VALUE CREATION IN A DIGITAL ECONOMY

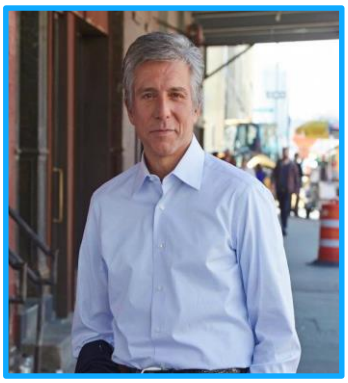
Adapt or Die

in a Digital World Where the Consumer is in Charge

SAP

Run Simple

A MESSAGE FROM BILL



Dear customers,

$237 billion. That's the staggering price tag of complexity for the 200 biggest businesses in the world. It translates to 10% of profits buried under a mountain of waste, inefficiency and missed opportunity.[1] This is so much more than a typical management issue. It is nothing less than the most intractable challenge of our time.

Every CEO I meet is fully aware that digital can be an opportunity or a threat. The question is not about awareness, it's about how to unleash the power of digital, while finding a balance between maintaining a healthy business and current infrastructure and innovating without disruption.

So what's the answer? The answer is simple.

At SAP, we did not invent the digital economy, but we unquestionably understand where it's going. SAP customers represent 98% of the world's most valuable brands. We are the #1 business cloud as measured by the number of users with over 80 million users.

We started a journey five years ago, building the agile platform and solution for the digital economy. This took over $30 billion in acquisitions and billions in R&D. The results speak for themselves – we are the only end-to-end solution to help CEOs solve their problems.

74% of the world's transactions touch our systems. With SAP S/4HANA, we reimagined and reinvented how business processes will work in real time with simplicity and higher value.

We understand the power of integrating the world. Nearly $1 trillion in commerce runs through our digital business networks. Our SAP hybris solution powered by SAP HANA is the de facto standard, reinventing the customer experience and CRM space by seamlessly integrating services, marketing, commerce, and sales.

Engaging the total workforce, including employees and contractors – changing work will drive a step change in productivity to ensure business sustainability.

None of this is possible without the reimagining of a completely new computing platform. This new paradigm is called SAP HANA, which is already used by 7,200 companies. Plus, we are working daily with top customers in the world to simplify, innovate, and digitize business.

In this report we have outlined the most significant trends in technology and shared a vision for how your business can harness the power of data and digitization and use our platform to reimagine your business and Run Simple.

This is a moment to be **epic**. To forge a bold vision for a different kind of data-driven business. It won't be easy, but it will be far brighter than standing in the shadows of competitors that take the path before you.

It is time to simplify, time to innovate, and time to leverage digital connectivity.

I respectfully invite you to join this conversation by dedicating your time to this white paper. We have invested our best minds and given you what I believe is a comprehensive road map to defeating complexity and accelerating growth. Our vision is to help the world run better and improve peoples' lives. The insights that follow are the tools to make that vision a reality.

Thank you for your interest and I look forward to your feedback.

Run Simple

Bill McDermott
SAP CEO

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Big picture: The digital economy is real and it's here to stay

The digital economy

Five technology trends have converged into the digital economy – hyperconnectivity, super computing, cloud computing, a smarter world based on outcomes, and cyber security. The resulting pace of change is staggering. In the next 10 years, 40% of the S&P 500 will no longer exist [2] if they do not keep up with these technology trends.

Leaders are emerging from nowhere

Examples are numerous, such as Uber and Airbnb. The automotive industry is being disrupted by Google, Tesla and Apple. Software is taking over hardware in connected and self-driving cars. Industry boundaries are blurring. Embedded software is changing everything.

Aware but unsure

Executives know the world has changed. Research shows 90% of CEOs believe the digital economy will have a major impact on their industry, but only 25% have a plan in place, and less than 15% are funding and executing on the plan.[3]

It's not about you, it's about your customers

Customers expect a new type of experience – one that is frictionless, where commerce is seamless, and where technology is invisible – one that makes their lives easier.

Early adopters are winning

Research shows that companies that have embraced the digital world and executed on their digital strategy are seeing real shareholder and stakeholder value. Value creation is significant, with +9% revenue creation, +26% impact to profitability, and +12% market valuation.[4]

Digital business models are disruptive. The rules have changed.

- **Under Armour** is not just selling shirts and shoes – it is connecting 38 million people on a digital health platform
- **Facebook** is not just a social network – it is the largest media company, even though it doesn't create content
- **Uber** is not just another taxi company – it is transforming into an "urban logistics" company with 200,000 drivers, roughly double the size of the UPS delivery workforce
- **Siemens** is not just an industrial powerhouse –it is a software company connecting its industrial assets in the cloud and enabling customers to generate new revenue streams by selling services, not products
- **Alibaba** is not just the largest e-commerce company –it is also a financial services and technology company, blurring industry lines

WHAT DOES THIS TELL US?

The road map to relevance is to reimagine business models and proactively evolve before new digital competitors emerge.

Every business is now a technology business.

Burning platform: Complexity is an obstacle to digitization

Complexity alert

Complexity is the most intractable issue of our time, an epidemic of wide-ranging proportions, affecting our lives, our work, and even our health.

Complexity exerts negative pressure on the collective bottom line. The 200 biggest companies in the world lose over 10% of their annual profit because of complexity – over $237 billion.[5] Productivity growth in almost every advanced economy is slowing or declining.[6]

For 20 years, businesses invested in **standardizing** business processes and implementing productivity tools to address this complexity. The results were remarkable – significant business value was achieved in terms of productivity, use of assets, and compliance.

But complexity still exists with the proliferation of products, business networks, customer demand, regulations, etc.

How do we pull ourselves out of this quagmire of complexity?

The answer is simple

To get the most out of this new world of digital business, you need to Run Simple.

Finding ways to **Run Simple** matters more than ever in order to drive **business innovation**. Running simple is when you reimagine business models based on real insights, not trends. It's when you can serve customers, not your process. It's when technology works for you, instead of the other way around.

This needs to be added to the business agenda.

When you Run Simple, you can unify the customer experience across channels. weave together a seamless partner and supplier network. empower and engage your workforce, and make business processes work together.

Running simple is contagious. When you Run Simple, customers are enabled to Run Simple too.

SAP doesn't do simple – we create simple, we deliver simple, we engineer simple.
Run Simple integrates digital systems and orientates you toward reimagination so that innovation isn't restricted.

SAP HANA is the great simplifier.
At the foundation of digital business is a flexible, secure, real-time innovation platform that makes all this possible – SAP HANA.

$50B
Incremental revenue available through simplification in U.S., UK, and Germany combined.
Source: S+G Global Brand Simplicity Index 2013[7]

81%
Of executives surveyed believe simplification is important for their organization, and 88% admit IT investment is important to achieve simplification
Source: SAP benchmarking

36
Enterprise apps per billion U.S. dollars in revenue for the average company. This is driving most of the technical complexity.
Source: SAP benchmarking

FROM:
STANDARDIZATION

TO:
SIMPLIFICATION AND INNOVATION

Road map to Run Simple: Steps to digitize your business

REIMAGINING

Do you have the right strategy? Start by reimagining your business with business outcomes and customers at the center.

REIMAGINE BUSINESS MODELS

Drive competitive advantage by expanding beyond traditional industry boundaries and transforming from an asset to a service/ outcome-based organization

REIMAGINE BUSINESS PROCESSES

Change or eliminate fundamental business processes due to digitization

REIMAGINE WORK

Step change in improvements to existing processes based on real-time information provided to make the right decisions and drive immediate impact

We leverage Design Thinking as a key approach to the reimagining phase.

PLATFORM

In order to reimagine your business, you need to have the right platform in place. Leaders are investing in digital capabilities that are congruent with their strategy. The right technologies ensure agility and a rich environment for innovation. In addition, the platform should align to desired outcomes.

The SAP's digital business framework is based on the five key pillars of a digital plan and a digital architecture:

1. Customer experience across all channels
2. Supplier collaboration across all spend categories (product, services, and T&E)
3. Core business processes (finance, supply chain, R&D, manufacturing, ...)
4. Workforce engagement, including employees and contractors
5. Assets and the Internet of Things to drive real-time insights and new business models

ROI drives this significant phase of the simple transition to digital. It's not about any one of the five pillars, but rather how they all interconnect to achieve business outcomes.

TOP 05 TECHNOLOGY TRENDS

Top 5 technology trends that are enabling the digital economy and changing the business landscape

Perfect storm: Five technology trends changing everything

We are witnessing an unmatched era of true business innovation. Breakthrough technologies have matured and hit scale together, enabling five defining trends:

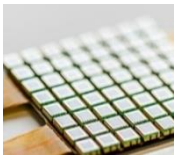
01

HYPERCONNECTIVITY

Every consumer and every machine is connected, disrupting all the established rules around business channels. Connectivity drives the movement of goods, services, people, knowledge, and wealth.

02

SUPER COMPUTING



The limits of 20th century computing power are gone. Networking and in-memory computing allow for the creation of infinite new business opportunities.

03

CLOUD COMPUTING

Technology adoption and business innovation now move at lightning speed. Technology infrastructure is now rented to eliminate barriers to entry. B2B transactions are moving to new cloud-based collaboration platforms, where millions of businesses and users are connected in a matter of days.

04

SMARTER WORLD

Sensors, robotics, 3D printing, and artificial intelligence are the new normal. The new outcome-based economy replaces products and services with outcomes. Businesses will manage products they are selling remotely, Sensors lay at the heart of the "circular economy".[8]

05

CYBER SECURITY

Cyber criminals have expansive new capabilities to attack, undermine, and disrupt businesses. Trust remains the ultimate currency, giving security-focused businesses a significant advantage in brand reputation.

1 2 3 4 5 Hyperconnectivity

Deliver higher value by engaging with the hyperconnected world to reach new customers, create new products and services, and ultimately enter new markets.

Connecting the world with roads, shipping routes, railways, and airports was a key enabler to the movement of goods and knowledge during the industrial age. These connections are directly related to wealth creation.

In a digital economy, we are witnessing an explosion in connections at the individual and machine level. This hyperconnectivity is driving new channels to reach customers and new ways to optimize assets to make the world a better place.

We believe that hyperconnectivity will make an impact across four dimensions:

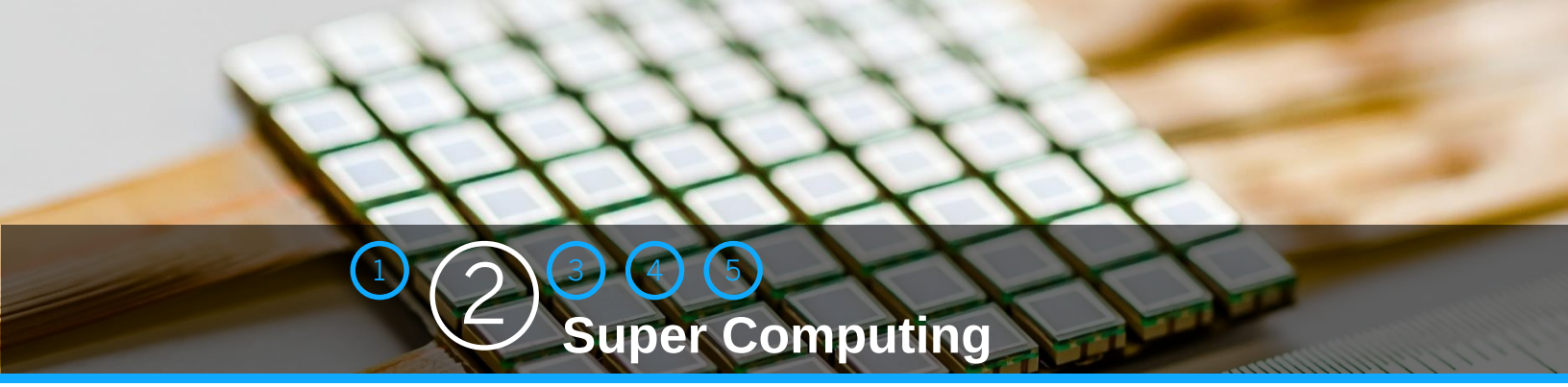
1. **People**
   With an unprecedented 3.1 billion people[9] connected to the Internet, companies have an amazing market opportunity. This is opening the door to a new world of personalization.
2. **Business**
   For years, industry standards have allowed B2B commerce at an industry segment level. We are witnessing the emergence of the network of networks. This is enabling digitization by connecting businesses with suppliers across all service categories at new levels of efficiency and in real time.
3. **Communities**
   Millions of people are leveraging specialized communities to provide services, share knowledge, and engage in commerce. Businesses need to leverage these communities to enhance customer engagement, drive personalized experiences, and align efforts across the value chain to maximize value potential.
4. **Sensors**
   Sensors are more reliable, last longer, and cost a lot less. This technology breakthrough is driving what is known as the Internet of Things and Big Data, and will drive value creation through a real-time and predictive world.

3.1 billion Internet users worldwide
Source: Miniwatts Marketing Group[9]

1.9 million companies connected to the Ariba Network
Source: SAP

1.3 billion people on social networks
Source: Nielsen[10]

Sensor prices have dropped to an average **60 cents from $1.30** in the past 10 years
Source: Goldman Sachs[11]



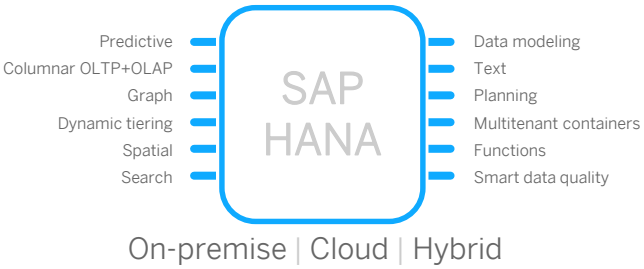
1 2 3 4 5

Super Computing

Large-scale in-memory computing is a breakthrough that collapses transactional and analytical processing into a single platform, dramatically reducing cost and enabling massive business simplification and value creation.

Since the inception of business applications, companies have dealt with major limitations. Transaction and analytic systems required separate landscapes, resulting in complexities (data redundancy, batch jobs, complex systems, high costs).

After eight years of innovation and development, SAP, under the direction of Hasso Plattner and strategic partners, has cracked the code on a completely new platform that eliminates the separation of transactions and analytics. This technology, SAP HANA, brings this massive breakthrough to the business world.



SAP HANA is more than just a database – it is a platform to manage digital business. Although the technology is new, we are witnessing 7,200 companies leveraging it to reimagine business.

The value that this technology brings includes:

1. **Real-time business**
   Supply chain, finance, and other processes can focus on predicting and optimizing the future and can run in minutes, not hours or days, changing how people work and how business is optimized.
2. **Business agility**
   Change, such as reorganizations, product launches, etc., can be made in one-tenth of the time. This provides business with the agility to be fast and nimble.
3. **Step change in productivity**
   Applications for business users can have the same sophistication as those used by consumers on their personal devices. With smart apps, transactions are run on any device, data is mined at any level of granularity, and simulations and predictive analytics are used to derive the perfect decision.
4. **Reduce total cost of ownership**
   TCO has decreased dramatically due to the collapse of architecture, fewer customizations, the ability to run large volumes of data on a single computer, and cloud deployment options. Architecture simplification will also enable fewer points of failure. Companies can shift their IT spend to innovation and value creation.

TODAY'S REALITY

- Only 20–30% of IT budgets are dedicated to innovation
- Companies have on average 36 applications/$1 billion in revenue

Source: SAP benchmarking

TOMORROW'S SOLUTION

- 7x faster throughput and 10x smaller data footprint
- 1,800x faster analytics and reporting
- 65% reduction in resource consumption

Source: SAP, Deloitte[12]

MAKING IT REAL

Increase in processing speed is equivalent to reducing a London-NY flight from 8.25 hours to 8.42 seconds

Source: Deloitte[13]

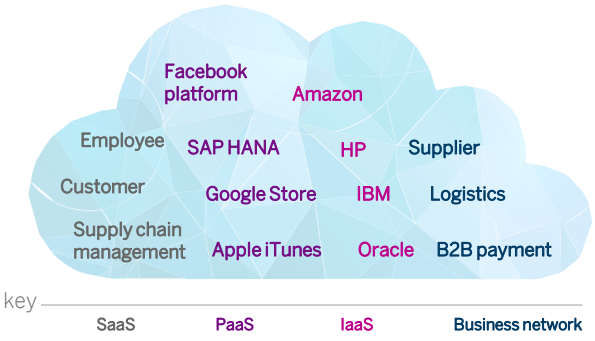
1 2 3 4 5

Cloud Computing

Cloud computing will accelerate time to value, drive higher adoption of new technologies, and connect value chains in real time. Organizations will need to evaluate exactly which delivery models will help them innovate faster.

Most companies operate in a hybrid world where cloud technologies will be interacting with on-premise apps. Most innovations are delivered as cloud apps, and the value is proven. With faster time to value, capabilities available in the network, and the rise in adoption, cloud is a force that must be reckoned with.

We believe that there are four cloud delivery models which must be evaluated:



1. **Software-as-a-service (SaaS)**
Saas is a mature trend, with companies like Ariba providing solutions via the cloud. SAP is the #1 company, with 80 million+ users leveraging SaaS. With SaaS growing more than 20%, we see more apps moving into the cloud. While this is dominated by CRM, procurement, and HR, other apps like ERP are also moving into the cloud.

2. **Platform-as-a-service (PaaS)**
PaaS provides an entire computing platform in the cloud, including hardware, software, and open APIs to build new businesses and create new solutions. Apple is a great example, and the SAP HANA Cloud Platform will also be a disruptive platform for business.

3. **Infrastructure-as-a-service (IaaS)**
Businesses are leveraging IaaS to get up and running in a matter of hours, without spending significant capital expense. This is possible through IaaS, such as Amazon Web Services. Even Facebook and others are opening their platform and architecture to develop solutions via IaaS.

4. **Business networks**
Companies are connecting and sharing information and transactions within the cloud. This collaboration will change how commerce is transacted. Ariba is leading this collaborative effort with ~1.9 million companies connected and $800 billion+ in business commerce. We believe there will be trillions of dollars of business commerce creating efficiencies in the way business is conducted.

Global SaaS software revenues are forecasted to reach $106 billion in 2016, increasing 21% over projected 2015 spending levels
Source: Forrester[14]

Projected spending on cloud computing infrastructure and platforms will grow at a 30% CAGR from 2013 through 2018, compared with 5% growth for overall enterprise IT
Source: Goldman Sachs[15]

$800 billion+ in business commerce through the Ariba Network
Source: SAP, Ariba

1 2 3 **4** 5

Smarter World

Smarter robots, smarter printing, artificial intelligence, and smarter products will completely reshape value chains, industries, and ultimately the world.

The world is becoming smarter with the digital economy, and this is influencing companies in dramatic ways. Companies can leverage Big Data and new technologies to change everything from product design to how customers are served. Industry lines are blurred, and companies need to innovate, or they will lose market share.

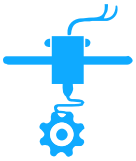
In order to compete, every company must be a technology company. Companies are creating new business models, embedding software in products, and focusing on business outcomes.

There are four innovations enabling the world to become smarter:

1. **Smarter robots**
   Robotics has redefined manufacturing as they have become more humanized with soft skills, can take on tasks without human intervention, and are available at a low cost.
2. **Smarter printing**
   With 3D printing, companies can enable tight value chain integration. This goes beyond providing products faster to customers. Consumers can print their own products. Companies can make spare parts on demand. The value includes faster time to market, reduced cycle times and supply chain cost, and new revenue sources.
3. **Artificial intelligence**
   The explosive growth of structured and unstructured data can be analyzed via AI. Computers can answer questions faster than humans through machine-based algorithms. Software can self-learn, and companies like Facebook and Google are demonstrating this.
4. **Smarter products**
   Smart products will change how businesses and consumers interact, and ultimately change the world. Self-driving cars and usage and/or performance-based contracts are examples of this.

The global industrial robot population will double to about four million by 2020
Source: HBR[16]

The fastest growing segments through 2020 include home energy conservation, with a CAGR of 49.4%, and IoT in utility monitoring, with a CAGR of 59.8%
Source: Mind Commerce[17]



The economic implications of 3D printing are significant, with up to $550 billion a year by 2025
Source: McKinsey Global Institute[18]

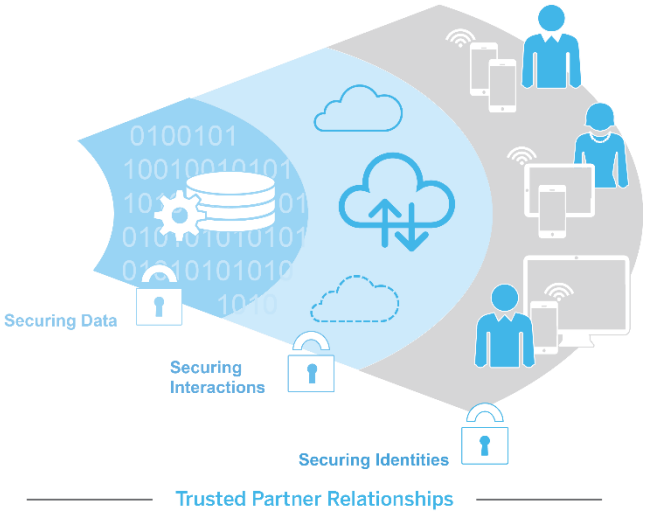
5 Cyber Security

With ever-increasing risk of corporate spying and digital theft, cyber security must be addressed as organizations set and execute their digital strategy.

Corporate spying and digital theft are on the rise, and organizations need to address cyber security at the corporate level. Employees and customers also expect a consumer-grade experience, which leads to additional security risks.

Managing security across your digital business must be accomplished through proper governance. This reduces TCO, business risk, and compliance breaches and solidifies the trust of your customers.

The following four cyber security elements should be addressed:



1. **Securing data**
   Securing data in hybrid environments requires companies and their partners to stay compliant with data privacy and regulations, understand local data controls, and establish encryption and classification criteria.
2. **Securing interactions**
   Value chain interactions must be secured. Joint SLAs should be in place with partners, checks should be at the application level to prevent widespread impact, and connectivity should be safeguarded.
3. **Securing identities**
   Access to digital information should be restricted to authorized users. There should be central authentication, regardless of device, and devices must be maintained to prevent hackers from gaining access to your digital IP.
4. **Partner with trusted suppliers**
   Supplier relationships are key in establishing trust as more non-core processes are outsourced. Companies should build relationships with a few partners who meet the highest security standards. This will also result in a more simple and nimble architecture.

In 2014, 47% of American adults had their personal information exposed by hackers
Source: Ponemon Institute[19]

Five out of six large companies were targeted by cyber criminals, a 40% rise from the previous year
Source: Symantec, 2015[20]

Globally, cyber crime costs businesses $375–$575 billion annually and a net loss of up to 200,000 jobs in the United States alone Source: McAfee[21]

REIMAGINING

DIGITAL ECONOMY OFFERS INFINITE 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

DIGITAL INNOVATION IS REAL

Companies understand that hyperconnectivity and Big Data are the keys to value creation. Based on our collaboration with thousands of businesses worldwide, winning companies are moving quickly in three strategic areas.

REIMAGINE BUSINESS MODELS

Most companies will only change business models if a competitor or new entrant changes the rules of the game. This is inevitable.

- **Outcome-based business models** focus on the outcome, not the product. This change has implications from product design to profitability, services, and OTC processes
- **Business outsourcing** of non-core businesses: Fashion and apparel have led the trend and already outsource most of their manufacturing. Supply chain simplification took years
- **Platform business models** like Apple iTunes are driving massive adoption and value
- **Business networks** and business brokerage models like Alibaba, eBay, and Ariba are enabling commerce with no physical inventory
- **Data-driven businesses** are aggregating and selling information – a business model that can apply to every industry

REIMAGINE BUSINESS PROCESSES

When analytics and transactions are combined in real time on the same platform, business processes will never look the same.

- **Optimize the supply chain** in real time based on demand signals. Today it takes hours, even days
- **Financial consolidation** and **business planning** reporting, cash flow management, and profitability analysis in real time will change how companies operate and optimize their business
- **Predictive software** and machine connectivity will transform how we manage and maintain assets
- **Detail-driven customer engagement** and segmentation will transform marketing, personalization, and customer loyalty, thereby improving people's lives
- **Structured and unstructured data** analytics will significantly improve how products are designed and marketed

Any process can and will be modernized and digitized.

REIMAGINE WORK

Employer of choice status goes beyond recruitment and retention to fundamentally revolutionizing the way people engage.

- **Eliminate work** altogether by digitizing manual steps in the process (e.g., invoice and payment processing)
- **Improve productivity** and profitability by enabling users to access the right information at the right time on any device
- **Use predictive and self-learning** software to improve machine-to-machine collaboration and optimize business decisions
- **Use interactive technology** to improve user experiences, including voice recognition, visualization, and gaming
- **Establish a new employer/employee contract for the digital economy** to invigorate and stimulate the changing workforce with the best technology and access to information

SAP HANA: THE GREAT SIMPLIFIER

In order to reimagine everything in the digital economy, agility and flexibility are required to adjust course at any time. This involves two key concepts: **simplification** and **innovation**.

- Simplification is all about doing what we are already doing, but BETTER, FASTER, and CHEAPER
- Innovation is all about reimagining business models and customer value by leveraging the five technology trends

The diagram below is at the heart of the digital business transformation. The idea is very simple, but it took years to make it a reality: bringing together transactions and analytics on the same platform. Uniting structured data (e.g., finance) and unstructured data (text, video, voice) will change the way businesses plan, scale, and innovate.

In-memory computing is a concept brought to life by the breakthrough SAP HANA platform. While relatively young by commercial standards, SAP HANA's rapid adoption across multiple industries validates its massive potential for digital businesses.

With in-memory computing, we can now finally:

1. Leverage Big Data from sensors, weather, social, and geospatial. Bringing all data signals together leads to the perfect recommendation, which can be instantly acted upon in transactional systems via human and machine-to-machine interfaces
2. Extend the business process to interoperate with business partners in near real time via advanced cloud-based business networks
3. Modernize business processes from finance to supply chain, running them in real time with no data replication and no batch programs

These capabilities open infinite ways of optimizing business, driving business digitization, simplifying everything, reducing cost, and providing the agility required in a fast-changing world.

SAP constructed an innovation road map designed to bring in-memory computing together with cloud computing and mobility. This strategy has been embraced by early adopters who are leading the transition to digital.

SMARTER DECISIONS + SMARTER TRANSACTIONS = SMARTER BUSINESS

DIGITAL BUSINESS FRAMEWORK

A SIMPLE AND PROVEN APPROACH TO VALUE CREATION THROUGH DIGITIZATION

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

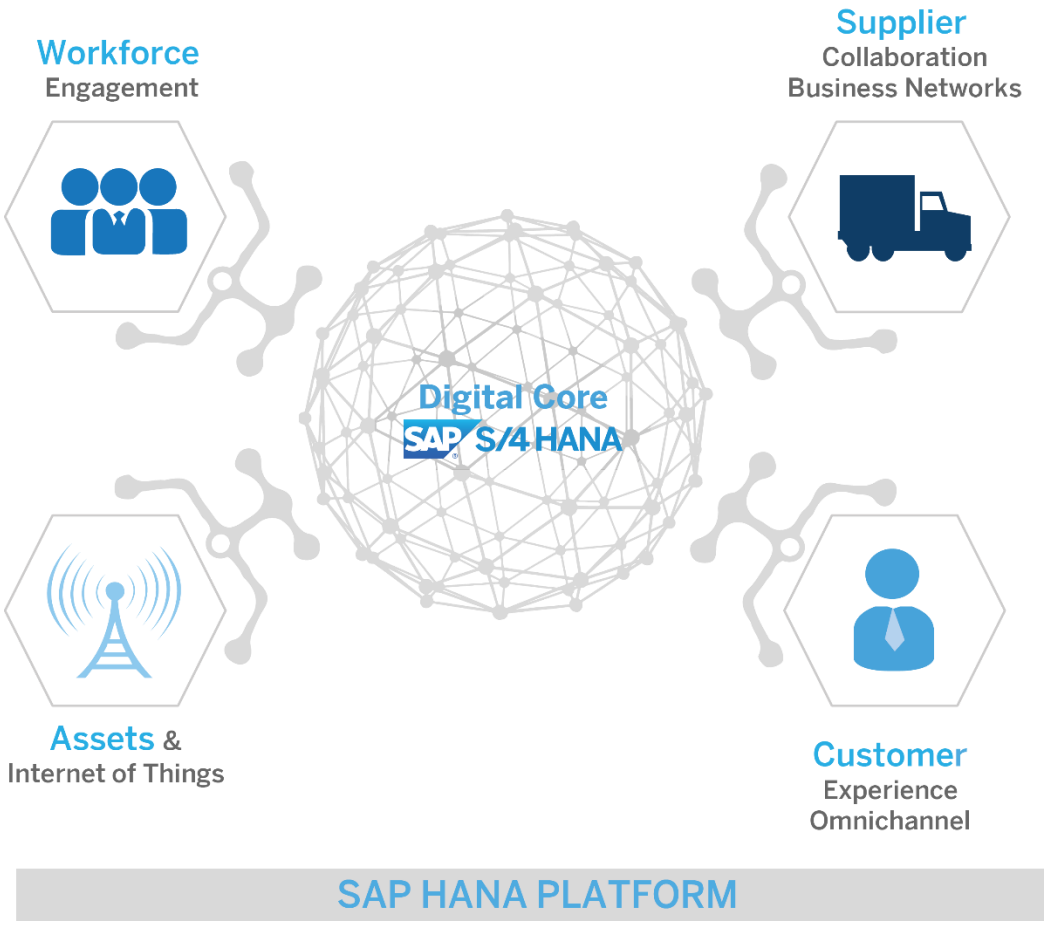
DIGITAL BUSINESS FRAMEWORK

Every company needs to think about digitization across five key pillars

SAP understands the five technology trends, and we also understand that these ever-changing requirements are big challenges for businesses. The reimagining process helps crystalize the future business model.

As a result, we have built a structured framework to think through how to develop and execute on your digital business strategy: the digital business framework. With this framework, the entire value chain will be digitized, including the core, which serves as the platform for innovation and business process optimization. Every company can develop a digital strategy across these five pillars:

1. Outcome-based customer experience
2. Re-platform core business processes and bring together transactions and analytics in real time to be smarter, faster, and simpler
3. Smarter and engaged workforce across all employees and contractors
4. Supplier collaboration to accelerate growth innovation
5. Harness assets and the Internet of Things to drive real-time insights and new business models



THE DIGITAL CORE

A NEW GENERATION OF ERP SOLUTION RUNNING **IN REAL TIME, INTEGRATING PREDICTIVE, BIG DATA, AND MOBILE,** WILL CHANGE HOW WE WORK, HOW WE RUN OUR BUSINESS, AND HOW INFORMATION IS CONSUMED: **THE FUTURE IS HERE.**

With advanced in-memory computing, you can finally free yourself from running the business in batch mode and building complex procedures to get around technology limitations. You can Run Simple and unleash the full power of the digital business.

Real time

Real-time optimization of business-based changes will have a massive implication for how we work, how we do business, and how we organize.

Power of prediction and simulation

Every employee can leverage real business insights with the help of simulation and predictive tools to drive perfect decisions, improve productivity, and increase profitability significantly.

Agility

The ability to rapidly enter new markets, acquire and onboard new companies, or reflect an organizational change in one-tenth of the time it takes with today's systems is now possible and will enable the agility required in the digital economy.

Deployment choice and lower TCO

The consuming solution to run the core has to be simple. Companies now have the choice to deploy in-house or in the cloud. In-memory computing will also have a significant impact on TCO, and it will free up more budget for innovation.

Consumer-grade user experience

User experience is key to success. It drives adoption, user engagement, and, ultimately, productivity.

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
Source: HBR[22]

45%
Of enterprises are building direct-to-consumer fulfillment capabilities
Source: SCM World[23]

52%
Of manufacturing companies expect to be highly vertically integrated in the next five years
Source: SCM World[24]

Simplify with SAP

Currently SAP S/4HANA is the only end-to-end solution that covers all business processes across 25 industries and is running in-memory. The real consideration here is, how and when do you use such a breakthrough in business applications?

In addition, the SAP HANA platform can be the single enterprise data source leveraged by SAP S/4HANA and the rest of your solution landscape.

CUSTOMER EXPERIENCE

DIGITAL TECHNOLOGY HAS **CHANGED THE GAME.** BUT, CUSTOMERS **CHANGED THE RULES.** CUSTOMERS DEMAND SIMPLE, SEAMLESS, PERSONALIZED EXPERIENCES ACROSS **ANY** CHANNEL, **ANYTIME, ANYWHERE,** AND ON **ANY** DEVICE.

Three key trends are reshaping the customer experience:

Outcome-based economy

The outcome-based economy requires a deep change in the business model, new organizational capabilities, and new business process capabilities. It also requires a much different approach to product design and product TCO across the lifecycle.

Customer journey

Customers choose their own journey in multiple channels at their convenience – the pattern that emerges is not linear, as in the past.

Big Data and marketing in near real time

Big Data allows companies to sense and respond to customers' needs in real time and predict the next, best step for engaging with them.

86%
Of customers are willing to pay more for a better customer experience
Source: AMEX Global Barometer[25]

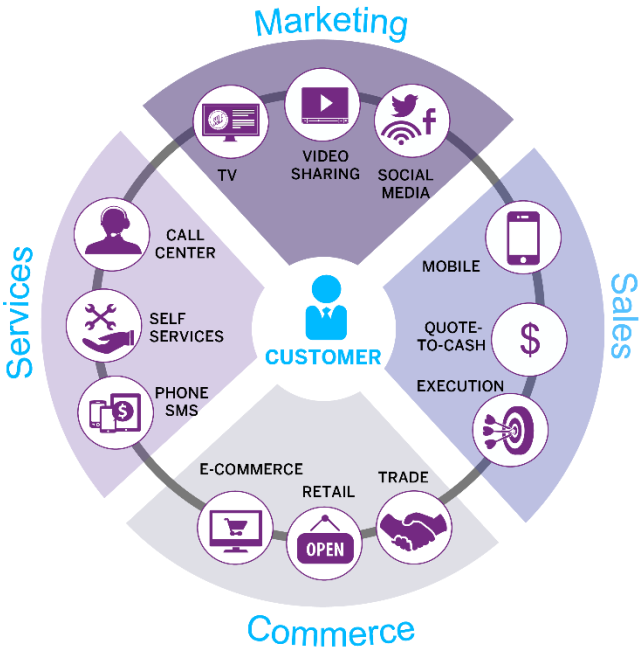
57%
Of the buying process is completed before a first interaction with sales
Source: Customer Executive Board[26]

2.4 billion
Brand-related conversions happen online every day
Source: Keller Fay Group[27]

Digitize your end-to-end customer experience with SAP

A single platform that brings together marketing, sales, services, and commerce (includes the #1 omnichannel solution, SAP hybris) to ensure seamless digitization of the entire customer experience. SAP solutions for customer engagement and commerce powered by the SAP HANA platform enable a 360-degree view of your customer, real-time interaction, and sophisticated predictive analytics, fully integrated to the core transactional system.

- Orchestrate business processes across marketing, commerce, sales, and service
- Deliver personalized experiences in context with each interaction
- Create a single, harmonized experience for your customer while reducing the burden on employees
- Be prepared to engage your customers on the channels they choose, at any moment in their journey
- Full integration with your core business processes



SAP HANA PLATFORM

WORKFORCE ENGAGEMENT

THE WORLD IS GETTING **SMARTER** IN THE DIGITAL ECONOMY. BUT **COMPLEXITY IS KILLING THE WORKFORCE** IN THIS PURSUIT.

Complexity is the enemy of workforce engagement. People are working harder than ever but are accomplishing much less. Workers do not have access to smart, consumer-grade technology to work smarter, faster, and better. Organizational complexity is driving cost and slowing down progress. Four forces need to be addressed:

Changing of the guard
Over 50% of the workforce will from the millennial generation by 2020.[28] This will require a workforce strategy to address this new reality.

Contingent labor is on the rise
To drive agility, lower fixed-cost companies are turning more and more to contractors and services providers.

Constant reorganization
Reorganizing to adjust to the new reality is becoming a constant affair.

Complexity is on the rise
Companies do business in more countries across many more channels. Products and services are becoming more complex. Regulations are changing by the day. Layer over layer of management is hindering speed and agility.

83%
Of executives indicate they're increasingly using contingent workers at any time, on an ongoing basis
Source: Oxford Economics[29]

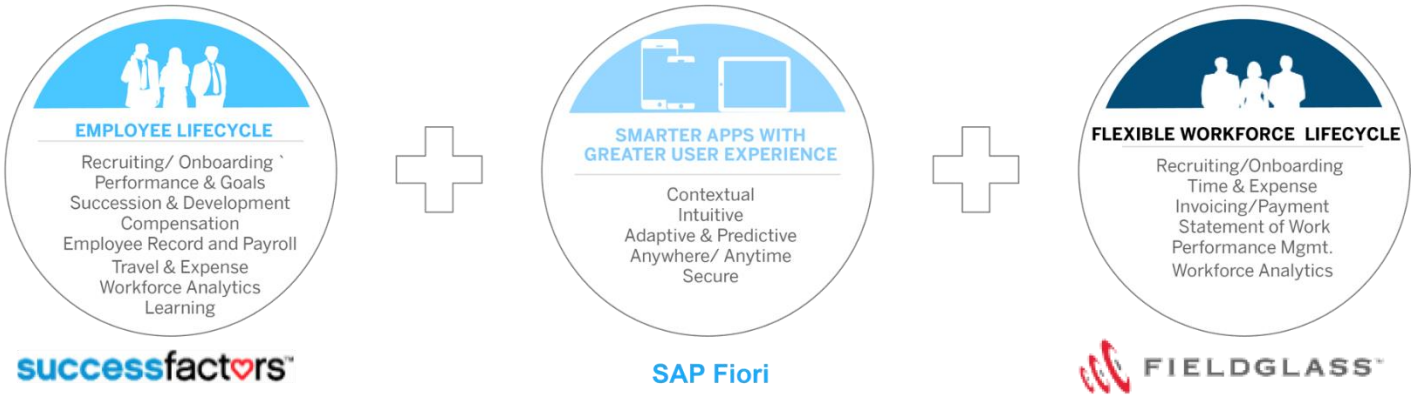
34%
Of executives feel that they've made progress in building a workforce that can meet future business goals
Source: Oxford Economics[30]

30%
Of executives say their companies give special attention to the particular wants and needs of millennials
Source: Oxford economics[31]

Improve your total workforce productivity. Simplify with SAP

Digitize your workforce with SAP: SAP S/4HANA + SuccessFactors + Fieldglass + SAP Fiori provides the tools for total workforce engagement and advanced analytics.

- **Attracting the best workforce**
  Recruit and onboard the best workforce, simplify their work, and ensure that regulatory and compliance requirements are met
- **Managing the total workforce lifecycle**
  Manage the total workforce lifecycle, from recruiting to onboarding, performance, compensation, and learning, all in one place
- **Smarter apps with greater user experience**
  Enable the workforce to easily access the right information across any device and through a dramatically simplified user experience



BUSINESS NETWORKS AND SUPPLIER COLLABORATION

TRILLIONS OF DOLLARS OF COMMERCE MOVING IN SILOS + MILLIONS OF COMPANIES ATTEMPTING TO INNOVATE ON THEIR OWN = **LOST OPPORTUNITY** TO IMPROVE THE LIVES OF BILLIONS OF END USERS.

Companies have to reimagine business processes to remain competitive and best serve customers in the digital economy. From sharing data securely and in real time, to providing personalized and contextual insights, to changing how companies exchange and offer products and services, collaboration across entire vertical markets is key to value creation. Several trends are redefining the game:

Consumer buying experience

Business applications must be effortless to learn and use, just like consumer applications such as iTunes, Amazon, or Google. Solution complexity leads to low adoption, increased costs, and lost opportunities.

Network of networks

An open network serving a single market (example: travel, suppliers, labor) is valuable to its ecosystem. But a vertical network that connects to other vertical networks in real time is revolutionary and can only be accomplished through a shared set of cloud-based services built on top of the SAP HANA Cloud Platform.

Business connectivity at scale

The greatest challenge and opportunity in connecting vast ecosystems is the exponential data growth generated and consumed by the network. Connecting millions of partners and processing petabytes of data in real time is the core requirement to becoming the de facto standard. Only SAP offers the platform to meet this challenge.

50%
Of networked companies are more likely than their peers to have increased sales, higher profit margins, and be a market leader
Source: McKinsey[32]

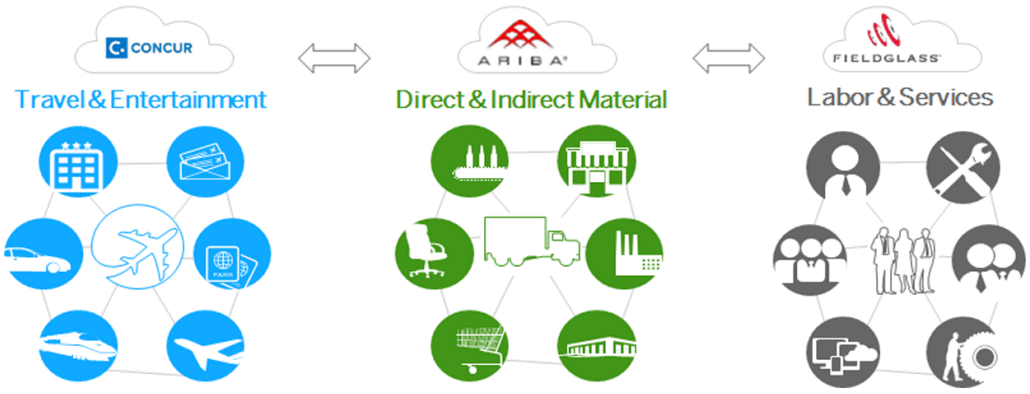
50–75%
Faster transaction cycles are being achieved with the Ariba Network
Source: SAP

25–50%
Of travel bookings are "out of compliance" with limited corporate control or visibility
Source: SAP

CONNECT YOUR BUSINESS TO THE WORLD AND THE WORLD TO YOUR BUSINESS

SAP S/4HANA gives you incredible capacity to digitize business processes across your internal business operations. It is the connections to our customers' global partner ecosystems that enable you to extend those processes beyond the four walls of your business.

- Today's cloud solutions from Concur, Ariba, and Fieldglass are #1 for travel and entertainment, direct and indirect material, and labor and services. Connected, effortless, and at scale
- Business networks operate on a global basis, meet data security standards, and operate at industry-best standards
- Services from partners vastly extend the value of core offerings



ASSETS AND THE INTERNET OF THINGS

THE MOST **DRAMATIC CHANGE** IN THE DIGITAL ECONOMY WILL BE DRIVEN BY HYPERCONNECTIVITY AND BIG DATA SCIENCE. THIS WILL **TRANSFORM NEARLY EVERY BUSINESS MODEL.**

Companies are finally understanding the full potential of the interlock between physical and digital assets and the Internet of Things. We are witnessing new use cases across industries with breathtaking results. Below are some key trends:

Smart products drive new business models

Companies are embedding sensors in their products and, as a result, are becoming more and more technology companies – hiring large numbers of software engineers and rethinking the value delivered by their products.

Data-driven business models

Industries like healthcare, media and entertainment, and telecommunications are transforming their business model with the power of Big Data (such as aggregation, distribution, marketing, etc.)

Technology-driven marketing and engineering

Marketing and engineering are spending more and more on Big Data and sensor technologies as their function is the most transformed by these new technologies.

New alliances

Seamless collaboration is now possible around new business models involving partnerships that may not have made sense few years back. Examples include partnerships between agriculture companies and satellite/weather companies, between Google and automotive makers, and many others.

By 2020

Three billion Internet users and an expected 30-50 billion connected devices

Source: UN International Telecommunications Union and EMC, Cisco[33,34,35]

$4–11 trillion

Estimated potential economic impact of the Internet of Things per year in 2025

Source: McKinsey Global Institute[36]

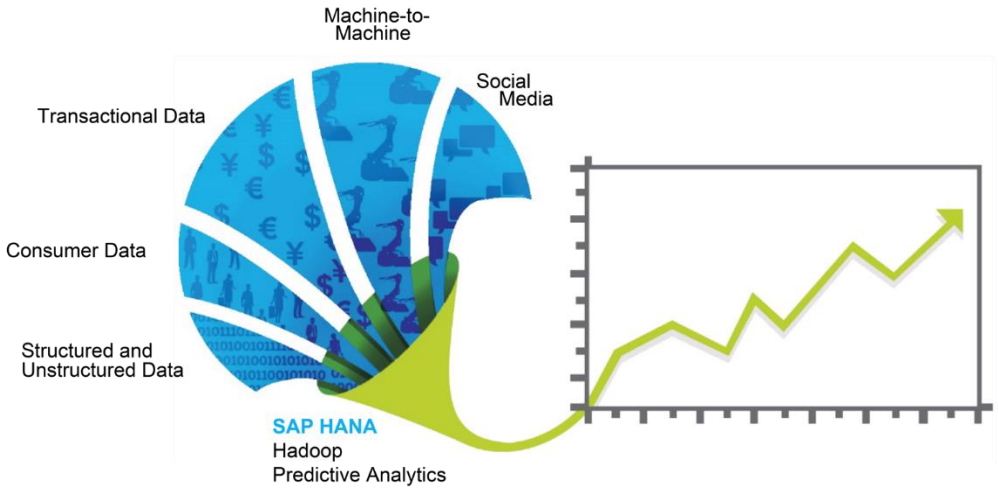
Port of Hamburg

brings together port and road traffic conditions, truck availability and incoming/outgoing shipment schedules to reduce idle truck/ship time. Its solution allowed the port to more increase container handling capacity by **178%** within the same land area.

Source: SAP

Connect, transform, and reimagine with SAP

With SAP HANA, Internet of Things (IoT) edition, organizations can now take embedded device data, analyze the data into information in real time, and leverage this information across the value chain to drive business insights and create new business models.



SAP HANA is the ultimate simplifier and the platform for innovation and digital business

Dream, develop, and deliver with SAP HANA Cloud Platform

SAP HANA Cloud Platform gives you the mobile, collaboration, integration, and analytic capabilities you need to dream big, develop fast, and deliver everywhere with the following capabilities:

Application extensions

Extend your current cloud and on-premise solutions for additional customization, enhanced business flows, and more.

Real-time analytics

Engage customers, optimize business processes, and unleash new revenues with real-time analytic apps, powered by SAP HANA.

New cloud apps

Quickly build innovative consumer-grade and industry apps for today's always-on, mobile, social, and data-driven world.

Extended storage capabilities

Holistically manage all structured, unstructured, and infinite data streams with flexible combinations of data stream processing, in-memory technology, disk-based columnar storage, and Hadoop-based storage solutions

Data footprint reduction

Significantly reduce memory footprint and TCO. In ERP systems, we have seen ~6x reduction by SAP HANA's dictionary compression. Removing aggregates and actual and historical data separation further reduces the footprint to ~10x

Groupe Danone

Groupe Danone is leveraging SAP HANA Cloud Platform to win over 7 billion customers and differentiate itself from competitors.

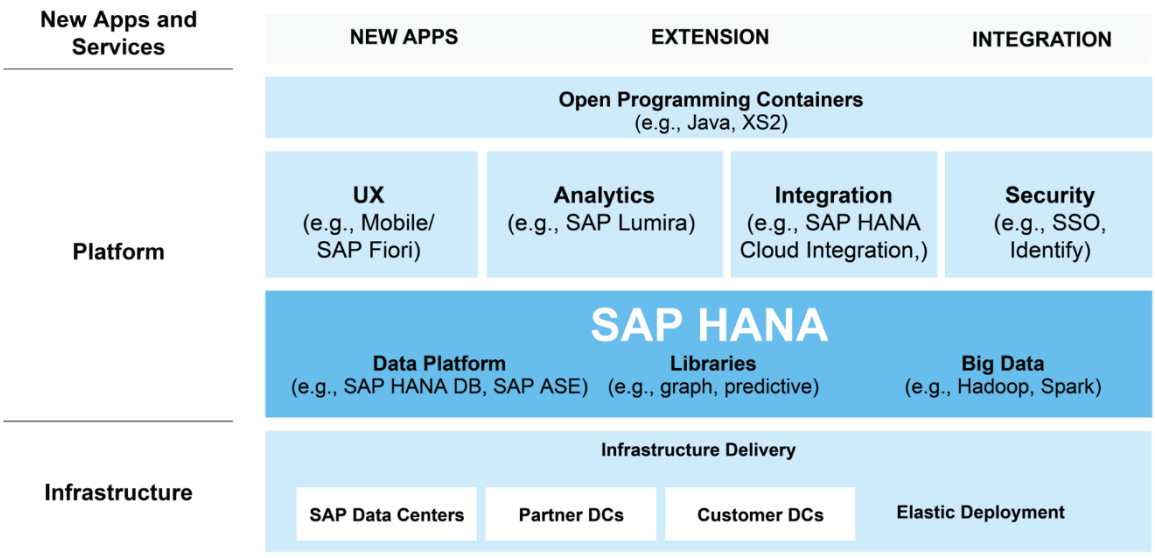
"We see a huge potential to easily and very rapidly develop very beautiful user-friendly applications, which are opening new opportunities **to connect our consumers to our back-end systems,** and that really is our strategy for the future."

"What we see is that IT solutions provided by SAP can help us to grow as fast as we did in the past and keep the pace so we can explore new markets and new opportunities in the **digital world** together with our consumers."

Source: Ralf Steinbach, Director Software Architecture, Groupe Danone

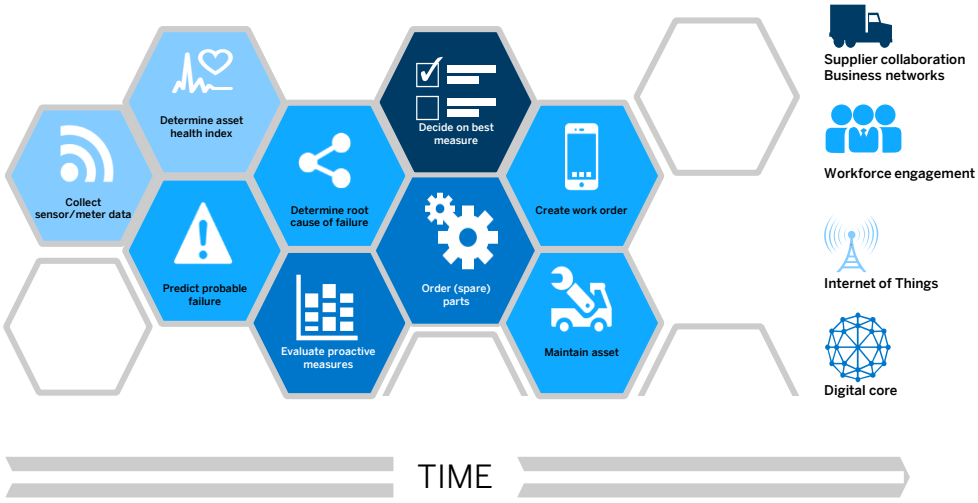
SAP HANA platform is...

Real-time, in-memory platform • 10x data footprint reduction for ERP • Extended storage, including Hadoop open architecture • Developer-friendly • Embeds mobile and analytics • Secure • Cloud-ready



HOW DOES IT ALL COME TOGETHER?

While the five digital business pillars deliver significant value as stand alone-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 customer experience strategy if products and services are to be delivered as promised.



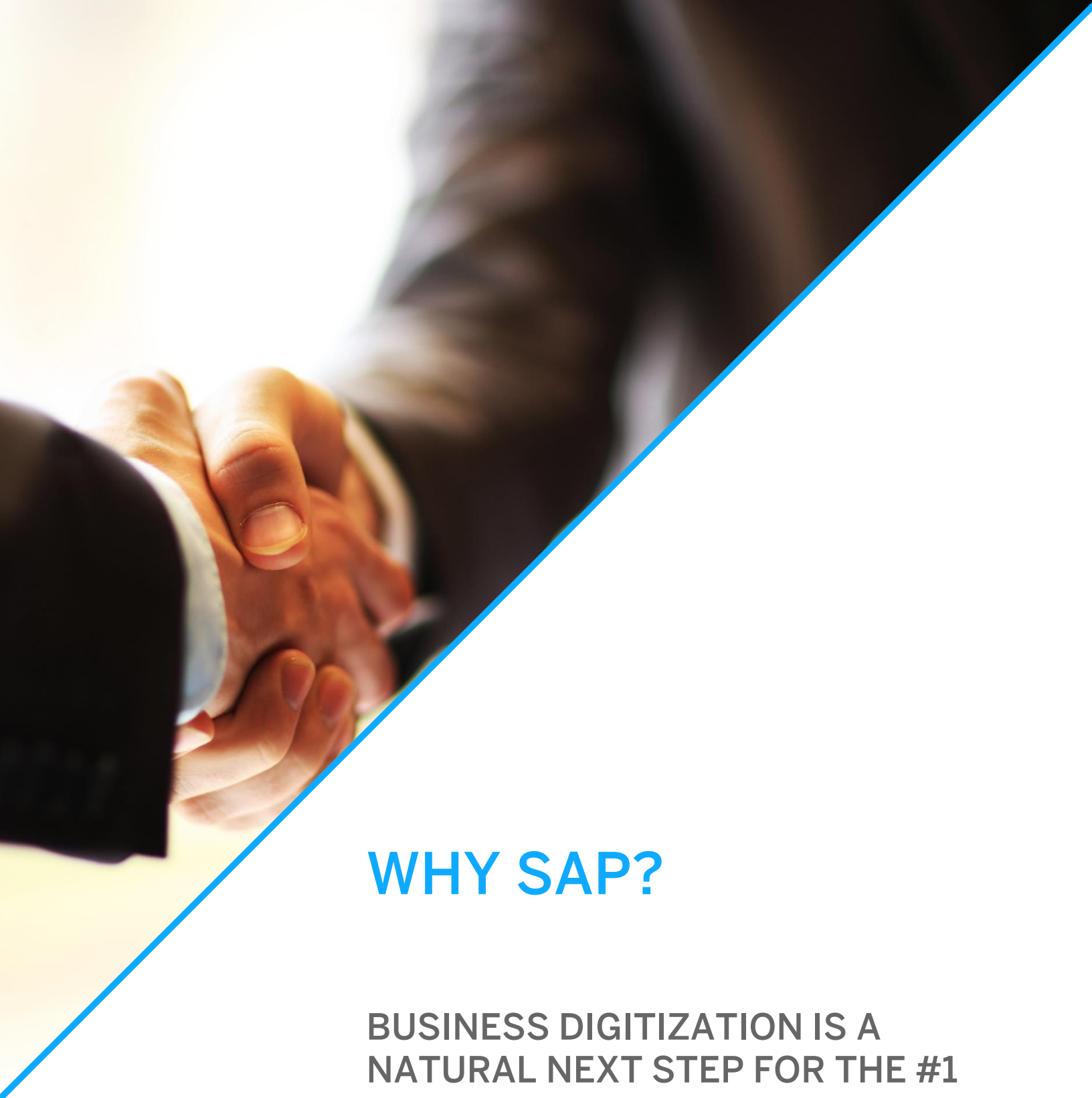
Use sensor and meter data to proactively maintain assets

Example: Utilities industry

The process flow shown on this page portrays how leaders in the utility business are integrating their OT and IT technologies to better serve their customers. OT is the operational technology that manages the entire infrastructure (such as generators, transmission, etc.), IT is the business systems that allow the management of business processes (finance, procurement, HR/payroll, maintenance, etc.). These two technology platforms are typically owned and operated by two different parts of the business. In the new digital utility era, the value will come from the interoperability of these environments.

The scenario above shows how sensors and Big Data coming from the OT world will be leveraged by the IT world to drive next-generation best practices in asset management. The predictive nature of the future solution will change how people work, how services are delivered better to end consumers, how operational costs are reduced, and how business partners are integrated in real time. The benefits of this scenario are significant:

- Higher ROA
- Faster recovery time from failure
- Higher productivity
- New services and new revenue streams



WHY SAP?

BUSINESS DIGITIZATION 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 COMMITED 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

- 75K employees representing 120 nationalities
- 295K customers
- SAP operates in 191 countries

- Solutions for 25 industries and 12 LoBs
- 98% of top valued brands are our customers
- 74% of the world's transactions managed on SAP

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

- 2011 SAP HANA launched
- 2012 SAP Cloud launched
- 2014 SAP business networks are the largest marketplace in the world
- 2015 SAP HANA Cloud Platform
- 2015 SAP S/4HANA: Most modern ERP system

Fire and rescue

New South Wales is now able to have a comprehensive view of fire and disaster risk to protect 7 million residents. 30+ years of experience available in real time in SAP HANA ensures the right people are addressing emergencies at the right time.

Early flood detection in India

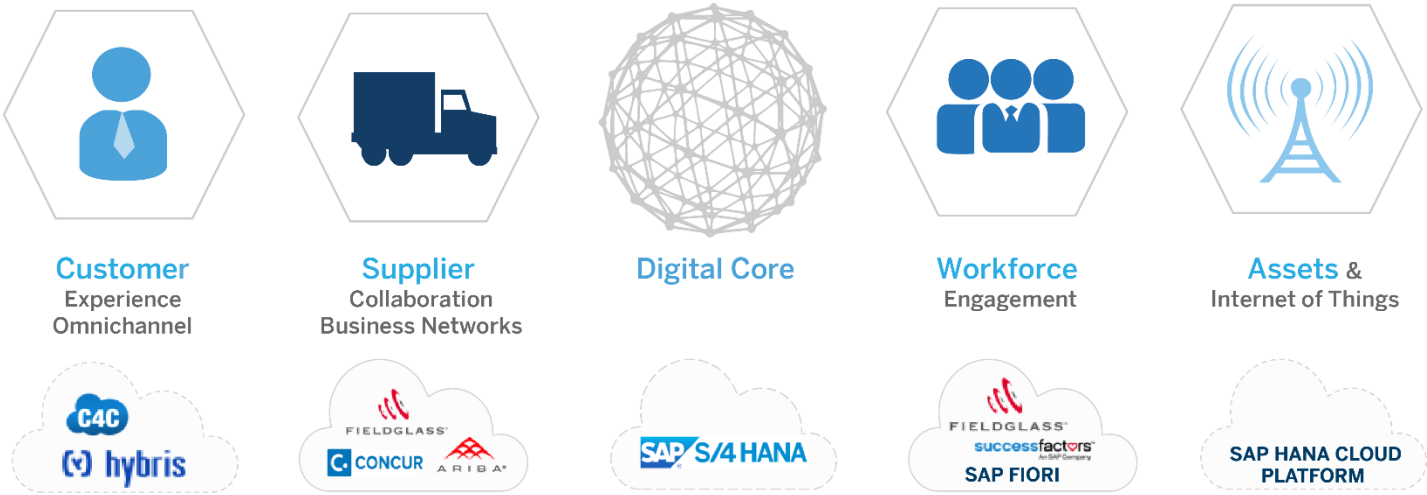
With SAP HANA and SAP Predictive Analytics, water levels can be monitored in real time to alert the population about floods and ultimately save lives.

Combating breast cancer

With its patient data explorer running on SAP HANA, NCT is able to analyze patient data from different sources (such as tumor registries, biobank systems, physicians notes) to offer a comprehensive view of patient medical history in real time and accelerate the development of individual, highly adjusted cancer therapies.

END-TO-END DIGITAL BUSINESS SOLUTION

Through our innovations and over $30 billion in strategic acquisitions, SAP has the best 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 chain. With 74% of the world's transactions running through SAP, 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.



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 SAP's collaborative value and innovation framework.

EXPERTISE

- Experts in 25 industries and 12 lines of business
- 6,000+ Design Thinking experts – sales, services, development
- User experience of the future
- Enterprise architecture
- Data scientists

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/Design Thinking discussions from 2014 to date

METHODOLOGY

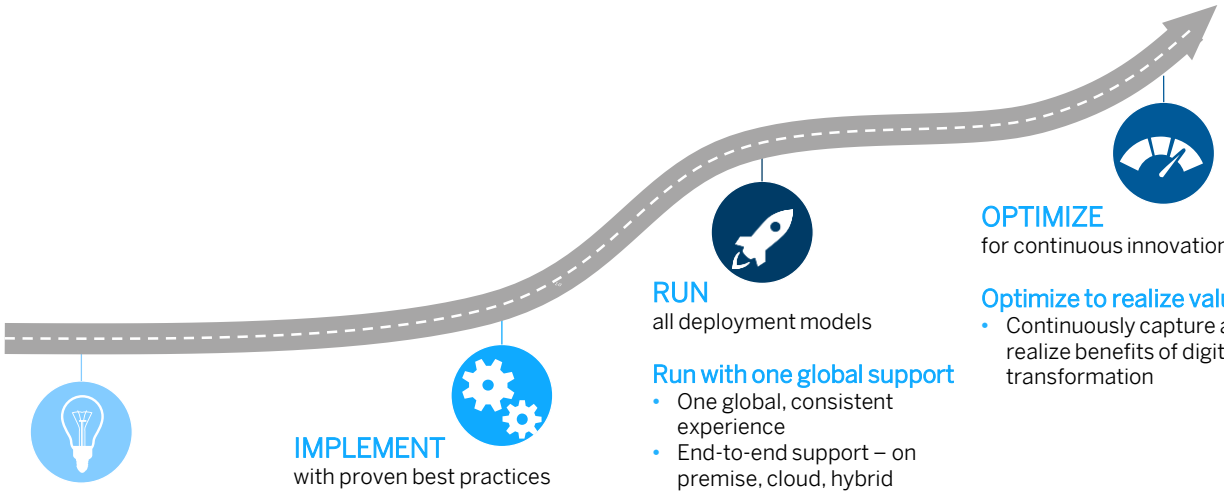
- Business case methodology
- Design Thinking
- Benchmarking
- Value partnership framework

SAP GLOBAL SERVICES AND SUPPORT TO DRIVE YOUR SUCCESS

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 optimizing 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 and approach.

Turn to the 30,000 consultants and support professionals who can bring your digital strategy to life. SAP's global service and support model provides a consistent experience – on premise, cloud, or hybrid. SAP's global service and support provide the expertise, assets, and 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, SAP ActiveEmbedded, and SAP Value Partnership across the end-to-end customer lifecycle.



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 realize benefits of digital transformation

Learn | Extend / Innovate | Engagement Foundation | Support

SAP COMPREHENSIVE ECOSYSTEM

Orchestrating the world to deliver faster value

Our comprehensive ecosystem offers integration into

- A wide range of business services (banking, travel, etc.)
- 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
- Forum for influence and knowledge
- Significant digital expertise and skill sets

BUSINESS NETWORK

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

INFLUENCE FORUMS & EDUCATION

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

IMPLEMENTATION SERVICES

- 13K partner companies
- 3,200 service partners
- Delivering 1,300+ industry specific solutions

INNOVATION

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

PLATFORM & INFRASTRUCTURE

- 1,400 cloud partners
- 1,500+ platform partners

CHANNEL & SME

- 4,800 channel partners

ADDITIONAL RESOURCES

Outlined below is additional external 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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The Best-Run Businesses Run SAP®

Run Simple