IE 563

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It must start with forecasting.

\[ x_1, x_2, \ldots, x_n \rightarrow n \text{ products} \]

\[ n = 4 \]

\[ \Rightarrow x_1, x_2, x_3, x_4 \rightarrow 4 \text{ products} \]

\[ \text{DVR}_1, \text{DVR}_2, \text{DVR}_3, \text{DVR}_4 \rightarrow \text{rws} \]

\[ \Rightarrow 70-80\% \text{ of items are the same} \]

Plan for aggregate production

\[ y_f \rightarrow \text{surrogate product for product family } f \]

\[ f = 1, 2, \ldots, m \]

\[ x_1, x_2, x_3, x_4 \rightarrow \text{in terms of hrs.} \]

\[ w/2 \rightarrow \text{Production in hours of product family } f \]

\[ \text{scheduled in month } t \text{ of } 6 \text{ months: } t = 1, 2, 3, \ldots, 6 \]

\[ \text{Labor, Inventory, # of employees hired/laid off, regular time, overtime, etc.} \]
What do we find?
- Prod. hrs allocated to each product family
- Aggregate Production Planning (APP)
  or simply Aggregate Planning (AP)

APP \rightarrow MPS \rightarrow Master Production Schedule.
For each family, MPS provides the # and time when the product is needed.
Time within in weeks
ex: 4 weeks, 6 or 8 weeks

Resource Planning (Rough cut capacity planning)
- comes in as a check on labor hrs?
- Two things \rightarrow man hrs.
  \{ Do we have enough hrs. to support production? \}
  \textbf{Only at the final assembly level.}
  \textbf{NOT detailed!}
MPS

Detailed material plan

Do we have the material?

We may run into material problems, capacity problems or both!

Feasible!

Firm production!

Not every thing has to be produced in-house.

Take HP for instance.

take $\Rightarrow$ core competency

Production

In-house $\Rightarrow$ Scheduling

Purchase $\Rightarrow$ Inventory control