

From Skepticism to Success in ETO Automation

How Xylem improved accuracy and throughput—without adding staff

The Client: Xylem

Xylem Inc. is an industry leader in water treatment and transportation across utility, industrial, commercial, and residential markets worldwide. Among their many brands, the Leopold group produces custom, ETO (Engineered-to-Order) components for water basins.

The Challenge

For Xylem's Leopold brand, precise drawing generation was critical to delivering projects on time and to company and industry standards. For years, they relied on 2D AutoCAD. But as project demands grew, the limitations of a 2D workflow began to take a heavy toll.

Relying on the limitations of a 2D tool created a high-pressure environment and a cascade of problems. Project delays mounted, which often forced rushed drawings, leading to scaling issues and dimensional errors. These mistakes occasionally carried through to manufacturing and even to field installation, where they became very costly to resolve.

Randy Callen, Engineering Manager, explained that the pressure to meet deadlines created a multitude of problems:

- **Manual, inefficient processes:** Time wasted duplicating templates, manually changing dimensions, and recreating views from scratch.
- **Error-prone output:** To meet deadlines, some drawings skipped scaling or "fudged" dimensions, risking precision-critical projects.
- **No associativity:** Changes in one view didn't update related views, creating inconsistencies.
- **Bottlenecks:** Drawings moved slowly to project engineers for review, leaving little time for thorough checks.
- **Staffing shortages:** Management hesitated to add headcount, pushing existing staff to their limits.

Recognizing the impact, management set out to overhaul processes with a clear goal: achieve the highest standards of precision and quality while boosting throughput and reducing errors—without increasing team size.

The Solution: Creo & SmartAssembly

SmartAssembly is an automation tool that enables organizations to achieve company initiatives from design to manufacturing. It can put any or all design and process rules into Creo to eliminate non-value-added engineering work by:

Automating Design Processes: Replacing manual tasks with automation to ensure consistency and reduce errors.

Generating Deliverables: Automatically creating outputs, e.g., BOMs, drawings, and manufacturing data, optimized for production systems.

Driving Data: Take information from Creo and drive it directly into enterprise systems like Windchill, and ERP systems like Oracle and SAP.

INDUSTRY

Municipal Water Treatment

CHALLENGES

- Manual, inefficient processes
- Error-prone output
- No associativity
- Bottlenecks
- Staffing shortages

SOLUTION

SIGMAXIM SmartAssembly

BENEFITS

- Error rates dramatically reduced
- Increased throughput with same team
- Faster BOM/Drawing generation
- Realistic 3D models for sales, marketing, and consulting engineers
- Time savings reinvested in innovation
- Applications easily modified as needed
- Rules and standards "baked into" the automations ensures standardization and facilitates design and training

Before SIGMAXIM: Automation Skeptics

Since other Xylem brands were already excelling with Creo and SmartAssembly automation, management directed Randy Callen's team to also make the switch.

The team was initially skeptical about automating such highly customized ETO components. *"I wasn't sure this was going to work for our Engineered-to-Order business. Every job is different,"* said Callen.

After SIGMAXIM: Automation Believers

But the results spoke for themselves. The team soon saw first-hand that automation could handle the complexity—while also reducing errors, saving time, and increasing throughput.

Design work that once took days could now be completed in hours, with automated rules ensuring accuracy and embedding product standards from the outset. Freed from tedious, repetitive tasks, engineers could focus on innovation and higher-value work, while new staff ramped up more quickly thanks to codified design rules.

Within the first year, automation delivered measurable improvements, including:

- **Reduced errors:** Dramatic drop in engineering errors.
- **Increased throughput:** More completed projects with the same team.
- **Faster BOM/Drawing generation:** Automated BOMs and drawings produced more quickly.
- **Realistic 3D Models:** Presentations enabled for sales, marketing, and consulting engineers.
- **Time savings reinvested:** Freed-up engineering time used to enhance engineering standards.
- **Application flexibility:** Automation code easily modified.
- **Standards baked in:** Product rules & standards encoded into the automation facilitates design and training.

One unexpected benefit of SmartAssembly automation is the ability to generate more CAD deliverables in the same timeframe.

Callen explains, *"We went from producing 2 or 3 drawings to now 5 or 6 in the same amount of time, because drawing generation is automated directly from the 3D model."*

Training and Support

After migrating to Creo and SmartAssembly, the team received in-depth training and support from SIGMAXIM experts. Once skeptical, they were now independently developing in-house automation applications tailored to their custom ETO products.

"SIGMAXIM has been a great partner, providing training, tech support, and a forum where other engineers quickly jump in to help," said Callen.

Key Takeaways

- Even for custom products, automation is not only possible—it delivers profound, measurable benefits.
- Automation improves efficiency, accuracy, standardization, and lets you scale without adding headcount.
- Time savings let teams focus on value-added work.
- Vendor support is critical for long-term success.

Conclusion

Xylem's Creo automation journey proved that even in highly customized, Engineered-to-Order environments, automation can deliver dramatic improvements.

"I was skeptical automation would work for our highly customized products—But it paid off."

Randy Callen
Engineering Manager
XYLEM, Inc. (Leopold Group)

ABOUT SIGMAXIM

SIGMAXIM has been the leading global expert in Creo automation solutions for over 20 years. We partner with companies of all sizes to deliver low risk, efficient automation solutions for both standardization and product configuration initiatives.

CONTACT US

Learn how SIGMAXIM's Creo Automation platform can help automate your custom, ETO products—without adding headcount.

info@sigmaxim.com | www.sigmaxim.com