DEMAND PLANNING

Umoja Demand Planning and Supply Network Planning Solution

Overview
Supply Chain Planning Operational Framework

- **Planning Processes**
  - Demand, Source, Acquisition, Deliver – levels 1-4
  - Global, regional, local entity
  - Planning horizons
  - Functions, roles and responsibilities, process maps, RACI

- **Supply Chain Planning Operational Framework**
  - Strategy
  - SC Blueprint
  - Operational Guidelines
  - SOPs
  - Business rules
  - Job aids
  - Org. structures, hierarchy
  - Global strategic
  - Global operational
  - Mission level

- **IT Systems and Tools**
  - Web-based DPSNP Solution
  - UE2 SC planning solutions
  - BI dashboards and tools
  - Material and Service Master Data

- **People**
  - Skill sets and experience
  - Training and Certification

- **Performance Management**

- **Policy and Guidance**
  - KPIs and metrics – SC PMF
  - Quality of planning data
  - Quality of requirements of planning
  - Deviations and timelines of implementation

- **Organization**

**Notes:**
- Global, regional, local entity
- Planning horizons
- Functions, roles and responsibilities, process maps, RACI
- Web-based DPSNP Solution
- UE2 SC planning solutions
- BI dashboards and tools
- Material and Service Master Data
<table>
<thead>
<tr>
<th>PLAN</th>
<th>Planning activities associated with determining requirements to achieve supply chain operations (Gross Demand, Net Demand, Sourcing, Acquisition and Delivery)</th>
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</thead>
</table>
| Source | Order and receipt of goods  
  - Establishing contracts for purchase of goods and supplies  
  - Ordering, scheduling deliveries, and receiving products |
| Deliver | Inbound and outbound logistics  
  - Creating, maintaining, and fulfilling orders  
  - Managing receipts, invoices, and shipments |
| Return | Reverse flow of goods back from the customer  
  - Identifying, scheduling, and receiving returned goods  
  - Does not include actions such as repair and refurbish |
| Enable | Manage Supply Chain  
  - Business rules, human resources, performance reporting, data and information  
  - Supply chain network, contracts, assets, regulatory compliance and risk |
Plan Supply Chain

- Establishment of course of action over a specific time periods that represent a projected appropriation of Supply Chain resources to meet supply chain requirements (Identify, Prioritize and Aggregate Supply Chain Requirements)

Plan Source

- Establishment of course of action over a specific time periods that represent a projected appropriation of Materials resources to meet sourcing requirements (modalities of fulfilling the demand, sourcing plans)

Plan Deliver

- Establishment of course of action over a specific time periods that represent a projected appropriation of Delivery resources to meet delivery requirements (delivery plans)

Plan return

- Establishment of course of action over a specific time periods that represent a projected appropriation of Return resources and assets to meet anticipated and unanticipated return requirements (establish and communicate return plans)
Core Supply Chain Planning - Strategic

**Strategic Supply Chain Planning** = Planning performed at global level to meet the long-term SCM vision, goals and objectives.

- The strategic supply planning identifies the overall requirements for goods and services with a long-term outlook of 2 to 5 years.

- It takes into consideration the historic consumption data, and the SCM updated policies, guidelines, Priority Project Demand, and planner insights.

- Stakeholders are: Local Entities, UNGSC, and UNHQ Supply Chain and Acquisition Planners,
**Annual Supply Chain Planning** = Planning performed at local, regional, and global level to meet the mid-term SCM vision, goals and objectives.

- The Annual Supply Chain planning aims at meeting the local entities’ anticipated requirements for goods and services for a given fiscal year.

- It takes into consideration the historic consumption data, adjustments and the OSCM updated policies, guidelines, priority project demand, Equipment and planner insights.

- Stakeholders are: Local Entities, UNGSC, and UNHQ Supply Chain and Acquisition Planners, UNHQ Category Managers, and UNHQ Budget Formulation.
Monthly Supply Chain Planning = Planning performed at local, regional, and global level to meet the short-term SCM vision, goals and objectives

- The Monthly Supply Chain planning aims at continuously update annual demand, source and delivery plans based on change requirements and evolving priority.

- It takes into consideration the historic consumption data, adjustments and the OSCM updated policies, guidelines, priority project demand, Equipment and planner insights

- Stakeholders are: Local Entities, UNGSC, and UNHQ Supply Chain and Acquisition Planners, UNHQ Category Managers, and UNHQ Budget Formulation
Annual Supply Chain Planning

- Develop Demand Plan
- Develop Source Plan
- Develop Acquisition Plan
- Develop Delivery Plan
- Finalize Annual Supply Chain Requirements
Planning Phases Flow

**Inputs**
- 2 years of Consumption Data
- Data Cleansing (Manual & Automatic)

**Process**
- Generate Statistical forecast 12-24 months
- Global Supply Chain Planner input
- Monthly Forecast review

**Outputs**
- Gross Demand Plan
- Dollarization Demand Plan (Contract / PO / MAP / Fair Market value)

**Inputs**
- Net Demand
  - Gross Demand Plan – Projected Holdings
  - Planners Adjustments

**Process**
- Planners Adjustments
- Identify sourcing options (Internal Vs External)

**Outputs**
- Budget Constrained Demand Plan (BPC)
- Unconstrained Demand Plan (Volume & Dollar)
- Optimized Acquisition Plan (Purchase requisitions)
- Suppliers from Local and Global Contracts
Processes Illustration

Demand Planning

- Services
- Services with goods component
- Goods

Source Planning

- System Contracts
- Turn Key Contract
- Other Existing Contracts
- New Procurements
- LOA
- MOU, LTA
- In sourcing (SDS, Surplus, UN Reserve)

Acquisition Planning

- Global AP
- Regional AP
- Mission AP
• **Gross Demand reflects:**
  - Total requirements for goods and services
  - Alignment with mandate activities

• **Net Demand reflects:**
  - Net requirements for goods and services
  - Unconstrained
Source Planning

**Source** = Modalities to prioritize and fulfill demand according to available sourcing options

**Source** is done from the following sourcing options

**Commercial:**
- System Contracts
- Turn Key Contract
- Existing Contracts
- New Procurements

**Non-Commercial:**
- LOA
- MOU, LTA
- LTA

**In Sourcing:**
- SDS
- Surplus
- UN reserve
**Acquisition /Procurement Planning**

**Acquisition** = Execution of the source plan through procurement and acquisition of products according to sourcing requirements. Starts when UNQ and Entity agree on the source plan after review, recommendations, IBP Meeting etc.

**Acquisition is done for the following Acquisition Plans**

- Global AP
- Regional AP
- Mission AP
Demand Planning and Supply Network Planning

Plan & Manage

Level 1
- Demand Planning

Level 2
- Gross Demand
- Net Demand
- Business Planning & Consolidation
- Source & Acquisition Planning
- Inventory Planning

Monthly Planning Process - IBP Meetings

Level 3
- Gather and Analyze Historical Data
- Add Insight and adjust Historical Data
- Run and Adjust Statistical Forecast
- Enter Entity Priority Project Demand
- Enter additional demand (events, equipment)

Stock Parameters: Safety Stock
- Stock Holdings
- Release of Unconstrained Net Demand Plan
- Manage Short Term Exceptions
- Measure & Monitor Demand Plan

Local Budget Unconstrained Net Demand
- Budget Adjustments
- Local Budget Constrained Net Demand

Account for UNGSC (SDS & Other) & Global Surplus
- Analyse Net Demand – Existing Contracts
- Develop Sourcing Strategies for New Procurement
- Net requirements with sourcing options
- Local/Regional/Global Procurement
- Manage Short Term Exceptions
- Measure and Monitor

Define and Improve Inventory Network and Strategy
- Run & Validate Inventory Optimization
- Measure and Monitor Inventory Performance
- Manage Excess and Obsolete
- Drive Continuous Improvements

*Outside Processes
Gross Demand Planning

**Demand** = Total Requirements for goods and services including correct calculation for headcount or associated ratio

01 **Historical Data**
- Review and Adjust Consumption and Sales History

02 **Classification**
- Run automated historical classification

03 **Data Cleansing**
- Substitute missing value
- Outlier correction

04 **Forecast**
- Smoothing
- Croston

Additional Demand

Can happen at any time during process steps
DPSNP Tool Key Elements
**Definition:**

- The IBP meeting is a decision-making forum where stakeholders from the Demand (often Service Delivery Units) and Supply Chain Management Pillar and Procurement are convening.
- The IBP meetings take place at local, global and HQ level.

**Goals:**

- To review and agree on a consensual Net Demand and ensure alignment between forecast and reality.
Rolling Demand Plan

Input:
- Production Data
  - Auto fed consumption Data (2 years) from Umoja

Calculations:
- Calculating Average Consumption and Sales
- Calculating Cleansing History
- Calculating Statistical Forecast

Output:
- Calculating trends/patterns (times series attributes)

The 24 Months Rolling Demand Plan

Commodity
## Rolling Periods

<table>
<thead>
<tr>
<th>Period in Months</th>
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<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
</tr>
</tbody>
</table>

- **“slushy” period**: 1-12 months planning horizon. Sufficient certainty and accuracy, and enough flexibility.
- **“liquid” period**: 12-24 months planning horizon. Less certainty, but most flexibility.

**Slushy**: 1-12 months planning horizon. **Sufficient certainty and accuracy**, and enough flexibility.

**Liquid**: 12-24 months planning horizon. **Less certainty, but most flexibility**.
Material Master Data and Demand Planning
Demand Planning is done at the fourth levels hierarchy of UN Standard Products and Services Code.
Demand Planning can be done at category, subcategory or commodities level
Example of UNSPSC

“root” = All Products and Services (implied)

Segment 44 Office Equipment and Accessories and Supplies

Family 10 Office machines and their supplies and accessories

Class 15 Duplicating machines

Commodity 01 Photocopiers

Class 31 Printer and facsimile and photocopier supplies

Commodity 03 Toner

44101501 Photocopiers

44103103 Toner
MM Hierarchy – Planning structure

- **Family**
- **Commodity**
- **Product**

- **Plant**
- **Planning Group**
- **Sub Location**
Planning Levels

Planning for the whole Mission

Planning for a group of Storage Locations or Fund Centers

Planning for a Storage Location or Fund Center
SAP Integrated Business Planning (IBP)

- SAP IBP is a cloud based solution that provides **planning functionalities** in Excel.

- IBP is the process of **matching demand and supply** throughout the supply chain with financial plans by product and by mission demand to deliver one seamless planning process.
SAP Integrated Business Planning Modules

Architecture

Supply Chain Control Tower

Exception Handling and Business Network Collaboration

Sales and Operations

Strategic and Tactical Decision Process. Manage S&OPS process from product and demand review to supply balancing with financial integration and scenario analysis

In Build

In implementation

Demand Planning

Manual and automatic adjustment and Statistical forecast

In Build

Inventory Management

Optimization

In Build

Supply and Response

Constrained and Unconstrained Supply Planning, Allocation and Deployment Planning

HANA

Underlying Data Repository flowing from ECC
# Gross Demand Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
</tr>
</thead>
</table>
| **Local Demand Planner** | - Adjust consumption and sales history  
- Adjust cleansing data history, Forecast override  
- Maintain EPP and Additional demand |
| **Senior Demand Planner** | - Adjust and Override Gross Demand  
- Final authority in approving entities Gross Demand for group of commodities |
| **Local Demand Plan Analyst** | - Formulate entities Demand Plan  
- Visibility to data across entities |
| **Supply Chain Manager** | - Adjust and Override Gross Demand  
- Final authority in approving entities Gross Demand for ALL group of commodities |
| **HQ Demand Planner** | - View across entities demand plan (HQ and UNGSC roles) |
### Gross Demand Roles Cont’d

<table>
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<tr>
<th>Role</th>
<th>Responsibilities</th>
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</thead>
<tbody>
<tr>
<td>Price Planner</td>
<td>- Review and update fixed and variable unit price (Contract &amp; PO price, MAP)</td>
</tr>
<tr>
<td></td>
<td>- Ensure accuracy of price used for dollarization</td>
</tr>
<tr>
<td>Statistical Forecast Planner</td>
<td>- Review and analyze statistical models</td>
</tr>
<tr>
<td></td>
<td>- Override data output if needed</td>
</tr>
<tr>
<td>DP &amp; SNP Admin</td>
<td>- Configure (profiles, run snapshots, manage templates, create shared favorites)</td>
</tr>
<tr>
<td></td>
<td>- Schedule jobs, customs alerts</td>
</tr>
<tr>
<td></td>
<td>- Technical role</td>
</tr>
<tr>
<td>DP &amp; SNP Master Data</td>
<td>- Manage master data customs table</td>
</tr>
<tr>
<td></td>
<td>- Technical role for MMDM</td>
</tr>
<tr>
<td>DP &amp; SNP Display all</td>
<td>- View only access to system templates</td>
</tr>
</tbody>
</table>
Benefits DPSNP

**Hard Benefits**
- Scalable statistical models for forecasting
- Best Fit of simulation scenarios

**Soft Benefits**
- Eliminate manual excel sheets hand offs
- Transparent and Efficient collaboration
- Reporting and Analytics
### Planning TIPS

<table>
<thead>
<tr>
<th>ACTIONS TO TAKE /DOs</th>
<th>ACTIONS TO AVOID /DON’Ts</th>
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<tr>
<td>• Involve budget holders in changes to the planning process</td>
<td>• Forget to understand all levels business requirements</td>
</tr>
<tr>
<td>• Base your forecasting on the key drivers of the business. If there is major change, react accordingly</td>
<td>• Wait for the end of year cycle to start preparing the planning</td>
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</table>
**TERMINOLOGY CHECK**

1. **GROSS DEMAND**
   
   Is the output of demand planning process that represents the entity’s total requirements for goods and services.

2. **NET DEMAND**
   
   The entity’s net requirements for goods and services. Derived from the Gross Demand Plan by deducting the projected holdings of goods.

3. **PROJECTED HOLDINGS**
   
   Current Holdings + Goods in Inventory Pipeline - Forecasted Planned Consumption (from the current date till the end of FY) - Goods Return (passed life expectancy, writes off, Obsolete)

4. **PLANNING HORIZONS**
   
   The amount of time an organization will look into the future when preparing a plan/forecast.
- Umoja Material Master Data
  o LMS-1929 Umoja Material Master Data Overview
- Umoja Logistics
  o LMS-1920 Umoja Logistics Overview
- Umoja Property Management
  o LMS-1775 Umoja Property Management Overview