Creation and Planning → Convert to Planned Order → Convert to Production Order → Goods Issues → Confirmation → Goods Receipts → Settlement/ Costing Run

Costing Run

Determine price differences for each raw material (via purchasing) and each manufactured product, and assign differences to inventory and cost of goods sold.

Alternative Valuation Run

Perform alternative valuations to take account of balance sheet valuation methods, such as FIFO, LIFO, lowest value, etc., and of alternative activity rates or to smooth out periodic price differences.

- Material price analysis via material ledger
- Costing run for revaluation of inventory
## Summary: Controlling Objects in Product Costing

<table>
<thead>
<tr>
<th>Characterized by</th>
<th>MTS (Discrete)</th>
<th>MTS (Repetitive)</th>
<th>MTS (Process)</th>
<th>MTO (Valuated)</th>
<th>ETO (Valuated)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard product</strong></td>
<td>Standard product, production by period</td>
<td>Standard product, continuous production</td>
<td>Standard product/co-product, batch production</td>
<td>Product with selectable options by the customer</td>
<td>Product engineered for customer needs</td>
</tr>
<tr>
<td><strong>Standard cost</strong></td>
<td>Standard BOM and routing</td>
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<td>Standard BOM and routing</td>
<td>Use of variant configuration</td>
<td>Use of project for budget and operations</td>
</tr>
<tr>
<td><strong>Cost object</strong></td>
<td>Production order</td>
<td>Product cost collector and cost object hierarchy</td>
<td>Process order</td>
<td>Production order created by sales order item</td>
<td>Project (WBS elements, networks) created by sales order item</td>
</tr>
<tr>
<td><strong>Work in process (WIP)</strong></td>
<td>Debits (resources) minus credits (finished goods), balance is WIP</td>
<td>Backflushing (debits and credits posted simultaneously), no WIP balance</td>
<td>Debits (resources) minus credits (finished goods), balance is WIP</td>
<td>Debits (resources) minus credits (finished goods), balance is WIP</td>
<td>Results analysis calculation (methods include percent complete, earned value)</td>
</tr>
<tr>
<td><strong>Finished goods received into</strong></td>
<td>Unrestricted inventory</td>
<td>Unrestricted inventory</td>
<td>Unrestricted inventory</td>
<td>Sales order stock for a customer</td>
<td>To project stock for a customer</td>
</tr>
</tbody>
</table>
Introduction to the Example
Make-to-Stock Manufacturing Example
Music Player — No Configuration Options

- **Components In the Bill of Material**
  - Back Panel $25
  - Front Panel $25
  - Internal Drive $70

- **Tasks In the Routing**
  - Setup Hours 1h @ $20
  - Labor Hours 3h @ $20
  - Machine Hours 4h @ $25

- **Overhead Rates**
  - Material OH 25%
  - Labor OH 25%
  - Machine OH 75%
  - Admin OH 25%

**Total Standard Cost:** $500  **Total Material Cost:** $120  **Total Activity Cost:** $180  **Total Overhead Cost:** $200
Make-to-Stock
Sample Scenario

Make-to-stock scenario
One production order
Four overhead cost centers
Assumes standard cost in place for product

What is covered?
Financials postings of each manufacturing step
FI postings
• Balance sheet
• P&L
CO postings
• Cost elements
• Controlling objects
Steps in the Manufacturing Process with the Associated Financial Postings

**Period postings**
Posting to cost centers
Raw materials issued from inventory to the production order
Activities allocated from the production cost center to the production order
Finished goods are received into inventory from the production order

**Month-end postings**
Apply overhead from the manufacturing cost center to the production order
Calculate work-in-process for the production order
Post cost center variances
Calculate production order variances
Run settlement to post WIP and variances of the production order to the G/L

<table>
<thead>
<tr>
<th>General Ledger Accounts (FI)</th>
<th>Balance Sheet/Profit and Loss Statement</th>
</tr>
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<tbody>
<tr>
<td>Secondary Cost Elements</td>
<td>Tracking Transfers Between Controlling (CO) Objects</td>
</tr>
<tr>
<td>Controlling Objects (CO)</td>
<td>Cost Centers/Production Orders for Make-to-Stock</td>
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Organization of the Sample Scenario in This Session

- Process Step
- General Ledger Accounts (FI)
  - B/S
  - P&L (Primary Cost Elements)
- Controlling Objects (CO)
- Secondary Cost Elements (CO)
Value Flow

Product Costs in Period 1
Steps in the Manufacturing Process — Period Postings

A. Posting to cost centers
   1. Posting costs to service/administrative cost centers
   2. Allocating from service/administrative cost centers to production overhead cost centers
   3. Posting of costs to the production cost center

B. Raw materials issued from inventory to the production order

C. Activities allocated from the production cost center to the production order
   1. Setup labor hours
   2. Labor hours
   3. Machine hours

E. Finished goods are received into inventory from the production order (Period 2 only)

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<td>Cost Centers/Production Orders for Make-to-Stock</td>
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</table>
A-1: Posting Costs to Service/Administrative Cost Centers

**General Ledger Accounts (FI)**

- **B/S**
  - A/P
    - 211000
    - A-1 800

- **P&L (Primary Cost Elements)**
  - Salary Exp
    - 610000
    - A-1 800

**Controlling Objects (CO)**

- Utilities CCtr
  - 90100
  - A-1 800

**Secondary Cost Elements (CO)**
A-2: Allocating Costs to Production Overhead Cost Centers

General Ledger Accounts (FI)

B/S

P&L (Primary Cost Elements)

Controlling Objects (CO)

Utilities CCtr
90100
A-2
800

Secondary Cost Elements (CO)

Utilities Assessment
810000
A-2
800
A-2
800

Mat'l OH CCtr
30250
A-2
200
A-2
200

Mach OH CCtr
30260
A-2
200
A-2
200

Labor OH CCtr
30270
A-2
200

Mfg Admin OH CCtr
30280
A-2
200
A-3: Posting of Costs to the Production Cost Center

General Ledger Accounts (FI)

- **B/S**
  - A/P
    - 211000
      - A-3 1000

- **P&L (Primary Cost Elements)**
  - Salary Exp
    - 610000
      - A-3 1000

Controlling Objects (CO)

- Production CCtr
  - 30100
    - A-3 1000

Secondary Cost Elements (CO)
B: Raw Materials Issued from Inventory to the Production Order

- **General Ledger Accounts (FI)**
  - **B/S**
    - Raw Mat'l Inv.: 131000
  - **P&L (Primary Cost Elements)**
    - Raw Mat'l Consum: 510000

- **Controlling Objects (CO)**
  - Production Order: xxxxxxxxx
  - Raw Material: B 120

- **Secondary Cost Elements (CO)**
C-1: Activities Allocated from Production Cost Center to Production Order (Setup Labor Hours)

**General Ledger Accounts (FI)**
- **B/S**
- **P&L** (Primary Cost Elements)

**Controlling Objects (CO)**
- Production CCtr
  - 30100
  - Production Order
  - xxxxxxxxxx
  - Setup hours: 20

**Secondary Cost Elements (CO)**
- Setup Hours
  - 802000
  - C-1 20
  - C-1 20
C-2: Activities Allocated from Production Cost Center to Production Order (Labor Hours)

General Ledger Accounts (FI)

B/S

P&L (Primary Cost Elements)

Controlling Objects (CO)

Secondary Cost Elements (CO)

Production CCtr 30100

Production Order xxxxxxxxxx

Labor Hours 801000

C-2 40

C-2 40 Labor hours
C-3: Activities Allocated from Production Cost Center to Production Order (Machine Hours)

- **General Ledger Accounts (FI)**
  - B/S
  - P&L (Primary Cost Elements)

- **Controlling Objects (CO)**
  - Production CCtr: 30100
  - Production Order: xxxxxxxxxx
  - C-3: 60

- **Secondary Cost Elements (CO)**
  - Machine Hours: 800000
  - C-3: 60
Period 1 Postings Prior to Month-End (Process Steps)
Value Flow

Month-End Postings for Period 1
Steps in the Manufacturing Process — Month-End Postings

F. Apply overhead from the manufacturing cost center to the production order
   1. Apply material overhead
   2. Apply machine overhead
   3. Apply labor overhead
   4. Apply administrative overhead

G. Calculate work-in-process for the production order
   1. Calculate WIP for open production order (Period 1 – posted at settlement)
   2. Cancel WIP for confirmed production order (Period 2 – posted at settlement)

S. Post cost center variances (manual clearing)

T. Calculate production order variances for confirmed production order (posted at settlement)

General Ledger Accounts (FI)
Balance Sheet/Profit and Loss Statement

Secondary Cost Elements
Tracking Transfers Between Controlling (CO) Objects

Controlling Objects (CO)
Cost Centers/Production Orders for Make-to-Stock
F-1: Apply Overhead from Manufacturing Cost Center to Production Order (Material OH)

General Ledger Accounts (FI)
- B/S
- P&L
  (Primary Cost Elements)

Controlling Objects (CO)
- Mat'l OH CCtr
- Production Order

Secondary Cost Elements (CO)
- Material OH
- F-1 30
- F-1 30
F-2: Apply Overhead from Manufacturing Cost Center to Production Order (Machine OH)

General Ledger Accounts (FI)
- B/S
- P&L (Primary Cost Elements)

Controlling Objects (CO)
- Mach OH CCtr 30260
- Production Order xxxxxxxxxx
- Machine OH

Secondary Cost Elements (CO)
- Machine OH 841000
- F-2 45
- F-2 45
F-3: Apply Overhead from Manufacturing Cost Center to Production Order (Labor OH)

General Ledger Accounts (FI)
- B/S
- P&L (Primary Cost Elements)

Controlling Objects (CO)
- Labor OH CCtr
- Production Order

Secondary Cost Elements (CO)
- Labor OH
  - 842000
  - F-3 15

Production Order
- 30270 Overhead
- Labor OH Allocation
F-4: Apply Overhead from Manufacturing Cost Center to Production Order (Admin OH)

General Ledger Accounts (FI)
- B/S
- P&L (Primary Cost Elements)

Controlling Objects (CO)
- Mfg Admin OH CCtr 30280
- Production Order xxxxxxxxxx
- Admin OH 843000
- Admin OH 843000

Secondary Cost Elements (CO)
- Admin OH 843000
- F-4 60
- F-4 60
G: Calculate WIP for Open Production Order

**Secondary Cost Elements (CO) Results Analysis**

- RA - Valuated
  - Material: 820000
  - Machine: 822000
  - Labor: 824000
  - Setup: 825000
  - Material OH: 826000
  - Machine OH: 827000
  - Labor OH: 828000
  - Admin OH: 829000

- RA - Calculated
  - Material: 821000
  - Machine: 823000
  - Labor: 825000
  - Setup: 825000
  - Material OH: 827000
  - Machine OH: 827000
  - Labor OH: 828000
  - Admin OH: 829000

**Controlling Objects (CO) Production Order**

- B: 120 Raw material
- C-1: 20 Setup hours
- C-2: 40 Labor hours
- C-3: 60 Machine hours
- F-1: 30 Material OH
- F-2: 45 Machine OH
- F-3: 15 Labor OH
- F-4: 60 Admin OH

**Work-in-Process**

- G-1: 390
Run Settlement of Production Order (Posts Work-in-Process)

General Ledger Accounts (FI)

<table>
<thead>
<tr>
<th>B/S</th>
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P&L (Not Cost Elements)

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<th>P&amp;L</th>
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<tr>
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Controlling Objects (CO)

<table>
<thead>
<tr>
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<tr>
<td>B</td>
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<tr>
<td>C-1</td>
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<tr>
<td>C-2</td>
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<td>45</td>
</tr>
<tr>
<td>F-3</td>
<td>15</td>
</tr>
<tr>
<td>F-4</td>
<td>60</td>
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</tbody>
</table>

Secondary Cost Elements (CO)
S-1: Post Cost Center Variances — Material OH (Manual Clearing)

30250 Overhead

Material CC variances

S-1

General Ledger Accounts (FI)

P&L (Not Cost Elements)

<table>
<thead>
<tr>
<th>OHCCtr Vars</th>
<th>533000</th>
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</thead>
</table>

| S-1 | 170 |

P&L (Primary Cost Elements)

| OHCCtr Offset | 519700 |

| S-1 | 170 |

Controlling Objects (CO)

Mat'l OH CCtr

| 30250 | 170 |

Secondary Cost Elements (CO)

| S-1 | 170 |
S-2: Post Cost Center Variances — Machine OH (Manual Clearing)

General Ledger Accounts (FI)

P&L (Not Cost Elements)
- OHCCtr Vars
  - OHCCtr Offset

P&L (Primary Cost Elements)

Controlling Objects (CO)

Secondary Cost Elements (CO)

30260 Overhead

Machine CC variances

S-1

Mach OH CCtr

S-2 30260 155

S-2 519700 155

S-2 533000 155
S-3: Post Cost Center Variances — Labor OH (Manual Clearing)

General Ledger Accounts (FI)

- **P&L (Not Cost Elements)**
  - OHCCtr Vars
  - S-3 533000 185

- **P&L (Primary Cost Elements)**
  - OHCCtr Offset
  - S-3 519700 185

Controlling Objects (CO)

- Labor OH CCtr
  - S-3 30270 185
S-4: Post Cost Center Variances — Admin OH (Manual Clearing)

General Ledger Accounts (FI)

- **P&L (Not Cost Elements)**
  - OHCCtr Vars
    - S-4 533000
  - S-4 140

- **P&L (Primary Cost Elements)**
  - OHCCtr Offset
    - 519700

Controlling Objects (CO)

- Mfg Admin OH CCtr
  - 30280
  - S-4 140

Secondary Cost Elements (CO)
S-5: Post Cost Center Variances — Production (Manual Clearing)

General Ledger Accounts (FI)

- P&L (Not Cost Elements)
  - ProdCCtr Vars: 532000
  - ProdCCtr Offset: 519600

Controlling Objects (CO)

- Production CCtr
  - 30100
  - S-5: 880

Secondary Cost Elements (CO)

- Cost Center Variances
  - 30100
  - S-5: 880
Period 1 Postings After Month-End
(Process Steps)

1. **Direct postings**
   - 90100 Cost Center
     - Allocations from cost centers
     - Raw Materials Inventory
     - Issue raw material to order
   - Production Order
     - Calculate WIP
     - Work-in-Process

2. **Cost center variances**
   - 30270
     - Activity (Setup) confirmation
   - 30260
     - Activity (Labor) confirmation
   - 30250
     - Activity (Machine) confirmation

3. **Allocations from cost centers**
   - 30280
     - Cost center variances
   - 30270
     - Cost center variances
   - 30260
     - Cost center variances
   - 30250
     - Cost center variances

4. **Overhead**
   - 30280
   - 30270
   - 30260

5. **Cost Center**
   - 30100
     - Overhead
     - Production Order
     - Work-in-Process
     - Raw Materials Inventory
## Period 1 Postings After Month-End (FI)

### General Ledger Accounts (FI)

#### B/S

<table>
<thead>
<tr>
<th>Account</th>
<th>Period 1 B</th>
<th>A-1</th>
<th>A-3</th>
<th>G1</th>
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<tbody>
<tr>
<td>Raw Mat'l Inv.</td>
<td>131000</td>
<td>800</td>
<td>1000</td>
<td>390</td>
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<tr>
<td>A/P</td>
<td>211000</td>
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<tr>
<td>WIP Inventory</td>
<td>138000</td>
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</table>

#### P&L

<table>
<thead>
<tr>
<th>Account</th>
<th>Period 1 A-1</th>
<th>B</th>
<th>G1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary Exp</td>
<td>610000</td>
<td>800</td>
<td>390</td>
</tr>
<tr>
<td>Raw Mat'l Consum</td>
<td>510000</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>WIP Offset</td>
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* Not a cost element
# Period 1 Postings After Month-End (CO)

## Controlling Objects (CO)

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<tr>
<th>Utilities CCtr</th>
<th>Mat'l OH CCtr</th>
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<th>Labor OH CCtr</th>
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<td>F-4 60</td>
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</table>

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Value Flow

Postings for Period 2
Steps in the Manufacturing Process — Period Postings (Period 2)

A. Posting to cost centers
   1. Posting costs to service/administrative cost centers
   2. Allocating from service/administrative cost centers to production overhead cost centers
   3. Posting of costs to the production cost center

B. Raw materials issued from inventory to the production order

C. Activities allocated from the production cost center to the production order
   1. Setup labor hours
   2. Labor hours
   3. Machine hours

E. Finished goods are received into inventory from the production order (Period 2 only)

| General Ledger Accounts (FI)                  |
| Balance Sheet/Profit and Loss Statement      |
| Secondary Cost Elements                      |
| Tracking Transfers Between Controlling (CO) Objects |
| Controlling Objects (CO)                     |
| Cost Centers/Production Orders for Make-to-Stock |
E: Finished Goods Are Received into Inventory from the Production Order

- **General Ledger Accounts (FI)**
  - **B/S**
    - **Fin Gds Inv.**
      - **E**
      - 134000
      - 500
  - **P&L (Primary Cost Elements)**
    - **Mfg Output - Std**
      - **519000**
      - **500**

- **Controlling Objects (CO)**
  - **Production Order**
    - xxxxxxxx
    - **E**
    - 500
    - Receive fin goods

- **Secondary Cost Elements (CO)**
### Period 2 Postings Before Month-End (FI)

#### General Ledger Accounts (FI)

**B/S**

<table>
<thead>
<tr>
<th>Account</th>
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**P&L**

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**ProdCCtr Offset**

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*Not a cost element*
### Period 2 Postings Before Month-End (CO)

#### Controlling Objects (CO)

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<th>Mach OH CCtr</th>
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#### Production CCtr

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<td>60</td>
</tr>
<tr>
<td>C-4</td>
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</table>

#### Production Order

- **Raw material**: B = 120
- **Setup hours**: C-1 = 20
- **Labor hours**: C-2 = 40
- **Machine hours**: C-3 = 60
- **Material OH**: F-1 = 30
- **Machine OH**: F-2 = 45
- **Labor OH**: F-3 = 15
- **Admin OH**: F-4 = 60

- **Raw material**: B = 50
- **Labor hours**: C-2 = 60
- **Machine hours**: C-3 = 60
- **Receive fin goods**: E = 500
- **Material OH**: F-1 = 12.5
- **Machine OH**: F-2 = 45
- **Labor OH**: F-3 = 15
- **Admin OH**: F-4 = 42.5
Steps in the Manufacturing Process — Month-End Postings (Period 2)

F. Apply overhead from the manufacturing cost center to the production order
   1. Apply material overhead
   2. Apply machine overhead
   3. Apply labor overhead
   4. Apply administrative overhead

G. Calculate work-in-process for the production order
   1. Calculate WIP for open production order (Period 1 – posted at settlement)
   2. Cancel WIP for confirmed production order (Period 2 – posted at settlement)

S. Post cost center variances (manual clearing)

T. Calculate production order variances for confirmed production order (posted at settlement)
   Run settlement of production order (posts WIP, variances)

General Ledger Accounts (FI)
Balance Sheet/Profit and Loss Statement

Secondary Cost Elements
Tracking Transfers Between Controlling (CO) Objects

Controlling Objects (CO)
Cost Centers/Production Orders for Make-to-Stock
## G: Cancel WIP for Open Production Order

### Controlling Objects (CO)

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### Secondary Cost Elements (CO) Results Analysis

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### Controlling Objects (CO)

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### Calculation of Variances

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Run Settlement of Production Order (Posts Work-in-Process and Variances)

General Ledger Accounts (FI)

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P&L (Primary Cost Elements/ *Not Cost Elements)

<table>
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Controlling Objects (CO)

Production Order

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Secondary Cost Elements (CO)

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</tr>
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Period 2 Postings After Month-End
(Process Steps)

1. **Direct postings**
   - 90100 Cost Center
   - Raw Materials Inventory
   - Issue raw material to order

2. **Allocations from cost centers**
   - 30250 Overhead
   - Cost center variances
   - Activity (Setup) confirmation
   - Admin OH allocation
   - Machine OH allocation
   - Material OH allocation
   - Labor OH allocation

3. **Cost center variances**
   - F-1
   - F-2
   - F-3
   - F-4
   - C-1
   - C-2
   - C-3

4. **Cost center variances**
   - S-1
   - S-2
   - S-3
   - S-4
   - S-5

5. **Production Order**
   - Calculate WIP
   - Work-in-Process
   - Cancel WIP

6. **Finished Goods Inventory**
   - Receive finished goods into inventory

7. **Manufacturing variances**

8. **Summary**
   - Total process steps for Period 2 Postings After Month-End
### General Ledger Accounts (FI)

#### Raw Mat'l Inv.
- **B/S**: 131000
- **A/P**: 211000
- **WIP Inventory**: 138000

**Period 1**
- **B**: 120
  - A-1: 800
  - A-3: 1000

**Period 2**
- **B**: 50
  - E: 500
  - A-1: 800
  - A-3: 1000

#### Fin Gds Inv.
- **B/S**: 134000

**Period 1**
- **S**: 880
  - S-5: 880

**Period 2**
- **S**: 880
  - S-5: 880

#### A/P
- **B**: 800
  - A-1: 800
  - A-3: 1000

#### WIP Inventory
- **B**: 390

### Salary Exp
- **ProdCCtr Offset**: 519600
  - S-5: 880

**Period 1**
- **A-1**: 800
  - A-3: 1000

**Period 2**
- **A-1**: 800
  - A-3: 1000

### ProdCCtr Vars
- **ProdCCtr Vars**: 532000*
  - S-5: 880

**Period 1**
- **S-1**: 170
  - S-2: 170
  - S-3: 185
  - S-4: 140

**Period 2**
- **S-1**: 187.5
  - S-2: 187.5
  - S-3: 185
  - S-4: 157.5

### OHCCtr Offset
- **OHCCtr Offset**: 519700
  - S-5: 880

**Period 1**
- **S-1**: 170
  - S-2: 155
  - S-3: 185
  - S-4: 140

**Period 2**
- **S-1**: 187.5
  - S-2: 155
  - S-3: 185
  - S-4: 157.5

### OHCCtr Vars
- **OHCCtr Vars**: 533000*

**Period 1**
- **G1**: 390

**Period 2**
- **G2**: 390

### Raw Mat'l Consum
- **Mfg Output - Std**: 519000
  - S-5: 880

**Period 1**
- **B**: 120

**Period 2**
- **B**: 50
  - E: 500
  - T: 175

### Mfg Output - Var
- **Mfg. Output**: 519500
  - S-5: 880

**Period 1**
- **G1**: 390

**Period 2**
- **G2**: 390

### Production Variance
- **Production Variance**: 531000*

**Period 1**
- **G1**: 390

**Period 2**
- **G2**: 390

### WIP Offset
- **WIP Offset**: 511000*

**Period 1**
- **G1**: 390

**Period 2**
- **G2**: 390
## Period 2 Postings After Month-End (CO)

### Controlling Objects (CO)

<table>
<thead>
<tr>
<th>Utilities CCtr</th>
<th>Mat'l OH CCtr</th>
<th>Mach OH CCtr</th>
<th>Labor OH CCtr</th>
<th>Mfg Admin OH CCtr</th>
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**Period 1**

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<td>200</td>
<td>45</td>
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<td>200</td>
<td>185</td>
<td>200</td>
<td>140</td>
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**Period 2**

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<tr>
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<td>200</td>
<td>12.5</td>
<td>187.5</td>
<td>200</td>
<td>45</td>
<td>155</td>
<td>200</td>
<td>185</td>
<td>200</td>
<td>42.5</td>
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</tbody>
</table>

### Production CCtr

|       | A-1  | C-1  | C-2  | C-3  | S-5  | A-3  | 1000 | B    | 120  | C-1  | 20   | C-2  | 40   | C-3  | 60   | F-1  | 30   | F-2  | 45   | F-3  | 15   | F-4  | 60   | T    | 175  |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|       |      | 20   |      | 60   | 880  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

**Period 2**

|       | A-1  | C-1  | C-2  | C-3  | S-5  | A-3  | 1000 | B    | 50   | C-1  | 60   | C-2  | 60   | C-3  | 60   | F-1  | 12.5 | F-2  | 45   | F-3  | 15   | F-4  | 42.5 | T    | 175  |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

### Production Order

|       | A-1  | C-1  | C-2  | C-3  | S-5  | A-3  | 1000 | B    | 120  | C-1  | 20   | C-2  | 40   | C-3  | 60   | F-1  | 30   | F-2  | 45   | F-3  | 15   | F-4  | 60   | T    | 175  |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|       |      | 20   |      | 60   | 880  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

- **A-1**: 800
- **A-2**: 200
- **F-1**: 30
- **S-1**: 170
- **A-2**: 200
- **F-2**: 45
- **S-2**: 155
- **A-2**: 200
- **S-2**: 185
- **A-2**: 200
- **S-2**: 140
- **F-2**: 12.5
- **F-3**: 45
- **F-3**: 15
- **F-4**: 60
- **F-4**: 42.5
- **S-1**: 187.5
- **S-1**: 157.5

### Raw material
- **B**: 120
- **E**: 500
- **F**: 12.5
- **F**: 12.5
- **F**: 15
- **F**: 42.5
- **T**: 175

### Setup hours
- **C-1**: 20
- **C-1**: 20
- **C-2**: 40
- **C-2**: 40
- **C-3**: 60
- **C-3**: 60
- **F-1**: 30
- **F-1**: 30
- **F-2**: 45
- **F-2**: 45
- **F-3**: 15
- **F-3**: 15
- **F-4**: 60
- **F-4**: 60

### Labor hours
- **C-1**: 60
- **C-1**: 60
- **C-2**: 60
- **C-2**: 60
- **C-3**: 60
- **C-3**: 60
- **F-2**: 45
- **F-2**: 45
- **F-3**: 15
- **F-3**: 15
- **F-4**: 42.5
- **F-4**: 42.5

### Machine hours
- **C-1**: 60
- **C-1**: 60
- **C-2**: 60
- **C-2**: 60
- **C-3**: 60
- **C-3**: 60
- **F-1**: 30
- **F-1**: 30
- **F-2**: 45
- **F-2**: 45
- **F-3**: 15
- **F-3**: 15
- **F-4**: 60
- **F-4**: 60

**Receive fin goods**
- **E**: 500

**Material OH**
- **F-1**: 30
- **F-1**: 30
- **F-2**: 45
- **F-2**: 45
- **F-3**: 15
- **F-3**: 15
- **F-4**: 60
- **F-4**: 60

**Machine OH**
- **F-1**: 12.5
- **F-1**: 12.5
- **F-2**: 45
- **F-2**: 45
- **F-3**: 15
- **F-3**: 15
- **F-4**: 42.5
- **F-4**: 42.5

**Labor OH**
- **F-1**: 15
- **F-1**: 15
- **F-2**: 45
- **F-2**: 45
- **F-3**: 15
- **F-3**: 15
- **F-4**: 42.5
- **F-4**: 42.5

**Admin OH**
- **F-1**: 60
- **F-1**: 60
- **F-2**: 45
- **F-2**: 45
- **F-3**: 15
- **F-3**: 15
- **F-4**: 60
- **F-4**: 60

**Settle variances**
- **T**: 175

**30100 Production CCtr**
- **30250 Mat'l OH CCtr**
- **30260 Mach OH CCtr**
- **30270 Labor OH CCtr**
- **30280 Mfg Admin OH CCtr**

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Wrap-Up
What Happens Next?
X: Finished Goods Are Delivered to Customer

Finished Goods Inventory

Production Order

Sales Order

General Ledger Accounts (FI)

B/S

<table>
<thead>
<tr>
<th>Fin Gds Inv.</th>
<th>134000</th>
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</thead>
<tbody>
<tr>
<td>X</td>
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</tbody>
</table>

P&L (Primary Cost Elements/
*Not Cost Elements)

<table>
<thead>
<tr>
<th>Cost of Goods Sold</th>
<th>500000*</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
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</tr>
</tbody>
</table>

Controlling Objects (CO)

Secondary Cost Elements (CO)
Y: Customer Is Invoiced

General Ledger Accounts (FI)

B/S

A/R

121000

Y

750

P&L (Primary Cost Elements/
*Not Cost Elements)

Revenue

410000*

Sales

Discounts

420000*

Y

800

Y

50

Controlling Objects (CO)

Secondary Cost Elements (CO)
Summary — Benefits

Integrated process – Financial and controlling processes automatically follow with logistics processes
Detailed analysis of production costs, WIP, and variances
Follows controlling concept of analyzing details in management accounting, not in the G/L
Where to Find More Information: Books

- Currently out of print, used copies sometimes occasionally available on Amazon.com


Where to Find More Information: Web, Social Media

CFO and Finance Leader Center: www.sapcfo.com

sap.com: www.sap.com/financiallexcellence

Subscribe to our monthly newsletter: www.sap.com/finance-newsletter

You can also follow us on:

- www.twitter.com/cfoknowledge
- www.twitter.com/sapepm

- www.facebook.com/sapfinancialmanagement
- www.facebook.com/sapepm

- www.youtube.com/playlist?list=PL4474C3D66B0F41BF

- http://cfoknowledge.wordpress.com/
- http://scn.sap.com/community/epm
- http://scn.sap.com/community/erp/financials
7 Key Points to Take Home

Costing support for all manufacturing strategies (make-to-stock, make-to-order, assemble-to-order, repetitive, process, engineer-to-order, etc.) provides flexibility for all types of manufacturing requirements.

Understanding the “big picture,” integrated view ensures an accurate reconciliation of manufacturing costs with financial statements.

Product costing is integrated into the SAP ERP environment, so postings that occur in logistics (sales, manufacturing, etc.) are immediately reflected in accounting.

Postings to the P&L, for primary cost elements, reflect actual expenses incurred in the manufacturing process.

Management accounting and postings to secondary cost elements allow companies to track costs as they flow through various controlling objects in the manufacturing process.

Month-end processes are in place to ensure compliance with financial reporting regulations, while maintaining the management view of the manufacturing process.

SAP continues to work on enhancements for inventory valuation to support changing legal requirements and evolving corporate requirements.
Thank you

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SAP Marketing, Finance Solutions
SAP
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