



Case Study

High Tech





Company

IPG Photonics

Location

Oxford, Massachusetts

Industry

High Tech

Business Challenges

- Manage BOM complexity
- Eliminate BOM management complications
- Resolve lengthy ECO delays

Solutions

Arena PLM BOMControl

Business Benefits

- Enabled engineers to focus on design
- Ensured fewer material blunders
- Reduced product design delays

ROI Results

- Reduced ECO cycles by 50%
- Allowed refactoring of large BOM trees in a few hours
- Dramatically lowered procurement costs

Making Product Design Processes Laser Sharp

BUSINESS CHALLENGES

IPG Photonics is the global leader in the industrial fiber laser market. “Our team at the Silicon Valley Technology Center (SVTC) specialty is wavelength conversion (e.g. ultraviolet and green) and pulsed laser technologies,” said Red Byer, IPG’s operation manager.

According to Byer, his company’s greatest challenge, which is indicative of the entire laser industry, was managing high complexity and low volume parts. “A given system may have thousands of parts sourced from around the world, and annual shipments may be in the tens of units,” said Byer. “One simply cannot afford to over-order (cost), under-order (delays), or get buried in the complexity of managing or communicating about all of these parts.”



Byer realized that relying on archaic tools, such as Excel spreadsheets, would prevent his dispersed manufacturing and engineering teams from sharing accurate information. Using manual processes in the past had led to frustrating versioning control problems, product errors and costly launch delays. These outdated tools especially hurt a company’s ability to scale the complexity of their production cycles.

“At the time, we thought our system might be a few hundred parts, but it quickly grew to a few thousand,” said Byer. “We knew that we would need a central clearinghouse for this product information. We also knew that product data control would be important, and welcomed the ability to track changes and process deviations (when the time was right to do so).”

SOLUTIONS

Byer turned to BOMControl, the flagship of the Arena PLM suite. The solution eliminated the time consuming complications of managing unwieldy change order packages by formalizing the engineering change request and ECO process. BOMControl’s intuitive cloud-based solution provided Byer’s engineering teams easy access to searchable product information from a password-protected cloud-based interface.

“One of the things that stands out about BOMControl is its distributed nature and ease of use,” said Byer. “We can truly capture product data during the definition state. From description, to design documentation, to vendor specification, everyone has the opportunity to refine item information. By enabling the entire team, we were able to build a collaborative culture of documentation.”

For Byer, BOMControl eliminated product design confusion by removing the collaboration barrier and increasing communications with a centralized cloud-based solution. This revision-controlled product information repository facilitates synchronization across the dispersed supply chain.

“BOMControl is an awesome collaboration tool,” said Byer. “We regularly hold BOM parties where 3 or 4 of us sit in a room with our computers and one-person projects the BOM on a wall. As we walk down the BOM tree and spot errors or changes, one of the attendees will jump on that task in parallel while the rest of the group continues their work. Using this method, three of us can refactor a large (2000 item) BOM tree in a matter of a few hours. This type of task would be completely impossible in a spreadsheet application.”

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— Red Byer, Operation Manager, IPG Photonics

BUSINESS RESULTS

According to Byer, Arena provided IPG Photonics four key benefits:

First, IPG Photonics saw an immediate improvement in the speed and accuracy of their communications about parts. “Say I needed to order a part — the old way would have involved printing (or attaching) the most recent PDFs and possibly an Excel spreadsheet with calculated quantities and or vendor information,” said Byer. “That’s a lot of manual labor that was prone to keying errors. Under BOMControl we were confident all information was current.”

Second, IPG Photonics saw a major reduction in dollars wasted. “By continuously improving our BOM information in a distributed fashion, we had BOMs with much higher accuracy levels than anything Excel could give us,” said Byer. “This directly translated into fewer materials blunders (over/under/mistake purchases). When we were a cash-crunched startup, this was a big deal for us.”

Third, IPG Photonics design iteration cycles decreased and part reuse increased. “Because it was easy to manage a BOM — and fairly trivial to find a part in our system — there was no longer an excuse to create a part or assembly with identical functionality,” said Byer. “As a result, not only did we save in procurement costs, but our engineers were no longer wasting time reinventing the wheel! The net result was product spins in half the time! Unbelievable.”

Fourth, BOMControl provided the functionality for IPG Photonics to compete with larger companies. “Given our size in the early years and the relative size of our customers, we needed to behave larger than we were,” said Byer. “By tying Arena PLM BOMControl to a full fledged ERP system, we were able to manage all aspects of our business and behave as if we were 10x our size. Nobody could believe we were handling all this complexity with an operations staff of just two people, let alone with the accuracy we were showing.”

“The time savings alone (forget about error rates) showed us an ROI in less than 18 months,” said Byer. One other metric is product development cycles. Earlier, I said we were doing spins twice as fast. This is based on historical data from our previous companies. But was it all due to BOMControl, or did we have the benefit of being a small company? Probably both.”

NEXT STEPS

Byer has already made use of PDXViewer and found it tremendously helpful. “As a technology center, we expend significant effort collaborating with design teams at our corporate headquarters in Oxford, Massachusetts,” said Byer. “PDXViewer has enabled us to share complex and rich information (e.g. BOMs) in an easy to digest and read format.” For Byer, an investment in Arena Exchange is a likely next step. Arena Exchange offers OEMs a secure, flexible environment to initiate collaboration with multiple users, at differing supplier levels, throughout their global supply chain. Quickly. No supplier’s licenses or provisioning required.

Byer and his team are also looking at an investment in Arena API, which expands the information value chain captured in Arena PLM by allowing customers to develop lightweight and flexible integrations from their enterprise application infrastructure to Arena PLM. “Arena API presents some attractive options for us,” said Byer. “We envision using the API to improve our batch inputs and outputs out of the tool, perhaps for improved data-sharing of certain files and documents without the overhead of having to log into Arena PLM BOMControl first.”

Find out how Arena can help you achieve success and take your company from chaos to calm. Sign up for a demo at www.arenasolutions.com/plm-demo

