Preparing for the Future
Enhancing S&OP Performance with Analytics

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Background
Opportunities
- YOY Revenue
- Cross-Functional engagement in S&OP

Challenges
- Sales growth exposing flaws in planning
- KPIs overemphasize the past
- Reactive decision-making

Key Questions
How can we...
• Effectively apply analytics to predict challenges before they occur?
• Improve decision-making in the S&OP process by proactively preparing for the future?

Relevant Literature
• “Predictive Metrics for Supply Chains” By Linda Haydamous and Dr. Larry Lapide, June 2009
• “Applying machine learning to key performance indicators” By Marcus Thorstrom, 2017

Methodology
- Identify Key Planning Metrics
- Pilot Predictive Model
  - Classify future sources of risk
  - Evaluate financial impact of alternative options
  - Recommend executable decisions to minimize risk
- Measure Performance
- Quantify Benefit
- Launch Model

Initial Results

<table>
<thead>
<tr>
<th>Plan</th>
<th>Actual</th>
<th>Target</th>
<th>Predictive</th>
<th>Predictive Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast Accuracy</td>
<td>75%</td>
<td>80%</td>
<td>73%</td>
<td>2%</td>
</tr>
<tr>
<td>Premier Brand</td>
<td>72%</td>
<td>85%</td>
<td>62%</td>
<td>8%</td>
</tr>
<tr>
<td>Key Customer 1</td>
<td>82%</td>
<td>80%</td>
<td>75%</td>
<td>1%</td>
</tr>
<tr>
<td>Key Customer 2</td>
<td>79%</td>
<td>80%</td>
<td>72%</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer 1</th>
<th>Premier Brand Risk</th>
<th>Demand Forecast</th>
<th>Demand Variance</th>
<th>Key Loc Inventory OH</th>
<th>Work Orders Qty</th>
<th>Promotion Days</th>
<th>Promo/ Everyday Price Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obsolescence, Service Level</td>
<td>18,500</td>
<td>3,500k</td>
<td>80,000</td>
<td>50,000</td>
<td>2</td>
<td>0.98</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer 2</th>
<th>Premier Brand Risk</th>
<th>Demand Forecast</th>
<th>Demand Variance</th>
<th>Key Loc Inventory OH</th>
<th>Work Orders Qty</th>
<th>Promotion Days</th>
<th>Promo/ Everyday Price Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockout, Service Level</td>
<td>330,000</td>
<td>60,000k</td>
<td>250,000</td>
<td>150,000</td>
<td>10</td>
<td>0.80</td>
<td></td>
</tr>
</tbody>
</table>

Expected Contribution
• Predictive tools that...
  - Identify and classify risks in the S&OP plan
  - Evaluate financial impact of risks to improve decision-making
  - Can be scaled and applied to other processes

Deepti Kidambi, Minhaaj Khan