Increasing Demand Insight and Forecast Accuracy with Demand Sensing and Shaping

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Agenda

Industry Trends and Business Drivers

SAP Addressing the Needs

Getting Started

Wrap-Up
Demand Network has Inherent Data Latency

Demand Signal Latency
Multiple layers in the demand network leads to data latency

Demand Granularity
Multiple aggregations across the demand network leads to loss of granularity

Traditional Flow of Information
Flow of Goods in a Supply Chain

~ 14 days
Purchase Orders

Time lag
Purchase Orders
Barcode Scans

Manufacturer ➔ Wholesaler ➔ Retailer ➔ Consumer
Empowered Customers are Changing the Rules

Digitally Connected

79% of customers spend at least 50% of total shopping time researching products online (Powerreviews)

Socially Networked

53% of customers abandoned an in-store purchase due to negative online sentiment (Interactive Advertising Bureau Report)

Better Informed

59% of customers are willing to try a new brand to get better customer service (American Express Global Customer Barometer)
Business Drivers to Address Consumer Demand and Behavior

Lost Sales
- 20% lost sales due to product out of stock (GS1)
- 27% loss of sale due to product wanted not available in assortment (Q&A Research & Consultancy)

Product Launch Failures
- 75% product launches fail... (AMR)

Promotional Effectiveness
- -19% average ROI on trade promotions (Capgemini)

Decline in Market Share
- 10% decline in market share on average due to recurring out of stock (Journal of Business Logistics)

Brand Substitution
- 82% of consumers will substitute and switch brands due to an out of stock product (Marketing Science Journal)

Price Sensitivity
- 52% of consumers agree that the price of a product is more important than brand names (dunnhumby)
Need for Demand Sensing & Shaping Capabilities

1. Deep Insights into Customer Needs
2. Comprehensive Market Share Analysis
3. Predict Demand and Optimally Position Supply
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Wrap-Up
Aggregated Demand Planning Needs to be Augmented

**Demand Signal Management**

**Capture Demand Signals**
Collect, harmonize, enrich all external and internal demand signals into a single source of truth

**Enterprise Demand Sensing**

**Analyze Demand**
Develop comprehensive market and demand insights

**Predict Demand**
Granular forecasting based on demand pattern recognition

**Collaborative Demand Planning**
Optimize forecasts and generate a consensus demand plan

**Supply Network Planning**
Optimally plan supply and deploy inventory to meet demand plan

APO-DP

APO-SNP
Cross-functional Process View

**Marketing**
- Marketing Planning and Resource Management

**Sales**
- Sales Planning and Performance Management

**Supply Chain**
- Demand Sensing and Shaping
  - Demand Signal Capture
  - Analyze and Shape Demand

** Processes**
- Output to Supply Processes
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Industry Trends and Business Drivers
SAP Addressing the Needs

SAP Demand Signal Management
SAP Enterprise Demand Sensing

Getting Started

Wrap-Up
SAP Demand Signal Management on HANA

SAP Demand Signal Management is the enterprise application for integrating all relevant demand signals (internal and external) to a single source of truth.

**DEMAND & MARKET VISIBILITY**
Increased insights with enhanced analytics

**DEMAND RESPONSE**
Leverage data in enterprise business applications

SAP Demand Signal Management

- Retailer POS
- Social Media
- Distributor/Wholesaler
- Market Research data (e.g., Nielsen)
- SAP Business Suite
- Linking additional external information (e.g., weather)
Scalable and Holistic Approach to Leveraging Value of Demand Signals with DSiM

1. External & Internal Demand Signal Upload
2. Data Cleansing & Validation
3. Data Harmonization
4. Demand Data Enrichment
5. Demand Insights
6. Integrate to Demand Response

DSiM on HANA
Benefits of a Single Source of Demand Signals

1. **Brand Performance in U.S.**
   - Brand items spread across two categories
   - "Local" Market Share

2. **Brand Market Share in N.A.**
   - Market Research Tracking Data from different providers
   - "Regional" Market Share

3. **Category Management**
   - Category Management for Walgreens in U.K.

4. **Sales Performance of Walmart**
   - Cross country view
   - "Customer language"

5. **Sales Performance in Canada**
   - "Sell-In vs. Sell-Out" comparison
   - Out-of-Stock Analysis

- **Nielsen**
  - Market Research Tracking Data / Retail Panel
  - U.S.

- **IRI**
  - Market Research Tracking Data / Retail Panel
  - Canada

- **Walgreens**
  - POS Data
  - U.K.

- **Wal-Mart**
  - POS Data

- **ERP**
  - Internal Data
Select DSiM Use Cases

Promotion Effectiveness
- Track promotion participation per store
- Identify Top/Bottom 10 selling stores
- Measure variations in Promoted Price

Market Share Analysis
- Monitor market trends, market size and competitor dynamics
- Identify root causes for market share declines (e.g., new competitor product)

Forecast Accuracy
- Increase forecast accuracy by including POS data in the Demand Planning process
- Analyze historic sales and promotions for planning insights

Sales Analysis
- Analyze demand data from different sources to spot trends
- Analyze historical sales, and product listing to adapt sales strategy
- Switch between internal and external (e.g., Retailer) views

Out of Stock Reduction
- Quickly identify stores with out of stock and take mitigating action
- Monitor Inventory levels across your network and reduce carrying costs

Product Launch Success
- Track store sales, distribution, price and promotions for new products
- Ensure stock availability at stores and distribution centers
## Embedded Analytics Delivered with DSiM

### Pre-defined analytics
(with the option to define and adopt **new additional analytics**)

<table>
<thead>
<tr>
<th>Function</th>
<th>Roles</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales</strong></td>
<td>Key Account Manager / Sales Director</td>
<td>• Sales Analysis</td>
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<tr>
<td></td>
<td></td>
<td>• Promotion Analysis</td>
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<td></td>
<td>• On shelf Availability</td>
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<tr>
<td><strong>Marketing</strong></td>
<td>Marketing Director / Product Manager</td>
<td>• Market Share Analysis</td>
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<tr>
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<td></td>
<td>• Product Launch</td>
</tr>
<tr>
<td><strong>Supply Chain Management</strong></td>
<td>Head of Logistics / Supply Planner / Demand planner</td>
<td>• Out of stock Analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inventory Analysis</td>
</tr>
</tbody>
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Data analysts can leverage DSiM data with predictive and data mining algorithms from SAP Predictive Analytics.

Integrate Social Media Data
Build Your Own Analytics – SAP Business Objects
Example: Linking Sell-Out Data with Weather Data

Predictive Consumer Sales & Weather data

Current selection: Taste Inc.
Period: 2011
Country: USA
City: Alabaster
Store: Department Store Alabaster

SAP Demand Signal Management
Cluster 3

- Sales revenue: Low
- Average number of Out of Shelf occurrences: Medium
- Average number of Out of Stock occurrences: Medium
- Inventory: Low
- Number of promotions: High

**Possible reasons/actions**

- Promotion not efficient enough
  - Strong competitors in the neighborhood: start a market campaign?
  - Increase the inventory level?
  - Un-list the product?
  - Store visit to find the root-causes
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SAP Addressing the Needs
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    SAP Enterprise Demand Sensing
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SAP Enterprise Demand Sensing
Sense Short-Term Demand Patterns

Short-term Forecast Issues Increases Inventory and Reduces Service Metrics

Enterprise Demand Sensing

- Predict daily demand requirements

- Apply pattern based forecasting logic for shipment and fulfillment

- Sense downstream demand using external data patterns (Planned Innovation)
EDS Identifies Optimal Blend of Inputs to Compute Short-Term Forecasts

**Adjustments**
- Open order correction
- Predicted future bias correction

**Disaggregation**
- Forecast patterns
- Shipment patterns
- Open order patterns

**Output**
- Optimal blend
- Daily outputs for execution systems
- Aggregated weekly or monthly values for planning and reporting
- Pattern Prediction
- Forecast feed to SNP for improved deployment
Benefits Enabled by EDS

- Improve short-term forecasts by 15-50%
- Reduce inventory 5-8%
- Increase demand agility
- Access actionable insights
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Putting it all Together – Demand Sensing

S&OP

Forecast

S&OP Forecast

APO (Demand Planning)

Demand Signal Mgmt

Downstream demand signals

Social Media

Master Data, Delivered orders

Enterprise Demand Sensing

Downstream demand signals

(Planned Innovation)

Forecast

Forecast adjustments

Master Data, Delivered orders

Open orders

ERP

Short-Term Forecast

APO SNP

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Roadmap to Business Value

![Diagram showing DSiM and EDS with external and internal demand signals]

- **Downstream Demand Insights**
  - External Demand Signals
  - DSiM

- **Short-term Forecasts for Optimal Inventory Deployment**
  - Internal Demand Signals
  - EDS

- **Solution Today**
- **Planned Innovation**
  - Demand Insights with enhanced Short-term Forecasts combining internal & external demand signals
Putting it all Together – Demand Shaping

- More precise TPO forecasts using demand data (POS, syndicated, internal)
- Enables SAP TPO to optimize promotion tactics
- Timely insights in promotion performance during Retail Execution and Post-Evaluation
  - Insights in promotion performance with sell-in and sell-out data
  - Ensure performance of the participating stores and products while the promotion is still running
  - Ensure On-Shelf-Availability during promotion execution
## Partner Ecosystem and Simplifying Consumption

<table>
<thead>
<tr>
<th>POS Data Acquisition Partners</th>
<th>DSiM Implementation Partners</th>
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<tbody>
<tr>
<td>(SAP ICC Certified)</td>
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<tr>
<td>Out of the box adaptors for 300+ global Retailers</td>
<td><a href="#">Hitachi Consulting</a></td>
</tr>
<tr>
<td><a href="#">Relational Solutions</a></td>
<td><a href="#">Wipro</a></td>
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<td><a href="#">IBM</a></td>
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<td><a href="#">bluefin</a></td>
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**Cloud offering from SAP Services**

Pilots on SAP HANA Enterprise Cloud (HEC)

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Where to Find More Information

  - Blog and video on customer success story for DSiM

  - Solution Brief for DSiM

  - Rapid Deployment Solution (RDS) for DSiM

  - Overview and introductory video for EDS

  - Solution Brief for EDS
Key Takeaways

- Increase demand visibility downstream in the demand network by capturing and analyzing demand signals
- Improve success of new product launches with increased customer insights
- Increase market share with holistic and integrated view of market trends at a local, regional, and global level
- Improve trade spend by analyzing store-level merchandising compliance and performance
- Improve forecast accuracy by predicting short-term demand patterns
- Boost sales by predicting and reducing out-of-stocks with demand pattern and trend recognition
- Lower expediting and inventory re-positioning costs with improved short-term forecasts
Thank You

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