

Integrated Value Flows

IVF6ILV

12 March 2025

Agenda



- Organizational issues
- complete with Integrated order-to-cash cycle
(Create Invoice for Customer)
- Material Management (MM) - Procurement
- Production Planning (PP)

Organizational issues



Sessions

Session	In class/VC/EL	Topic	
03.03.2025 09:00 - 12:30	In class	Introduction, course overview, self-conception, introduction to SAP S/4HANA, introduction logistics case study	✓
03.03.2025 14:00 - 17:30	In class	Master – organizational – transaction data, Introduction sales SD	✓
04.03.2025 18:00 - 19:45	E-learning – Tasks in MS Teams – no course	SCOR – SAP Activate – After Class	✓
05.03.2025 09:00 - 12:30	In class - Customizing	Review of the content from Session 1 and continuation with the SAP Sales Process + Custom Fields	✓
11.03.2025 09:00 - 12:30	In class	Introduction MM & MRP	✓
11.03.2025 14:00 - 17:30	In class	Introduction MM & MRP	✓
12.03.2025 09:00 - 13:15	In class	PP & MM Challenge - Time for preparation	
12.03.2025 14:00 - 17:30	In class	Intermediate Exam – Short individual presentation & time for Logistic Case Study	
26.03.2024 23:59 -00:00	only submission/no course	Deadline submission documentation – only submission/no course	

Material Management (MM)

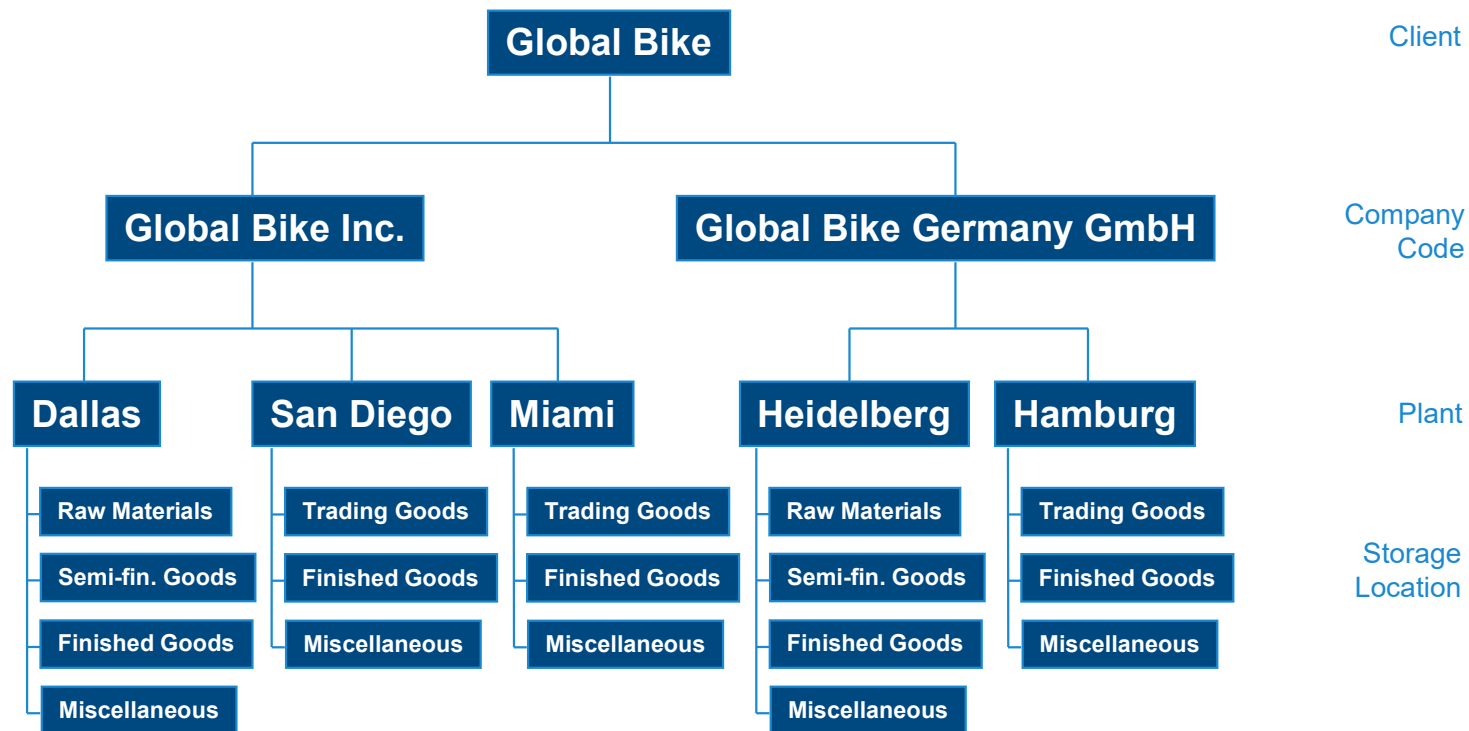
MM Organizational Structure (Materials Mgmt.)

- Client
 - An independent environment in the system
- Company Code
 - Smallest org unit for which you can maintain a legal set of books
- Plant
 - Operating area or branch within a company
 - Manufacturing, distribution, purchasing or maintenance facility
- Storage Location
 - An organizational unit allowing differentiation between the various stocks of a material in a plant

MM Organizational Structure (Purchasing)

- Purchasing Organization
 - The buying activity for a plant takes place at the purchasing organization
 - Organization unit responsible for procuring services and materials
 - Negotiates conditions of the purchase with the vendors
- Purchasing Group
 - Key that represents the buyer or group of buyers who are responsible for certain purchasing activities
 - Channel of communication for vendors

Global Bike Structure for Materials Management



MM Master Data

SAP Create Purchase Order

Document Overview On Create Other Purchase Order Hold Check Help Personal Setting More

NB Standard PO Vendor: 125015 Mid-West Supply Doc. Date: 20.04.2018

Header

Item	A	I	Material	Short Text	PO Quantity	O...	Deliv. Date	Net Price	Curr...	Per	O...	Mati Group	Pint
10			CHLK1000	Chain Lock	200	EA	20.07.2018	32,00	USD	1	EA	Utilities	DC Miami

Default Values Add Planning

Item: 1 [10] CHLK1000 , Chain Lock

Material Data Quantities/Weights Delivery Schedule Delivery Invoice Conditions Texts Delivery Address Confirmations Condition Control Retail

Quantity: 200 EA Net: 6.400,00 USD

Condition rec. Analysis Update

Pricing Elements

I...	CnTy	Description	Amount	Crcy	per	U...	Condition Value	Curr.	Status	NumC...	OUn	CCon...	Un	Condition Value
PB00		Gross Price	32,00	USD	1	EA	6.400,00	USD		1	EA	1	EA	0,00
		Net value incl. disc	32,00	USD	1	EA	6.400,00	USD		1	EA	1	EA	0,00
NAVM		Non-Deductible Tax	0,00	USD			0,00	USD		0		0		
		Net value incl. tax	32,00	USD	1	EA	6.400,00	USD		1	EA	1	EA	
SKTO		Cash Discount	0,000	%			0,00	USD		0		0		
		Actual price	32,00	USD	1	EA	6.400,00	USD		1	EA	1	EA	
wOTB		OTB Procurement	32,00	USD	1	EA	6.400,00	USD		1	EA	1	EA	

Vendor Master Data

Material Master Data

Purchasing Info Record

Condition Master Data

Output Master Data

Material Master Data

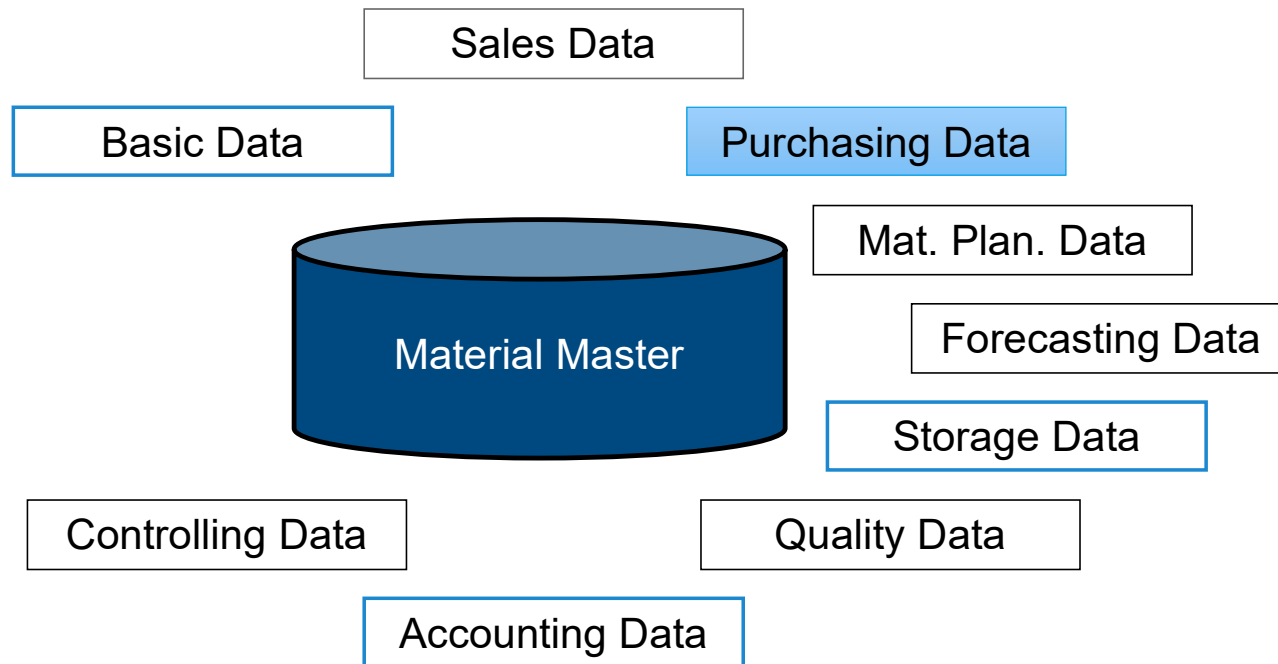
■ Material Master

- Contains all the information a company needs to manage about a material
- It is used by most components within the SAP system
 - Sales and Distribution
 - Materials Management
 - Production
 - Plant Maintenance
 - Accounting/Controlling
 - Quality Management
- Material master data is stored in functional segments called Views

The screenshot displays the SAP Material Master Data for material DXTR1000 (Deluxe Touring Bike (black)). The interface is organized into several sections:

- General Data:** Includes fields for Base Unit of Measure (EA), Material Group (BIKES), Old material number, Division (BI), Product allocation, X-plant mat status, Assign effect. vals, Ext. Mat. Group, Lab/Office, Prod. hierarchy, Valid from, and GenitemCatGroup (NORM).
- Material authorization group:** Includes the Authorization Group field.
- Dimensions/EANs:** Includes fields for Gross weight (8.510), Net weight (8.510), Volume (0.000), Size/dimensions, EAN/UPC, Weight unit (G), and Volume unit.
- Packaging material data:** Includes the Mat. Grp Pack. Mat. field.

Material Master Views



Vendor Master Data

- Vendor Master
 - Contains all the necessary information needed to business with an external supplier
 - Used and maintained primarily by the Purchasing and Accounting Departments
 - Every vendor MUST have a master record

The screenshot displays the SAP 'Create Organization: Role FI Vendor' form. The top navigation bar includes the SAP logo and the title 'Create Organization: Role FI Vendor'. Below this, a menu bar contains options: Locator On/Off, Person, Organization, Group, With Ref, Open BP, and More. The main form area is divided into several sections. The 'Business Partner' section at the top includes a dropdown for 'Business Partner' and a 'Create in BP role' dropdown set to 'FLVN00 FI Vendor (New)'. Below this is a 'Grouping' dropdown. The 'Address' section is highlighted in the left sidebar. The 'Name' section contains a 'Title' dropdown set to '0003 Company', a required '*Name' field with 'Mid-West Supply', and a 'Salutation' field. The 'Search Terms' section has a required '* Search Term 1/2' field with '000'. The 'Special Customer' section includes checkboxes for 'VIP' and 'Undesirable Customer', a 'Reason Undes.' dropdown, and a 'Comment' field. The 'Standard Address' section features a 'Print Preview' button. The 'Street Address' section contains fields for 'Street/House number' (335 W Industrial Lake Dr), '*Postal Code/City' (68528 Lincoln), '*Country' (US), 'Region' (NE Nebraska), and 'Time zone' (CST).

Vendor Master Views

- Client Level

- Address
- Vendor Number
- Preferred Communication

General Data

- Company Code Data

- Reconciliation Account
- Terms of Payment
- Bank Account

Company Code Data
Financial Accounting (FI)

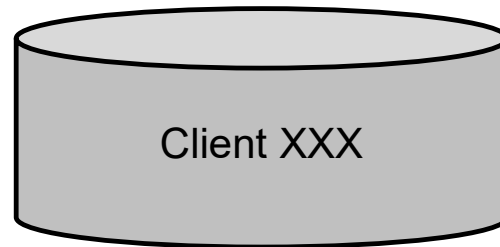
- Purchase Org Data

- Purchasing Currency
- Salesman's Name
- Vendor Partners

Purchasing Data
Materials Mgmt (MM)

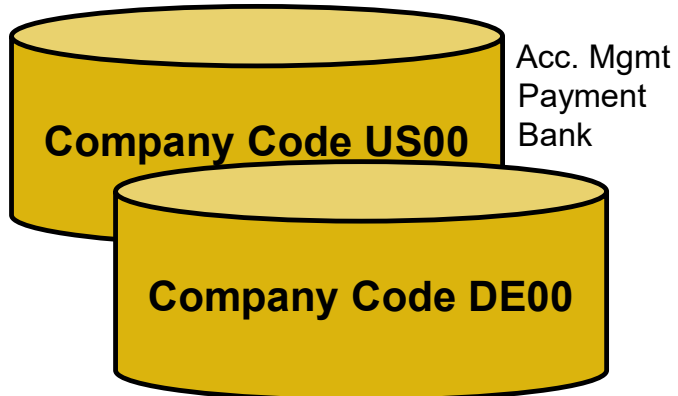
Vendor Master

General Information relevant for the entire organization:



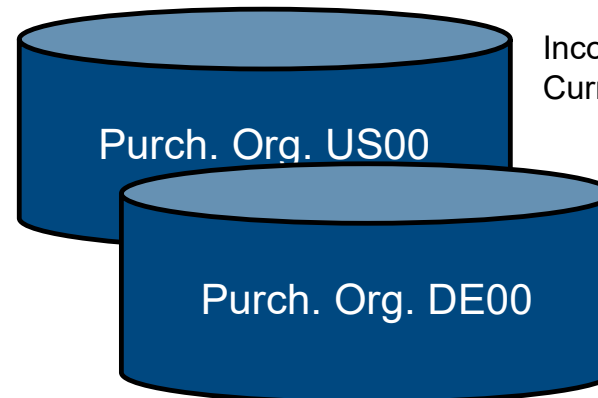
Name
Address
Communication

Company Code specific information:



Acc. Mgmt
Payment
Bank

Purch. Organization specific information:



Incoterms
Currency

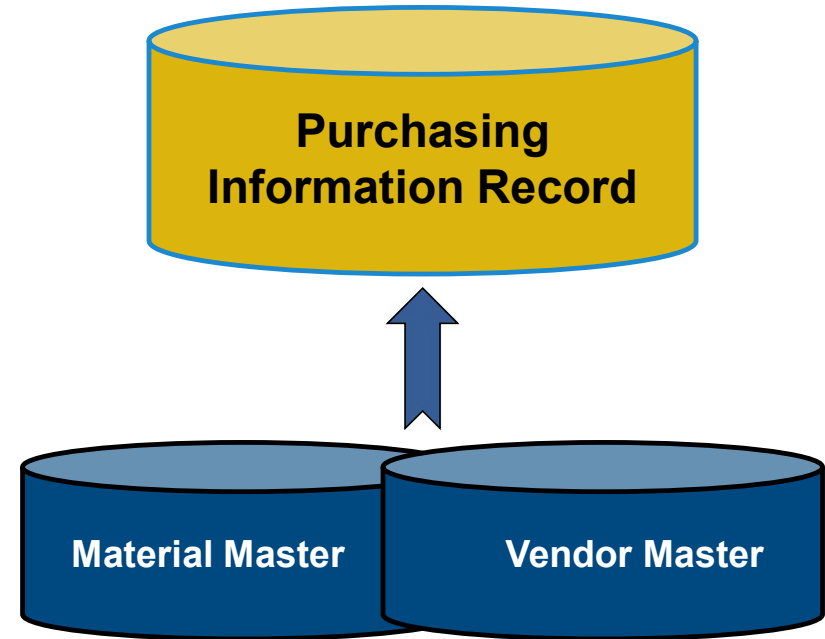
Create Vendor Master

- Name 1: Mid-West Supply S25_###
- Search Term 1: ###
- Roles:
 - FLVN00
 - FLVN01
- Company Code:
 - US00
 - Reconciliation Account: 33000000
- Purchasing Organisation
 - US00



Purchasing Information Record

- Framework for Purchase Order
 - Contains the relationship between a vendor and a material
- Can be created:
 - Manually
 - Automatically – Quotations
 - Automatically – Purch. Orders
- Reporting
 - Vendor Evaluation



Purchasing Information Record

- Allows buyers to quickly determine:
 - Which vendors have offered or supplied specific materials
- Info Records contain:
 - Data on pricing and conditions
 - Last purchase order
 - Tolerance limits for deliveries
 - Specific lead times
 - Availability periods
 - Vendor Evaluation data
- Serves as default information for Purchase Orders

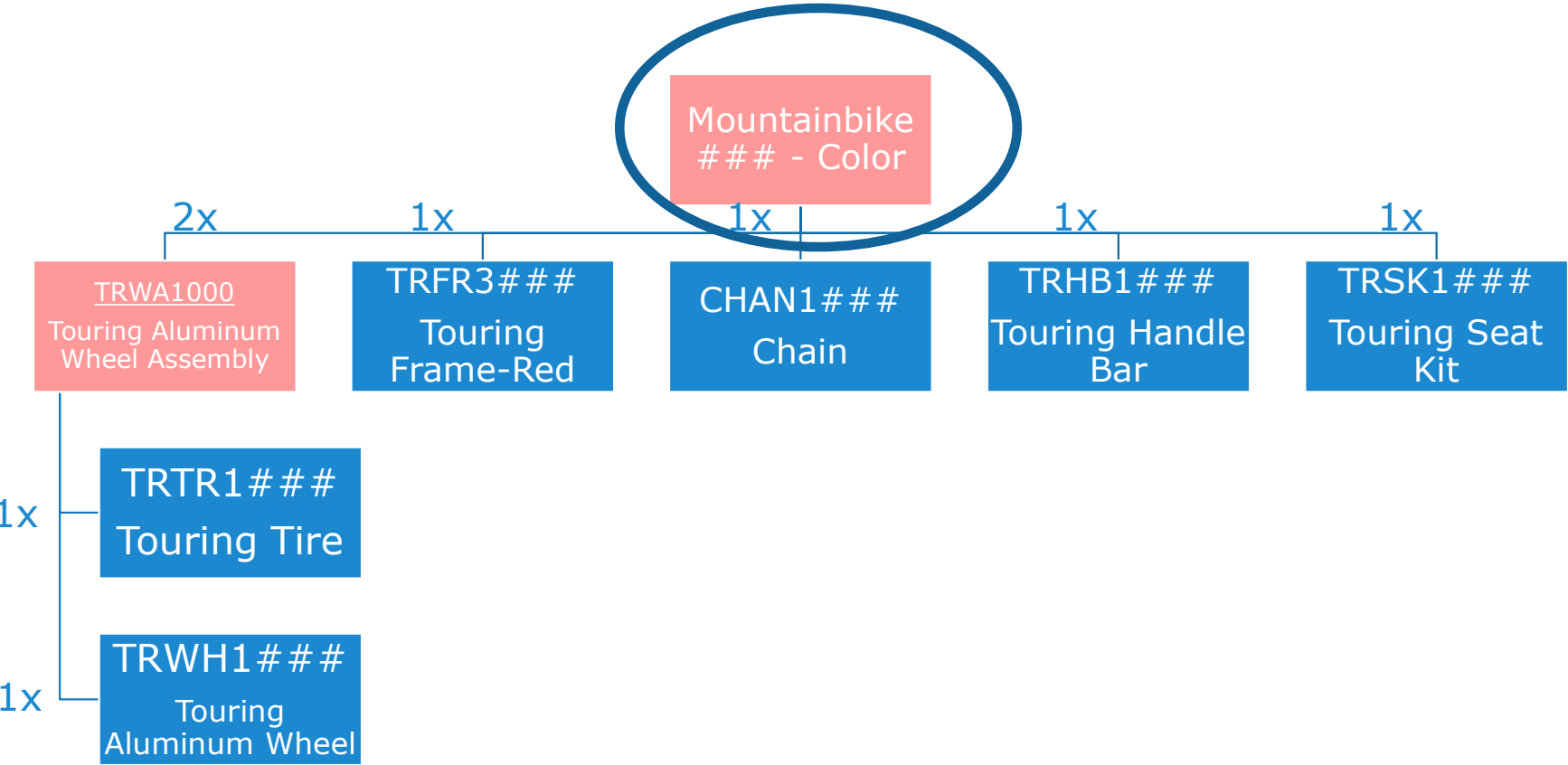
Create Purchasing Information Record

- Business Partner (Supplier): Mid-West Supply S25_###
- Material: TRTR1000
- Purchasing Organisation
 - US00
- Delivery Time in Days: 10
- Standard Order Quantity: 5

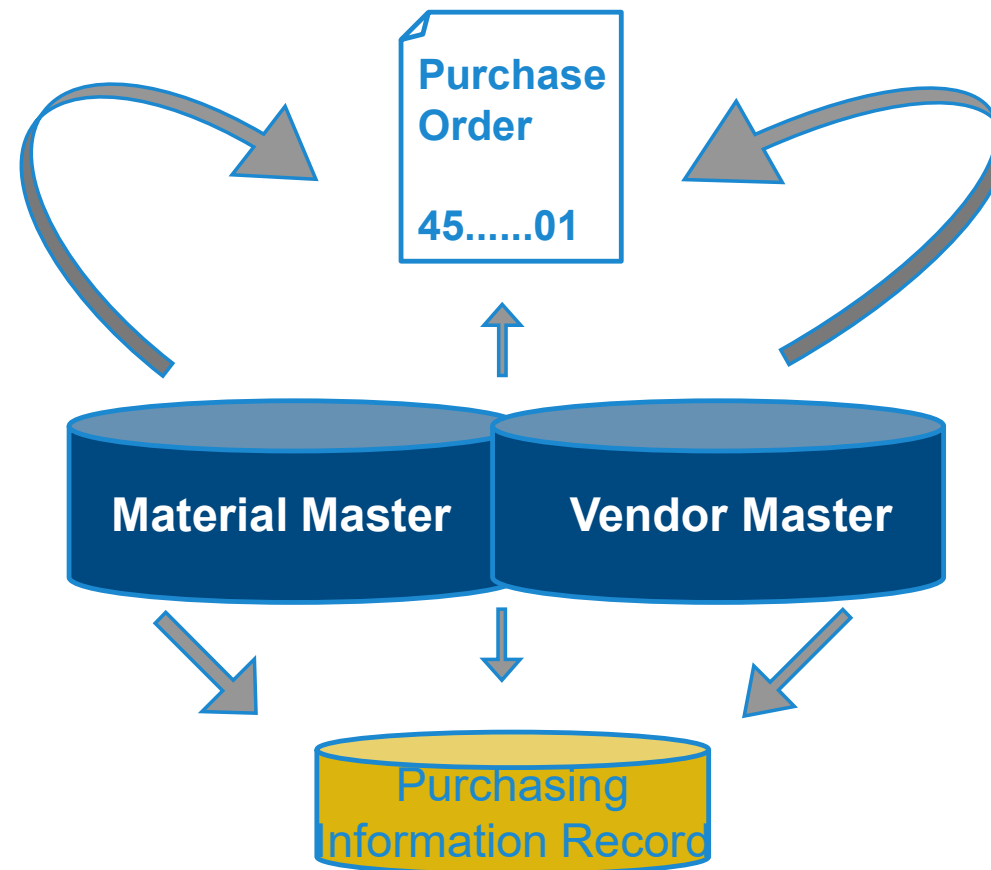


Manage Purchasing
Info Records

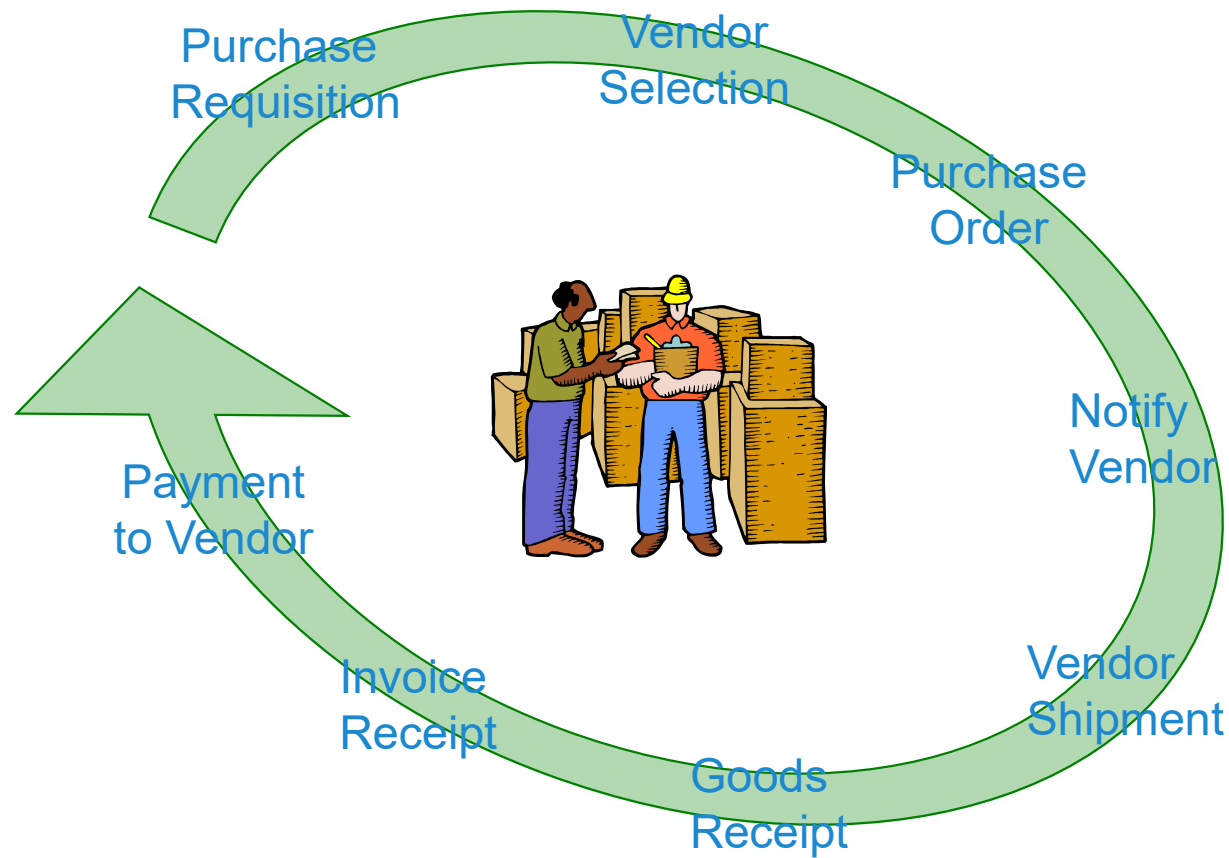
Create Purchasing Information Record for all Raw materials



Master Data in Use



Procure-To-Pay Process



Purchase Requisition

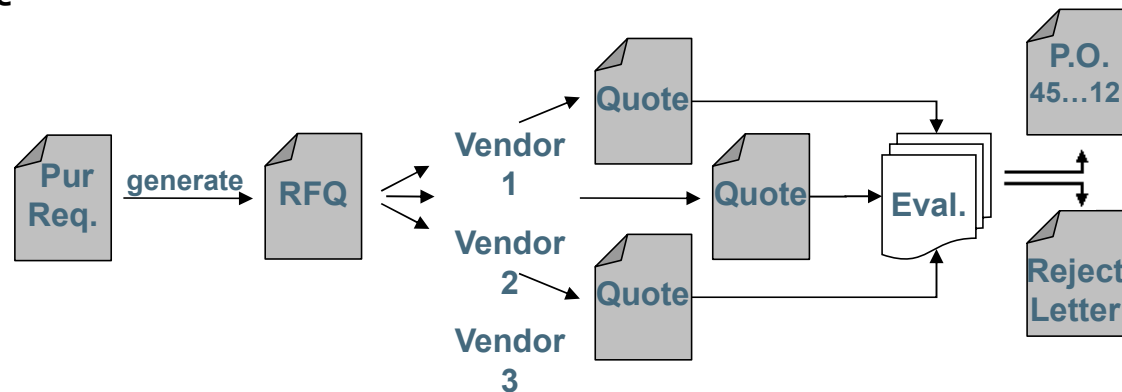
- Internal Document instructing the purchasing department to request a specific good or service for a specified time

- Requisitions can be created two ways:
 - Directly - Manually
 - person creating determines: what, how much, and when

 - Indirectly - Automatically
 - MRP
 - Production Orders
 - Maintenance Orders
 - Sales Orders

Request for Quotation

- If nothing exist in the system we may need to submit a request for quotation to our vendors. An RFQ is an invitation to a vendor by a Purchasing Organization to submit a bid for the supply of materials or services
 - The accepted quotations will generate Purchasing Information Records
 - Perform Quotation Price Comparisons
 - Finally Select a Quotation



Quotation from Vendor

- The quotation received by your company is a legally binding offer, should decide to do business with the vendor, containing price's and conditions for the materials specified in the RFQ for a predefined period of time.
 - In SAP the RFQ and the Quotation will be become a single document, you will enter the vendor's response in the RFQ you created.

Vendor Evaluation once Identified

- Vendor evaluation helps purchasing evaluate vendors for sourcing while also enabling the company to monitor vendor relationships through performance scores and criteria you put in place.
 - Supports a maximum of 99 main criteria and 20 sub criteria for each main:
 - Price
 - Price Level
 - Price History
 - Quality
 - Goods Receipt
 - Quality Audit
 - Complaints/Rejection level
 - Delivery
 - On-time delivery performance
 - Quantity reliability
 - Compliance with shipping instructions
 - Confirmation Date
 - You then must establish a scoring range (1 -100) and determine the weight factors of scores for each.

Purchase Order

- A purchase order is a formal request to a vendor for a specific material or service under the stated conditions
- Purchase Orders can be created manually
 - Reference a Purchase Order
 - Reference a Purchase Requisition
 - Reference a RFQ/Quotation
 - Without Reference
- Purchase Orders can be create automatically

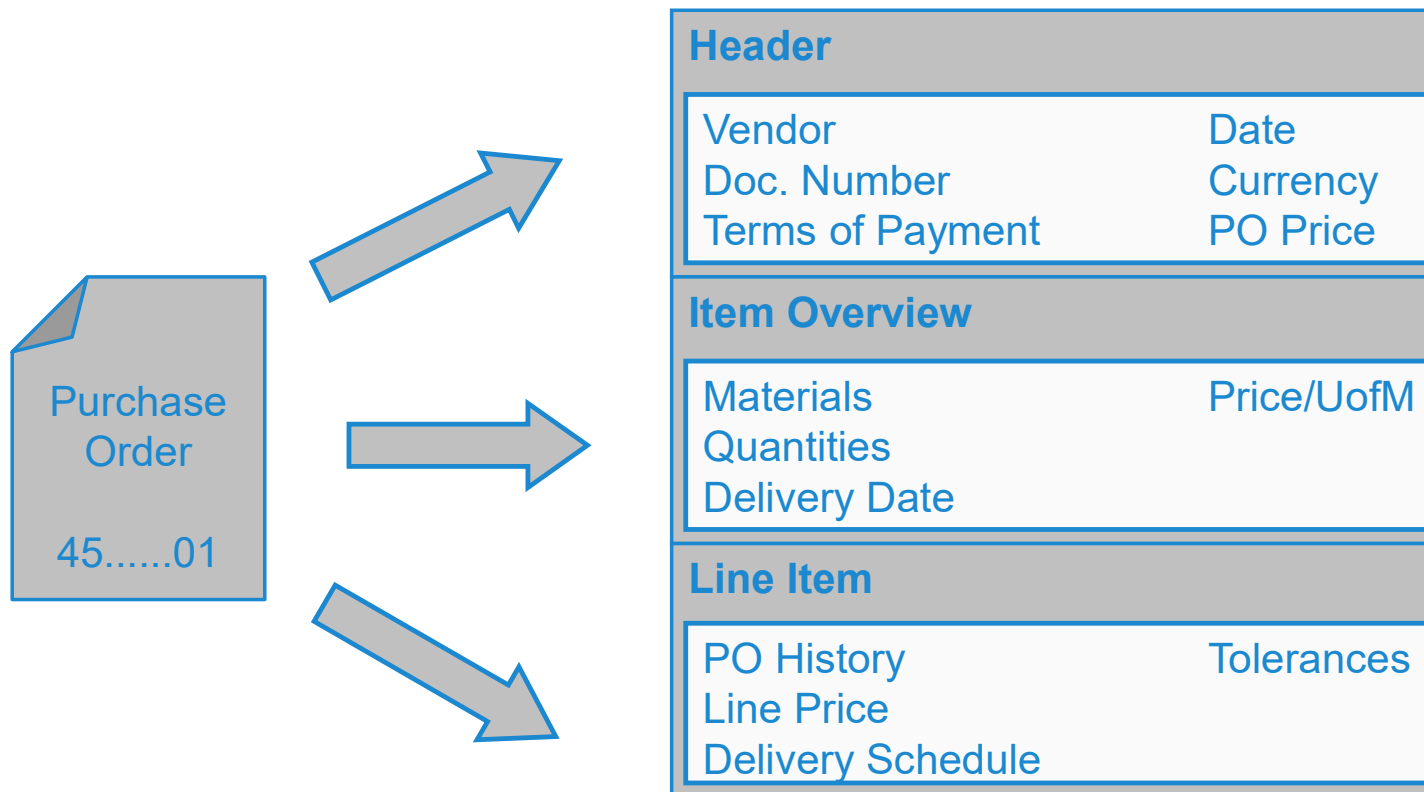
Purchase Order

- A purchase order can be used for a variety of purposes, the item category (procurement type) defined in the PO will dictate the use of the order and the process that the order will follow:

- Standard
 - Stock or Consumption
- Services
- Subcontracting
- Third-Party
- Consignment

The screenshot displays the SAP 'Create Purchase Order' interface. The top navigation bar includes 'SAP' and 'Create Purchase Order'. Below it, a secondary navigation bar lists options: 'Document Overview On', 'Create', 'Other Purchase Order', 'Hold', 'Check', 'Help', 'Personal Setting', 'More', and 'Exit'. The main content area is organized into tabs: 'Delivery/Invoice', 'Conditions', 'Texts', 'Address', 'Communication', 'Partners', 'Additional Data', 'Org Data', 'Status', and 'Incoterms'. The 'Org Data' tab is currently selected, showing fields for 'Purch. Org.' (US00), 'Purch. Group' (N00), and 'Company Code' (US00). Below these fields, a table lists items with columns: 'Item', 'Material', 'Short Text', 'PO Quantity', 'O...', 'Deliv. Date', 'Net Price', 'Curr.', 'Per', 'O...', and 'Matl Grou'. The first item is '10', 'CHLK1000', 'Chain Lock', with a quantity of '200 EA' and a net price of '32,00 USD'. The bottom section shows 'Pricing Elements' with a table listing various price components like 'Gross Price', 'Net value incl. disc', 'Non-Deductible Tax', 'Cash Discount', 'Actual price', and 'OTB Procurement'.

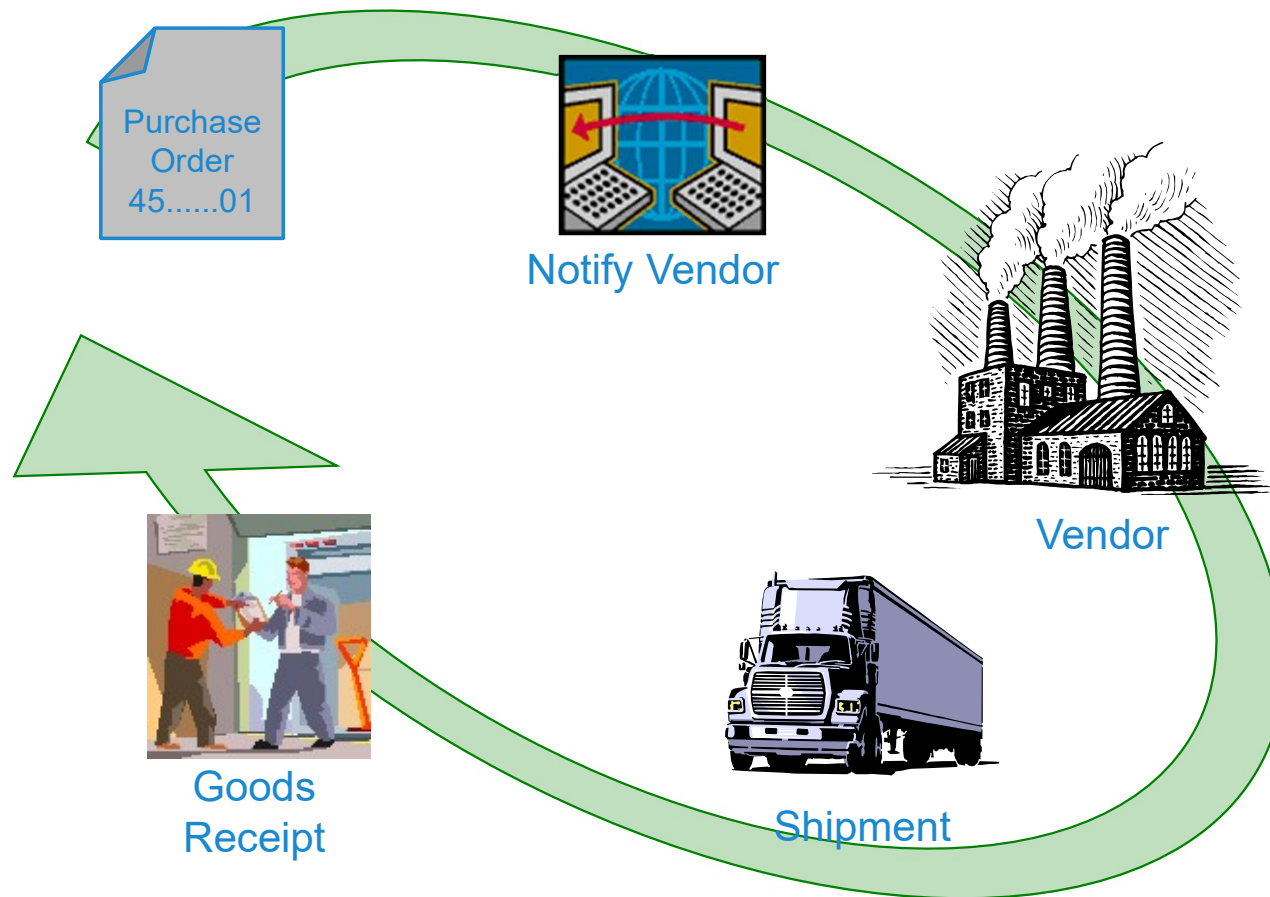
Purchase Order Structure



Purchase Order Output

- Once a Purchase Order has been created the vendor needs to be notified
 - Printed
 - E-mail
 - EDI
 - Fax
 - XML
- There are a variety of forms that aid in the purchasing process and are generated from the Purchase Order
 - Purchase Order Output
 - Order Acknowledgement Forms
 - Reminders
 - Schedule Agreements

Goods Receipt



Goods Receipt

- Goods movement in which we accept goods into our system
- If materials are delivered against a Purchase Order we will reference that Order
 - Determine if we got what we ordered
 - System can purpose data for us from the PO
 - Material, quantity
 - Purchase Order History is update with the receipt
 - Updates Physical Inventory
 - Updates Inventory G/L Account

Material Movements

- When a goods movement takes place it is represented by a Movement Type
 - Movement types are three-digit keys used to represent a movement of goods
 - 101 – goods receipt into warehouse
 - 103 – goods receipt into GR blocked stock
 - 122 – return delivery to vendor
 - 231 – consumption for a sales order
 - 561 – initial entry of stock
- Destinations for Receipt of Goods
 - Warehouse – Unrestricted, Quality, Blocked
 - Quality
 - Goods Receipt Blocked Stock

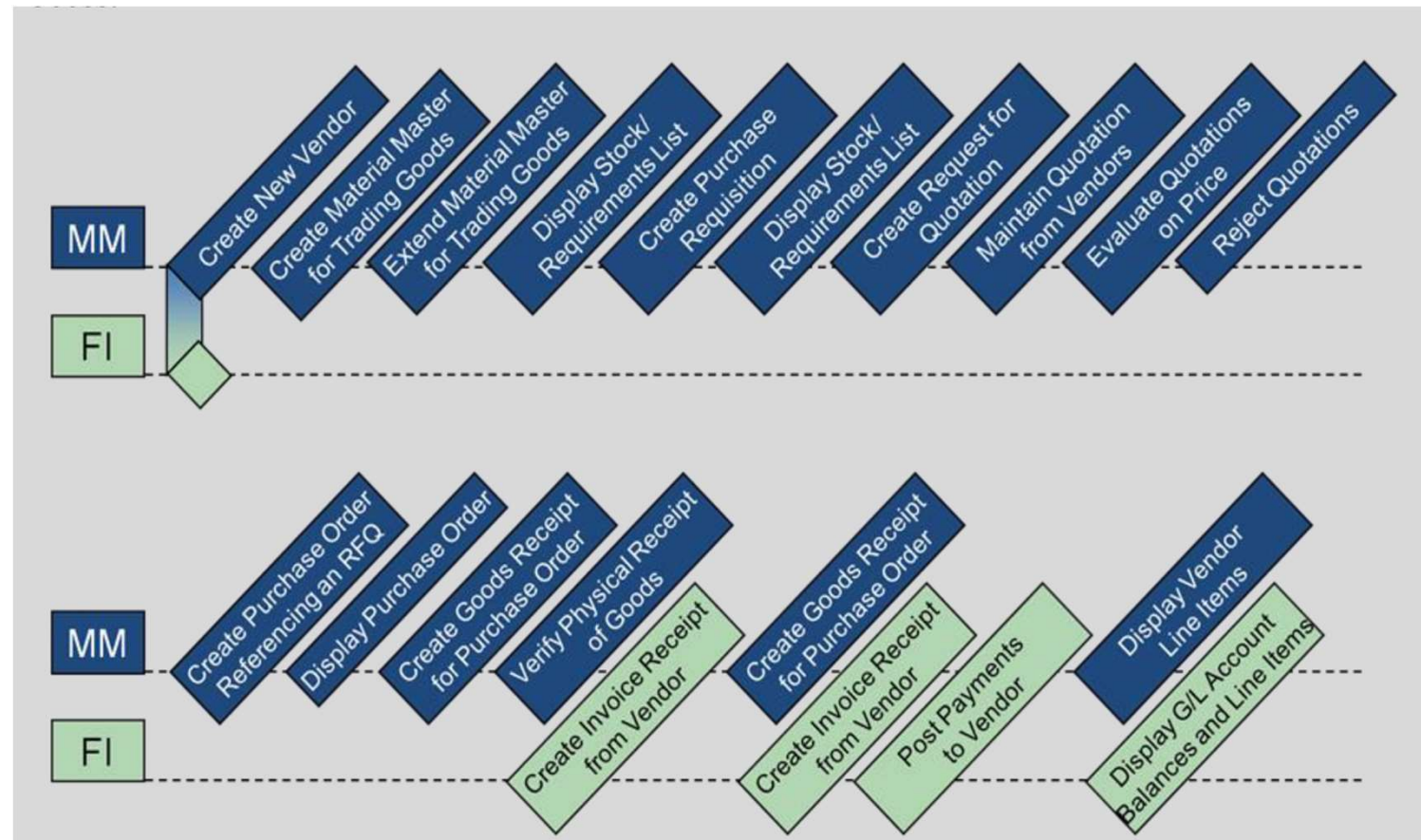
Effects of a Goods Receipt

- When a Goods Movement for the receipt of goods takes place a series of events occur
 - Material Document is Created
 - Accounting Document is Created
 - Stock Quantities are Updated
 - Stock Values are Updated
 - Purchase Order is Updated
 - Output can be generated (GR slip / pallet label)

Integrated procurement process



To process a complete procurement process, you will assume various roles within Global Bike Inc., for example: Purchaser, Warehouse Worker, Accounting Clerk. In general, you will work in the Materials Management (MM) and Financial Accounting (FI) departments.



MM Challenge

Try the exercise on your own!

Scenario

To produce the Repair Kit for the PP Challenge, you need the materials TRTR1###, BOLT1###, and TRWH1###. in stock. Generate purchase requisitions from the demand using the MRP run. Your purchasing department has identified a new cost-effective supplier (Max Accessories). TRTR1### = 20\$, BOLT1### = 25\$, and TRWH1### = 23\$. Create this business partner and set up the purchasing info record for all three materials. Convert purchase requisitions into a purchase order and order all materials from this supplier. Then, post the goods receipt to the warehouse location MI00.

Note : After the MM Challenge, you can proceed with the PP Challenge.

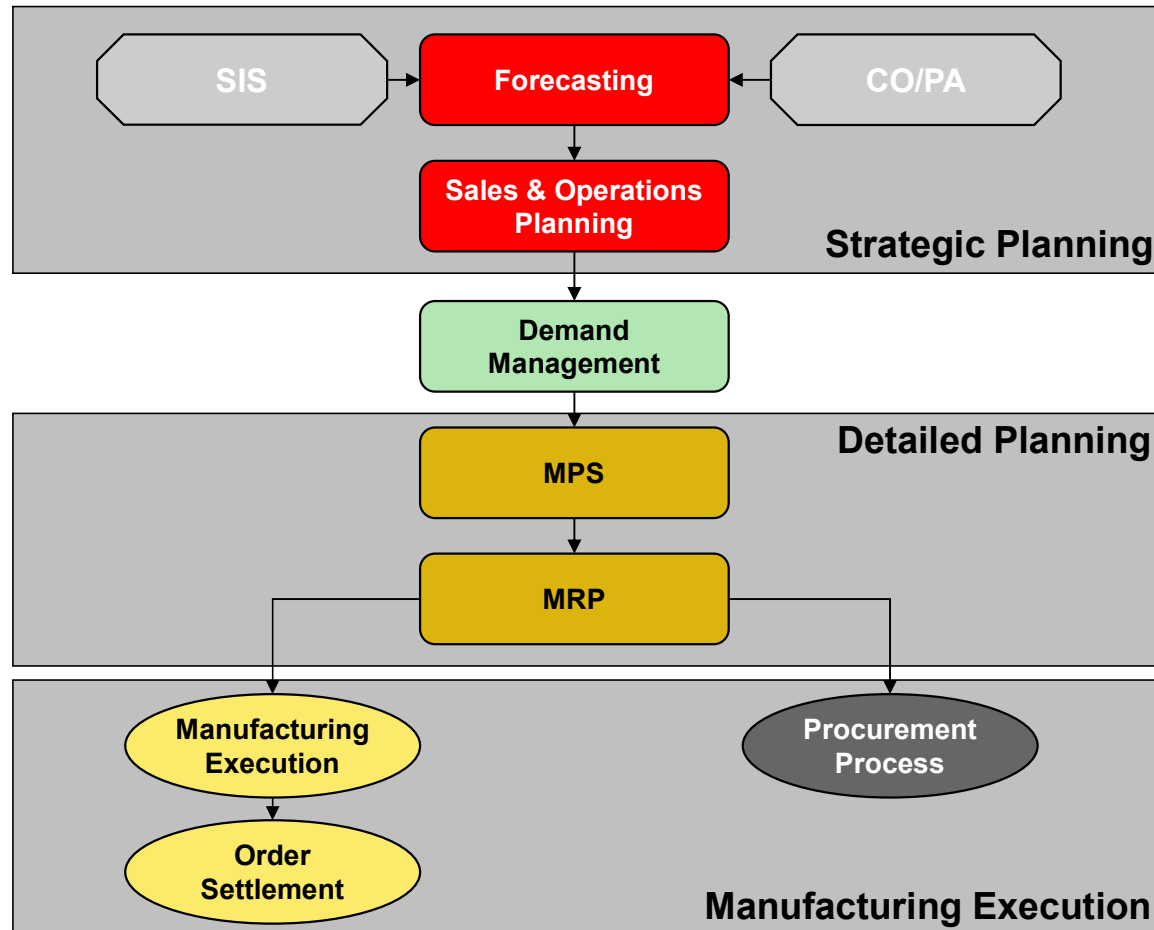
Task Information Perform a complete procurement-process

Production Planning (PP)

PP Processes

- Production Planning & Execution
 - Forecasting
 - Sales and Operations Planning (SOP)
 - Demand Management
 - Master Production Scheduling (MPS)
 - Material Requirement Planning (MRP)
- Production Order

Production Planning & Execution



Production Planning & Execution

■ Players in the Game

– Strategic Planning

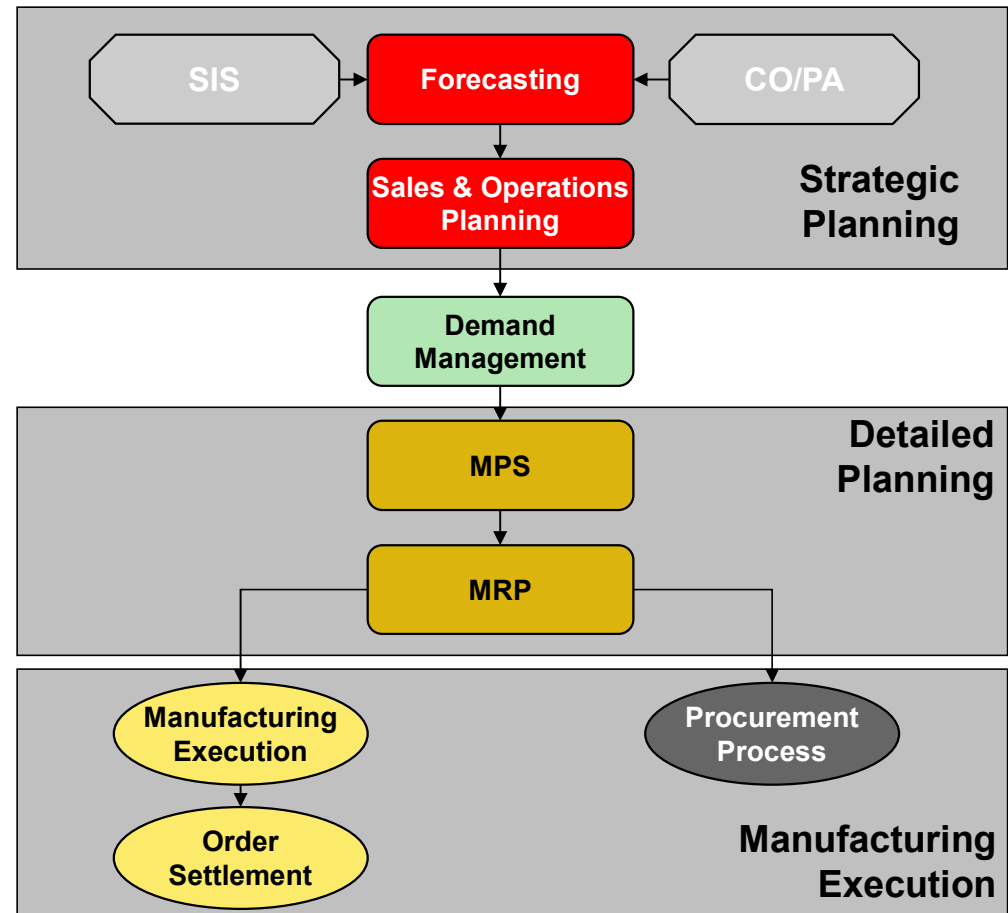
- CEO, COO, CIO, CFO, Controller, Marketing Director

– Detailed Planning

- Line Managers, Production Scheduler, MRP Controller, Capacity Planners

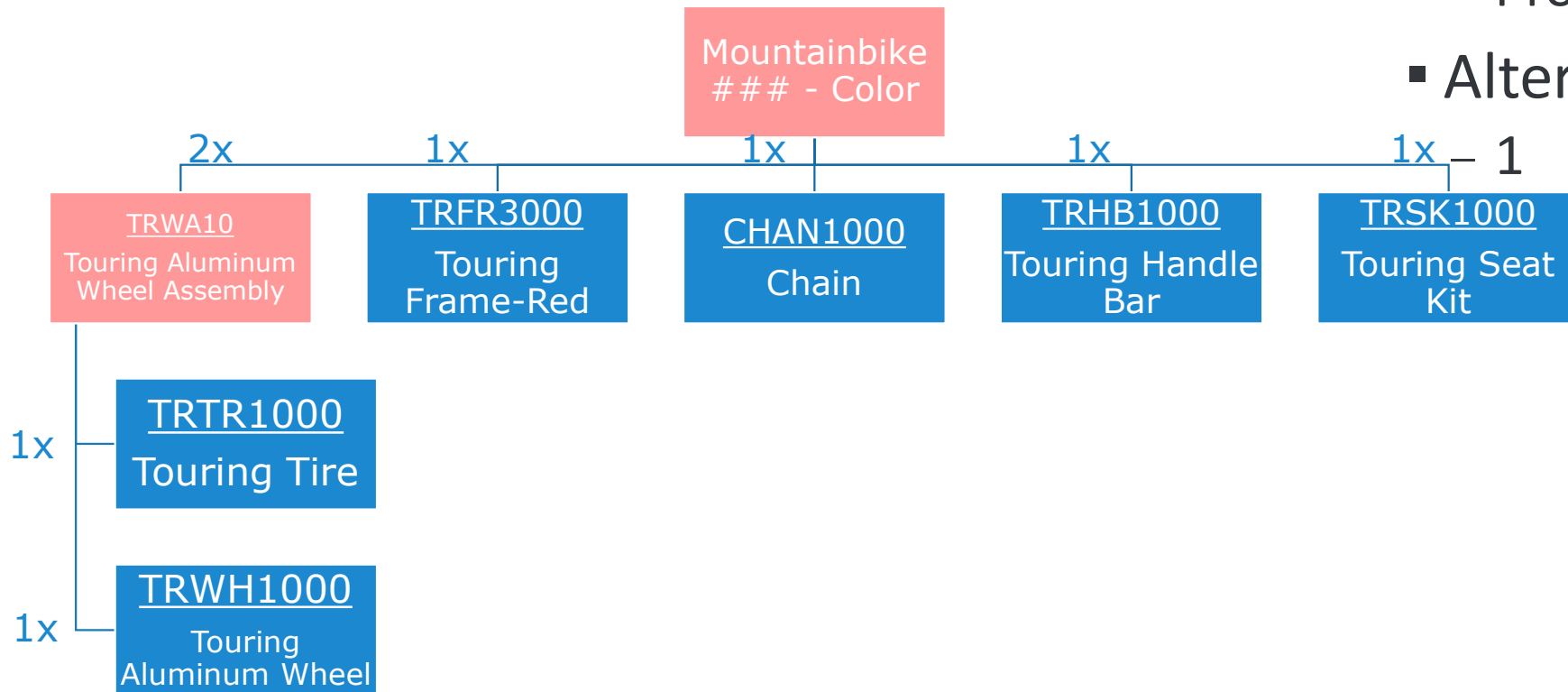
– Execution

- Line Workers, Shop Floor Supervisors



TASK: Create BOM

- Plant:
 - MI00 DC Miami
- BOM Usage
 - Production (1)
- Alternative BOM

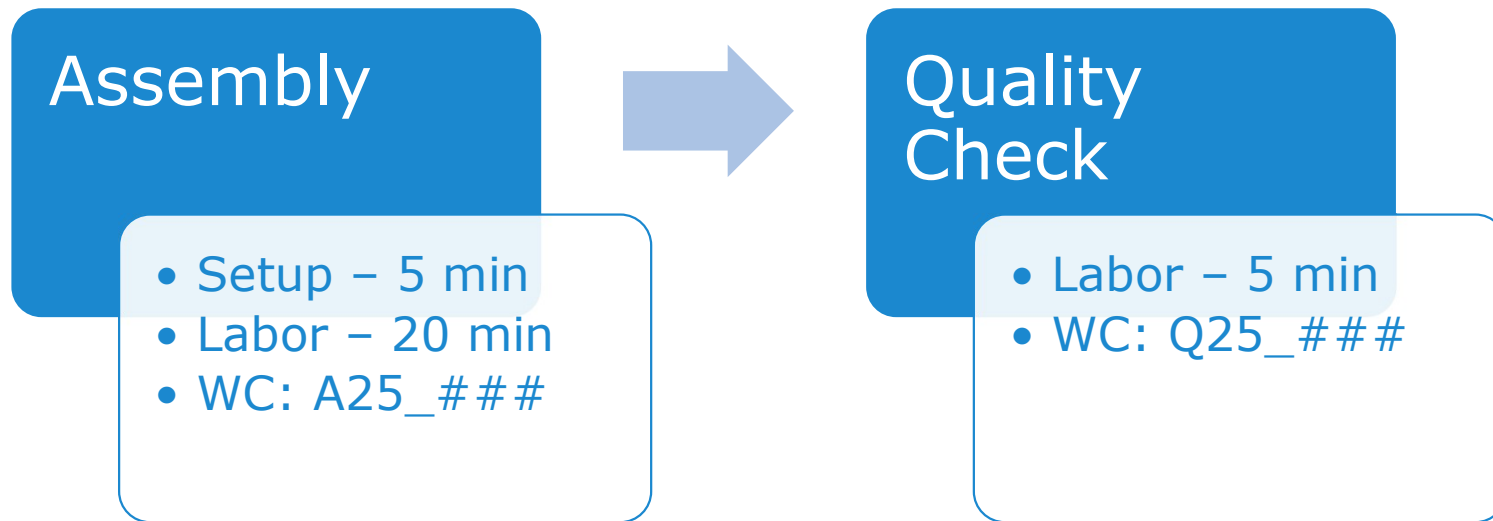


TASK: Create Work center

- Plant:
 - MI00 DC Miami
- Work center
 - A25_###
- Work Center Category
 - 0003 Labor

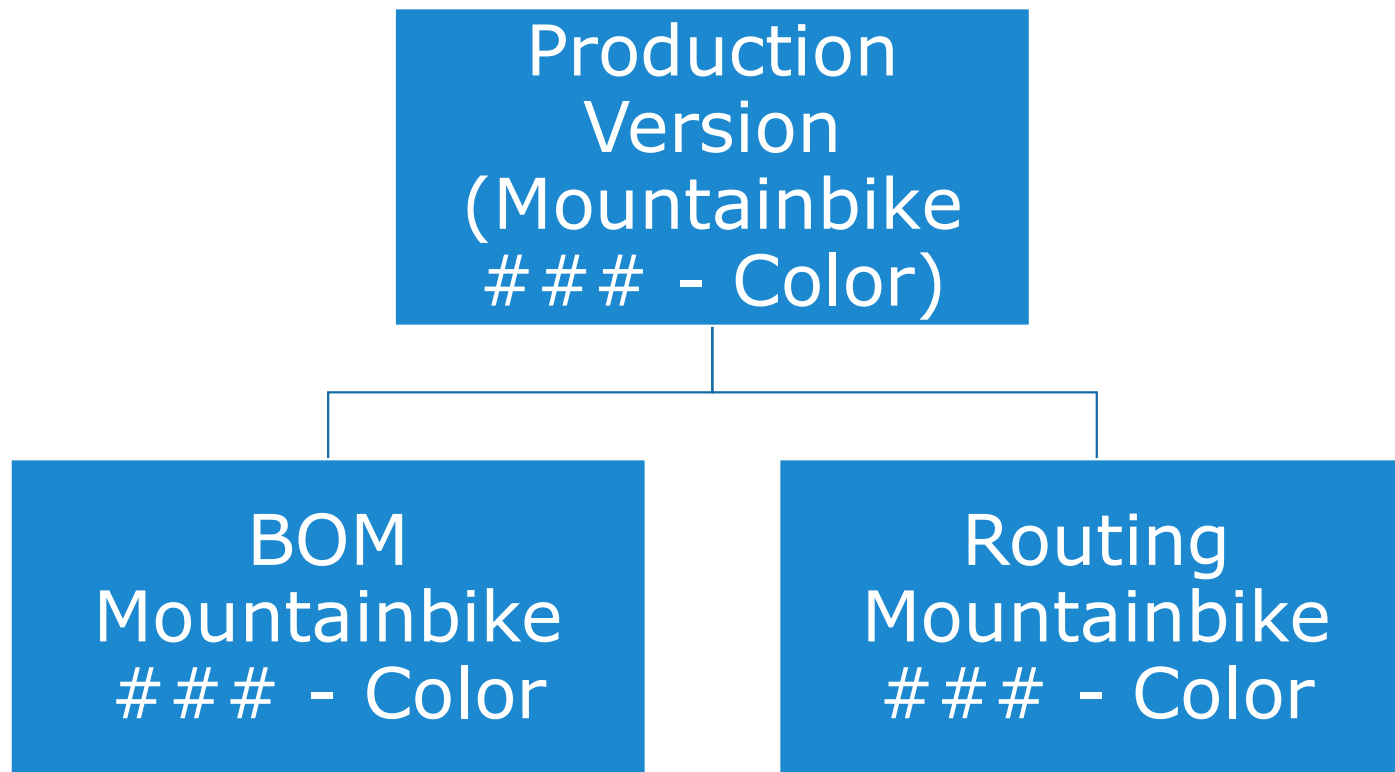
- Plant:
 - MI00 DC Miami
- Work center
 - Q25_###
- Work Center Category
 - 0003 Labor

TASK: Create Routing



- Plant:
 - MI00 DC Miami
- Usage
 - Production (1)
- Overall Status
 - 4 - released

TASK: Create Production Version



- Version:
 - V###
- Prodn Version Text
 - Standard Production
- Material
 - Mountainbike ###
- Plant
 - MI00

Status: Mountainbike

- BOM ✓
- Routing ✓
- Production Version ✓



Demand Management

Forecast



Planned
Independent
Requirements

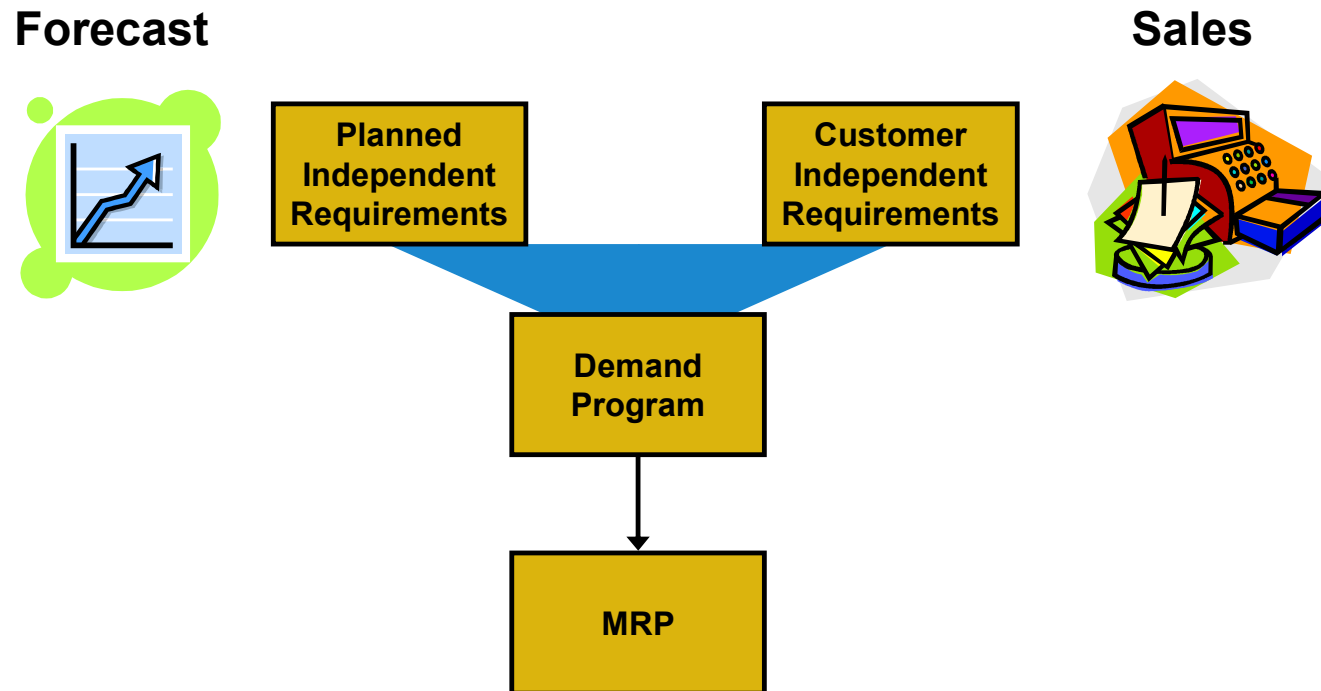
Customer
Independent
Requirements

Sales



Demand
Program

MRP



Planned Independent Requirements

- The PIR serves as a placeholder for the actual demand that you expect in the future.

The screenshot displays the SAP 'Change Material 21 (Finished Product)' interface. The top navigation bar includes tabs for 'Basic data 1', 'Basic data 2', 'Sales: sales org. 1', 'Sales: sales org. 2', 'Sales: General/Plant', 'Ext. SPP Basic Data', 'Intl Trade: Export', 'Sales text', 'MRP 1', 'MRP 2', and 'MRP 3'. The 'MRP 3' tab is highlighted with a blue box. Below the navigation bar, the 'Material: 21' and 'Descr.: Mountainbike 002 - Green' are shown. The 'Plant: MI00' is also visible. The 'Forecast Requirements' section is highlighted with a blue box and contains the 'Period Indicator' set to 'M'. The 'Planning' section is also highlighted with a blue box and contains the following fields: 'Strategy Group: 40', 'Consumption mode: 2', 'Fwd consumption per.: 30', 'Planning material:', 'Plng conv. factor:', 'Bwd consumption per.: 60', 'Mixed MRP:', 'Planning plant:', and 'Planning matl BUnit:'.

MRP (Material Requirements Planning)

- helps organizations manage their inventory and production planning
- MRP ensures that a company has the right materials available at the **right time** to meet its production needs.

Planning Material Needs: MRP helps when and how much raw materials, components, or finished products need for production processes.

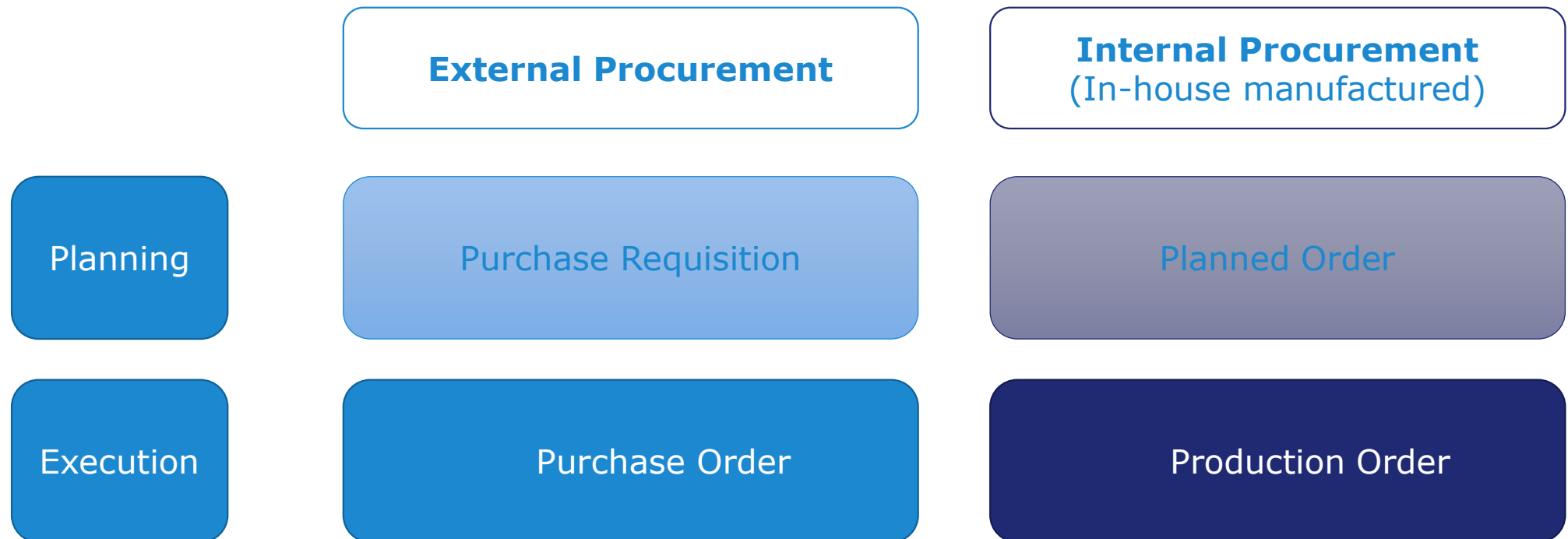
Automatic Scheduling: It automatically schedules and calculates the required quantities based on production orders, sales orders, and existing inventory levels.

Preventing Shortages and Surpluses: MRP aims to prevent shortages by ensuring that there's enough stock available to meet demand. At the same time, it helps avoid excess inventory, which can be costly.

Optimizing Production: MRP optimizes production schedules, ensuring efficiency in manufacturing processes by aligning material availability with production requirements.

Integration with SAP Modules: MRP is closely integrated with other SAP modules, such as Materials Management (MM) and Production Planning (PP), creating a streamlined and interconnected business process.

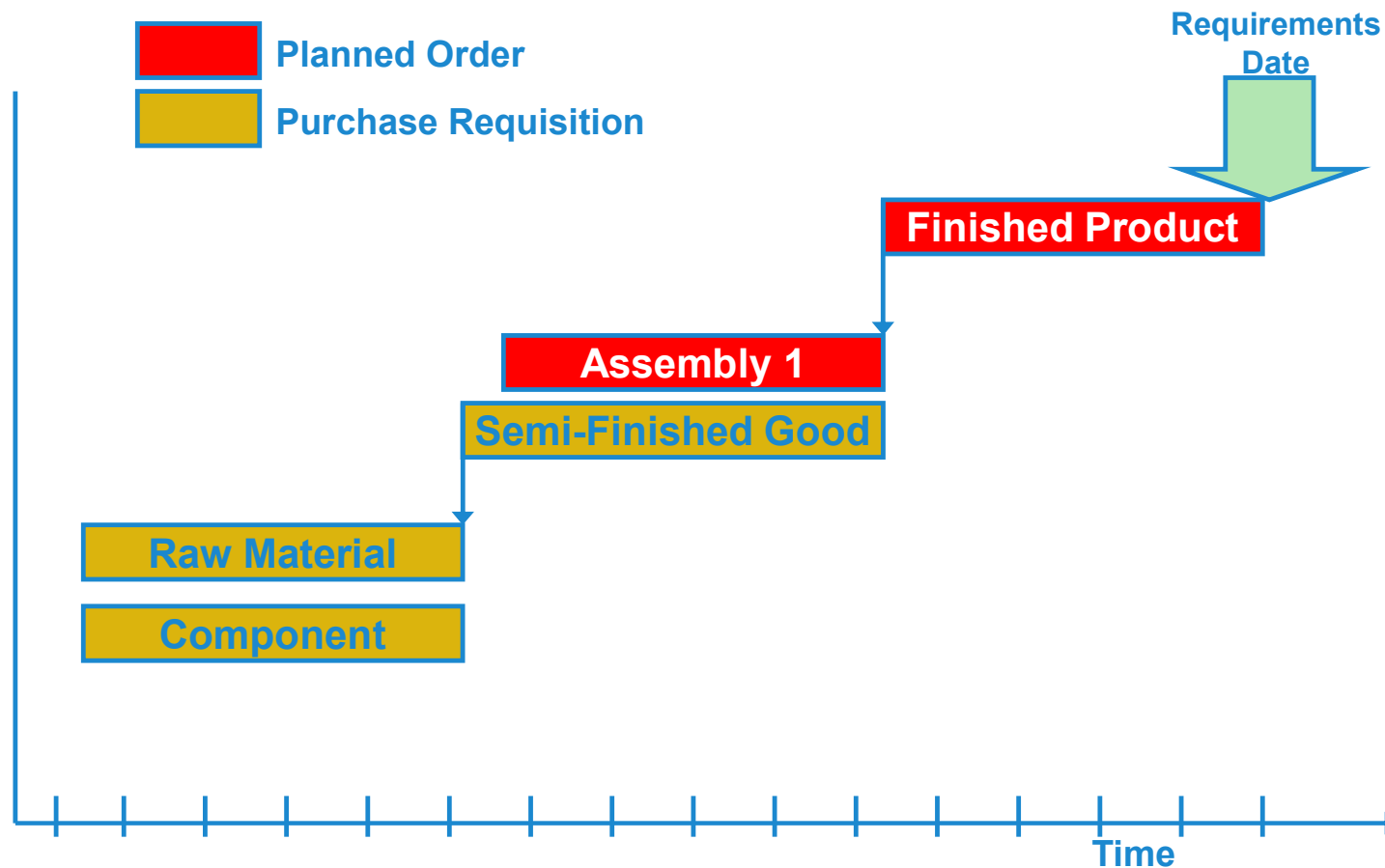
MRP - Result



Orders, orders, orders

- Planned Order (planning)
 - A request created in the planning run for a material in the future (converts to either a production or purchase order)
- Production Order (execution)
 - A request or instruction internally to produce a specific product at a specific time
- Purchase Order (execution)
 - A request or instruction to a vendor for a material or service at a specific time

MRP (Material Requirements Planning)



Production Order

- Production orders are used to control production operations and associated costs

- Production Orders define the following
 - Material produced
 - Quantity
 - Location
 - Time line
 - Work involved
 - Resources used
 - How to costs are settled

The screenshot shows the SAP 'Production order Create: Header' interface. Red boxes with arrows point to specific fields, each labeled with a question from the list:

- How**: Points to the 'Type' field (PP01).
- Components**: Points to the 'Material' field (DXTR1000).
- What**: Points to the 'Status' field (CRTD MSPT RELR SETC).
- How many**: Points to the '* Total Qty' field (10).
- Time Line**: Points to the 'Confirmed' date and time field (14.04.2018 13:39).

The interface includes tabs for General, Assignment, Goods Receipt, Control, Dates/Times, Master Data, Long Text, Administration, Items, and Fast Entry. The 'Dates/Times' section shows a table for scheduling dates and times.

Basic Dates		Scheduled		Confirmed	
End:	16.04.2018 00:00	14.04.2018	13:39		
Start:	13.04.2018 00:00	14.04.2018	08:00		00:00
Release:		13.04.2018			

The 'Scheduling' section shows the 'Type' set to '2 Backwards' and the 'Sched. Margin Key' set to '001'. The 'Floats' section shows 'Float Bef. Prdn' and 'Float After Prdn' both set to '1 Workdays'.

PP Challenge

Try the exercise on your own!

Scenario Your sales team has identified the demand for a new product. Due to high inflation, many customers prefer to repair their bicycles themselves. Therefore, repair kits (new Material RKSS####) will now be offered for sale. These kits consist of the existing products TRTR10000, BOLT1000, and TRWH1000.

To enable the sale of this repair kit, a new sellable material and all production (PP) master data are required.

For the production of the repair kit, a new work center (R24-####) is required (with one person). The assembly process requires 5 minutes, along with an additional 2 minutes for quality inspection. The sales team anticipates sales of 20 units in March and potentially 30 units in April. Please create planned independent requirements and initiate production accordingly.

Note PIR need settings in material master data (MRP 3)

Task Information Perform a complete production-process