# SAP FI Integration

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# About

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- Worked on SAP since 1997 as end-user, core team member, consultant and delivery manager
- End-user experience in SAP FI (AP, AR, GL, AA), SAP CO (CCA, PC, PA,PCA)
- Implemented 4 projects in SAP FICO with integration
- Specialised in Product Costing, Profitability Analysis
- Delivered on several large and global SAP & Data Analytics projects
- Head SAP Team (all modules), Head Data Analytics
- Worked with General Motors, Shaw Wallace, Bayer, Colgate, IBM, General Mills

# Content

- Integration
- Procure to Pay
- Order to Cash
- Plan to Produce

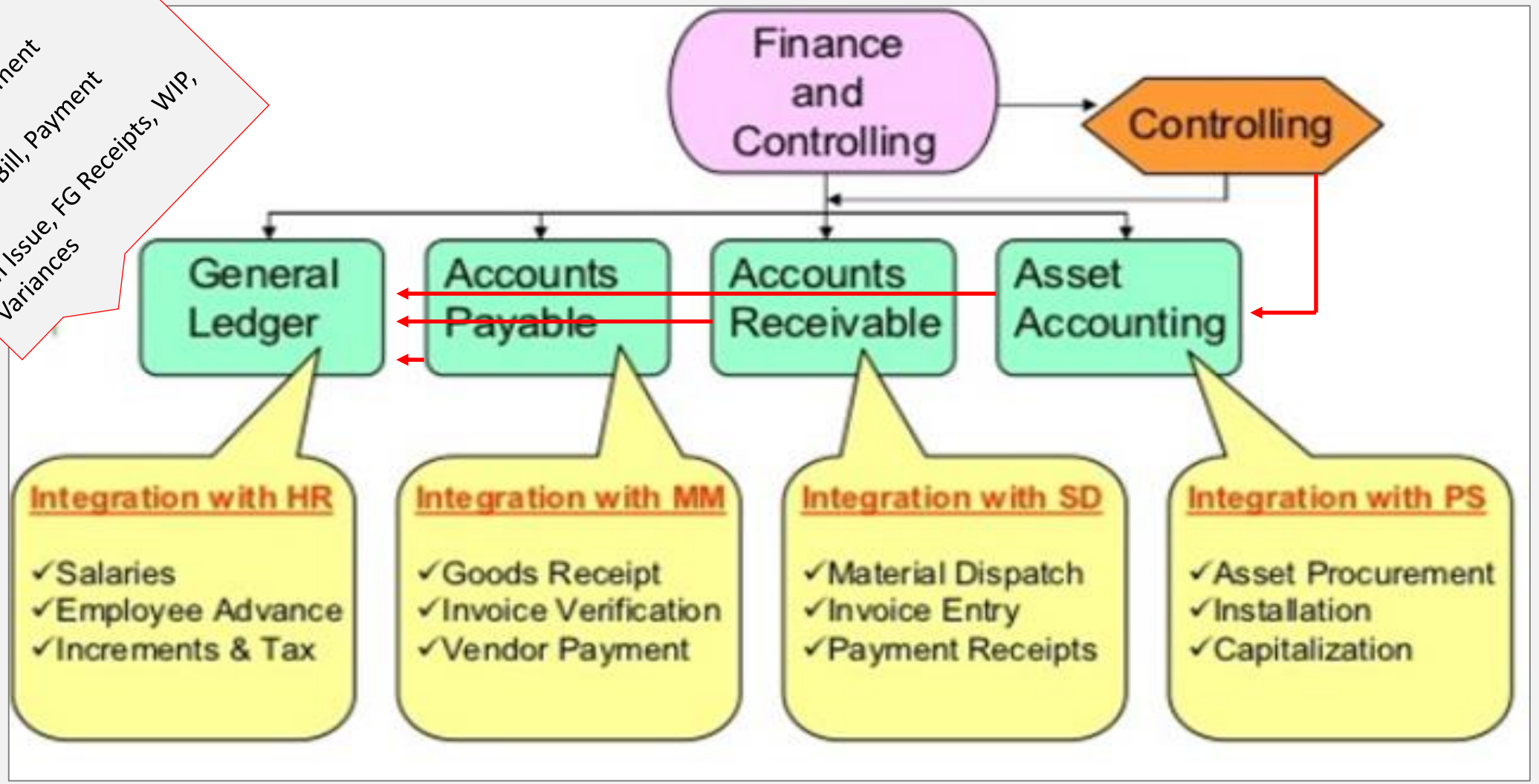
# SAP FI INTEGRATION

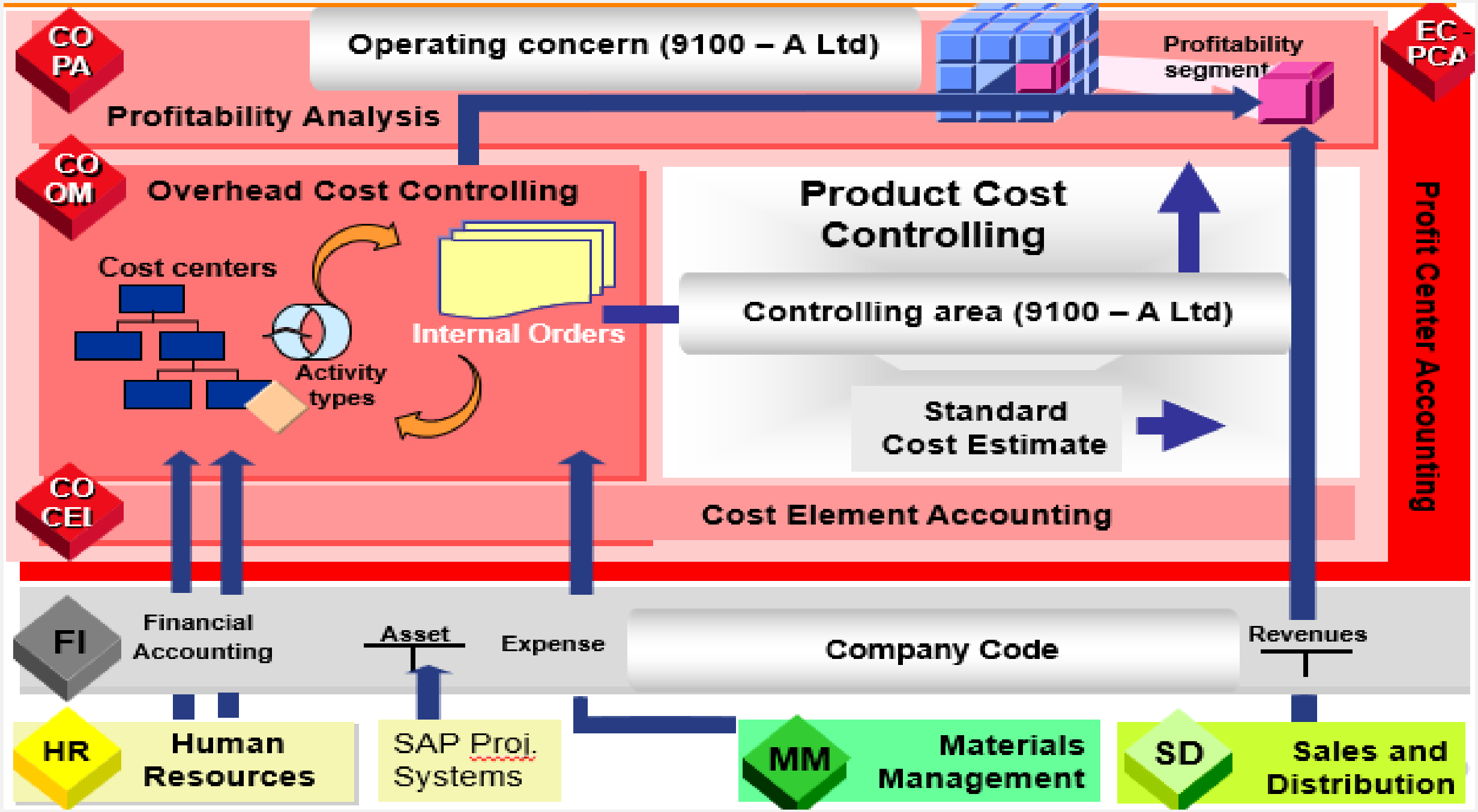
# Integration Concept

MM:
- GR, IV, Payment

SD:
- PGI, Bill, Payment

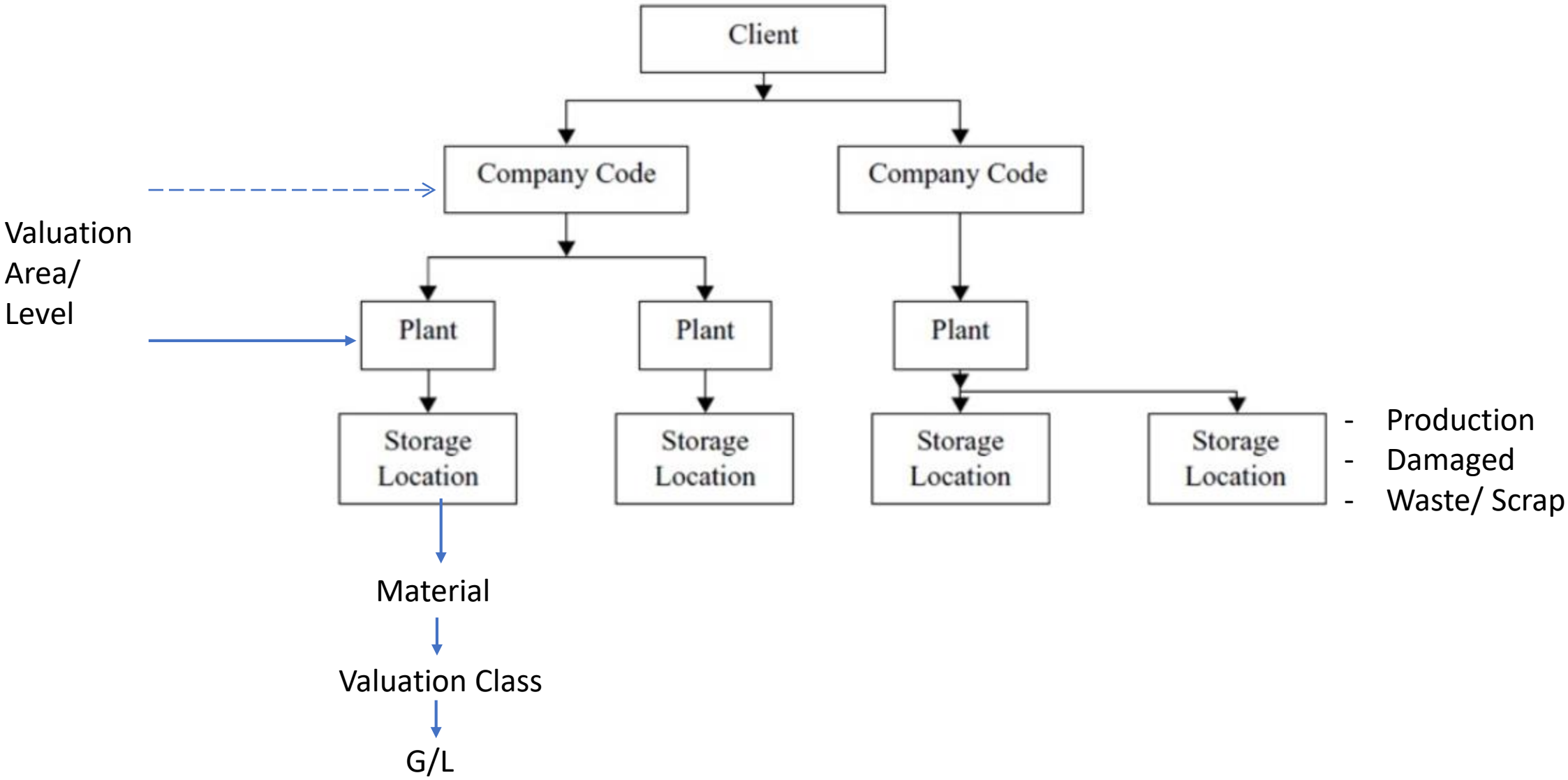
PP:
- RM Issue, FG Receipts, WIP, Variances




CO PA
Operating concern (9100 – A Ltd)
Profitability segment
EC-PCA
Profitability Analysis
CO OM
Overhead Cost Controlling
Product Cost Controlling
Cost centers
Internal Orders
Activity types
Controlling area (9100 – A Ltd)
Standard Cost Estimate
Profit Center Accounting
CO CEI
Cost Element Accounting
FI
Financial Accounting
Asset
Expense
Company Code
Revenues
HR
Human Resources
SAP Proj. Systems
MM
Materials Management
SD
Sales and Distribution

# PROCURE TO PAY

# P2P – Understanding MM



# Plant in SAP

**Org Structure**

- The plant is an operating area or branch within a company.
- The plant is assigned to a single company code. A company code can have several plants.
- Several storage locations in which material stocks are managed can belong to a plant.
- A single business area is assigned to a plant and to a division.
- A plant can be assigned to several combinations of sales organization and distribution channel.
- A plant can have several shipping points. A shipping point can be assigned to several plants.
- A plant can be defined as a maintenance planning plant.

**Importance**

The plant plays an important role in the following areas:

**Material valuation**

If the valuation level is the plant, the material stocks are valuated at plant level. Each plant can have its own account determination.

**Inventory management**

The material stocks are managed within a plant.

**MRP**

Material requirements are planned for each plant. costing In costing, valuation prices are defined only within a plant.

**Plant maintenance**

If a plant performs plant maintenance planning tasks, it is defined as a maintenance planning plant.

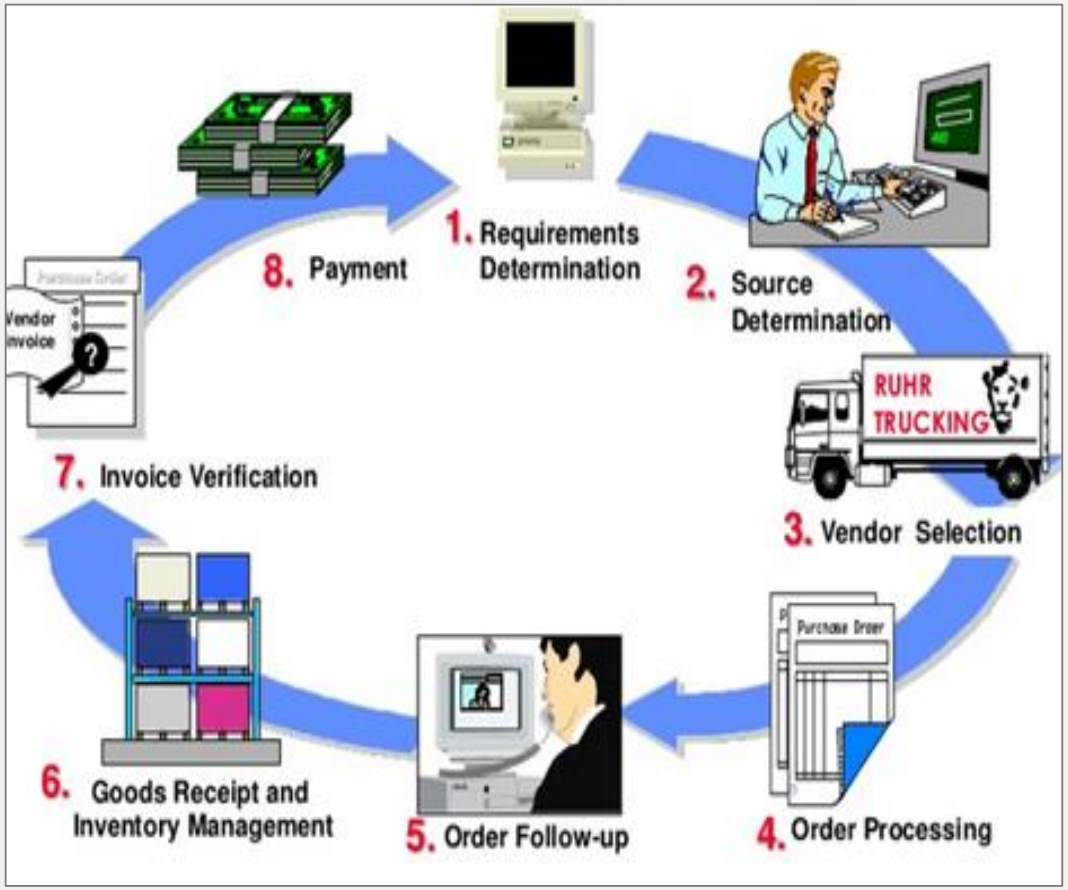
# P2P Accounting

No Accounting

**Payment Run**
**Dr:** Vendor
**Cr:** Bank

**MIRO**
**Dr:** GR/IR
**Cr:** Vendor

**MIGO**
**Dr:** Material or Expense or AUC
**Cr:** GR/IR




No Accounting

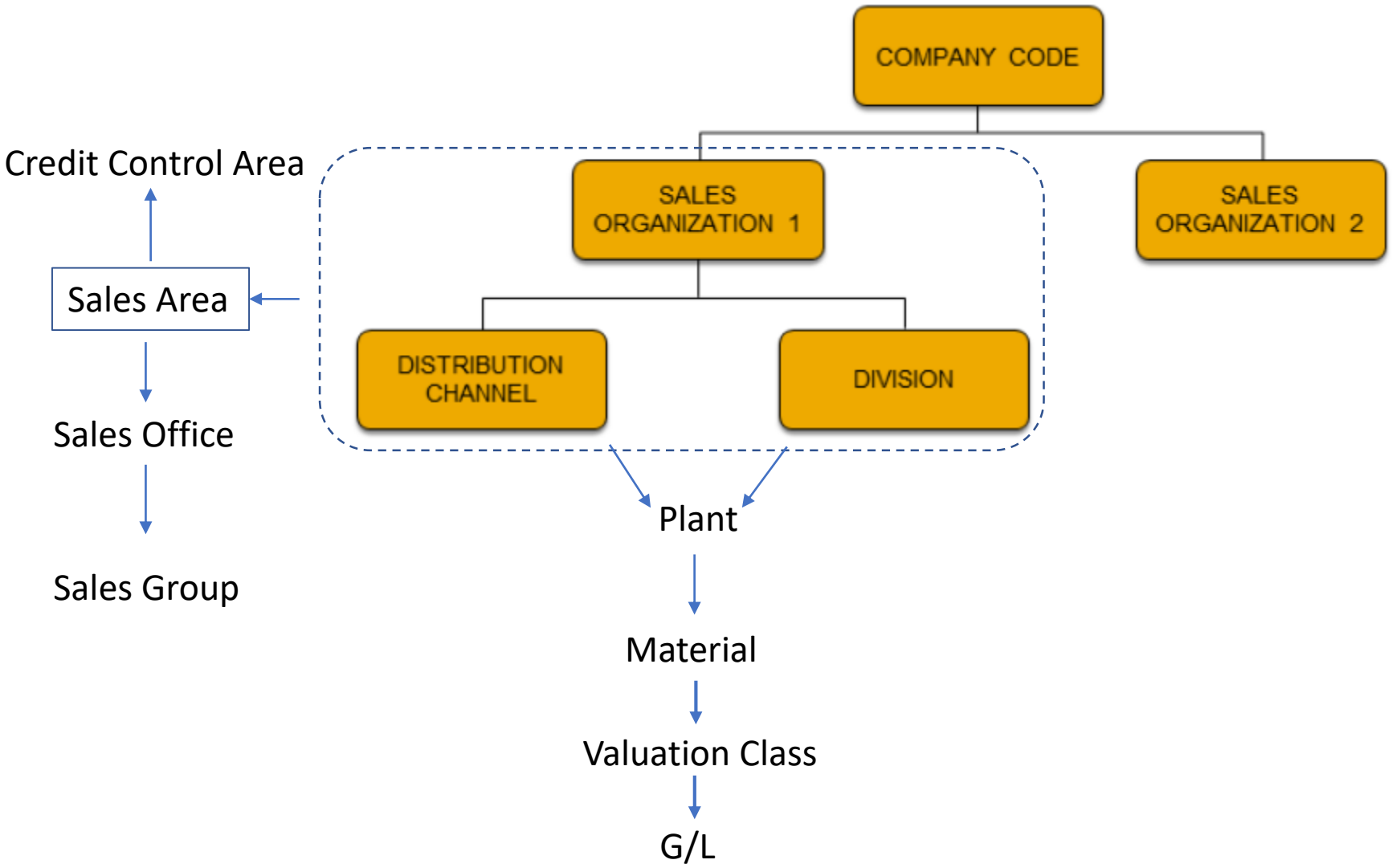
MK01/ FK01
Create
Vendor
Master

MR51N/ ME21N
No Accounting

No Accounting

# ORDER TO CASH

# Business Integration with ERP



# O2C Accounting

VA21
No Accounting

Dr: Bank
Cr: Customer

F-28

VA01
No accounting

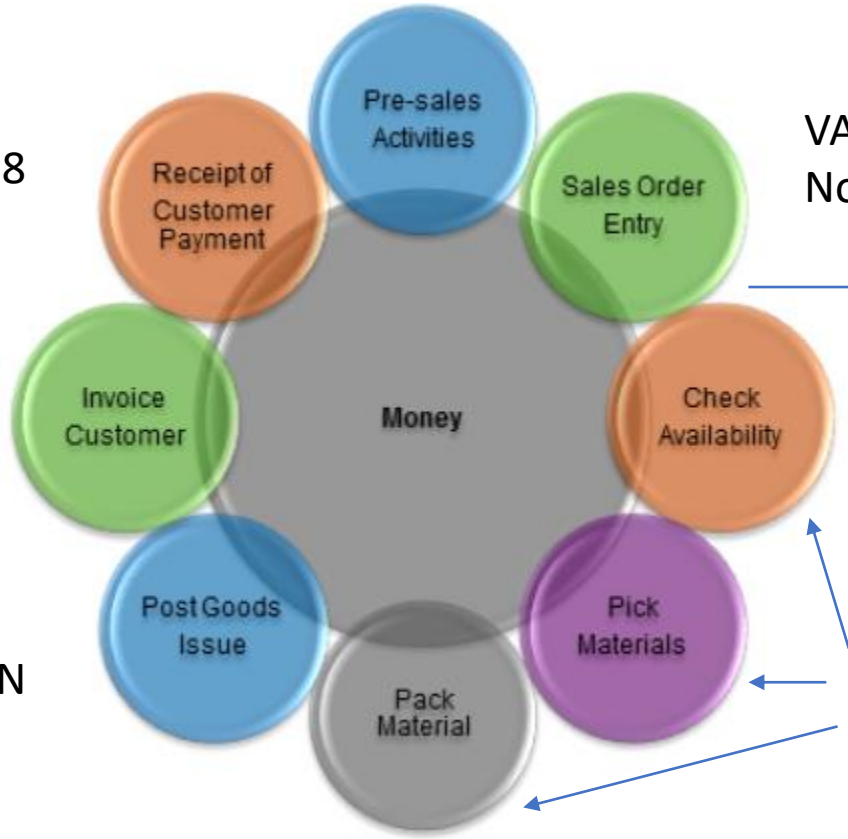
- Credit Management (Advance)
- Credit Check

Dr: Customer
Cr: Sales
Cr. GST

VF01

Dr: COGS
Cr: FG

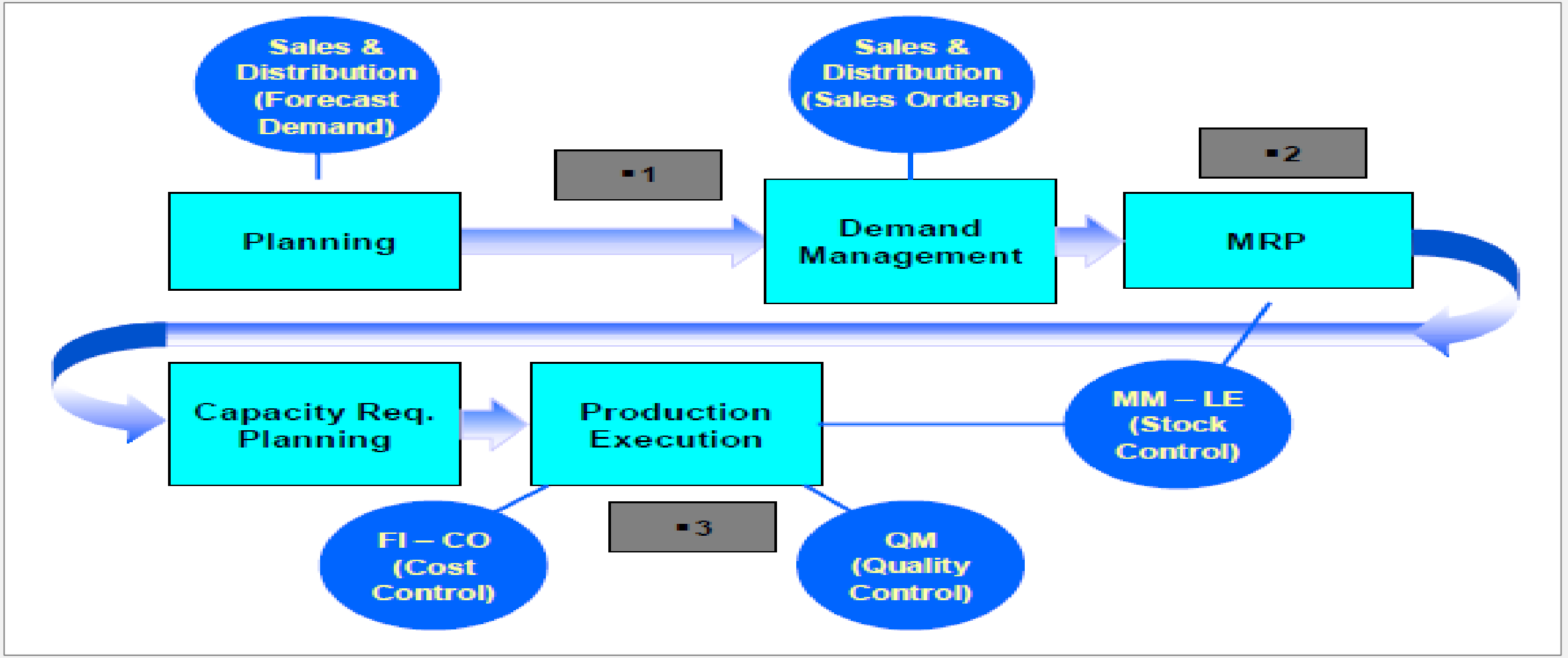
VL02N




No Accounting

# PLAN TO PRODUCE

# SAP PP Integration



# SAP PP Integration

PP integration takes place mainly at these stages-

1) When we create and release the production order, the planned costs will be calculated from BOM and Routing/Master Recipe master data. CO document will be generated for planned postings

2) When we issue goods (Raw materials) to production (against Production order) the FI and CO entries will get generated

3) When operations in routings are confirmed, the cost centers in the work centers will be charged with the activity costs. Here secondary cost postings will be triggered in the production cost centers.

# Product Costing

# About PC

Product Costing is used for determining cost of manufacturing product/ rendering services.

It helps management in -

- Determining Cost of Goods Sold
  Sale – COGS = Gross Profit
- Valuation of Inventories (Legal Valuation)
- Cost controlling
- Profitability forecasting & analysis
- Pricing

In this session, we will deal with manufactured products

# Costing Methodology

- Moving Average Price
  **Price that changes in consequence of usage and entry of invoices. Calculated by dividing the value of material by the quantity in stock. Automatically recalculated based on activity.**
- Standard Price
  **Constant price without considering usage or invoices. Price variances are posted to price difference accounts; not affecting the standard price. Usually calculated at the beginning of each year.**
- MAP is indicated by Price Control indicator as ‘V’ and Standard Price is indicated by ‘S’ in the material master
- The decision on method of valuating material is taken at the time of creating/ extending the material master. Finished goods are valuated with standard price while RM/ PM may be MAP or standard price.

# Manufacturing Scenarios

- Make to Order

  The planning and manufacturing process is initiated after receiving the sales orders from the customer.

  The whole process is customer focused and throughout the manufacturing process the connection to the customer can be maintained.

  The primary benefit of this process is that manufacturer can meet specific customer requirements and track the profitability of each sales order.

# Manufacturing Scenarios

- Make to Stock

  Characteristics of a Make-to-Stock (MTS) process are commodity based end products

  Production prior to sales order based on forecast

  End products sold from inventory, controlling of inventory is critical and distribution and warehousing of end product is the norm.

# Striking Similarity – Plant & Kitchen !

Kitchen is a “plant” with several “Work Centre”

# Standard Costing

Finished Goods

Rosgulla | 100 Psc

Costing Lot

Raw Material

Activity

Overhead

| Ingredients | Qty | Rate | Tot | |
|---|---|---|---|---|
| Milk | 10 Ltrs | 25 | 250 | |
| Sugar | 5 Kgs | 20 | 100 | |
| Misc. Item | 1 Kg | 50 | 50 | 400 |
| Heating | 2 Hrs | 25 | 50 | |
| Refrig. | 1 Hrs | 30 | 30 | |
| Washing | 1 Hr | 15 | 15 | |
| Storage | 5% | | 20 | 115 |
| Standard Cost | | | | 515 |
| Per Unit Cost | | | | 5.15 |

# Standard Costing

Rosgulla | 100 Psc

Bill Of Material

Recipes/ Routings

Costing Sheet

| Ingredients | Qty | Rate | Tot | |
|---|---|---|---|---|
| Milk | 10 Ltrs | 25 | 250 | |
| Sugar | 5 Kgs | 20 | 100 | |
| Misc. Item | 1 Kg | 50 | 50 | 400 |
| Heating | 2 Hrs | 25 | 50 | |
| Refrig. | 1 Hrs | 30 | 30 | |
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| Storage | 5% | | 20 | 115 |
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# Standard Costing

| Rosgulla | 100 Psc |
|---|---|

| Ingredients | Qty | Rate | Tot | |
|---|---|---|---|---|
| Milk | 10 Ltrs | 25 | 250 | |
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| Misc. Item | 1 Kg | 50 | 50 | 400 |
| Heating | 2 Hrs | 25 | 50 | |
| Refrig. | 1 Hrs | 30 | 30 | |
| Washing | 1 Hr | 15 | 15 | |
| Storage | 5% | | 20 | 115 |
| Standard Cost | | | | 515 |
| Per Unit Cost | | | | 5.15 |

Cost Component

# Standard Vrs. Actual Costs

| 100 Psc | Standard | | | Actual | | | Var. |
|---|---|---|---|---|---|---|---|
| Ingredients | Qty | Rate | Tot | Qty | Rate | Tot | |
| Milk | 10 Ltrs | 25 | 250 | 12 Ltrs | 30 | 360 | |
| Sugar | 5 Kgs | 20 | 100 | 10 Kgs | 18 | 180 | |
| Misc. Item | 1 Kg | 50 | 50 | 1 Kg | 50 | 50 | |
| | | | 400 | | | 590 | 190 |
| Heating | 2 Hrs | 25 | 50 | 3 Hrs | 25 | 75 | |
| Refrig. | 1 Hrs | 30 | 30 | 1 Hrs | 30 | 30 | |
| Washing | 1 Hr | 15 | 15 | 1 Hr | 15 | 15 | |
| Storage | 5% | | 20 | 5% | | 30 | |
| | | | 115 | | | 150 | 35 |
| Standard Cost | | | 515 | Actual Cost | | 740 | 225 |

# What makes it work in SAP?

**Master Data**

- Material Master for FG, RM and PM
  - Price Control, Costing indicator, Plan price for RM/ PM
- BOM
  - Assembly
  - Item with quantity
  - Base qty
- Routings
  - Operations
  - Work Centre, Cost Centre
  - Activities
  - Resources
- Cost Centers/ Cost Elements
- Activity

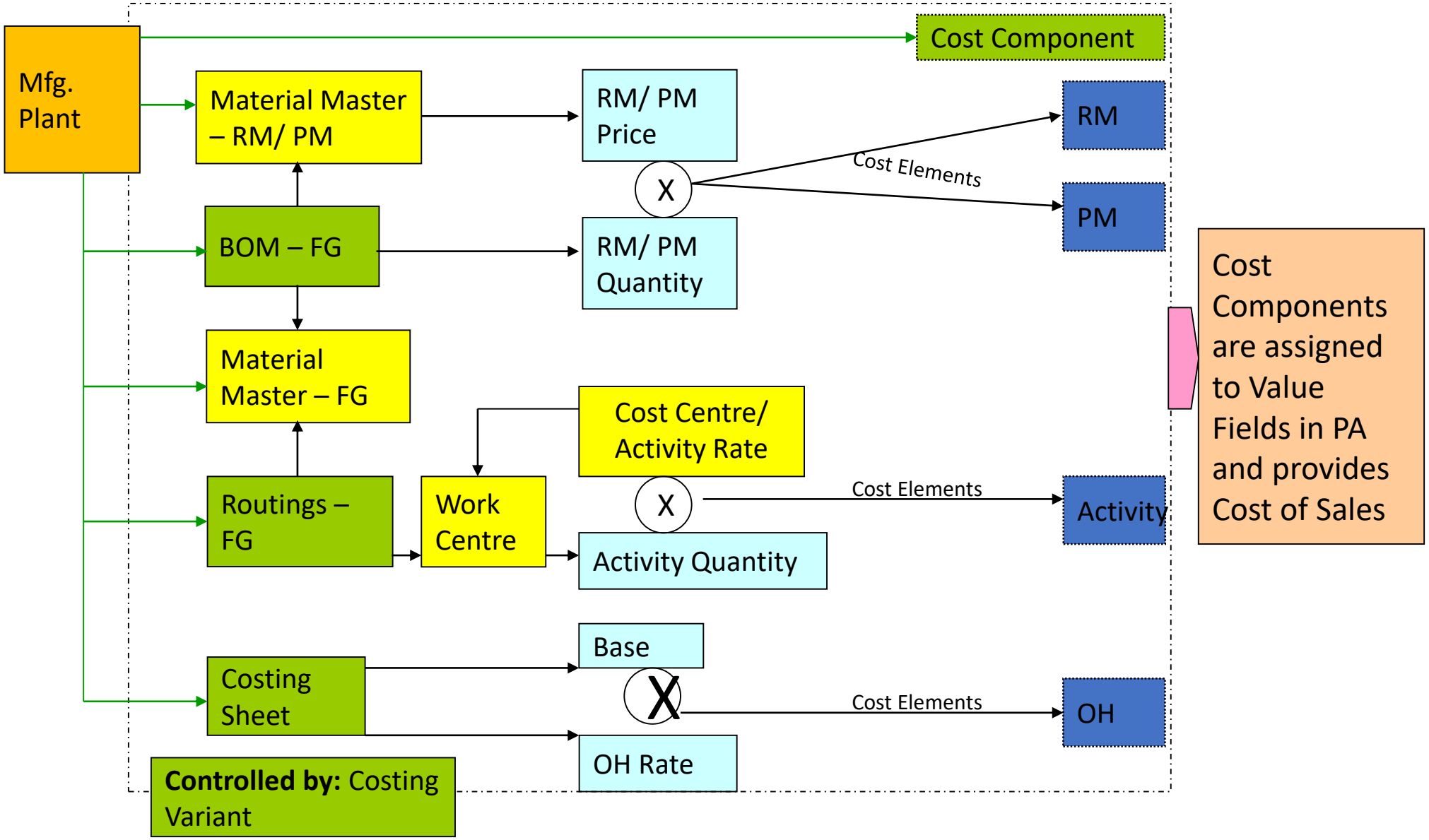
**T-Codes**

- Material Cost Estimate/ Costing Run (CK13N/ CK40N)
- Cost Centre Planning & activity rates (KP26)

**Configuration**

- Costing Variant
  - Costing type
  - Valuation Variant
  - Date Control
  - Qty structure control
  - Transfer Control
  - Reference Control
- Costing Sheet
- Plant, production version, etc

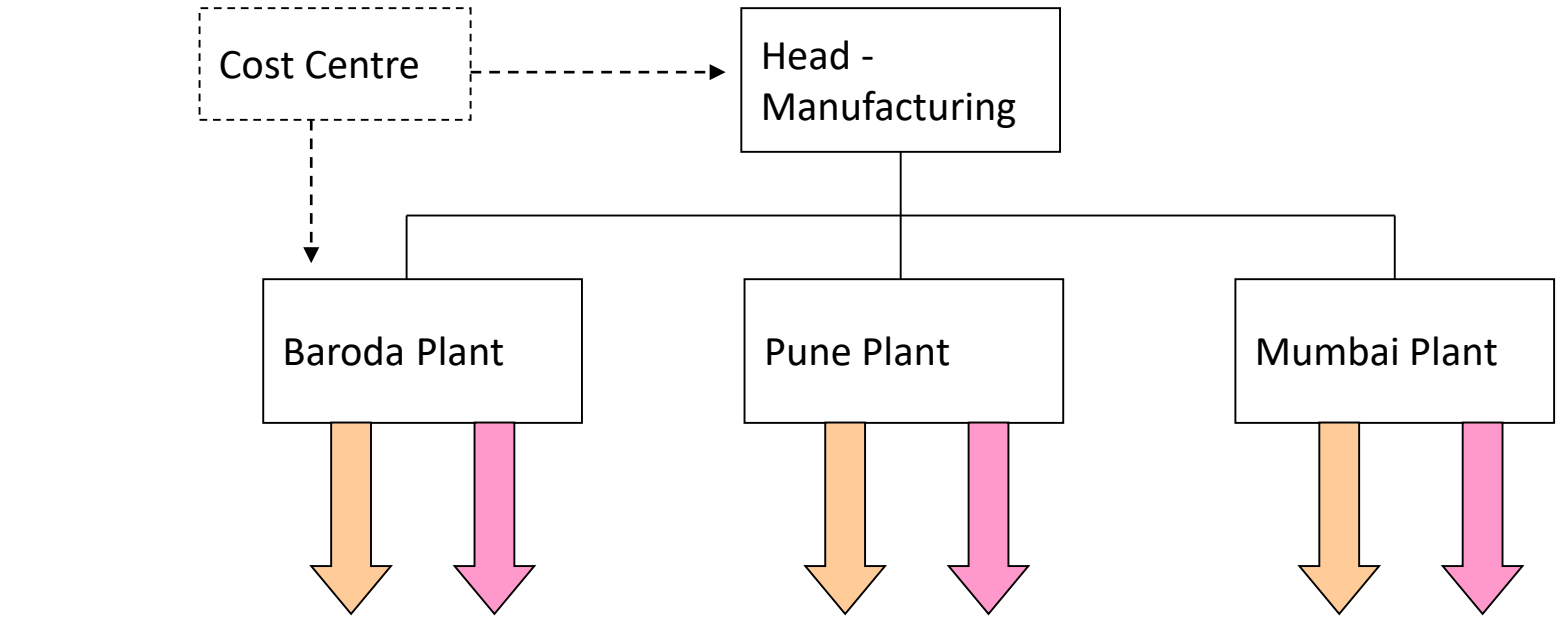
# Standard Costing Process



# Activity Price Calculation

- **RM/ PM** prices are based on market forecast or historical averages
- **Activity prices** involves cost centers and activity-dependent planning

# Activity Price Calculation




$$\frac{\text{Fixed Machine Cost}}{\text{Capacity Machine Hour}} + \frac{\text{Variable Machine Cost}}{\text{Plan Machine Hour}} = \text{Machine Activity Price}$$

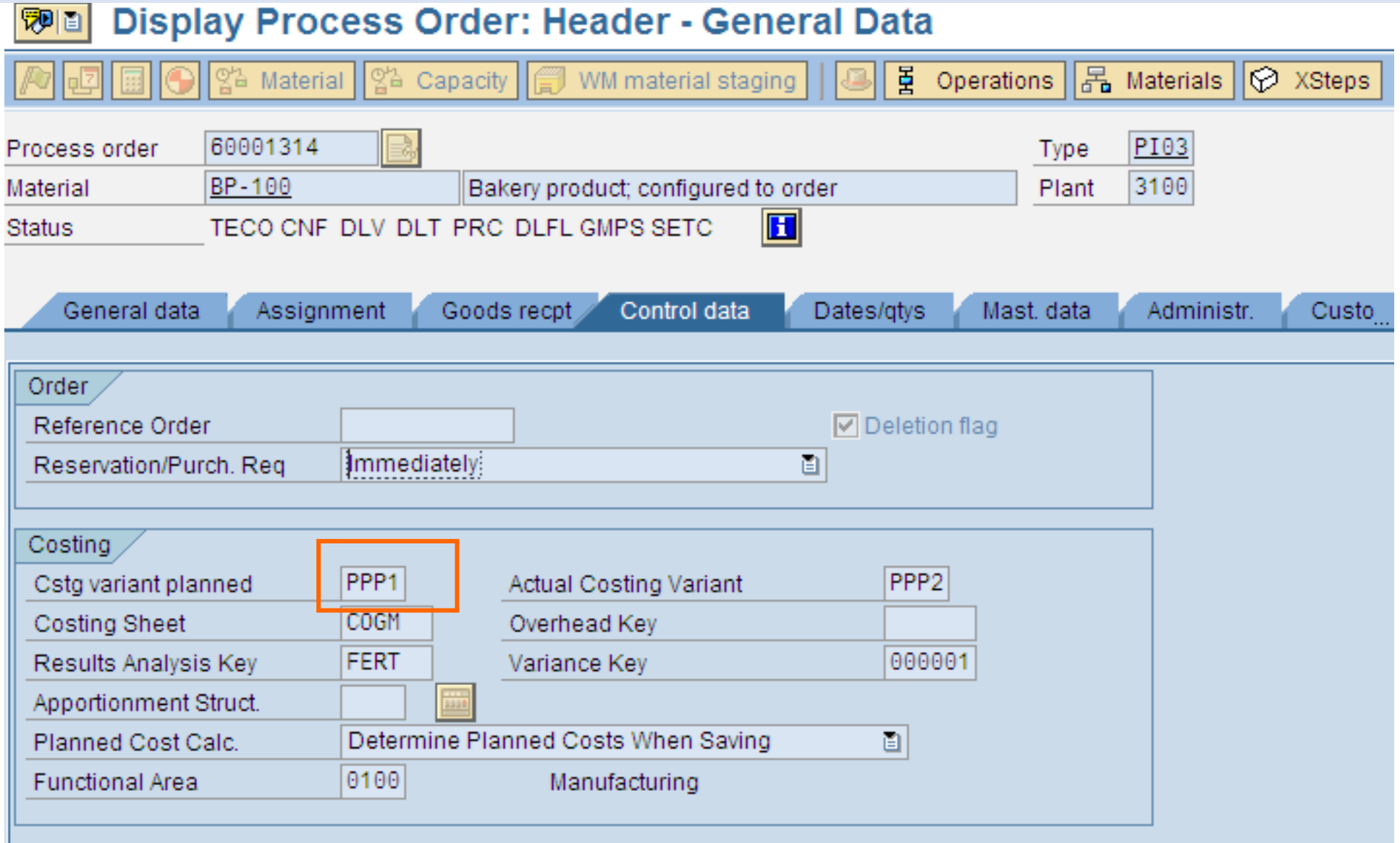
Machine Activity

Labor Activity

# Valuation

- Once standard cost is released, all finished goods currently in stock, are re-valuated.
- Difference between old value and the new value gets posted to FI using MM procedures in OBYC.
- FG stock is reflected at current standard price

# Production


Display Process Order: Header - General Data
Material
Capacity
WM material staging
Operations
Materials
XSteps
Process order
60001314
Type
PI03
Material
BP-100
Bakery product; configured to order
Plant
3100
Status
TECO CNF DLV DLT PRC DLFL GMPS SETC
General data
Assignment
Goods recpt
Control data
Dates/qtys
Mast. data
Administr.
Custo...
Order
Reference Order
Deletion flag
Reservation/Purch. Req
Immediately
Costing
Cstg variant planned
PPP1
Actual Costing Variant
PPP2
Costing Sheet
COGM
Overhead Key
Results Analysis Key
FERT
Variance Key
000001
Apportionment Struct.
Planned Cost Calc.
Determine Planned Costs When Saving
Functional Area
0100
Manufacturing

# Production

- RM/ PM required for a production batch are issued on Process Order using movement type 261.
- Activity hours are confirmed on the process orders.
- Production quantity is confirmed
- While saving, costs gets calculated on Process Orders –

  RM/PM valued at MAP, Activity – Standard
- At the period end, variances are calculated between standard costs and MAP and settled.
- Finished Goods produced are always valued at Standard Cost.

# Sales

- At the time of Post Goods Issue (PGI), cost of finished goods dispatched are booked in SAP FI.
- This happens as per procedures in OBYC (MM module).
- Costs are picked up from current standard price field in material master.
- Cost per unit * units dispatched is booked as COGS.
- Using pricing condition VPRS in billing document, COGS value is transferred to PA

# Perion End

Major Activities:

- Overhead Calculation as per costing sheet
- WIP Calculation for process order with status ‘partially delivered’
- Variance calculation – between Standard Cost and Target Cost
- Settlement of variances in FI
- Actual activity prices

# Profitability Analysis

| Value Field | Description | Rs. |
|---|---|---|
| VVR01 | Sale Revenue | 1000 |
| VVC01 | COGS | 515 |
| VVC02 | Variances | 225 |
| Gross Profit | | 260 |

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# Thanks!