

Sequencing

Manufacturing Planning

Challenge: Optimizing production operations

The world of manufacturing has become increasingly challenging over the past several years. Competitive landscape and market demands pressure manufacturing organizations to deliver products faster and with greater flexibility, while simultaneously reducing operating costs.

Customers continue to require product delivery in immediate time frames. Faced with the competitive threat of substitute products and/or suppliers, manufacturers are driven to do whatever is necessary to execute and maximize customer service levels. On the other hand, sales and marketing organizations continue to push for increased product proliferations with more aggressive pricing and promotions, causing increased volatility in demand forecasts, production changeover costs, cleandown and downtime.

When capacity is finite, manufacturers must make the right decisions in terms of which products to make, when and in what quantities. However, conventional methods that address generic manufacturing challenges do not provide the level of intelligence required to stay competitive in today's more complex production environments.

Solution: Blue Yonder Sequencing

Blue Yonder® Sequencing takes production scheduling to the next level by simultaneously balancing customer service, cost and utilization while respecting complex manufacturing constraints and rules. In both single and linked multi-stage production environments, Blue Yonder Sequencing considers manufacturing resources and associated product attributes and their interdependencies at each stage in the process.

The advanced algorithm in Blue Yonder Sequencing produces a globally optimal solution for your manufacturing scheduling challenges based on user-defined scheduling objectives. These user-defined objectives, such as on-time delivery and resource utilization, can be modeled in Blue Yonder

Key benefits

- Solves non-linear problems through finite schedule optimization
- Balances manufacturing objectives, material usage and customer service objectives based on user-driven optimization
- Generates a detailed line schedule — down to the hour or minute, if desired, with color coding and filtering options
- Models attribute-based rates and changeovers
- Provides detailed view of resource assignments and manual assignment editing, leveraging a highly interactive and userfriendly schedule board that features what-if and drag-and-drop capabilities
- Real-time updates of downtime and production using APIs to application
- Produces inline reports that provide detailed information on resource utilization, order status, inventory position and costs, with a built-in export to Excel

Sequencing to reflect your manufacturing strategies at each location of use. In addition, the solve times are fast, generating schedules in minutes rather than hours. Schedulers can quickly generate and compare the scenarios with base schedule to evaluate the impact of events and new manufacturing strategies on every aspect of your manufacturing operations.

Blue Yonder Sequencing enables continuous flow production and waste reduction

Gain greater benefit from your enterprise resource planning system with Blue Yonder Sequencing. It addresses the business requirements necessary to achieve profitable growth objectives and unlock the full potential of a strategically responsive, dynamic supply chain.



Continuous flow production, reduced waste

Many companies look to cut manufacturing costs by minimizing setup and changeover times. With all of the possible changeover combinations, it is difficult to generate a schedule — let alone a cost-optimal schedule — when product attribute complexity is significant. Blue Yonder Sequencing utilizes attribute sensitive changeover models that consider both the duration and cost of each changeover. Since Blue Yonder Sequencing considers more than just the item, changeover models can be based at the item level and the item attribute level. In addition to minimizing setup and changeover times, Blue Yonder Sequencing considers manufacturing cycle time reduction to minimize work-in-progress inventories and increase throughput. Developed specifically for sequence determination, the realistic models simulate operations for a variety of process and discrete manufacturing work centers and departments with these specific characteristics.

These models support reusable and auxiliary resources, resource groups, user-defined units of measure, detailed bills of materials, production rate models and production method models.

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- Provides library of key performance indicators to easily evaluate schedule quality
- Supports multi-user collaboration
- Provides library of metrics for easy configuration of key business requirements

Real results

- Manufacturers that rely on Blue Yonder Sequencing can reap significant benefits including:
- Maximized resource, department and plant throughput
- Improved customer service
- Optimized plant operations based on user-defined objectives
- Enhanced efficiencies gained by simultaneously considering both material and resource constraints
- Smooth production across multiple production resources
- Improved modeling of complex production environments