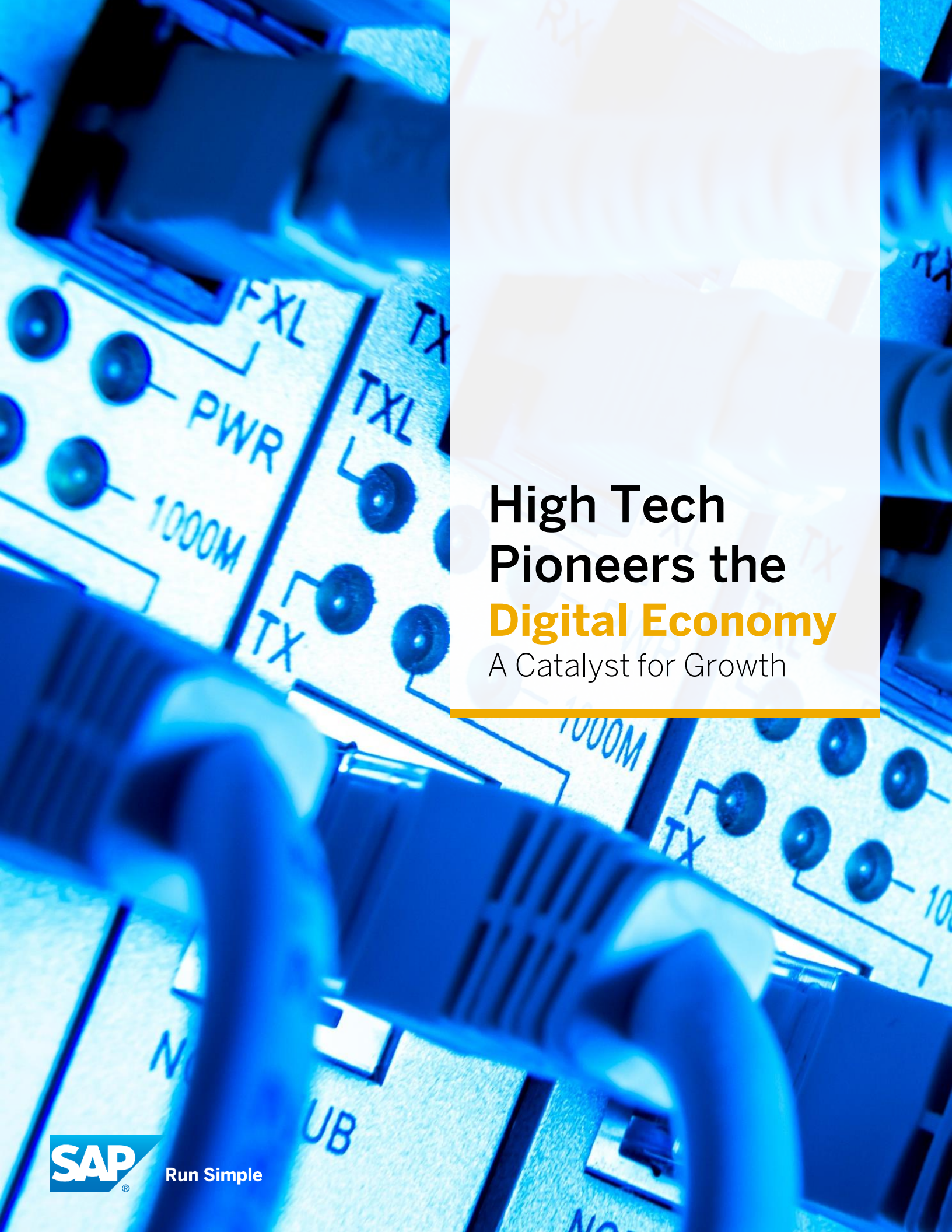


High Tech Pioneers the Digital Economy

A Catalyst for Growth

SAP® Run Simple

JEFF'S POINT OF VIEW

"Our vision is to enable high-tech companies to take measured risks and disrupt conventional business models."

Jeff Howell
Global Vice President
High Tech Industry Business Unit
SAP SE

Dear customers,

The high-tech industry is not just a key participant in the digital economy; it is also the fundamental backbone. Technology is ubiquitous, powering every organization, network, transaction, piece of equipment, and consumer device. Software is embedded in nearly all tech products to deliver capabilities and to monetize them, trumping the role that hardware has played for years.

As industries embrace digital transformation, they dismantle conventional business models, blur industry boundaries, and become more intimate with the unique needs of their customers. The high-tech industry is poised to play a unique role, not just as an enabler of digital transformation, but also as a potential disrupter of all industries. By 2020, 70% of all high-tech revenue will be directly related to other industries adopting the digital economy.[1]

As such, high-tech companies themselves are not immune to digitalization. High-tech companies still need to redefine their core competencies and, consequently, to rebuild their business strategies around those competencies. In working with leading high-tech companies across the globe, we see investments and energy in four strategic priorities:

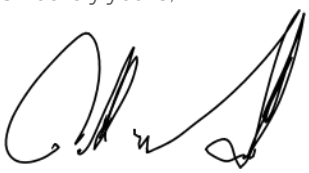
- Subscribing to outcomes
- Realizing a digital supply chain
- Providing digital smart products
- Achieving customer intimacy

Our goal is to help the high-tech industry successfully master the digital transformation and become a driver for the digitalization of companies across all industries.

This document offers a deeper perspective on digital transformation in our industry. Focusing on how companies in the high-tech industry can stay competitive by running a live business and, in turn, pioneer new growth and innovation across all industries in this new, digital world.

Thank you for your interest, and I look forward to taking this journey together with you to Run Live!

Sincerely yours,



Jeff Howell

Global Vice President
High Tech Industry Business Unit
SAP SE

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THE DIGITAL ECONOMY

The Big Picture: High-Tech Companies Power the Digital Economy, But Will Also Need to Adopt It to Survive

Technology Trends Change Everything

Digitalization has reached every aspect of life today, and it is here to stay. Technologies such as in-memory computing, cloud, and enterprise mobility have already started to make an impact in high-tech companies. Others such as the Internet of Things (IoT), cybersecurity, artificial intelligence (AI) and machine learning (ML), and augmented reality provide new and exciting opportunities.

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.

Transformation Drivers

Traditional industry boundaries between consumer technology, automotive, and industrial manufacturing continue to blur. It is getting increasingly more difficult to distinguish industries from one another. Most day-to-day products – like cars, smart phones or manufacturing machines – now have advanced software and electronics embedded. Software companies are getting into hardware, OEMs are developing their own semiconductor technologies, and semiconductor companies are enhancing their product portfolios with more software. Leaders are emerging quickly, and often from unexpected places.

The high-tech industry's value chain is transforming at incredible speed, driven by:

The shift to broad-based applications (IoT). Many smaller devices are available at much lower price points versus leading-edge devices in narrow applications like cell phones and servers. This shift is causing investors to place incredible scrutiny on the R&D spend in nearly every semi-conductor company.

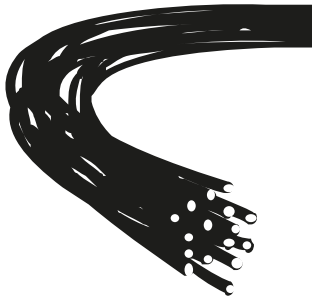
Hardware is no longer the golden ticket. Over the past five years, profits from hardware have been cut in half. So, if not in traditional hardware, where is the next wave of profit to be found in the industry?

Innovation with software. SAP believes that software is now the true differentiator. Software, and especially software in products, provides the ability to leverage the IoT. It makes products easier to use and creates an integrated platform uniting producers and consumers. But with all the billions of connected devices, how can we be sure they're safe and secure?

The Value of Digitalization

High-tech companies need to redefine their core competencies and rebuild their business strategies around them. Successfully embracing the opportunities from new technologies and consequently implementing the right business initiatives will be the foundation of successful digitalization and staying ahead of the innovation curve.

Access more information on the latest technology trends



Digital business models are disruptive. The rules have changed.

- **Lexmark International,** once a printer division of IBM, is today a provider of printing, imaging, software, and solutions, distributing both products and services. Lexmark is extending its strategy beyond printing and into the realm of combining physical and digital content, then integrating it with enterprise resource planning (ERP) and other enterprise applications.[2]

- **Amazon** challenges the idea that IT can't be a profit center. The online retailer is now an enterprise cloud offering leader. Thanks to Amazon, startups and small businesses have access to the power of a supercomputer at a fraction of the cost. Amazon Web Services grew 49% year-over-year with no prior B2B heritage.[3,4]

- **Adobe Systems'** business model has fundamentally changed. Instead of selling boxed software, its business is now driven by cloud-based subscriptions.[5]

The Future: Priorities for High Tech

Strategic Priorities for High-Tech Companies

In this situation, where the opportunity is huge but, at the same time, new market entrants are threatening traditional high-tech companies, it is essential to focus on the right strategic priorities to drive digitalization across the business. In working with leading companies across the globe, we see investments and energy on four strategic priorities:

1. Subscribing to outcomes

High-tech companies are shifting from selling products and services to selling measurable results that are relevant to their customers. 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 the platforms and ecosystems that are needed for the outcome economy.

2. Realizing a digital supply chain

Transform your supply chain into a responsive network. Companies everywhere face volatile customer demand and heightened expectations of responsiveness. Innovative technologies can help resolve these issues by providing vital business information across the network, improving real-time analysis, and enabling a better collaboration across departments and trading partners – thus making the supply chain more responsive.

3. Providing digital smart products

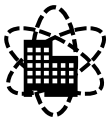
Digitally connect your products and transform them into solutions. Enabling products to provide intelligence about their usage and to be upgraded remotely any time with the latest features required by customers allows for differentiation in an industry where products get rapidly commoditized. Data-based services can be monetized, and individualized offerings can be provided cost effectively, Leverage the Internet of Things to connect the products to R&D and sales processes.

4. Achieving customer intimacy

Putting the end customers' point of view at the center of every decision is a key prerequisite for success in the digital age. This does not stop in the sales department, but also applies to what products are built and what services are offered.

REIMAGINING

But how do you achieve these strategic priorities? The starting point of the digital journey is the ability to reimagine your business together with customers. That means **reimagining your business models, your products, your business processes,** and **your talent**.

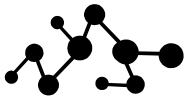


Two-thirds

Of the CEOs of Global 2000 enterprises will have digital transformation at the center of their corporate strategy[6]

14 out of 30

Top global brands by market capitalization are platform-oriented companies[7]



36

Enterprise apps per $1 billion in revenue for the average company. This is driving most of the technical complexity.[8]

REIMAGINING

THE DIGITAL ECONOMY OFFERS INFINITE NEW OPPORTUNITIES

In a connected world, where every company is becoming a technology company, smarter products and services will refocus commerce on business outcome and blur industry lines.

REIMAGINE BUSINESS MODELS

Tech leaders are challenging the status quo by disrupting and evolving traditional business models to create new markets and generate new revenue streams.

In today´s digital economy, high-tech firms need multiple business models. The one-size-fits-all model won't work any more. A tech company may need four or five business models to survive.

We have seen three primary business model changes over the past decades: the shift from selling purely products and devices in the 80s to solutions at the beginning of the 2000s to selling outcomes today.

Subscribing to Outcomes

The outcome-based economy requires significant changes to business models, organizational capabilities, business processes, and products. High-tech companies are moving from selling products to selling complete solutions that include hardware, software, and services, and that aim to deliver a specific outcome or capability.

- **Turnkey solutions** delivered by a single point of contact that are bought and owned by the customer; for example, a cash register solution for a national retail chain that includes third-party products (touch screens and printers) and third-party services (maintenance), which are provided through a single point of contact
- **Complete solutions as a service** that are leased or subscribed by the customer; for example, a hosted e-commerce solution that includes third-party servers and software
- **Results,** where the customer buys a specified outcome and the vendor owns and controls the solution used to provide that outcome; for example, an MRI room in a hospital where the hospital pays only for the scans while the solution provider owns and operates all equipment

Compete as a network

The outsource model of the 1990s is maturing into a network of interconnected suppliers, value-added resellers (VARs), and trading partners, allowing shorter lead times and greater responsiveness to customers.

Successful networks need to have the following building blocks:

- **Digitally connected suppliers** that get more-accurate visibility to channel-master demand
- R&D that receives **near-real-time responses** to quality and overall acceptance
- Procurement that can make **better-informed risk buys**

Scale with a platform

Enterprises are constantly finding new ways to deliver value to their customers and to serve the "segment of one." The platform-based model enables enterprises to deliver next-generation products and services using the power of an ecosystem of partners and developers. The platform helps deliver new services, consume services, personalize the experiences, and facilitate continuous commerce.

Successful platforms need to have following building blocks:

- **Development tool kit** to build, extend, or customize applications on open platforms and leverage social, mobile, analytics, and cloud technologies to connect everything – business networks, assets, systems, Internet of Things, and more
- **Vibrant ecosystem** to attract both consumers and producers with the right pricing models, value-based services, and revenue-share models with partners
- **Insights** from the platform and products to deliver services (such as predictive maintenance of an asset) and to connect to consumers in a meaningful way with every interaction

Lexmark International transformed its business model from a hardware manufacturer to provider of business solutions.[2]

Apple's competitive advantage isn't built on its hardware or its software. Apple's greatest competitive advantage is its ecosystem.[9]

Adobe Systems fundamentally changed its business model. Instead of selling boxed software, the business is now driven by cloud-based subscriptions, enabling Adobe to generate more than $1 billion in recurring revenue in less than two years.[5]

REIMAGINE PRODUCTS

Avoid product commoditization by providing digital smart products who are more secured, connected, and intelligent

Providing Digital Smart Products

As products become more intelligent and interconnected, the opportunity to sense and serve the needs of your customers will increase dramatically. At the same time, products can be run more cost and environmentally friendly. Leverage the Internet of Things to drive customer satisfaction, and increase revenue by turning your products into smart solutions. The following three examples illustrate the new trend in the industry.

Cybersecure

As the volume of data increases, so does the size of the attack surface for any potential hacker targeting enterprise data. Denial-of-service attacks have been the primary weapon for hackers to identify a vulnerability and exploit it with injected code to escalate an attackers' privilege on the target system. With the advent of the Internet of Things, distributed denial of service will become a greater threat.

One of the best defenses against malicious activity is the implementation of secure development practices. This is characterized as secure software development lifecycle (S-SDLC). S-SDLC is a framework for integrating security into each phase of development, from security training for developers to the response to an incident in the event of a breach.

Connected

Enterprises are quickly realizing they need to get closer to their customers. They also see the Internet of Things as a vehicle to accomplish this goal. The byproduct of this business driver is the ability for engineering and marketing functions to obtain firsthand knowledge on exactly how their products are being used in the field and which features and functions are being over/underutilized. Sensors and embedded software in the products allow companies to get insight on product usage and customer interactions, allowing for tailor-made service offerings and future road map direction.

Intelligent

Businesses can transform their operations and customer experiences when utilizing the data generated by products and customer interactions. Leveraging the Internet of Things and Big Data platforms and combining them with the right entitlement models, companies can deliver individualized capabilities and services and enable usage-based pricing.

What keeps you up at night?

When IT security professionals were asked about their highest areas of concern, more than 65% of them were extremely or very concerned about the increasing sophistication of malware threats.[10]

SIEMENS builds an open cloud platform for analyzing Big Data from industrial applications. This will provide the platform for data-based services such as predictive condition monitoring and energy data management.[11]

Leading companies are introducing a new executive role into their organizations. The chief digital officer (CDO) is responsible for driving digitalization into every aspect of a company – first and foremost its products.[12]

REIMAGINE BUSINESS PROCESSES

Break down the silos of traditionally linear processes to optimize and provide visibility across organizations and respond faster to market dynamics.

Realizing a Digital Supply Chain

Innovative technologies can help provide vital business information across the network, improve real-time data analysis, and enable better collaboration across departments and companies.

Digital business planning

Transform your supply chain into demand networks with demand-driven business planning

- **Align** strategic, financial, commercial, and operational goals with SAP® solutions for demand-driven business planning
- **Develop** short-, mid-, and long-term views of expected demand across channels
- **Plan** using cross-functional collaboration, analysis, and optimization of real-time demand signals, supply constraints, and inventory requirements
- **Extend** planning by collaborating with customers, partners, and suppliers

Digital response and supply management

- **Respond quickly to global demand changes** with software for digital response and supply management

Digital logistics

- **Balance customer service and delivery costs** through efficient digital logistics and order fulfillment

Digital manufacturing

- **Develop real-time visibility and transparency** into manufacturing operations, optimize manufacturing processes, and collaborate in global networks while lowering total manufacturing costs

Achieving Customer Intimacy

High-tech companies that offer complete solutions, including third-party products and services, use new business processes that allow collaboration across departments and partners. Configuring, pricing, quoting, and billing a complete solution for end customers significantly simplifies the utilization and consumption of this solution for the customer.

"Segment of one," usage-based pricing

Companies need to create profitable digital services with flexible pricing and intelligent revenue management capabilities. Uses of digital services and single-purchase fixed fees need to be consolidated in a single invoice in order to improve transparency for the customer. To be successful, companies should be able to:

- **Launch customer-centric subscription offers quickly**
- Exploit rapidly moving market opportunities by **simulating pricing changes and the impact to the business**
- Develop **flexible partner-revenue-sharing models**
- **Ensure** compliance with accounting standards for **revenue recognition**

Entitlements and up-sell

With the shift to intelligent solutions, companies are increasingly focused on driving revenue growth through digital capabilities and tailor-made services. Entitlement models provide a great monetization vehicle to develop flexible offerings and enforcement mechanisms.

- Create **flexible entitlement programs** that can be quickly and easily adapted to specific customer needs and market conditions
- Provide a **360-degree view of the customer** to identify opportunities for up-sell and automatic renewal

87% of finance executives agree that meeting growth targets requires **faster data analysis,** but only 12% are able to respond to information requests in real time.[13]

Adobe Systems' customer interactions – once periodic and performed through resellers or partners – are now **continuous and occur across multiple channels**, including social media, display ads, e-mail, the call center, direct sales, and the Web.[5]

eBay
In the fiercely competitive retail landscape, online marketplace provider eBay uses predictive analytics and in-memory computing to **better serve customers** and bolster the bottom line.[14]

REIMAGINE TALENT

Talent is the currency for high-tech companies. To maintain a competitive edge, enterprises need to find, attract, recruit, retain, develop, and engage their highly skilled workforce to drive innovations and growth.

A key enabler to succeed in these strategic priorities is to have a talented workforce. The following building blocks are needed:

A flat organization

"No managers" and "eliminate hierarchies" are terms that have been used within the high-tech community for well over a decade. These are clearly exaggerations: managers are still needed.

In a "lightly structured" work environment, empowerment resides with the network, whereby managers are not encumbered by the structure of a static organization to meet their objectives, nor are the employees "linked" to the specific goals of that manager. The manager becomes an enabler of self-managed teams. The employees become part of an internal network to be shared across boundaries to meet the company's overall objectives.

High-tech work environment

Today's workforce is highly mobile, well connected, and continuously challenged to stay engaged. It is no longer acceptable to have disconnected goals and performance feedback and rewards at the end of the year as the only feedback. Enterprises thrive with an engaged and motivated workforce and need relationships that invigorate and stimulate talent to innovate and develop trust for long-lasting partnerships.

To achieve this, companies can:

- Introduce **gamification** on a **collaborative platform** to encourage employees to share ideas and discuss projects
- **Provide access** to **on-demand learning** resources tied to employees' performance and reward metrics
- **Institute collaborative performance goals** that are continuously evaluated to stay current in changing dynamics and are clearly tied to activities and company goals; share ongoing feedback with all involved stakeholders; and provide **instant rewards** tied to specific work objectives

Talent management

Attracting and recruiting top talent in a highly competitive market requires the ability to align to the changing technology landscape and workforce demographics. In addition, a compelling employee brand, which is focused on the desired talent pools, must be carefully created and updated regularly to ensure you are attracting the best talent available.
In addition, you should:

- **Develop** and **maintain a skills inventory** of all employees so that you can assemble ad hoc teams to meet customer needs quickly
- **Leverage professional social network** sites to develop social presence and attract new talent
- **Source a contingent workforce on an as-needed basis** from recognized workforce management vendors, allowing your organization to flex as the needs of the business change

By 2020, millennials will form 50% of the global workforce. A millennial-friendly environment may be fully digital, but it also needs to be comfortable and creative.[18] In the rapidly moving economy, technology companies are empowering and complementing their workforce with advanced tools and technology to work smarter and be highly productive.

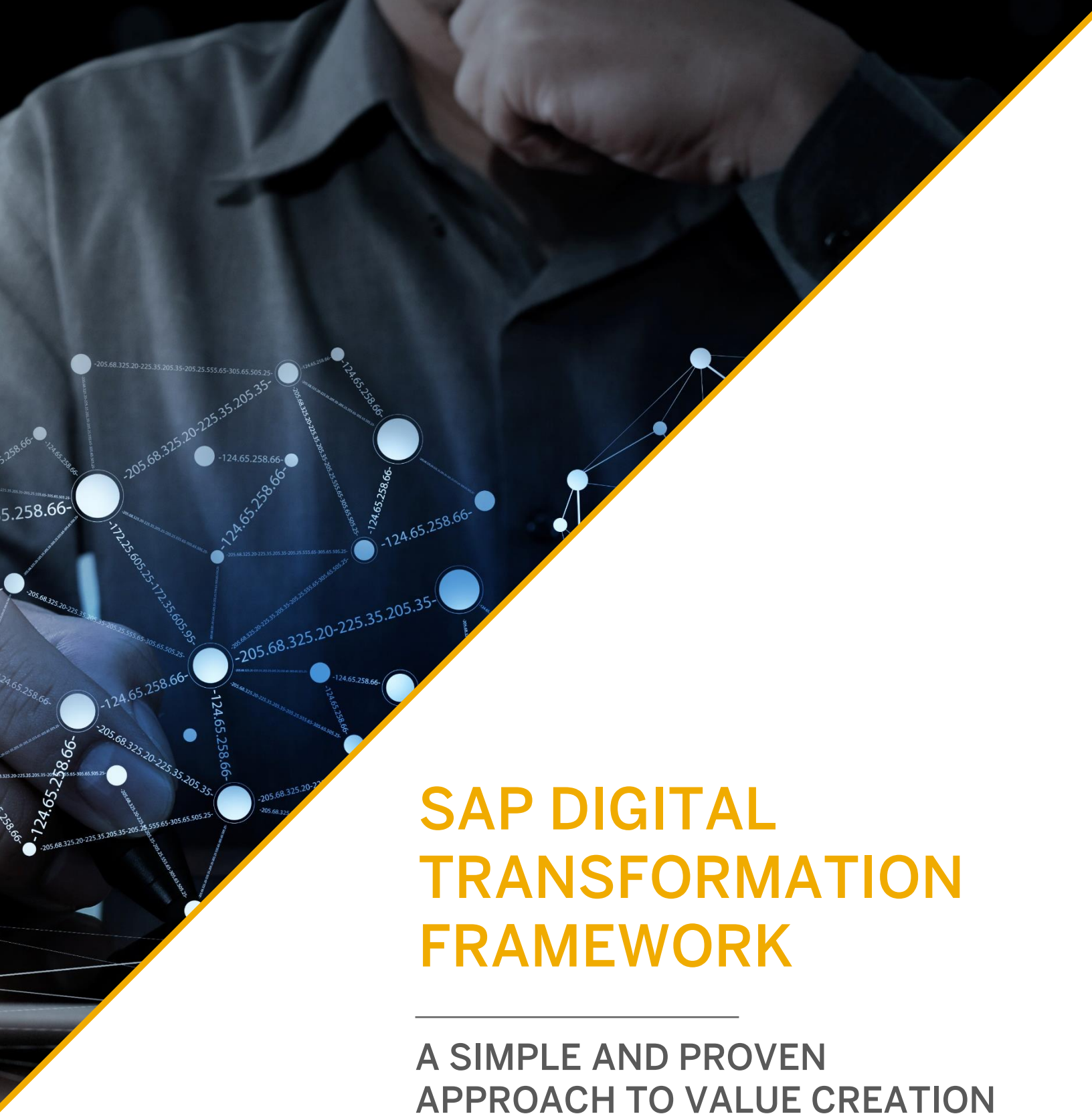
Enterprises are implementing:

- **Data-driven insight tools** to take measured risks and respond faster to changing market dynamics
- **Access to knowledge and resources** from anywhere, anytime
- Advanced technologies to improve productivity, such as **advanced 3D visual work instructions** to assist in order configurations and repair for complex machines found in semiconductor fabrication plants

Talent management has become a headache for CEOs, with **only 30%** saying that they have the talent they need to fulfil their future growth ambitions.[15]

62% of high-tech workers feel the ideal workplace provides a highly collaborative environment.[16]

Microsoft selects SAP SuccessFactors® HCM Suite for its 114,000 full-time employees. Microsoft expects not only to reduce costs and drive greater operational efficiency but also to deliver an enhanced employee experience consistent with its mobile-first, cloud-first philosophy that attracts and retains talent.[17]



SAP DIGITAL TRANSFORMATION FRAMEWORK

A SIMPLE AND PROVEN APPROACH TO VALUE CREATION THROUGH DIGITALIZATION

Every company requires a simple, digital approach to build a pragmatic and executable vision on its digital strategy.

SAP DIGITAL TRANSFORMATION FRAMEWORK

Every company needs to think about digitalization across five key pillars

SAP understands the five pillars of digitalization, and we also understand that the continuously changing requirements pose big challenges for businesses. The reimagining process helps crystalize the future business model.

As companies are reimagining their entire business, they need an IT architecture that provides both stability and long-term reliability for the core enterprise processes, and, at the same time, allows for flexibility in areas where change is happening on a continuous basis.

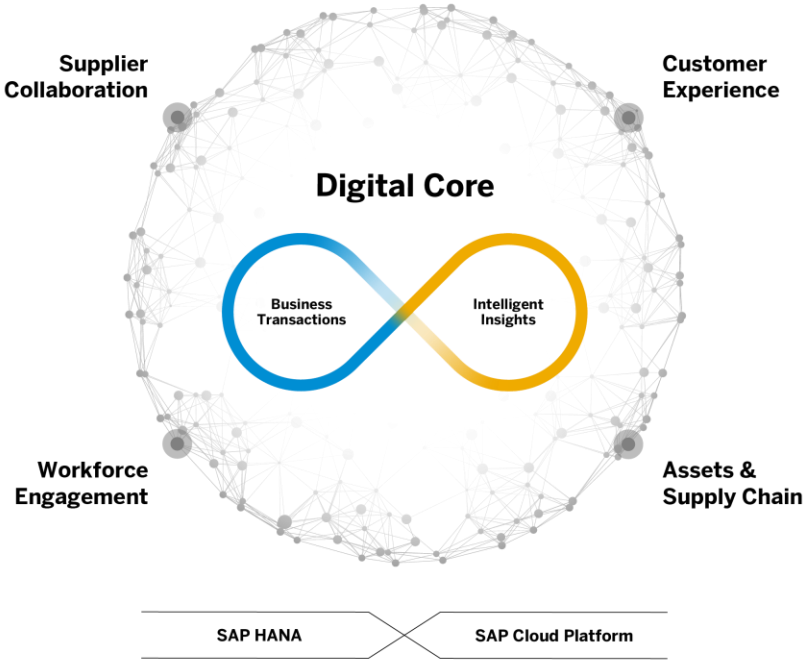
This concept, which is often referred to as bi-modal IT[18], is brought to life through the SAP Digital Transformation Framework methodology, pictured below. Every high-tech company can develop a digital strategy across the following five pillars:

- The **digital core** is the foundation for the core enterprise processes, which need to run consistently and uninterrupted. It provides real-time **business transactions** and **intelligent insights**, the ability to work with Big Data, and connectivity to the four outside pillars of the framework.
- The **digital products and assets** are the equipment and machinery on your own factory floor as well as the products you are providing to your customers and that you need to connect to your digital core. Here a large amount of flexibility is needed to connect new equipment on a constant basis.
- Your **customers** require flexibility in the way they interact with you through multiple channels.
- New **business networks** are changing the game for businesses and customers in the digital economy. Flexibility and adaptability in working with suppliers and partners are key in order to onboard new suppliers quickly and shift supply to alternates.
- Flexibility is required when building and maintaining an agile **workforce**.

Digital innovation is a journey without a final destination. With **artificial intelligence** and **machine learning**, we are building new, intelligent applications that drive the next era of business automation. Our applications are more open, thanks to new application programming interfaces (**APIs**) that enable integration with heterogeneous ecosystems.

We deliver best-in-class **security** in every single SAP application and technology platform. You can rest assured that your mission-critical data is protected from all types of attacks – whether you store it on premise or in the SAP Cloud Platform. Take advantage of robust data and IT security[19], built-in application security[20], cloud security[21], and more.

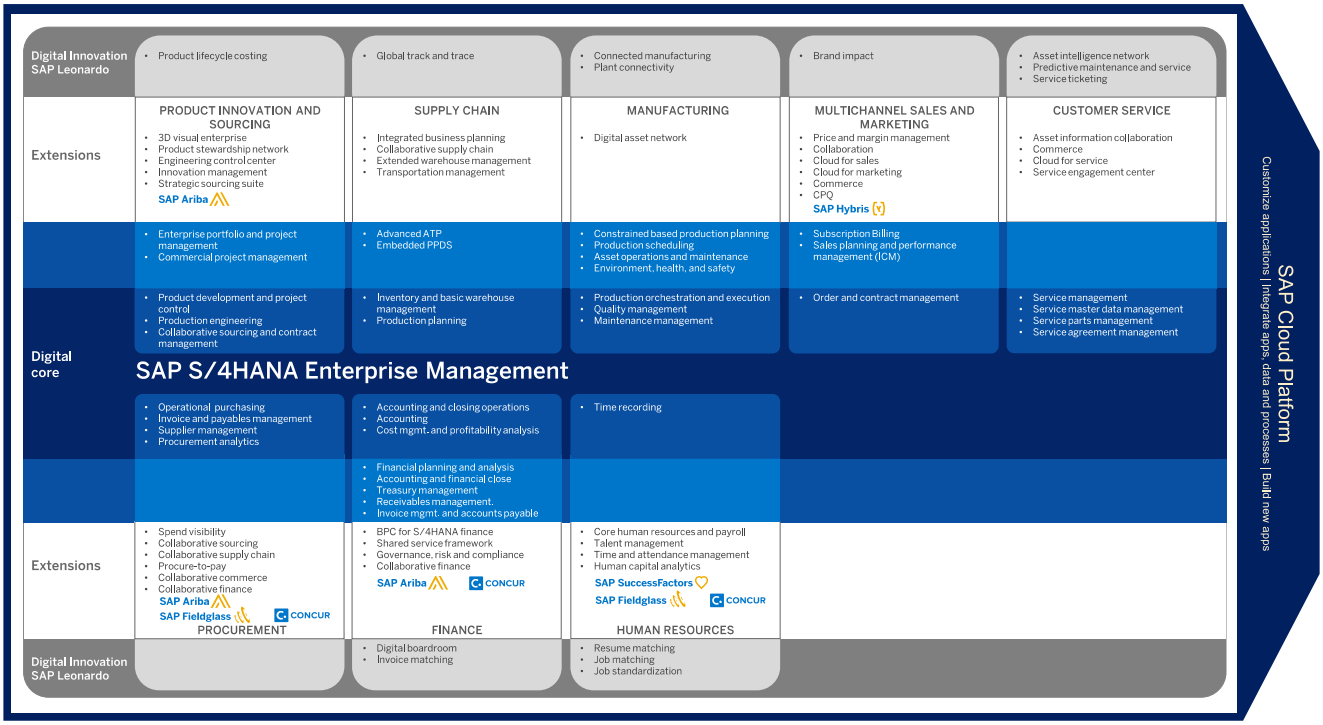
The value of SAP is in the integration we deliver across every part of the SAP Digital Transformation Framework methodology. SAP is the only **industry** partner that can help customers digitalize every aspect of the business value chain.



SAP PORTFOLIO WITH SAP S/4HANA AND SAP LEONARDO

SAP has innovated its portfolio to provide for both a stable digital core as well as flexible line-of-business extensions.

In the digital economy, simplification and business innovation matter more than ever. To do this effectively, it's important to cover the end-to-end digital transformation journey, ranging from planning a digital innovation road map and implementation plan with proven best practices to the ability to run all deployment options, and ultimately optimize for continuous innovation with a focus on outcomes. Processes are designed from the outset to flow end to end across the cloud-based solution extensions, shown in the white bands in the image, are fully integrated to SAP S/4HANA Enterprise Management solution and are optionally deployed to address business needs. The solution capabilities shown in the dark blue band, the digital core, are delivered as part of SAP S/4HANA Enterprise Management. The lighter blue band, also in the digital core, reflects capabilities that are part of SAP S/4HANA Enterprise Management, but added on as needed.



Digital core: Core solution capabilities delivered as part of SAP S/4HANA Enterprise Management

Digital Core: Solution capabilities that are also part of SAP S/4HANA Enterprise Management, but added/purchased as needed.

Extensions: Cloud-based (LoB) solution extensions that are *fully integrated* with SAP S/4HANA Enterprise Management, but added/purchased as needed.

Leonardo: Solution capabilities that are powered by a Leonardo technology and included in the Leonardo suite and how to add/purchase is not shown on this diagram.

*(Partially) compatibility scope

They pursue **four key initiatives** that require **new business capabilities** along the value map.

High Tech companies need to constantly innovate across their value chain to drive profitable growth and adapt to how customers want to acquire, use, and pay for their products and services

1. Subscribing to outcomes
Companies deliver outcomes, not just traditional products or services, and generate new revenue streams through result-driven offerings

2. Compete as a network
Existing outsource models are maturing into a network of interconnected suppliers, VARs, and trading partners

3. Scaling with a platform
Deliver next-generation products and services using the power of an ecosystem of partners and developers

	Product Innovation and Sourcing	Supply Chain	Manufacturing	Multichannel Sales and Marketing	Customer Service	Procurement	Finance	Human Resources
Subscribing to Outcomes	• Enable product individualization through flexible, high-performing, and easy-to-use configuration and classification capabilities • Simplify decision-making and processes across the enterprise through intuitive visualization	• Advanced available-to-promise (ATP) check for back-order processing, product allocation, and release for delivery • Supply planning beyond MRP to provide supply plans based on business rules, like customer prioritization	• Production order flexibility based on customer priorities • Improved user experience to deliver personalized, responsive, and intuitive applications • Track & trace of individual products	• Product configuration and variant management incl. costing • Performance based charging • Outcome based solution offerings • Support subscription based business models • Omni-channel solution selling	• Network for product data collaboration • Offerings, subscriptions, and usage-based services in one contract • Deliver performance based service and "Products as a Service" • Tailor-made service offerings	• Find and contract talent with specific non core skills to drive new strategies outside the current business scope.	• Real-time project financial performance to ensure overall solution profitability and manage risk • Financial controlling of performance based service contracts • Real time postings to recognize revenue supporting different revenue recognition methods (IFRS15)	• Manage external contractors in a flexible way • Procure and manage contingent labor and services for an optimized service delivery across regions
Realizing a Digital Supply Chain	• Manage requirements, mechanics, electronics, software, and simulation tied to a single product design and compliance collaboration platform • Define and analyze product costs	• Immediate insights on information with planning, execution, prediction, and simulation analysis done at the finest level of granularity • Real time supply planning beyond MRP to provide supply plans at the speed the business requires	• Advanced and embedded finite production and capacity planning • Detailed scheduling with harmonized master data • Integrated material management from shop floor to warehouse	• Precise and reliable sales forecasting • Responsive to demand fluctuations through live inventory management and material flow analysis • Improve customer service levels by planning based on customer prioritization	• Digital value-add services • Network for collaboration on equipment data • Seamless as-built equipment information handover to aftermarket services	• Single platform to manage all operational procurement processes • Automated and simplified integration of material suppliers • Spend management across every major category at reduced costs	• Manage increased financial risks associated with highly flexible supply chains and manufacturing operations • Automated reconciliation with the business network • Maintain effective controls and ongoing compliance	• Empower employees to make decisions in real-time and focus on value-adding activities • Improve productivity through state-of-the-art, user centric UX • Enable flexible work teams spread across the globe to work on a single set of data
Providing Digital Smart Products	• Systems engineering approach (incl. mechanical, software, electronic, etc.) • Embedded technologies foundation for product networks • Visual Digital Product Twin for all enterprise processes	• Integrated material management from shop floor to warehouse • Rapid and collaborative S&OP, including "what if" and scenario planning	• Digital components tracking • 3D Printing for spare parts • Advanced testing and connectivity management	• Collaborative solution & value selling • In-product software installation and management	• Services for digital smart products • Provide equipment network to connect digital products in the field • Seamless as-built equipment information handover to aftermarket services	• Strategic and agile global multi-tier supplier network management enabling economies of scale and flexible call orders.	• Ability to include payment models for digital services into product calculation and financial reporting • Digital rights management and compliance • Manage increased financial risks of highly flexible manufacturing operations	• Train & certify workforce on new digital technologies along with knowledge sharing & community building • Enable flexible work teams • Knowledge sharing and community building
Achieving Customer Intimacy	• Co-Innovation and structured requirement collection based on customer interactions • Product innovations resulting from actual usage and incident reports • Modularized product concepts and platform models cross prod. families	• On-time delivery and advanced availability to promise • Demand driven collaborative supply networks • Provide end-to-end supply chain visibility	• Production order flexibilization based on customer priorities • Agile and responsive manufacturing network • Track & trace of individual products	• Single Customer View • 360 Customer Intelligence • Contextual customer engagement • Omni-channel customer experience • Product configuration and variant management incl. Costing	• Personalized marketing & sales • Personalized e2e service parts process • Sophisticated customer segmentation • Mobilized and empowered teams	• Find and contract talent with specific non core skills to drive new strategies outside the current business scope.	• Use simulation and analysis to evaluate financial implications of strategic business choices • Strategic customer portfolio management. • Continuous Cash Collection	• Maintain top talent pipeline • Attract and secure top talent • Flexible contracting to work with customers • Enable social collaboration among teams
Typical business benefits*	▪ New products revenue: + 10-20% ▪ R&D cost: - 20-30% ▪ Prod. meet. rev. targets: + 15-20%	▪ 10–15% reduction in revenue loss due to stock-outs ▪ 10–12% reduction in days in inventory	▪ Total manufacturing cost: - 10% ▪ Manufacturing cycle time: - 10% ▪ Scrap value: - 25%	▪ 95% Faster Quote-to-order process ▪ 46% Lower Customer complaints	▪ Revenue leakage: - 7-9% ▪ Service delivery cost: - 4-5% ▪ Cost of non compliance: - 4-5%	▪ Proc. function cost: - 15-20% ▪ Worker acquisition time: - 30-40% ▪ DPO on targeted spend: - 2-5 days	▪ Days to close annual books: -40–50 days ▪ Budgeting & forecasting cost: -25%–50% ▪ Invoice processing productivity +10%–40%	▪ Days to close annual books: - 40–50 days ▪ Budgeting & forecasting cost: -25%–50% ▪ Invoice processing productivity

Digital Innovation SAP Leonardo

Internet of Things · Machine Learning · Analytics · Blockchain · Big Data

SAP Cloud Platform · Analytics Services · UX Services · Mobile Services · Security Services · Collaboration Services

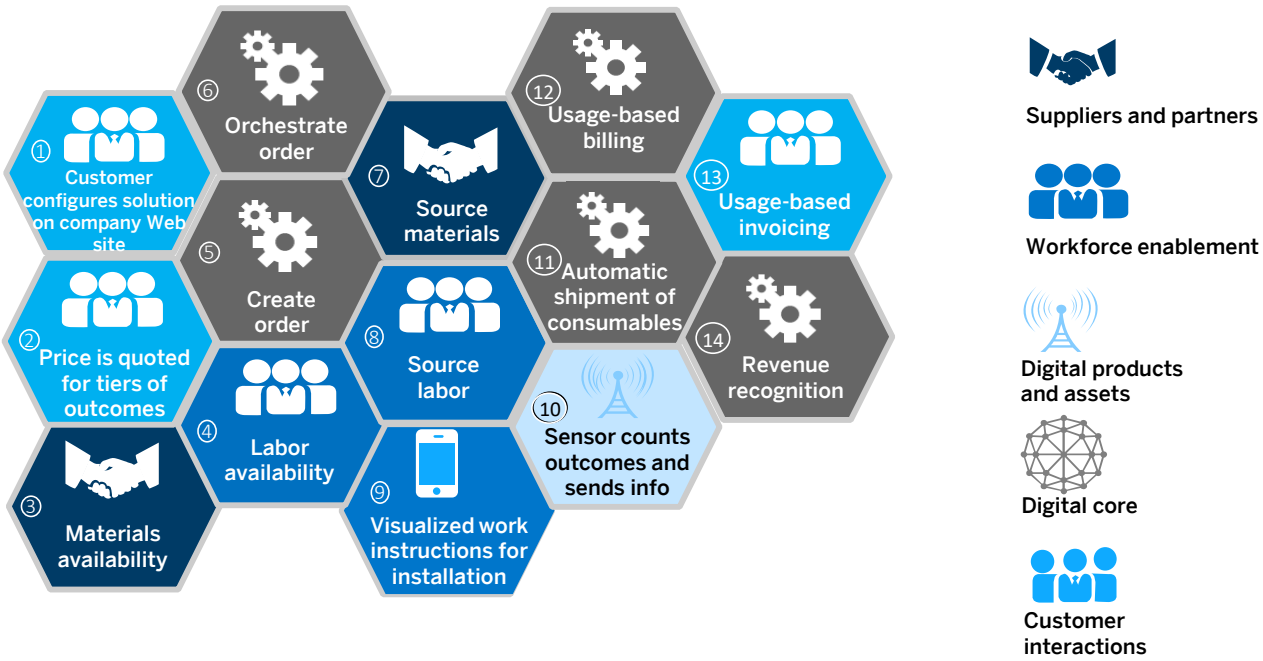
	Product Innovation and Sourcing	Supply Chain	Manufacturing	Multichannel Sales and Marketing	Customer Service	Procurement	Finance	Human Resources
Extensions	▪ Product lifecycle costing ▪ 3D visual enterprise ▪ Product stewardship network ▪ Engineering control center ▪ Innovation management ▪ Strategic sourcing suite SAP Ariba	▪ Global track and trace ▪ Integrated business planning ▪ Collaborative supply chain ▪ Extended warehouse management ▪ Transportation management	▪ Connected manufacturing ▪ Plant connectivity ▪ Digital asset network	▪ Brand impact ▪ Price and margin management ▪ Collaboration ▪ Cloud for sales ▪ Cloud for marketing ▪ Commerce ▪ CPQ SAP Hybris	▪ Asset intelligence network ▪ Predictive maintenance and service ▪ Service ticketing ▪ Asset information collaboration ▪ Commerce ▪ Cloud for service ▪ Service engagement center	▪ Spend visibility ▪ Collaborative sourcing ▪ Collaborative supply chain ▪ Procure-to-pay ▪ Collaborative commerce ▪ Collaborative finance SAP Ariba · SAP Fieldglass · CONCUR	▪ Digital boardroom ▪ Invoice matching ▪ BPC for S/4HANA Finance ▪ Shared service framework ▪ Governance, risk and compliance ▪ Collaborative finance SAP Ariba · CONCUR	▪ Resume matching ▪ Job matching ▪ Job standardization ▪ Core human resources and payroll ▪ Talent management ▪ Time and attendance management ▪ Human capital analytics SAP SuccessFactors SAP Fieldglass · CONCUR
Digital Core SAP S/4HANA	▪ Enterprise portfolio and project management ▪ Commercial project management ▪ Product development and project control ▪ Production engineering ▪ Collaborative sourcing and contract management	▪ Advanced ATP ▪ Embedded PPDS ▪ Inventory and basic warehouse management ▪ Production planning	▪ Constrained based production planning ▪ Production scheduling ▪ Asset operations and maintenance ▪ Environment, health, and safety ▪ Production orchestration and execution ▪ Quality management ▪ Maintenance management	▪ Subscription Billing ▪ Sales planning and performance management (ICM) ▪ Order and contract management	▪ Service management. ▪ Service master data management ▪ Service parts management ▪ Service agreement management	▪ Operational purchasing ▪ Invoice and payables management ▪ Supplier management ▪ Procurement analytics	▪ Financial planning and analysis ▪ Accounting and financial close ▪ Treasury management ▪ Receivables management. ▪ Invoice mgmt. and accounts payable ▪ Accounting and closing operations ▪ Accounting ▪ Cost Mgmt. and profitability analysis	▪ Time recording

* Benefits are based on early adopters of SAP S/4HANA or conservative outside-in benefits due to moving from a traditional ERP to enhanced SAP S/4HANA and LOB/cloud capabilities.

HOW DOES IT ALL COME TOGETHER?
Example: Outcome-Based Economy

Each of the five digital business pillars delivers individual business value, but next-generation business processes will span multiple pillars to drive efficiency internally or across the business network, connect to devices, and enhance the omnichannel customer experience.

Example: outcome-based economy



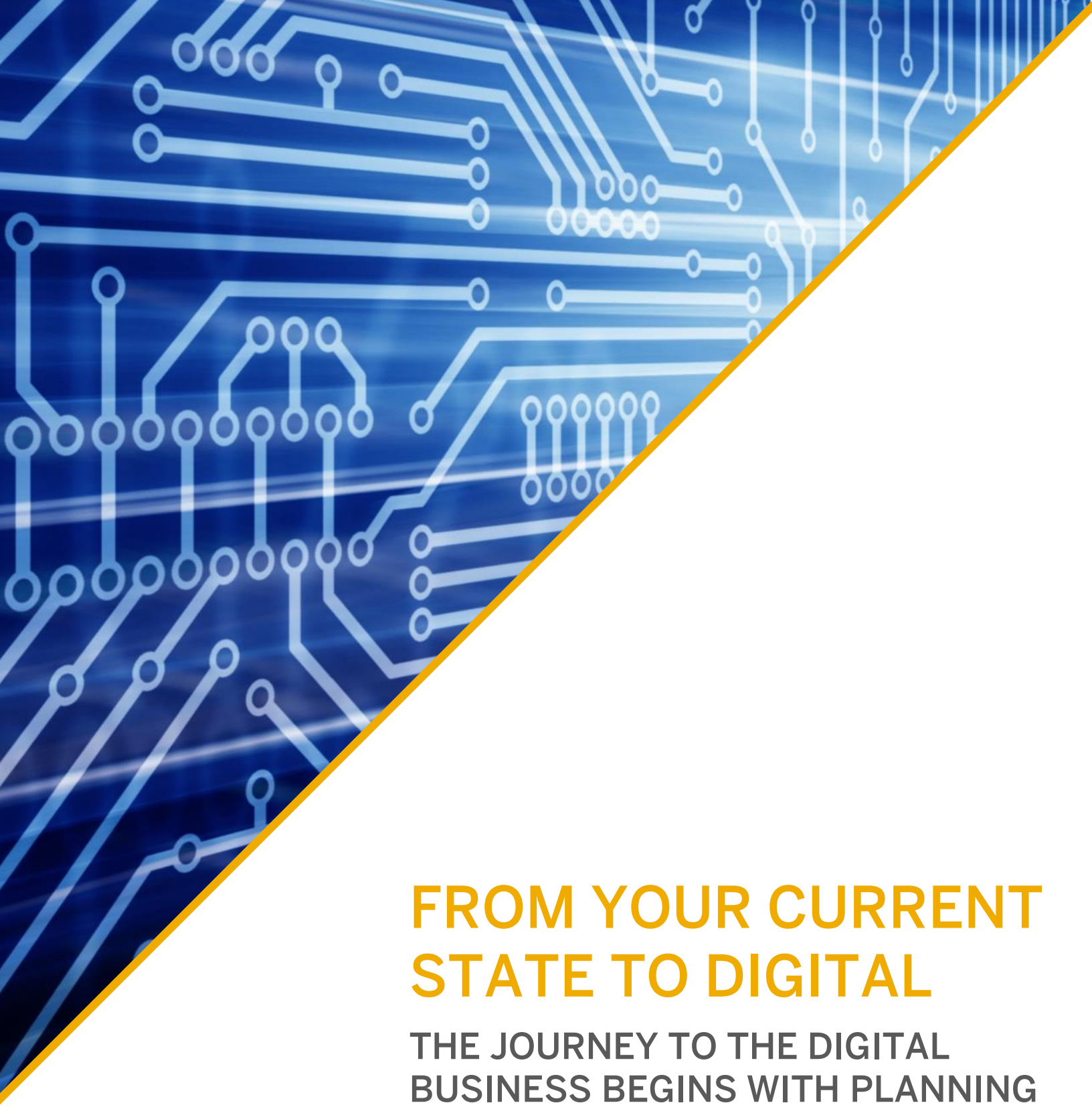
This diagram shows the process of an outcome-based digital economy model for a printer manufacturer transforming from selling printers to selling managed print services. This results in continuous revenue streams and greater customer intimacy. End customers of managed print services – both enterprises (B2B) or individual consumers (B2C) – pay based on:

- Usage: number of pages printed, scanned, faxed, and copied
- Fixed monthly recurring fee for the contractual period
- Actuals for consumables: ink cartridges and paper

In the managed print services model, businesses have to ensure availability, functionality, and performance of printers. They are paid on consumption of services and often work with an ecosystem of partners to deliver consumables and manage service execution (such as installing a printer or working on a service ticket), meet the competitive service-level agreements, and compensate for the products and services used. To deliver the desired outcome for the customer, a managed print service provider needs to:

- **Steps 1 & 2:** Configure, price, and quote the solution, which includes hardware, software, and services (including those from third-party providers)
- **Steps 3 & 4**: Check availability of all solution components and resources for installation, service, and so on
- **Steps 5 & 6:** Create order and manage the order orchestration to address all aspects from ordering, simulating the impact of any changes, performing availability checks across all solution components, and splitting the customer order into its execution components so that manufacturing can customize the hardware, service teams can be assigned and scheduled, and third-party components and services can be procured
- **Steps 7 & 8:** Source all solution components and resources for installation, service, and so on
- **Step 9:** Provide installer with detailed, visualized work instructions
- **Steps 10 & 11:** Collect usage and product data to charge for the consumed services. Leverage the product usage data to provide additional services, such as predictive maintenance, shipment of consumables that are running low, or identification of new opportunities to up-sell.
- **Steps 12 & 13:** Consolidate one-time and recurring charges with usage-based charges; provide the customer a customizable, easy-to-read invoice; and settle with partners for their products and services consumed
- **Step 14:** Manage revenue allocation across the solution elements, handle complex revenue recognition rules such as IFRS and GAAP, and accurately forecast revenues

The high-tech digital business framework provides enterprises with strong capabilities to transform their business to deliver outcomes, instead of just products.



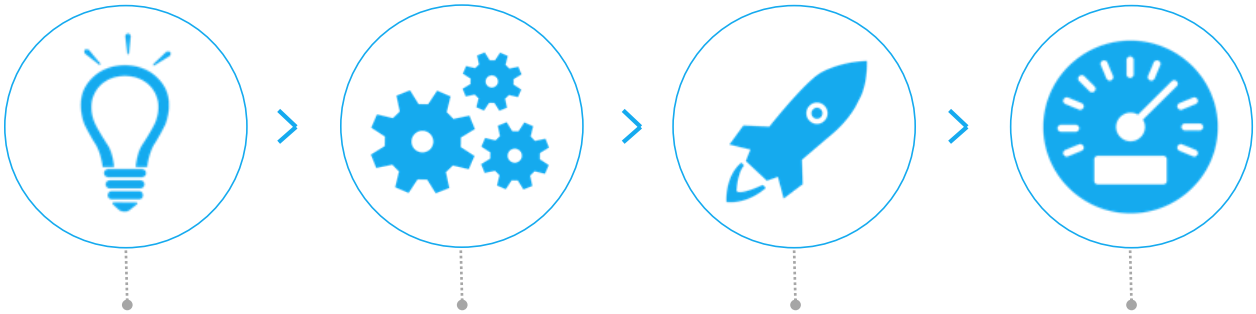
FROM YOUR CURRENT STATE TO DIGITAL

THE JOURNEY TO THE DIGITAL BUSINESS BEGINS WITH PLANNING A DIGITAL TRANSFORMATION ROAD MAP

TRANSFORMING FROM YOUR CURRENT STATE TO DIGITAL
the keys to success

In the digital economy, simplification and business innovation matter more than ever. To do this effectively, it's important to cover the end-to-end digital transformation journey, ranging from planning a digital innovation road map and implementation plan with proven best practices to the ability to run all deployment options and ultimately optimize for continuous innovation with a focus on outcomes.

The end-to-end digital transformation journey



PLAN
well to manage expectations

Simplify and innovate
- Reimagined business models, business processes, and work
- SAP Digital Transformation Framework as a guide for digital transformation
- Value-based innovation road maps

BUILD and LAUNCH
with proven best practices

Standardize and innovate
- Model company approach to accelerate adoption with model industry solutions
- Design thinking and rapid tangible prototypes
- Co-engineered industry innovations delivered with agility

RUN
all deployment models

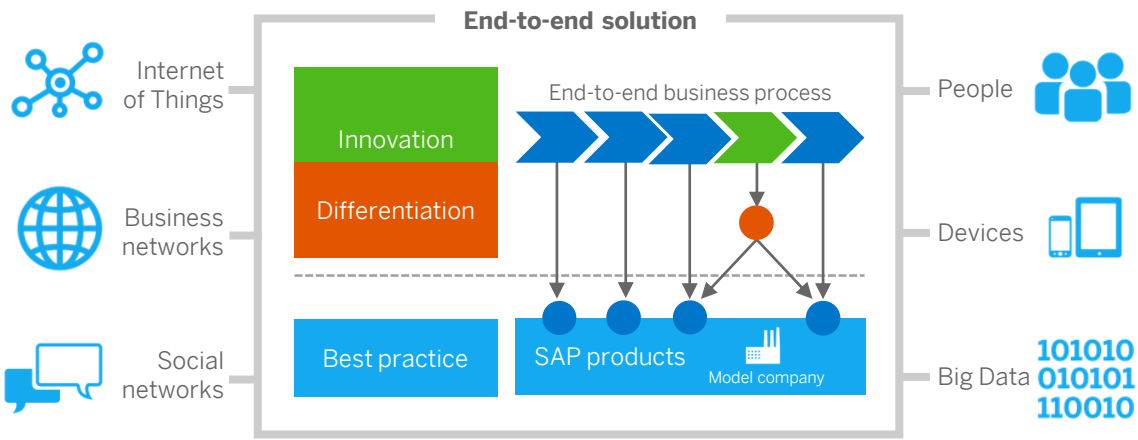
Run with one global support
- One global, consistent experience
- End-to-end support – on premise, cloud, or hybrid

OPTIMIZE
for continuous innovation

Optimize to realize value
- Continuously capture and realize benefits of digital transformation

And to move forward with speed and agility, it helps to focus on live digital data, instead of Big Data, and combine solution know-how and industry-specific process expertise with data analytics so that the right digital reference architecture is defined and delivered. In that context, we believe that a model company approach is very relevant to enable you to transition from your current state to digital. Model companies represent the ideal form of standardization for a specific line of business or industry. They are built on existing SAP solutions using best-practice content, rapid prototyping solution packages, and additional content from customer projects. They provide a comprehensive baseline for rapid, customer-specific prototypes, cloud demos, and quick-start implementations.

Model company approach



SAP DIGITAL BUSINESS SERVICES

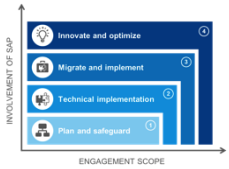
Enabling your success in digital transformation

SAP has a broad range of services to cover the end-to-end digital transformation journey, ranging from advising on a digital innovation road map and implementation plan with proven best practices to the ability to run all deployment options and ultimately optimize for continuous innovation. We provide both choice and value within our service offerings, allowing you to tailor the proper approach based on your specific company expectations and industry requirements.

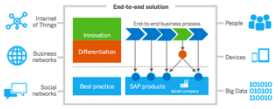
- 25,000 professionals in 70 countries
- Serving customers in 130 countries
- Outcomes delivered as one team in one contract
- Projects connected in real time to global network of support functions through SAP Mission Control Center
- SAP MaxAttention and SAP ActiveEmbedded services to safeguard investment
- Consistent experience – on premise, cloud, or hybrid
- Standardized adoption of processes and tools
- Streamlined onboarding and ramp-up of stakeholders

From proposing a comprehensive digitalization proposal to realizing and running it, SAP delivers on the digital transformation promise to its customers, on time, on budget, and on value.

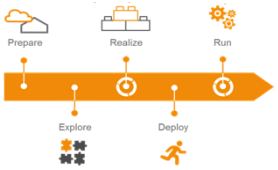
SAP value delivery relies on unique differentiating assets:



Exhaustive service portfolio



SAP Model Company



SAP Activate methodology

SAP Solution Manager

SAP Mission Control Center

Expert organization

Global reach

Partner ecosystem

Industry expertise

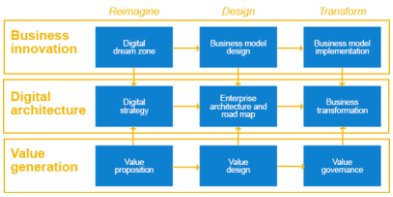
Focus on business outcome

Co-innovation

SAP Digital Business Services delivers digital innovation with simplification and accelerated implementation, which is key to adoption and value realization. Continuous improvement is supported through ongoing assessment of real-life data insights and joint governance with customers.

SAP value delivery focuses on the following deliverables:

Digital business foundation



- Digital business model
- Flexible, scalable enterprise architecture
- Platform for the digital future
- People and culture transformation

Business insights

- Digital boardroom
- Predictive customer insights
- Value realization dashboard
- Agile decision making and execution support

Continuous improvement

- Joint value governance
- Sustainable engagement model
- Innovation without disruption
- Simplification

COMPREHENSIVE SAP ECOSYSTEM

Orchestrating the world to deliver faster value

Our comprehensive ecosystem for high tech offers:

- Integration into a wide range of business services (banking, travel, and many others)
- Open architecture: choice of hardware and software
- Complementary and innovative third-party solutions
- Broad reach with partners to serve your business of any size, anywhere in the world
- Forum for influence and knowledge
- A large pool of industry experts with broad and deep skill sets

Our partner ecosystem includes, among others:

IBM, vendavo, Deloitte., Capgemini, Vistex, HUAWEI, NTT DATA Global IT Innovator, DELL EMC, CISCO, Hewlett Packard Enterprise, pwc, Atos, Infosys, KPIT, SIEMENS, OPENTEXT, itelligence

BUSINESS NETWORK

- 1.8 million suppliers
- 200 major travel partners (air, hotel, and automobile)
- 50,000 service and contingent labor providers

INFLUENCE FORUMS AND EDUCATION

- 32 user groups across all regions
- High-tech executive advisory council
- Semiconductor executive value network
- OEM executive value network
- SAP community with >24 million unique visitors per year
- 1,800 members of SAP University Alliances

INNOVATION

- >1,900 OEM solution partners to extend SAP solutions
- 2,000 startups developing applications that integrate with SAP HANA®

IMPLEMENTATION SERVICES

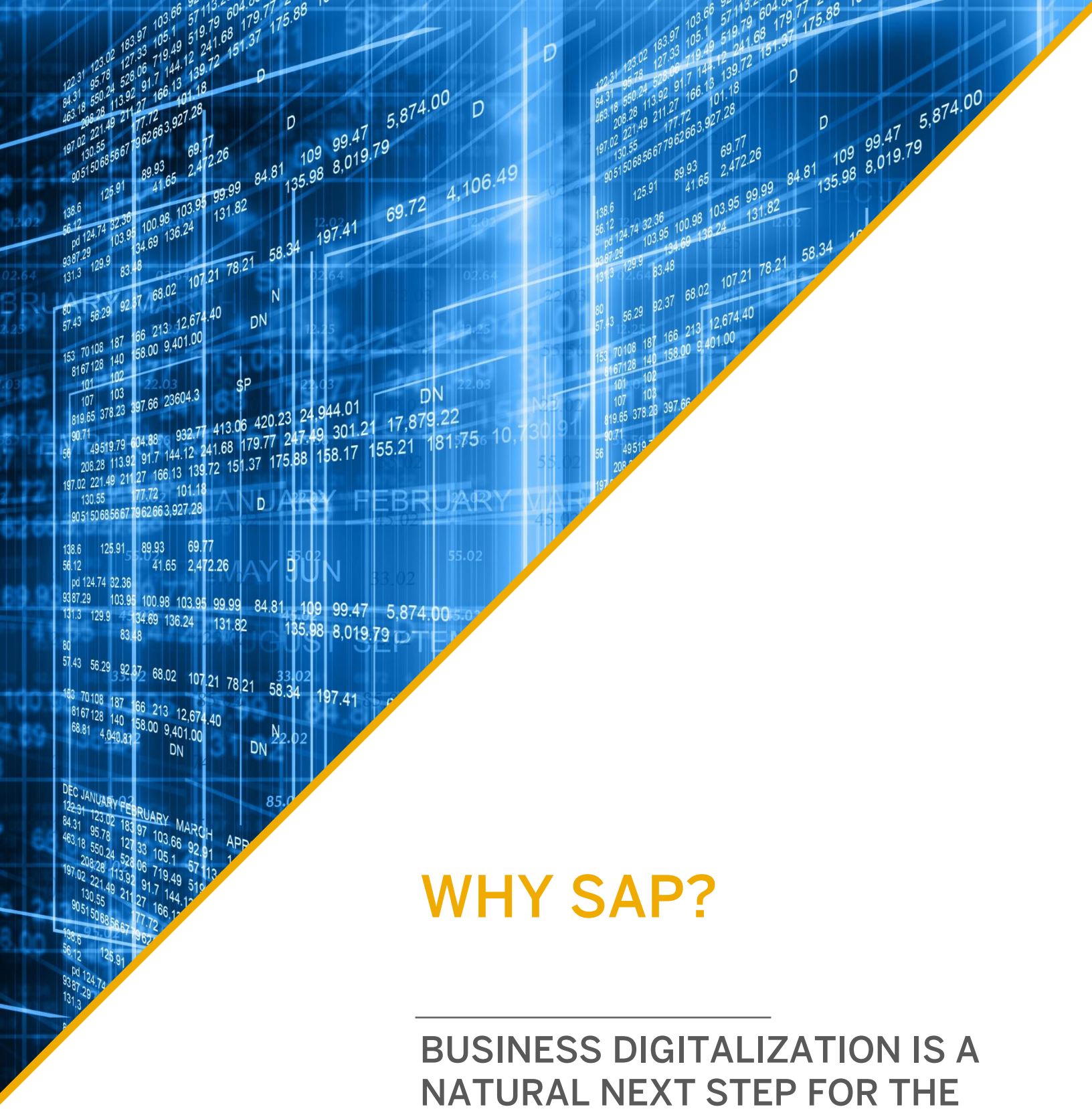
- 13,000 partner companies
- 3,200 services partners overall
- >300 high-tech-specialized services partners delivering high-tech-specific solutions

PLATFORM AND INFRASTRUCTURE

- 1,400 cloud partners overall
- >450 cloud partners in high tech
- >1,500 platform partners

CHANNEL AND SME

- 4,800 channel partners overall
- >880 high-tech channel partners



WHY SAP?

BUSINESS DIGITALIZATION IS A NATURAL NEXT STEP FOR THE #1 BUSINESS APPLICATION COMPANY

It took years of innovation, strategic investment, and the forging of new, strategic relationships to build the end-to-end digital business platform.

SAP IS COMMITTED TO INNOVATION

Vision	Help the world run better and improve people's lives
Mission	Help our customers run at their best
Strategy	Become the cloud company, powered by SAP HANA

- **>84,000 employees** representing >150 nationalities
- **345,000 customers,** >15,000 in high tech
- Operations in **190 countries,** and high-tech customers in 106 countries

- **High-tech-specific offerings** across LoBs
- **97% of high-tech companies** in the Forbes Global 2000 are SAP customers
- **19 out of 20 most valuable technology brands** run SAP

- **74% of world's transactions** are managed on SAP
- **1.9 million** connected businesses
- **>$855 billion** in B2B commerce
- **>99%+ of mobile devices** connected with SAP messaging

- 2011 **SAP HANA** launched
- 2012 **SAP Cloud solutions** launched
- 2014 **SAP business networks** form the largest marketplace in the world
- 2015 **SAP HANA Cloud Platform**
- 2015 **SAP S/4HANA** launched as the next-generation business suite

Source: internal SAP data

Dell Technologies

"The partnership between Dell Technologies and SAP helps make the promise of the Internet of Things a reality for our customers."

– Michael Dell, CEO, Dell Technologies[22]

Lenovo

By leveraging SAP services throughout the entire project lifecycle, SAP and Lenovo were able to work closely to support Lenovo's future growth and the management of its processes.[23]

Hewlett Packard Enterprise

"By running a live business, we're going to be a smaller, much more nimble, and faster company. Having a technology partner like SAP is incredibly important to help make sure that Hewlett Packard is continuing to win in the marketplace."

– Meg Whitman, CEO, Hewlett Packard Enterprise[24]

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Listed below are sources used as supporting material for this white paper.

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

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