



Aligning Supply and Demand at Bell Helicopter

Bell Helicopter, a worldwide leader in aircraft manufacturing, brings an extensive product line and a proven commitment to customer service to the highly competitive aerospace and defense industry. To drive greater productivity and cost-efficiency on its shop floor, Bell Helicopter deployed an enterprise-wide i2 production planning solution. As a result, the company has realized the benefits of having a closed-loop sales and operations planning process.

Bell Helicopter manufactures helicopters for corporate, military, law enforcement, emergency service, and utility missions.

That extensive mix of aircraft models requires a supply chain capable of delivering a wide variety of parts and materials, typically in relatively small volumes, but on a timetable that optimizes both inventory efficiency and customer delivery schedules.

To meet the requirements of its unique and demanding supply chain, Bell Helicopter needed to improve manufacturing scheduling and planning, including the management of deep and complex bills of materials, coordination of assembly operations, and constraint-based production planning.

To bring its complicated supply chain into more precise alignment with demand, Bell Helicopter sought to improve material resource planning in three important ways.

First, the company established special teams to examine its business processes, to redesign certain metrics and to clean up data in its MRP systems. Second, Bell Helicopter needed to more closely track and reduce part and material shortages that adversely affect manufacturing throughput.



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Challenges

- More effectively balance supply and demand
- Produce more accurate build plans
- Support the sales, inventory, and operations planning process

Solutions

- Leverage automated factory planning for resource planning teams
- Create visual and highly detailed build plans
- Identify and resolve mismatches between supply and demand before they affect the factory floor

Results

- Integrated enterprise-wide support for sales, inventory, and operations planning
- Created feasible, cost-efficient plans across entire supply chain
- Streamlined setup times, improved shortage tracking, and accelerated manufacturing throughput

Company Description

Bell Helicopter is a leading producer of commercial and military helicopters, and the pioneer of the revolutionary tiltrotor aircraft. The company's global workforce of more than 7,500 employees serves customers flying Bell aircraft in more than 120 countries. A Textron company, Bell Helicopter has annual revenues of \$1.6 billion.

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**—Mark Ferrell
Leader, Enterprise Planning**

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Finally, the company wanted a more holistic approach to production planning and scheduling—one that would more closely align supply and demand and provide enterprise-wide supply chain visibility.

Why i2?

Bell Helicopter began looking for a supply chain solution to help it gain that visibility, and to get a grip on mismatches between supply and demand before they impacted work on the shop floor.

“We selected i2 because of the graphic capabilities of the system, because of the location of i2 resources, and because i2 was totally committed to the process and gave us everything we asked for,” said Mark Ferrell, Bell Helicopter’s Leader, Enterprise Planning.

Bell Helicopter launched an enterprise-level implementation of i2 Factory Planner.™

Companies can leverage Factory Planner to optimize manufacturing operations by creating workable, cost-efficient plans that meet customer delivery requirements and OEM business goals. Manufacturers can deploy Factory Planner to reduce planning and production cycle time, to accelerate product deliveries, and to control inventory and production costs.

i2’s Contribution

Bell Helicopter implemented Factory Planner to streamline and accelerate crucial manufacturing operations.

The company formed five resource planning teams and assigned each team to a specific Center of Excellence (COE) production unit. Those teams use Factory Planner, which is integrated with Bell Helicopter’s legacy supply chain systems, to anticipate potential mismatches between part and material supply and to analyze the throughput demand of their respective COE.

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“These are our forward observers,” Ferrell said. “They use Factory Planner to look and see what is coming down the pike and to align us so that when the time comes to put a job in work, the material is available, the schedules line up to meet customer demand, and we can start and keep ourselves on schedule.”

i2 solutions are designed to help Bell Helicopter optimize the manufacturing of its helicopters, which are typically delivered to meet very demanding customer schedules.

“Our manufacturing environment requires a large and responsive supply chain, complex tooling, and very exacting setup procedures,” Ferrell said. “We use Factory Planner to streamline setup activities, and we can now create manufacturing plans that reduce costs and improve throughput.”

Bell Helicopter believes strongly in the use of highly visual displays to help organize and communicate its supply chain activities. The firm employs large display screens so resource planners can easily project and review the output of Factory Planner and related tools. The planning teams collaborate closely with representatives from the company’s manufacturing, industrial engineering, and material resource planning groups.

“The primary job of our resource planners is to identify the problems, to work through them, to elevate them back to the demand owner if necessary, and to negotiate some of the realignment that may have to happen on the requirement side,” Ferrell said.

“So when the bill plan feeds into the shop floor, it is in line and it is an achievable plan.”

Bell Helicopter’s Results

With its implementation of Factory Planner, Bell Helicopter can now better see and understand the natural, constant variations in its supply and demand.

A more robust factory planning system enables Bell Helicopter to formulate a manufacturing plan that is feasible and cost-efficient, and to communicate that plan across its entire supply chain.

“The biggest advantage, aside from giving us a decent build plan, is the feedback from our sales, inventory, and operations planning process,” Ferrell said. “Now we can step back and look at things from a Bell Helicopter standpoint, and examine the tradeoffs across various centers of excellence, tradeoffs between supply and demand, and where we need to assign our capacity. This gives us a holistic view of our environment.”

Factory Planner has enabled Bell Helicopter to produce more precise and timely build plans, to streamline setup activities, and to more closely align supply and demand in the company's fast-paced manufacturing environment.

"By identifying upcoming production requirements early, and by tracking those demands against available resources, we can work to accelerate parts supplies and refine production activities, or if necessary, renegotiate job deliveries to a more realistic schedule," Ferrell said.

Bell Helicopter also leverages Factory Planner to track and optimize two key production metrics: output deliverables at each Center of Excellence, and what the company calls "opportunity to impact." Output deliverables measure the throughput of the COE, with particular emphasis on long pull inventory requirements and opportunity to impact focuses on ensuring that key manufacturing resources are available to meet required delivery dates, thus more precisely aligning supply with production demand.

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i2 solutions are enabling Bell Helicopter to manage one of the strongest growth periods in the company's history.

"We did a small survey, and our people would scream if we took Factory Planner away from them," Ferrell said. "They love it."



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