The next generation of Supply Chain Planning Solutions

An Art and a Science

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Evolution of Advanced Planning Systems



The 4 Pillars of a Planning System

1 Modeling Capabilities





3 User Interface

Can users analyze and understand the plan?



2 Powerful Algorithm

Can the solver Optimize and Create a plan as desired?



4 Integration

Can the system easily connect with needed Data sources?



Modeling

- Model the supply change accurately
 - Constraints, Capacity, Alternates, Attributes, Multiple Outputs
- "Real" Scenario Planning
- Use Model for multiple purposes
 Production / Master / S&OP / Budget plans
- Be able to Prioritize
- Granularity Options
 Bucketed Planning

Telescopic Buckets



insync

Capacity

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 WO-113
 WO-113
 WO-114
 WO-124
 WO-124
 WO-122
 WO-122
 WO-122
 WO-123
 WO-123
 WO-124
 WO-125
 WO-125

Capacity Examples





Routing Example



Algorithm

- Create a plan as Desired
- Across Levels and Simultaneous Material and Capacity resolution
 Know all the Constraints before making a decision
- Be able to control what constraints that are "hard" vs "soft"
- Be able to understand the algorithm
 Avoid "Black Box" syndrome



What is a good Plan?

- Optimized?
- Be able to configure the system so that the results are like the "human" planner would make them
- Empower Planners
 - Able to influence the plan/algorithm to get the desired results

"Our planners use to be the last in the office to leave, after implementing iPlanner, they were the first to leave, at the same time we improved our ability to execute to our plan from 78% to 94%" Seungmin Lee, Dongbu Steel

Algorithm Concepts



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Sequential, Level by Level Planning Sample



 Balanced supply chain with Resource A capacity of 9 per period feeding resources X,Y, and Z, each with capacity of 3 per period

Greedy, Level by Level Execution



- PROBLEM: After 1/3 of period, Resource A has finished all P1 orders for Resource X, but Resource X can only complete 1 order, so 2 orders worth of intra-operation inventory sit idle
- PROBLEM: After 1/3 of period, Resource Y and Resource Z capacity remains idle

Synchronized Planning Across Multiple Levels



- 1) Algorithm simultaneously considers impact across multiple levels to minimize WIP by only planning orders to align with feasible times for subsequent operations
- 2) After 1/3 of period, orders 1, 4, and 7 are planned in that sequence so that WIP is minimized and capacity utilization is maximized
- 3) Across the full period, this smoothes distribution of orders across Resource X, Y and Z to maintain capacity utilization.

User Interface

- Intuitive and Ease of use
 - Easy Navigation
 - Understand reasons for delays/Shortages
- Fast Decision Cycle Time
 Integrated
- Configurable/Extendable
- Accessibility
 Web, Mobile
- Interactive and Collaborative workflows
- Broader Audience

Broader Audience

1 Executives Dashboards



2 Mid Level Management Reports

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3 Planners Detailed Analysis



4 Suppliers and Customers Information Sharing



Summary

1 Modeling Capabilities





3 User Interface

Can users analyze and understand the plan?



2 Powerful Algorithm

Can the solver Optimize and Create a plan as desired?



4 Integration

Can the system easily connect with needed Data sources?



Q & A

If you can't explain it **simply**, you don't understand it well enough.

