The Consumer-Driven Digital Economy

Creating value
in a digital world where the consumer is in charge

Engaging consumers and capitalizing on new opportunities depends on the capacity to identify, act on, and deliver value in a moment, exactly where and when a need arises.

Miss the moment, miss the opportunity.

E.J. Kenney
SVP, Global Head of
Consumer Products
SAP

Dear Customers and Partners,

In the age of the digital consumer, we can no longer refer to the "consumer products" industry – it is now the "consumer outcomes" industry.

By 2020, the world's population will grow to 7.7 billion people,[1] and everyone on earth will have one thing in common – they will all be digital consumers.[2]

Billions of new consumers are joining the global middle class, bringing trillions in net-new spending power. Demand for water, natural resources, and key food categories may outstrip supply. Consumers are living longer, healthier, and differently. They are increasingly urban, hyperlocal, and "always on," connected to one another and to the world around them in real time.

Despite decades of process improvement investments for efficiency and scale, complexity and cost continue to grow. "Personalization," such as SKU proliferation, shorter product lifecycles, and more channels, only challenges service delivery, increases inventory, and drives cost.

Couple these considerations with 30 years of downward-trending median industry profitability[3] and declining brand loyalty and market share among the industry's top 100 brands,[4] and projections that the industry, in its current form, is unlikely to grow beyond population growth rates, and it becomes clear that there is an economic imperative to act now.

In the new digital economy, competition, consumer engagement, and operational effectiveness are fundamentally changing, and accelerating. New competitors are redefining the landscape at unprecedented rates. Building and keeping trust mean delivering exceptional brand experiences, every time, through fragile processes that balance consumer needs with cost to serve. One size does not fit all.

Engaging consumers and capitalizing on new opportunities depend on the capacity to identify, act on, and deliver high-value experiences and outcomes like joy, confidence, security, and control, all in the span of a moment, exactly where and when a consumer or business need arises. Miss the moment, miss the opportunity.

In this environment, profitable growth will not result from doing things incrementally better, but from doing things fundamentally differently by shifting from products to outcomes. How?

- **Reimagine business models** – integrate vertically and virtually to compete as an ecosystem, transform products into services, and capitalize on knowledge

- **Reimagine business processes** – engage consumers with real-time personalization, enable hyperlocal demand and supply networks, and optimize capacity with hyperconnected manufacturing

- **Reimagine work** – fundamentally transform productivity, exponentially improve enterprise intelligence, and empower a flexible, agile workforce to enable agility at speed
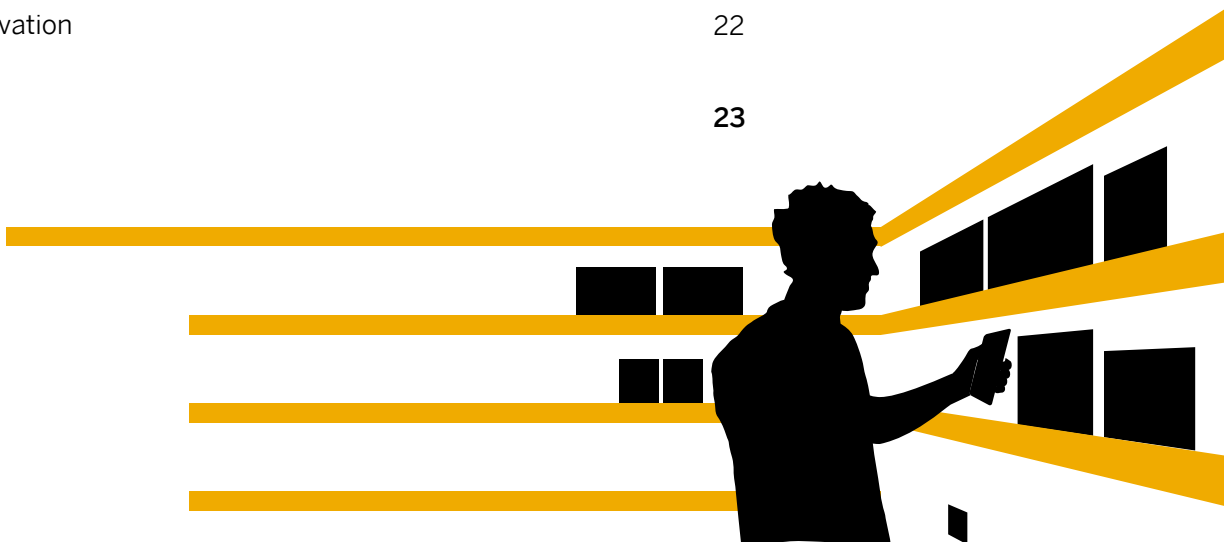
The time to unleash the power of digitalization is now, to maintain a healthy business, to drive new growth, and to balance current infrastructure and future innovation without disruption.

Here we offer our perspective on the future of the industry and how SAP contributes to the transformation of the consumer-driven digital enterprise. Thank you for your interest, and I look forward to our journey together.

E.J. Kenney
SVP, Global Head of Consumer Products
SAP

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Big picture: Digital transformation is the catalyst for growth

Technology trends and the consumer-driven digital economy

Technology trends
In consumer products as in other industries, technology has become interwoven with business strategies to the point of inseparability. Consumer products companies that cannot rapidly adjust to technological advances quickly fall behind. Mega technology trends, such as the Internet of Things (IoT), artificial intelligence and machine learning, blockchain, augmented reality, in-memory computing, cloud computing, and enterprise mobility, have all converged to transform the industry at a staggering pace.

The consumer products industry has become the consumer outcomes industry.
When consumers can get what they want, when and where they want, differentiation no longer results only from quality, price, value, or convenience, but from subjective, nuanced, and intangible experiences like joy, confidence, control, and protection.

Today's challenge: move from carts to hearts
Consumers expect a new type of experience – one that makes their lives easier, is personal, relevant and simple, where commerce is seamless, technology is invisible, and privacy, security, and trust are assumed and assured. They don't want to be sold to or influenced. They want to be inspired, guided, educated, and helped.

A world without SKUs
Experiences and outcomes can't be forecasted, manufactured, stocked, or distributed. They are created and delivered in moments of need. New digital leaders are already transforming products into services, creating new value by competing as ecosystems and by delivering outcomes that cannot be bar-coded.

A world without boundaries
Timely, tailored, and relevant experiences are orchestrated by networks of dynamic, collaborative business functions, processes, and partners. When evaluating experience, consumers don't distinguish between you and a retailer, trade promotion, or marketing offer, or even between you and a another new competitor you never even saw coming.

Anything less than real time is out of time
Value chains have defined the industry, but, in the digital economy, chains are the ties that bind. They are sequential, time-lagged, and inflexible. Only real-time, dynamic, agile, and collaborative networks will deliver the experiences and outcomes consumers now demand.

Transformation will not result from doing things incrementally better, but by doing things fundamentally differently.

Digital business models are disruptive. The rules have changed.

- **Under Armour** is not just selling shirts and shoes; it is a technology company connecting more than 190 million people in its global digital community.[5]
- **Hampton Creek Foods** is not just a mayonnaise and cookie dough company; it is exploring the food potential of over 400,000 plant varieties to reimagine the future of food production.[6]
- **Red Bull** is not just a beverage company; it is a content media company, spanning Web, social, film, print, music, and TV, creating brand experiences of joy, exhilaration, and adventure.[7]
- **Mink** is not just a cosmetics company; it is fundamentally transforming consumer perceptions of beauty and attractiveness.[8]

WHAT DOES THIS TELL US?

Consumer experience is the new definition of relevance, powered by digitally enabled processes and people.

Every business is now a technology business.

EXECUTIVE SUMMARY

The future: The "consumer outcomes" digital enterprise

The "always-on" consumer is now in control

The digital economy has put consumers firmly in control. With multiple devices providing real-time access to information about everything from trends to product availability to pricing, a consumer's shopping journey takes place across a series of moments from home to workplace to commute to store. Taking advantage of these moments hinges on the ability to sense, analyze, and act in the moment and throughout the value network based on real-time market signals generated by the interaction of people, technology, and things.

A marketplace of moments

Digital business is a new frontier of growth and development, and leading companies will capitalize on new opportunities to deliver outcomes in moments of need – better, faster, and cheaper than previously possible – driving sustainable, profitable growth.

- **Consumer moments:** reaching consumers directly and immediately at the point of need with personalized engagement through digital venues such as commerce-enabled social networks, smart homes, smart cars, and smart shelves
- **Customer moments:** driving category growth, increasing sales velocity, and ensuring on-shelf availability through digitally enabled collaboration with retailers and channel partners to simplify and streamline commerce and act in real time on demand dynamics
- **Market moments:** responding in moments of market disruption to capitalize on new opportunities or mitigate risks with agile, flexible operations and business processes that can be coupled and decoupled as needed to identify new suppliers, suggest promotion opportunities, and automatically optimize forecasts, or modify capacity plans to meet future demand

Digital to the core

For consumer companies pursuing ambitious growth strategies in an otherwise low-growth environment, the business operations that have been built for efficiency and scale lack necessary agility and flexibility to address nontraditional physical and virtual channels.

What's needed are new business models, business processes, and ways of working that redefine and transform traditional levers of performance improvement by:

- Delivering personalized products and services without the cost and complexity of increasing SKU counts
- Dramatically extending your brand value proposition at no incremental cost.
- Engaging consumers in real time and at low cost to understand what they're thinking right now instead speculating about what they might be thinking tomorrow
- Enabling the flexibility and agility to sense, analyze, optimize, and act profitably to orchestrate and deliver personalized, high-value outcomes directly in moments of need

The time to reimagine is now. Digital is at the heart of your transformation opportunity.

82%
of smartphone users say they consult their phones on purchases they're about to make in a store[9]
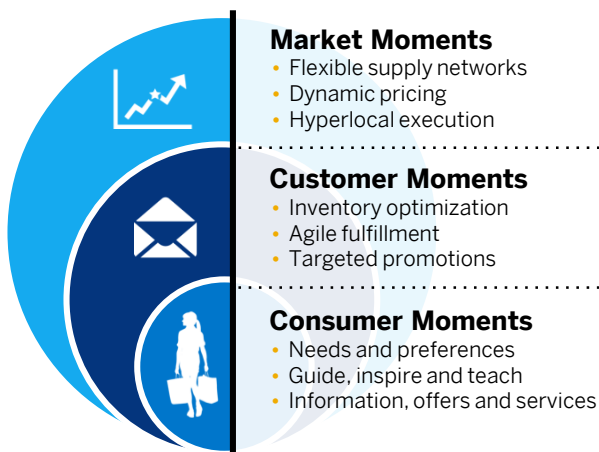
33%
of consumers purchased from a company or brand other than the one he or she intended because of information received in a micromoment[10]

$1 trillion
or 28% of all retail sales influenced by mobile devices in 2014[11]

MOMENTS: NEW DRIVERS FOR GROWTH

Market Moments
- Flexible supply networks
- Dynamic pricing
- Hyperlocal execution

Customer Moments
- Inventory optimization
- Agile fulfillment
- Targeted promotions

Consumer Moments
- Needs and preferences
- Guide, inspire and teach
- Information, offers and services

Experiences and Outcomes

REIMAGINING

THE DIGITAL ECONOMY OFFERS INFINITE NEW OPPORTUNITIES

In a connected world where every consumer company is becoming a technology company, smarter products and services will refocus commerce on business outcomes, blur industry lines, and integrate physical and virtual value networks.

REIMAGINE BUSINESS MODELS

> Connected and empowered consumers, intelligent value networks, and blurring industry lines are enabling entirely new business models based on the capability to orchestrate and deliver high-value outcomes in the span of a moment.

Integrate vertically, virtually

Focus on moments to identify and orchestrate entirely new and perhaps previously unattainable dimensions of value delivery at no or low incremental cost.

- Differentiate on the basis of flexible and agile execution throughout the entire value network to deliver vertically integrated outcomes, virtually
- Enable previously unviable partner ecosystems to orchestrate personalized information, offers, and services tied to consumption, use, and market need
- Couple and decouple with partners seamlessly across physical and virtual networks with real-time information exchange as customer, consumer, and market needs change
- Collaborate with service and knowledge-based partners to deliver fundamentally new and differentiated consumer value propositions

Share, rent, and optimize

In the digital economy, assets and competencies are available virtually and can be capitalized and shared to optimize capacity, localize fulfillment, and orchestrate outcomes

- Digitalize and share excess capacity and competency to monetize capital expenditures on plant, equipment, and other capital-intensive investments
- Upend traditional metrics that drive efficiency at scale to minimize cost per unit to focus instead on agility at speed to maximize return on engagement
- Digitalize process and service capacity and functional competencies to optimize utilization and build new revenue streams

Deliver products as services

Evolving models and embedded sensors create new revenue streams by transforming consumers' brand perception from individual purchase and use to ongoing engagement and experience.

- Add information services and content subscriptions, maintenance agreements, or replenishment services available right in the moment of need
- Explore category-specific options for leasing, pooling, or sharing product functions versus selling product ownership
- Transform value propositions to desired outcomes such as flavors, nutrition and wellness, comfort, reliability, security, control, and more

Capitalize on insights

The value of physical assets and even intangible assets such as brand equity are eroding. In the new digital economy, what you know will be more valuable than what you own or what you make.

- Combine consumer and market insights to orchestrate outcomes based on a deep understanding of preference and opportunity, in context and in the moment of consumer need
- Virtual assets such as consumer insights, network reach and coverage, and ecosystem commerce potential are the new drivers of growth, differentiation, profitability, and market value

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Mink's service enables consumers to capture colors that resonate with their personal style, match the colors using a mobile app and "print" cosmetics on demand.[12]

Nest and Whirlpool are partnering to orchestrate consumer experiences with no direct investment in physical assets, staffing, or finished goods.[13]

Under Armour is reimagining itself as a technology company to elevate to a Connected Fitness experience for millions of people around the world.[14]

REIMAGINE BUSINESS PROCESSES

Flexible and agile business processes are smart and dynamic, designed to shift in real time to deliver outcomes that capitalize on moments of consumer, customer, and market need.

Personalized engagement

Digital consumers are "just for me" consumers, expecting personal and easy experiences precisely in the moment of need and designed to help them achieve their goals and aspirations.
- Products are configurable and personal, tailored to individual consumers' needs and preferences
- Information and offers are aligned to consumer preferences and presented at the moment of need
- Seamless and fluid channel experiences enable consumer engagement and fulfillment anywhere
- Sensors monitor use, consumption, wear, and freshness, alerting consumers to replace, replenish, or repair, just in time

Real-time, consumer-driven innovation

Innovation leverages real-time, direct consumer engagement to accelerate time to market with the right solutions and outcomes at the right time.
- Eliminate the time, cost, and uncertainty of interpreting and predicting shifting trends with qualitative market research
- Build consumer advocacy during development cycles using social engagement to help ensure market adoption and drive category growth post-launch

Virtual, hyperlocal demand and supply networks

Local is no longer defined by fixed locations. In the digital economy, "just for me" consumers define local as wherever they happen to be. Meeting them where they are requires open, agile, and collaborative cross-channel demand and supply networks.
- Enable agile, cost-effective supply network execution for direct-to-consumer fulfillment
- Automate and optimize short- and medium-term forecasting through real-time integration for supply and demand collaboration across functions

- View individual orders or shipments as profit or cost centers to measure customer or even consumer-specific performance with ubiquitous information availability

Virtual business networks

Frictionless supplier networks enable real-time integration to couple and uncouple with consumer companies based directly on market need.
- Real-time information access and cross-network transparency transforms supply planning to enable just-in-time availability while streamlining and eliminating inventory and safety stock
- Enable network agility to adjust quickly and profitably for weather, natural disasters, and disruptions from unforeseen events

Hyperconnected manufacturing

Sensors, smart machines, and algorithms are automating and connecting manufacturing processes with every aspect of the enterprise and extended value network to optimize capacity and production output.
- Sensors monitor asset utilization and health, predicting potential issues and maintenance needs
- Fixed manufacturing schedules become agile and flexible thanks to ongoing, real-time data sharing with global supply networks
- Capacity plans are updated directly and automatically through automated integration with supply network demand forecasts
- Consumers and homes connect directly to manufacturing capacity through smart things that monitor real-time consumption and use this information to exponentially improve demand forecasting and production planning

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Hampton Creek Foods, now the #1 selling mayonnaise at Whole Foods, is analyzing food potential of 400,000+ plants to reimagine future food production.[15]

Frito-Lay is reimagining innovation as a consumer contest, driving YoY sales growth with simultaneous engagement and advocacy.[16]

Lego, anticipating the emerging threat from 3D printing, developed apps for interactive cities, tailored sets, and other experimental products, leading to quadrupled revenue over 10 years.[17]

REIMAGINE WORK

> The singular-focused, task-oriented, full-time consumer products workforce transforms into the digitally enabled, dynamic, and agile consumer outcomes workforce, collaborating in real time to orchestrate and deliver value in consumer, customer, and market moments.

Contingency-based operations

Enable a flexible, variable cost operation and workforce that scales dynamically based on business opportunity and market need.

- Reassess full-time staffing and rationalize talent toward differentiating skills like data science, consumer insights, and engagement
- Eliminate or assign to contingent labor analog, manual processes in customer service, manufacturing, finance, and other areas
- Enable dynamic service delivery by brand ambassadors, along with the capacity to track, manage, and assess quality of service delivery
- Leverage shared capacity and knowledge to ramp business operations up or down and improve competencies as needed at a low cost

Redefine how and where work gets done and who does it

Leverage digital capabilities to distribute varying functions to consumers, customers, partners, and suppliers to drive differentiation and value at low or no cost.

- New technologies like 3D printing are enabling consumers to complete finished goods production
- Direct-to-consumer fulfillment is transferring logistics operations and costs to third-party providers and consumers
- Real-time consumer engagement is eliminating the need for qualitative research and minimizing investments in agency relationships

Simulate and optimize outcomes

Previously sequential processes are now simultaneous, agile, and responsive, enabling speed at scale with modeling and simulation to quickly identify best options.

- Collaborate in real time across functions and with customers, channel partners, and suppliers to orchestrate outcomes in moments of need

- Simulate outcomes considering implications and issues across internal and external teams. Align on best options versus common enterprise objectives
- Leverage real-time data to ensure changes are accounted for across complementary functions

Automate intelligent processes

Embed intelligence to monitor and automate processes end-to-end in real time, streamlining decision making based on predefined rules and tolerances and limiting intervention to exceptions.

- Elevate the workforce to exception handling, simulating, and optimizing outcomes as well as proactive risk management
- Streamline manufacturing and fulfillment with new technologies like robotics and 3D printing
- Automate routine processes like order processing, replenishment, and deductions through integration with functions, retailers, partners, and financial institutions
- Transform ad hoc marketing and services to real-time consumer engagement
- Break linear and time-bound cause-and-effect cycles with ongoing process monitoring

Transparency and trust

Trust accelerates seamless relationships, and with real-time visibility to all data, expectations of consumers, customers, partners, suppliers, and employees for transparency have radically and forever changed.

- Complete materials, ingredients, and traceability visibility ensures consumer confidence and supplier accountability while mitigating brand, financial, and regulatory risk
- Offer consumers options to validate organics and trace ingredients and inputs to origin to build and sustain consumer trust from farm to fork and from sheep to shop
- Guarantee authenticity and quality and eliminate fraud and counterfeiting risk while minimizing waste and costs

ConAgra analyzes cost inputs, cost decomposition, volume, and trade against shared KPIs to model and predict product and customer profitability.[18]

Colgate-Palmolive is aligning and visualizing cross-functional enterprise information in real time to enable the boardroom of the future.[19]

SAP DIGITAL TRANSFORMATION FRAMEWORK

A SIMPLE AND PROVEN APPROACH TO VALUE CREATION THROUGH DIGITALIZATION

Every company across all industries requires a simple digital approach to build a pragmatic and executable vision of its digital strategy.

SAP DIGITAL TRANSFORMATION FRAMEWORK

## Every company needs to think about the five pillars of a digital strategy

We have looked at the strategic priorities that consumer products companies are pursuing and how they have to reimagine their business models, products, processes, and work to do that.

Let's now look at how SAP can help enable them do this by providing the following architecture.

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 constant basis.

This concept, which is often referred to as "bimodal IT," is brought to life through our SAP Digital Transformation graphic, pictured below.

- The **digital core** is the foundation for the core enterprise processes, which need to run consistently and uninterrupted. It provides real-time transactions and analytics, the ability to work with Big Data, and connectivity to the 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 consumers 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 consumers require flexibility in the way they interact with you through multiple channels.

- Flexibility and adaptability in working with **suppliers and partners** are key to onboard new suppliers quickly and shift supply to alternates.

- A lot of flexibility is required when building and maintaining an agile **workforce**.
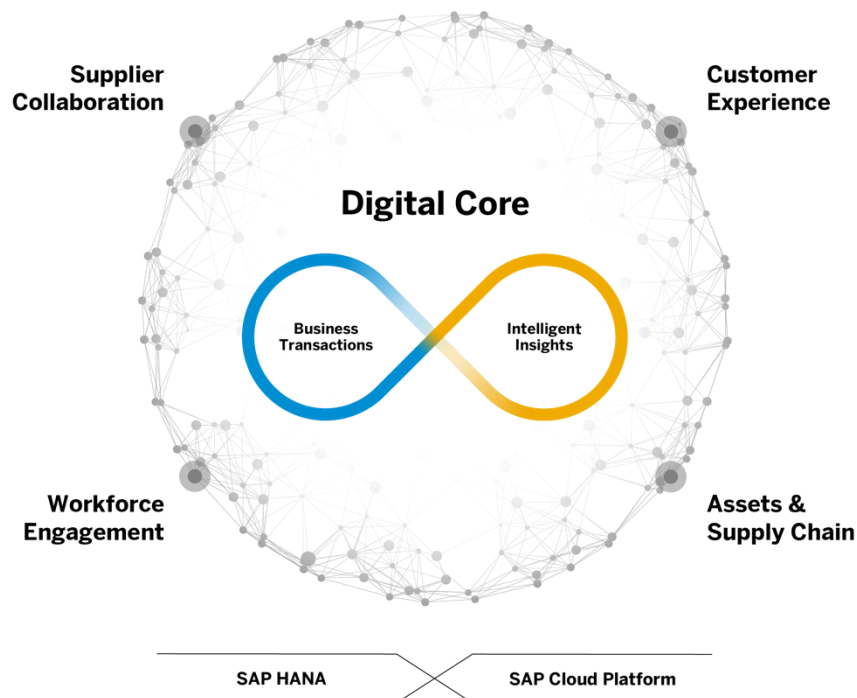
SAP PORTFOLIO WITH SAP S/4HANA AND SAP LEONARDO

Executing on a digital strategy provides distinct benefits in each of the pillars and enables the end-end-end value chain for consumer products companies

The Digital Core

Enterprise management, a new generation of enterprise resource planning running in real time and integrating predictive, data, and mobile, will change how we work, how we run our businesses, and how information is consumed. The future is here.

Spend
Management

The most dramatic change in the digital economy will be driven by hyper-connectivity, Big Data science, and the Internet of Things, enabling new consumer products, business models based on automated manufacturing and connected logistics, smart things, and context awareness.

Customer
Experience

Digital technology has changed the game, but consumers changed the rules. Consumers now demand simple, seamless, personalized experiences across any channel, anytime, anywhere, and on any device. It's all about the consumer journey and real-time engagement
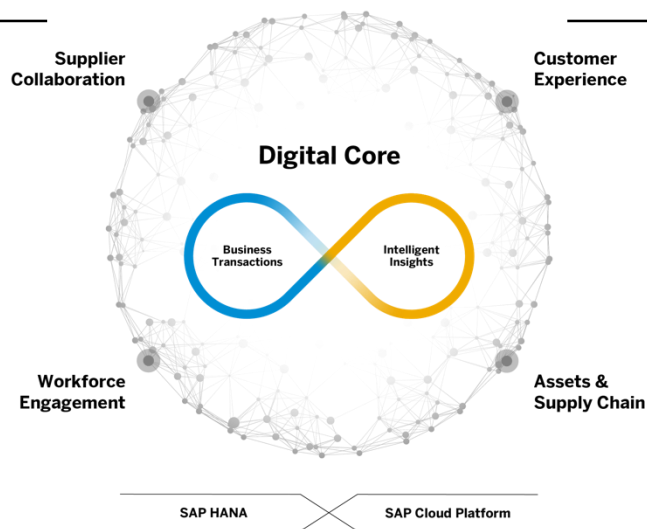
Workforce
Engagement

The world is getting smarter, but complexity still hampers the workforce. Workers demand access to smart, consumer-grade technology to work faster, better, and more efficiently.

IoT
& Supply Chain

Reimagining business processes as an orchestrated network of networks enables consumer companies to scale and improves consumer outcomes and experiences.

Supplier Collaboration

Customer Experience

Digital Core

Business Transactions

Intelligent Insights

Workforce Engagement

Assets & Supply Chain

SAP HANA

SAP Cloud Platform

SAP PORTFOLIO WITH SAP S/4HANA AND SAP LEONARDO

To execute on their digital strategy, consumer products companies will not only need to reengineer their business processes – they will also have to evaluate if they have the right technology platform that can deliver on the vision. The winning platform will require an IT architecture that provides both stability and long-term reliability for core enterprise processes, while allowing for flexibility in areas of frequent change. The "digital core" is the foundation for the core processes that need to run consistently and flexibly. It provides uninterrupted, real-time transactions and analytics, the ability to work with Big Data, and connectivity to line-of-business extensions that enable supporting processes such as talent sourcing and networks.

SAP S/4HANA® was specifically developed to represent the digital core in this "bimodal IT architecture." It provides consumer products companies with a proven framework to adopt industry best practices while attaining operational excellence – specifically but not exclusively across core industry capabilities such as real-time supply chain and digitalized sales.

Digital Innovation SAP Leonardo
- Product lifecycle costing
- Connected goods
- Manufacturing integration and intelligence

Extensions

SUSTAINABLE PRODUCT INNOVATION
- Engineering control center
- Innovation management
- 3D visual enterprise

SOURCING AND PROCUREMENT
- Business network
- Guided end-user buying
- External workforce management
- Supplier collaboration
- SAP Ariba
- CONCUR
- SAP Fieldglass

AGILE MANUFACTURING
- Manufacturing execution
- Sequenced manufacturing
- Digital asset network
- Product stewardship network

- Enterprise portfolio and project management
- Environment, health, and safety management
- Constraint-based production planning
- Production scheduling
- Asset operations and maintenance*

- Product development and project control
- Production engineering
- Operational purchasing
- Invoice and payables management
- Supplier management
- Procurement analytics
- Production operations
- Maintenance management
- Quality management

Digital core

SAP S/4HANA Enterprise Management

- Inventory and basic warehouse management
- Production planning
- Order and contract management
- Accounting and closing operations
- Accounting
- Cost management and profitability analysis

- Advanced ATP
- Billing, invoicing
- Billing, customer financials
- Sales planning and performance management
- Financial planning and analysis
- Accounting and financial close
- Treasury management
- Invoice management and accounts payable

Extensions
- Integrated business planning
- Extended warehouse management
- Transportation management
- Sales cloud
- Service cloud
- Marketing cloud
- Commerce
- Billing, charging
- Trade promotion management
- SAP Hybris
- Governance, risk, and compliance solutions
- Financial services network
- SAP Ariba
- CONCUR

REAL-TIME SUPPLY CHAIN | **SALES AND MARKETING** | **FINANCE**

Digital Innovation SAP Leonardo
- Vehicle insight
- Global track and trace
- Invoice matching

SAP Cloud Platform
Customize applications | Integrate apps, data and processes | Build new apps

- **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 compatible scope

87%
of finance executives say meeting growth targets requires **faster data analysis**, but only 12% can respond to information requests in real time[20]

70%
of customers are "very satisfied" when their needs are met over three or more touch points[21]

50%
Networked companies are 50% more likely than peers to have increased sales and higher profit margins[22]

$4 trillion–$11 trillion
Estimated potential economic impact of the Internet of Things per year by 2025[23]

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Consumer products companies are at the forefront of digital transformation as they:

They pursue **five key initiatives** that require **new business capabilities** along the value chain.

1. Recognize that the digital economy has dramatically changed the competitive landscape and brought customer engagement to the spotlight
2. Take charge of their destiny by building digital business capabilities and quickly identifying and acting on new growth opportunities

	Sustainable Product Innovation	Sourcing and Procurement	Agile Manufacturing	Real-Time Supply Chain	Sales and Marketing	Finance
Compete as an ecosystem by integrating vertically and virtually	• Integrate product development processes to enable collaboration and reduce production costs • Collaborate with service and knowledge-based partners to deliver fundamentally new and differentiated consumer value propositions	• Maximize visibility into spend and turn data into actionable intelligence • Combine network-driven intelligence with integrated spend management	• Make fixed manufacturing schedules more agile and flexible through ongoing, real-time data sharing with global supply networks • Create a network of distributed manufacturing capability through 3D-printing capabilities	• Couple and decouple with partners seamlessly across physical and virtual networks with real-time information exchange as customer, consumer, and market needs change • Collaborate in real time across functions and with customers, channel partners, and suppliers to orchestrate outcomes in moments of need	• Enable previously unviable partner ecosystems to orchestrate personalized information, offers, and services tied to consumption, use, and market need • Process transactions and analytics against a single copy of data in memory for real-time insight	• Gain real-time access to financial data and eliminate latencies that can dull competitiveness • Automate and optimize short- and medium-term forecasting through real-time integration for supply and demand collaboration across functions
Deliver products as services	• Alert consumers to replace, replenish, or repair products in real time through sensors that monitor use, consumption, wear, and freshness	• Source proprietary and third-party content for value-added services • Orchestrate service delivery from partner organizations	• Expand manufacturing and production processes to include finished goods coupled with services based on real-time consumer demand	• Extend agile processes to include the management and delivery of physical goods and virtual content • Enable agile, cost-effective supply network execution for direct-to-consumer fulfillment • Innovate pay-per-use models for smart products	• Transform value propositions into desired outcomes such as flavors, nutrition and wellness, comfort, reliability, security, control • Embed sensors that prompt consumers to replace, replenish, or repair in real time to support business models such as subscriptions	• Develop innovative spend models for products delivered as services • Implement accounting approaches for accounts payable and receivable to deliver products as services
Serve the segment of one	• Map the personalized the digital consumer experience to understand consumer needs and desires • Expand the definition of product to include content and ongoing engagement and embed them into innovation processes	• Organize the supplier network to respond to small or individualized lot size production • Accelerate order fulfillment across geographies through a flexible supplier network	• Run manufacturing processes that are responsive to individual consumer needs and concerns, such as producing small or individualized lot sizes • Offer products that are configurable and personal, tailored to individual consumers' needs and preferences	• Give consumers real-time visibility into inventory availability • Engage consumers and fulfill orders anywhere with seamless, fluid channel experiences	• Increase personalization of products, content, information, and offers • Align information and offers to consumer preferences and present them at the moment of need • Engage consumers along the entire purchase path	• Report consumer activities and segment profitability with greater granularity, resulting in increased personalization • Personalize payment options for seamless use across all sales channels
Build hyperconnected business networks	• Partner with service providers to deliver comprehensive, branded experiences • Use consumer insights to create offers for partners in adjacent industries	• Engage suppliers digitally to proactively use and predict consumer demand and adjust production • Gain multitier visibility of supplier risk through a network-centric approach to risk management	• Apply available capacity through co-manufacturing partners to manage peak demand at minimal cost • Enable predictive maintenance through connected goods to mitigate downtime and minimize product loss	• Cover complex fulfillment, transportation, and storage needs through cross-company collaboration • Develop and manage partnerships with logistics providers to fulfill orders directly to the consumer • Extend demand forecasting to a partner network to help ensure optimal service levels	• Partner on opportunities for co-branding, shared experiences, or technology-enabled personalization • Improve the consumer experience through value-added service delivery enhanced by partner content	• Innovate subscription-based business models • Create multisided business models that involve consumers and different partners
Model business outcomes to drive speed at scale	• Gain unprecedented insight from text, spatial, predictive, time-series, streaming, and graph analytics to continuously improve products	• Gather supplier information from 160,000 sources and quickly analyze it with in-memory technology to help ensure real-time availability	• Model capacity utilization to maximize manufacturing output while minimizing cost	• Enable real-time visibility to forecast demand and inventory availability to help ensure optimal fulfillment across channels • Automate short-term forecasting processes in accordance with real-time consumer demand	• Model promotion scenarios to determine optimal price points and maximize consumer sell-through • Monitor consumer response in real time across channels, including social media, to assess sentiment	• Perform simulations and what-if analyses on cost and profit drivers to plan cost optimization • Test the impact of every decision to find the most beneficial scenario

Typical business benefits*

• Lower total costs for new product development • Accelerated time to market	• Better collaboration with suppliers • Smoother operations with improved spend insights and higher compliance	• Reduced manufacturing cycle time • Improved manufacturing productivity	• Reduced supply and inventory planning cost • Increased inventory accuracy	• Higher internal sales productivity • Greater transparency of end-to-end order management	• Real-time insight for making timely and relevant decisions • Better compliance and management of financial ri

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

Digital Innovation SAP Leonardo

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

Sustainable Product Innovation	Sourcing and Procurement	Agile Manufacturing	Real-Time Supply Chain	Sales and Marketing	Finance
• Product lifecycle costing		• Connected goods • Manufacturing integration and intelligence	• Vehicle insight • Global track and trace		• Invoice matching

Extensions

Sustainable Product Innovation	Sourcing and Procurement	Agile Manufacturing	Real-Time Supply Chain	Sales and Marketing	Finance
• Engineering control center • Innovation management • 3D visual enterprise	• Business network • Guided end-user buying • External workforce management • Supplier collaboration **SAP Ariba** **CONCUR** **SAP Fieldglass**	• Manufacturing execution • Sequenced manufacturing • Digital asset network • Product stewardship network	• Integrated business planning • Extended warehouse management • Transportation management	• Sales cloud • Service cloud • Marketing cloud • Commerce • Billing, charging • Trade promotion management **SAP Hybris**	• Governance, risk, and compliance solutions • Financial services network **SAP Ariba** **CONCUR**

Digital Core SAP S/4HANA

Sustainable Product Innovation	Sourcing and Procurement	Agile Manufacturing	Real-Time Supply Chain	Sales and Marketing	Finance
• Enterprise portfolio and project management • Environment, health, and safety management		• Constraint-based production planning • Production scheduling • Asset operations and maintenance*	• Advanced ATP	• Billing, invoicing • Billing, customer financials • Sales planning and performance management	• Financial planning and analysis • Accounting and financial close • Treasury management • Invoice management and accounts payable
• Product development and project control • Production engineering	• Operational purchasing • Invoice and payables management • Supplier management • Procurement analytics	• Production operations • Maintenance management • Quality management	• Inventory and basic warehouse management • Production planning	• Order and contract management	• Accounting and closing operations • Accounting • Cost management and profitability analysis

HOW DOES IT ALL COME TOGETHER?
Reimagine fashion and apparel

While the five digital business pillars deliver significant value as standalone capabilities, the ultimate goal is to design the next generation of business processes that will span across all the digital pillars. Consumer experience will not stop at the channel experience; supply chain and services have to be aligned with the consumer experience strategy if products and services are to be delivered as promised.

EXAMPLE: FASHION AND APPAREL

Leading consumer companies are leveraging digital technologies to serve consumers in moments of consumer need – in this case, the moment the consumer needs new running shoes.

Sensors in the shoe monitor pressure and wear relative to use and purchase date, dynamically predicting the optimal time for the runner to buy a new pair.

At that moment, the company automatically notifies the consumer that the time is right to replace his or her running shoes. It provides information on usage and wear, and offers the runner recommendations on which new shoes to purchase and offers for those shoes, tailored to the consumer individually based on that consumer's exercise patterns and physical needs, such as cushioning and arch support.

These offers also include other cross-sell opportunities matched to the runner's needs, such as offers for a jacket or gloves along with running gear to help the runner maintain regular exercise frequency during the upcoming winter months.

Once the runner chooses the best combination of tailored recommendations, he or she completes the order online, designating options for automated payment, shipping, and delivery.

The additional items the runner chose are automatically picked and included in the order, and the shoes and other purchased items are sent to the desired pickup or delivery location. Finally, any loyalty points or rewards are credited to the consumer's profile to prepare for and facilitate future purchases.

The diagram above demonstrates how leveraging the digital value network can deliver a personalized experience. The benefits of this scenario are significant:
- Better consumer engagement and insights
- Stronger competitive differentiation
- Compelling and holistic brand experience
- New services and revenue streams

HOW DOES IT ALL COME TOGETHER?
Reimagine personal care

While the five digital business pillars deliver significant value as standalone capabilities, the ultimate goal is to design the next generation of business processes that will span across all the digital pillars. Consumer experience will not stop at the channel experience; supply chain and services have to be aligned with the consumer experience strategy if products and services are to be delivered as promised.

EXAMPLE: PERSONAL CARE

Identify color from Web or via phone camera

Submit color for color matching

#93C939
Hex code sent to 3D printer

Consumer adds substrates; prints cosmetic

Consumer orders in Web shop

Consumer pays via mobile

Company tracks color trends in real time

Other fulfillment and logistics

Tailored delivery

Company monetizes intellectual capital

TIME

Supplier collaboration
Business Networks

Customer experience
Omnichannel

Assets and the
Internet of Things

Digital Core

Companies are now using 3D printing to enable consumers to "print" makeup by selling an affordable, branded 3D printer and the core substrates required to print the cosmetics.
These companies enable consumers to choose a color from anywhere – a Web site or social media by taking a photo on their mobile phone, for example – and submit the color for matching using an app. Once complete, the app sends a color code to the 3D printer to create the cosmetic.

Because most makeup, from high-end brands to value-based private labels, is made from the same core substrates, these companies can source the same substrates as the premium fashion and cosmetics brands and produce finished products comparable to that of premium brands, helping to ensure a positive consumer experience.

However, what's most compelling is the shift in market dynamics these companies are enabling.

Here, beauty and attractiveness are defined by the consumer – "for me, by me, right here, and right now." These new entrants have discovered how to monetize a consumer moment – the moment in time when a consumer spots a color and develops an idea to enhance her own beauty and attractiveness.

And, relative to their larger, more established competitors, these companies are doing all of this with:
- No investment in qualitative research to predict color trends
- Minimal and very streamlined finished goods inventory
- Few or no manufacturing processes
- Direct-to-consumer fulfillment exclusively through third-party logistics providers and paid for by the consumer
- Minimal R&D cost and regulatory risk
- A fraction of the full-time employee base

HOW DOES IT ALL COME TOGETHER?
Reimagine durables

Appliance companies as well as new technology-enabled consumer electronics companies are disrupting the consumer durables segment by adding digital interfaces and sensors to previously analog devices, transforming consumers' perceptions of utility, value, and control.

EXAMPLE: CONSUMER DURABLES

Adding digital interfaces makes appliances like washing machines easier to use, while also redefining consumers' perception of utility and value.

For example, consumers used to clean clothes on the basis of two or three combinations of options – water temperature, fabric type, and cycle time. The consumer also had to determine which combination of the three would deliver the best results depending on the clothing he or she planned to wash.

Now, consumers choose how to wash their clothes based on desired outcomes – deep clean, sanitize, quick wash, wrinkle free, and so on. The machine's intelligence calibrates the variables to achieve those outcomes on the consumers' behalf, rather than the other way around.

Companies are now also embedding sensors into their appliances. Web-connected sensors detect detergent use and consumption, enabling consumers to reorder detergent and fabric softener automatically as needed, adjusting volume and package size to ongoing consumption and use.

Sensors also monitor water, energy, and detergent use to recommend ways to optimize energy consumption and minimize waste. They offer options for managing appliances from mobile devices, as well as coordinating appliance use with other devices based on options, for example, to run during off-peak hours.

More practically, sensors are now also monitoring the "health" of the appliances, giving appliance makers the capacity to monitor age and wear and tear, and to predict maintenance, improving forecasting for replacement parts, planning for services delivery, and minimizing the risks of warranty claims and other potential product-related liabilities.

Incremental investments in digital technologies enable:
- Digital interaction with other appliances and things by using standards-based platforms
- Previously impossible avenues for consumer engagement
- Real-time forecasting and planning based on actual demand from within the home
- Low obsolescence and write-downs
- Significant reduction in service cost and liability risk

FROM YOUR CURRENT STATE TO DIGITAL

THE JOURNEY TO BECOMING A DIGITAL MANUFACTURER BEGINS WITH PLANNING A DIGITAL TRANSFORMATION ROAD MAP

THE KEYS TO SUCCESS

Through our innovations and over $30 billion in strategic acquisitions, SAP has the solution portfolio and expertise required to enable your digital business strategy. SAP is the largest cloud company with 80 million+ users and has the fastest growing solution portfolio to support the entire digital value network. With 74% of the world's transactions running through SAP software, 7,200+ customers leveraging SAP HANA®, and 1,600+ customers leveraging our Internet of Things technologies to drive new business models, SAP is the preferred choice to turn your digital vision into reality.

Customer Experience	IoT & Supply Chain	Digital Core	Workforce Engagement	Spend Management
SAP Hybris	SAP Fieldglass	SAP S/4 HANA	SAP Fieldglass	SAP CLOUD PLATFORM
	CONCUR		SAP SuccessFactors	
	SAP Ariba		SAP FIORI	

SAP will bring expertise, assets, and the proven methodologies required to support the development of your digital business strategy. These capabilities will be leveraged throughout our collaborative value and innovation framework.

EXPERTISE

- **40 years** experience in consumer products
- **86%** of consumer products companies on the Forbes 2000 use SAP software
- **10 of the top-10** largest food, beverage, home and personal care, and durables companies use SAP software
- **14,000+** consumer products customers worldwide
- **6,000+** design thinking experts – sales, services, and development

ASSETS

- **60+** business process benchmarking and best practice assessments
- **600+** industry-focused innovation scenarios
- Innovation case studies by industry
- Infrastructure to drive proofs of concept
- **13+** co-innovation and living labs with **470+** customer co-innovation or design thinking discussions from 2014 to date

METHODOLOGY

- Business case methodology
- Design thinking
- Benchmarking
- Value partnership framework

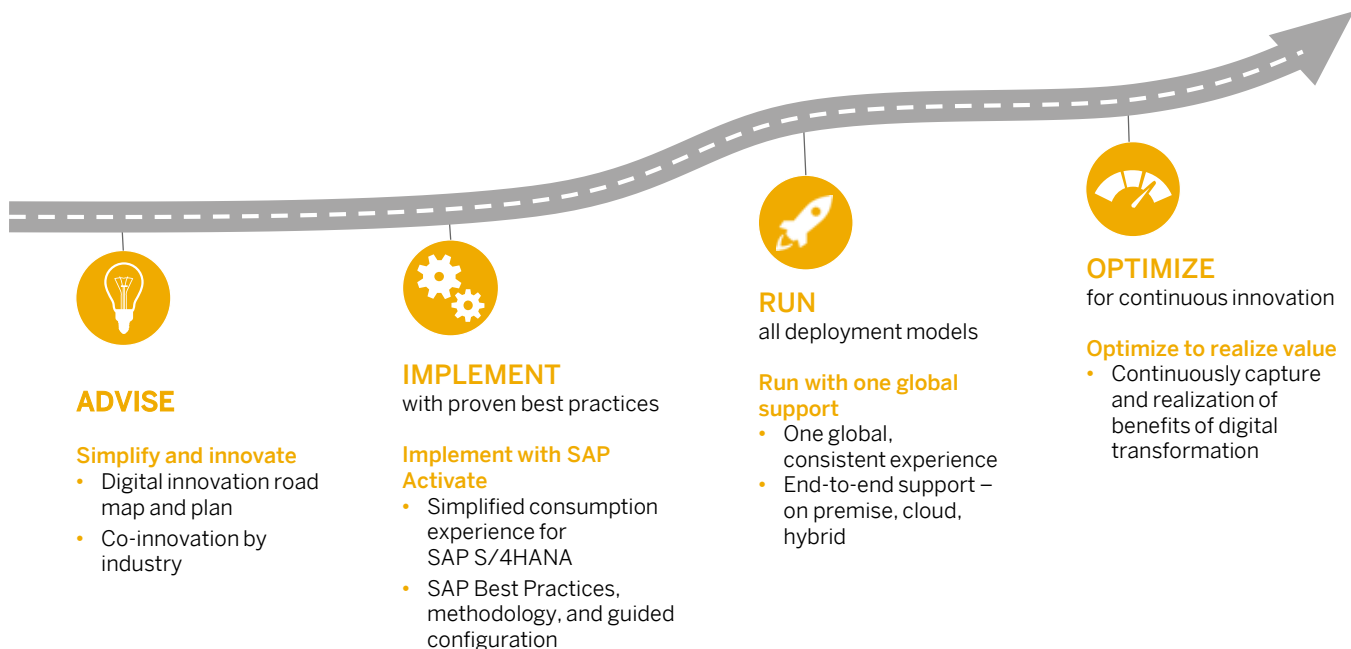Source of all data: SAP internal data and analysis

SAP DIGITAL BUSINESS SERVICES

In the digital economy, simplification and business innovation matter more than ever. 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 plan, to implementing with proven best practices, to the ability to run across all deployment models, and ultimately optimize for continuous innovation across your digital journey. SAP provides both choice and value within our services, allowing you to tailor the proper approach based on your needs.

Turn to the 30,000 consultants and support professionals who can bring your digital strategy to life. Our global service and support model provides a consistent experience – on premise, in the cloud, or a combination of both. We provide the expertise, assets, and the proven methodologies required to accelerate business innovation, reduce TCO, and run a stable platform (on premise or in the cloud).

SAP Activate is a new, simplified consumption experience introduced for SAP S/4HANA and cloud adoption. It provides a combination of SAP Best Practices, methodology, and guided configuration. In addition, we provide leadership in learning to drive quick time to value realization and a solid engagement foundation with SAP MaxAttention™ services, SAP ActiveEmbedded offerings, and the SAP Value Partnership service across the end-to-end customer lifecycle.

SAP HANA Enterprise Cloud is the optimal springboard to the cloud for customers. It offers an attractive option for organizations that are eager to leverage the latest SAP innovations, such as SAP S4/HANA®, with the peace of mind that SAP is in the driver's seat.
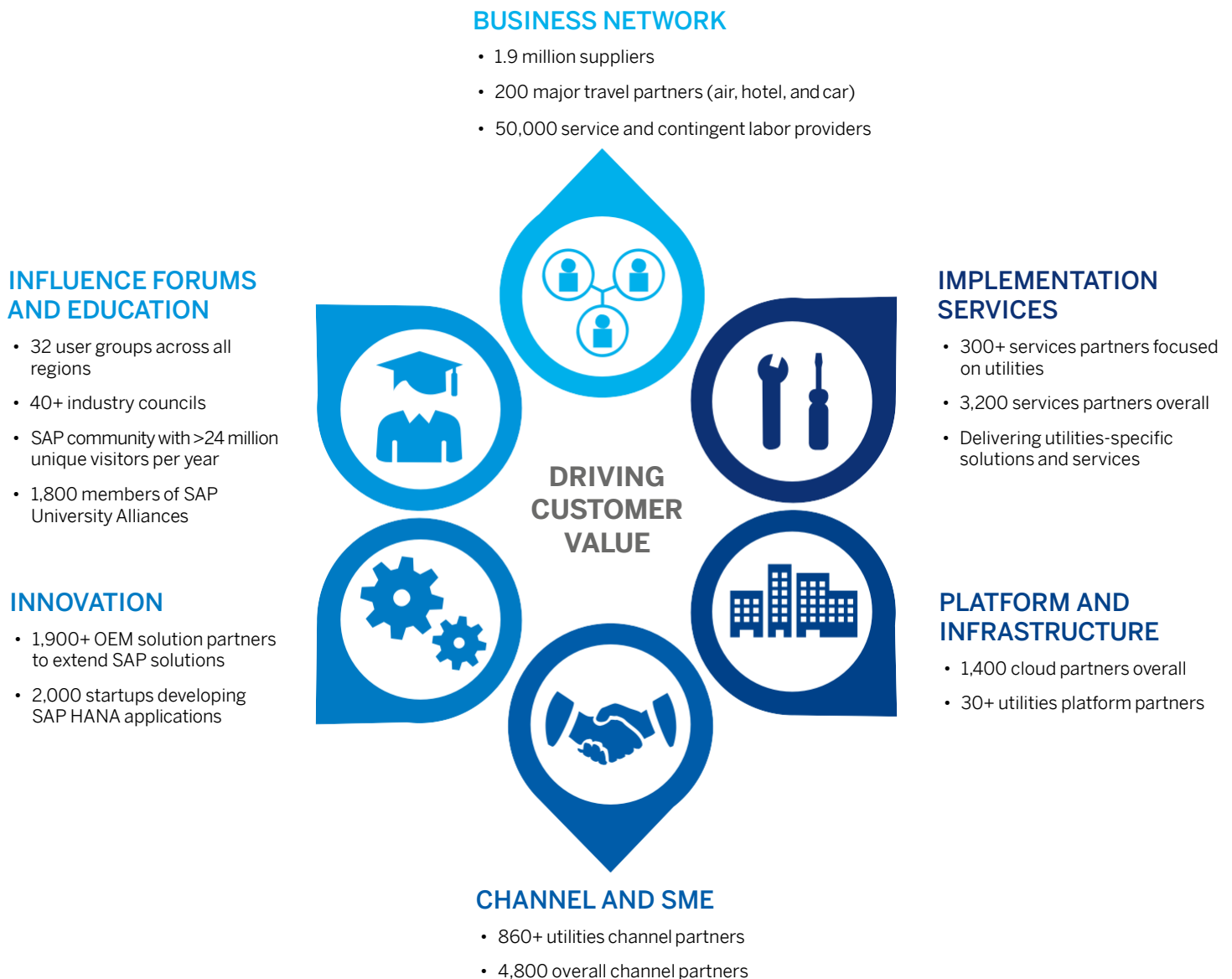
ADVISE

Simplify and innovate
- Digital innovation road map and plan
- Co-innovation by industry

IMPLEMENT
with proven best practices

Implement with SAP Activate
- Simplified consumption experience for SAP S/4HANA
- SAP Best Practices, methodology, and guided configuration

RUN
all deployment models

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

OPTIMIZE
for continuous innovation

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

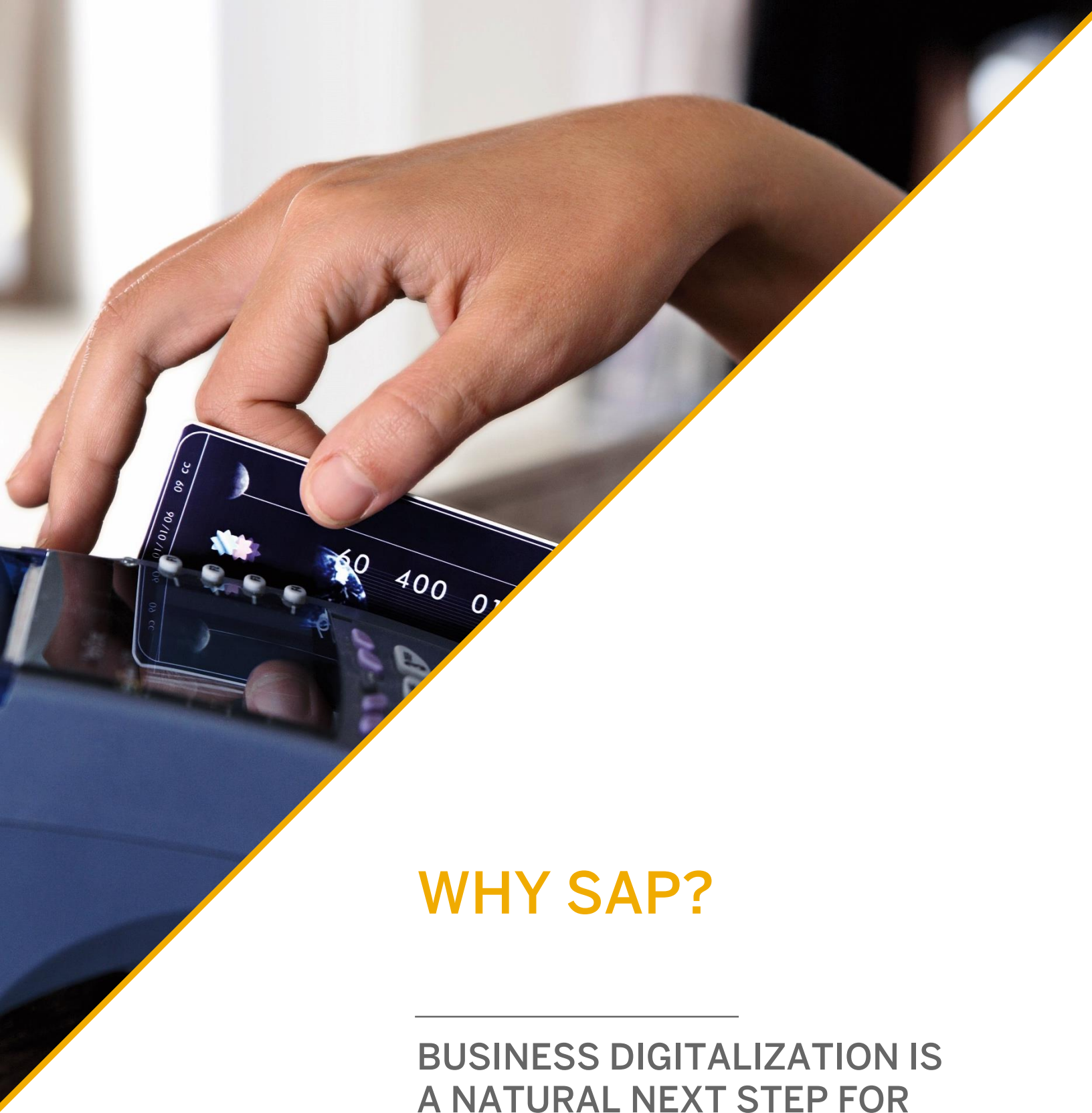Learn | Extend / innovate | Engagement foundation | Support

COMPREHENSIVE SAP ECOSYSTEM

Orchestrating the world to deliver faster value

Our comprehensive ecosystem for the consumer products industry offers:

- Integration into a wide range of business services (suppliers, banks, key vendors, travel, and so on)
- Open architecture: choice of hardware and software
- Complementary and innovative third-party solutions
- Reach – partners to serve your business of any size anywhere in the world
- A forum for influence and knowledge
- A large pool of industry experts with broad and deep skill sets

BUSINESS NETWORK

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

INFLUENCE FORUMS AND EDUCATION

- 32 user groups across all regions
- 40+ industry councils
- SAP community with >24 million unique visitors per year
- 1,800 members of SAP University Alliances

IMPLEMENTATION SERVICES

- 300+ services partners focused on utilities
- 3,200 services partners overall
- Delivering utilities-specific solutions and services

DRIVING CUSTOMER VALUE

INNOVATION

- 1,900+ OEM solution partners to extend SAP solutions
- 2,000 startups developing SAP HANA applications

PLATFORM AND INFRASTRUCTURE

- 1,400 cloud partners overall
- 30+ utilities platform partners

CHANNEL AND SME

- 860+ utilities channel partners
- 4,800 overall channel partners

WHY SAP?

BUSINESS DIGITALIZATION IS A NATURAL NEXT STEP FOR THE NUMBER-ONE 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.

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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

GLOBAL PRESENCE AND RELEVANCE

- **82,400 employees** representing 130 nationalities
- **335,000 customers**
- SAP operates in **190 countries**

INDUSTRY AND LOB FOCUS

- Solutions for **25 industries and 12 LoBs**
- **98% of top-valued brands** are our customers
- **76% of the world's transactions** managed on SAP

DIGITAL ECONOMY-READY

- **120 million** business cloud users
- **1.9 million connected** businesses
- **>$800 billion+** in B2B commerce
- **99%+ of mobile devices** connected with SAP messaging

INNOVATION LEADER

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

CP COMPANIES ENABLED BY SAP

- **40+ years** consumer products industry expertise
- **86% of consumer products companies** in the Forbes 2000 use SAP software
- All of the top 10 food, beverage, home and personal care, and durables companies use SAP software

Source of all data: SAP internal data and analysis

One-day financial close

With the SAP HANA platform, Unilever has accelerated financial close processes, **reducing month-end close cycles to just one day using half the staff**.[24]

End-to-end channel visibility

With the SAP Fashion Management application and the SAP HANA platform, the adidas Group has **complete visibility from the factory to e-commerce channels** with point-of-sale data analysis that provides a better understanding of consumers**, helping replenishment with the best-selling products**.[25]

Global market share analysis

With the SAP Demand Signal Management application powered by SAP HANA, Beiersdorf can analyze various product attributes and **collect intelligence to gain extensive insight into local and global market share** development, brand health, and overall market competition.[26]

ADDITIONAL RESOURCES
Listed below is additional research that was used as supporting material for this white paper.

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*Note: All sources sited 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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SAP

Run Simple