Agenda

- Introduction
- Importance of forecasting
- Short term forecasting methods
- Long term forecasting methods
- Q&A
My name is P.S. Subramaniam.

- Nokia Customer Logistics, North America
- Accountable for planning & order fulfillment for NAM customers

Select companies I have worked with:
The mobile phone supply chain is complex with perishable and substitutable products.

<table>
<thead>
<tr>
<th>Locations</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;500</td>
<td>7-10 DOS</td>
</tr>
<tr>
<td>~200</td>
<td>10-20 DOS</td>
</tr>
<tr>
<td>1</td>
<td>7-10 DOS</td>
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<tr>
<td>2</td>
<td>15-30 DOS</td>
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<tr>
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<td>&gt;4000 DOS</td>
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</tbody>
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Note: DOS = Days of supply measured as on hand inventory/ avg daily forward looking forecast
Accurate demand forecasting is key to minimizing channel inventory and lost sales.

Channel inventory can be reduced with better forecasts.

Better forecasts can also help minimize lost sales.
There are two types of product forecasts; each driving different decisions.

**Stages of a product lifecycle**

- **Launch**
  - Short Term Forecast: 2-7 wks
  - Long Term Forecast: 8-18 wks

- **Replenishment**
  - Short Term Forecast: ✓ ✓
  - Long Term Forecast: ✓ ✓

- **End of Life**
  - Short Term Forecast: ✓ ✓
  - Long Term Forecast: ✓ ✓

**Short Term Forecast**
- **Activity**
  - Collaborative planning

**Long Term Forecast**
- **Activity**
  - Projected lifetime volume & timing
- **Decision**
  - Replenishment plan
  - Raw material purchase, mfg. plan
Short term forecast is driven by a robust Sales & Operations Planning process.

Weekly demand forecast/Purchase Orders

- **Supplier Teams**
  - Consolidate global demand
  - Allocate supply

- **Nokia Factory Team**

- **Nokia Account Team**
  - Sales
  - Finance
  - Supply Chain

- **Customer Planning Team**
  - National Retail Company Owned Stores
  - Online Dealer Network
  - Competitive Supply
  - Key Promotional Events

Weekly supply confirmation
Quantitative analysis is used to improve the quality of the S&OP process.

**Areas of Focus**

**Planning**

- Sample Methods
  - Analyze consumer sales across channels to proactively adjust forecast
  - Model demand lift from promotions
  - Detect supply constraints early to proactively substitute products

**Execution**

- Increase order lead times
- Track channel inventory anticipating order pull-ins and push-outs
Longer term forecast contributes to prudent raw material sourcing and mfg planning.

Two cases illustrating complexities of launch planning
Initial buy qty is set by heuristics and continually adjusted based on actual sell out in the field.

### Activity
- **Reduce purchases for long lead time components**
- **Identify critical gating components**
- **Buffer raw matl inventory of critical components**

### Objective
- **Minimize matl & mfg equipment liability**
- **Qty of long lead time items ~50% planned min life time volumes**
- **Launch qty ~15% of planned life time volumes**
- **Minimize lead time to store**
- **Maximize sales opportunity**
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