# DIGITAL TRANSFORMATION AND THE BANK OF THE FUTURE

The Power of Possibility

# INTRODUCTION
## THE RISE OF THE DIGITAL BANK

**The banking sector is facing tough challenges. The much larger burden of regulation compared with ten years ago has increased costs by forcing the banks to grow their compliance headcount and spend money adapting IT systems to capture and make sense of the new information that regulators want.**

**For retail and commercial banks, low interest rates in many countries are keeping loan margins thin. Meanwhile, FinTech businesses are eating into banks' market share by offering various banking products, including payment services, loans and wealth management, at highly competitive rates. Major tech firms with deep pockets — such as Google, Amazon, Facebook and Apple — are also encroaching onto banks' territory, by offering similar products to the FinTech upstarts.**

At the same time, customer expectations have also become more demanding. A new generation of well-educated and informed customers is taking over. These changing bank customers want a higher-quality and more personalized service, and they want it quicker and whenever or however it's convenient to them. They expect to access a wide range of services seamlessly on their preferred channel, whether that is online, by smartphone or in brick-and-mortar branches.

In turn, banks are having to facilitate these new functionalities on legacy systems designed for the era of pre-digital banking – and they having to compete with FinTech businesses and global digital players with state-of-the-art systems that can be scaled up quickly and cheaply.

However, banks can cope with these pressures and realize new opportunities by embracing automation and advanced digital technologies, including Artificial Intelligence (AI), Natural Language Processing (NLP), Robotic Process Automation (RPA) and One Touch Processing.

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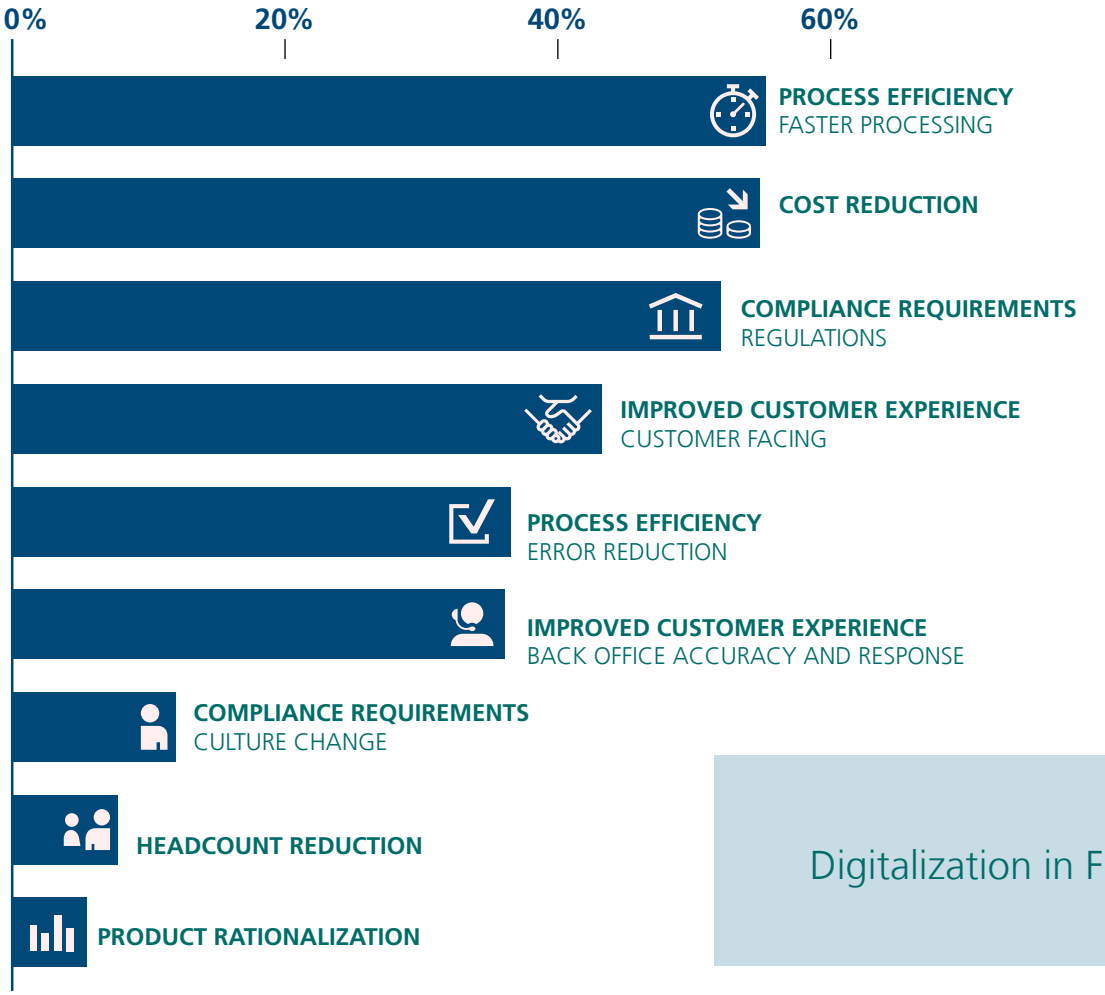
This White Paper looks in detail at how these technologies are transforming the ways banks operate. It considers the huge process improvements that can be achieved by automating manual tasks; how digital technology can help banks cope with regulatory demands, as well as the crucial cost savings that can be made through digitalization.

Finally, it looks at how automation can improve the customer experience. Increasing efficiency and rationalizing the cost base are important strategies, but it is equally important that banks re-focus their resources and human capital to optimize the way they serve and interact with customers. In the new environment it is the only way to win.




## Key Drivers

Digitalization in Financial Services

Source: AIIM

## Automation

Key Technologies

**Artificial Intelligence (AI)** is the ability of software to think and learn. It allows computers to grow progressively better at performing tasks: they learn from their mistakes and from previous patterns.

**Natural Language Processing (NLP)** is a domain of AI encompassing the capacity of software to understand the nuances of human language — a much harder challenge than processing numbers or simple 'yes' or 'no' responses. NLP is useful, for example, in detecting meaning from communications such as email, allowing more efficient processing.

**Robotic Process Automation (RPA)** is when a company deploys computer software to perform rule- based actions previously done by people, which are based on a Structured Data input. The software can be seen as a robot, since it replaces the work of humans. Common uses of RPA include processing transactions and manipulating and imputing data between digital systems.

**Intelligent Automation (IA)** is a combination of AI and RPA, which transforms unstructured information into Structured Data to enable automated processing.

**Unstructured Information** is the natural form of human communication in writing or speaking. It has an increasing importance in business-to-consumer (B2C) communication via chatbots, emails, electronic documents, (paper) letters, etc. IA is used to digitize, extract, classify and process data provided by unstructured communication flows.

**Omnichannel Communication** is a holistic pattern of interaction between a bank and its customers through a variety of channels, including face-to-face, phone, website, internet chat, email and text.

# AUTOMATING MANUAL PROCESSES

**The opportunity for automation will grow as banks become more digitalized. In fact, combining RPA with technologies like AI could revolutionize areas including credit processing, payments processing and securities processing, as well as customer care in general. Indeed, it is estimated that automation can replace up to three quarters of manual processes in banking.**

One example is customer onboarding, which is very labor-intensive: at a large retail bank it can involve up to 100 full-time employees (FTEs) in this area alone. Yet much of this work can be completed by software algorithms that replicate the key-strokes and actions of human employees, shifting data seamlessly between different databases, and completing key validations and verifications. This not only can reduce costs but revamp legacy systems. There is also the potential to greatly speed up processing times. For corporate banks, the onboarding process for a new client is expected to rise to an average of 40 days this year.[1] For some retail banks, up to 90% of customers abandon new account applications prior to their completion.[2]

**75%**

**of manual processes in the banking sector can potentially be automated**

Another ideal area for process automation is master data management, where time-consuming processes such as address changes can be automated. A large retail bank might have to process 750,000 address changes a year, and it quickly gets complex with more than 20 different processing varieties and validation rules per address.[3] Being able to automate this process can result in huge efficiency gains.

**80%**

**of data banks receive is in unstructured form**

Source: SPS, Gartner

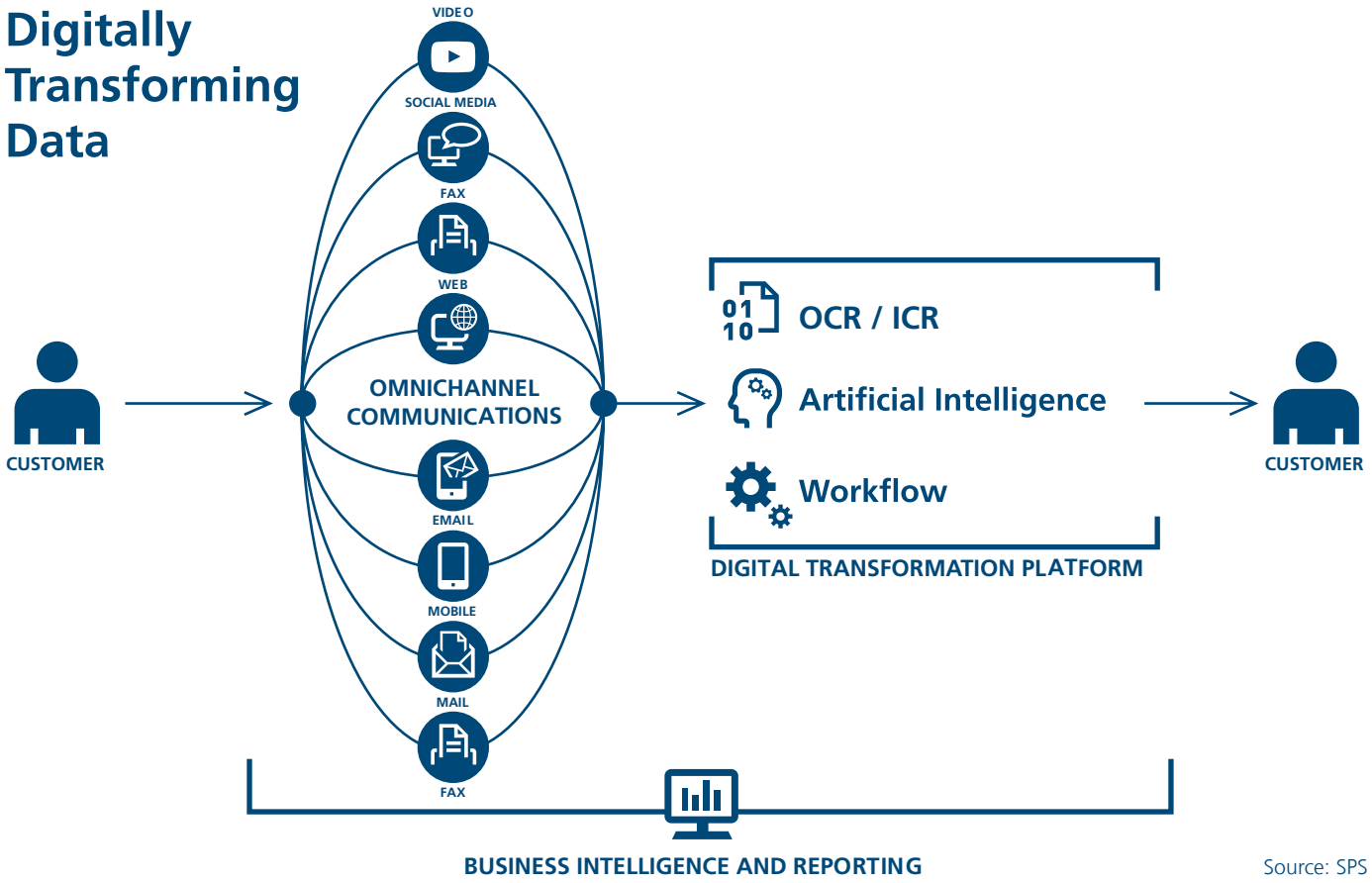

## Case study
## Document Processing

A Swiss bank operating in more than 50 countries and employing more than 50,000 staff engaged SPS to help manage processes such as payments, new client onboarding, and loan or credit card applications, which required numerous controls, such as signature verifications and credit-rating checks. Traditionally, the bank scanned and archived the resulting documentation at the end of the process, making it difficult for staff to address customer queries immediately.

SPS' solution revolutionized the bank's operations by scanning all incoming documentation at the beginning of the process and making it instantly available throughout the organization. This has enabled the bank to cut processing time considerably, as digital rather than paper information now flows through the organization.

# Moving from Unstructured to Structured Data

The heart of Intelligent Automation is the capability to turn Unstructured Data into Structured Data. This means converting information from a variety of different sources — paper documents, email, social media, SMS — into a standardized, digital format that can be understood and processed by software and back-end systems. Presently, 80% of information received by banks originates in unstructured form. Fortunately, Optical Character Recognition technologies and AI can now be used to process this information, quickly and accurately, whatever channel it originates from. "Capturing this Unstructured Data is key to further automation and creates huge potential within the bank", says Michael Neuberg, Director, Global Solution Design Banking at SPS.




Source: SPS

# Freeing up Resources and Improving Performance and Service Levels

However, automation is not only a way for banks to reduce their cost burden. It is also an opportunity to improve processes and provide a better service. By cutting the time that employees spend on routine administrative activities, automation frees staff to spend more time working on cases for which human intervention is desirable. "Take the example of loans", says Neuberg. "Automation gives staff more time to focus on the VIP customer, or a case where a loan is more complex, or where the customer's credit history requires careful thought about whether to advance the loan."

# AUTOMATING MANUAL PROCESSES

**The regulatory and compliance burdens on banking has reached unprecedented levels within the last decade. Meeting these increasingly strict standards, coupled with the business of gathering and crunching the data for regulatory reporting and then putting it in the form the regulator wants to see, is becoming a major burden across the entire financial services sector. This reflects the impact of new frameworks such as the Basel III rules on capital reserves, Know Your Customer (KYC) and anti-money laundering regulations, and a generally more hands-on approach to banking supervision by regulators following the credit crisis of 2008.**

## Reporting and Compliance

However, the sub-sector of digital technology, known as RegTech, can help banks to be more efficient and to cope with regulatory demands. For example, RPA can be used for regulatory reporting of capital adequacy, risk exposures and asset quality. Reporting requires high amounts of data collection from a variety of sources. Take MiFID II (the Market in Financial Instruments Directive), a key piece of regulation in the European banking sector. To meet just one requirement for transaction reporting requires filling in many different fields per trade, down to the trader's name and date of birth.

RPA is well suited for such tasks that involve locating and validating different data across multiple spreadsheets and sources. Furthermore, automation can result in greater transparency of the data that has been processed, which makes life easier for internal auditors and gives the regulator greater confidence in the bank's regulatory compliance.

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Digital technology can also be deployed by the bank for its own internal policing to ensure regulatory compliance through conduct monitoring. For example, when allied with other techniques, NLP can be used to ensure trading compliance, by analyzing the telephone conversations of traders.

Meanwhile, AI can, when combined with RPA, check for potential fraud committed by customers or employees. Using AI, software systems are able to analyze the data and text connected with previous frauds — including both Structured Data and the Unstructured Data in emails — and look for similar patterns that may point to current fraud.

## Keeping an Eye on the Prize

However, there is a danger that banks will keep too narrow a focus on compliance. Banks can use technology to reduce the operational burden of compliance, nevertheless it is important that they then concentrate on using the resources freed up by this to focus on core business areas and improve the customer experience. This then has the potential to create a virtuous circle, whereby they are cutting costs but also improving and supporting revenue-generating activities.

**+£500m**
**the annual cost of implementing KYC standards at a major bank**

**10–15%**
**of a bank's staff is now devoted to regulation and compliance**

Source: Thomson Reuters, Financial Times

# SCALABILITY AND COST

**As mentioned, banks are under enormous pressure to rationalize and further cut costs, faced as they are with cut-throat competition from newer digital banking upstarts, as well as downward pressure on fees and margins. Yet this presents a major challenge, because for many banks the cost base is rising rather than falling, as they are forced to upgrade legacy infrastructure to cope with the new wave of technological innovation sweeping the industry, as well as the growing challenges of compliance.**

Big banks, including HSBC, Deutsche Bank and JP Morgan, spend well over $1 billion a year each on regulatory compliance and controls. The Spanish bank BBVA has estimated that on average financial institutions have 10 to 15% of their staff dedicated to this area.[4]

Robotics can help immensely. Software that harnesses RPA techniques can process huge amounts of work at a much lower cost than hiring an army of FTEs to do this. RPA can be 35–65% cheaper than using onshore employees, and 10–30% cheaper than using offshore employees[5] — with robots working 24/7 without ever getting tired, and making fewer errors into the bargain. Robotics capability can also be scaled up or down to meet peaks and troughs in demand: for example, sudden surges caused by new product launches.

Another advantage of robotics is its quick deployment cycle, ranging from one month for low-complexity processes to three months for high-complexity processes. What's more, thousands of robots can be trained simultaneously. However, there is still a need for human intervention in many of these tasks, especially for exception handling and some of the more complex areas of information. Banks can also leverage Intelligent Automation services to offload back-office work to contact centers, improving cost and quality ratios between machine and manual labor that is both efficient and scalable.

## RPA in Numbers

**35–65%**
cheaper than onshore employee

**10–30%**
cheaper than offshore employee

**24/7**
operation and is virtually error free

**10%**
of process errors are due to human inattention to detail

Source: National Association of Software and Services Companies (NASSCOM), Institute for Robotic Process Automation

## Security

Security is a vital issue for all banks. If anything, they are thinking about it even more than before, with the advent of the General Data Protection Regulation (GDPR). This is an EU-wide regime, in force from May 2018, which introduces tougher rules on processing and storing personal data, as well as on obtaining customer consent.

National regulations are also important: for example, Switzerland does not allow data on banking customers to leave the country, so this information must be stored locally. But also in many other regions banks pay increasing attention to the location where their data is stored and processed in order to secure a maximum of business and customer secrecy and protection.

As a Swiss and government-owned company, SPS has an intimate understanding of the appropriate regulations and imposes the highest standards in the practical implementation of data security and privacy. It conducts stringent checks on staff and building access, protection of stored data and uses rigid governance to police its operations worldwide.

# IMPROVED CUSTOMER EXPERIENCE

**Banks know the quality of the customer experience (CX) is becoming the key battle-ground. "Times have changed", says Marc Lebherz, Global Head of Go-To-Market Strategy of SPS. "A few years ago the banks were focusing on cost. But nowadays customer experience comes even before cost. Banks know that this is how they differentiate themselves from the competition." Indeed, research has shown that improving CX can increase the likelihood of customers renewing or buying new products by 30–50%.[6,7]**

Automation can play an important role in this differentiation. It can increase efficiency and the processing of data and documents, making the digital front-end run more smoothly. This means fewer errors that impact the customer. Intelligent Automation also allows a bank to respond much more quickly to customer requests — shrinking the time for a decision on a credit card application from weeks to seconds, for example. For those processes that take longer, automation increases transparency: the customer can track the progress of a request as software sends it through the system. Such efficiency is crucial in order to compete with the new wave of FinTechs. One new start up can approve a small business loan in seven minutes, this is 5,000 times faster than the 20 days on average it takes a bank.[7]

## Digital Disruptors

Competition between the banks is tough, but this is not all they have to cope with. They are also facing competition from digital disrupters from other industries, including e-commerce, telecoms and internet services.

One huge usurper is Amazon, which has begun lending to businesses that sell products through its site. Amazon enjoys two great advantages. It knows about the cash-flow of these businesses because of its key role in their business model; moreover, the collateral is already in its warehouses. This makes it easy to seize collateral if the borrower does not pay.

Apple Pay allows people with Apple phones or watches to buy goods by touching their smart phones on contactless payment points. The money is deducted from a designated bank account.

Google has experimented with various financial services, including Google Pay Send, which allows people to send and receive money from a mobile device or desktop computer at no cost to either sender or receiver.

Banks are also facing competition in another core area: lending. Peer-to-peer lenders, such as Funding Circle, are using crowdfunding techniques to allow households and small and medium enterprises (SMEs) to bypass the banks.

Yet another challenge to the banks comes from the technology of blockchain: a transparent ledger of transactions that cannot be tampered with, without this showing up in the ledger's history. Blockchain allows a customer to pay securely for a product, and the vendor to have total confidence that payment has been made, on an instantaneous basis. Because of the certainty of payment, banks are no longer needed to act as a third-party guarantor in the transaction.

But although the banks are being assailed by technological disruption in many areas, if they are nimble they can use these technologies to their advantage. For example, blockchain could be used by the banks to make payments to each other more easily, securely nd quickly.

# Optimizing Customer Service

Automation technology offers great potential to improve customer service. For example, because of advances in NLP, which can read Unstructured Data, chatbots can understand and immediately answer most queries in plain, natural language, saving the customer from having to wait on the phone for a human to reply.

**"A chatbot can now analyze language and sense when a customer is growing upset about an issue, and needs an empathetic reply or a human who can defuse the situation."**

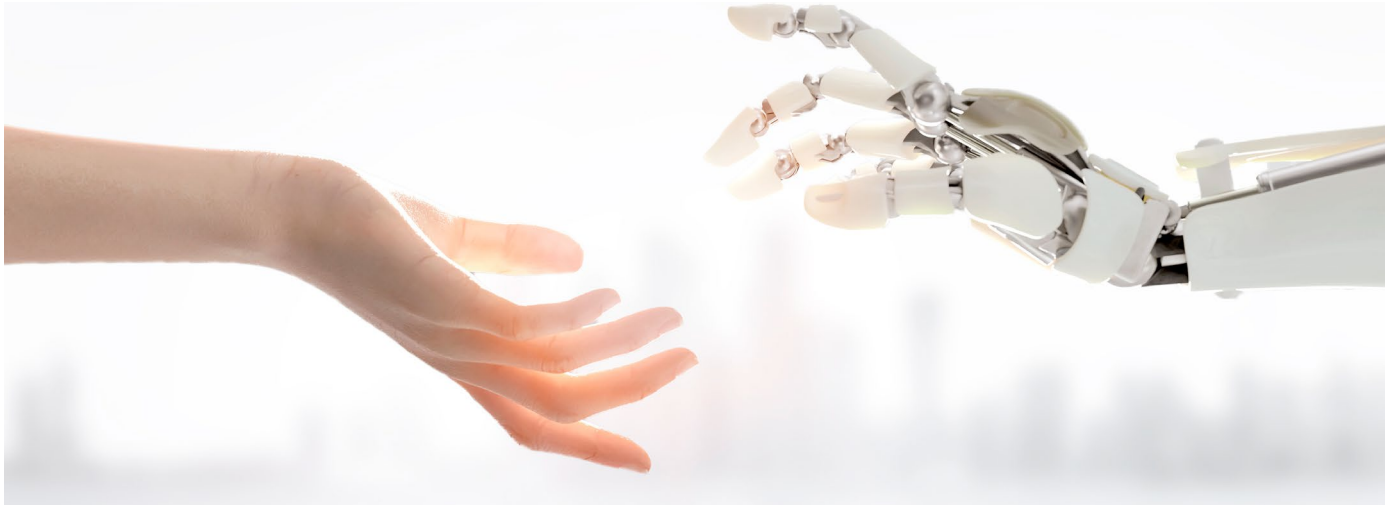
Alternatively, where human intervention is necessary, AI systems can be used to classify and route customer communications, so that the right person is tasked with responding to the query. "A chatbot can now analyze language and sense when a customer is growing upset about an issue, and needs an empathetic reply or a human who can defuse the situation", says Neuberg. "AI can also analyze emails from customers to assess where to direct the customer's query or comment, as well as gauging the customer's emotional state." As these systems improve they will have the ability to understand more complex data sources, including hand-written documents and video and voice recordings.

Importantly, the customer can seek a response on the channel they choose. Some might prefer to engage with the bank on its website (which employs intelligent search functionalities), whereas others might prefer email; others might opt for the combination of a chatbot response, followed by a conversation with a bank employee on the phone or in branch to resolve any remaining aspects of the query.

People are becoming progressively more attached to using systems, such as Alexa and Google Home, in their houses and apartments, so they will increasingly expect a similar capability from their banks. In short, robotics and AI are key to providing an omnichannel solution to the customer.

## The Rise of Robo-advisors

Robotics can also generate high-quality responses to more complex questions outside routine processes. Consider advances in the use of robotics in wealth management, for example. AI techniques allow software to digest enormous amounts of research covering a huge number of possible topics — far more research than any human could. To a client asking about the outlook for the Chinese stock market, a chatbot could, having amassed all the relevant information, reply that there was a general consensus that the Chinese stock market would rise. In fact, financial advisors, are increasingly coming under pressure from digital competitors, or so-called robo-advisors.



# CONCLUSION
# DELIVERING THE DIGITAL BANK

**The advantages of digital transformation in the banking sector are many. Intelligent Automation can cut costs, improve customer service and satisfaction, and create competitive advantage. Continuing advances in AI and other digital techniques will make the returns from investing in the digital future ever greater.**

But how do banks go about achieving this? One option is to rely on in-house staff. The bank may well have highly talented staff who know the bank's systems inside out. However, most of them will lack direct experience of how a complex digital transformation program can be achieved. The bank could parcel up the work to a number of technology providers or system integrators. However, dividing responsibilities between different vendors makes it hard to create the smooth connection between the different functions of the bank that is essential to get the most out of Intelligent Automation. Instead, banks are increasingly turning to experienced end-to-end providers that understand how all the different technological solutions fit together, and how the interface between people, processes and technology should work.

For example, Intelligent Automation can play an extremely useful role in bridging the gap between front and back-office systems, because it is able to take Unstructured Data from a wide range of inputs and turn it into Structured Data that can be used by front-office systems. Consider information on a change of address entered by a customer. Without robotics, this information would have to be checked by a member of staff before being entered manually on the legacy back-office system.

However, robotics can both enter the information automatically and, using AI, refer problematic cases to a human. As a result, Intelligent Automation can help create a more seamless process between the back and front office. This improves the customer experience, through faster response times and a higher level of service.

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# Creating a Roadmap

When it comes to digital transformation, the first step is not to ask the bank what it wants to achieve now, but what it wants to achieve several years from now — a question that requires the bank to look at all processes, from beginning to end. As Neuberg puts it: "You need a visionary roadmap of where you want to be in five years' time." He adds: "It's always important not to reinvent the wheel — most banks will want to continue using their legacy systems. But you must have the big picture in mind, while still wanting to secure some quick wins from the beginning."

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Any good roadmap is based on a careful audit of the bank's current sytems and end-to-end processes. Using this information, SPS can help a bank to understand the benefits involved in intelligent automation for each function — giving the bank the information it needs to decide how and where to act. Also, digitalization is an evolving process and can be completed in modules, with each separate process being perfected before moving on to the next.

A final point to bear in mind. Because of this ongoing rapid improvement in capabilities, and because rival banks are competing so fiercely to effect similar digital change, banks should continually ask themselves where they want to be in five years' time, rather than posing this question just at the point when they begin their transformation. Because the frontier is constantly moving forward they might never get there, but the effort of trying to reach that goal will spur them to advance their digital offering again and again.

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