



SIGMAXIM

Your Products

Faster

Your Rules

Streamlined

Your Processes

Consistent

- Design Process Standardization for Creo.
- Configurator Deliverables with Creo.
- Design and Manufacturing Automation in Creo.

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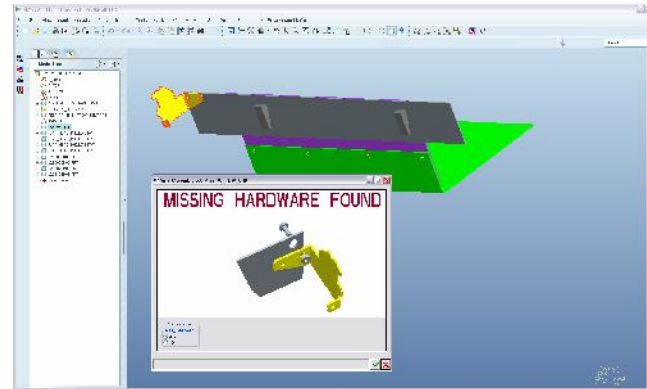
Who Is SIGMAXIM?

- We are a global company, headquartered just outside of Boston, MA, with operations in Europe and Asia.
- We have been in business since 2001.
- We are a PTC software and services partner.
- Our primary corporate objective is to help companies radically increase their productivity in Creo. We accomplish this by focusing on 3 key areas:
 - Design Process Standardization
 - Configurator Deliverables
 - Design & Manufacturing Automation



What Is SIGMAXIM's Design Process Standardization Solution?

- A software solution that captures *your* design rules and facilitates their adoption in all of your Creo (Pro/Engineer) design and manufacturing processes.
- Does not dictate how *your* engineers design *your* products.



This example points out that, according to the design rules, this assembly requires hardware, features, and structure which are currently missing from the design.

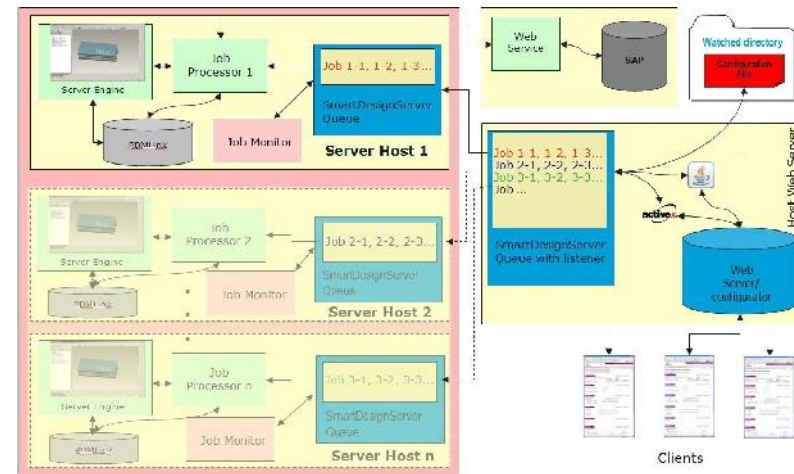
How Does Design Process Standardization Benefit My Company?

- Retain knowledge. With our solutions, design rules can be captured and retained for future users.
- Reuse parts and design elements. Why reinvent the wheel? (Literally!) Even if you are designing one-off or unique products, chances are your designer will use some of the same elements from one design to the next.
- Reduce ECR's. No errors = no change requests = reduced design time = faster time to market!
- Eliminate scrap. When well-defined rules are embedded in your CAD system, scrap becomes a thing of the past.



What Is SIGMAXIM's Configurator Deliverables Solution?

- A software solution that enables companies to seamlessly integrate their Creo deliverables with their sales configurator.
- Automatically generate required deliverables for custom products.
- Bridges the gap between engineering and sales.



How Do Automated Deliverables Help My Company?

- Create custom products. With well-defined product rules, customizable products are created quickly and easily.
- Eliminate non-value added engineering work. Automate repetitive tasks, freeing up time for more creative work. Decrease your delivery time to your customers.
- Build geometry on the fly. Dynamically create features as your design requires. Retrieve, configure, and assemble components. Manipulate your assembly structure as needed.
- Automatic deliverables. Even non-Creo users can access information needed to generate designs, quotes, drawings, route sheets, and other customer deliverables.



SIGMAXIM

RADICALLY INCREASE YOUR PRODUCTIVITY

Case Study—Global KBE (Knowledge Based Engineering)

Project Background

- Global manufacturer of glass products wanted to standardize their design process across multiple manufacturing facilities throughout the world.
- Most of the sites were using AutoCAD. Only one site was using Pro/E. They wanted all sites to convert to Pro/E because they knew that Pro/E's 3D data allowed them to create deliverables 10%-20% faster than the other sites.
- This was problematic because of the learning curve involved with transitioning to a new CAD system. They would have to take a step back in order to move ahead.

Solution

- Conducted a 6 month pilot, converting one site to Pro/E while utilizing SIGMAXIM solutions to implement a KBE system.

Results

- Time to market from design to production was reduced from 2 months to 2 weeks.
- The company quickly converted all of their locations to Pro/E with SIGMAXIM's KBE solution.
- As an added bonus, the company's product designs became more consistent globally since they were able to automatically share knowledge and methodologies.
- By implementing KBE, all users are able to work just as efficiently as their most knowledgeable counterparts.



Products pictured are representative, and are not necessarily the products for which work was performed.



Case Study—Guarantee Accuracy of Seldom Used But Essential Manufacturing Methodologies

Background of Project

- Manufacturer of medical equipment has a very diverse product offering. Certain products require methodologies that are not used very often.
- Dealing with seldom seen product features slows down the manufacturing process as users are forced to relearn the required methodologies.
- This creates an abnormally high percentage of ECR's and rework.

Solution

- SIGMAXIM provided a solution utilizing our solution that not only captured the product knowledge needed to create the seldom-designed products, but also automated the repetitive, tedious tasks performed when creating just about every part quick and error free with a "pick & click" GUI.

Result

- Client virtually eliminated late process ECR's and rework due to these unusual features.
- New user training greatly improved because you only have to deal with training on "normal" process...(rework).



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Case Study—Custom Products at the Speed of Standard

Project Background

- A luxury boat builder creates custom built-in interiors that are unique to each boat.
- The interior concept is designed by an architect. The boat builder must take these custom concepts and create an engineered design.
- Each single piece of interior is unique to each boat, even when they look the same on the surface.
- The boat builder needed to speed up the design process for these custom products without limiting the designer's creativity.
- When dealing with custom boats, every design is one-off due to the individual owner's unique taste, the architect's concept, as well as the design of the boat itself.

Solution

- SIGMAXIM created an automated system that takes the aesthetic concept and quickly converts it to a buildable design.
- Complete design of cabins is created utilizing our unique methodology and tools.
- The solution forces the users to adopt company rules and use standard dimensions such as tooling size and hardware references to automate drawing and manufacturing deliverables.
- Each assembly is now full designed with complete hardware and manufacturing details.

Results

- Boat builder was able to speed up the preliminary design process by 2x.
- Cabin design modifications is now done around 2x faster.
- Design changes to specific features went from taking about 5 minutes to less than 30 seconds per change.



Even custom one-off interiors for luxury boats can be designed and manufactured quickly and efficiently utilizing SIGMAXIM's design standardization solution.

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Case Study—Engineer-to-Order Products

Project Background

- A manufacturer of power distribution equipment was using 2D CAD to deliver complex engineer-to-order products.
- They wanted richer data to use for their downstream processes.
- They wanted to drive the bulk of their product design from the customer order details collected in their SAP ERP system.
- They wanted to cut their product engineering costs by at least 80%.
- They required many complex and varied deliverables. Because of this, they met with much internal resistance.

Solution

- SIGMAXIM implemented a solution to drive SAP order characteristics directly to Pro/ENGINEER. The bulk of the design is automatically built in Pro/ENGINEER.
- All missing or unknown design details are aggregated and sent to the engineering group for further processing.
- The engineering group was provided with special tools to speed up the work on the remaining details of each order.

Result

- 90% of all engineer-to-order product design is done without any manual work.



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Case Study—Maximizing Engineering Throughput

Project Background

- Large power generation contractor wanted to increase the number of bids to increase business without putting a drain on their resources.
- Responding to bid requests required tying up 40 engineers' time for the 2 month proposal period.
- With their current staff and processes, they were only able to submit 6-7 bids per year. They wanted to increase that number. Engineering resource requirement for the bidding process was the bottleneck.
- They needed a more accurate costing estimate by having a more complete engineering representation during the bid process.

Solution

- SIGMAXIM created a solution to (design process standardization lingo...)

Results

- They now finalize their bid proposals with $\frac{1}{4}$ of the resources.
- They increased their bid submissions from 6-7 to 20 per year, utilizing the same staff.
- They now finish the bids faster, so they are frequently able to submit additional proposals for the same project, offering improvement suggestions that are outside the specification of the bid.
- As an added bonus, engineering has more time to try more “what if” scenarios on each bid, and to be more accurate on each aspect of the bid design minimizing the risk of costing errors.



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Case Study—Rapid Tooling for Prototypes

Project Background

- Large tire manufacturer engineers had a need to speed up their prototyping process.
- Their current process lends itself for individual users to develop their own processes.
- Once the prototype is designed, there is an extensive amount of analysis required to determine whether product meets standards for wear, noise and rolling resistance.
- An extensive set of molding tools must be created to produce the tires.
- This is a manual process that is very time-consuming and error-prone.

Solution

- SIGMAXIM provided a solution that streamlined the exchange of metrics between prototype data and internal databases.
- Special analytical tools were provided to extract relevant information from the prototype designs.
- Rules and standards were incorporated into the CAD system to speed up the creation of the mold tooling.

Results

- Increased accuracy of the collected data for internal reporting.
- Eliminated errors due to manual entry.
- Mold tooling design time decreased by 50%.



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Case Study—Global Design Initiative w/Supplier Integration

Project Background

- Large construction equipment manufacturer utilizes multiple international sites as well as multiple suppliers to design and manufacture their vast product line.
- The manufacturer wanted to be able to reuse designs and tooling worldwide.
- The manufacturer is dealing with multiple facilities and suppliers that each have their own way of doing things.
- In order to be able to share these designs and tooling around the world and with external suppliers, they needed a standardize methodology of putting things together.
- Suppliers have a difficult time consistently delivering to complicated specifications.

Solution

- SIGMAXIM supplied a large library of methodologies and components that could be used throughout the organization as well as by their outside vendors.
- The solution is very flexible in regards to what the user is designing, but the elements of the design remain consistent.

Results

- Eliminated large specification manuals previously required by internal staff as well as outside suppliers.
- It is now possible for any internal location around the world to reuse and easily modify any tool created anywhere around the world.
- or outside vendor to design to company specifications quickly, efficiently, consistently, and accurately.



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Case Study—Quickly and Easily Convert CAD Systems

Project Background

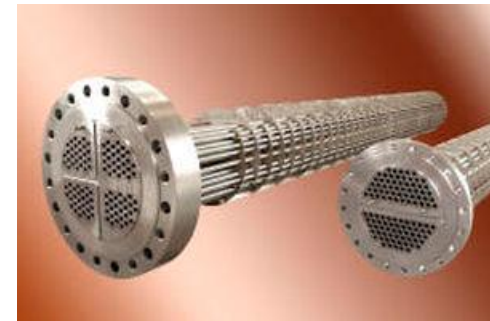
- Global supplier of industrial products for utility companies wanted to convert all sites to PTC platforms to increase efficiencies across the corporation.
- Their main site goal was to increase engineering bandwidth while delivering richer 3D data in the same amount of time.

Solution

- SIGMAXIM created a solution that would not only motivate the user base, but present a robust return on investment.
- The company developed CAD models and implemented a solution that would automatically assemble configurations on the fly.
- The company was also able to connect with their database to bring increased capability over the existing automation in 2D and streamline the order communications from sales to engineering.
- Implemented SIGMAXIM's solution to automatically assemble new configurations as they were requested by their customers in the ERP system.

Results

- They are able to connect with their existing database to bring capabilities above and beyond the previous drawing-based automation they had used with their old 2D CAD software.
- They are now able to develop fully configured top-level assemblies, and drawing packets automatically.
- On the corporate level, they are able to reduce the number of multiple CAD licenses and increase collaboration by using a global vault.
- The company's current staff is able to learn Creo while being productive.
- Sales benefits because they are able to instantaneously provide 3D data to the customers..



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Case Study—Automatic Generation of 3D Data

Project Background

- Global manufacturer of electronic components needed an efficient and reliable method of delivering 3D data to customers.
- Their goal was to take their three-day design process and create online access that would allow their customers to generate the 3D data off their custom ordered products online.

Solution

- SIGMAXIM implemented a solution to enable design engineers to dynamically create virtual 3D connector models, even for designs that have yet to be manufactured.
- This solution built on the customer's existing web-based configuration technology and unique single field search, which allows users to utilize a single interface to search their entire catalogue of products.
- With the 3D modeling tool, design engineers, sales, and customers can select from various output model formats, such as STEP, Pro/E, Shrink-wrap, 3D PDF, STL and IGES.

Results

- This 3D web-based modeling allows users to quickly and easily import different fully-assembled connector solutions straight into their prototype designs, giving the flexibility to try different solutions. This helps speed up the selection of the optimum product solution, and therefore reduces time to market for their new products.
- Within the summarized output, users can directly request the generation of 3D solid model. A number of industry-standard formats are available.
- The downloadable files are obtained via a system-supplied email link. The customer simply clicks through the link to download the design package as a .zip file, which is then easily imported into their own CAD system for prototyping in products.
- Increased sales conversions because 3D models are already included in the custom design.



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How Are SIGMAXIM's Solutions Different?

- Our software is modular, which makes it very flexible. It's not an all or nothing approach. Use our rules-based software in one area and gradually roll it out in others. Our solution can grow with your product line.
- Our solution is future-proof and easy to maintain. No need to recapture rules every time PTC releases an upgrade or a new version of Creo or Windchill. Once implemented, our solution can be easily maintained by virtually any user.
- Rapid application development provides short ROI. Our applications can be implemented in weeks, not years like many automation initiatives.
- We provide expert training and support. Our experienced engineering staff can design a training program to get you started on the right path.
- We offer customized consulting services. Don't have time to write applications? No problem! We can develop your custom application as a turn-key solution in no time at all.



Okay, I'm Listening...What Do I Do Next?

- Let's get to know each other. Talk to your SIGMAXIM sales rep about your current design process. He or she will share this information with our engineers, who have years of experience using PTC products and specialize in design process and automation.
- Watch a demo...seeing is believing. At a time that is convenient for you, one of our highly skilled engineers will show you real examples of our solutions in action...all from the comfort of your desk via a web meeting.
- Bring the boss! Bring key decision makers to the meeting so they can see how our solution will save your company time and money. (They'll thank you!)

Call SIGMAXIM today! 1.877.SIGMAXIM

