

THE INTELLIGENT ENTERPRISE FOR THE HIGH TECH INDUSTRY

Delivering unbounded innovation
and experiences with a
thoroughly trusted brand





“In 2025, platforms and subscription-based services will become the primary vehicle for high tech companies to monetize their intellectual property. The sale of single products or point applications will no longer drive commerce growth in this industry.”

Jeff Howell
Global Vice President
High Tech
SAP SE

WELCOME

It has become conventional wisdom that every company must “be a tech company” in today’s economy. This means every company must understand and adopt technology as part of a fundamental shift to digital processes, products, and services. Disruption today comes from players that have been able to identify an experience gap – an opportunity to create a new experience for their customers (such as technology as a service or smart and connected systems).

For tech companies, this disruption has meant an outsized impact on business and society and a new sense of responsibility for the thoughtful deployment of technology.

The past 10 years have been a period of unprecedented innovation, reimagining the way we communicate, the ease with which we buy products, how we travel, where we stay, and how we track our health, consume entertainment, and spend our time. It has also been one of unintended consequences and increased scrutiny of tech companies’ impact on society. Regulations and safeguards to protect data privacy, cross-border protection of intellectual property, and innovations for reducing and even eliminating waste from the high tech ecosystem are still in their infancy. These issues are a significant threat to brand loyalty and trust for some of the largest and most widely known technology companies.

As tech companies dominate the global economy and navigate the attention that comes with this domination, they must manage an evolving set of challenges, including customer experience and preference for a variety of consumption options, the need to scale faster than ever, the dominance of software over hardware, and the rise of policy to protect consumer privacy.

Going forward, winning companies will be those that are the most adaptable to this new dynamic.

They will build a trusted relationship through a single-minded focus on their customers to create amazing experiences.

They will embrace business model innovation, process optimization, and workforce productivity. And they will manage a delicate balance between deploying frontier technologies – artificial intelligence, Big Data analytics, blockchain, the Internet of Things (IoT), and edge and cloud computing – and thinking through their impact on society. Companies recognize adopting Industry 4.0 as a priority can turn some of these challenges into opportunities so that they can stay connected to customers and integrate partners.

We believe these technologies can be incorporated responsibly into business processes to increase efficiency, optimize use of resources, and create a more rewarding work experience for employees.

Tech companies can lead the way by demonstrating best practices that maintain this balance.

We have identified four strategic priorities that will keep tech companies on the path forward:

- Adopting a consumption-based business model
- Realizing an intelligent supply network
- Providing digital smart products
- Achieving customer intimacy

By 2025, the sale of single products or point applications will no longer drive commerce growth.

As high tech companies develop products that are smarter, connected, cross-compatible, and built on common standards, we expect scalable platforms to capture the high volume and velocity of data their products generate.

The transition comes with significant challenges. The most effective companies will be those that can fairly share revenue with partners, ensure accounting compliance, organize high volumes of customer sentiment data, ensure accurate record keeping of software entitlements, and secure the supply chain from intrusion and counterfeiters.

This is no small task.

This paper takes a deep dive into the trends shaping our industry over the next five years and the path forward. In it, we propose a set of priorities that will propel positive change and the tools that will make it possible.

The tech industry has been at the center of a massive shift in the relationship between business and society – one that has been a driver of progress and has also raised serious questions about some of its outcomes. Going forward, those companies that champion the responsible deployment of technology will build trust, accelerate their growth, and earn an enduring role in society’s ongoing transformation.

Sincerely yours,

Jeff Howell
Global Vice President
High Tech
SAP SE

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OUR PLACE IN THE NEW WORLD

Global “megathemes” are impacting the high tech industry and are providing new opportunities for growth.

- **Circular economy:** The necessity for a circular economy requires high tech companies to move from the traditional “take, make, waste” model toward a system that is more circular and sustainable.
- **Education and work:** The U.S. Bureau of Labor Statistics (BLS) 2019–2029 employment projections show that occupations in STEM fields are expected to grow 8% by 2029, compared with 3.7% for all occupations.¹ Millions of STEM jobs are projected to go unfilled in the near future. Talent management organizations are predicting over 3.5 million jobs will need to be filled by 2025.
- **Trusted products:** The need to trust high tech products requires the products to dynamically adapt to new laws and regulations concerning privacy and security.
- **Global supply chains:** High tech companies rely on multitier and multivendor supply chains that must exact trust through product compliance, responsible labor practices, and the assurance that components are not counterfeit and firmware is never compromised.



The high tech industry is being reshaped by four major trends.

- **Consumption preference:** High tech companies need to offer a hybrid of consumption options versus "one-and-done" offerings. For example, customers may want the option to lease, time share, subscribe, or use a pay-by-the-X model.
- **Time-to-volume rules:** Moore's law is slowing, forcing companies to compete on rapid market penetration. This requires the ability to ramp from zero to a million units profitably with little notice.
- **Software is king:** Hardware companies are expanding margins and avoiding commoditization of their hardware by embedding software in nearly every manufactured product.
- **Regulations and geopolitical activity:** Changes to accounting rules (International Financial Reporting Standards 15/16), privacy laws such as the General Data Protection Regulation in Europe, and rapid changes to policies (tariffs) impose increasing disruption on operational efficiency.

Companies capable of addressing global megathemes and industry challenges will

be among the winners in the next 10 years. Successful business model innovation, process optimization, workforce productivity, and a single-minded focus on the customer are directly linked to delivering great customer and employee experiences. In fact, research indicates that the best-performing companies are pulling away from the rest, widening the performance gap. They are doing this by creating a landscape where they deliver great experiences and are the most profitable because they successfully adopt new technologies and deliver winning products and services more efficiently.



Digital strategies are disruptive and changing the rules for high tech firms.

[SK Solutions](#) implemented a security solution based on SAP HANA® that uses 3D anticollision software. The solution uses sensors that deliver critical information in 3D images to a dashboard.

[Signify](#) helped to resolve smart city challenges by offering Smart pole. It is a platform for lighting and citywide 4G, 5G, and WiFi infrastructure and accommodates a wide variety of IoT sensors and cameras offering environmental monitoring and enhanced security options such as incident detection. With the SAP® Analytics Cloud solution and SAP HANA, municipalities get real-time insights.

[Xerox](#) meter reads were done manually, which resulted in being prone to a high error rate. Xerox and SAP's intelligent services team developed a smartphone application that reads meter data from multifunctional devices, takes an image of the device meter, and uploads the data and image to Xerox's back-end billing system on SAP Business Technology Platform for processing.

[Microsoft Corporation](#) launched the One Digital Supply Chain initiative to streamline the design-to-deliver direct spend processes for its hardware supply chain. SAP Ariba® solutions and the SAP Integrated Business Planning for Supply Chain solution helped the company build a demand-driven supply chain.



INDUSTRY VISION 2025

In 2025, platforms and subscription-based services will become the primary vehicle for high tech companies to monetize their intellectual property. The sale of single products or point applications will no longer drive commerce growth in this industry.

As high tech companies continue to improve customer intimacy by developing products that are smarter, connected, cross-compatible, and built on common standards, it will be a scalable platform that serves as the foundation to capture the high volume and velocity of data their products generate. Further, the platform will serve as the commerce hub for the ecosystem to provide additional products and services. These services will include traditional support, professional services, and software with the outcome of bringing the category of everything as a service (EaaS) to the forefront of revenue growth.

On one hand, the platform model provides a means to improve customer intimacy, create new revenue opportunities, and scale. On the other hand, this will create new complications to existing business processes, as most business processes currently in place were not developed to support the platform model. There will be challenges in sharing revenue accurately with partners in the ecosystem, ensuring accounting compliance, collecting and summarizing high volumes of customer sentiment data, ensuring accurate record keeping of software entitlements, negotiating with suppliers, and securing the supply chain from intrusion and counterfeiters. Industry 4.0 can help to reinvent production and the supply chain by using intelligent technologies, assets, and processes that dynamically adapt to changing priorities.

To alleviate these stressors on processes, the Intelligent Enterprise combines end-to-end processes from lead to order, plan to promise, license to renew, and outcome to cash on one scalable platform (see [Figure 1](#)).

To market and sell, all opportunities and order information are consolidated for better campaign management. This allows for more individualized quotes and higher win rates. Intelligent, responsive, and trusted supply networks will be the result when transforming planning and supply chain execution processes. As all high tech companies are evolving into EaaS business models, automated provisioning and entitlement management is crucial for repetitive revenue and high renewal rates. Forecasting and billing in an outcome-based business model are especially critical to maintain reliable margin planning and high profitability. These end-to-end processes are supported by overarching service offerings at each point of customer interaction.



75 billion

Internet of Things devices by the year 2025²

26%

Growth of the hyperscale data center market by 2022³

60%

Of the top manufacturers will rely on digital platforms that enhance their investments in ecosystems and experiences and support as much as 30% of their overall revenue by 2020⁴

US\$3.7 trillion

Value creation potential of manufacturers and suppliers implementing Industry 4.0 in 2025⁵

70%

Of G2000 companies will use AI to develop guidance and insights for risk-based operational decision-making by 2026, compared with less than 5% of the G2000 today⁶

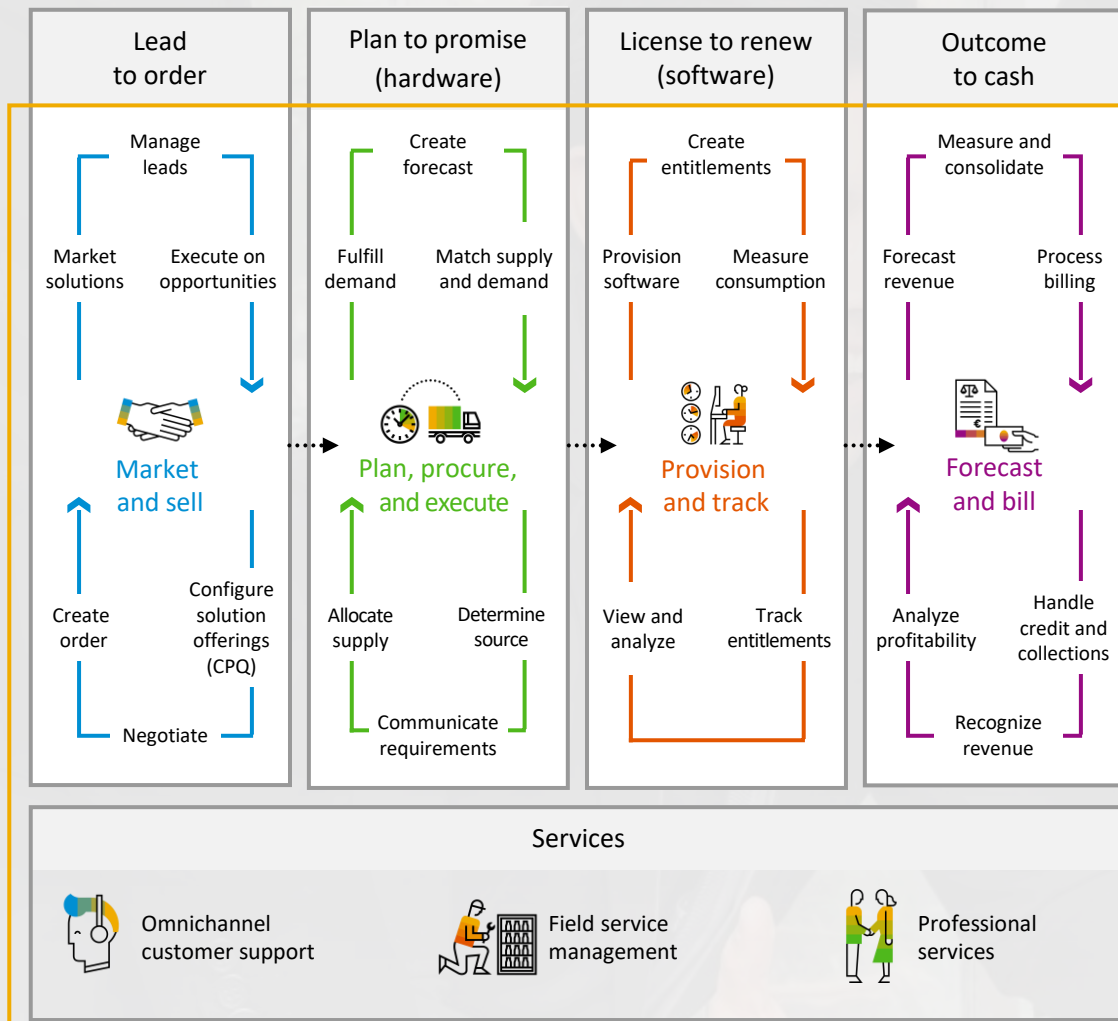
By 2022, industry ecosystems will see a

40%

 greater innovation rate

of new digital and physical products and services brought to market compared with traditional innovation approaches⁷

Figure 1: Vision 2025: End-to-End Process for High Tech





FOUR PRIORITIES FOR SUCCESS

We have identified four strategic priorities necessary for high tech companies to help them innovate products and services to build a trusted brand and deliver amazing experiences.



ADOPTING A CONSUMPTION-BASED BUSINESS MODEL



REALIZING AN INTELLIGENT SUPPLY NETWORK



PROVIDING DIGITAL SMART PRODUCTS



ACHIEVING CUSTOMER INTIMACY

ADOPTING A CONSUMPTION-BASED BUSINESS MODEL

Transform the business model to offer and deliver subscription and usage-based services to allow high tech customers the flexibility to pay for consumption.

Becoming an outcome provider requires a different business model – one where customers can pay for the outcome. As high tech companies realize this, they are increasingly acquiring, building, and joining platforms and ecosystems that are needed for the outcome economy to enable a “consortium” of business partners to provide the hardware, software, and services that deliver and measure what the customer is paying for – the outcome (see Figure 2).

The Vision

In 2025, high tech companies will be able to provide outcomes to their customers in a way that allows customers to subscribe to an outcome and only pay for quality results delivered as expected. For example, a hospital will no longer purchase a high tech MRI machine, data storage, software applications, consulting services, and so on from different vendors and have their own staff to run everything. Instead, they will pay the outcome provider for each image taken and analyzed.

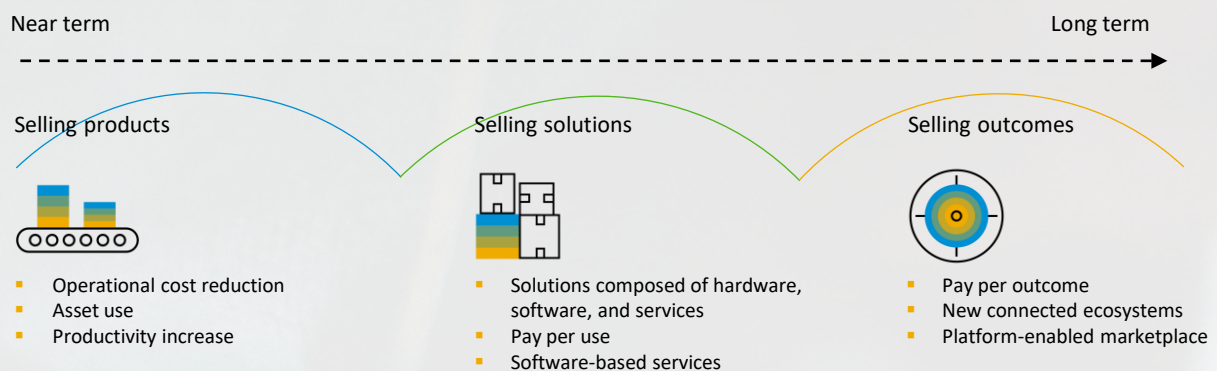
The Journey

High tech companies will start moving toward becoming outcome providers by first evolving into solution providers. This means they will provide their customers with bundled hardware, software, and services. Optimizing the collection of massive amounts of data from sensors will allow for speedy analysis to monitor the health of the solution.

Extending existing analytics capabilities will enable the use of this data to understand the value provided to the customer and start offering subscription models. In this phase, high tech companies – not their customers – start to carry the financial risk when an outcome is not provided.

High tech companies will transform their business model to enable a consortium of solution providers to provide hardware, software, and services for a desired outcome. This requires a partner ecosystem that can operate in one marketplace.

Figure 2: Transformation from Selling Products and Services to Selling Measurable Outcomes



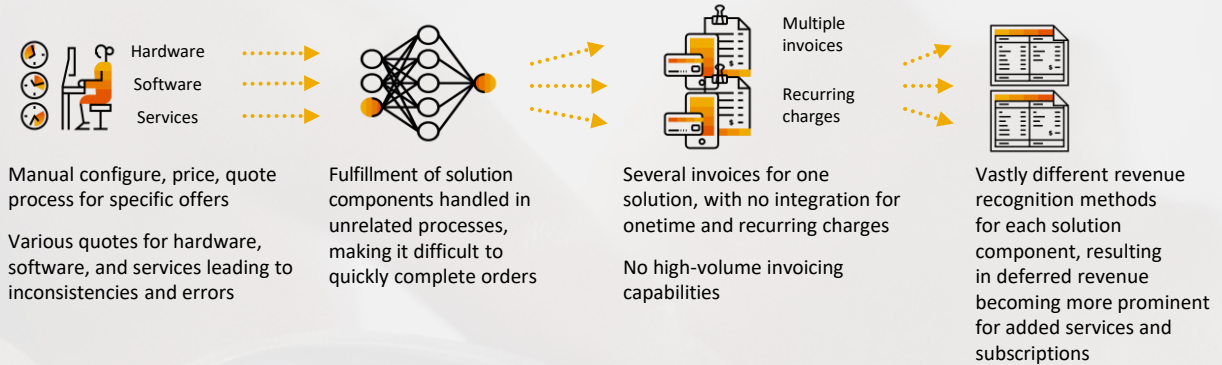
By 2024, 70% of companies will adopt an outcome-asset impact model by integrating at least five data sources to a system to obtain a 360-degree view of key enterprise assets and drive better performance.⁸

ADOPTING A CONSUMPTION-BASED BUSINESS MODEL

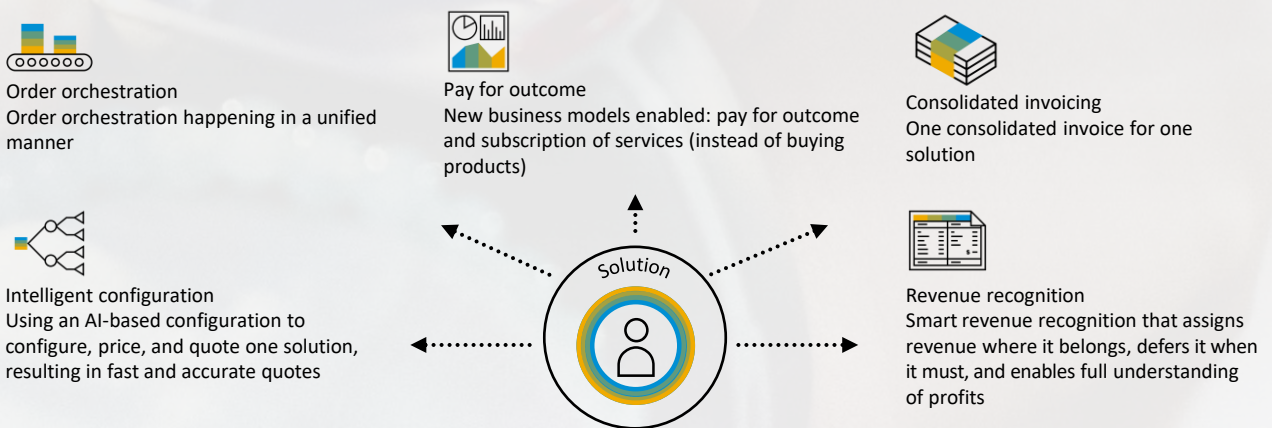
Reimagine the Quote-to-Cash Process

As high tech companies move from selling products to providing outcomes, the power of software becomes apparent. Coupled with the speed and scale of the Internet as well as extensive ecosystems of suppliers, software developers, startups, and other innovators, it enables the outcome-based economy and disrupts existing industries. To enable all partners to collaborate on the outcome, a platform must be provided that connects and aligns all partners. The platform enables them to configure, price, and quote together. It allows the consortium of providers to collect and analyze data from all participants – including customers – and ensures that outcome commitments are met, the proper bills are generated, and the collected revenue is assigned where it belongs.

TRADITIONAL SCENARIO



NEW-WORLD SCENARIO



TOP VALUE DRIVERS

Faster quote-to-order process when quotes are configured by an AI-based configurator

Fewer customer complaints when real-time order, billing, and invoicing is available

Source: SAP Performance Benchmarking

REALIZING AN INTELLIGENT SUPPLY NETWORK

When it comes to customer needs, one size does not fit all.

To survive in times where artificial intelligence, machine learning, and blockchain technologies massively shift supply chain tectonics, high tech companies must transform traditional, linear supply chain models into intelligent, trusted, and responsive supply and demand networks. High tech companies need to be in the position to orchestrate a global supply chain characterized by volatile demand, geopolitical risk, shorter product lifecycles, and aggressive competition to meet unique and shifting customer expectations.

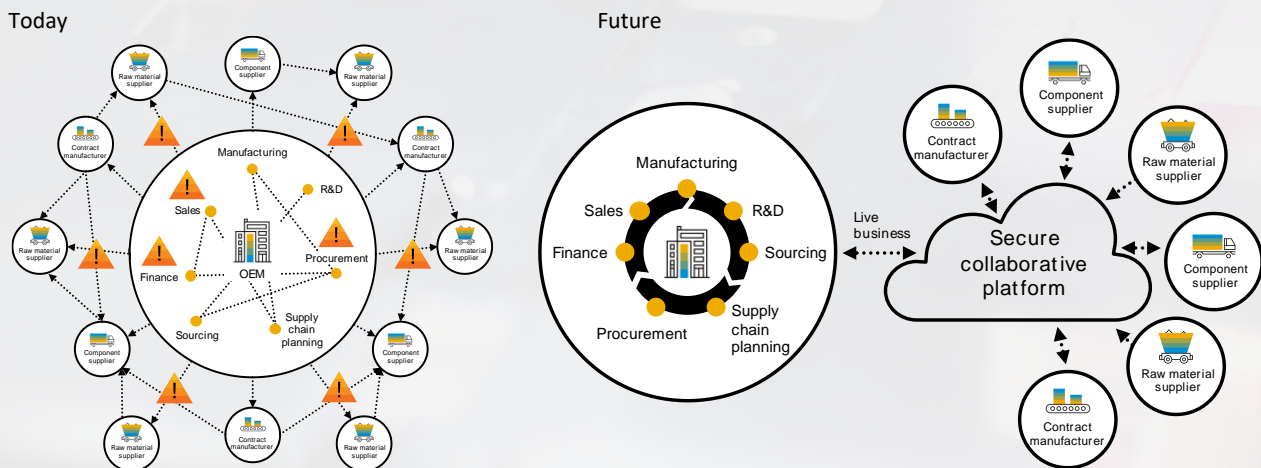
The Vision

By 2025, high-performing supply networks will enable high tech companies to remain profitable in an environment where margins are rapidly declining and business volatility and complexity are increasing. High tech companies will transform linear supply chains into intelligent, responsive, and trusted networks with integrated planning, execution, and decision support (see Figure 3).

The Journey

High tech companies will have to remodel their internal supply chains, connecting stakeholders and driving one plan from strategy to execution. Beyond the exchange of plans, they will include either a product lifecycle costing methodology amid the overall design-to-make process or continuous component price renegotiations based on machine learning insights. This will allow them to take advantage of price depreciation in high tech markets. Accompanying the internal transformation, collaboration with an ever-growing external partner network will change from linear, bilateral collaboration models to true, real-time, and secure supply networks, where blockchain technology provides trustworthy information about the provenance and location of goods. The transformation will be complete when internal and external networks are aligned, companies deploy more technologies to automate non-value-adding tasks, and software interprets the available data to present options – all so that planners can focus on business-critical decision-making.

Figure 3: The Vision of Realizing an Intelligent Supply Network



By the end of 2021, 90% of all manufacturing supply chains will have invested in the technology and business process necessary for true resiliency, resulting in productivity improvements of 15%.⁹

REALIZING AN INTELLIGENT SUPPLY NETWORK

Reimagine Supply Networks

High tech companies need to solve the equation of delivering stellar customer service at minimum cost. In recent years, this task has fallen to supply chain departments. They must enable high tech companies to continuously adapt and reshape their business to thrive in volatile markets.

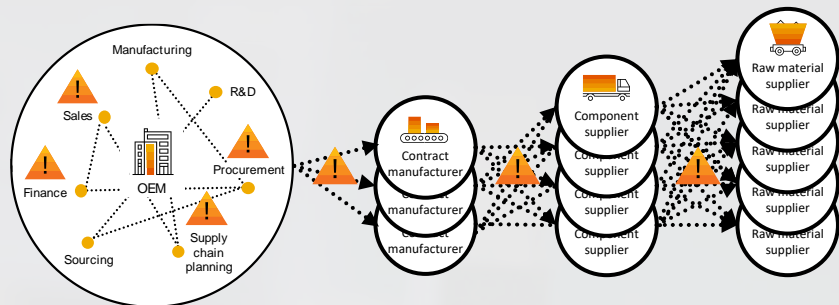
High tech enterprises create a digital mirror of their complete supply chain – from design, planning, and manufacturing to logistics and ongoing maintenance – embedding intelligence from beginning to end and helping ensure customers are central to each and every phase of any business transaction. They achieve total visibility as products are designed, delivered, and deployed by connecting business processes with real-time data from assets, equipment, customers, and suppliers.

To run a responsive, profitable, and trustworthy business, high tech companies embed innovations such as 3D printing, machine learning, and blockchain technology into their everyday operations and enable new business models for the future. Industry 4.0 improves upon current efforts to trace products throughout the supply chain by enabling real-time tracking from the supplier to the plant to the store.

TRADITIONAL SCENARIO

Disconnected departments and limited access to the business network, prohibiting responsive planning:

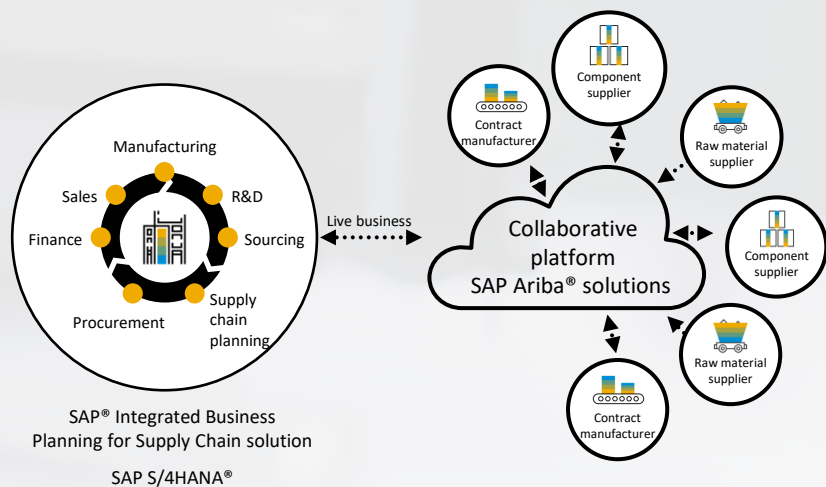
- When plans are not consistently created and shared, information cannot flow quickly. R&D, sourcing, sales, manufacturing, and planning are not aligned – wasting time and money.
- When companies rely on a few external partners and communicate manually with suppliers, collaboration is difficult, delays are inevitable, and the risk of error is high.
- Due to media breaks and time lags, real-time visibility and traceability throughout the supply chain is not possible.



NEW-WORLD SCENARIO

One plan that can be shared with all critical resources and partners to achieve visibility, agility, and responsiveness:

- Collaboration between R&D and sourcing, accelerating time to market
- Machine learning and AI generating insight into future demand for manufacturing and procurement, optimizing inventory
- Alignment of sales, manufacturing, and delivery, improving customer satisfaction
- Linear supply chains that transform into intelligent supply networks through real-time collaboration with all relevant stakeholders
- Full visibility of provenance and location of goods through blockchain
- New technologies such as the Industrial Internet of Things and blockchain that enable improved visibility and traceability in trusted high tech supply networks



TOP VALUE DRIVERS

Top-line revenue growth

Improved inventory turns

Improved customer service levels and customer retention

Reduced logistics costs

Source: SAP Performance Benchmarking

PROVIDING DIGITAL SMART PRODUCTS

With more and more demanding customers looking for tailor-made products and solutions, product innovations will need to dynamically adapt to market, consumer, usage, and environmental needs.

This requires the ability to influence and manage the features provided with a product along the entire lifecycle, from the initial design stage through actual productive use to final decommissioning. To thrive, high tech companies must have connectivity to Big Data, consumer-and-device-insights platforms, and configurability through embedded software.

The Vision

In 2025, high tech products will be more secure, connected, and intelligent, supported by the rapid growth of subscription-based products and services. Smart products designed for edge computing will drive real-time processes and direct interaction with the platform ecosystem. Detailed usage and condition monitoring will provide product innovation and portfolio and operation processes with continuous insights into feature relevance and adoption as well as overall product performance. Supported by machine learning, the insights collected will enable high tech companies to fine-tune innovation and optimize installed products through remote updates, resulting in increased productivity and asset usage as well as higher customer satisfaction (see Figure 4). In an Industry 4.0 environment, customers can be involved in the research and design of the

product, which fosters a cohesive experience that enables individualization.

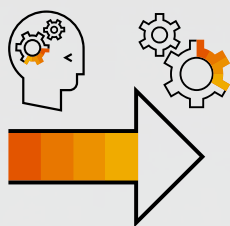
The Journey

High tech companies will start with streamlining their innovation processes through a common intelligent product innovation platform and standardized cross-departmental processes.

With a rapidly growing pool of market, usage, and even decision insights, they will then automatically trigger and analyze engineering changes in regard to impact, as well as process them through manufacturing, supply chain, and service. In an ultimate step, high tech companies will change their processes in portfolio management and design to primarily anticipate future customer usage and technology advancement adoption. Beyond optimized operations of products, the design of new products will ultimately be driven primarily by insights gained through use of current and competitor products and early insights into technology advancements.

Figure 4: The Vision of Providing Digital Smart Products

Today



Product design primarily based on technology advancements

Future



Product design driven by automated and self-learning insights

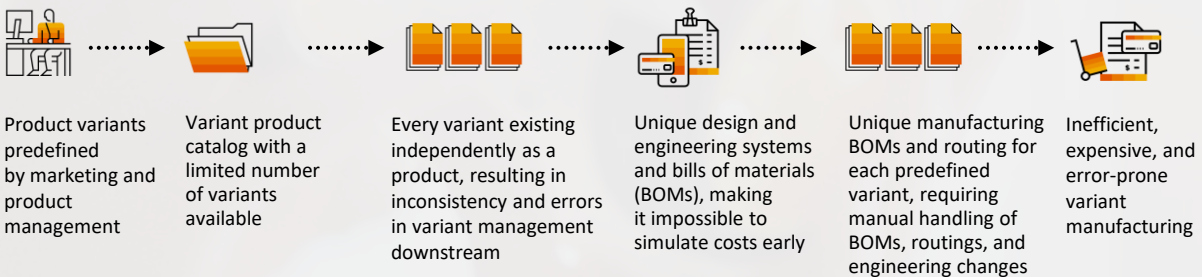
“Innovation and digitalization are the core of our business and part of our story.”
Andreas Heer, [Sensirion Holding AG](#)

PROVIDING DIGITAL SMART PRODUCTS

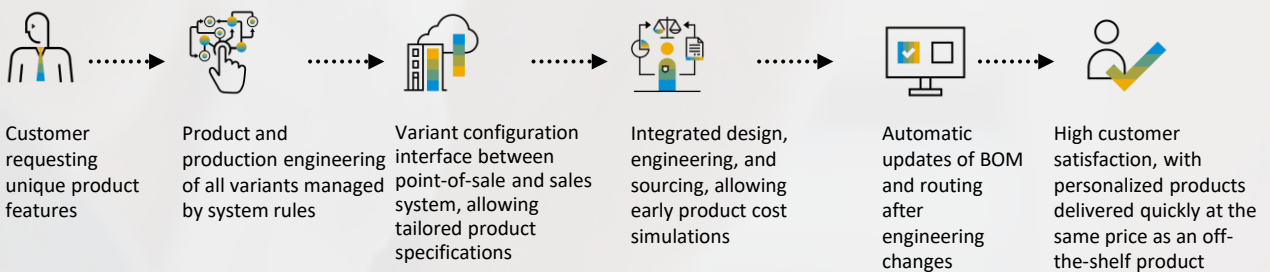
Reimagine the Desire-to-Manufacturing Process for Personalized Products

Realizing and keeping differentiation and specificity in products while streamlining the way they are conceived, designed, manufactured, sold, and serviced requires a shift from predefined physical and digital representations or variants of the product being manually created to more automated and self-learning generation of functional, design, manufacturing, and service information and structures. Intelligent technologies such as predictive analytics, machine learning, and robotic process automation help drive this data and process transformation within high tech companies. In high-volume production, the concept of Industry 4.0 drives further increases in productivity, while changing product mixes require higher flexibility or production line adaptation.

TRADITIONAL SCENARIO



NEW-WORLD SCENARIO



TOP VALUE DRIVERS

Faster time to market

Lower R&D costs

Increased revenue from new products

Source: SAP Performance Benchmarking

ACHIEVING CUSTOMER INTIMACY

In today's digital economy, high tech companies need to provide a seamless customer experience.

High tech companies need to develop insights into the end-customer journey, from requirements through product usage, and into installed-base refresh and renewal cycles to anticipate and deliver for customer needs. They must provide complete solution outcomes as a network, as the ecosystem is also impacted. To keep the promises you make to your customers and thereby provide great experiences, it is imperative to understand how your customers are using your products to deliver value for their customers – all the way to the end consumer. Ultimately, high tech companies need to predict and anticipate business demand changes before the customer even realizes them.

The Vision

In 2025, high tech companies will be able to develop "customer-for-life" relationships with shared risk and a long-term, value-based focus. Therefore, a 360-degree understanding of the customer is required. High tech companies will interact seamlessly with customers on a constant basis across multiple channels from Web to direct and through IoT connectivity. This should lead to detailed insights into end-customer behavior and enable high tech companies to adjust their service offerings and collaboration

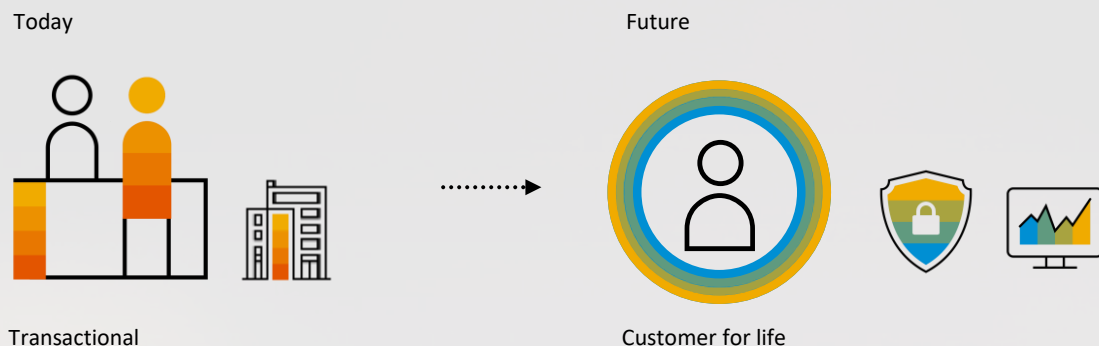
with their ecosystem accordingly in real time (see Figure 5).

The Journey

High tech companies will start by evolving their business models into a true omnichannel model. This allows companies to flexibly serve their customers independent of their interaction preference. This setup will be extended by including insights from the solutions operated and bought in the past. More sophisticated analysis of solution use, customer feedback, productivity, and health will be performed. Finally, they will enable true collaboration with customers and their end customers, including their intelligent assets to differentiate, providing everything as a service in a 360-degree relationship.

Industry 4.0 helps companies achieve this strategic priority, improving products' reliability by collaborating with customers and end users and by incorporating real-time operational feedback into product development processes.

Figure 5: The Vision of Achieving Customer Intimacy



By 2021, 65% of organizations will have shifted to digital first through automated operations and contactless experiences, as physical interactions become an amenity of the past.¹⁰

“Much of what we build at AWS is based on listening to customers. It’s critical to ask customers what they want, listen carefully to their answers, and figure out a plan to provide it thoughtfully and quickly. No business could thrive without that kind of customer obsession. But it’s also not enough. The biggest needle movers will be things that customers don’t know to ask for. We must invent on their behalf. We have to tap into our own inner imagination about what’s possible.”

2018 Amazon Annual Report ¹¹

ACHIEVING CUSTOMER INTIMACY

Reimagine the Market to Order Process

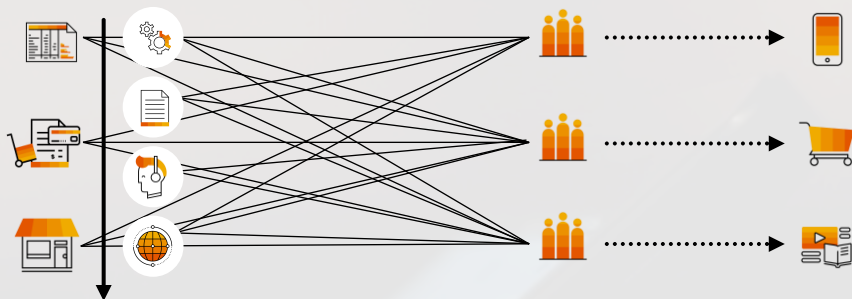
Customers today expect a seamless interaction and user experience with high tech companies, independent of the channels they use for sales and service-related processes. This is equally true for business-to-business and business-to-consumer sales. Leveraging customer insight from any previous engagement and data collected from intelligent devices is essential to satisfying customer expectations for individualized marketing activities, personalized sales contacts, and proactive service engagements. Industry 4.0 enables collecting product usage and experience data to predict business demand changes before the customer even realizes them.

TRADITIONAL SCENARIO

Disparate legacy CRM applications and data silos that make it impossible to focus on customer experience

Messaging, offers, and recommendations that are not relevant to customers

Uncertainty of the performance impact of all marketing investments



CRM, Web content management system, mobile, marketing, order management system, stores, contact centers

NEW-WORLD SCENARIO

Put the customer experience at the center:

- Create a single view of a first-party customer profile, and gain insight into their motivations and intent
- Leverage machine learning to deliver individualized experiences across channels
- Measure both online and offline in one view, and understand the incremental impact to optimize the marketing strategy



TOP VALUE DRIVERS

Improved customer satisfaction

Reduced sales and service cost

Increased revenue growth

Source: SAP Performance Benchmarking



KEY TECHNOLOGIES

The current pace of technological advancements has the most profound impact on enabling how high tech companies transform themselves to respond to their customers' needs and to market trends.

Intelligent technologies promise to bring great benefits, such as productivity and efficiency gains, enabling innovative new business models and new revenue streams. The high tech industry is responsible for incubating and further developing these technologies. Leading high tech companies will adopt these technologies to grow, curtail margin compression on hardware, and rethink software and service delivery.

The following intelligent technologies are instrumental in helping high tech companies respond to market trends.

Artificial Intelligence and Machine Learning

Artificial intelligence and machine learning enable algorithms to "learn" from existing data and achieve the best possible outcomes without being explicitly programmed. Once the algorithm is trained, it can predict future outcomes based on new data.

Businesses can leverage these capabilities to eliminate repetitive manual tasks, such as service ticket management, automatically determining classifications, routing, and responses.

This helps with complex solution configurations by applying artificial intelligence and machine learning to historical data to streamline the quotation process for configurable products.

The Internet of Things and Industry 4.0

Advances in ubiquitous connectivity and edge computing are driving a step change in business productivity. This connectivity, coupled with artificial intelligence and machine learning, can analyze petabytes of data and affect business outcomes. Entire value chains can be connected: from design and production to supply chain and operation, enabling faster, more flexible, and more efficient processes to produce higher-quality individualized goods at reduced cost. Data-driven insights of customer preferences can drive better design, lower material costs, and reduce risk. Remote condition monitoring of assets provides real-time data from machines to predict maintenance needs and identify potential quality problems in manufacturing processes before they occur. Assets can be jointly managed as digital twins by manufacturers, customers, and partners, thereby improving asset data and modeling.



Data Platform to Manage Experiences

In the digital economy, reducing the cycle time to sense, analyze, and respond is a big competitive differentiator. Leaders are interlocking the operational performance data, or O-data, from companies' business systems (what is happening) across the multiple streams of rich experience data, or X-data, coming from customers and employees (why it is happening).

Advanced Analytics

The integration of advanced analytics capabilities – including situational awareness – into applications enables business users to analyze data on the fly and drives better decision-making. Empowered users, benefiting from embedded analytics in business processes, can get real-time visibility into their changing environment, simulate the impact of business decisions, mitigate risk, and achieve better customer outcomes.

Blockchain

Blockchain technology can help the electronics sector address the very real problem of counterfeit components. Throughout the semiconductor value chain, blockchain makes it possible to verify in real time if an underlying asset has been tampered with or fabricated. Blockchain promotes a transparent supply chain – increasing trust, productivity, and efficiency.

Augmented Reality

Virtual reality (VR) – the use of digital technology to create immersive simulations – was once the stuff of science fiction. So was augmented reality (AR), which allows users to interact with digital content that is overlaid on the real world. Already in use to help workers with difficult or infrequent maintenance activities, AR and VR will become even more critical to attract and retain millennials.

Conversational AI

Advances in machine learning are enabling algorithms to become highly accurate in natural-language understanding and in image and voice recognition. This is especially useful in after-service and call-center activities. Voice interfaces will be the go-to technology for the next generation of applications, allowing for greater simplicity, mobility, and efficiency while increasing worker productivity and reducing the need for training.

Robotic Process Automation

Robotic process automation streamlines repetitive, rule-based processes and tasks in an enterprise and reduces costs through the use of software robots by replicating specific tasks or keystrokes.



68%

Of organizations use machine learning to enhance their business processes¹²

50%

Of companies expect blockchain to drive digital transformation over the next three to five years¹³

50%

Of organizations report that their companies have adopted AI in at least one business function¹⁴

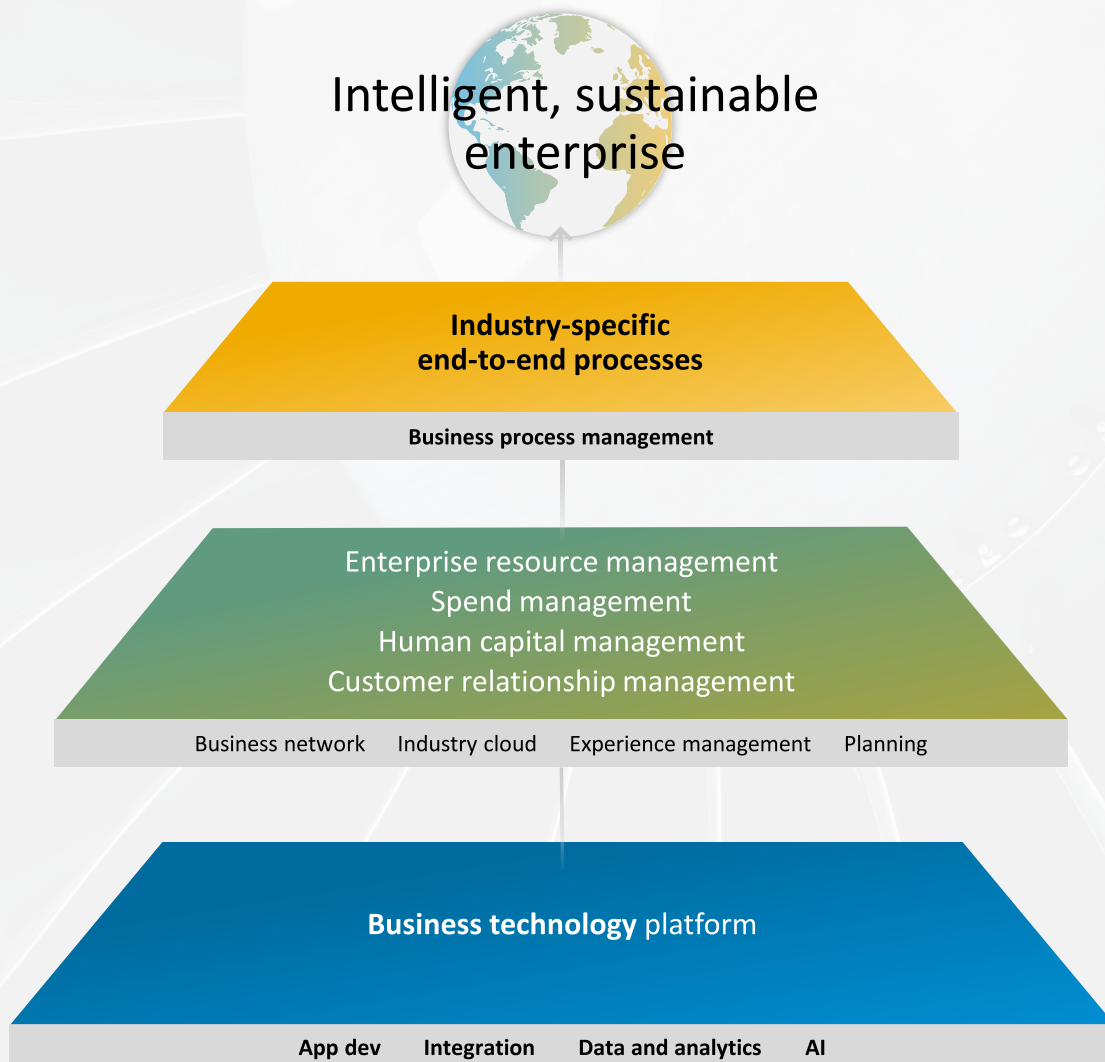


Getting There: How SAP Can Enable Every Organization to Become an Intelligent, Sustainable Enterprise

We enable our customers to become intelligent, sustainable enterprises by bringing together our comprehensive portfolio of solutions and technology in service to customers' business process needs.

- It starts with our platform technology that provides the foundation of application integration, extension to a robust ecosystem of solutions, and data and AI.
- Then our industry-leading business applications work together spanning front-end and back-end systems that only SAP can provide.
- This all comes together to provide the customer with support for the end-to-end, industry-specific business processes they need to run as an intelligent, sustainable enterprise (see Figure 6).

Figure 6: SAP Intelligent Enterprise Framework



RISE with SAP: Driving Business Innovation Together

Every enterprise needs to develop new business models to avoid being disrupted, gain efficiencies to fund innovation, and transform mission-critical systems without business risk. RISE with SAP is the solution.

RISE with SAP is a comprehensive solution with:

- Cloud ERP for every business need
- Industry next practices and extensibility
- Analytics and business process intelligence
- Outcome-driven services from SAP and partners

Discover the value of RISE with SAP



Take the lead with industry innovation for top-line, bottom-line, and green-line growth

- ✓ Grow revenue by creating differentiating business models in your industry
- ✓ Increase margin with built-in industry-specific processes and best practices
- ✓ Unlock new efficiency with intelligent automation across mission-critical processes
- ✓ Manage sustainability with company-wide transparency and controls



Never stop improving with continuous insight to optimize business processes

- ✓ Prioritize optimization opportunities with instant analysis of processes, activities, and tasks
- ✓ Sharpen process performance based on actual system usage, best practices, and industry benchmarking
- ✓ Accelerate your progress with tailored insight on where to automate business processes with AI








Secure your business with a trusted partner for your needs, every step of the way

- ✓ Run your mission-critical operations at their best around the globe
- ✓ Reach the cloud without compromise with solutions for every business and every regulatory requirement
- ✓ Take charge of change using a versatile platform to speed innovation
- ✓ Own your tomorrow with a guided journey and outcome-driven practices from SAP and our partners

RISE with SAP is built to fit your needs

RISE with SAP is designed to support your business needs – for your industry, in your geography, for your regulatory requirements – with SAP responsible for the holistic service-level agreement, cloud operations, and technical support. It includes:

 <p>Cloud ERP SAP S/4HANA Cloud</p>	 <p>Business process intelligence Business process intelligence starter pack</p>	 <p>Business platform and analytics SAP Business Technology Platform (CPEA credits)</p>	 <p>Business networks SAP Business Network Starter Pack</p>	 <p>Outcome-driven services and tools From partners</p>
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RISE with SAP is the foundation for an intelligent, sustainable enterprise in the cloud. We look forward to joining our customers on their transformation journey into the future. Find out more about [RISE with SAP](#).

COMPREHENSIVE SAP ECOSYSTEM ORCHESTRATING THE PARTNER ECOSYSTEM TO DELIVER VALUE FASTER

Our comprehensive ecosystem for the high tech industry offers:

- The Intelligent Enterprise as the overarching strategy to meet future requirements, providing:
 - SAP S/4HANA co-development programs for customers and partners
 - Industry co-innovation programs for industry-specific use cases
 - Delivery of enterprise-to-enterprise industry clouds
 - Thought leadership, evangelism, and enablement by industry through events, councils, and regular customer exchange
 - Integration into a wide range of business services (OEMs, suppliers, key vendors, and more)
 - Open architecture, with a choice of hardware and software specifically designed to meet requirements
 - Complementary and innovative third-party solutions to provide extensive and robust technology
- SAP is a founding member of the Open Industry 4.0 Alliance, which aims to overcome proprietary isolated solutions with a common reference architecture to accelerate the implementation of Industry 4.0 solutions and services.

Our partner ecosystem includes, among others:



SAP IS COMMITTED TO INNOVATION



10-Year Innovation Vision

Our vision is to deliver fully intelligent business solutions and networks that span across company boundaries and promote purpose-driven businesses. These solutions will be the most empathic symbiosis between machine intelligence and human ingenuity.

- Self-running enterprise systems
- Self-organizing business ecosystems
- New markets and business models



Comprehensive Industry Coverage

SAP enables the comprehensive coverage of the complete high tech value chain across the enterprise. With its clear industry road map, SAP is the partner of choice for the high tech industry.

- More than 16,700 high tech companies in 110 countries innovating with SAP solutions
- 10 of the 10 top technology companies in the world running SAP solutions
- Support for all lines of business on a single platform



Proven Services Offering

By bringing together world-class innovators, industry and emerging technology expertise, proven use cases, and design thinking methods, we help high tech companies develop innovations that deliver impact at scale.

- Use proven methodologies to drive innovation, from reimagining customer experiences to enhancing operations
- Fuel your innovation through a managed innovation ecosystem from SAP
- Build your own innovation capability and culture

SAP delivers support for high tech companies to become intelligent enterprises – providing integrated business applications that use intelligent technologies and can be extended on SAP Business Technology Platform to deliver breakthrough business value.



Learn more

- [SAP for High Tech solutions](#)
- [SAP Services and Support](#)
- [SAP Advisory Services](#)

RESOURCES

Outlined below is external research that was used as supporting material for this paper.

1. U.S. Bureau of Labor Statistics, "[Why Computer Occupations Are Behind Strong STEM Employment Growth in the 2019–29 Decade](#)," Jan. 2021.
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6. "[IDC FutureScape: Worldwide Intelligent ERP 2021 Predictions](#)," Doc # US45753520, Oct. 2020.
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11. "[2018 Amazon Annual Report](#)," page 3, Oct. 2019.
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13. "[2020 Blockchain Trends: A Realistic Look at Industry Disruption](#)," SAP, Jan. 2020.
14. "[The State of AI in 2020](#)," McKinsey & Company, 2020.

Note: All sources cited as "SAP" or "SAP Performance Benchmarking" are based on our research with customers through our benchmarking program and other direct interactions with customers.



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