SIEMENS

Become a sustainable Digital Enterprise and **supercharge your transformation**

siemens.com/digital-enterprise

Complexity in industry
is growing

Industrial companies face increasing complexity from global trends such as scarce resources, disruptive technologies, changing business models, shifts in global markets, skills shortages, and most importantly, the climate crisis.

The imperatives of our time for industry are to become better, faster, more profitable, and more sustainable.

Lack of talent

Productivity

Supply chain disruptions

Integration   Resilience   Quality

Flexibility   Cybersecurity   Scalability

Complexity   Adaptability   Efficiency

Glocalization

Safety   Health   Sustainability

Individualization   Circular economy   Cost pressure

Faster innovation cycles   Ageing societies

The game changer:
Combining the real and digital worlds

Technological advances in industrial software and automation are the game-changers that can solve current and future challenges by seamlessly combining the real and digital worlds. Companies must embrace a digital-first approach and need to become a sustainable Digital Enterprise.

By seamlessly combining technologies from the digital and real worlds through our comprehensive Digital Twin approach and cutting-edge technologies, companies can integrate and digitalize the entire product and production lifecycle, including supply chains.
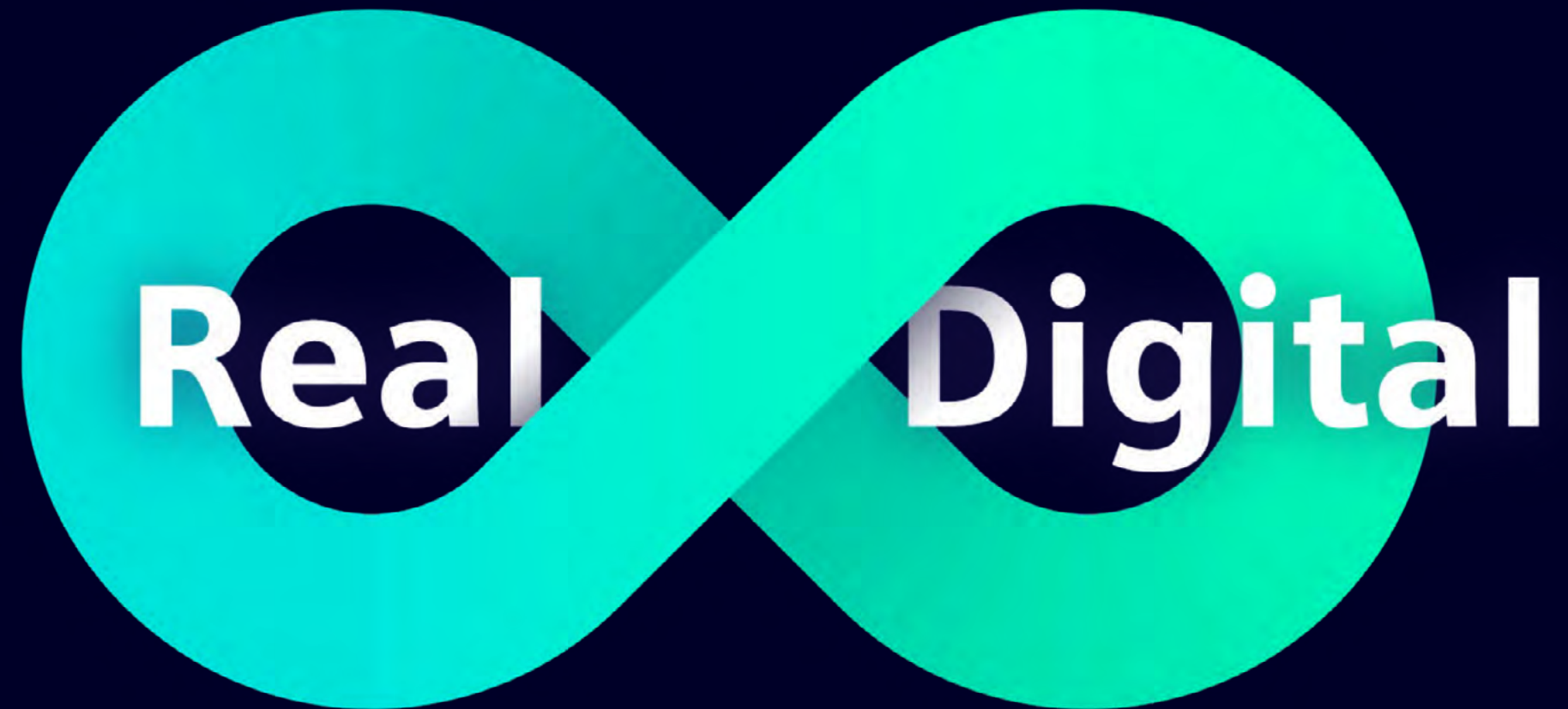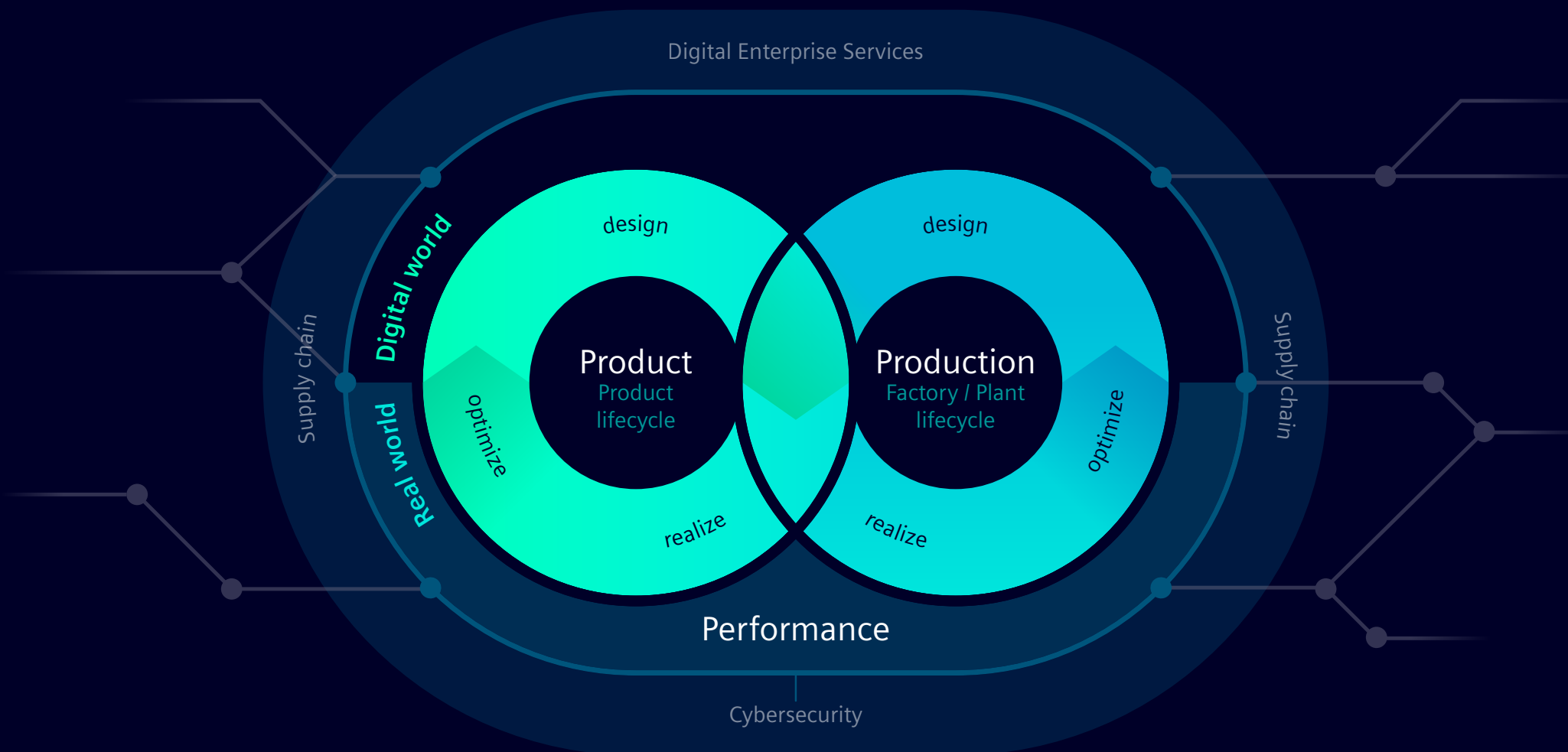
Become a sustainable
Digital Enterprise

The ability to combine the real and the digital worlds allows companies to design, simulate, test, optimize, and validate products, machines, lines, and even entire factories and plants in the digital world, making them faster, more efficient, and more sustainable in the real world. The result is a continuous loop of optimization, from the design of a product to its realization and optimization, with a continuous flow of data.

We do this by providing our customers with the end-to-end solutions they need to make the entire product and production lifecycle, including supply chains, more efficient and sustainable. They can achieve unprecedented levels of circularity, decarbonization, energy and resource efficiency, and create best-in-class products and production.
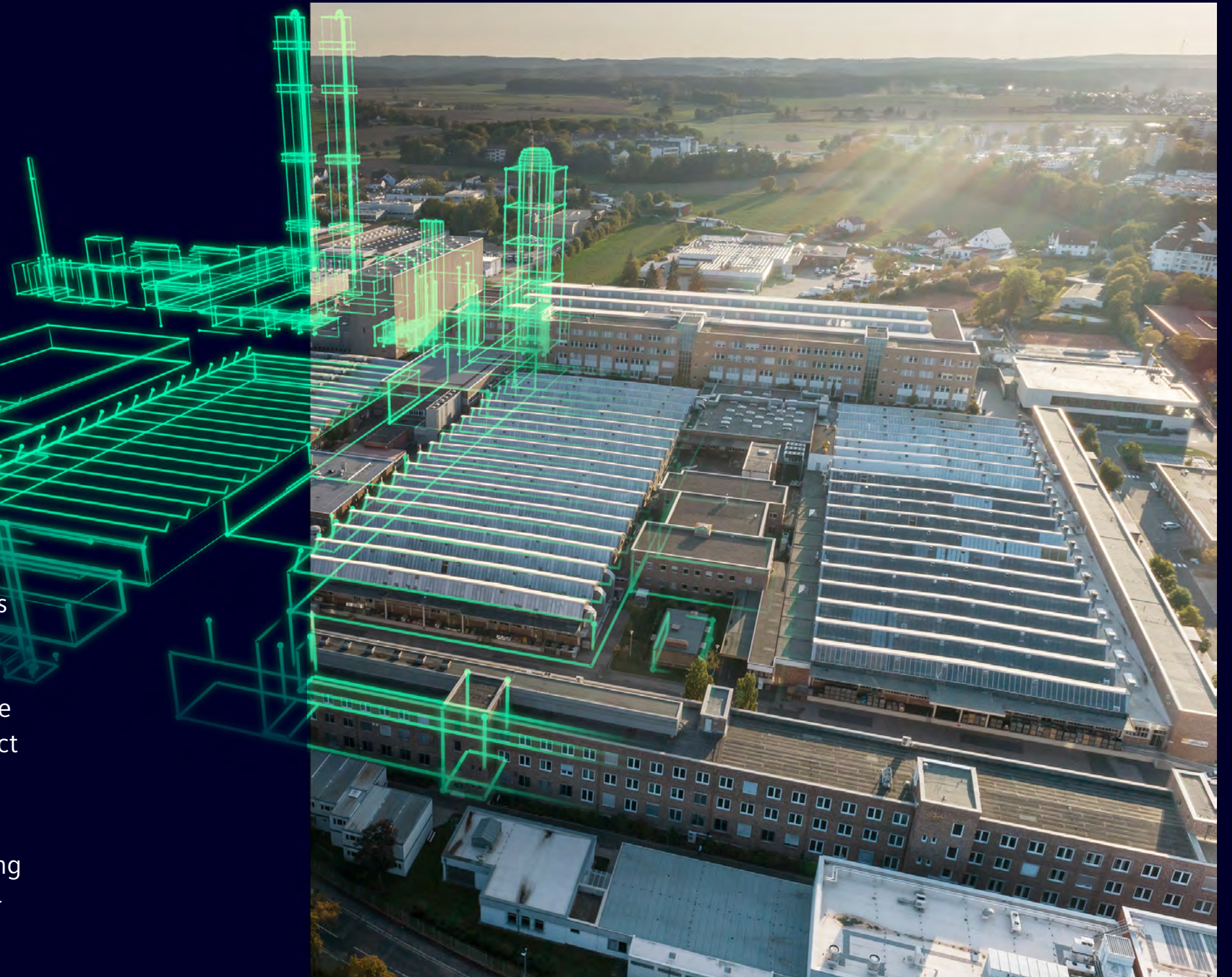
Digital Enterprise – integrating the lifecycles
of product and production, including supply chains

Combining the real and the digital worlds enables you to seamlessly integrate the entire value chain from design to realization, while optimizing it with a continuous flow of data. A sustainable Digital Enterprise is able to harness the unlimited power of data by gaining valuable insights to make fast and confident decisions – and to create best-in-class products through efficient production.

Siemens Xcelerator is our open digital business platform that helps you to innovate faster and ultimately become a Digital Enterprise. Then you are able to integrate the entire product lifecycle with the factory and plant lifecycle, along with performance data, using our comprehensive Digital Twin approach. The result is a continuous open loop of optimization, both for the product and the production.

SUSTAINABLE INDUSTRIES

Scaling
sustainability impact

Manufacturers play a huge role in creating a sustainable global economy. Even 1% less CO_2 emissions from industry means 90 million tons can be kept out of the atmosphere. And this already starts with product development, as 80% of a product's environmental impact is determined in the design phase.

How can we make smarter decisions for a more sustainable future without sacrificing on profitability and growth? It's time to become a sustainable Digital Enterprise. Siemens Xcelerator accelerates this transformation by enabling closer collaboration between all stakeholders needed in the decision-making process. It empowers businesses to optimize resource use, track environmental impact in real-time, reduce carbon footprints, ensure sustainable supply chain practices, and rapidly innovate on their path to net zero.

Learn more about sustainable industries

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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The journey to a **sustainable Digital Enterprise** has begun

At Siemens, we provide our customers with the end-to-end solutions they need to become better, faster, more profitable and more sustainable: automation hardware, industrial software, industrial know-how and services that enables them to make the entire product and production lifecycle, including supply chains, more efficient and sustainable. This includes analyzing and optimizing carbon intensity, creating circular models for longer product lifecycles and greater resource efficiency, and improving ergonomics and safety for our people.
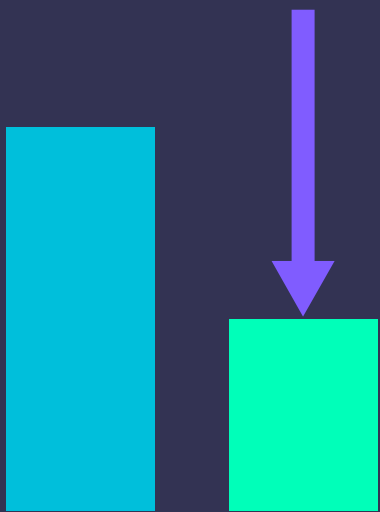
Up to 80% of all product-related environmental impacts
are determined during the product design phase

Resource-efficient

Save up to 50% of material by reducing costly prototyping with Digital Twins.

Decarbonized

Save 25% of energy and CO_2 emissions by designing for optimized energy use in product manufacturing, use phase and maintenance.
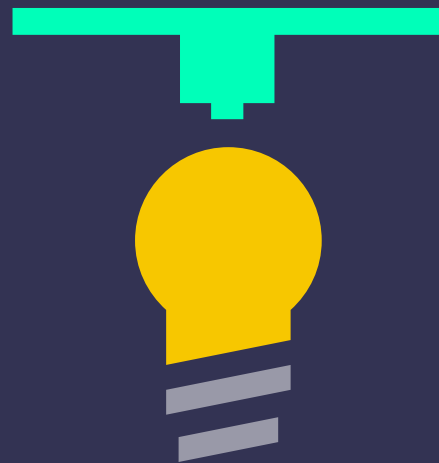

Circular

Preserve valuable resources by planning for reuse, recycling and remanufacturing.

Innovative

**Tap into innovation** with new materials, carbon-free technologies and new production methods.

Source: Ellen MacArthur Foundation

90 million tons CO$_2$ emissions can be saved each year
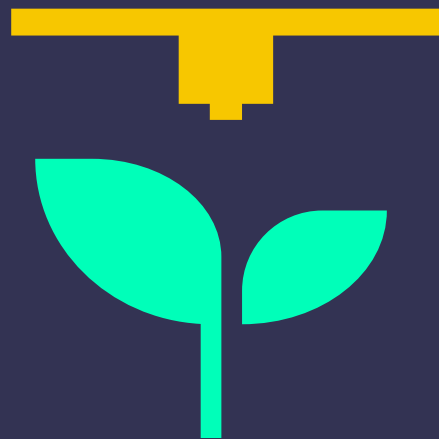by reducing just 1% of industrial production carbon footprint.

Energy-efficient

Save up to 40% of energy with digitally optimized production processes and system-wide energy management.
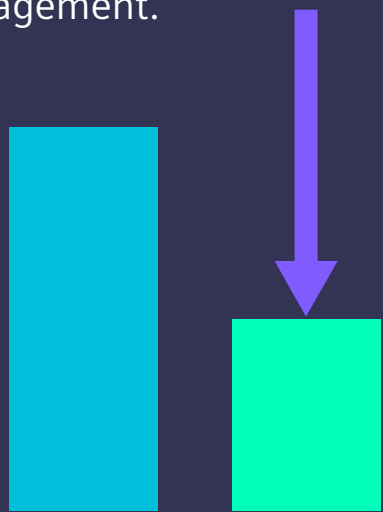
Innovative

Incorporate new sustainable production methods such as additive manufacturing and modular production to drive sustainability.

Circular

Keep products in use longs or give them a second life through repair, reuse, recycling and remanufacturing.

Decarbonized

Reduce your CO$_2$ footprint by up to 50% in manufacturing through data analysis.

Source: IEA

Supply chains account for more than 90% of an organization's greenhouse gas (GHG) emissions

Transparent

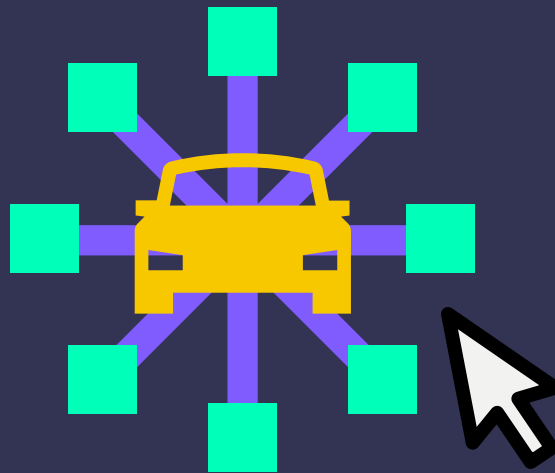**Ensure supply chain traceability** based on complete data transparency.

Decarbonized

Aim to reduce your natural gas usage by <20% with **carbon footprint data from your supply chain combined with your manufacturing data.**
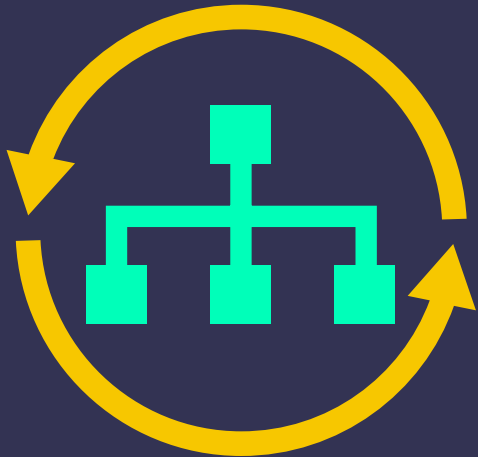
Integrated

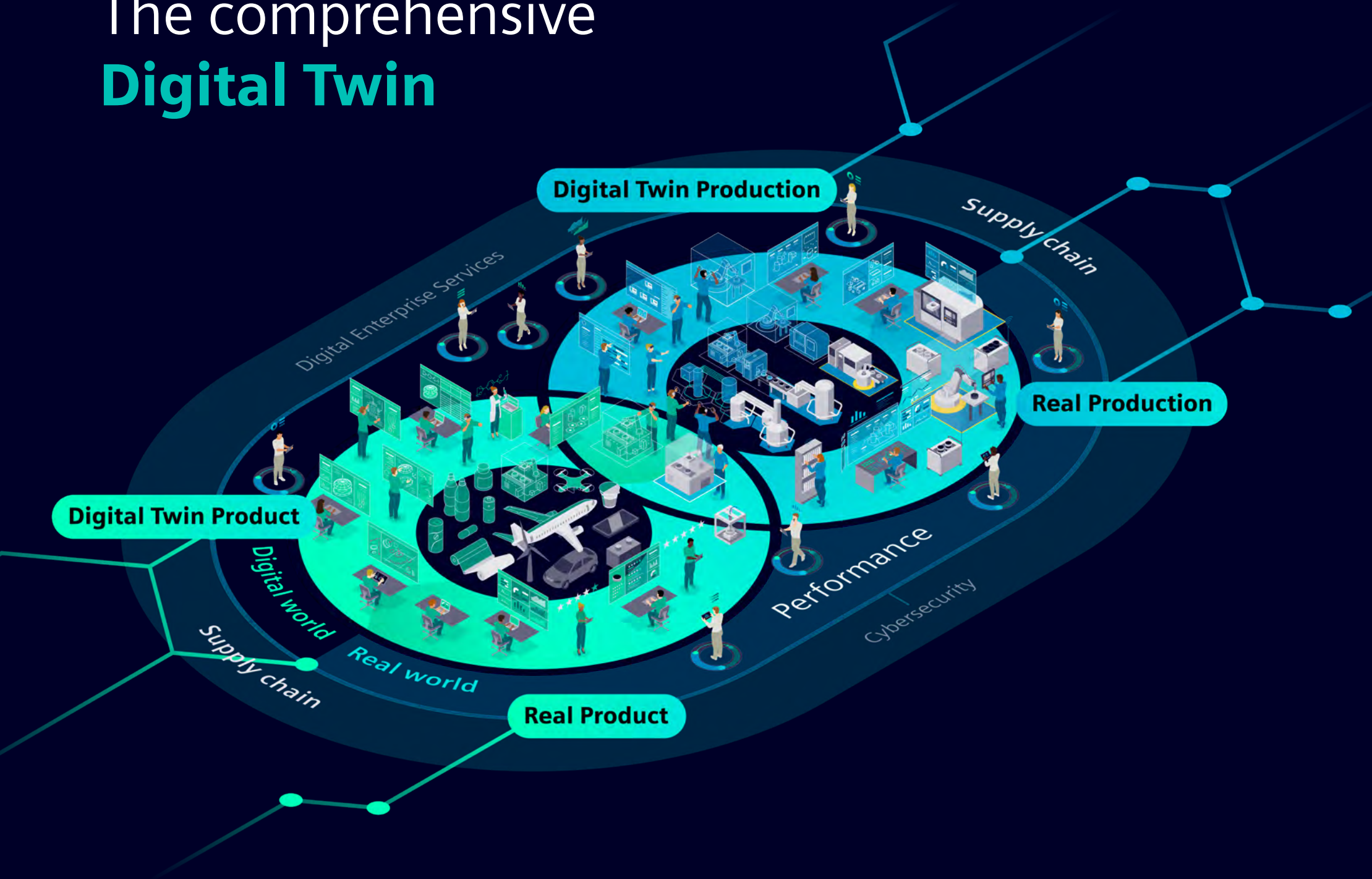**Manage sustainability compliance** connecting suppliers to requirements.

Cost-effective

Reduce transportation costs by 13% and optimize transport networks and capacity with digitalization.

Source: EY

The comprehensive **Digital Twin**

Combining the digital and the real worlds through our comprehensive Digital Twin approach enables the seamless integration of the product and production lifecycles, including software and automation. It allows manufacturing companies to design, simulate, test, optimize, and validate products and production with the Digital Twin.

The comprehensive Digital Twin comprises a set of consistent digital models representing different aspects that can be used throughout the entire product lifecycle, the production lifecycle, and the supply chain. The comprehensive Digital Twin is our approach to ensure the consistency of Digital Twins along the entire lifecycle and to minimize efforts for creating and maintaining these Digital Twins. We offer all the necessary solutions to create this comprehensive Digital Twin.
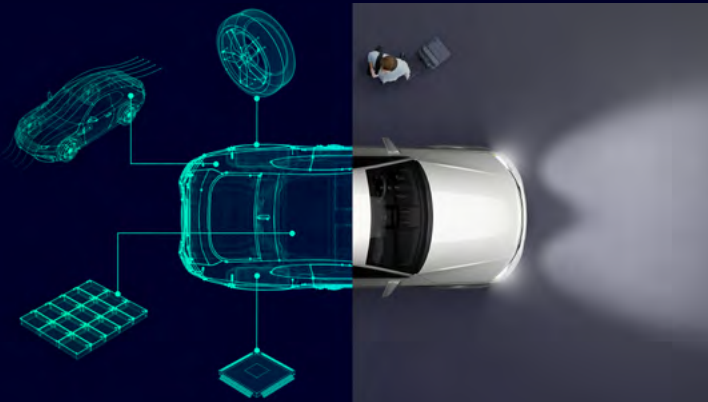
Get the most
out of your Digital Twins

A Digital Twin is a digital representation of a physical asset or process (e.g., product, machine, production, plant) that evolves with the lifecycle. It helps to define and optimize the product and production system before investing in physical assets, thus reducing the need for physical prototypes. Users can start small, create further Digital Twins when needed, and expand their capabilities with additional data over time as their experience and ambitions grow.

This makes the Digital Twin the practical solution for mastering industry's challenges: reducing the CO_2 footprint, minimizing waste, increasing resilience, and speeding up processes.
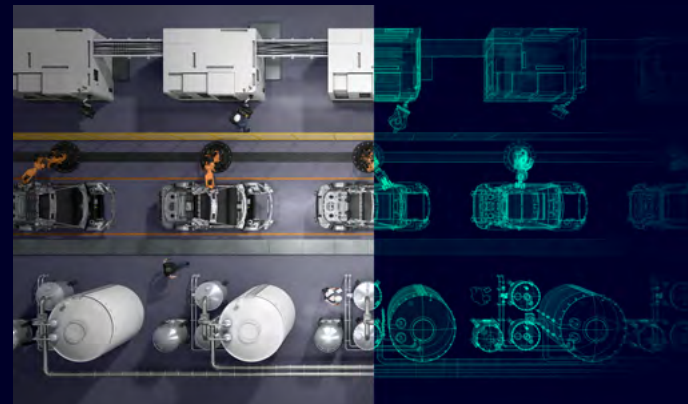
Learn more about the Digital Twin

Continuous optimization with **the Digital Twin**

The Digital Twin generates tremendous value by running "what if" scenarios and predicting future performance and behavior. It lays the foundation for making quick and confident decisions before taking action in the real world. It also helps to reduce the time to market and ensures that the requirements are met.

This makes the Digital Twin invaluable: Users obtain direct feedback on their actions – whenever they change settings or create new scenarios, they experience the impact and can make better and confident decisions. Data suddenly becomes understandable and tangible, leading to more reliable decision making.

Digital Twin for Products
The Digital Twin for Products helps to design, simulate, and verify products virtually, including mechanics and multi-physics, electronics, and software.
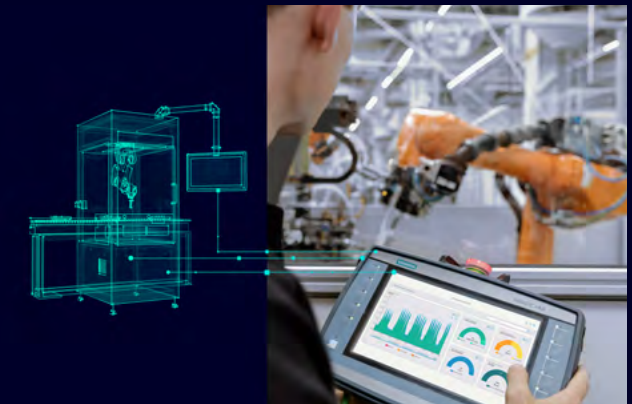
Digital Twin for Production
The Digital Twin for Production helps to plan, simulate, predict, and optimize all production processes across the entire lifecycle – from the design and engineering, simulation of the machine, line, factory or plant to virtual commissioning.

Digital Twin of Performance
The performance data of the real production or the real product is collected, analyzed and fed back into development. The result is a continuous loop of optimization.

Collaborate in the **Industrial Metaverse at new levels of efficiency**

Transforming into a Digital Enterprise is the prerequisite for leveraging the full potential of the Industrial Metaverse, enabling accelerated innovation and enhanced collaboration along the entire value chain.

The Industrial Metaverse combines the real and digital worlds even more closely and fluently, so customers can immerse into a digital space that is connected to and accurately reflects the real world.

This enables users to access all relevant data through a "single pane of glass," thus gaining insights to optimize their operations, predict performance, and address potential issues in real-time.

Digital Twin, Software Defined Automation, and Data & AI are the building blocks to make this vision a reality. All of these building blocks are available through Siemens Xcelerator.

Learn more about the Industrial Metaverse

Speed up processes
by working in parallel

The Digital Enterprise enables the horizontal integration and digitalization of the entire value chain – from design to production to service and recycling.

Seamless horizontal integration bridges the gaps between former information silos, connecting everything from product innovation to production and extending through products in use.
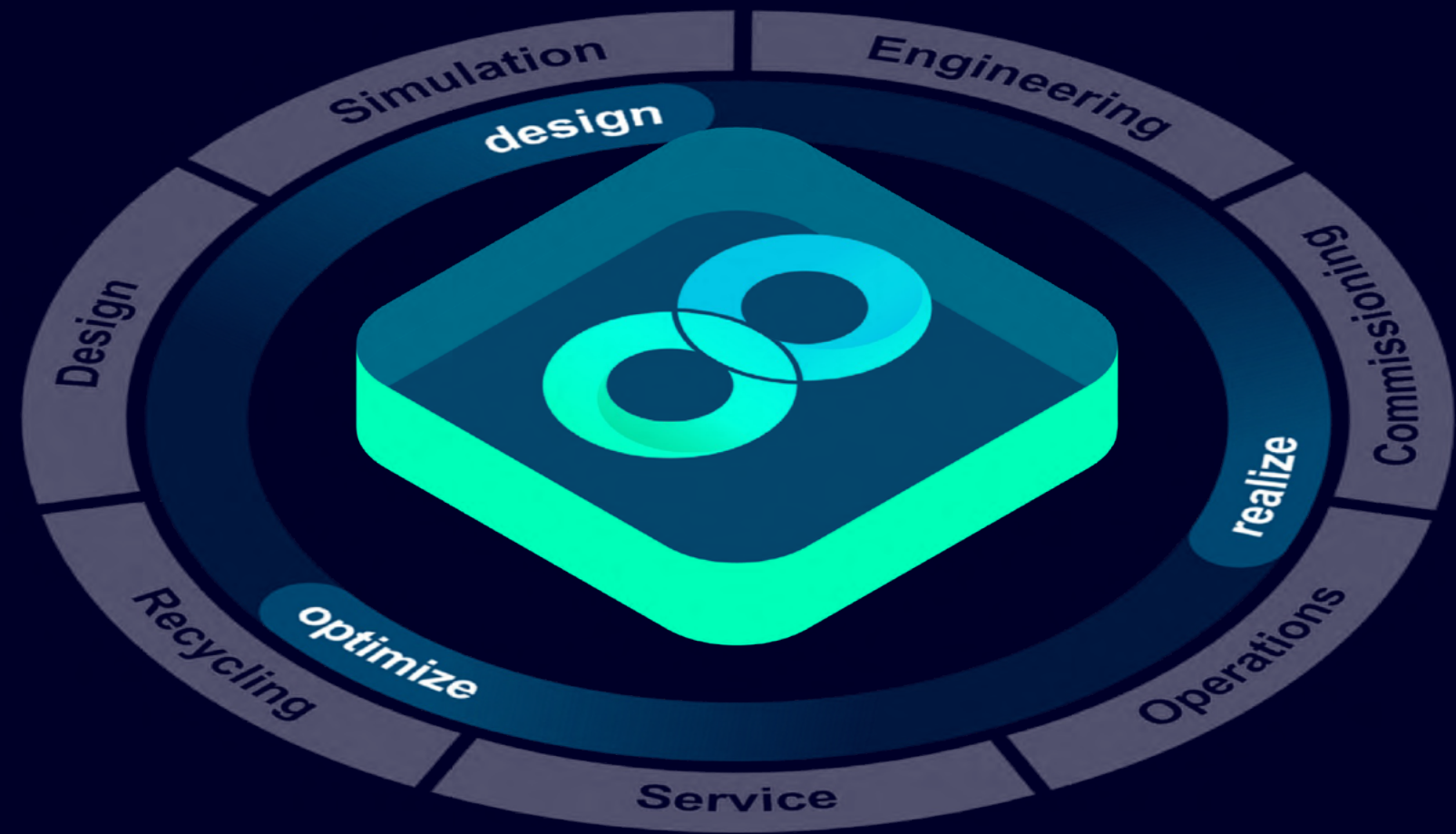
Lay the groundwork
for data-driven decision making

Combining information technology (IT) with operational technology (OT) enables a Digital Enterprise to connect, and analyze information and operations, increase transparency and access and leverage data across the product and production lifecycle and throughout the supply chain ecosystem. By converging IT and OT, data can flow starting vertically from field devices and sensors to edge computing and the cloud. Applying IT and software development methodologies to the OT world and collecting, contextualizing, and leveraging OT data with IT mechanisms makes modular, flexible, secure, and sustainable production a reality.

Learn more about sustainable industries

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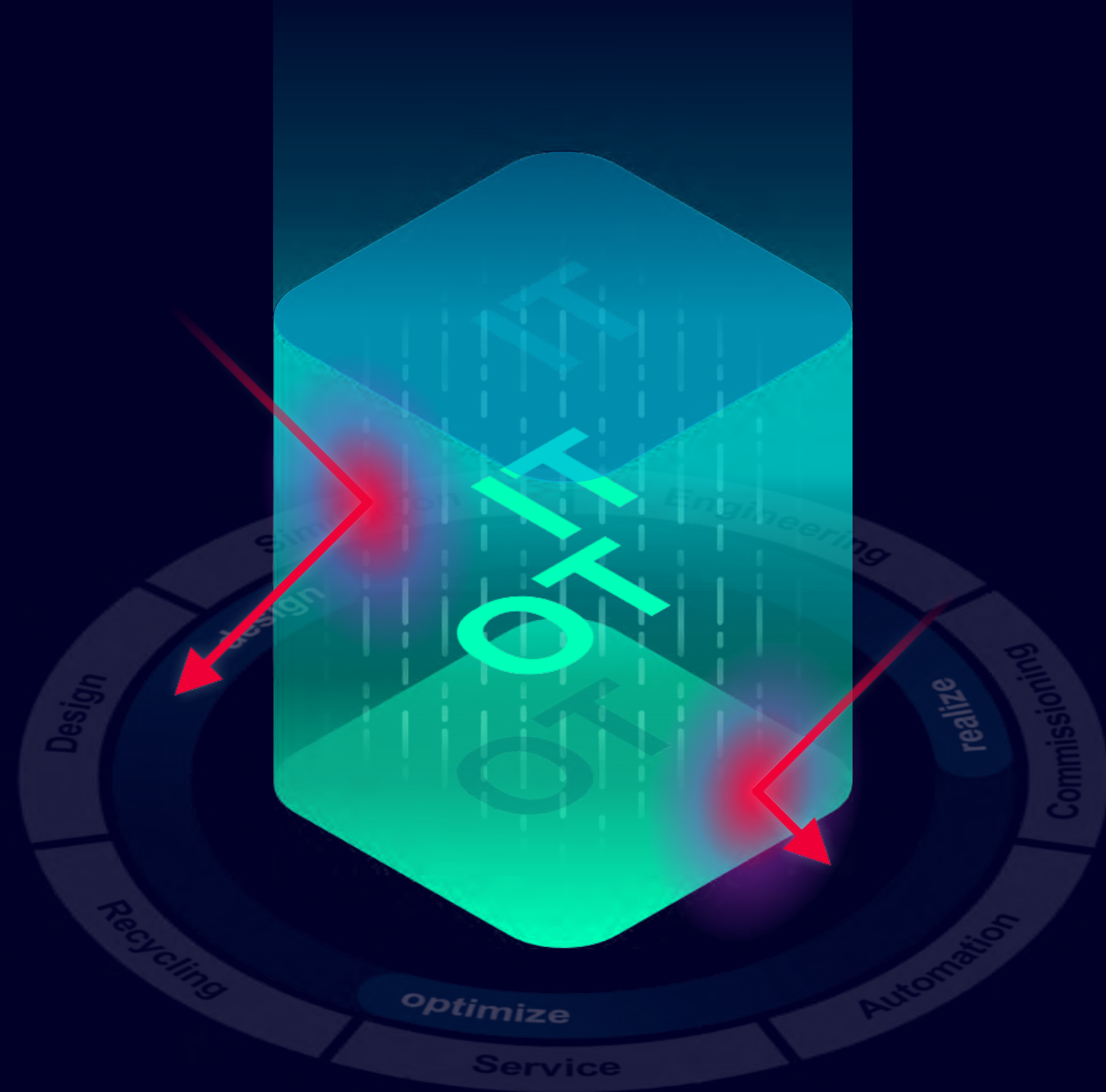
Artificial Intelligence
that meets the stringent requirements and standards of industry

Artificial Intelligence (AI) is rapidly changing the world, revolutionizing industries, enhancing human capabilities, and reshaping our lives. Yet, reaping AI's benefits in industry is complex due to the critical need for reliability and trust, combined with a shortage of skilled experts.

Siemens turns AI into industrial-grade AI designed to be robust enough to meet the stringent requirements and standards of the industry. We foster collaboration within a wide ecosystem of partners, academia, and customers to ensure AI is reliable, secure and trustworthy. In addition, we strive to democratize Industrial AI, making it accessible to anyone, anywhere, and at any time, thereby empowering non-AI experts to easily operate and benefit from it. With industrial-grade AI we support companies to accelerate their digital transformation and achieve their scalability, quality, and sustainability goals.

Learn more about Industrial AI

Combine the real and digital worlds **securely**

The free flow of data in a Digital Enterprise both horizontally and vertically requires a comprehensive cybersecurity approach for industry. It begins with our own production plants and products and includes a broad range of hardware, software and services for industrial security. We rely on the multilayer Defense in Depth concept strengthened by Zero Trust principles. This ensures reliable and always up-to-date protection on all levels, thanks to three pillars: plant security, network security and system integrity, including Industrial Cybersecurity Services.

Learn more about Cybersecurity for Industry

Security threats demand action

Always active

Plant security

Network security

System integrity

Industrial Cybersecurity Services

Collaboration enables
true efficiency
and flexibility

All relevant data is linked with open, collaborative data models, enabling the necessary openness for growing ecosystems beyond company borders.

We are innovating faster and more efficiently within our strong partner ecosystem. No one can do it alone: The digital transformation is faster and easier to implement through collaboration with others. Together, innovations, new business models and added value are created for all the participants in the ecosystem.

Learn more about the Industrial Partner Ecosystem
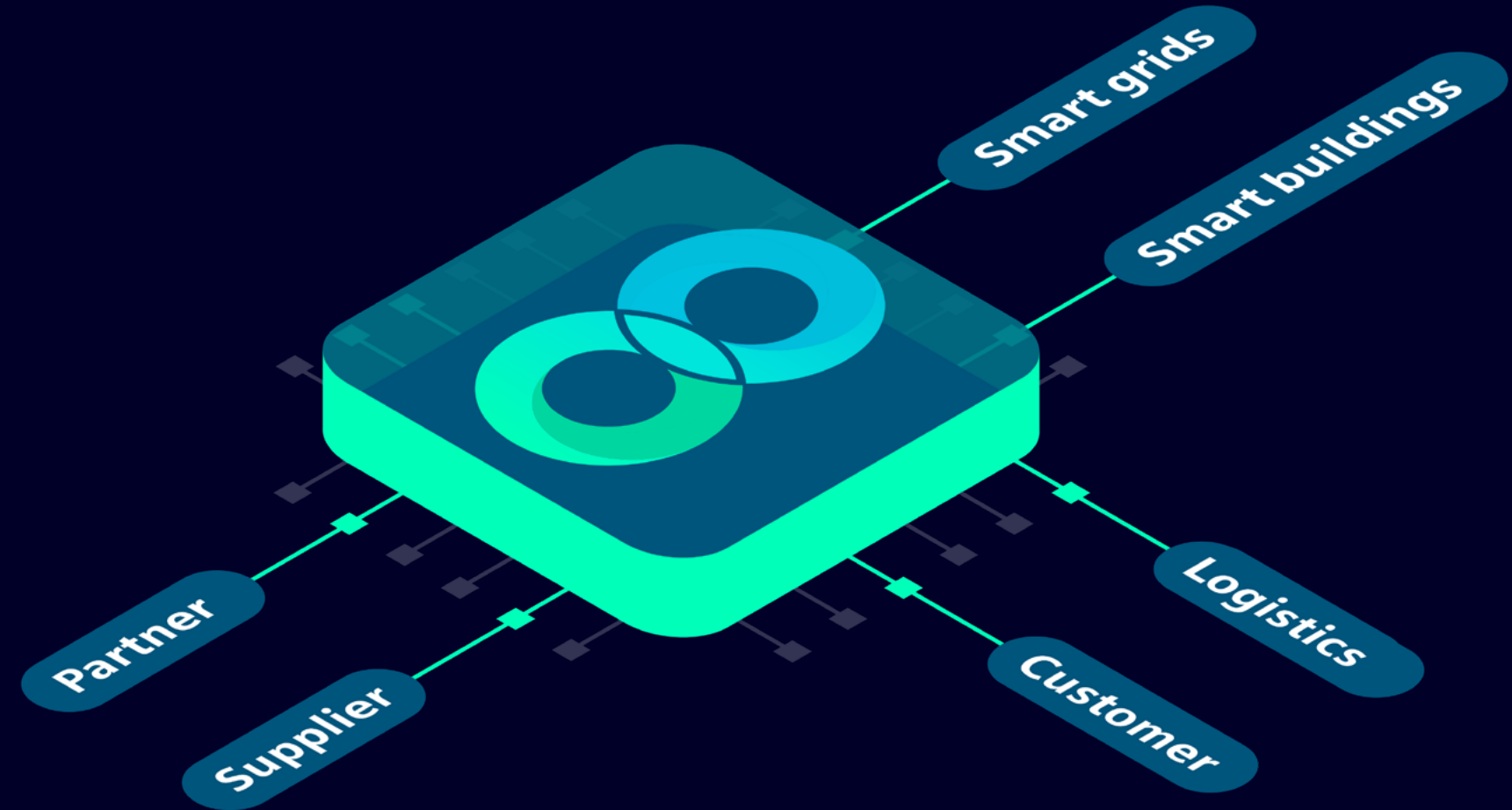
Digital Enterprise Services – **passionate about tomorrow**

In our world, your plant is more than just a plant. It's part of your success story. Just like digitalization. And so are your sustainability goals. Our team of service experts makes your goals their own. By providing innovative services throughout your production and product lifecycle, we help you increase your impact on your market and customers. Let's make our mark on tomorrow.

Learn more about Digital Enterprise Services

SIEMENS XCELERATOR

Become a sustainable Digital Enterprise faster with **Siemens Xcelerator**

Siemens Xcelerator is our easily accessible, flexible, and open digital business platform. It enables rapid progress across the product and production lifecycle and the supply chain. The ability to design, manufacture and deliver products faster translates directly into competitive advantage. It helps reduce time to market through accelerated product design, accelerated innovation cycles (first-mover advantage), efficient manufacturing, and on-time delivery. Saving time also means saving energy and valuable resources.

By deploying Siemens Xcelerator as a service (SaaS) and increasingly adopting a cloud-first approach, we are democratizing the technology and making it available to all companies – regardless of size. This new level of flexibility and speed means lower IT costs, personalized and modular solutions, easier and more secure access, and scalability.

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Accelerate your transformation into
a true Digital Enterprise

Building blocks

Portfolio

A comprehensive, curated portfolio that includes digital and IoT-enabled offerings from Siemens and certified partners

Ecosystem

A continuously growing, powerful ecosystem of partners

Marketplace

An evolving marketplace to explore, educate, exchange, and transact alongside a community of customers, partners, and experts

Successfully mastering the digital transformation is a prerequisite for paving the way to the Industrial Metaverse, which will enable us to accelerate innovation and take collaboration along the entire value chain to a completely new level.

Siemens Xcelerator offers everything companies need to become a sustainable Digital Enterprise and reach for the future of industry."

**Cedrik Neike –
CEO Siemens Digital Industries**

Siemens Xcelerator helps you in three ways:

1. Identify your specific needs to understand your business problems

2. Deliver modular solutions to solve your business problems

3. Lets you take control by opening our platform of capabilities

Managing
growing complexity

With Siemens Xcelerator, we help our customers manage the growing complexity by enabling rapid advancements across the product and production lifecycles. The capability to design, manufacture, and deliver products faster translates directly into a competitive advantage and enables to do less with more:

- **Time to Market:** Speed in transformation enables faster product design, accelerated innovation cycles (first-mover advantage), effective manufacturing, and on-time delivery. Saving time also means saving energy and valuable resources.

- **Agility and Adaptability:** Rapid digital transformation allows companies to quickly adapt to changes in customer preferences, market trends, technological advancements, and to meet compliance and sustainability requirements.

- **Flexibility and Speed:** By driving Siemens Xcelerator as a service (SaaS) and increasingly driving a cloud-first approach, we are democratizing technology and making it available to all companies – regardless of their size. This means lower IT costs, personalized and modular solutions, easier and secure access and scalability.

- **Risk Mitigation:** Faster testing and validation of ideas reduce the risk of investing in unsuitable products and production.

- **Resilience:** Creating transparency and traceability along supply chains increases plannability and resilience while building trust between companies, suppliers, and end customers. This also means being able to adapt to gradual but significant change as well as sudden disruptions.

INDUSTRIAL OPERATIONS X

From automated to
adaptive production

Our steadily growing, interoperable portfolio Industrial Operations X is part of Siemens Xcelerator. With this, we are taking the next logical step to consistently bring IT capabilities and proven methods from software operations to the shop floor. This makes the Siemens Xcelerator promise real in the production and automation world.

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Faster ideation and implementation

Integrate IT methodologies like the ability to deploy functionalities wherever needed and increase openness to any communication standards, protocols and APIs.

Intuitive interdisciplinary collaboration

Reinforce your workforce with IT-minded engineers and foster a creative co-creation environment between OT and IT departments with parallel, interdisciplinary workflows.

Improved operations decision making

By bringing together IT and OT data, new patterns emerge and reveal new insights that enable data-driven operational decisions in near real-time.
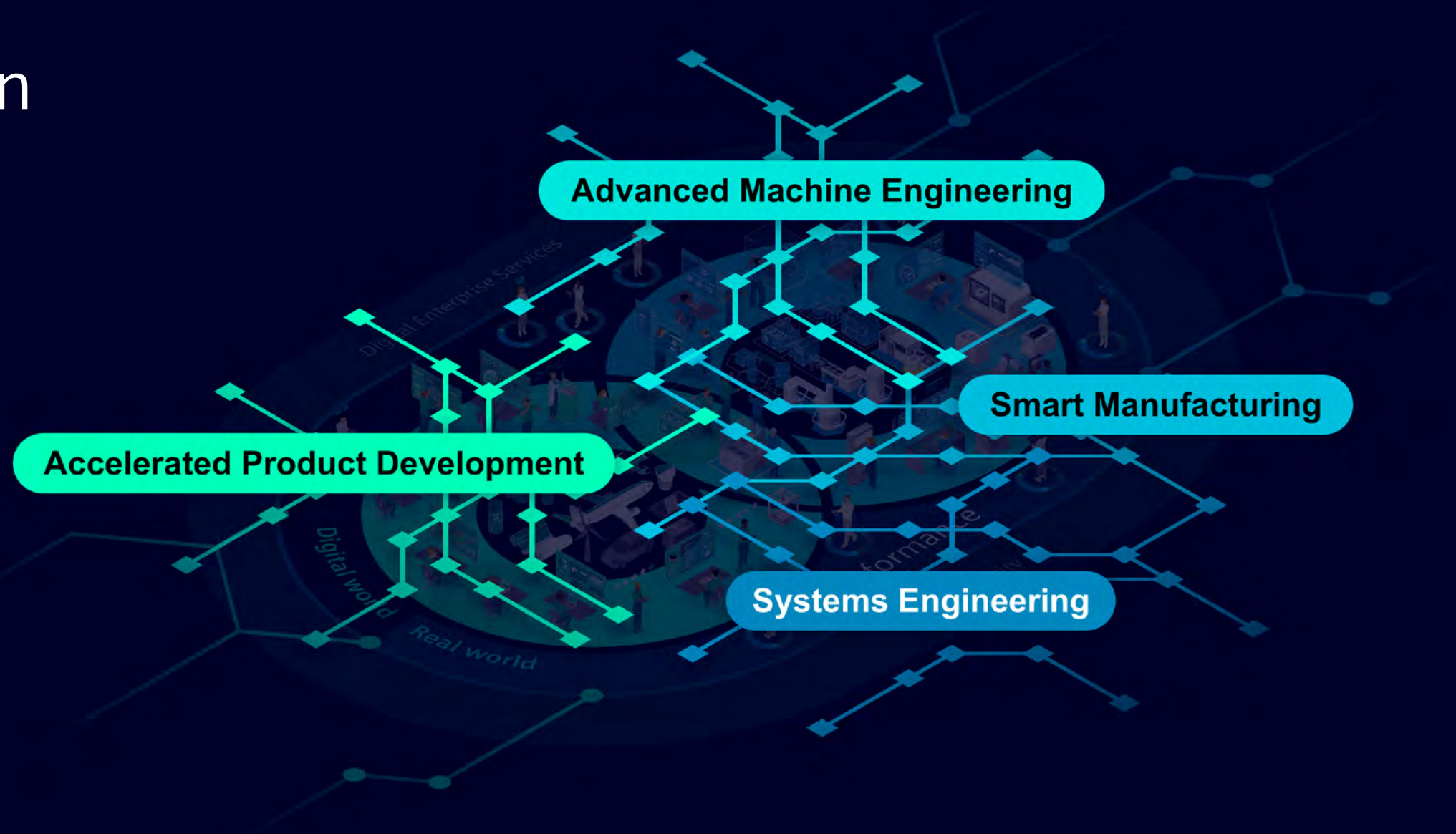
Easier scaling of operations

Seamlessly scale computing resources on demand and flexibly exchange software modules during operations to quickly respond to changing requirements.

Manage complexity
with a holistic digitalization approach

By combining the real and digital worlds and stream-lining industrial processes with Digital Threads, Siemens Xcelerator allows businesses to accelerate the digital transformation and therefore gain competitive advan-tages in a dynamic market. Digital Threads are linked and traceable sequences of specific digitalized business workflows.

In a Digital Enterprise, Digital Threads refer to the inter-connected and integrated flow of data across the entire product and production lifecycle. With this holistic and end-to-end approach to digital transformation, we help our customers realize their sustainable Digital Enterprise faster and transform their everyday business.

Unique portfolio
to enable the Digital Enterprise

As our own customer zero, we understand the importance of becoming more flexible and productive. We are able to offer best-in-class technologies and proven solutions, which we use in our own factories. Three of them have been recognized by the World Economic Forum (WEF) as the World's Lighthouse Factory. As an innovation leader, we are continuously advancing and integrating further technologies such as artificial intelligence, edge computing, cloud computing, industrial 5G, blockchain, and additive manufacturing into our portfolio to help our customers accelerate their transformation.
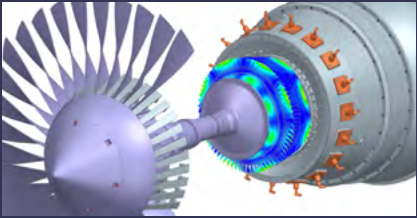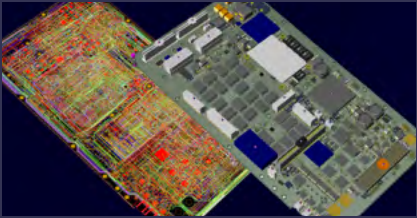
The Digital Twin for Products

Design Software
Simulation Software

Design, simulate, and perfect products in the virtual world
NX CAD/CAM, Simcenter

Simulate the product's mechanical performance
Simcenter

Develop integrated electrical and electronic systems
Capital, Xpedition

Improve design, engineering and manufacturing with next-gen machine design
NX CAD

Develop, simulate, validate, and manage embedded software
Polarion ALM

Consistent, end-to-end data models for the entire lifecycle
gPROMS, Teamcenter
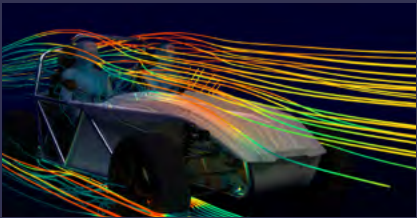
Engineer innovation with CFD-focused multiphysics simulation
Simcenter

Optimize system performance
Simcenter

Fully explore the design space
Simcenter

Machine process planning and validation
NX

Easy evaluation of different machine concepts
NX Mechatronics Concept Designer

Interdisciplinary engineering – from mechanical and electrical to automation
TIA Portal and Teamcenter

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The Digital Twin for Products

Design Software
Simulation Software

Shorter machine commissioning and higher flexibility in engineering
Create MyVirtual Machine with SINUMERIK ONE

Test faster, smarter and earlier
Simcenter

Faster machine design and engineering with Digital Twins of SINAMICS drives
SINAMICS DriveSim Basic & Advanced

Validate ADAS through physics-based simulation
Simcenter

A virtual car on every engineer's desk
PAVE360 Platform

The Digital Twin for Production

Digital Production Planning and Engineering
Simulation Software
Manufacturing Engineering Software
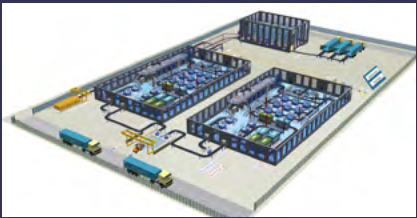**Automation Engineering**

Integrate the planning and validation of part manufacturing and product assembly plans and processes
Teamcenter Easy Plan

Conduct guided, 3D planning and detailing for body-in-white assembly processes and equipment
Assembly Line Planner

Program, simulate and validate human tasks, robotics processes and automation equipment
Tecnomatix
Process Simulate

Model, simulate and optimize production system processes, material flow and logistics
Tecnomatix
Plant Simulaton

Integrated plant management over the entire lifecycle – from engineering to operation
COMOS

Virtual commissioning and operator training
SIMIT

Adapt your plant fast and efficiently to new processes and demands
Modular production with
Module Type Package

Configure digital layouts to optimize factory space and maximize capital resource utilization
Line Designer

Efficient plant operation and engineering with a fully web-based process control system
SIMATIC PCS neo

The Digital Twin for Production

Digital Production Planning and Engineering
Simulation Software
Manufacturing Engineering Software
Automation Engineering
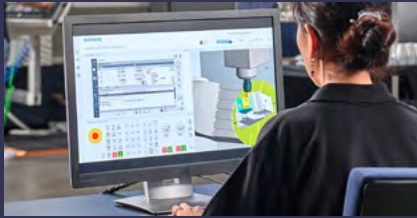
Shorten job preparation and higher productivity
SINUMERIK ONE with Run MyVirtual Machine

Program and simulate CNC machines, robots, 3D printers, and quality control equipment
NX for manufacturing

Take your maintenance management to the next level
COMOS Mobile Worker

IT-like engineering with SIMATIC AX
TIA Portal, SIMATIC AX

Virtual commissioning of SINAMICS drives
SINAMICS DriveSim Advanced

Efficient engineering in automation
TIA Portal V19

Immersive 3D virtual reality and field operator training
COMOS Walkinside

Digital companion for maintenance
SIMATIC eaSie

Real product, production, and Digital Twin of Performance

Automation
Motors and Drives
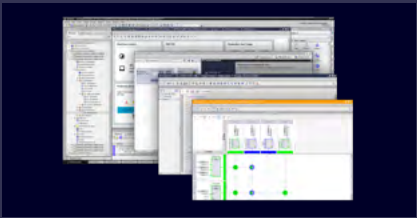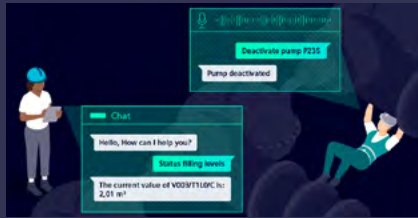**Industrial Communication**
Motion Control
Digital Services

The leading automation concept for absolute consistency from the field level to the enterprise level
Totally Integrated Automation ↗

Harmonize manufacturing operations (MOM) with a holistic software portfolio
Opcenter ↗

Integrated security for comprehensive protection at all levels
Cybersecurity for industry ↗

Benefit from a powerful base for all current and future IIoT applications
Digital Connectivity for Industry ↗

Modern learning culture focusing on the needs of learners and the demands of innovative companies.
SITRAIN – Digital Industry Academy ↗

Successful plant operation today and tomorrow
Process Control ↗

Measuring everything that matters
Process Instrumentation ↗

Make your shop floor more agile
MACHINUM apps for machine protection ↗

Faster machining and higher tool lifetime
MACHINUM apps for machining process optimization ↗

Minimize maintenance costs in CNC production
MACHINUM apps for service and maintenance ↗

Set up the right connectivity for your plant components and systems
Engineering and Integration Services ↗

Integration of IT and OT as the key for digital transformation
Industrial Edge, SIMATIC Controller, SCADA ↗

Seeing what matters, in a brilliant way
SIMATIC HMI Unified Panels ↗

Real product, production, and Digital Twin of Performance

Automation
Motors and Drives
Industrial Communication
Motion Control
Digital Services

Get started immediately with LiveTwin, Performance Insight and Notifier, without having to program it yourself
Industrial Edge and Industrial Edge Apps ↗

Best individual preparation for the digital transformation
Digital transformation consulting ↗

Low-code application development platform
Mendix ↗

Reach for operational excellence
Digital applications and services for the process industries ↗

Bring process knowledge to plant operations with digital applications
gDAP ↗
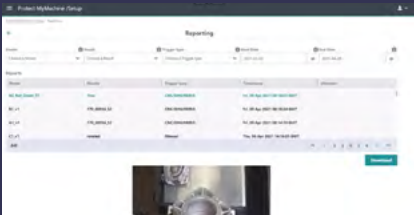
Quality improvement of workpieces and machine condition monitoring
MACHINUM apps for quality management ↗

Turn data into actionable information
XHQ ↗

Visualization and optimization of energy consumption
SIMATIC Energy Suite ↗

Turn your digital assets into qualification
Virtual Training Solutions ↗

Manage and reduce emissions along the entire value chain
SiGREEN ↗

From automated to adaptive production
Industrial Operations X ↗

State-of-the-art technologies and algorithms to unleash efficiency potential
Analytics and Artificial Intelligence Services ↗

Integrate artificial intelligence into shop floor operations
SIMATIC S7-1500 TM NPU ↗

Drive data analytics for energy efficiency and performance optimization
Analyze MyDrives on Industrial Edge ↗

Why Siemens?

Our unique ability to solve our customers' business needs is based on **thought leadership approaches and tailored solutions**. We have proven this ability over our long history with deep industry domain expertise. Proven means: For more than 175 years, we have created referenced use cases from customers across industries where we are the supplier of choice.

Today, **we are #1 in automation and industrial software** – our installed base already provides the technological foundation and data flows that companies need for their digital transformation, and we'll continue to shape the future by expanding complementary solutions with our partners.

Recognized by leading industry analysts, we are **the only company to offer an end-to-end solution** that seamlessly integrates and digitalizes the entire product and production lifecycle, enabling a seamless data flow across the entire value chain – from design to realization to optimization.

As a leader in industrial software and automation, we have spent the last 20 years building an **integrated portfolio that combines the real and digital worlds** better than anyone else and that enables our customers to become a true Digital Enterprise. We continue to do so with Industrial Operations X and the Industrial Metaverse.

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Why we can keep this promise

Integrated insights from our own 120+ factories worldwide

At Siemens, we walk the talk. We are a manufacturer, and we equip our plants with our latest automation and digitalization solutions. Our customers benefit from the expertise we gain from our collaboration with other customers, as well as from what we prove every day in our own business. That is why we open our factories to visitors and show them what we have achieved and how.

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

|← ← → →|

13x productivity increase since the start of production in 1990

>120 variations built per day ~1 product per second

~350 changeovers per day to handle 1,200 different products

99.9999% perfect quality – every day

Siemens Electronics Manufacturing Plant Amberg, Germany

~25% productivity increase through office digitalization over the last 4 years

>160 product ramp-ups / year

>22,000 living products / variants

99.9985% perfect quality for complex products every day

Siemens Manufacturing Karlsruhe, Germany

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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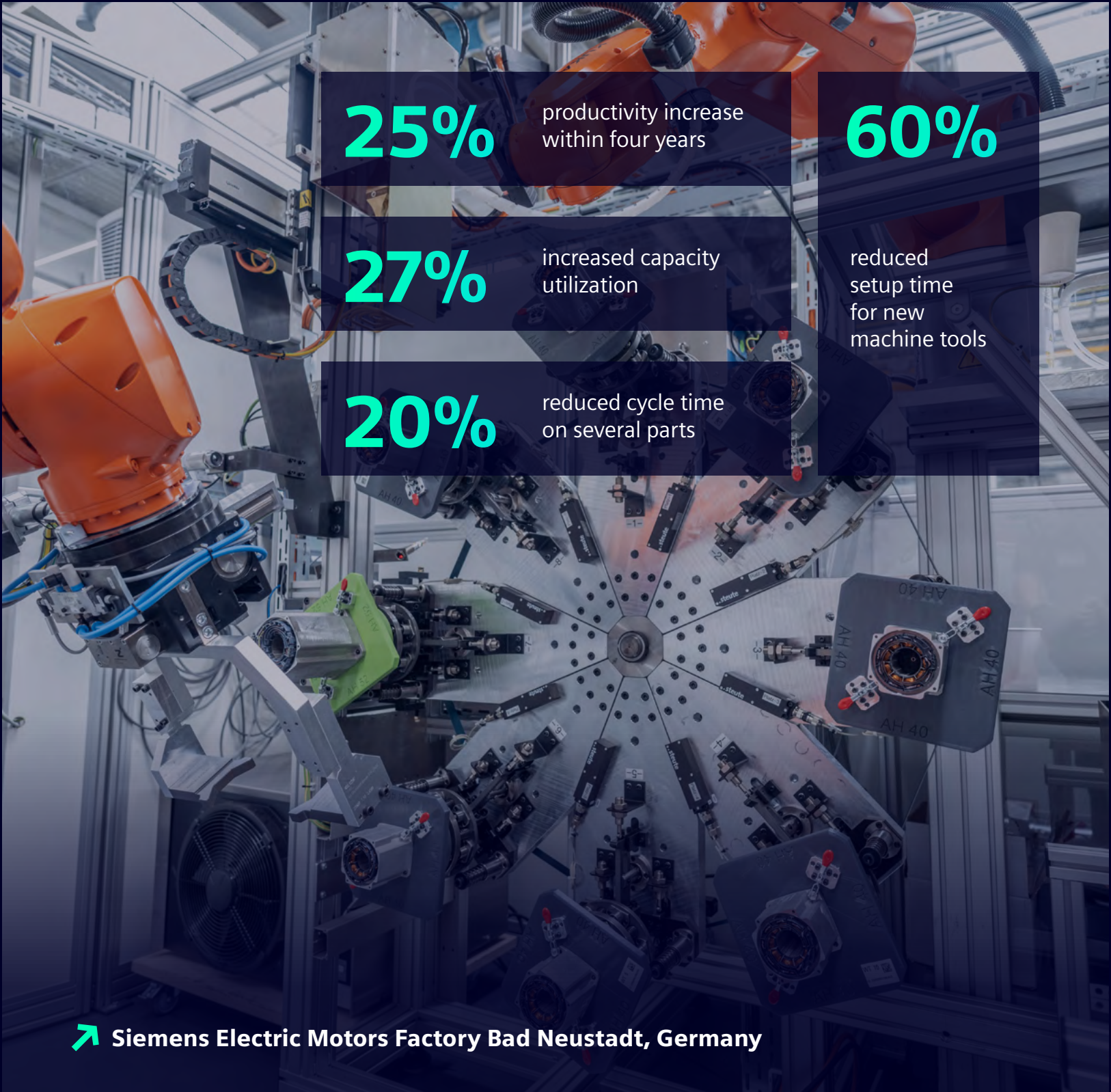
>5% productivity increase per year

25→7 days reduction of delivery time

25% productivity increase through office digitalization over the last 4 years

99.9994% perfect quality – every day

↗ **Siemens Electronic Factory Erlangen, Germany**

25% productivity increase within four years

60% reduced setup time for new machine tools

27% increased capacity utilization

20% reduced cycle time on several parts

↗ **Siemens Electric Motors Factory Bad Neustadt, Germany**

Visit one of our
Digital Enterprise Experience Centers

Experience the Digital Enterprise up close:
We invite you to get a closer look at the unique combination of automation and software.

Discover what makes a true Digital Enterprise in our showrooms for digitalization and automation technologies at more than 40 sites around the world: In virtual and real tours, visitors to the Digital Enterprise Experience Centers witness the combination of the real and the digital worlds at first hand.

Make an appointment to visit a Digital Enterprise Experience Center (DEX) in your region:

↗ **Learn more**

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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Siemens Financial Services –
Financing the digital transformation

Industry has to do more with less. But how do you rationalize the cost of new technology and equipment?

Siemens Financial Services (SFS) offers a broad range of smart financing solutions to enable a successful digital transformation. Based on our unique combination of technological expertise and financial know-how we provide a diverse set of financing solutions enabling investments in future-proof technologies in key areas like automation, digitalization, and sustainability.

↗ **Learn more**

Equipment and Technology Plan

An affordable way to benefit from the use of the latest technology

- Pay as you use new equipment and technology
- Existing credit lines remain untouched
- Simple and easy to use

Retrofit Finance Plan

A smart way of financing technology updates

- Pay as you benefit from updated technology
- Regular affordable payments
- Industrial expertise

Corporate Lending

Pay-per-use: payments aligned with production rates

- Flexible, usage-based payments
- Planning certainty from payments aligned to actual usage
- Simple and easy to use

Vendor Finance
(for OEMs, distributors, and resellers sales)

Give your customers the best-fit solutions with finance built in

- Differentiate and add value
- Better meet customer needs
- Expert guidance from Siemens

Extended Payment Terms

Flexible financing with longer payment terms

- Exclusively for Siemens' channel partners and customers
- Extend payment terms up to 180 days with flexible payment options
- Simple and easy to use

Equity Finance

Unlocking the value of infrastructure investment

- Broad range of equity investment solutions
- Beyond capital: access to strong networks and ecosystems
- Experienced global investor across multiple industrial sectors

Project Finance

Funding for complex and capital-intensive infrastructure projects

- Debt finance solutions for public or private sector projects
- Leverage growth opportunities and boost competitiveness
- In-depth experience in industry, financing and risk management

Finance Advisory

High class solutions for sales-related financing needs

- Tailored advisory services for financing solutions from a single source
- Support of early-stage projects, including financial market background checks
- Risk mitigation concepts

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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Specific solutions
combined with deep domain know-how for all industries

Each company has specific needs and requests that should be acknowledged. With our established and comprehensive knowledge of markets, we can offer our customers the best and most appropriate products, solutions and services that can be used effectively and efficiently in their businesses.

Discover success stories from our customers across a wide range of industries.

Cranes

Glass

Aerospace

Solar

Oil and Gas

Water and Wastewater

Food and Beverage

Automotive

Pharma-ceuticals

Semiconductor

Intralogistics

Electronics

Chemicals

Machine Building

Paper and Metals

Tire

Batteries

Wind

SIEMENS

50% less energy per product

25% less total energy consumption

Siemens Electronics Factory Erlangen

How to stay competitive as a sustainable Digital Enterprise

Customer challenge

- Produce medium-volume products with high variance in a cost-effective and sustainable way

- Reduce energy and resource consumption to become net-zero by 2030

Solution

- Transformation into a sustainable Digital Enterprise

- Use of key technologies like Digital Twins, Artificial Intelligence, IT/OT convergence, and the Industrial Metaverse

Customer benefit

- 40% shorter time to market through Digital Twins

- 50% reduction in carbon footprint through data analysis

- 60% increase in quality with AI-based solutions
- 50% more production through digital lean methods
- 40% less material circulation through simulations

↗ **Discover the whole story**

Natilus

Transforming air freight with sustainable innovation

50%
reduced fuel consumption

1.5x
more cargo capacity
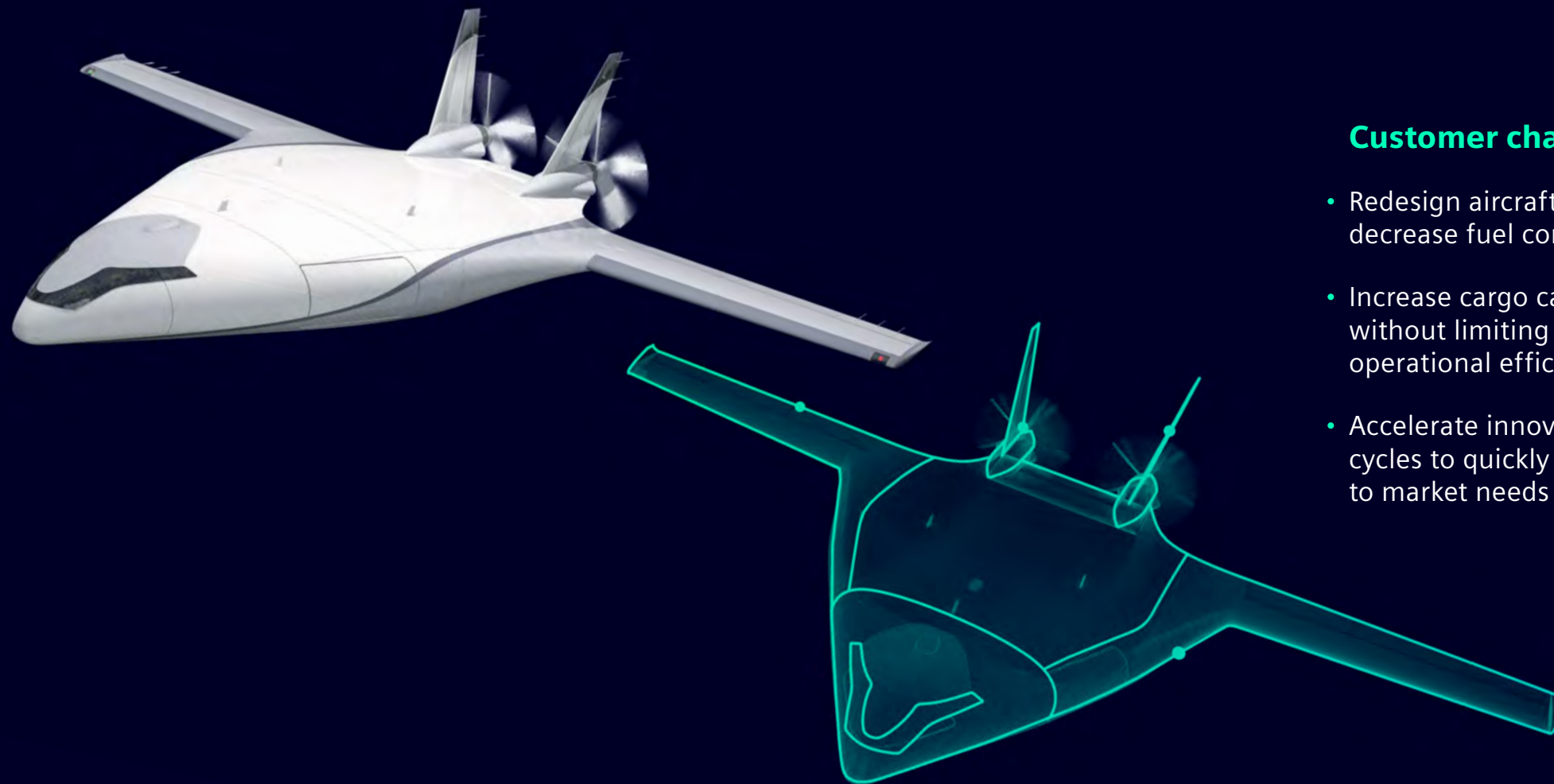
Customer challenge

- Redesign aircrafts to decrease fuel consumption

- Increase cargo capacity without limiting operational efficiency

- Accelerate innovation cycles to quickly adapt to market needs

Solution

- Implement blended-wing body design to increase cargo capacity and reduce fuel consumption

- Advance digital tools to accelerate aircraft development and enable faster market entry

- Enable real-time, scalable digital twin to improve design and collaboration

Customer benefit

- 50% reduction in fuel consumption

- 1.5x more cargo capacity

- 50% faster time-to-market

- Enhanced team collaboration and customer engagement

↗ **Discover the whole story**

BASF

Staying competitive with the Digital Twin

Customer challenge

- The BASF headquarter in Ludwigshafen is the world's largest chemical production site

- Political turmoil, climate change and disruptions in the energy market and supply chains are impacting the chemical industry more than most other industries

- BASF saw the need to constantly adapt their plant to changing conditions

Solution

- Integration of data from the BASF complex to ensure a universal flow of data over the entire lifecycle of BASF's facilities

- SIMATIC PCS7, COMOS and SIMIT were used to create the plant's Digital Twin

- Combination of the plant's data with a digital simulation to create a real-time virtual plant on which to test optimization ideas

Customer benefit

- Shorter development times thanks to the Digital Twin

- Design and testing of processes virtually before using them with valuable raw materials in a real production plant

- Faster implementation of optimization measures through digitalized work processes

↗ **Discover the whole story**

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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Lenzing AG

Digital Twin empowers a circular economy in fiber production

Customer challenge

- Lenzing continuously develops innovative technologies for the production of sustainable products, for example its TENCEL™ lyocell and modal fibers

- Lenzing aims to unlock capacity and further streamline its operations

Solution

- Extensive use of software such as COMOS for process plant engineering and SIMIT for simulation of automation functions laid the foundation for the Digital Twin and reduced engineering times

- AI made old legacy plant design documents – such as P&IDs – intelligent and finally usable as the basis for modernization and expansion projects

Customer benefit

- Lenzing has expanded production capacities and identified inefficiencies

- Higher output and enhanced sustainability

- Contribution to a sustainable circular economy by enhancing efficiency, reducing waste, and supporting long-term environmental goals

↗ **Discover the whole story**

Lenzing
Innovative by nature

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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DMG MORI

40%
faster ramp-up times

75%
Less unproductive machine times

The first end-to-end Digital Twin of a machine tool on Siemens Xcelerator Marketplace

Customer challenge

- DMG MORI customers demand higher productivity

- Unproductive tasks must be moved from the machine to the virtual world

Solution

- Based on the Digital Native CNC SINUMERIK ONE, the solution includes the digital twin of the control, the customer specific DMG MORI machine tool, and the workpiece

- The open digital business platform Siemens Xcelerator creates a power-ful ecosystem of partners and provides a marketplace where DMG MORI offers its end-to-end Digital Twin of a machine tool

Customer benefit

- The Digital Twin helps eliminate programming errors that cause scrap and damage to the real machine

- Enables up to 40 percent faster production ramp-up and significantly reduces the energy consumption of the real machine

- Unproductive machine time is reduced by up to 75 percent

↗ **Discover the whole story**

Vertical farming is flourishing thanks to digitalization

95% less water used than in traditional farming

300x as much food grown per square foot

Customer challenge

- Demand for healthy, locally grown food is increasing

- 80 Acres Farms developed a solution for fully automated, indoor vertical farming

- Industrialization and scale-up requires crop management software, algorithms, environmental controls, robotics, and automation

Solution

- Smart power distribution equipment and building management help monitor fire and life safety and security

- Advanced industrial automation tech and edge devices for automation and monitoring

- Siemens and 80 Acres Farms are collaborating on a Digital Twin that simulates the plant growth and the production process

Customer benefit

- Plants get the perfect amount of light, energy, carbon dioxide, nutrients, air, temperature, and humidity

- Plants are 100% pesticide-free and are produced with less CO_2 emissions

- 17 to 20 more growing cycles per year result in significantly higher yields than traditional agriculture

↗ **Discover the whole story**

35%

faster customer inquiry process

20% higher machine utilization

How digitalization helps SKF to stay one step ahead of the competition

Customer challenge

- SKF has identified digitalization as an important lever to increase competitiveness

- The quest for greater production flexibility, development speed, improved efficiency, cost reduction, and the pursuit of consistently high product quality

- Customers demand improved traceability and control of the product throughout the value chain

Solution

- SKF and Siemens jointly developed and implemented a digitalization strategy

- Vertical integration connects the shop floor and the top floor

- Inspired by the Siemens electric motor plant in Bad Neustadt, Germany, where Siemens uses its own digital tools in its own plant to create a seamless manufacturing process

Customer benefit

- Improved connectivity and transparency, traceability, and development of new business models

- Higher quality, greater efficiency, and new improved services for SKF's customers

- By using the machines more efficiently, SKF was able to improve the quality and reduce the scrap rate

↗ **Discover the whole story**

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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25%
productivity increase within four years

27%
increased capacity utilization

Siemens Elektromotorenwerk Bad Neustadt

Digitalization makes an existing factory more competitive

Customer challenge

- The electric motor factory started its digital transformation to better meet customer requirements

- The goals were short and reliable delivery times, greater flexibility, and more sustainable production

- The existing factory needed to be digitalized, including old machines without connectivity

Solution

- The digital transformation of the Bad Neustadt plant is based on use cases that were primarily driven by the production staff

- Connectivity solutions ensure that relevant data from the machines is captured, understood and evaluated

- Digital Twins of machines, artificial intelligence, and collaboration beyond company borders

Customer benefit

- IT/OT integration creates added value through data refinement and condition monitoring increases plant availability

- Maximum flexibility for 35,000 motor variants thanks to Digital Twins

- Greater energy efficiency through optimization reduces costs and boosts sustainability

↗ **Discover the whole story**

10%

reduced energy consumption

250

data points for different types of energy

Driving towards energy efficiency and sustainability

Customer challenge

- The automotive supplier Faurecia has launched a pilot project to reduce energy costs at its Almussafes plant in Valencia, Spain

- Focus on productivity in combination with sustainability and decarbonization

- Lack of transparency and energy consumption, e.g., fluid consumption

Solution

- The joint scoping workshop between Faurecia and Siemens resulted in an energy map

- By linking 250 energy data points using SIMATIC Energy Manager PRO and automation hardware, Faurecia captured and analyzed valuable data

- Notification of supervisors via SMS when machines consume energy while not producing

Customer benefit

- Transparency gain for better understanding to analyze and make decisions on various aspects

- Quick wins enabled by transparency on energy data, e.g., chilling units can be disconnected if they are no longer needed

- Plans to implement the solution in other countries such as Poland, the Czech Republic, and the United States

↗ **Discover the whole story**

ElringKlinger

Smart energy management for maximum sustainability

100%
carbon neutral
in Europe
in 2025

100%
scalability
to all plants
worldwide

Customer challenge

- The automotive supplier ElringKlinger has recognized the urgency of rising energy prices and scarce resources

- The company aims to achieve CO_2-neutral production in Europe by 2025 and in the USA and Asia by 2030

- This implies mapping the entire carbon footprint of all products in all plants worldwide

Solution

- Siemens designed ElringKlinger's digital transformation in a collaborative approach

- Standardization reduces the complexity of the overall plant architecture and simplifies the integration of machines and systems

- Implementation of a uniform energy management system thanks to the extensive standardization of its plants

Customer benefit

- Reduction of engineering and commissioning times, as well as time to market

- Emission monitoring determines the Product Carbon Footprint and thereby creates all the conditions for minimizing this footprint

- ElringKlinger produces its own energy that is integrated into balancing load management, which in turn reduces costs

↗ **Discover the whole story**

Hugo Beck

A sustainable packaging machine thanks to the Digital Twin

50%

shorter
commissioning
time

20%

less
energy
consumption

Customer challenge

- Hugo Beck's goal was to meet individual customer requirements with regard to the performance and sustainability of packaging solutions

- Focus on e-commerce and mail order

- The project had to stick to the schedule and budget, given the global competition from cost-effective machine manufacturers

Solution

- Hugo Beck used almost the entire automation and digitalization portfolio from Siemens

- The machine was simulated and optimized before construction, and could then be directly connected to ERP or MES systems

- Optional remote monitoring maintenance

Customer benefit

- Hugo Beck cooperated with Siemens, other partners and suppliers to halve the commissioning time

- Reduced energy consumption by up to 20%, packaging material by up to 30%, and packaging volume by 10%

- Replaced plastic film with more easily recyclable paper

↗ **Discover the whole story**

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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Unlimited Tomorrow

Digital Twin enables a revolution in prosthetics

90% cheaper than traditional prostheses

75% less weight than traditional prostheses

Customer challenge

- The startup's mission is to make affordable, lightweight, high-quality prostheses for children and adults

- Unlimited Tomorrow prioritizes remote care, requiring the prosthesis to seamlessly align with the individual's residual limb

Solution

- A scanning application creates a digital model of the limb to ensure a proper fit

- Siemens NX makes it possible to design and manufacture a customized socket for each prosthesis

- Additive manufacturing is used to 3D print the prosthesis with precise geometry and a realistic finish

Customer benefit

- Prosthesis for $8,000 instead of $80,000

- One pound weight instead of four pounds

- Delivery times of a few weeks instead of up to a year

↗ **Discover the whole story**

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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XIAO GUAN CHA

Traditional tea factory turns into a Digital Enterprise

90%
of manufacturing is automated

243
pieces of automation equipment

Customer challenge

- Xiao Guan Tea aims to bring top-quality teas en masse onto the global market

- The company needs to maintain the highest quality and quickly respond to new circumstances

Solution

- Consulting from Siemens Digital Enterprise Services experts

- Digital integration of the product lifecycle, order delivery, digital factory life-cycle, and production lines

- Joint development of the manufacturing execution system (MES)

- Integration of IT and OT

Customer benefit

- 90% of the manufacturing process is automated thanks to 243 pieces of automation equipment and 46 intelligent robots

- AI-enabled robots remove impurities from the premium-grade leaves at the start of the filling line

- Automated filling, packaging and storing

↗ **Discover the whole story**

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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GSK

Stepping up the pace in vaccine development and production

Customer challenge

- The global healthcare company GSK is collaborating with Siemens and ATOS to digitalize its vaccine development and production process

- Their goal: accelerate the vaccine development process

Solution

- GSK, Siemens and ATOS have developed a proof-of-concept Digital Twin specifically for the development and manufacture of adjuvant technologies

- Digital Twins allow data collection to understand exactly what is happening in real time during production. With that information, they can optimize operations

Customer benefit

- Much shorter development times for vaccines, allowing them to reach people faster and with the optimum quality

- Monitoring of complex processes and prediction how changes would affect them

- Improved control of quality

↗ **Discover the whole story**

DIGITAL ENTERPRISE STORY   SUSTAINABILITY   DIGITAL ENTERPRISE IN DETAIL   SIEMENS XCELERATOR   PORTFOLIO   WHY SIEMENS   REFERENCES

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BioNTech

Paperless manufacturing accelerates vaccine production

Customer challenge

- To scale-up their COVID-19 vaccine manufacturing capacity, BioNTech has begun production in Marburg

- Switching from rigid to mobile production with many single-use components

Solution

- The Opcenter Execution Pharma solution from Siemens as the new MES enables completely paperless manufacturing and fully electronic batch recording

- The SIMATIC PCS 7 distributed control system steers and controls all the processes in the plant and takes digitalization to the field level

Customer benefit

- Seamlessly integrating automation solutions makes it possible to develop, optimize, and manage production processes automatically

- Electronic Batch Records (eBR) are made faster

- Testing is based on the principle of "review by exception"

↗ **Discover the whole story**
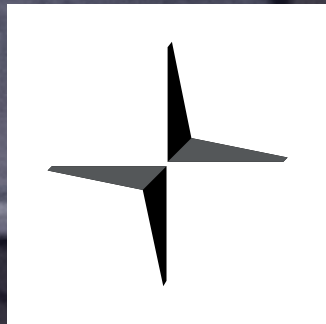
Polestar

Make safety for electric vehicles real

Customer challenge

- Safe maintenance, especially of high-voltage batteries, has become a challenge for several reasons

- Every technician working with batteries must be familiar with the entire procedure

Solution

- After a successful pilot with Virtual Training Solutions, the company was looking for a training solution on a global scale

- The solution provides a critical link in the chain of safety activities, clarifying which technician has what skills and is authorized to perform what service work

Customer benefit

- Standardization is a big help in achieving safety in maintenance

- Especially in battery maintenance, it is important to follow the defined sequence of activities to protect people and equipment

- The latest vehicle data and service procedures are available within seconds

↗ **Discover the whole story**

25%
shorter machining cycles

50% shorter setup times

Digital CAD/CAM/CNC chain expands capacity

Customer challenge

- Increasing part complexity and demand for the fast, cost-effective production of small batches

- Space constraints prevent the addition of new production capacity on site

Solution

- Programming all CNC machines using NX CAM, managing processes and data with Teamcenter Machine Resource Library, scheduling with Opcenter APS

- Tool and resource management with Mcenter (formerly SINUMERIK Integrate) and Manage MyResources

Customer benefit

- The digitally connected process improves collaboration and productivity

- Machining simulation during CNC programming eliminates errors

- Advanced toolpath technologies reduce machining time

↗ **Discover the whole story**

Contact

Cybersecurity information

In order to protect plants, systems, machines and networks against
cyber threats, it is necessary to implement – and continuously maintain –
a holistic, state-of-the-art industrial cybersecurity concept. Siemens'
products and solutions constitute one element of such a concept.
For more information about industrial cybersecurity, please visit

www.siemens.com/cybersecurity-industry

To stay informed about product updates as they occur, sign up for
a product-specific newsletter. For more information, visit

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