

Operations & Supply Planning
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Demand Forecasting

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Agenda

- Understanding Demand: nature and components
- Forecasting - motivation
- Forecasting techniques
 - Stationary series
 - Error measures
 - Trend
 - Seasonality
- Forecasting in the real world

Opening question

What is the key role of an operations manager?

Making the right product/service available at the right place at the right time for the right customer at the right price

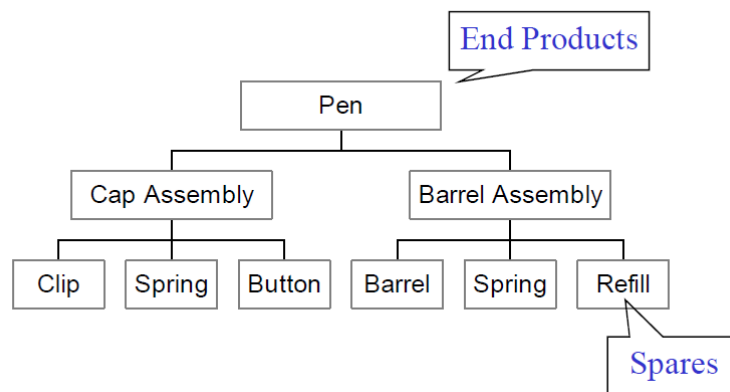
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Matching Supply with Demand



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Independent – Dependent Demand



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Demand Management

- Not much a firm can do about dependent demand
 - It is demand that must be met
- There is a lot a firm can do about independent demand
 1. Take an active role to influence demand
 2. Take a passive role and respond to demand

Understanding Independent demand!



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Independent Demand – Nuances

- What are the characteristics of demand?
 - Demand is not the same as sales.
 - It's random and uncertain
 - Depends several factors
 - Time of the year
 - Economic environment
 - Weather
 - Price fluctuation – upward or downward
 - Sales Promotion
 - Other product demand

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What Forecasting is not...



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What is Forecasting?



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What is forecasting?



Predicting the future based on past data!!

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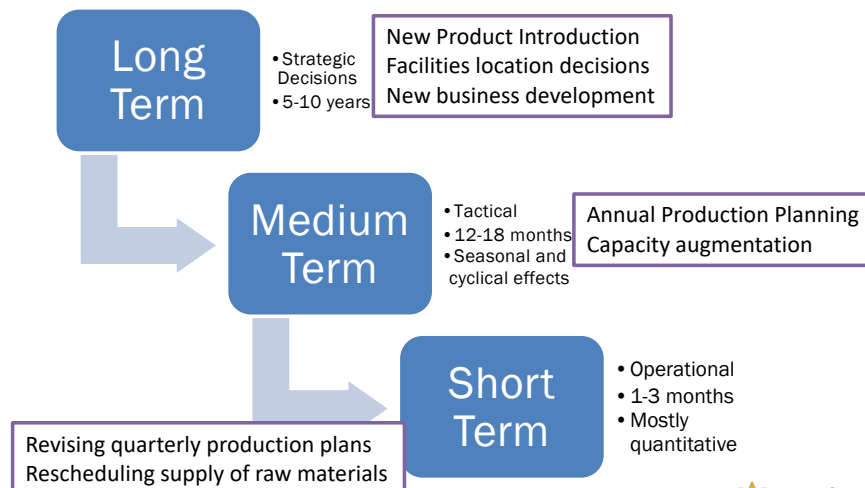
Questions to ponder

- Why forecast?
 - It's expensive not to. Why?
- What to forecast?
 - Level of aggregation.
 - What use is a forecast to you?
- How to forecast?
 - What methodology are you going to follow?
 - What data do you need?



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Forecasting time horizon



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Subjective Forecasts

- Sales force composites
 - Salesforce provides optimistic, pessimistic and most likely forecasts
- Jury of executive opinions
 - Top executives from different functional areas
- Customer surveys
 - Select a sample population of customers
- The Delphi method

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Subjective forecasts

- Form group of experts – anonymous
- Send questionnaires
- Collect and tabulate findings
- Redistribute and seek justification of outer quartiles
- Re-collect and tabulate findings
- Repeat until consensus is reached

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Common biases in subjective forecasting

- Inconsistency
 - Applying different decision criteria in similar situations
- Conservatism; Recency
- Anchoring; Confirmation bias
- Uncertainty underestimation
- Reputation effect

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