



How Banks Can Survive **Digital Disruption**

Strategic choices for
retail banks in the
digital economy



Run Simple



“Digital transformation presents a huge opportunity for retail banks to challenge every aspect of their organization: from internal operations to customer experiences.”

Falk Rieker
Global Vice President – Banking
SAP

Dear customers, partners, and colleagues,

The digital economy is changing how we work, live, and function as a global society. Everything we touch, say, and do is connected. By 2020, there will be an estimated 2.5 billion people connected on personal and business social networks worldwide.¹ Plus, an estimated 200 billion devices will be linked to each other through the Internet of Things.²

The retail banking industry is no exception to this revolution. The digital economy is dramatically influencing the way we bank and creating new competitors in the marketplace. So-called “fintechs” are emerging with completely new business models that address existing inefficiencies – for instance, approving a loan within minutes, which traditionally takes banks many days. Retailers and telecommunications companies are offering financing options as part of their value chain at the point of sale in real time. Google, Apple, and social networks, such as Facebook, are using their ability to access billions of people to enter the banking market and offer mobile wallets and procure-to-pay (P2P) payment solutions. As a consequence, traditional banking value chains and business models are being disrupted.

How can banks survive digital disruption? Fortunately, banks are beginning to acknowledge the need for reimagining their business models, processes, and work. With mounting customer demand for more efficient operations, faster delivery of new product innovations, and highly personalized solutions, banks require a new approach to supporting all of these objectives simultaneously. Through agile, end-to-end, digitized processes based on a single source of real-time information, from planning and execution to prediction and analysis, today’s banks can provide a superior customer experience – every time.

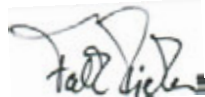
Leading banks are extending their value chain **beyond banking** through partnerships and customer relationships. For instance, when a customer buys a home, a bank should offer a loan as well as a comprehensive set of services that are a necessary part of home ownership. By anticipating immediate and future needs and becoming a life coach for good financial health, the bank becomes a part of its customers’ daily lives. And in turn, customer loyalty increases, and, ultimately, the institution grows.

In our increasingly digital world, successful banks will be the ones that establish **their position in the marketplace** by joining a powerful network of providers, customers, and partners. They will not only provide a platform for peer-to-peer lending and crowd funding, but will also become active participants in the marketplace and network that secure relationships with commercial and retail customers and allow the bank to provide financing, insurance policies, payments, and other related services.

The changing competitive landscape will lead to a world in which banks and nonbanks compete against and cooperate with each other. **Banking as a service** allows nonbanks to apply economies of scale while they and traditional banks can benefit from each others’ strengths and expertise.

Digitization also empowers banks to drive **inclusive banking** and reach new customer segments, such as the unbanked. Thanks to mobile and cloud technologies, basic banking services can be provided at nearly no cost, and the industry will play a key role in driving prosperity to this socio-economic demographic.

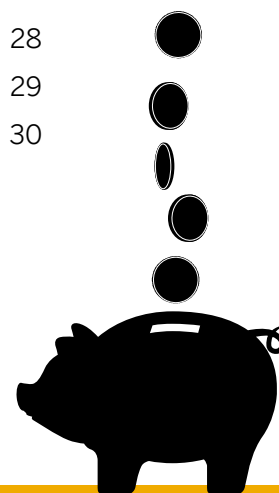
This document offers our perspective on where the industry will go and how SAP can help banks with the digital transformation. Let’s innovate the future – together.



Falk Rieker
Global Vice President – Banking
SAP

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EXECUTIVE SUMMARY

Big picture: The digital economy reshapes banking

The boundaries of traditional retail banking are already blurred

Online retailers, communities, marketplaces, and platforms have access to large customer and supplier networks. Financial services are offered by nonbanks as an integral part of their product offering. Financial technology providers, also known as fintechs, are fueling rapid innovation. Retail banks acknowledge the need to address the challenge that traditional value chains are being disrupted by new entrants.

Technology trends shaping the digital economy

We are witnessing an unmatched era of digitally driven innovation. Breakthrough technologies have matured and achieved scale together. This will change how banks provide financial services. We see five technology trends shaping the digital economy: hyperconnectivity, supercomputing, smarter world, cloud computing, and cybersecurity.

Bank executives understand that current models are unsustainable.

Key drivers for digital transformation

- **The digitally connected:** Customers are becoming increasingly tech savvy and socially connected, with access to increased purchasing and investment power. More and more, they are turning to alternative banking providers. Meanwhile, the role of banks as trusted intermediaries is diminishing.
- **Emergence of fintechs and other nonbank competitors:** Fintechs and other startups are bringing an innovation mindset and a lean organizational structure that allow fast innovation and execution. Intensifying competition is reducing profitability and fragmenting market share.
- **Loss of direct customer relationships:** Various aspects of every customer's financial life have shifted to new marketplaces, which often drive new forms of financial transactions such as microlending, micropayments, peer-to-peer lending, and investing.
- **The race for the network:** Successful institutions have established powerful networks of customers, suppliers, and partners and formed robust ecosystems.
- **Rise of the sharing economy:** Collaboration, peer-to-peer lending, and crowdfunding, to name a few, are impacting the development of new business models, which are more focused on temporary usage instead of ownership.
- **Digital currencies and the blockchain:** These technologies are enabling the development of disruptive solutions that are driving the market towards a cashless world.



18%

of millennials have switched their primary bank within the past 12 months — compared to 10% of customers between the ages of 35 and 54 and just 3% of people who are 55 and older³



>85%

The share of digital banking interactions exceeds 85% for the most advanced countries today and is heading to more than 95% in the near future. ⁴



19x

Crowdfunding growth from 2015 to 2030⁵

EXECUTIVE SUMMARY

The future: Retail banking goes digital to survive

We envision banks will accompany customers throughout their lives – proactively managing and anticipating their needs while helping them make the best financial decisions. To make this happen, banks need to focus on the desired customer outcome, not just on the financial transaction itself.

New business models and innovative offerings are creating new revenue sources

- **Beyond banking:** Extend the value chain by integrating nonfinancial, value-add services to increase wallet share.
- **The new marketplace:** Create and maintain financial services marketplaces while enabling e-commerce among retail customers, corporate customers, and third-party suppliers.
- **Banking as a service:** Integrate offerings into the value chain of others to benefit from additional customer networks and distribution channels.
- **Inclusive banking:** Reach new customer segments with the help of low-cost cloud platforms and mobile services.

Early adopters are winning

Companies that embrace the digital world and execute on their digital strategy are growing shareholder and stakeholder value faster than their peers. To win in a digital economy, banks must successfully:

- Predict customer needs and extend tailored offers based on those predictions in real time
- Deliver a consistent, seamless, channel-optimized, and highly personalized customer experience across all channels
- Use Big Data, predictive analytics, and social media to make optimal loan decisions in real time
- Build a network of traditional and nontraditional providers to serve customer needs together
- Integrate banking services with other suppliers' offerings
- Deliver product innovations and features in a matter of days
- Improve cycle times and realize immediate outcomes with a real-time operational core
- Respond to regulatory changes quickly and efficiently



Digital business models are disruptive. The rules have changed.

- **LendingClub** is more than just one of the most visible and successful marketplace lenders reshaping personal financing. By achieving more than US\$3.5 billion in financing in the first half of 2015;⁶ it is also entering the small business financing market and further disrupting traditional financing models.
- **PayPal** offerings are available in more than 200 countries, enabling 173 million active customers to hold balances in 26 currencies. In 2014, PayPal processed four billion payments, one billion of which were initiated from a mobile device.⁷
- **MoneySuperMarket**, UK's leading price comparison site, works closely with over 790 providers and helped three million customers pay bills with free online services, generating £144 million in revenues in the first half of 2015.⁸

EXECUTIVE SUMMARY

Road map to the digital banking network: How to digitize your business

Reimagining

Do you have the right strategy? The starting point of any transformation journey is to reimagine your business by placing outcomes and customers at the center.



REIMAGINE BUSINESS MODELS

Traditional business models are no longer sustainable. Retail banks are reevaluating their customer engagement activities, networks, digital capabilities, and data insights to find new answers to questions including:

- Which profitable business models are driven by new technologies and trends such as the Internet of Things, peer-to-peer platforms, changing governmental regulations, and digital currencies?
- How do changes to value chains in industries such as retail, insurance, or automotive affect my own retail banking business?



REIMAGINE BUSINESS PROCESSES

Direct interaction with customers and the ability to perform the majority of the processes in real time significantly change how the business executes. Examples include:

- Instant digital lending
- Cashless payments
- Digital marketing
- Robo-advisors



REIMAGINE WORK

Digital technology is not only changing how banks serve customers more efficiently, but also how bank employees work. Digital transformation enables banks to automate processes and invest in improving employee skill sets, thus reassigning employees to higher-value, high-touch tasks to profoundly change what people do, how they work, learn, interact, engage, and grow.

Design thinking

We apply Design Thinking as our key approach to the reimagining phase. Design Thinking can be described as a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity.

Platform

Do you have the right platform?

Leaders are investing in digital capabilities that are congruent with their strategy. We ensure solutions align to desired outcomes.

SAP's **digital business framework** is based on the five key pillars of a digital strategy:

1. **Customer experience across all channels**
2. **Business network collaboration across the ecosystem**
3. **Workforce engagement** including employees and contractors
4. **Core business processes** (origination and processing of transactions, finance, risk, and compliance)
5. **Internet of Things and Big Data** to drive real-time insights and new business model value creation

It's not about any one of the five pillars, but rather how they all interconnect to achieve business outcomes. Leading analysts have consistently ranked SAP® solutions as market leaders in all pillars relevant for the digital strategy.

SAP brings it together – from vision to realization

SAP did not invent the digital economy, but we unquestionably understand where it's heading. We started a journey five years ago, building an agile platform and solution for the digital economy. This took over \$30 billion in acquisitions and billions in research and development.

SAP provides a unique combination of technology, applications, platform, reference architecture, and business process expertise. SAP not only helps you formulate your strategy, but, most importantly, to implement and operationalize it as well. More than 14,100 banks in 149 countries use SAP solutions. We understand the power of transforming and integrating the world.



SAP is ranked as the overall lead vendor in execution.⁹



SAP earned top overall scores for banking platform functionality and accounting and analytics.¹⁰

EXECUTIVE SUMMARY

Fundamental changes: Five technology trends changing everything

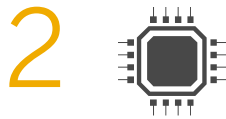
We are witnessing an unmatched era of true business innovation. Breakthrough technologies have matured and hit scale together, enabling five defining technology trends:

HYPERCONNECTIVITY



Today's customers are socially connected and in charge, and expect immediate and highly interactive communication with their bank. Banks are engaging with the hyperconnected world to reach new customers, create new products and services, and conquer new markets. This drives innovations such as digital currencies, mobile payments, and crowd funding.

SUPER COMPUTING



Large-scale in-memory computing enables massive simplification – a prerequisite for seizing new business opportunities. The digital bank is able to anticipate customer needs and assess risks in real time. Technologies such as blockchain can enable the financial services industry to operate more efficiently by enabling banks and people to exchange money directly.

CLOUD COMPUTING



Cloud computing will accelerate time to value for new banking business models and drive faster adoption of new technologies. Cloud capabilities allow banks to realize significant cost savings and free up valuable resources for innovation. Therefore, cloud computing is one of the key enablers for the digital bank.

SMARTER WORLD



The proliferation of smarter, always-connected devices enables banks to offer smarter banking products that are reshaping value chains and redefining banking. For example, proximity-enabled technology creates new forms of customer engagement in customer servicing, machine-to-machine payments, and loyalty programs.

CYBER SECURITY



Banks are prime targets for cyber attacks. Cybersecurity is a top priority. Multifactor authentication, biometrics supported by contextual analysis and location-based intelligence, and behavioral analytics for fraud prevention will become increasingly important.



REIMAGINING

THE DIGITAL ECONOMY OFFERS INFINITE NEW OPPORTUNITIES

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

DIGITAL INNOVATION IS REAL

Based on our collaboration with thousands of banks worldwide, we have seen that digital retail banks are moving quickly in three strategic areas:

REIMAGINE BUSINESS MODELS

The unprecedented connectivity with customers and the entrance of new market players redefine value chains. We see four primary business models emerging:

- **Beyond banking:** Banks will increasingly partner with companies in other industries, such as online real estate companies, to offer banking products and services and provide an end-to-end banking experience to the bank's customers
- **Bank's marketplace:** Banks provide financial services marketplaces for fintechs and others to enable partners to provide additional products and services to the bank's customers
- **Banking as a service:** Banks partner with companies in other industries, such as retail, to offer banking products to partners' customers. Banks benefit by servicing non-customer products
- **Inclusive banking:** Mobile technology enables banks to cost-effectively meet the needs of the unbanked customer segment

REIMAGINE BUSINESS PROCESSES

The direct interaction with customers and the ability to perform the majority of the processes in real time significantly change how the business executes.

- **Instant digital lending:** Digitization enables banks to reimagine the entire loan origination process in real time
- **Introducing new products at market speed:** The digital bank empowers product managers to launch products quickly
- **Cashless payments:** The digital revolution accelerates replacement of cash by electronic payments, micro-payments, digital wallets, and e-currencies
- **Adaptive regulatory compliance:** Access to financial data on a granular level allows banks to quickly react to new regulatory requirements
- **Real-time fraud detection:** Real-time detection systems minimize fraud while using alternative ways to assess risk (e.g., leverage social data)
- **Robo-advisors** provide automated, algorithm-based wealth management advice and online portfolio rebalancing tools

REIMAGINE WORK

To be successful, retail banks must rethink not only the technology, but also organizational models.

Reimagined business models and processes need an adaptable workforce with new skills and competencies.

- Digital business processes **eliminate** the majority of **manual procedures**
- The **right information**, at the right time, on the right device improves decision quality, profitability, and productivity
- **Predictive** and self-learning software improves employee productivity and collaboration and empowers employees to focus on higher-value tasks



REIMAGINE BUSINESS MODELS

Traditional business models are challenged, and value chains are disrupted. Leading banks must reconsider business models and value chains to align their strategy and seize the opportunities presented by the digital economy.

Beyond banking

Leading retail banks extend their value chain to proactively manage their customers' financial matters and become an integral part of their daily lives. By integrating services into OEM products, online providers, and others, banks can deliver pervasive payments and offer value-add financial services to their customers.

For example:

- Provide real estate buyers with contextual information, such as recent sales prices, while providing relevant bank offers
- Use smart devices to enable machine-to-machine payments through embedded digital wallets

Banks can benefit from:

- Increased share of wallet
- Higher-margin, value-add services
- Improved customer loyalty

The new marketplace

Banks are building a marketplace for financial services and providing a platform for corporate partners to do business with retail banking customers. By offering products and services from niche providers such as fintechs, customers have unprecedented access to additional financial and e-commerce offerings, giving them a choice and a one-stop-shop experience that meets every financial need.

Banks can benefit from:

- Generation of incremental transaction fees
- Monetization of buyer and seller data
- Greater customer satisfaction and loyalty

Banking as a service

Retailers, manufacturers, digital communities, and other companies often offer financing to make their products more affordable. We expect that retail banks will integrate their financial offerings more deeply into the value chains of those companies. This will allow banks to extend their reach to nonbank customers and focus on servicing and financial transactions processing.

Banks can benefit from:

- Expanded customer base
- Rising product sales to nonbank customers
- Economies of scale

Inclusive banking

More than two billion adults worldwide don't have access to banking services.¹¹ The challenges in reaching the unbanked are mostly related to high expenses associated with building and supporting a branch network and the cost of maintaining low-balance accounts. Low-cost cloud platforms and mobile services enable banks to offer services to the unbanked profitably and at a low cost.¹²

Banks can benefit from:

- Larger deposits
- Increased fee revenue
- More customer relationships that will grow in value



REIMAGINE BUSINESS PROCESSES

Intimate customer relationships through omnichannel interactions, real-time interactions, and processing of huge amounts of data enable new, refined, dramatically simplified, and accurate business processes.

Digitized, personalized marketing

By correlating social media, transaction history, and external information, digital banks can anticipate customer needs in real time. For example, Big Data analysis enables optimal, personalized product packaging. Plus, banks can offer multiple tailored packages at once, giving customers a choice while delivering to a segment of one.

Introducing new products at market speed

Product managers can introduce and refine internal, partner, and bundled products at market speed. Through real-time analysis of customer behavior and market reaction, banks can launch products quickly with turnaround cycles never seen before.

Instant digital lending

With real-time Big Data predictive analytics coupled with social media sentiment analysis, a next-generation digital core, and smart device capabilities, banks can reimagine and digitize the entire loan-origination process – from initial customer interaction to disbursement. In addition, effective use of business networks creates new forms of customer engagement that improve loyalty and satisfaction, drive innovative ways to cross-sell, and empower banks to acquire new customers.

Adaptive regulatory compliance

Maintaining all relevant financial data at the most granular level allows digital banks to quickly react to the latest regulatory reporting requirements while minimizing the need for integration and data harmonization. By making all data immediately available for analysis and reporting, financial transparency is at its best.

Cashless payments everywhere

The digital revolution will accelerate the drive toward the cashless economy. Mobile devices and machines execute financial transactions directly. This enables new business scenarios and allows banks to reach new customer segments.

- A cashless economy built on the backbone of mobile networks enables access to formerly non-profitable or geographically difficult to reach customer segments, thus driving inclusive banking
- Replacing cash collection with real-time mobile payments leads to improved operational efficiency and reduced risk

Robo-advisors bring Wall Street to Main Street

An online wealth management service based on robo-advisors offers automated, algorithm-based portfolio management advice without the use of human financial planners. This cost advantage opens up large, formerly unviable market segments.



30% shorter time to market for new products (in months) for banks that spend at least 25% of their marketing budget on digital¹³



87% of global financial services companies feel a significant impact from regulatory reforms¹⁴



45% of banks monitor borrower behavior to anticipate default risk as a way to seize competitive advantage from analysis of Big Data¹⁵



REIMAGINE WORK

Expectations for high levels of service, the convergence of people and technology, and employee competence for increasingly complex tasks are placing high demand on workforce skill sets and flexibility.

Digital transformation simplifies and automates

Banks rely on thousands of employees to service customers and manually process paper-based tasks. Unfortunately, institutions need simpler, more economical approaches to increase efficiency and improve customer service. Digital processes automate manual procedures and streamline work flows in customer service and process management. In addition, they can elevate the performance of back-office functions including finance, HR, procurement, risk management, and compliance.

The right information at the “moment of truth”

Mobile technology enables banks to innovate and deploy intuitive mobile solutions for service, sales, teller, and branch manager applications. These solutions can offer full-service and transaction capabilities, guided cross-selling, needs-assessment analysis, and other productivity capabilities that drive continuous engagement and high-touch customer experiences. Having access to the right information on the right device empowers every employee to become a digital banker while simultaneously reducing the cost of running a branch network.

Predictive and self-learning capabilities

These solutions accelerate the delegation of business processes and decision making by allowing people to use their everyday devices. Banks can automatically collect relevant data and analyze it to better understand business performance, costs, and risk drivers. This approach empowers employees to shift their focus toward higher-value tasks, as opposed to manual, time-consuming processes.

Digitization of the internal knowledge base

Transformation into a digital bank creates hundreds of millions of new interactions between consumers and agents and among team members. This means that employees require quick access to relevant employee-related information. Real-time digital information on the right devices is critical when advancing the business agenda through staff engagement, especially in a world that relies on physical and virtual workforces.

People continue to be the key asset in digital banks. Their roles will change, but their value to each segment in the network will continue to grow.



73% of CEOs believe the lack of employees with key technical skills is a threat to their company's growth¹⁶



65% of senior leaders believe that business simplification is of significant strategic importance today¹⁷



DIGITAL BUSINESS FRAMEWORK

A SIMPLE AND PROVEN APPROACH TO VALUE CREATION THROUGH DIGITIZATION

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

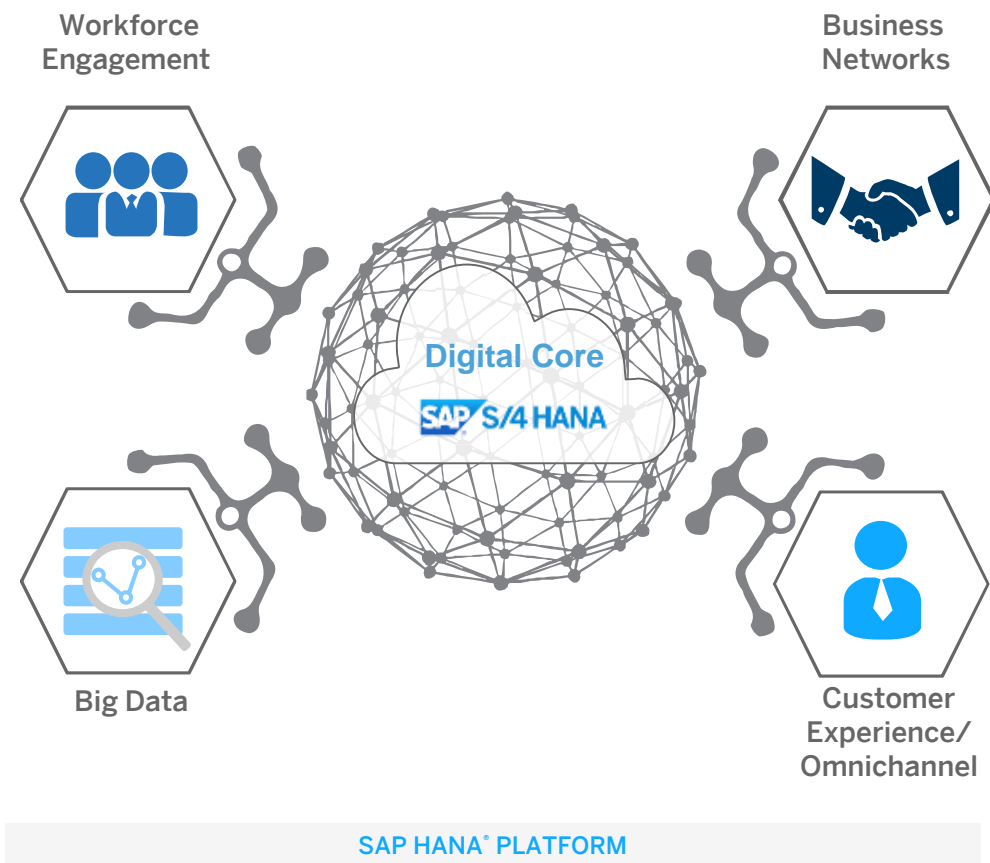
DIGITAL BUSINESS FRAMEWORK

Every bank needs to think about the five pillars of digitization

SAP sees five pillars of digitization, and we also understand that continuously changing requirements pose big challenges for businesses. Reimagining business models, business processes, and work can help develop the digitization road map.

We have built a structured framework to think through the development and execution of the banking digital enterprise strategy: the digital business framework. The digital core is the platform for innovation and business process optimization, connecting the workforce, the Internet of Things, the partner network, and customers.

1. True **customer** engagement across all channels
2. Smarter and engaged **workforce** across all employees and contractors
3. **Business network** collaboration that accelerates growth and co-innovation
4. **The Internet of Things and Big Data** to drive real-time customer engagement
5. **Core business processes** that connect channels, transactional banking, and analytics in real time to run faster, simpler, and in a more agile manner – including **finance, risk, and compliance** running on SAP HANA® Cloud Platform as the single enterprise data source





THE DIGITAL CORE

The next-generation bank runs in real time and integrates predictive analytics and omnichannel sales and service. This will change how banks operate and how customers are served – and the future is here.

Digitization sets new requirements for core banking systems:

Introducing new products at market speed

Leading banks need to be able to serve the “here and now” generation with the right custom-made products in real time. Fast and efficient launching of new products and bundles across all layers and channels is key for success.

Digital, personalized marketing

Extending the “segment of one” marketing, “the product of one” will empower customers to shape their own products and choose pricing and payment options based on their specific needs, while enabling banks to improve customer or household product cross-selling.

Value chain agility

Banks will need to integrate with other players to perform a part of the value chain. They also need to become a part of someone else’s value chain. Overall, banks require easy integration with third parties.

Transactional simplicity

Decreasing costs to combat reduced margins and increased competition requires banks to simplify, automate, and standardize their processes.

Simplify with SAP

Commonwealth Bank enables transformational simplicity through:

- 24x7 banking including direct account opening
- Fewer and simpler products with more feature choices
- Accelerated offers and pricing
- 30% fewer processing errors across branch network
- 75% reduced time to market for new products¹⁸

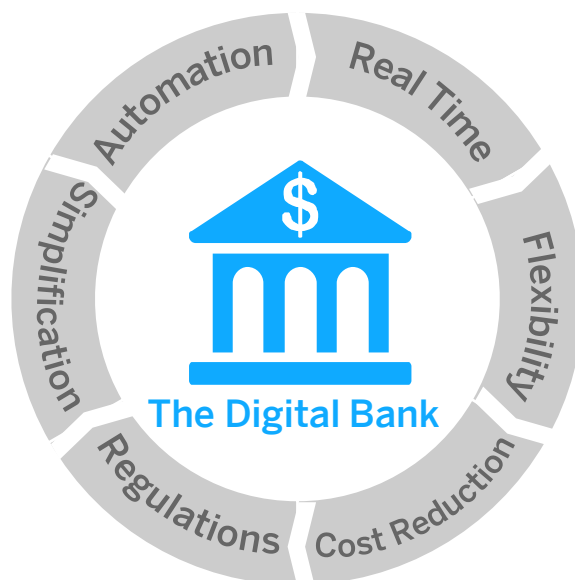
Deutsche Postbank reduced the time to market for new payment products by 80% and achieved >98% straight-through processing.¹⁹

Standard Bank takes an average of only 10 minutes to open each new mobile account (64% reduction in time).²⁰

Simplify and standardize core banking processes with SAP

SAP provides a real-time core banking solution that combines transaction processing and analytics using the SAP HANA® platform. It is an open and agile platform and can help banks to reduce time to market and enable personalization as well as standardization of product processes. Digital end-to-end processes can be orchestrated and integrated with customer channels and third parties.

- Enable customers to **personalize** their banking products
- Create a single **real-time** experience with immediate response and product delivery to customer requests
- **Simplify, standardize, and automate** back-office banking processes to improve efficiency and reduce operational costs
- **Orchestrate** automated, real-time, end-to-end business processes from origination through servicing to accounting for improved productivity
- **Provide value chain agility** for easy product configuration as well as open and secure integration with third parties to reduce costs and improve time to market





THE DIGITAL CORE

Banks must effectively manage risk and sharpen their focus on costs. The need for fast, accurate, accessible, and on-demand risk, compliance, and finance information has never been greater.

The world of finance is dynamic, expanding, and unpredictable. As rapid and endless change continues to be a driving force, a bank's system architecture must allow it to quickly and cost-effectively take control of its current and future process needs.

Elimination of silos between finance and risk

No matter the size or type of your financial institution, understanding the risks associated with every financial decision is critical to long-term performance and growth. However, very few financial institutions share the same reliable insight across risk and finance teams.

Adaptive regulatory compliance

The unprecedented volume of global regulation is placing considerable demand on the change capacity of banks. Basel III, Dodd Frank, CCAR, EMIR, EBA Stress Testing, BCBS 239, BCBS 248, US GAAP, IFRS, and a host of other regulations and accounting standards will affect every aspect of every bank's business models, operations, and infrastructure. Regulatory change will remain with us for the foreseeable future; a new approach to managing its impact is critical.

Platform-driven architecture

The best defense against relentless change is an holistic and open system architecture that supports an integrated approach to finance, risk, and compliance that enables new business processes and unanticipated regulatory demands in the future. Without this flexibility, business and regulatory pressure will result in tactical quick fixes that entail increased complexity, rigidity, and cost.

Transparency, speed, and agility

To succeed in this climate, greater transparency, speed, and agility are essential. BCBS 239, which imposes mandates for risk-data aggregation, brings a need for frequent and timely ad hoc reporting and compliance in times of stress and crisis. To comply with BCBS 248, the standard for intraday liquidity management, banks are faced with significant challenges in data collection and consolidation. In-memory technology, such as SAP HANA, is the essential enabler.

39%

fewer compliance and risk management full-time equivalents per billion dollars in revenue by using risk management systems with automated capabilities for reporting and alerting²¹

15%

time savings during the financial close in organizations that set up real-time financial accounting²²

\$200 million

In cash flow can be aggregated and calculated for liquidity profiles within one second²³

SAP S/4HANA Finance: One of the World's Leading Finance Solutions – Reinvented





CUSTOMER EXPERIENCE

Customers demand simple, seamless, personalized experiences that address their lifestyle needs.

Three key trends are reshaping the customer experience:

Conversion of loyalty into revenue

Customers expect interactions that are relevant and financial products and services that tailored to their specific needs. To answer those demands, leading banks aim to develop customer-centric business models for sales, marketing, and service with real-time execution capabilities. By putting customers first, these institutions deliver personalized and relevant advice, service, and offers at any point of the interaction. For example, using advanced analytics to help customers choose the best payment option for any purchase enables banks to attract new customers and increase total deposits and revenues.

The customer journey

Customers are choosing their own journey in a variety of channels that are convenient for them. However, this emerging pattern is not linear as past trends. In fact, only 12% of companies surveyed can provide a seamless handoff between channels. Delivering a seamless, consistent, channel-optimized, and customer-centric experience drives loyalty.

Big Data and marketing in near real time

Big Data and sophisticated predictive analytics of structured and unstructured data provide 360-degree customer insight, enabling banks to anticipate the behavior of their customers; respond to their needs; predict the next, best step or product offer; and rapidly engage them in real time. The digital economy is highly personalized and offers better convenience, choice, and value to the customer.

Only 11%

of financial services organizations have a unified 360-degree view of the customer and can provide a consistent experience across all products and channels²⁴

One in six

customers claims that a poor mobile experience prompts them to shop for a new bank²⁵

Only 6%

of financial services organizations can personalize marketing by using deep insight into customer preferences, behavior, and sentiment, such as on social media²⁶

SAP enables lifestyle banking

The omnichannel banking platform from SAP brings together marketing, sales, banking services, and commerce to enable seamless digitization of the entire customer experience regardless of the channel. This includes applications that serve retail and commercial banking for mobile and online users. Fully integrated into the digital core transactional system and using customer engagement and commerce solutions from SAP, a 360-degree view of the customer and sophisticated, predictive analytics enable highly personalized, real-time interactions across all channels and devices.

With SAP solutions, banks can:

- Engage your customers on the channels and devices they choose at any moment in their journey
- Create personalized experiences in every interaction
- Deliver a single, harmonized lifestyle experience for your customers
- Orchestrate business processes across marketing, commerce, sales, and service





WORKFORCE ENGAGEMENT

The world is getting smarter in the digital economy, but complexity is overwhelming the workforce in this pursuit.

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

Changing of the guard

Over 50% of the workforce will be from the millennial generation by 2020.²⁷ Banks have to devise a workforce strategy to make work in this industry attractive for the digital generation.

Optimize contingent labor

Banks have traditionally been turning to contractors and service providers to complement skills and lower fixed costs, and that trend continues to increase. They now see the need for digital integration of this workforce into all business processes to increase efficiency and improve team member engagement and collaboration.

Constant reorganization

Reorganizing to adjust to the new reality is becoming a constant and can't be allowed to disrupt efficient operations.

Complexity is on the rise

Many banks do business in more countries across many more channels. Products and services are becoming more complex, regulations are changing by the day, and layer upon layer of management are hindering speed and agility.

41%

increase in contingent workforce spending in the past five years²⁸

34%

of executives feel that they've made progress in building a workforce that can meet future business goals²⁹

30%

of executives say their companies give special attention to the particular wants and needs of millennials³⁰

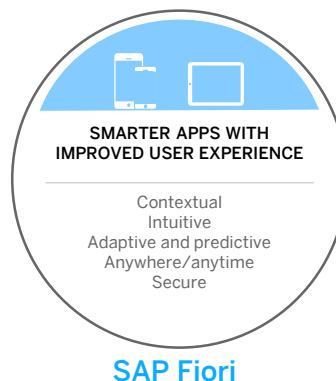
29%

faster average time to fill positions and reach productivity with SAP SuccessFactors Onboarding (34 days down to 24 days)³¹

Improve your total workforce productivity: Simplify with SAP

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

- **Attracting the best talent** – 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, 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

Banks will increasingly focus on collaborating with customers and suppliers to more quickly and efficiently provide their services.

Business connectivity at scale

With banks connected to suppliers and customers in the millions, large or small. As such, banks need a simple and effective platform that allows them to collaborate with any company and safely share compliance, risk, performance, and transaction information. This is already a reality with SAP's portfolio of networks, including the Ariba Network, offering the complete procure-to-pay lifecycle.

Customer experience

Doing business with customers in the digital age requires seamless integration, always-on availability, and ease of use. Customers and employees want processes delivered in a user-friendly way across an integrated ecosystem of buyers, suppliers, and employees.

Network of networks

Business networks like Ariba and Concur aggregate services into a one-stop seamless network. They also enable value-added non-financial services to your customers that simplify their lives.

Simplify collaboration with SAP business networks

SAP S/4HANA gives you incredible capabilities to digitize business processes across your business – and the connectivity to the business network allows you to extend those processes beyond the four walls of your business.

- **Solution already at scale** and cover all spend categories (direct and indirect material, labor and services, travel and expenses)
- **Business networks operate on a global basis**, meet data security standards, and operate with near zero downtime
- **Extensive offering** by using services from many partners such as supply chain, financing, payment, and supplier certification

74%

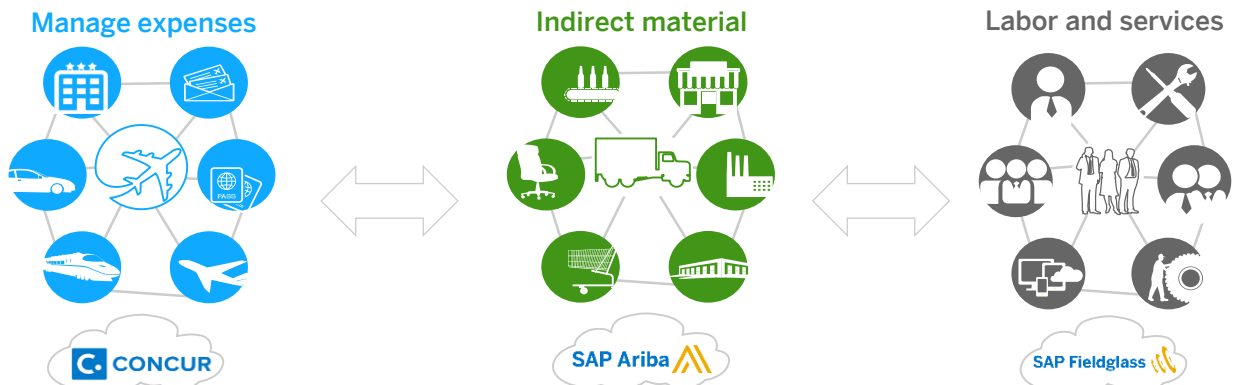
of the world's transaction revenue touches an SAP system³²

SAP connects more than **2.0 million** companies in 190 countries, completing \$750 billion in business on the Ariba Network, the world's largest business-to-business network³³

B2B transactional inefficiencies are costing **\$600 billion** per year from sourcing and transaction to payment processing³⁴

50–75%

faster transaction cycles are being achieved with the Ariba Network³⁵





BIG DATA

The most dramatic change in the digital economy will be driven by the hyperconnectivity in the Internet of Things and Big Data.

Banks are just beginning to understand the full potential of Big Data and the Internet of Things. Going a step beyond realizing the information through Big Data and understanding the data by analytics, the Internet of Things makes information readily available and consumable by other systems and networks. It acts as an intermediary tool that helps turn information into a force that can boost efficiency, increase productivity, and drive fundamental improvements in customer experiences.

Here are some key trends in this space:

Smart products bring new business models

Suppliers and business customers are embedding sensors in their products and processes. The Internet of Things has huge implications on the development of new business models in retail banking as well as small business and corporate banking. By using data and geolocation information and consuming insights generated from their customers or third-party suppliers, banks can anticipate their customers' immediate and future financial needs and offer products and solutions to help them make better decisions.

Data becomes the currency of the digital economy

The transformation of the banking industry is enabled by Big Data technology and computing power that processes massive amounts of data in real time. From improving fraud detection and security, compliance and regulatory reporting, and risk management to enabling a 'product of one', the ability to analyze large volumes of internal and external data in real time is unlocking the potential of Big Data and providing banks with unprecedented insight into their customers – creating significant opportunity to gain competitive advantage.

Technology drives customer engagement

The Internet of Things is leading the way to the future of banking. With this technology, banks can improve and provide a more convenient and rewarding experience for customers using credit and debit cards. A practical application includes banks analyzing the frequency of ATM use within a certain area and targeting specific zones for ATM installation where foot traffic is highest. Other examples that are shaping future offerings and enable true lifestyle banking include a connected and smart living room, smart fridge, smart watch, connected car, and machine-to-machine payments.

3 billion

Internet users and an 30-50 billion connected devices are expected by 2020^{36,37}

80%

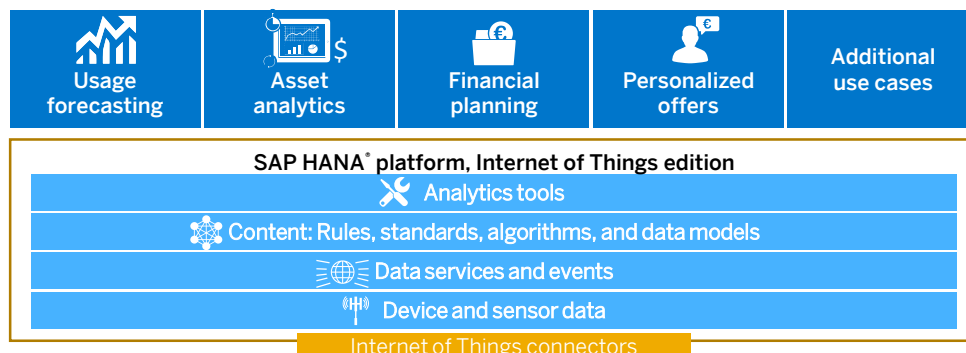
of a survey pool of 795 multinational companies increased revenue from investments in the Internet of Things in 2014, with an average increase of 15.6%³⁸

IDC predicts the Internet of Things market will soar in the coming years – from 9.1 billion installed units at the end of 2013 to

28.1 billion by 2020³⁹

Connect, transform, and reimagine with SAP

By enabling the Internet of Things with SAP HANA, organizations can now take embedded device data, analyze it in real time, and apply it across the value chain to drive business insights and create new business models.



SAP HANA: THE GREAT SIMPLIFIER

At the heart of a digital business is the agility and flexibility 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 financial services business models and customer engagement 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 banks plan, scale, and innovate.

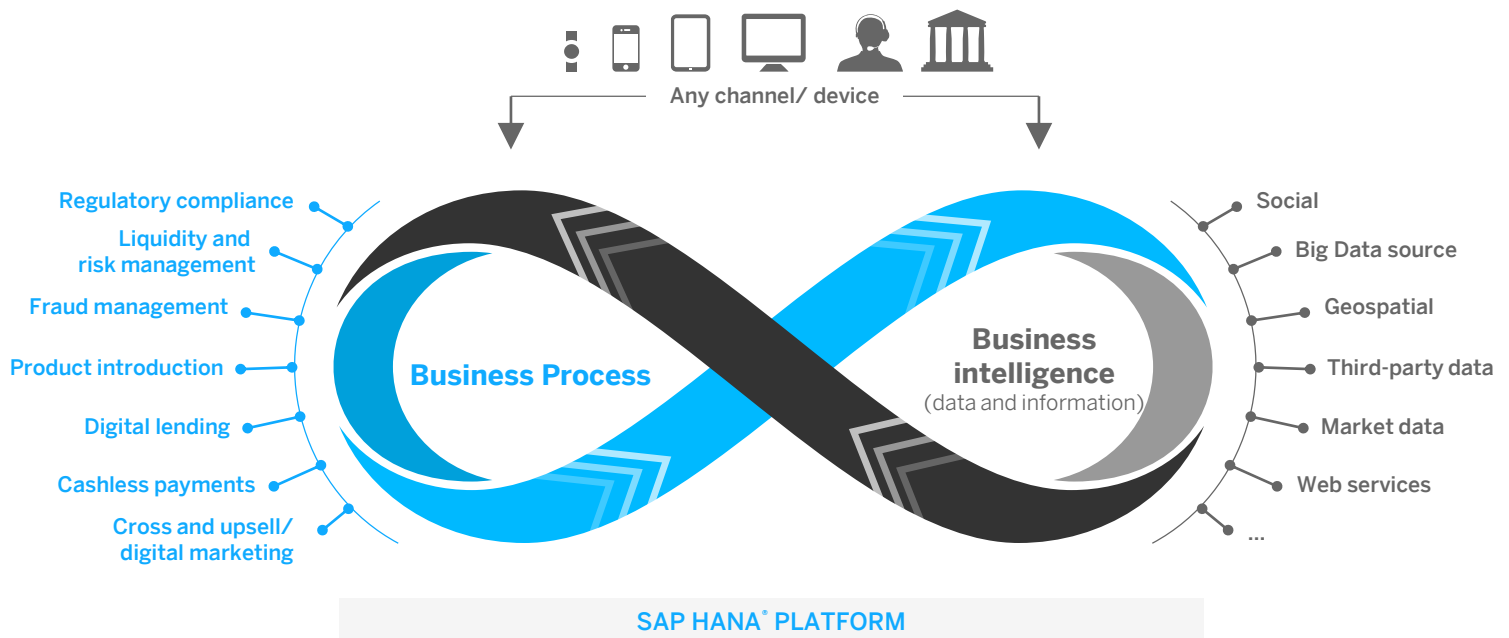
In-memory computing is a concept brought to life by the breakthrough SAP HANA platform. While relatively young by commercial standards, rapid adoption of SAP HANA across the industry validates its massive potential for digital businesses.

With in-memory computing, we can now finally:

1. Truly optimize the customer experience beyond the UI level but with **tailored, context-aware offerings**.
2. **Use data assets** inside and outside the bank for better and faster decisions, whether creditworthiness of customers, risk assessments, fraud detection and what-if analysis, or overall reporting for finance and compliance. SAP HANA Vora software enables banks to reveal unprecedented business context by combining enterprise and Hadoop data to facilitate more precise decisions through greater contextual awareness.
3. Provide **services to partners** and **integrate** respective services through a **highly flexible and secure platform** with managed APIs and out-of-the-box integration capabilities with SAP HANA Cloud Platform.

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

SMARTER USERS + SMARTER TRANSACTIONS + SMARTER DECISIONS = SMARTER BANKING



HOW DOES IT ALL COME TOGETHER? CASHLESS PAYMENTS.

Next-generation business processes will span multiple pillars of digital business to drive efficiency internally and across the business network, connect to devices, and enhance the omnichannel customer experience. The Internet of Things, Big Data, social media analytics, and smarter devices are changing the landscape for payments and lending as well as driving product cross-selling.



Imagine parking your hybrid car in a public garage with a space equipped with a fast charger. When you return later, you unplug your car and the display on the charging station shows the amount of electric power you used and the total charge. As you leave your parking space, the payment is automatically processed through the prepaid e-wallet incorporated into your car's electronics system.

As you leave the garage, the ramp display shows the parking fee, which is also transmitted to your car's dashboard through near field communication. You approve the purchase, your e-wallet is charged, and you drive away.

When you log into your bank account, your car's current electricity usage, the corresponding charge, and the parking fee are automatically assigned to the appropriate category and displayed in your personal financial management dashboard that compares your current period and historical usage. This information is plotted against your monthly budget to improve tracking. You also have an option to compare your detailed car expenditures against customers similar to you.

Since your bank also offers car insurance, you decided to share your connected car data with your bank when you were approved for the car loan. Your bank monitors your driving habits, use, average speed, and other relevant telematics data. Based on your car use, the

bank automatically adjusted your premium downward and notified you of the adjustment when you logged into your bank account online.

Your bank also knows that your regular 36,000-mile service is due next month. Given that your bank participates in a business network that connects small businesses and consumers, the bank provides a list of bank-approved and highly rated car mechanics on social media that are close to your location. You are offered the option to contact the business and schedule an appointment. Based on real-time, predictive analytics, your bank also knows that you will need a loan to finance the service and offers you a short-term, low-interest loan to cover the expense.

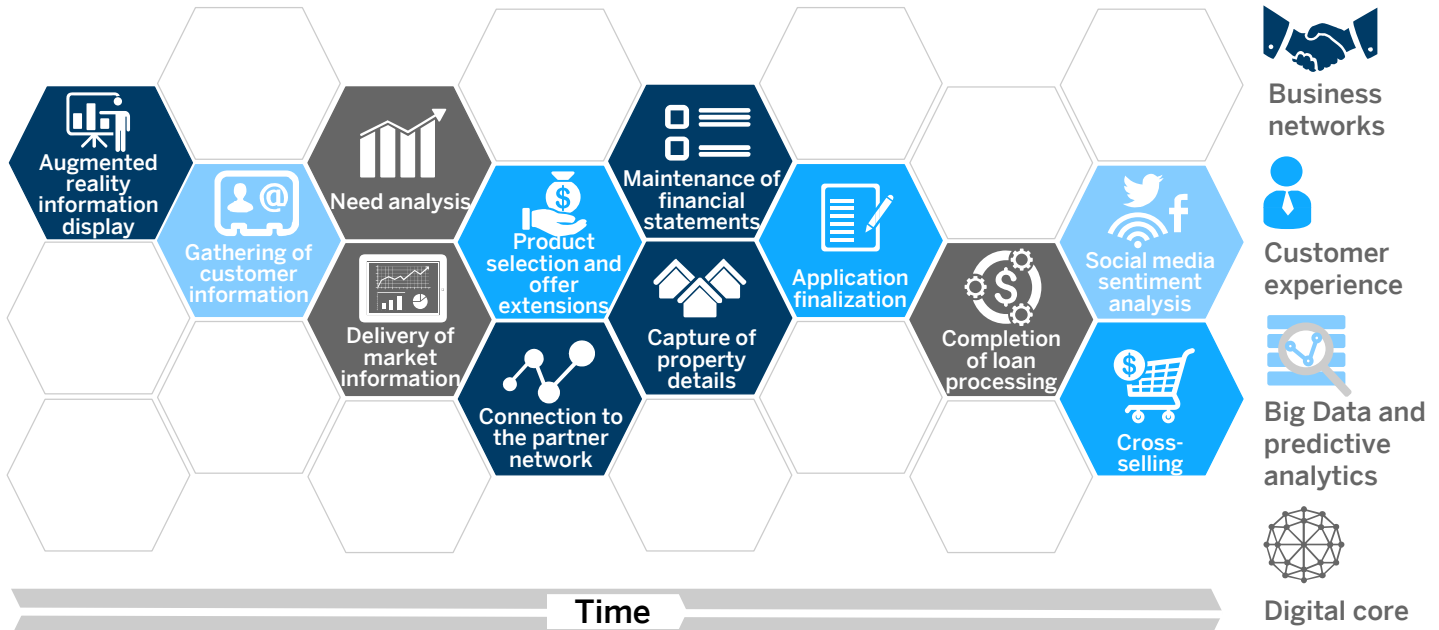
This example illustrates how banks can use digital technology to run simpler and faster, use real-time data and predictive analytics, and partner with business networks to offer frictionless customer solutions on any device – all while reducing cycle times. With this approach, banks are becoming an integral part of customers' daily lives.

The following business benefits are significant:

- Higher return on assets
- Higher customer satisfaction, engagement, and loyalty as well as improved net promoter scores
- New revenue streams

HOW DOES IT ALL COME TOGETHER? – E2E HOME BUYING SERVICE

Next-generation business processes will span multiple pillars of digital business to drive efficiency internally and across the business network, connect to devices, and enhance the omnichannel customer experience. Digitization of all layers of the bank and business network is influencing digital mortgage lending.



Imagine you are looking for a new house. Based on its knowledge of your personal setup, the housing market, and other ratings, your bank recommends areas with communities that match the home price you want, your income range, and desired infrastructure such as school districts and home construction.

As you stroll through one of these desirable neighborhoods, you see a house for sale. You scan the house with the camera function of your mobile banking app. Since your bank has partnered with the real estate company, the bank sends you the listing price, the agent's contact information, comparable recent sales, and other relevant information – which are all displayed through your smartphone's augmented reality feature.

If you want additional information, you can e-sign the agent's terms and confidentiality agreement directly in the banking app, which connects you immediately to the agent company. While you learn more about the house, the bank prepares a personalized mortgage offer based on your financials and lifestyle and the price of the house compared to market prices. But it's not over yet; you can further tailor your individual preferences once you are back home on your couch.

When you accept the offer, you send any missing documents through a mobile scan because the bank can complete most of the paperwork with information you provided earlier in the process and details given by the listing agent.

The bank further guides you through all necessary formal steps to

acquire the house and offers the best rates for other services such as house inspectors, lawyers, builders, and movers through its partner network.

To cover damage and other risks, the bank offers insurance, projects the home's repair and maintenance costs, and proposes a savings plan tailored to your personal financial profile.

Once you close on the house, you share the news with your friends and family through social media. Since your bank monitors social networks to track customer sentiment, it knows that you're extremely happy with the purchase and the services provided by your bank. Using sentiment analysis, Big Data, and other available information, the bank identifies which of your friends is likely to join the real estate market in the near future. The bank follows up with them separately and identifies how to best serve their future financing needs.

The predictive, real-time nature of the solution will change how people work, how services are delivered, how operational costs are reduced, and how business partners are integrated in real time.

The following business benefits are significant:

- Higher return on assets
- Increased total deposits
- Higher customer satisfaction, engagement, and loyalty as well as improved net promoter scores
- New revenue streams
- Stronger innovation and differentiation



HOW TO START

THE JOURNEY TO THE
DIGITAL BANK BEGINS WITH
A CAPABILITY ANALYSIS
THAT RESULTS IN THE
TRANSFORMATION AGENDA

HOW TO START

THE JOURNEY TO THE DIGITAL BANK

The journey to define future business models capitalizing on the digital bank involves all disciplines of a modern bank and requires a systematic approach to identify and capture business opportunities.

The collaborative value and innovation framework

Banks embarking on the transformation journey to the digital bank typically start to reimagine their business with focus on customers and business outcomes. Answering the key questions, “What role will banks play in the future financial services value chain?” and “How will we make money?” will provide direction for reimagining your face to the customers, your business processes, and the operational model.

For future innovation, a new level of collaboration is required. As a result, we have developed a framework that will be a continuous and holistic partnership model designed to drive true collaboration and engagement.

Outlined below are the five steps of the collaborative value and innovation framework from SAP:



- 1. Strategy alignment:** Understand the bank’s strategic direction and identify strategic initiatives.
- 2. Opportunities assessment:** Perform digital readiness check. Identify and assess opportunities in line with strategic direction. Prioritization based on value, feasibility, risk, and cost.
- 3. Solution road map and ROI:** Document end-state solution, business case – benefits, total cost of ownership, ROI, and strategic road map.
- 4. Value realization:** Deliver transformation on time, on budget, and on value.
- 5. Governance:** Maximize investments and accelerate value creation with governance based on executive engagement, value delivery, and continuous innovation.



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 IS COMMITTED TO INNOVATION

Vision

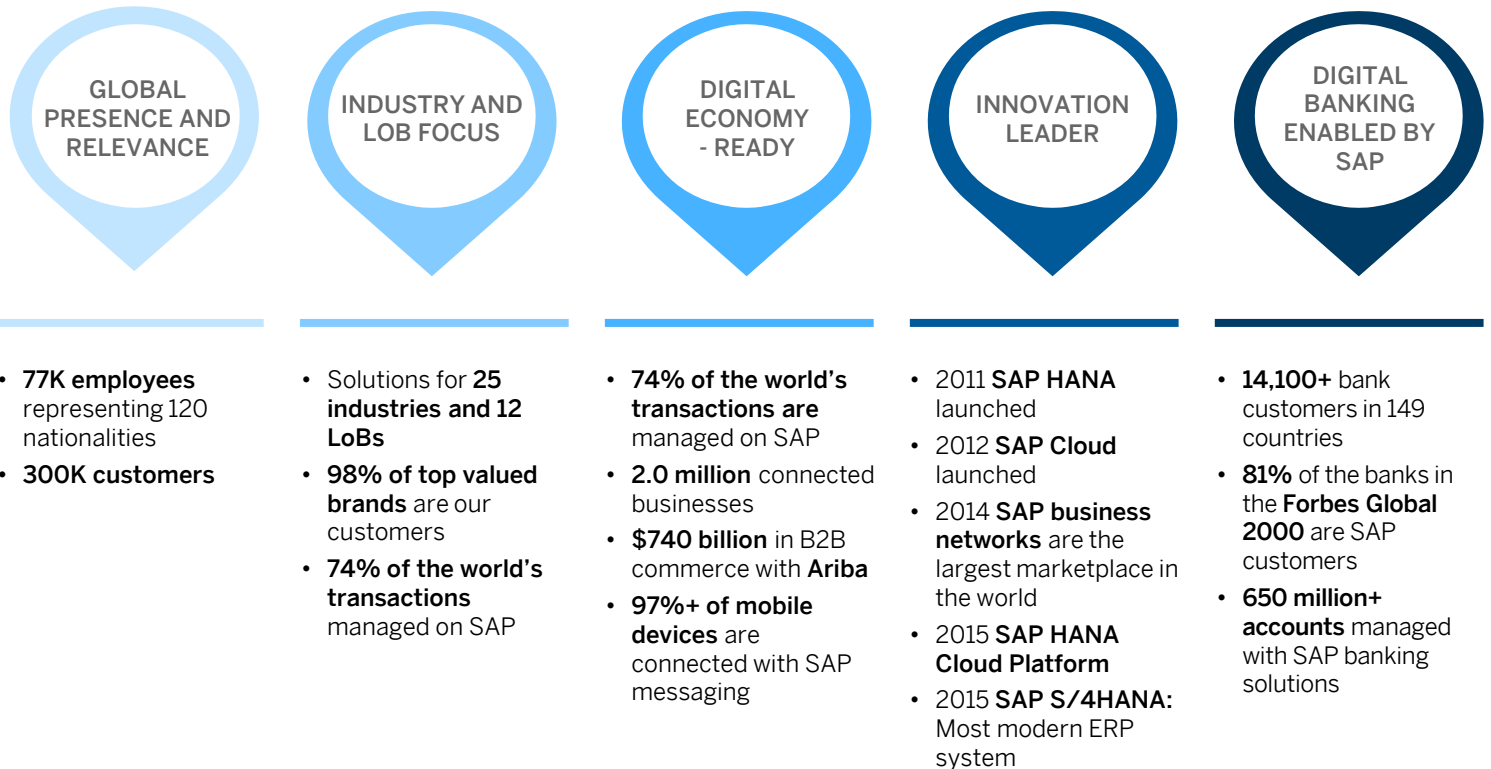
Help the world run better and improve people's lives

Mission

Help our customers run at their best

Strategy

Become the cloud company powered by SAP HANA



ATB FINANCIAL

"Implementing cross-border, straight-through processing with SAP Payment Engine has virtually eliminated the need to manually add routing details to each payment. Wire transfers are processed faster and reach the beneficiary sooner."⁴⁰

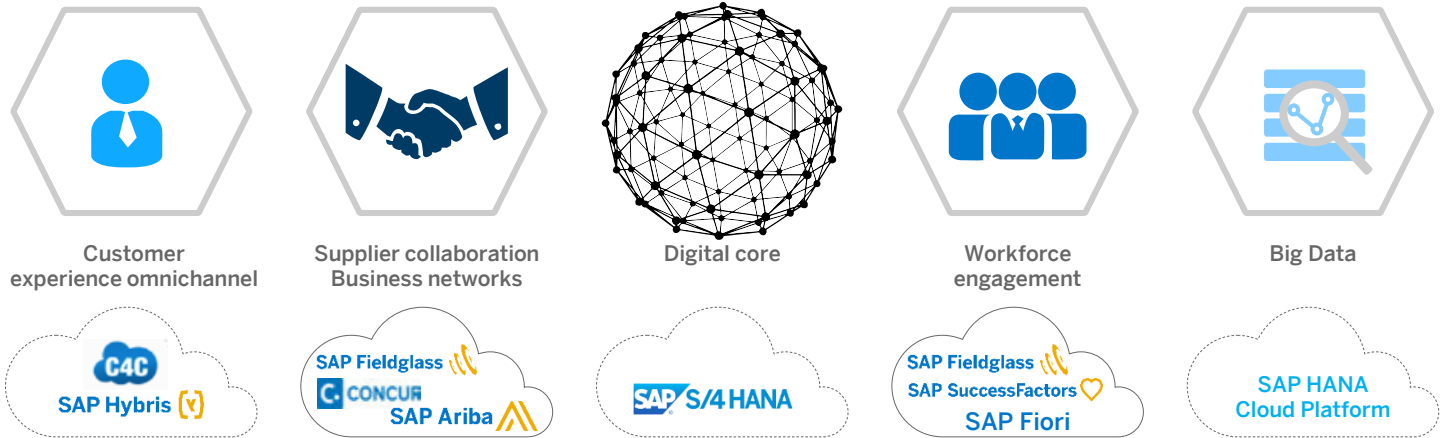
COMMONWEALTH BANK

"The success of the core banking modernization program has given CBA a two to three-year first-mover advantage over competitors that could significantly change the Australian banking landscape."⁴¹

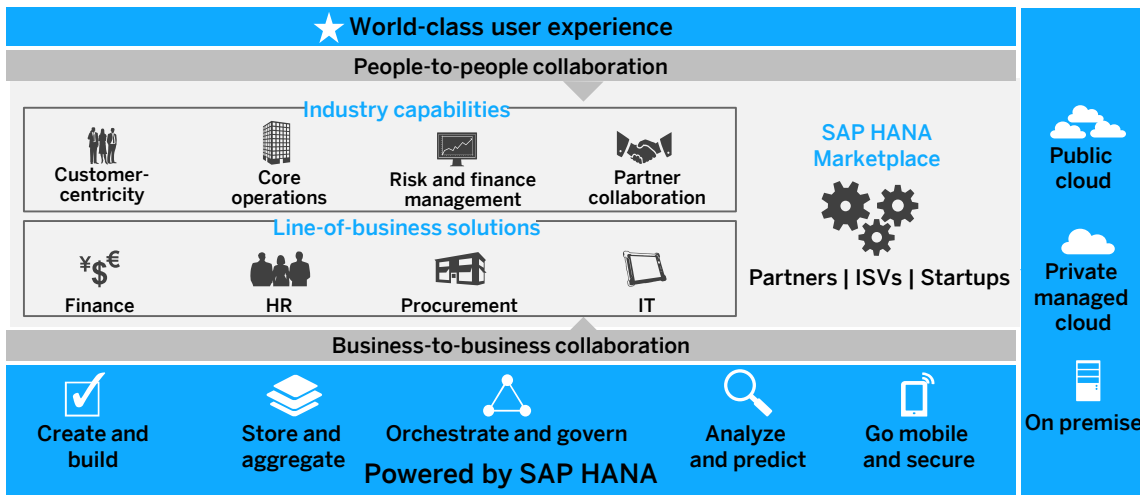
GALICIA

With millions of customers, Banco Galicia is a top private bank for local capital in Argentina. Given the country's economic environment since the late 1990s, managing risk to protect its customers is one of the bank's primary objectives. By deploying SAP banking solutions, the bank is now able to respond to new regulations in less than 24 hours, while offering customers 21st century products, services, and convenience.⁴²

CREATE COMPETITIVE ADVANTAGE THROUGH INNOVATION



SAP will bring simplification, innovation, and acceleration required to support the development of your digital business strategy. These capabilities will be leveraged throughout the collaborative value and innovation framework from SAP.



ASSETS

- 60+ business process benchmarking and best practice assessments
- 600+ industry-focused innovation scenarios
- **Banking Industry Architecture Network** aligned with BIAN
- Rapid-deployment solution to accelerate digital transformation
- **Worldwide** co-innovation labs

METHODOLOGY

- Business case methodology
- Design Thinking
- End-to-end enterprise modelling framework based on Banking Industry Architecture Network
- Benchmarking
- Value partnership framework
- **SAP Activate** – market-leading services methodology to accelerate solution realization for banking

SAP GLOBAL SERVICES AND SUPPORT TO DRIVE YOUR SUCCESS

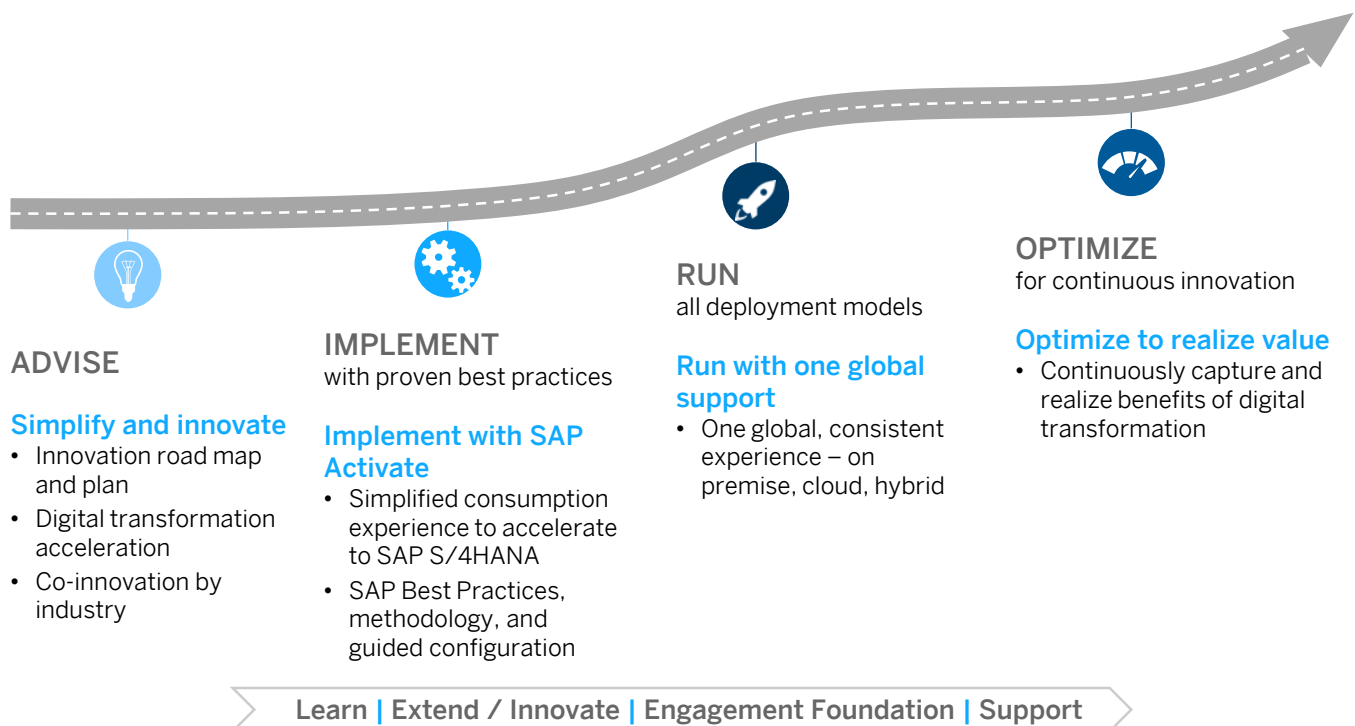
The digital economy puts massive pressure on retail banks, but it also offers tremendous opportunities to traditional players, new market entrants, and startups. Innovating the customer experience is key. Process optimization from the customer interaction into the back-end systems is a precondition for economic success.

SAP offers significant industry-specific solutions that enable financial services organizations to innovate, simplify, and transform. Our scalable, flexible solutions are built on the latest technology, and our customers decide where to run them – on premise, cloud, hybrid – all depending on the local requirements from the regulator and the customers.

Rely on the 30,000 services and support professionals who help shape your digital road map and bring it to life. Our business transformation services help you turn the strategy into an actionable road map, always with an eye on business benefit, low-hanging fruits, controlled risk, and long-term success. Services implement the projects according to the agreed upon road map. We apply our proven SAP Activate methodology and our SAP Banking Reference Architecture to offer best in class value realization.

With the Banking Industry Architecture Network, we provide an enterprise architecture modeling framework delivering the methodology, the tools, and reference content to identify, refine, and document all steps of your digital transformation journey, from understanding the corporate strategy and its impact on your value chain and business processes, down to recommendations for your future application landscapes and application integration architecture.

Our premium services and SAP MaxAttention™ services help ensure ongoing success from planning through implementation and operations. The Global Service & Support organization guides you in the definition and implementation of your digital transformation agenda. Our people provide leadership, industry insight, and technology expertise – our promise is to maximize your short and long-term value add from the SAP solutions.



SAP COMPREHENSIVE ECOSYSTEM

Orchestrating the world to deliver faster value

Our comprehensive ecosystem for banking offers integration into:

- Integration into a wide range of business services (retail banking, commercial banking capital markets, etc.)
- Open architecture: choice of hardware and software
- Complementary and innovative third-party solutions
- Reach with partners to serve your business of any size, anywhere in the world
- Forum for influence and knowledge
- Thought leadership and industry expertise

BUSINESS NETWORK

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

INFLUENCE FORUMS AND EDUCATION

- User groups across all regions
- Executive industry councils
- SAP community >24 million unique visitors per year
- 2,650 University Alliances
- 20,000+ partner resources educated on SAP's financial services industry portfolio

INNOVATION

- 1,900+ OEM solution partners to extend SAP solutions
- 2,700 startups developing SAP HANA apps
- 30+ financial services industry partner solution co-innovation initiatives

CHANNEL AND SME

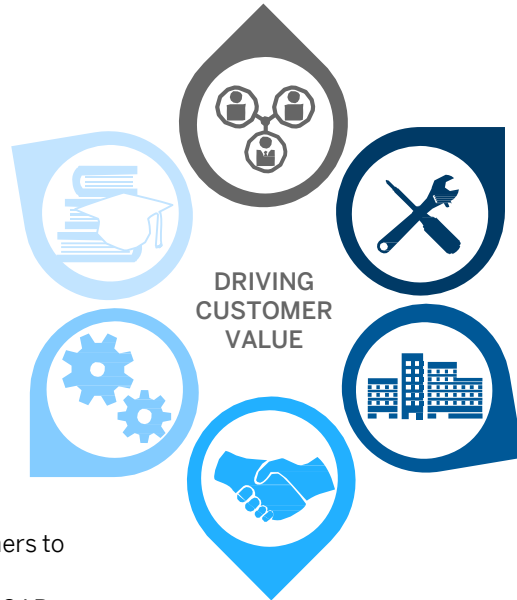
- 4,800 channel partners
- 400+ active in the financial services industry

IMPLEMENTATION SERVICES

- 500+ SAP partners in the financial services industry
- 5,000+ consultants trained in financial services industry core solutions

PLATFORM AND INFRASTRUCTURE

- 1,400 cloud partners
- 1,500+ platform partners
- 500+ financial services industry partner development resources trained in the SAP HANA Cloud Platform



ADDITIONAL RESOURCES

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

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