MIT Supply Chain MANAGEMENT

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# Preparing for the Future
## Enhancing S&OP Performance with Analytics

MIT | MIT GLOBAL SCALE NETWORK

## Background

**Opportunities**

⬆ YOY Revenue

⬆ Cross-Functional engagement in S&OP

**Challenges**

⬇ Sales growth exposing flaws in planning

⬇ KPIs overemphasize the past

⬇ Reactive decision-making
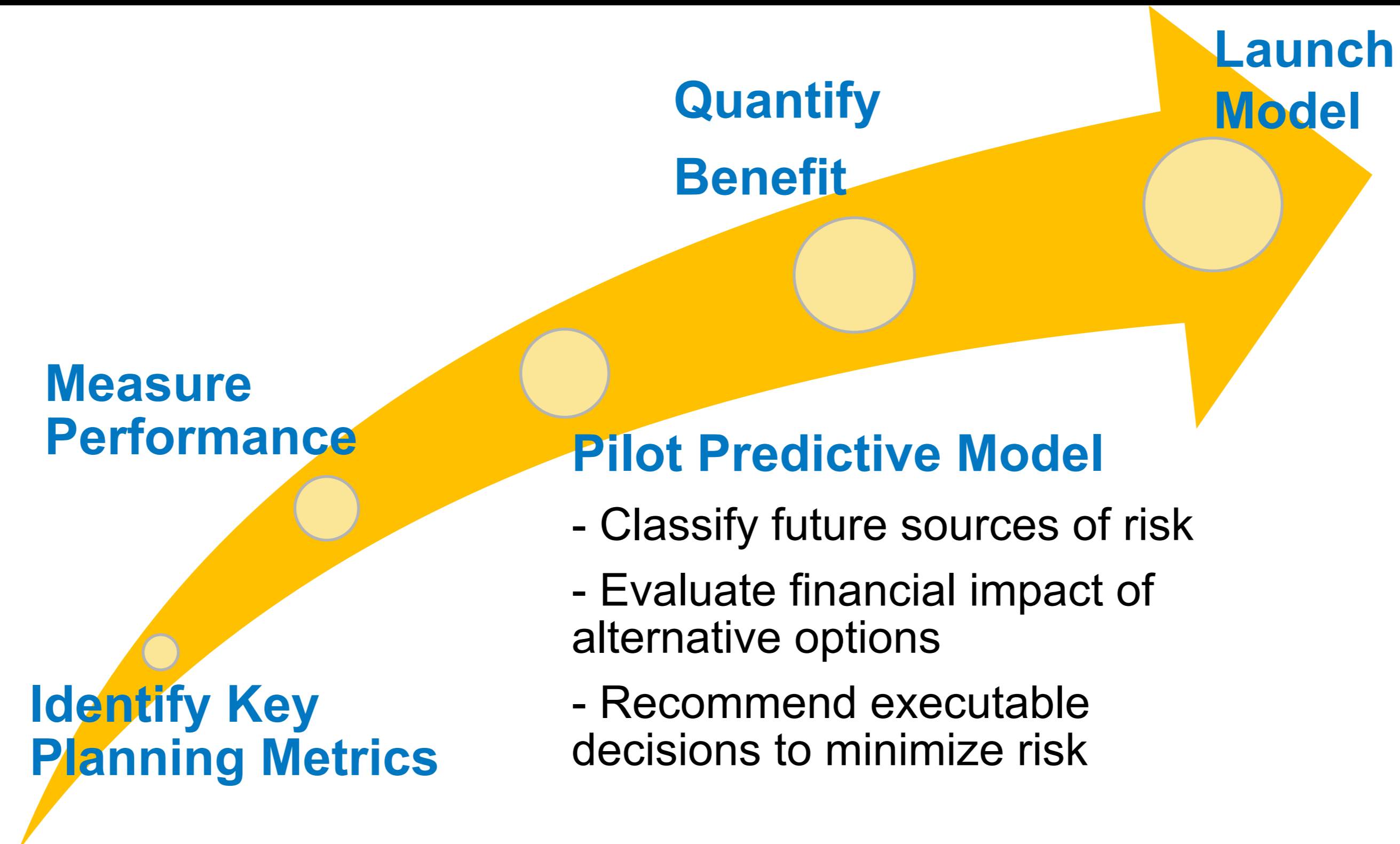
## Key Questions

**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

**Launch Model**

**Quantify Benefit**

**Measure Performance**

**Pilot Predictive Model**
- Classify future sources of risk
- Evaluate financial impact of alternative options
- Recommend executable decisions to minimize risk

**Identify Key Planning Metrics**

## Initial Results

| | | Actual | Target | | Predictive | Predictive Trend |
|---|---|---|---|---|---|---|
| **Plan** | | | | | | |
| **Forecast Accuracy** | | 75% | 80% | 🟠 | 73% | 2% ➡ |
| *Premier Brand* | | 72% | 85% | 🔴 | 62% | 8% ⬇ |
| *Key Customer 1* | | 82% | 80% | 🟢 | 75% | 1% ➡ |
| *Key Customer 2* | | 79% | 80% | 🟢 | 72% | 3% ➡ |

| *Customer 1* Premier Brand Risk | Demand Forecast | Demand Variance | Key Loc Inventory OH | Work Orders Qty | Promotion Days | Promo/ Everyday Price Ratio |
|---|---|---|---|---|---|---|
| Obsolecense, Service Level | 18,500 | 3,500k | 80,000 | 50,000 | 2 | 0.98 |

| *Customer 2* Premier Brand Risk | Demand Forecast | Demand Variance | Key Loc Inventory OH | Work Orders Qty | Promotion Days | Promo/ Everyday Price Ratio |
|---|---|---|---|---|---|---|
| Stockout, Service Level | 330,000 | 60,000k | 250,000 | 150,000 | 10 | 0.80 |

## 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

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