Production Planning

Lesson 5 : Sales and Operation Planning

Lesson Objectives

- Objectives -On successful completion of this training module, you should have:

  - Understood the basics of Sales and Operation Planning

  - Become familiar with Principle Of SOP

  - Become familiar with Features Of SOP

  - Become familiar with Processes and Roles

  - Become familiar with SOP Planning Table
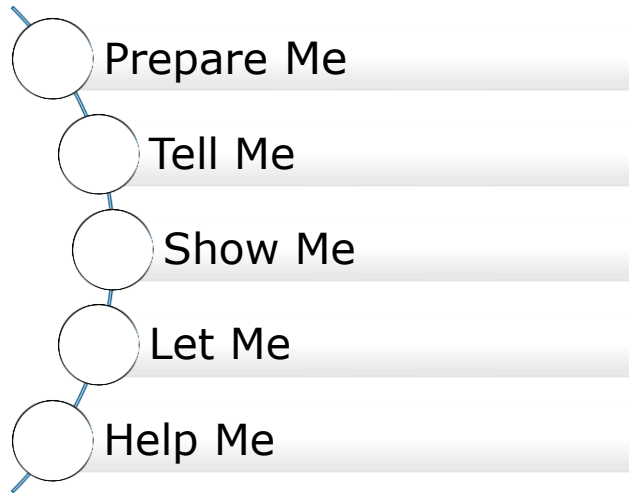
2

Training Agenda

- PP Principle Of SOP
- PP Features Of SOP
- PP Process overview of SOP
- PP Processes and Roles
- PP Flow & Integration With Other Module
- PP SOP Planning Table
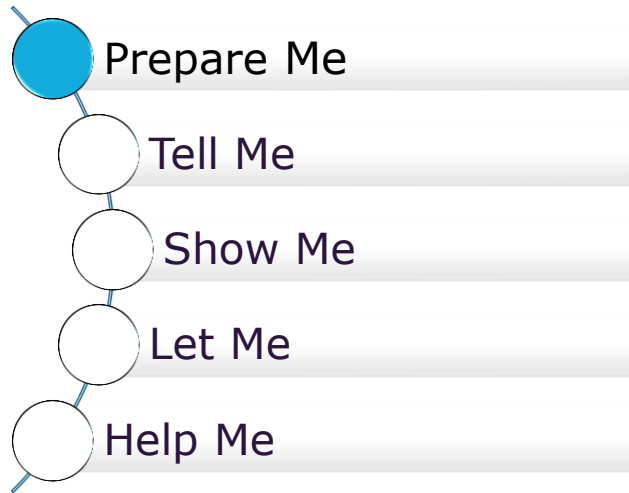- PP Process Flow-MPS

3

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PP1009 -SOP

Prepare Me

Tell Me

Show Me

Let Me

Help Me

4

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PP1009 -SOP

- Prepare Me
- Tell Me
- Show Me
- Let Me
- Help Me

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Prepare Me

- The main purpose of sales and operations planning is to define the product types and quantities to be sold for a medium- to long-term planning period.
- The goals of SOP is to obtain the corresponding planning data for production.
- Sales planning defines the ranges of products and the sales quantity for the coming planning period on the basis of the production capabilities and the product demand in the sales market.
- The goals of sales planning is to define the sales program and to forecast the sales quantities and prices.
- SOP comes from SO76 standard information structure.

6

Introduction…

- What is SOP?

- Principles of SOP

- Features of SOP
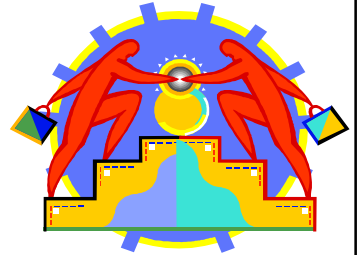
What Is SOP?

- Sales & Operations Planning is a flexible forecasting and planning tool with which sales, production, and other supply chain targets can be set on the basis of historical, existing, and estimated future data.

- Rough - cut planning can also be carried out to determine the amounts of the capacities and other resources required to meet these targets.

- SOP is particularly suitable for long-and medium-term planning.

- This SOP tool will allow you to formulate a Rough-cut production plan based on the sales data that you have created.

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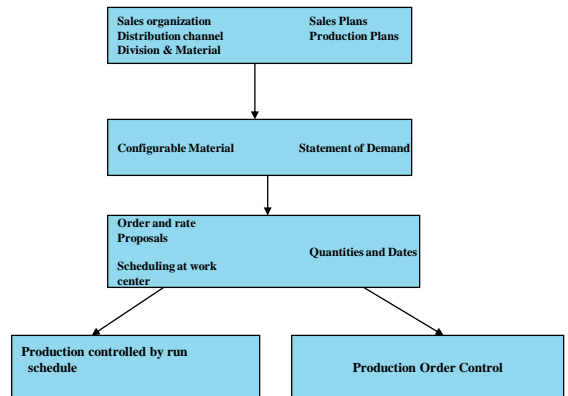# Principles of SOP

Long and Medium
term planning

| Sales organization
Distribution channel
Division & Material | Sales Plans
Production Plans |

| Configurable Material | Statement of Demand |

| Order and rate
Proposals

Scheduling at work
center | Quantities and Dates |

Demand Management

| Production controlled by run
schedule | | Production Order Control |

9

Add the notes here.

Principles of SOP

- SOP can be done at all level of finished products or using product groups.

- Any combinations of materials or even of product groups can be grouped together into other product groups.

- The exact breakdown is done at the level of material and the plant.

- The planning mechanism allows the entire planning to be viewed in the central system.

10

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here.

Features of SOP

SOP is made for two application components such as
- Standard SOP
- Flexible Planning

Standard SOP:

- Standard SOP comes largely preconfigured with the system.
- You work with one organizational unit, the product group, product hierarchy and plan predefined key figures in a planning table with a set layout.
- All plans in Standard SOP are based on the standard info structure S076.
- Planning can not be done at different region or different sales organization level using Standard SOP.

11

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Features of SOP

Flexible Planning:

Flexible Planning provides detailed way of planning based on our own
characteristics.

It can be based on any info structure of your choice, either self-defined
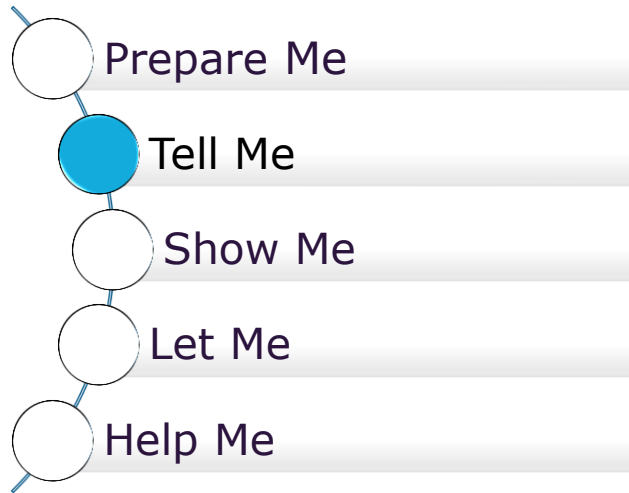information structure or standard information structure.

Planning can be done at different region or different sales organization
level

using Flexible planning.

12

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Sales and Operation Planning

Prepare Me

Tell Me

Show Me

Let Me

Help Me

13

Process overview of SOP

Process flow
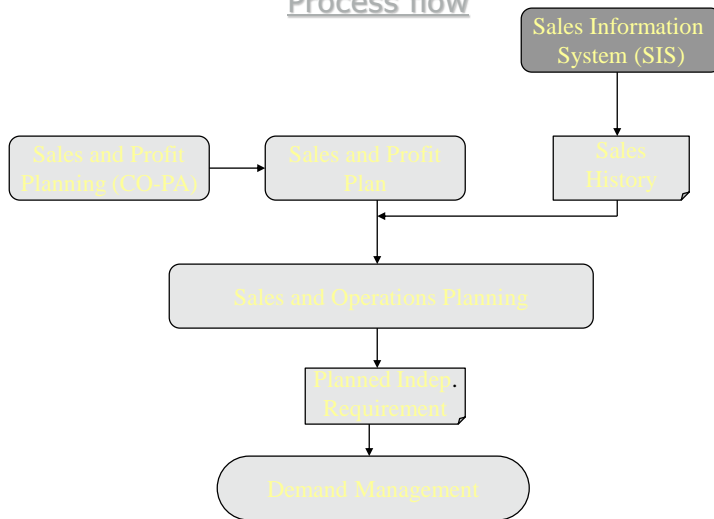
Sales Information System (SIS)

Sales and Profit Planning (CO-PA) → Sales and Profit Plan

Sales History

Sales and Operations Planning

Planned Indep. Requirement

Demand Management

14

Add the notes here.

Process flow

- The result of sales and operations planning is the operations plan that is transferred as planned independent requirement to demand management.

- The operations plan is created on the basis of the sales plan, which is also a result of this process.

- Sales and operations planning first carries out the individual steps for creating sales plan.

- Sales planning for profitability segment, that is planning at product group level or for individual products.

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Process flow

- Sales and profit planning on the basis of costs planned in controlling (for e.g., cost of good manufactured and cost-center overhead.
- The interface with the profitability analysis (CO-PA) enables you to use the sales and profit plan as a basis for the sales plan.
- It is also possible to transfer the sales and operations planning to sales and profit planning, cost-center accounting, or activity based costing. This enables an integration of quantity and value planning.
- planner's experience or is supported by a forecast based on the historical sales data.

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PP Processes and Roles

| 1 Sales & Operations Planning | → | 2 Long Term Planning | → | 3 Demand Management |

| 4 MRP | → | 5 Capacity Requirements Planning | → | 6 Production Execution |

Master Data Maintenance

Production Planning Master Data provides the infrastructure for Production Planning transactions

17

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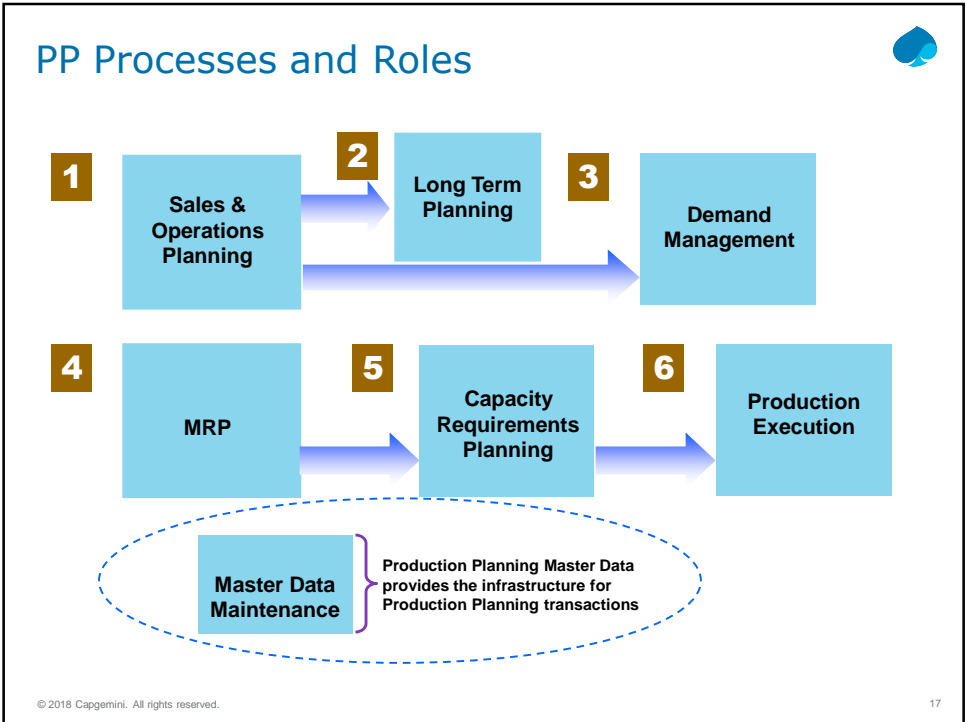
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PP flow & Integration with other module

FI /CO

MM

Long Term Capacity Planning

Sales & Operations Planning

Demand Management

MRP

Capacity Req. Planning

Production Execution

MM – LE (Stock Control)

CO (Cost Control)

QM (Quality Control)

18
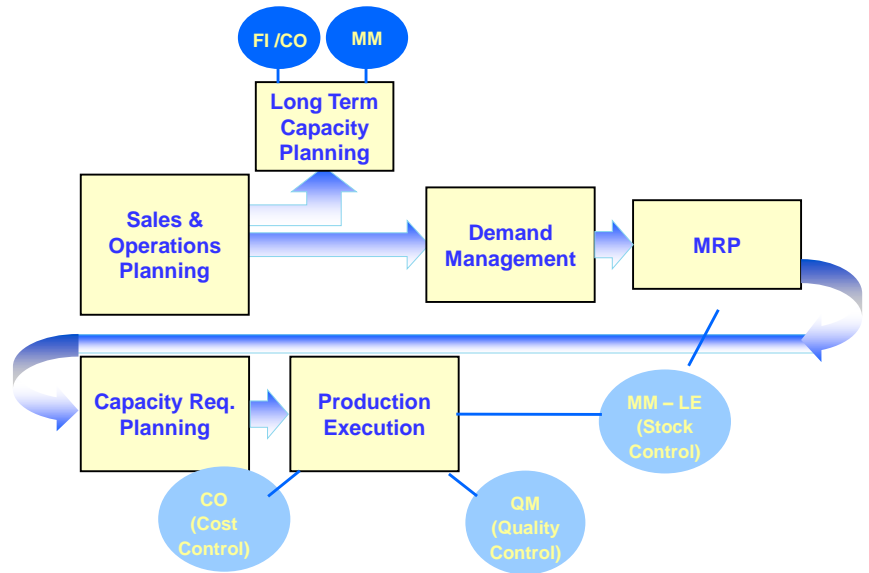
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How does SOP data apply to the Process?

SOP data creation

Create Sales Plan

Create Production Plan

Aggregate Plan and Check Capacity

Transfer Planning Values to Demand Management

19
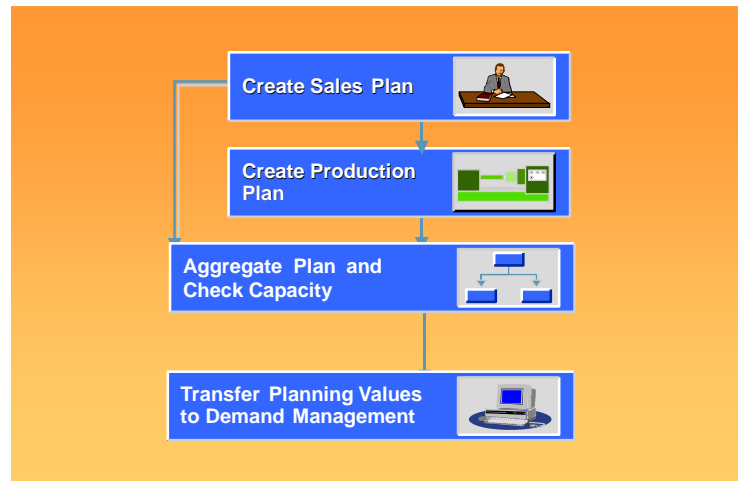
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SOP Planning Table

	Sales Information System	CO / PA Module	Forecast

Sales Information System

Information
Version ———
From ———
To ———

Measure
- Sales quantity
- Returns

CO / PA Module

CO/PA field name
Version ———
From ———
To ———

Measure
- Sales quantity

Forecast
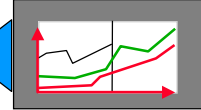
SOP Planning Table

	Un	05/2005	06/2005	07/2005	…
Sales	PC	1000	1200	900	

	Value	OP	From	To
Sales	5	%+	01/1999	12/1999
Production				
Target stock lvl	10	=	01/1999	12/1999
Tgt days' supply				

Direct - manual

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here.

Transfer to Demand Management
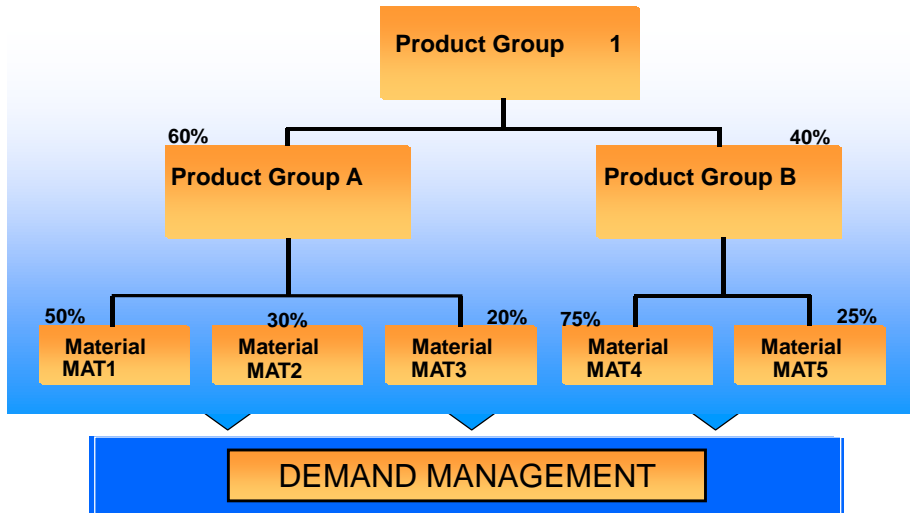
Product Group   1

60%

Product Group A

40%

Product Group B

50%   30%   20%   75%   25%

| **Material** | **Material** | **Material** | **Material** | **Material** |
| **MAT1** | **MAT2** | **MAT3** | **MAT4** | **MAT5** |

DEMAND MANAGEMENT

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Sales and Operation Planning

Prepare Me

Tell Me

Show Me

Let Me
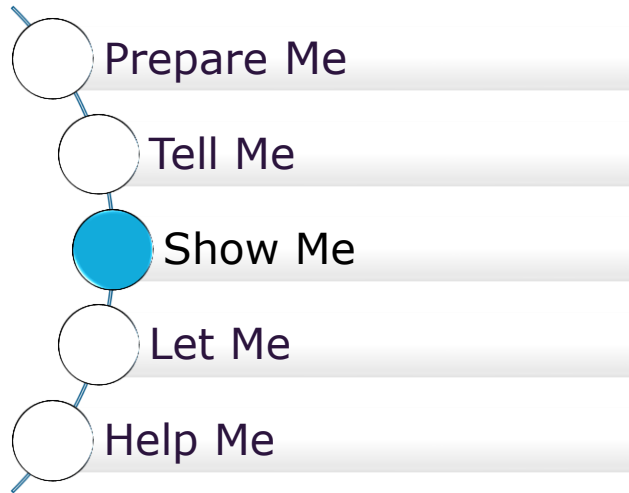
Help Me

Show Me….

- Environment
- Prerequisites of SOP
- Basic Terminologies used in SOP
  & their Definitions
- Master Data
- Customizing
- Integration in SOP

23
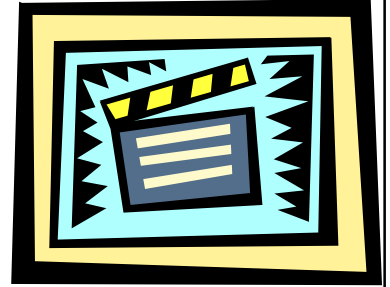
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Position of MPS in the PP process flow

Environment

The Environment in which Sales and Operations Planning
runs is SAP R/3 under PP module.

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Process Flow: MPS

- Information structure
- Master data like
    - Product group.
    - Planning type.
    - Planning hierarchy.
    - Rough-cut planning profile

- The whole idea of SOP/forecast etc., are to bring the requirement to Demand management in a more scientific way.

- Entire planning action of MRP/MPS run picks up the requirement from Planned Independent Requirement.

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Show Me….

Basic Terminology used in SOP & their Definitions

- Information Structure
- Planning Type
- Product Group
- Planning Hierarchy
- Planning Table
- Resource
- Rough-Cut Planning Profile
- Planning methods

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Show Me….

Definitions...

Information Structure

- Information structure is the one which hold entire information of the required characteristics and key figure. E.g. S755
- Example of characteristics & Key figure
    - Production line -- characteristic
    - Product Size -- characteristic
    - Market -- characteristic
    - Sales --key figure
- SAP standard information structure may be used for flexible planning. Info structure should be planned for consistent planning and level be level planning.

Planning Type

- Planning type is a customized view on the planning table.
- Planning type defines the content and the layout of the lines in the planning table.

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here.

Show Me….

Definitions...

- Planning data is saved on the information structure and planning type acts as a mere template on the information structure.
- There is no restriction on number of planning type per info structure.

Planning Hierarchy

- Planning hierarchy is a combination of characteristic values based on the characteristics of one information structure.
- Planning hierarchies provide the frame work for planning.
- Examples of Planning hierarchy.
  - For information structure S755, sales quantity is planned for below characteristic
  - Production line – characteristic.
  - Product Size – characteristic
  - Market -- characteristic

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Show Me….

Product Group
A product group combines other product groups and materials according to whatever criteria best meet the needs of your enterprise. Mostly used in Standard SOP..

Planning Table
- Planning table is the place where the planning is done.
- Planning table hold the information with different version for each plan

Resource
Machine is normally referred as a work center or resource in SAP. It is the place where conversion of work takes place. Used in Rough-cut profile.

Rough-cut Planning profile
- Rough-cut planning profiles are used in resource leveling.
- Rough-cut planning profiles are designed to give you an aggregate view on your resources.

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Show Me…

Definitions…

Planning Method

- Very importance in SOP is the planning method applied to the information structure. The planning method determines how data is distributed to different corporate units.

- You define your planning methods in Customizing (in Set parameters for info structures and key figures).

Three planning methods are available:

- Consistent planning
- Level-by-level planning
- Delta planning

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Master Data

- In Sales & Operations Planning, you can manage plans for various types of master data.

  - Manually created planning hierarchies.
  - Automatically generated planning hierarchies.
  - Product groups.
  - Materials.

- You maintain plans for planning hierarchies, or other branches of planning hierarchies, in Flexible planning.

- You maintain plans for product groups in Standard SOP.

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Show Me…

Step by step procedure for Standard SOP

Four important steps in Standard SOP Process:
- Create Plan in Inactive version (MC81)
- Disaggregate product group plan & check capacity utilization (MC76)
- Convert Inactive version to Active version (MC78-Copy)
- Transfer plan to Demand Management (MC75)

Step by step procedure for Flexible Planning

Three important steps in Flexible planning are
- Convert plan into Active version (MC8V-Copy)
- Transfer Material to Demand Management (MC90)
- Create Plan in Inactive version (MC93)

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Procedure for Standard SOP

1) Create Plan in Inactive version:
Menu Path: Logistics → Production → SOP → Planning → For product group → MC81-Create
T.Code: MC81

33

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Show Me….

T code-MC81

Create Rough-Cut Plan

| ✔ | | ◀ | 🖫 | 🗲🗲🗲 | 🖨🗒🗟 | 🗗🗗🗗🗗 | 🗺🗐 | 🕜🗐 |

Create Rough-Cut Plan

🖺 Characteristic 🖩

Product group	PG-100		PRECISION Pumps
Plant	1000		
Version	008 Version 008		New, inactive

Enter the sales quantities for future periods

SOP: plan individual product group

Planning table	Un	M 09.2007	M 10.2007	M 11.2007			008	M 03.2008	M 04.2008	M 05.2008	M 06.2008	M 07.2008	M 08.2008	M 09.2008
Sales	PC	100	250	300	350	400	450	500	550	600	650	700		
Production	PC													
Stock level	PC	-100	-350	-650	-1000	-1400	-1850	-2350	-2900	-3500	-4150	-4850	-4850	-4850
Target stock level	PC													
Days' supply	***													
Target days' supply	***													

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Show Me….

Procedure for Standard SOP

2) Disaggregate product group plan & Check capacity:

Menu Path: Logistics → Production → SOP →Disaggregation → MC76 Break Down PG plan
T.Code-MC76
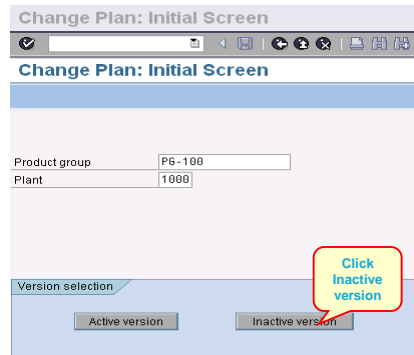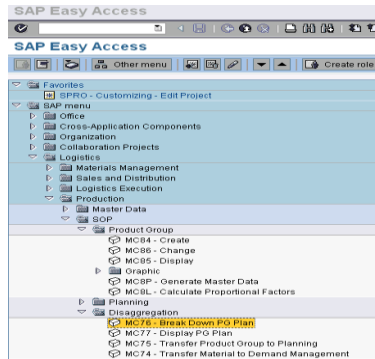
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Procedure for Standard SOP
T.Code-MC76

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Show Me…

Procedure for Standard SOP
T.Code-MC76

Change Rough-Cut Plan

| Prod.group/material | P6-100 | Plant | 1000 |
| Version | 008 Version 008 | | Inactive |

Aggregate information	Un	M 09.2007	M 10.2007	M 11.2007	M 12.2007	M 01.2008	M 02.2008	M 03.2008	M 04.2008	M 05.2008	M 06.2008	M 07.2008	M 08.2008	M 09.2008
Sales	PC	100	250	300	350	400	450	500	550	600	650	700		
Production	PC													
Stock level	PC	-100	-350	-650	-1000	-1400	-1850	-2350	-2900	-3500	-4150	-4850	-4850	-4850
Target stock level	PC													
Days' supply	***													
Target days' supply	***													

Detailed information	Un	M 09.2007	M 10.2007	M 11.2007	M 12.2007	M 01.2008	M 02.2008	M 03.2008	M 04.2008	M 05.2008	M 06.2008	M 07.2008	M 08.2008	M 09.2008
P-101 ->1000	Pc	***												
Sales	PC	21	54	65	76	87	97	108	119	130	141	152		
Production	PC													
Stock level	PC	-21	-75	-140	-216	-303	-400	-508	-627	-757	-898	-1050	-1050	-1050
Target stock level	PC													
Days' supply	***													
Target days' supply	***													
P-100 ->1000	Pc	***												
Sales	PC	57	141	169	197	225	255	283	311	339	367	395		
Production	PC													
Stock level	PC	-57	-198	-367	-564	-789	-1044	-1327	-1638	-1977	-2344	-2739	-2739	-2739
Target stock level	PC													
Days' supply	***													
Target days' supply	***													
P-102 ->1000	Pc	***												
Sales	PC	22	55	66	77	88	98	109	120	131	142	153		
Production	PC													
Stock level	PC	-22	-77	-143	-220	-308	-406	-515	-635	-766	-900	-1061	-1061	-1061
Target stock level	PC													
Days' supply	***													
Target days' supply	***													

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Show Me…

Procedure for Standard SOP

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here.

Show Me…

Procedure for Standard SOP

Change Rough-Cut Plan

Characteristic

| Prod group/material | PG-100 | Plant | 1000 |
| Version | 008 Version 008 | | Inactive |

Aggregate information	Un	M 09.2007	M 10.2007	M 11.2007	M 12.2007	M 01.2008	M 02.2008	M 03.2008	M 04.2008	M 05.2008	M 06.2008	M 07.2008
Sales	PC	100	250	300	350	400	450	500	550	600	650	700
Production	PC	100	250	300	350	400	450	500	550	600	650	700
Stock level	PC											
Target stock level	***											
Days' supply	***											
Target days' supply	***											

Detailed information	Un	M 09.2007	M 10.2007	M 11.2007	M 12.2007	M 01.2008	M 02.2008	M 03.2008	M 04.2008	M 05.2008	M 06.2008	M 07.2008
P-101 ->1000	PL***											
Sales	PC	21	54	65	76	87	97	108	119	130	141	152
Production	PC	21	54	65	76	87	97	108	119	130	141	152
Stock level	PC											
Target stock level	***											
Days' supply	***											
Target days' supply	***											
P-100 ->1000	PL***											
Sales	PC	57	141	169	197	225	255	283	311	339	367	395
Production	PC	57	141	169	197	225	255	283	311	339	367	395
Stock level	PC											
Target stock level	***											
Days' supply	***											
Target days' supply	***											
P-102 ->1000	PL***											
Sales	PC	22	55	66	77	88	98	109	120	131	142	153
Production	PC	22	55	66	77	88	98	109	120	131	142	153
Stock level	PC											
Target stock level	***											
Days' supply	***											
Target days' supply	***											

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Show Me…

Procedure for Standard SOP

40

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Procedure for Standard SOP

T.Code-MC78
3) Convert Inactive version to Active version (version management)
 Menu path: Logistics → Production → SOP → Planning → Version
Management →MC78 Copy

42

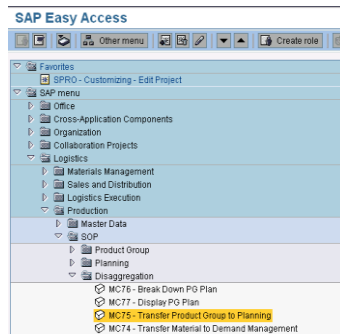Add the notes here.

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here.

Show Me...

Procedure for Standard SOP

T.Code-MC75
4) Transfer plan to Demand Management:
Menu Path: Logistics → Production → SOP → Disaggregation → MC75 Transfer
product group to planning
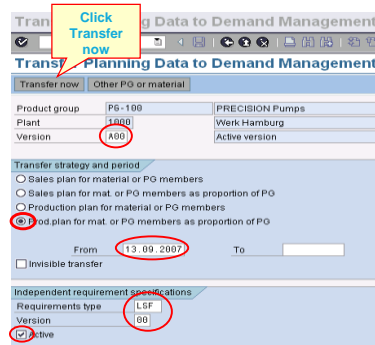
43

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Show Me….

Procedure for Standard SOP

T. code: MC75

Plnd ind. reqmts: Planning Table

Plnd ind. reqmts: Planning Table

Planning start   13.09.2007   Plng finish

| Table | Items | Sched. lines |

Materi.	MRP	V	A	BU	M 09.2007	M 10.2007	M 11.2007	M 12.2007	M 01.2008	M 02.2008	M 03.2008	M 04.2008	M 05.2008	M 06.2008
P-100	1000	00	☑	PC	56	141	169	198	226	254	282	310	339	367
		00	☑											
		00	☑											

Now the plan is transferred to Demand Management. Similar to Disaggregation & Aggregation can also be done
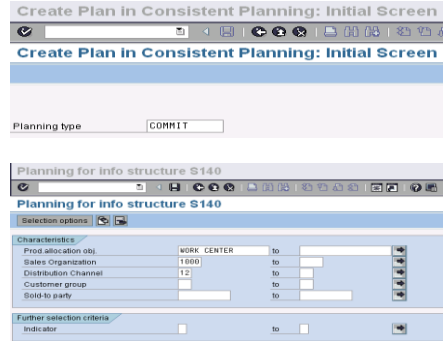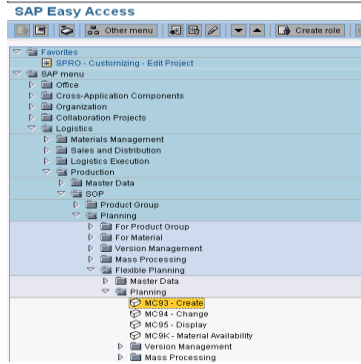
44

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Show Me...

Procedure for Flexible Planning

1. Create Plan in Inactive version:

Menu path: Logistics → Production → SOP → Planning → Flexible planning → Planning → MC93 Create

45

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here.

Show Me...

Procedure for Flexible Planning
T.code: MC95

Enter the quantity & save it

46

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Show Me…

Procedure for Flexible Planning

2) Convert plan into Active version (MC8V-Copy)

Menu Path: Logistics → Production → SOP → Planning → Flexible planning →Planning → Version management → MC8V copy

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Show Me…

Procedure for Flexible Planning

3) Transfer Material to Demand Management (MC90)

Menu Path: Logistics → Production → SOP → Planning → Flexible planning →Environment →MC90 Transfer Material to Demand management

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Show Me...

Procedure for Flexible Planning
T.code: MC90

| Planned indep.reqmts | Edit | Goto | Settings | Environment | System | Help |

Plnd ind. reqmts: Planning Table

Planning start   01.01.2004   Plng finish   01.01.2007

| Table | Items | Sched. lines |

Material	Plnt	DV	Ac	B...	M 01.2005	M 02.2005	M 03.2005
TEST-SOP-001	01	00	✓	EA	1.000	1.400	2.000
	0001	00	✓				

49

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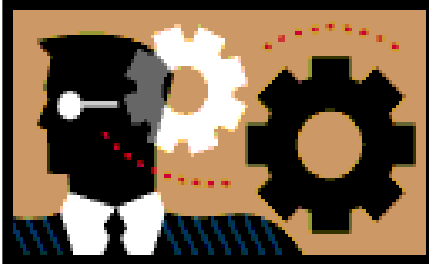
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Show Me…

Configuration of SOP

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here.

Show Me…

Configuration of SOP

Standard SOP does not require much configuration. Only SOP master data like Product group and rough-cut planning profile is sufficient for standard SOP.

The following steps involved in the configuration.

- Create info structure (MC23)
- Set parameter for info structure and key figure (MC7F)
- Define Transfer Profile
- Define Activity
- Define Key figure assignment
- Define copy profile

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Show Me…

Configuration of SOP

1) Create Information Structure:

IMG →Logistics-General → Logistics Information system (LIS) →Logistics Data Warehouse →Data basis →Information structure →Maintain self defined information structure (MC23)

2) Set parameter for info structure and key figure:

IMG →Logistics-General → Logistics Information system (LIS) → Planning → Master data → Set parameters for info structure and key figures (MC7F)

3) Maintain Transfer profile:

IMG → Production → Sales and Operations Planning → Functions →Mass processing →Maintain Transfer profiles.

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Configuration of SOP

4. Define Activity:

IMG → Production → SOP → Planning → Functions → Mass processing → Define Activity

5. Define Key Figures:

SAP Menu → Logistics → Production → SOP → Settings → Mass processing → MC8Z-Key Figures Assignments

6. Define Copy Profile:
SAP Menu → Logistics → Production → SOP → Settings → Mass processing → MC9D-Copy Profiles

These are steps mostly involved in the configuration of SOP.

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Sales and Operation Planining

- Prepare Me
- Tell Me
- Show Me
- Let Me
- Help Me

54

Let Me…

- Understand the Basic Business scenario of SOP
- Understand the Process of SOP, Integration with other modules
- Understand two different processes such as Standard SOP & Flexible Planning as discussed in previous slides

55

Add the notes here.

References

- Tips and Tricks
- Additional Info

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Tips & Tracks…

Comparison of the Different Planning Methods in SOP :

Function	Consistent	Level by Level	Delta
1.Automatic Aggregation	Yes	No	Yes
2. Automatic disaggregation based on factors saved in Database	Yes	No	No
3.Create Planning hierarchy	Yes	Yes	Not required
4.Forecast	Yes	Yes	Yes
5.Resource Leveling	Yes	Yes	No
6.Backgroung Processing	Yes	Yes	No
7. Fix Key figure values in the planning table	Yes	No	No
8. Standard Analysis for Info Structure	Yes	No	No
9. Transfer to Demand Management	Yes	Yes	No

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Add the notes here.

Add instructor notes
here.

Additional Information….

LIS Structure/Control Table:
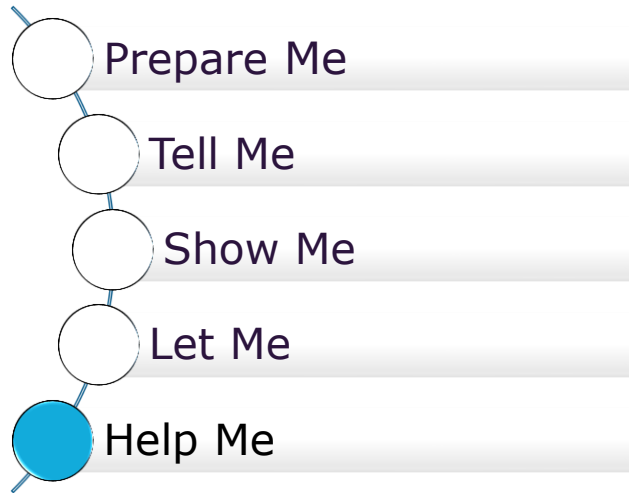
TMC4 – Global Control Elements: LIS Info Structure

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PP1009 -SOP

Prepare Me

Tell Me

Show Me

Let Me

Help Me

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Add instructor notes here.

Frequently Used Transactions for SOP

Practice the following transactions generally used for Sales & Operations Planning

- MC21/MC22 Create/Change Information Structure
- MC7F Planning parameters of the Information structure
- MC84/MC85 Create/Change Product Groups
- MC91 Graphical presentation of Product Groups
- MC61 Create Planning Hierarchy
- MC62 Planning Hierarchy –Edit proportional factors
- MC9A Generate Master Data for Flexible Planning
- MC8A/MC8B Create/Change Planning Type
- MC87/MC88 Create/Change Standard SOP (Material)
- MC81/MC82 Create/Change Standard SOP (Product Group)
- MC93/MC94 Create/Change Flexible Planning
- MC96 Forecast Profile
- MC35/MC36 Create/Change Rough-cut profile
- MC74 Transfer Standard SOP to Demand Management (Material)
- MC75 Transfer Standard SOP to Demand Management (Product Group)
- MC90 Transfer Flexible Planning to Demand Management

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Add the notes here.

Add instructor notes
here.

Summary

The main purpose of sales and operations planning is to define the product types and quantities to be sold for a medium- to long-term planning period.

The goals of SOP is to obtain the corresponding planning data for production.

Sales & Operations Planning is a flexible forecasting and planning tool with which sales, production, and other supply chain targets can be set on the basis of historical, existing, and estimated future data.

SOP can be done at all level of finished products or using product groups.

Any combinations of materials or even of product groups can be grouped together into other product groups.

Flexible Planning provides detailed way of planning based on our own characteristics.

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Add the notes here.

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Review Questions

1. The result of sales and operations planning is the operations plan

   Check whether the statement is true or false

   a. True
   b. False

2. Sales and operations planning first carries out the individual steps for creating   sales plan

   Check whether the statement is true or false

   a. True
   b. False

3. The interface with the profitability analysis (CO-PA) enables you to use the sales and profit plan as a basis for the sales plan.

   Check whether the statement is true or false

   a. True
   b. False

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Add the notes here.