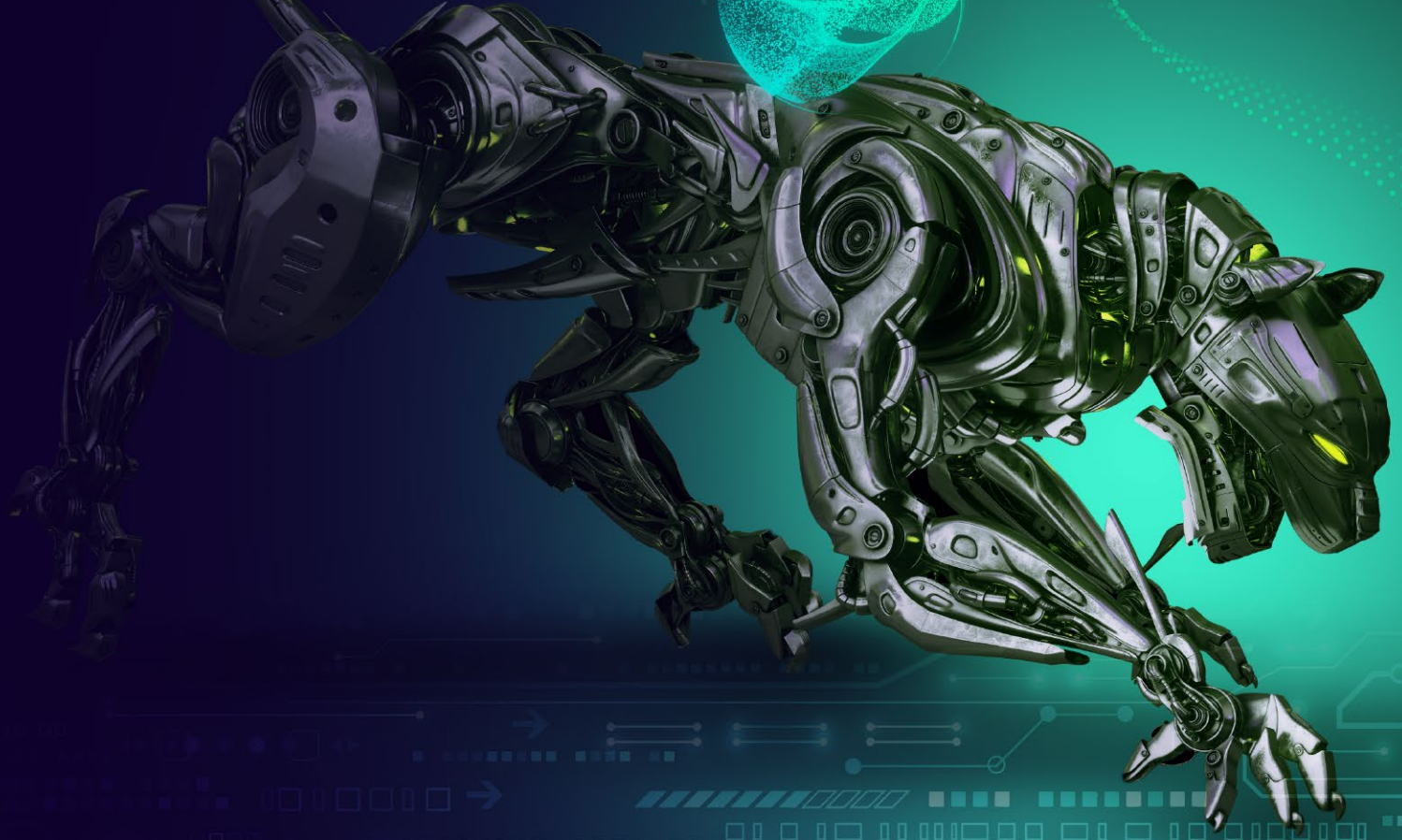




| Electronic Systems Design

Unleash the art of multi-disciplinary design innovation for electronics

[siemens.com/software](https://www.siemens.com/software)

Turn regulation into opportunities for innovation

Customers today are attracted to environment-friendly brands and sustainability is very much on the agenda for individuals, governments, and industries. It has joined the ranks of other market drivers such as safety, performance, and price – and consumers take note when buying new products—but providing credible "green" credentials, minimizing environmental harm, and investing in sustainability impact the bottom line.

To meet demand for a wider range of more personalized products and shorter time to market, companies are outsourcing manufacturing and forming strategic partnerships. While this streamlines operations and reduces costs, the knock-on effect is increasingly complex supply chains that require careful management to track requirements and meet rapidly changing regulatory standards for environmental and social compliance.

The use of electronics in daily life continues to grow and manufacturers must find ways to increase creativity and innovation while reducing time to market. The race is on to create green, compliant, earth friendly products to beat the competition.

Every new product should start with a concept that provides the foundation and backbone for design development and decision-making. With the ability to run what-if analysis on many design concepts, it is possible to create products that use more sustainable, cost-effective, and readily sourced materials. And it is possible to achieve this without adversely affecting you and your intended customer's bottom line.

Do you have the tools you need to differentiate your products?

Key Drivers for change

- More complex supply chains build pressure to streamline data management.
- Product complexity and accelerating convergence of disciplines require a digital approach.
- A rising need for software to drive new technology functionality, such as 5G.
- An increasing reliance on electronic manufacturing services to meet market demand.

Trend #1

New markets

Trend #2

Emerging technologies

Trend #3

Consumer driven customization

Trend #4

Globalization



Unleash your creativity to boost innovation

Leverage best-in-class design solutions to thrive in today's challenging electronics market

With such rapid pace of change in the electronics industry, failure to innovate the way you design will have significant consequences.

As systems become more complex, understanding all items that can impact the system performance becomes more difficult.

To overcome the barriers to improving quality and reducing time to market a digital transformation is required.

However, despite product complexity spiraling, many companies have maintained outdated legacy practices. Siloed data, different toolsets, manual handoffs and redundant processes that slow down and frustrate are still the reality for most designers and engineers.

Such practices leave teams isolated and unable to collaborate in real time. Lacking visibility of other domains they are unaware of how their design changes may impact others, resulting in incompatibility and reliability issues.

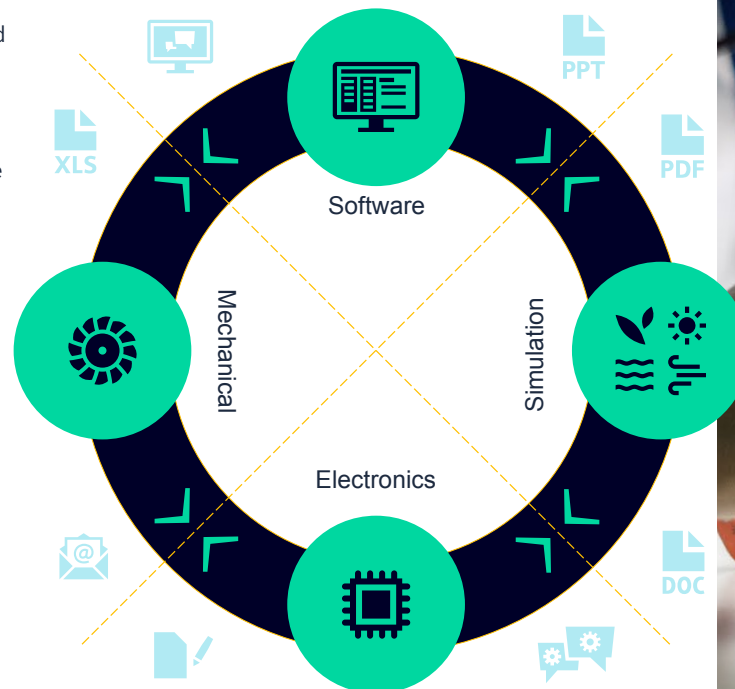
A recent Aberdeen Group research study found that implementing an integrated approach to whole product design

Reduce the use of physical prototypes by **65%**

Reduce design cycle time by **20%**

When we think of impediments to collaboration the first and most significant that electronics engineers and mechanical engineers alike can attest to is the traditional separation that has existed between the disciplines. Electronics engineers and mechanical engineers typically work with completely different tool sets and have completely different vocabularies. Many times, they even reside in different physical locations.

What's getting in the way of your collaboration?



Deliver next generation products with state-of-the-art design tools



Technological advances, accelerating innovation and the need to reuse intellectual property (IP) are all driving changes in the way companies design the products we use today.

With little collaboration and no clear digital trail, collecting and reusing key information is a mammoth task. Teams waste valuable time locating documents which may not even contain the latest specifications. Under these circumstances, mistakes are made and requirements targets are missed, resulting in multiple engineering change orders (ECOs) and manufacturing delays.

This is further exacerbated by a continued reliance on testing with physical prototypes. Waiting to verify designs through physical prototypes, only to discover issues that require further iterations, send development costs skyrocketing and complicate the task of launching new products quickly, meaning you may miss out on new business opportunities.

To validate product integrity and reduce time-to-market it's necessary to use integrated solutions and processes.

Design today's electro-mechanical products with a multi-discipline approach that leverages seamless cross-domain collaboration to boost creativity and conquer growing product complexity.

Focus on developing your products, not running your systems. And with cloud-based design solutions overhead costs associated with deploying and maintaining CAD software, hardware supply chain bottlenecks and hardware obsolescence are eliminated. It also alleviates the IT barriers to product development in today's global environment.

It's time to set your designers and engineers free with a collaborative approach to electronic systems design!

Increasingly complex devices need a single platform for electromechanical design

- ✓ MBSE for architecture design
- ✓ Concurrent design with state-of-the-art design tools
- ✓ Seamless multi-domain collaboration
- ✓ Continuous product verification and validation

Free teams from unproductive tasks and speed up development.

Growing systems complexity requires the implementation of new development methods to keep costs, time, and quality under control. Traditional, document-centric and test-based approaches are not compatible anymore with the current multi-disciplinary and distributed systems engineering.

Engineers need a new approach: A model-based systems engineering approach!

A model-based systems engineering (MBSE) approach enables design and engineering teams to work together across all domains. It replaces document-centric processes with model-centric processes and a structured design process to leverage state-of-the-art design tools. Adopting digital twin technology allows you to perform virtual validations, analyses and simulations earlier in the design cycle.

This shift-left methodology advances testing making it possible to continuously verify throughout the design process, to develop first time right products.

Digitalization breaks down these barriers so that design teams can "start integrated and stay integrated." To seamlessly connect stakeholders to the most up-to-date information to improve decision-making and reduce the risk of mistakes. And with increased design efficiency, engineers have more time to create innovative and disruptive products

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The adoption of Teamcenter has revolutionised our product development processes for competitive advantage and improved the visibility and efficiency of our technical management across the enterprise

***Peng Zirong, Vice President and Director,
Technical Center, henzen Hangsheng Electronics.***

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Boost creativity and productivity with a collaborative approach to electronic systems design

Gain a competitive advantage in electronics systems design to dramatically improve business

Bring together mechanical, electrical and software domains to ensure compatibility and product integrity.

Keep all disciplines in sync to boost collaboration and drive efficiency while benefiting from improved traceability.

Flag and fix errors early in the design cycle to save resources and boost innovation.

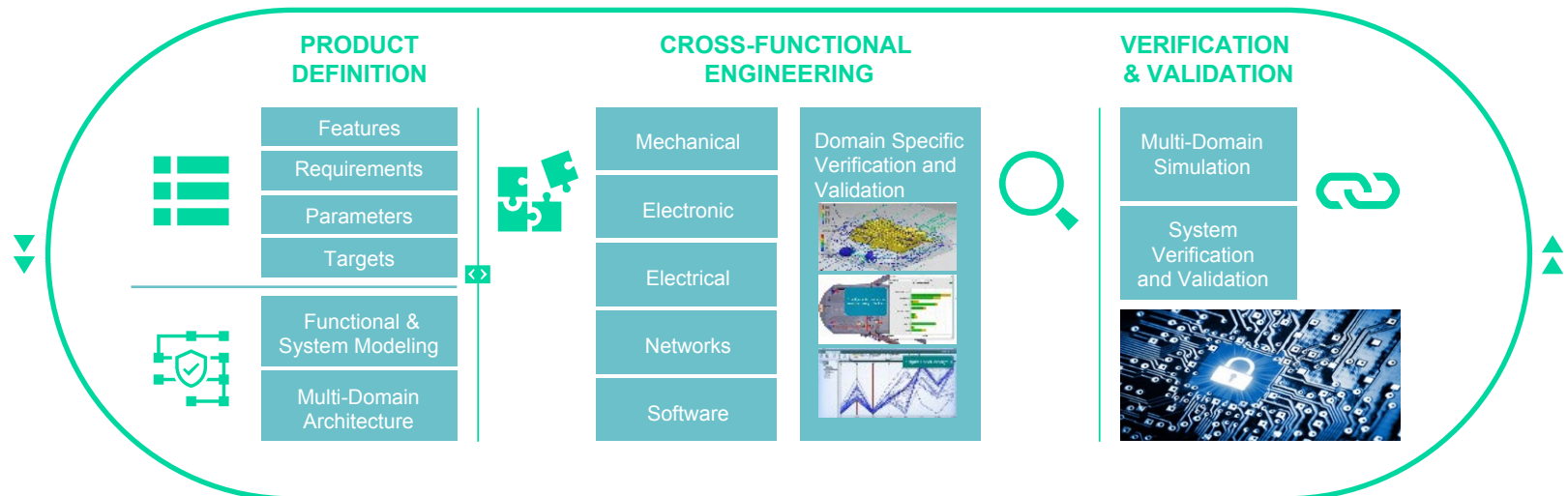
Minimize the need for physical prototypes to improve time to market and reduce costs.

Reuse key IP to continuously optimize designs and achieve higher quality.

Leverage low-code solutions to protect IP, securely share data with external partners, perform design reviews and reduce re-spins to accelerate new product introduction.

Siemens offers a multi-disciplinary approach to design that leverages integrated and single harmonized design, verification and testing environment across multiple engineering platforms. It allows you to find issues as early as possible in the design lifecycle of the system while providing industry-leading performance and platform scalability.

Orchestrate your engineering program with MBSE To bring a new level of integration and efficiency to complex systems and processes



Product Lifecycle Management – Requirements, Parameters, Interfaces, Navigation, Workflows and Program Management



Catalyst for the Digital Enterprise

An integrated portfolio of software, services and an application development platform that speeds the digital transformation cycle and unlocks a powerful industrial network effect. Blurs the boundaries between traditional stand-alone engineering domains such as electrical, mechanical and software.

- ✓ Comprehensive Digital Twin
- ✓ Personalized Adaptable/Modern
- ✓ Flexible Open Ecosystem

About Siemens state-of-the-art design solutions:

The comprehensive digital twin leverages a shift-left design methodology that integrates design verification tools throughout the system design process to let designers find and fix errors where they happen, instead of waiting until later.

Digitalization breaks down barriers so that design teams can "start integrated and stay integrated." To seamlessly connect stakeholders to the most up-to-date information to improve decision-making and reduce the risk of mistakes. And with increased design efficiency, engineers have more time to create innovative and disruptive products.

A comprehensive digital twin covers the entire product and production lifecycle, and it must include a closed-loop to ensure actual performance data is fed back into models that are continuously refined. It also needs to scale to cover microelectronics, mechanical design, software, manufacturing, app development and IoT analytics.

To successfully realize a digital transformation, companies need tools backed by a global supplier with the breadth, depth, and resources to help them develop, enhance and support next-generation systems design platforms. Software as a Service (SaaS) will change the way design teams create next-generation products, and how this will facilitate and optimize companies' digital transformation. By augmenting desktop authoring tools with integrated, native cloud applications that seamlessly connect companies with the electronics value chain, design teams will be empowered to confidently deliver on aggressive requirements, schedules, and budgets.

About Siemens Digital Industries Software

Siemens Digital Industries Software is driving transformation to enable a digital enterprise where engineering, manufacturing and electronics design meet tomorrow. Xcelerator, the comprehensive and integrated portfolio of software and services from Siemens Digital Industries Software, helps companies of all sizes create and leverage a comprehensive digital twin that provides organizations with new insights, opportunities and levels of automation to drive innovation.

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

Siemens Digital Industries Software.

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