

SIEMENS DIGITAL INDUSTRIES SOFTWARE

PLM for Machine Builders

Each year, the world of industrial machinery and equipment grows increasingly complex. Faced with outdated technology and legacy procedures, many machine and equipment builders encounter complex workflow processes that bottleneck projects, leading to delays that inhibit future orders and damage staff morale. To respond to these challenges, machine and equipment builders need a templated tool with a low cost of ownership; a tool that can effectively track changing customer requirements, readily clone and reuse data across projects so that orders can be satiated quickly and projects can be scaled at a whim. With Siemens Digital Industries Software, machine and equipment builders gain an instant-on, cloud-based platform that comes preconfigured with best-practices, so machine and equipment builders can immediately improve their output. Through this small investment in digitalization, organizations make a giant leap forward for their business – read on to learn more.

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Intro

Today's machinery and equipment market is entirely customer-driven: more and more operators require complex machines producing products in assorted colors, sizes and shapes. Compounding this problem are consumer demands – as consumers change their preferences, machine requirements must be changed to compensate. In turn, machine and equipment builders face a great deal of pressure as they quickly update projects in a moment's notice, all while trying to maintain their competitive position against global players and uphold staff morale.

To outpace global competition, retain the best employees, meet complex customer requirements and increase profitability, machine and equipment builders need a new way forward. By adopting a cloud-based, templated, easily deployable approach to product lifecycle management, machine and equipment builders can track complex customer requirements with ease; they can surmount any machine changes; and they can leverage built-in best practices to immediately update their processes and bring reliable, flexible machines to market faster, helping maintain market share while satisfying employees.



Overcome global pressures and satisfy staff with project management tools

The road to digital transformation and improving business processes begin with cloud-based project, process and requirements management tools. These SaaS tools allow machine and equipment builders to identify information, then monitor and deliver on project milestones through real-time dashboards. Integrated dashboards provide increased transparency into projects' progress, while simultaneously providing traceability across the engineering design process.

When project, process and requirements management tools integrate with machine configuration and reuse tools, a greater harmony is achieved within the organizational ecosystem – while preconfigured machine software provides a means to reuse and revamp project information across multiple orders, project management tools enable fast and easy remote collaboration, in addition to providing transparency into requirements, timelines and budgets necessary for meeting goals and staying competitive against market players.

When organizations fail to adhere to customer requirements, timelines and budgets, a series of bottlenecks arise in the project management process. These delays reduce organizational output, leading to losses in immediate revenue and straining staff, whose expectations are changing given the paradigm shift induced by the COVID-19 pandemic. Delays also jeopardize future revenue, as operators dissatisfied with machine and equipment builders' output may avoid repeat orders. This loss in business can lead to a loss in market share to competitors, who are unencumbered by legacy technology and business processes and can afford to offer lower price points to win orders. In summation, cloud-based project, process and requirements management tools can help machine and equipment builders circumvent competitive pressures and staffing challenges.

Satiate customer requirements with machine configuration and reuse

Compounding the utility of project, process and requirements management tools is a machine configuration and reuse approach. In simplest terms, machine configuration and reuse let machine and equipment builders use a templated, cloud-based software system; this system can be lightly customized to fit any engineering needs, from the design domain to the quality control department. This pre-configured system allows machine builders to readily respond to changing customer requirements, as they can source, clone, and manage machine structure and Computer Aided Design (CAD) documents as synchronized business objects. Meanwhile, workflow and version management tools can be used to track order development and maturity through each phase of a project's lifecycle.

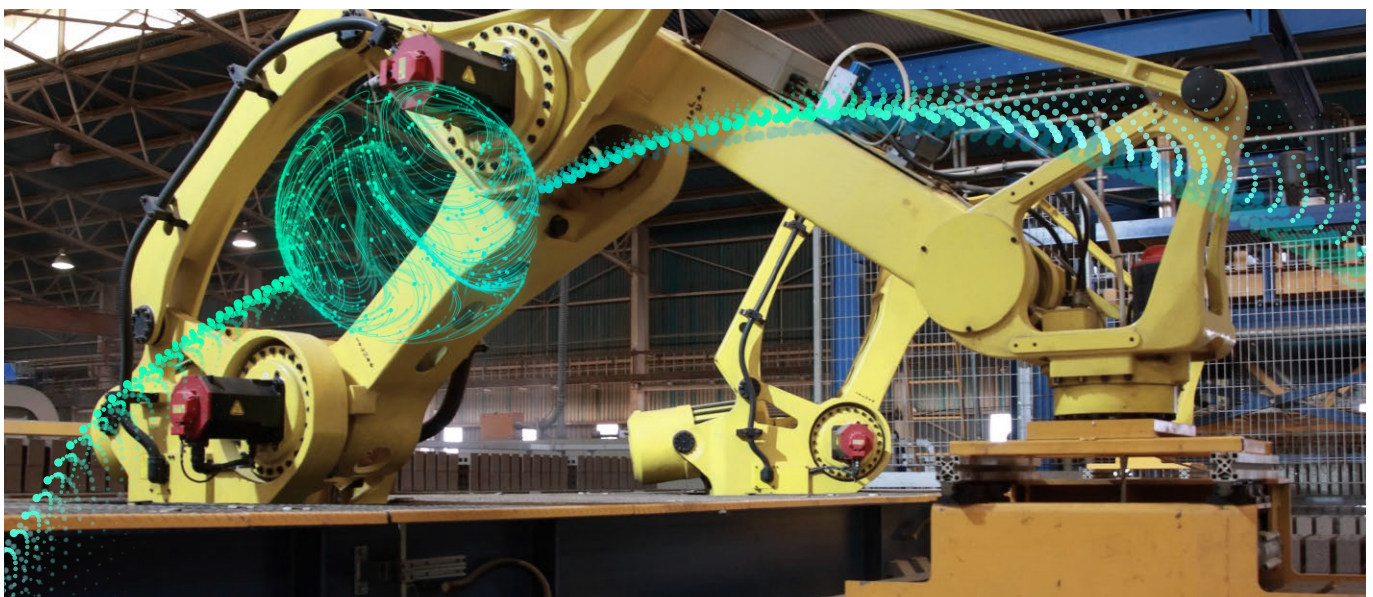
Machine configuration and reuse therefore simplifies change management across the enterprise [sales, application engineers, project managers, technicians.] For instance, a machine configuration and reuse solution means machine and equipment builders can immediately start storing project data in the cloud, which can later be reused. By reusing modules across orders of a similar scope, machine and equipment builders can standardize their design practices so that they can easily meet changing customer requirements. Standardized design practices help machine and equipment builders understand and improve long-term machine maintainability, driving down any potential, future repair costs. This also means machine lifecycles are extended beyond their usual measure, in turn extending a machine's productivity and profitability.

Increase profitability and expedite order fulfillment with blended ETO/CTO functionality

Another key component defining a machine's profitability is reliability. Machine and equipment builders are often challenged to create the most reliable machines possible for several customers at a time against the backdrop of tight timelines and evolving customer needs. Complicating matters are disparate systems – all too often, designers will work in one CAD system, the shop floor will use inadequately controlled 2D drawings, while quality control will work in a separate Quality Management System (QMS) and so on and so forth. This technological gap makes it difficult to communicate changes between departments, thus depriving machine and equipment builders from reaching the pinnacle of organizational efficiency.

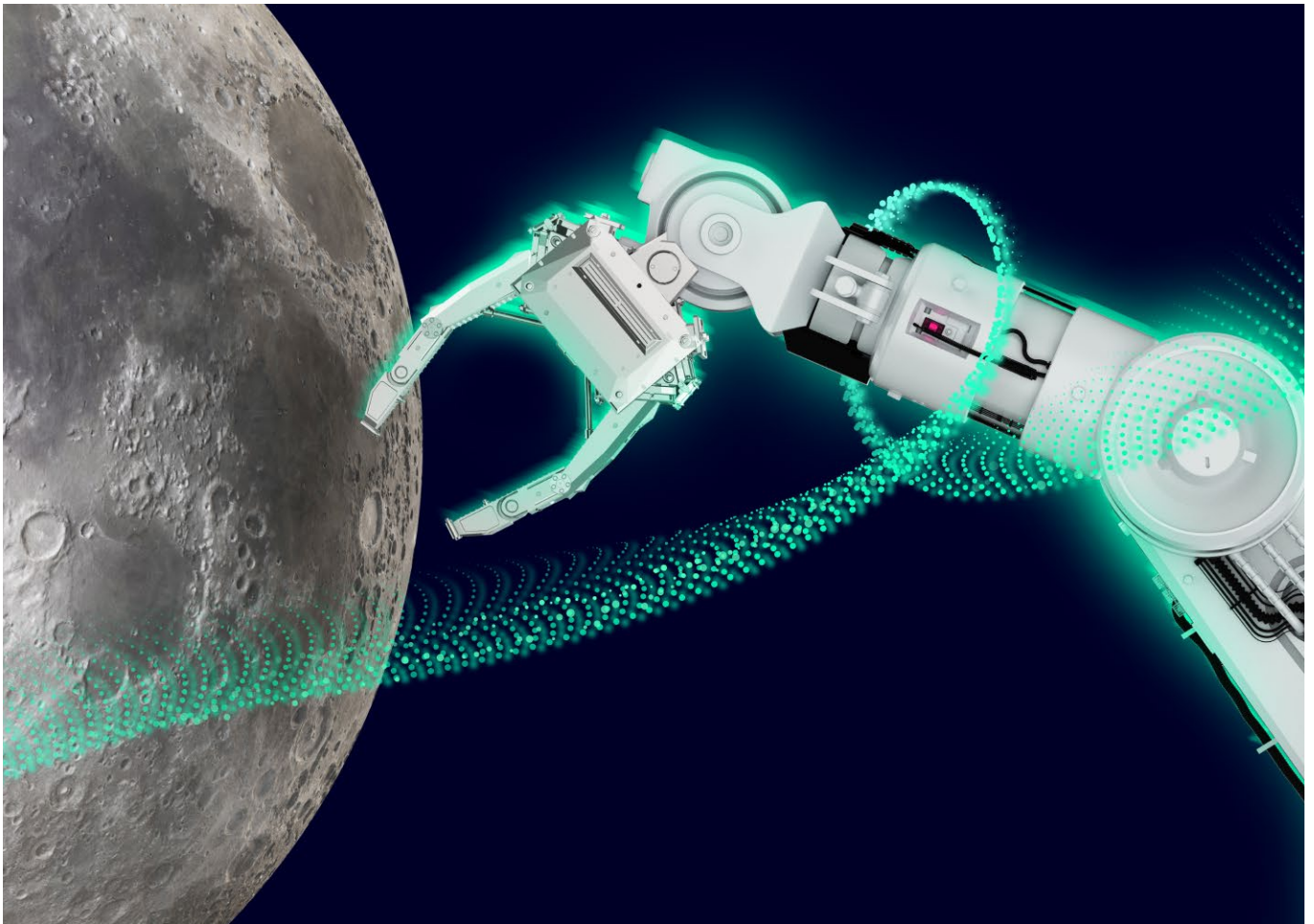
Fortunately, by implementing a blended engineer-to-order (ETO) and configure-to-order (CTO) solution, machine builders can harness the power of this complexity with software modules. These instant-on modules allow machine and equipment builders to define, configure and maintain machine programming rules and logic; and they can store BOMs, project data, customer requirements, and other essential information that can be collaboratively accessed, used and reused at any time in the cloud.

Furthermore, these modules can integrate across several enterprise applications (Enterprise Resource Planning software, Manufacturing Execution System software, etc), further breaking down organizational silos that bottleneck processes. Through a blended ETO/CTO solution then, cross-departmental collaboration saves time and expenditure that could have been wasted fixing late-stage machine development mistakes; and, it allows machine builders to streamline builds, automate repetitive tasks and scale machine development. Reusing machine data means increased machine predictability, since the concept has been tested and proven in previous customer orders. Increased predictable and reliable machines means increased profitability since a greater number of accurate quotes can be produced and a greater number of machines can be engineered and sold. Thus, a blended ETO/CTO solution sets organizations up for success, as they can collaborate in the cloud and reuse data between projects to expedite and increase order fulfillment.



| Conclusion

To survive rapid industry changes, leverage global market opportunities and increase the efficiency of engineering resources, businesses must adopt a culture of change. This culture of change begins with digital tools that support the reuse of project and mechatronics data; the management of orders through real-time dashboards; the use of modular solutions for immediate project delivery; and collaborative engineering tools. By harnessing the power of cloud-based digitalization, machine and equipment builders can realize fundamental resource savings, in addition to reducing time and costs – all while retaining personnel and maintaining their competitive position within the global market.



Siemens Digital Industries Software

Americas: 1 800 498 5351

EMEA: 00 800 70002222

Asia-Pacific: 001 800 03061910

For additional numbers, click [here](#).

About Siemens Digital Industries Software

For customers eager to adopt change, Siemens' digital tools provide a new way forward. Our solutions are built on secure, modern platforms, while our open architecture allows integration inside leading design software. Through our decades of experience with machine builders, we have engineered industry best practices into our cloud solutions, which support a blended CTO/ETO delivery, project execution and design management.

For more information on Siemens Digital Industries Software products and services, visit [siemens.com/software](https://www.siemens.com/software) or follow us on [LinkedIn](#), [Twitter](#), [Facebook](#) and [Instagram](#).

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