SIEMENS

DIGITAL INDUSTRIES SOFTWARE

Deliver new, high-quality components to market faster than ever before

Using Accelerated Product Introduction to maximize productivity

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Trend #1
Disruptive influences: Sustained increases in fuel costs are driving companies to focus on their energy usage – putting pressure on component manufacturers to deliver the most efficient, sustainable equipment.

Trend #2
Smarter factories: Industry 4.0 is driving changes across industry – with components as small as solenoids reporting current and temperature to support remote diagnostics.

Trend #3
Business model changes: Many nations are using carbon pricing as a method to address climate change. This places additional responsibilities and demand on the supply chain to report their own carbon footprint.

To stay on the cutting edge of Industry 4.0, component manufacturers must introduce increasingly innovative, high-quality, energy-efficient and sustainable products that outshine competitors.

This is especially true as more low-cost players enter the industrial machinery market, unencumbered by legacy technology or outdated manufacturing methods.

Disruptive business influences such as fuel prices and smarter factories are further complicating matters where increasingly connected machines generate a plethora of data, leaving untapped potential by businesses that fail to adopt digital transformation. Digital practices make it possible to further reimagine business models where companies use solutions to sustainably solve everyday challenges, rather than rely on the limitations of specific products or manufacturers.

It is becoming clear to many that holistic digitalization is pivotal to initiating change and success for the common component manufacturer. With cloud-based tools, you can navigate the increasingly complex landscape of industrial machinery, driving greater efficiency, velocity and revenue outcomes for your business.

Key drivers

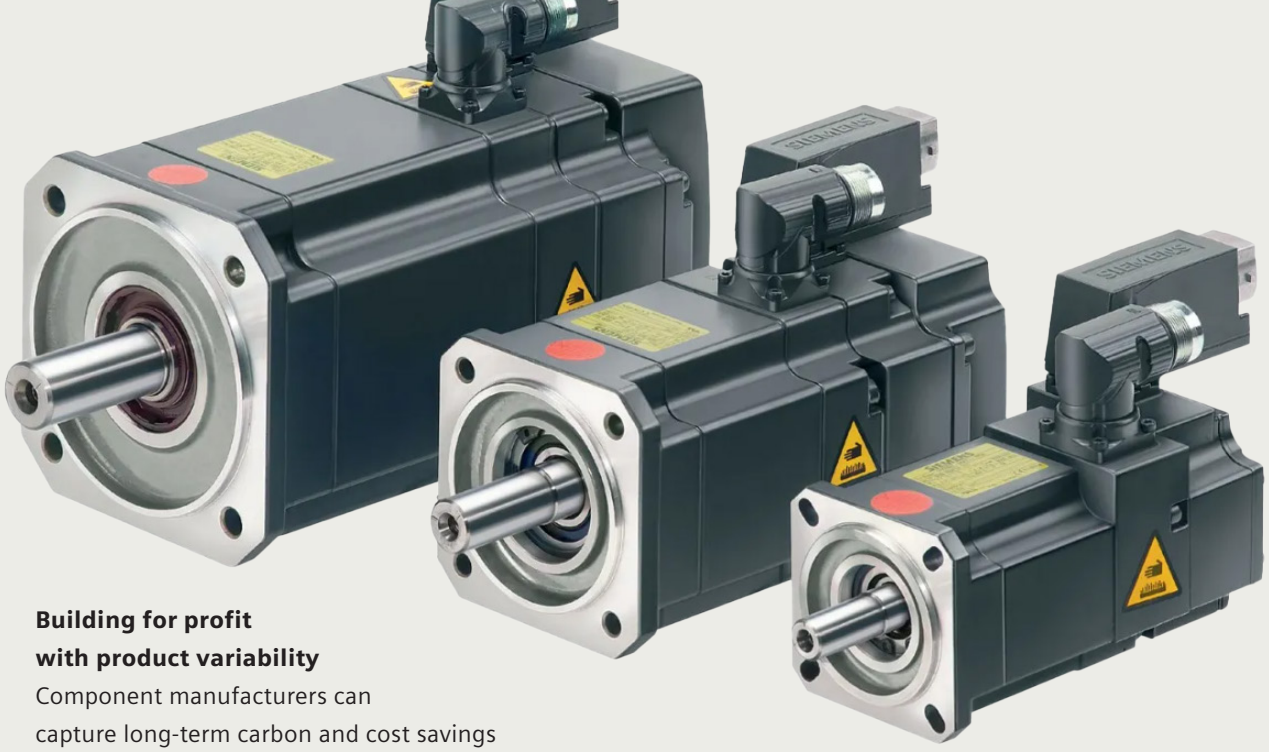
- Linking upstream and downstream engineering systems fundamentally guarantees requirements and orders are in sync with one another
- Economically integrating sustainability into standard operating procedures yields greater self-sufficiency and a long-term reduction in energy costs
- Incorporating quality assurance (QA) processes into the product development cycle expedites product deliveries while ensuring products are accurate and reliable

Use digitalization to discover and create new products

Component manufacturers of all sizes face a common challenge: introducing new products to the market. The new product introduction (NPI) process can be time-consuming and complex as businesses discern how to manufacture products swiftly and cost-effectively while ensuring parts are accurate, reliable and repairable, should they ever fail in service. With Accelerated Product Introduction, a digital thread solution by Siemens, businesses can readily overcome NPI barriers by using three key imperatives.

Linking processes to ensure next-generation NPI

With Accelerated Product Introduction, component manufacturers can implement transparent changes and configuration management systems to create a comprehensive digital twin. The digital twin is a holistic 3D mockup of a component. Using simulation technology, the digital twin demonstrates how a part will operate under various real-world factory conditions. By understanding the pros and cons of part materials, physics and their performance in the broader manufacturing environment, component manufacturers can tailor parts for optimized performance. Furthermore, the digital twin provides a single view of all product data. Through this singular view, the design, product planning, catalog creation and manufacturing domains can align on product development goals and standardize processes for greater consistency, leading to higher quality assurance for products. Domains can balance and verify internal needs against changing customer requirements, leading to expedited planning, scheduling, execution and delivery to market. A well-managed, transparent NPI process is essential to support on-time project delivery.



Building for profit with product variability

Component manufacturers can capture long-term carbon and cost savings by examining their design processes and scrutinizing their end-to-end manufacturing value chain. With Accelerated Product Introduction, this process begins by using a cloud-based platform that closely connects component manufacturers with their stakeholders. Connecting with supply chain vendors will yield greater transparency over material expenditures, connecting with distributors will accelerate products brought into various global markets, connecting with sellers will provide greater revenue and so on. In addition to controlling these external cost and revenue factors, component manufacturers can control internal cost, revenue and sustainability factors by implementing a digital twin. The digital twin can test important component variables, such as material, helping businesses identify more cost-efficient and sustainable resources and product variations while concurrently eliminating the need to run physical tests that rely on expensive, energy-intensive resources, such as hydraulic or pneumatic actuators. Component manufacturers can maximize their profitability by balancing these internal initiatives against bespoke customer requirements.

Driving quality excellence through data

Companies can use Accelerated Product Introduction to integrate their manufacturing and quality processes, deriving products with greater consistency, reliability and sustainability. Using the digital twin and modular design tools, component manufacturers can use modular lines of text to swiftly configure projects and program machines, leading to increased scalability and customization that satiate even the most challenging market demands. This swift programming allows users to readily update component designs to become more sustainable and meet evolving customer requirements in the moment. You can also leverage catalog management tools to re-use sustainable designs across projects, driving greater consistency and quality into builds as you use designs that have already been validated in a physical environment. By dynamically incorporating re-use across systems, businesses realize a new level of standardization, further supported by closed-loop analytics. Closed-loop analytics capture data along every phase of the product lifecycle, informing quality assurance checks while determining incremental improvements that maximize a product's potential. In turn, only the highest quality new components are rapidly introduced to the market.

Siemens offers a complete end-to-end digital solution to help you thrive in today's highly competitive industrial machinery market.

Using Accelerated Product Introduction for a new path forward

As global competition grows, it becomes vital to maximize productivity to avoid costly, time-consuming mistakes. Using Accelerated Product Introduction helps you deliver products with ease through integrated upstream and downstream systems and control product variability and profitability through cloud-based connections and the digital twin. It also allows you to produce high-quality products where integrated systems and closed-loop processes drive NPI improvements.

Now it's your turn to:

- Link upstream and downstream component engineering and manufacturing systems, driving greater collaboration and alignment on new product development
- Create a comprehensive digital twin that balances internal initiatives against changing customer requirements, helping realize expedited planning, scheduling, manufacturing and delivery sooner
- Use the cloud to connect with supply chain vendors, distribution network partners and in-field sellers to generate greater visibility into expenditures and revenue streams
- Implement the digital twin to create product variations and determine cost-effective materials that don't trade-off on performance to eliminate the need for energy-intensive, costly physical prototypes with simulation testing
- Program component manufacturing machines with drag-and-drop configuration tools, leading to greater scalability and customization for new products without a loss in manufacturing velocity or quality
- Drive consistency, reliability, quality and sustainability into new product builds through modular design re-use across CAD, CAM, simulation and quality management systems

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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