

DIGITAL INDUSTRIES SOFTWARE

# Empowering the world's machine engineering

Build tomorrow's machinery today with Siemens Advanced Machine Engineering

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**SIEMENS**

# Complexity, customization and connectivity

## Trend 1: Disruptive Influences

Geopolitical factors are upending supply chain and labor availability, driving the need for greater connectivity and transparency.



## Trend 2: Smarter Machines

Changing customer preferences require adaptable machines, where integrated hardware, software and services rapidly meet demands in the moment.



## Trend 3: Business Model Changes

Industry 4.0 technologies and the need for self-sufficiency are reshaping businesses from product-centric, to solution-centric, sustainability-driven practices.



The complexity of today's markets forces you as machine builders to evolve from traditional "physical" product engineering to simulation-driven, digital product design. Consumers will increasingly demand a packaged system of integrated products and services that is customized to meet their individual needs.

Your customers have to respond to complexity created by consumer demands with extremely flexible, connected and adaptable machines, which in turn requires machinery that supports efficiencies gained through smart and connected machines via the Internet of Things (IoT).

Technology innovation leaders must adopt a mindset around new practices that embraces perpetual change. The change may be incremental or radical, and may be applied to existing or new business models and technologies.

Are you prepared for the challenge?

## Key drivers

- Consumer's increasing customization demands
- Order backlogs and procedural inefficiency
- Automated and integrated quality tools that outshine the competition
- A need for self-reliance, realized through sustainable, energy-efficient practices



# Become an advanced machine engineering company to satisfy fluctuating market requirements, grow revenue and gain market share



**Siemens offers a complete and holistic framework to help you cope with the challenges of today's machine engineering market.**

## Siemens Advanced Machine Engineering

Advanced Machine Engineering (AME) is a digitally-enabled approach driving greater certainty in creating next generation machines. With AME, you can effectively manage projects by integrating your disciplines, helping to rapidly deliver against changing customer requirements and industry regulations.

Simultaneously, aligned disciplines empower collaboration, helping you build smarter machines via the cloud. The cloud provides visibility into each discipline's work stream, supporting data re-use so that projects can take advantage of standard delivery processes conforming to an evolving best practice.

Meanwhile, AME's virtual simulation technology provides you with the digital twin – a mockup of a machine, where you can test energy efficiency, output, performance and conduct multi-disciplinary analysis without the need for physical prototypes. The digital twin therefore gives your machinery the flexibility needed to thrive in complex markets.

In summation, AME provides a broad range of tools that can help you drive greater efficiency into the management of projects and the product lifecycle.

### **Smarter software, smarter machines**

Machine manufacturers have to build smarter machines to cope with global competition, shrinking margins, rapidly expanding customization, environmental and government regulations etc. That requires smarter software solutions, too.

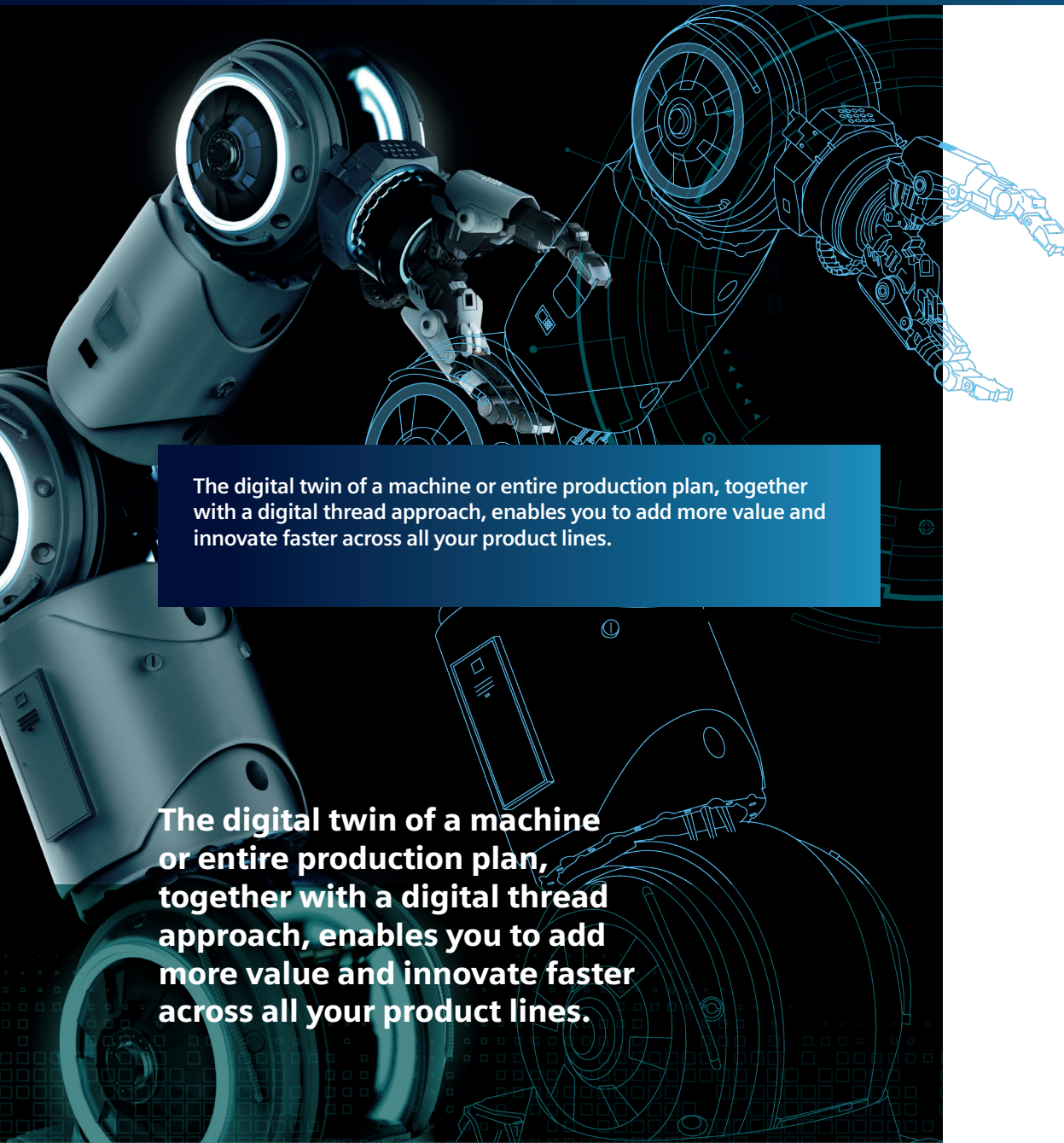
AME delivers a cloud-based, digital thread approach to engineering that enables companies to develop increasingly complex machines faster while lowering developing costs to decrease production and operational costs. It helps companies better manage their projects, harnessing complexity into a key competitive advantage.

The Siemens Xcelerator portfolio in Siemens Digital Industries Software suite of products provides a full suite of solutions to empower machine builders and suppliers with the essential tools to thrive in their highly competitive market and transition seamlessly to create tomorrow's machinery today.

**50%** Faster time to production

**25%** Shorter commissioning phase

# Siemens Advanced Machine Engineering offers you a rapid return on investment



The digital twin of a machine or entire production plan, together with a digital thread approach, enables you to add more value and innovate faster across all your product lines.

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## Siemens Advanced Machine Engineering

AME lets you effectively manage and deliver complex projects to market through early design and simulation tools.

By aligning remote and physical workers in the cloud, you can store, access and utilize real-time dashboards, schedules and documents at any time, from anywhere – helping you align on and achieve company goals faster.

This collaboration between mechanical, electrical, electronic and software domains also enables next generation machine design, where machines can be coded and reconfigured to meet the latest market needs. Your machine's adaptability therefore provides a wider spectrum of profit possibilities.

Finally, the digital twin of machinery helps you create and simulate complex machine models. Models can test thousands of features against thousands of requirements; in turn, you can produce the most optimized, innovative machine on the market.



# Siemens Advanced Machine Engineering empowers machine engineering companies all over the world



## What our customers say:

**//** *We shortened the design phase by about 10% and commissioning by 20 to 25%.”*  
Tronrud Engineering, Norway

**//** *Parallel mechanical design and control design led to a significant reduction in development time.”*  
Komatsu NTC Ltd., Japan

## | What should you do?

Adopt a holistic approach, a total lifecycle methodology using a powerful, centralized project delivery platform.

Leverage an integrated change management solution in the cloud, allowing you to keep track of and even benefit from the thousands of changes during a product lifecycle.

Implement next generation machine design to create comprehensive digital twins that can contain mechanical, electrical, software and automation information.

Additionally, use the digital twin of machinery and virtual commissioning capabilities to simulate every minor tweak or major change, any check or test in this virtual environment.

To allow your customers to thrive in their markets, provide the capability to digitalize their entire design and manufacturing processes the same way you have done it.

Effectively deliver complex projects with cloud-based schedules, dashboards and other collaboration tools.

All this will considerably reduce the complexity and time-to-market of creating and implementing new machinery, giving you an advantage over your competitors.



**Siemens Digital Industries Software** helps organizations of all sizes digitally transform using software, hardware and services from the Siemens Xcelerator business platform. Siemens' software and the comprehensive digital twin enable companies to optimize their design, engineering and manufacturing processes to turn today's ideas into the sustainable products of the future. From chips to entire systems, from product to process, across all industries, [Siemens Digital Industries Software](#) – Accelerating transformation.

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