The outlook for the digitalisation of Spanish banks: risks and opportunities

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THE OUTLOOK FOR THE DIGITALISATION OF SPANISH BANKS: RISKS AND OPPORTUNITIES

Abstract

The rapid developments in technology, the expectations of digital customers and the emergence of new competitors have driven banks[1] to reconsider their business models and improve their internal processes. In an environment of low interest rates and reduction in margins, banks are looking for new sources of income and focus their strategy on customers, providing products and services that enhance the customer experience and customise their offer. At the same time, banks are launching digital transformation plans to make their internal processes more effective and efficient.

This article describes the current situation regarding the digitalisation of Spanish banks. It also provides a non-exhaustive list of the potential risks and opportunities[2] arising therefrom. Furthermore, the article presents a number of supervisory challenges. In our experience, it is essential that supervisors keep an open and ongoing dialogue with the industry that enables us to get real knowledge of banks' actual digitalisation situation while at the same time facilitates the transmission of our supervisory expectations.

1 Introduction

Digitalisation is an unstoppable process in today's society. Individuals have integrated technologies into everyday life to socialise, to work, to buy goods and to gain access to services. Digital customers, with increasingly demanding expectations, want immediate access to products and services from any location and at any time. They demand agile, flexible and fully customised digital services.

In this context, many firms are moving from a product-centred strategy to a customer-centric business model. The study of the behaviour and needs of consumers along with the improvements in the usability of solutions have become key factors for the development of many companies. Companies are also transforming internally, modernising and digitalising their working processes and methods to achieve a cultural change within the organisation that allows innovation and collaborative work

1 Throughout the article the terms bank, credit institution and financial institution will be used to refer interchangeably to the entities described in Art. 4.1.1 of Regulation (EU) No. 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms.

2 It describes those risks and opportunities which, at the time the article was drafted, the authors considered most significant.

to become levers for their growth. We can therefore talk about two sides of digital transformation: that within the organisation itself and that focused on customers.

This article aims to describe the current situation of Spanish banks' digitalisation drawing on information obtained via the interaction with the industry, questionnaires on digital transformation sent by the Banco de España to a number of banks, participation of the authors in national and international working groups, and their supervisory experience.

2 Spanish banks' digitalisation: the current landscape

Most industries have set in train digitalisation initiatives; however, the status and pace of adoption of new technologies vary from one to another.

In the banking sector, the emergence of *FinTech, BigTech,* the entry into force of the second Payment Services Directive[3] (PSD2) and the challenges posed by an environment of low interest rates and reduction in margins have been an incentive for the transformation of the industry and for the search for new business models.

There are also other factors behind the change, including: the possibility of gaining access to millions of potential customers via the Internet; the widespread use of mobile devices; the increase in computing power and storage at lower prices; new collaborative working environments; and, of course, the need to improve customers' experience.

While some banks tackle their digital transformation with in-house resources, it is common to find organisations that *collaborate with third parties,* namely external consultants, start-ups in which they invest or acquire, or other service or product providers (see Chart 1). Mixed scenarios in which several of the foregoing cases combine are also habitual.

In some cases, banks have launched *accelerators*[4] or *incubators*[5] to help small companies with innovative ideas, or they have partnered with IT providers. The *participation in consortia* is another mechanism widely used to explore new technologies or to develop solutions, generally within the banking sector, although in some consortia we can find companies from different sectors.

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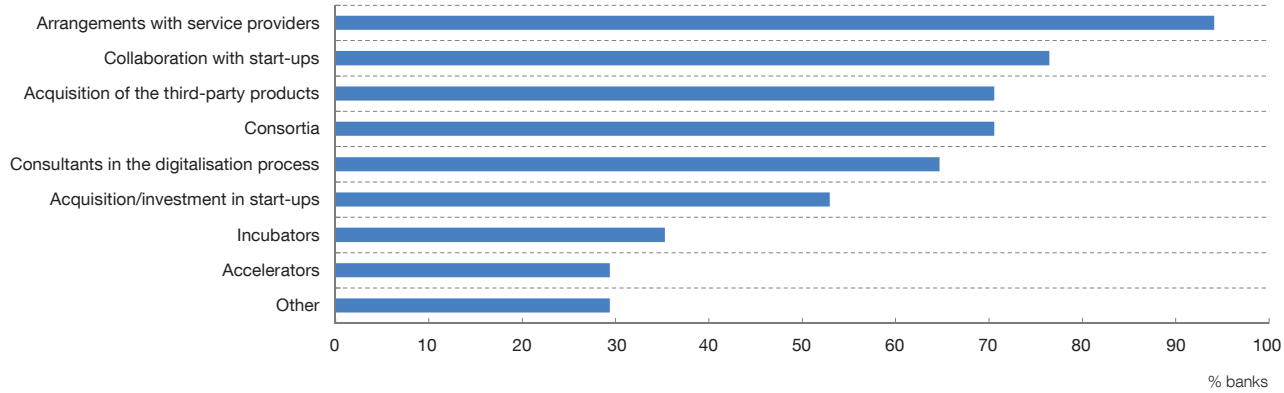
3 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No. 1093/2010, and repealing Directive 2007/64/EC (Text with EEA relevance).

4 Accelerators accompany start-ups already operating in order to accelerate their growth, acting as mentors in the definition of their business model, their commercial strategy and also in raising finance.

5 Incubators offer entrepreneurs and start-ups in their initial stages a physical space with basic services such as telecommunications where they can launch an innovative business idea. Generally, they provide access to a network of contacts and to teams of experts who advise them to materialise their idea.

Chart 1

COLLABORATION WITH THIRD PARTIES IN THE DIGITAL TRANSFORMATION PROCESS (END-2019 DATA)



SOURCE: Authors' own creation.

Most institutions in the Spanish banking system are the outcome of various mergers and acquisitions. This means they must make additional investments to integrate their *legacy systems* into the initiatives launched to achieve their digital transformation. Legacy systems have been characterised by their reliability for years, but they have a low level of flexibility to adapt to innovation; accordingly, intensive effort is needed to integrate them with new systems.

Data have become an increasingly valuable asset that needs to be properly protected and managed to be turned into intelligence, without compromising compliance with the regulations in force. A digital transformation strategy must be underpinned by quality data, with an appropriate governance framework that establishes their owners, the single source of consolidated information *(golden sources)* and levels of confidentiality, ensuring their integrity and security at all times.

Innovative developments normally begin with a proof of concept (PoC) or pilot testing phase. Here, a small number of customers or employees participate to assess whether the initiative is viable. These initiatives may originate, inter alia, to meet business needs, to improve existing processes or to extend the catalogue of products or services. Following satisfactory testing, the initiative is usually deployed into production, rolled out to all customers or employees, and extended in a staggered fashion to the different regions where the bank operates.

Credit institutions adopt different *strategies regarding innovation.* For some, digitalisation and the early adoption of innovative solutions is key to their business. Others, however, implement those ideas that have proven to be successful for competitors or develop some type of innovative product.

At present, the trend is clear. *Customers* prefer to interact with their bank in the quickest and most convenient way possible using digital channels instead of visiting

Table 1
MOVEMENT OF FUNDS IN SPANISH BANKS IN 2018

	Traditional means	Digital channels	
		Mobile banking	Online banking
Movement of funds in 2018			
Average amount/transaction (€)	1,282	640	2,055
Total annual average amount per bank (€)	86 billion	108 billion	
Average monthly accesses per bank		17 million	8 million

SOURCE: Authors' own creation.

their offices. Moreover, competition to offer the best solutions has increased and customers can change banks easily. Banks, aware of this, invest in improving their digital banking channels, trying to optimise the user experience and incorporating new products and services that make a difference. These may include financial account aggregation services, payment solutions and digital onboarding of customers, among others.

As to *user* preference regarding *digital channels,* at most institutions the number of active customers: in the bank website exceeds those that use the mobile app, but in spite of that, the number of accesses from the latter doubles those from the website. The conclusion is clear: customers make a bigger number of requests from the mobile app due to its immediacy.

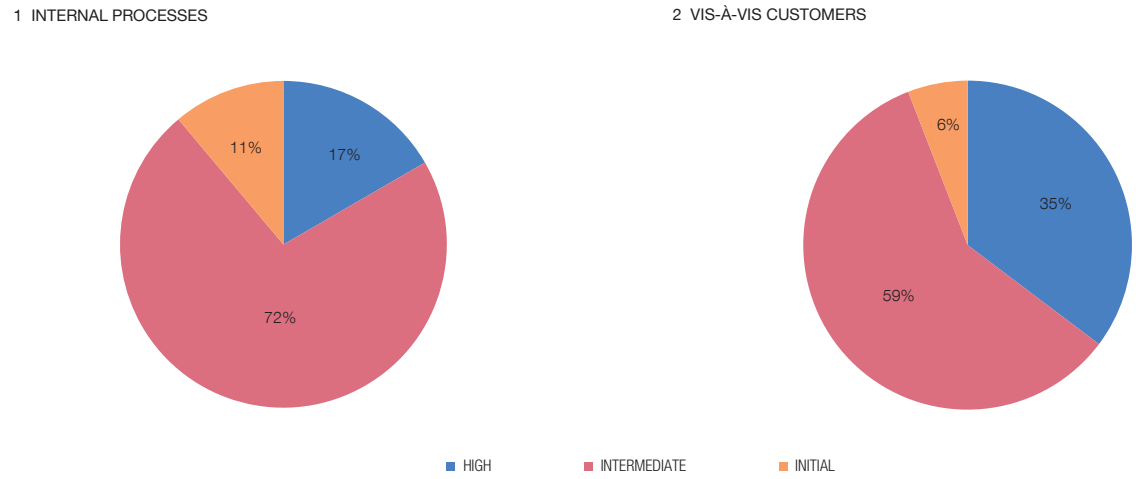
The number of accesses to *digital channels has grown significantly* in recent years, rising to 25 million per month per bank on average in 2018. This has forced banks to study and invest in solutions and systems capable of supporting such demand or to consider moving some workloads to cloud infrastructures,[6] leveraging their capacity to scale up easily and adapt to the new needs of digital business.

As can be seen in Table 1, which tracks *fund movements* in Spanish banks in 2018, the overall amount of movements through digital channels already exceeded at that time those made through traditional means.

With regard to the *degree of implementation* of digital transformation, banks appear to prioritise projects aimed at improving services for their customers compared to those geared towards evolving or improving their internal processes. In this respect, 17% of banks consulted stated that their internal transformation strategy was

6 According to the EBA Guidelines on outsourcing arrangements, "cloud services means services provided using cloud computing, that is, a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."

Chart 2
DIGITALISATION IMPLEMENTATION STATUS AT THE END OF 2019



SOURCE: Authors' own creation.

substantially in place in late 2018, with this figure rising to 35% of banks when we refer to transformation vis-à-vis customers or third parties (see Chart 2).

Although the digital transformation cuts across all types of customers (individuals, SMEs, large corporations, investors, etc.), banks' investment is currently focused on the *retail segment.*

The following paragraphs show what innovative technologies are being used by banks, ordered by the percentage of institutions using them.

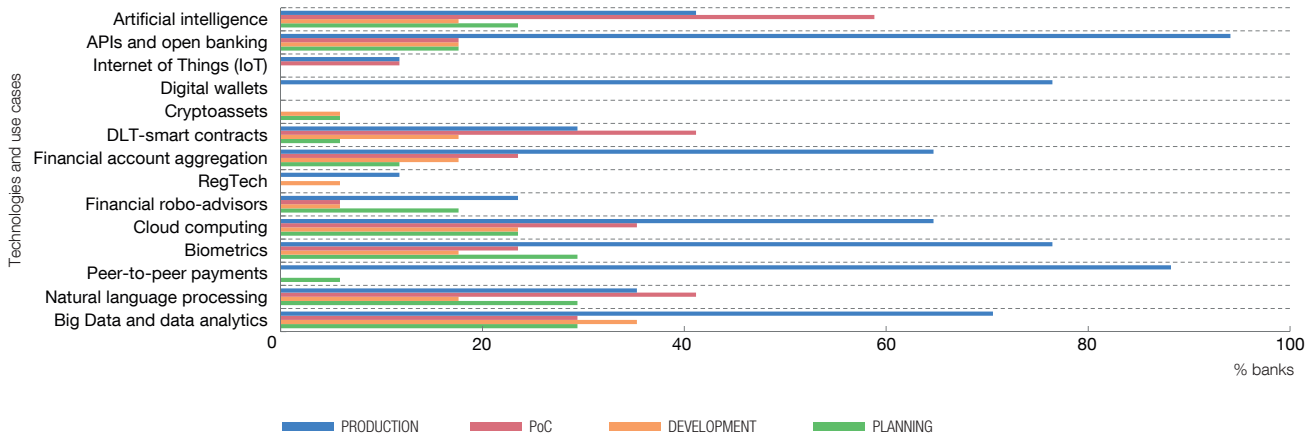
The *technologies* and *use cases* most implemented at the banks consulted are: biometrics, digital wallets, big data and data analytics, cloud computing and especially technologies related to payment services, boosted by the entry into force of the PSD2 (see Chart 3).

Biometrics is extensively used in Spanish banks for user authentication. Among the most prominent use cases are biometric signature, authentication of users in banks' mobile apps and facial recognition for remote identification in digital onboarding processes, where the customers' photograph in their identity card is compared with a snapshot of their face taken during a video call with the bank.[7] Generally, for the use of biometrics, banks rely on third-party solutions, such as device manufacturers, operating system developers and software suppliers.

7 See authorisations of remote identification procedures by means of video-identification and video-conference published by Sepblac in https://www.sepblac.es/wp-content/uploads/2018/02/Autorizacion_video_identificacion.pdf and https://www.sepblac.es/wp-content/uploads/2018/02/autorizacion_identificacion_mediante_videoconferencia.pdf.

Chart 3

TECHNOLOGIES AND USE CASES AND IMPLEMENTATION STATUS AT THE END OF 2019



SOURCE: Authors' own creation.

Some banks have developed their own digital wallets to enable *payment by mobile phone,* while others offer the possibility of including their virtual cards in the wallets of major suppliers such as Apple Pay, Samsung Pay and Google Pay, among others.

Currently, financial institutions are using *big data and data analytics* mainly for the creation of models to personalise their commercial offer and reduce customer churn.

There is a growing movement among banks towards the use of *cloud services,* mainly through the use of major providers' infrastructures (IaaS)[8] or through comprehensive solutions (SaaS)[9]. The main benefits of the IaaS model are flexibility, scalability, easy provisioning and potential cost-cutting. As for services under the SaaS model, specific solutions are set up rapidly to work, it is possible to always be updated to the latest available version and the responsibility for the software maintenance falls on the provider.

It should be mentioned that some providers currently offer their services only in connection with cloud infrastructures. This is either because solutions were developed specifically for processing in this type of environment or because they have decided to discontinue the versions they previously supplied on-premise. Banks prefer a *hybrid* cloud, comprising a mix of private cloud and public cloud services.[10]

8 Classified as IaaS are those cloud services which provide computing power, storage, networks and other essential computing resources.

9 Classified as SaaS are those services in which the customer makes use of a provider's applications that are run on a cloud infrastructure.

10 A public cloud is a cloud infrastructure available for open use by the public in general; a private cloud is available for the exclusive use of a single institution; a community cloud is for the exclusive use of a specific community of institutions; and a hybrid cloud is a mix comprising two or more of the foregoing cloud infrastructures.

Instant peer-to-peer payments are in place at 88% of the banks participating in the survey. This is mainly due to the fact that many banks participate in the Bizum payment platform. Here, almost 8 million users have registered and over 113 million transactions have been conducted since its launch in October 2016 to early May 2020. The service allows person-to-person payments to be made by introducing the recipient's mobile number. Funds are transferred in seconds from one account to the other. Payments can also be made to NGOs, associations and online businesses linked to this platform.

Banks are using or exploring *data analytics* and *natural language processing* technologies. Among the most common use cases are the personalisation of the commercial offer, fraud detection, chatbots, and the classification of documentation and extraction of relevant information.

Banks carry out numerous proofs of concept or pilot testing with *artificial intelligence* and *DLT technologies,* although the number of projects that are ultimately used in productive environments is limited.

Currently, most respondent financial institutions are not considering pursuing *cryptoasset*-related activities.

A very high percentage of surveyed banks – 88% – view positively the launch of a *regulatory sandbox* in Spain,[11] where they can test sectorial projects and innovative services in a controlled environment with a small number of customers. Among their arguments, banks highlight the timeliness of gaining access to multidisciplinary teams of the supervisor or supervisors involved, and the possibility of clarifying regulatory aspects that pose some uncertainty or knowing supervisory expectations.

3 Risks arising from digitalisation

3.1 Internal control and governance framework

Banks' internal governance framework must ensure their effective and prudent management. According to the EBA's internal governance guidelines, a credit institution's management body is responsible, among other matters, for the setting, approval and overseeing of the implementation of the overall business strategy; an appropriate and effective internal control framework; and a risk culture (awareness, definition of risk appetite and the assumption thereof).[12]

11 See Ministerio de Economía, Industria y Competitividad (2018).

12 See EBA (2017).

The growing importance of IT risk must be borne in mind within banks' control framework. Also, it is essential that the board of directors ensures that the bank's IT strategy is aligned to its business strategy.[13] One circumstance that may provide for the attainment of this objective is the inclusion on the board of members with experience in IT-related matters.

3.2 IT risk

Nowadays, a bank's survival depends largely on the availability and proper functioning of its systems, and on its ability to cover all internal and external business needs.

Bank digitalisation entails growth in the degree of dependence on technology. Further, the amount of computing assets to be managed, their complexity and the growth of interconnectedness between banks themselves and with third parties extend the exposure perimeter to cyber threats, which are increasingly more sophisticated.

In this setting, market pressure, the attempt to be the first offering a new product or service and the increasing level of exigency on the part of customers, who demand greater flexibility and immediacy, may force banks to take decisions that could significantly increase their risk exposure. Such risks involve inter alia, the risk of using relatively immature technologies, giving priority to users' experience to the detriment of systems security and the data they handle, and developing systems without the required quality.

3.3 Reliance on third parties

Banks' interest in outsourcing activities to third parties has grown significantly in recent years. Their aims are clear: reducing costs in a period of low profitability, increasing flexibility and improving efficiency.

Sometimes banks outsource functions to third-parties that are experts in a specific field, and at other times they outsource tasks which do not bring any added value to them, so they can focus on more relevant activities. They also rely on other third parties with which they are obliged to interact in view of their activities, such as those offering market information services and clearing houses.

IT outsourcing, which often involves handling confidential information, is among the most common types of outsourcing due to its potential benefits. It provides banks

13 See EBA (2019).

with relatively straightforward access to new technologies and enables them to focus on the most significant activities of their business. Moreover, as mentioned before, outsourcing to cloud service providers has been intensified becoming one of the levers for the digitalisation of the sector.

It should be borne in mind that credit institutions cannot delegate their responsibility and must analyse in depth the risks stemming from their reliance on third parties before establishing business relationships. The risks involved are clear: a lack of control over activities and the loss of the knowledge required to perform them, problems to monitor activities, and difficulties to bring a service back in-house or to change providers if needed, etc. Of course, these risks are greater when outsourcing critical services, where having a viable exit plan is even more important.

Other circumstances increase the third-party risk. Interdependences and the existence of chain outsourcing extend the exposure perimeter, complicating the control that banks must exercise over the outsourced services and their supervision by the competent authorities. Further, concentration risk is increasingly evident as outsourcing to a small group of large providers inevitably grows. In the near future we may be talking about systemic providers, rather than systemic banks.

The EBA, aware of the risk posed by the reliance on third parties, published its Guidelines on Outsourcing on 25 February 2019 (EBA/GL/2019/02, in force since 30 September 2019).[14] At the national level, in Spain, the outsourcing of services by credit institutions is also governed by Article 22 of Royal Decree 84/2015 and Rule 43 of Banco de España Circular 2/2016.

3.4 Business model risk

The widespread use of the Internet and mobile devices has been a wake-up call for many companies to evolve their business strategy. In this respect, as with other sectors, incumbent banks have identified risks to their business model sustainability if they are not able to adapt to customers' current expectations and increasing competition. Banks are working to adapt their strategy, processes and systems to integrate them into the new ecosystem of market solutions.

14 The Executive Commission of the Banco de España, as competent authority for the direct supervision of less significant institutions, payment institutions and electronic money institutions, adopted these Guidelines as its own on 29 July 2019, except for Guidelines 62 and 63 (see https://www.bde.es/f/webbde/INF/MenuHorizontal/Normativa/guias/EBA-GL-2019_02_EN.pdf).

Financial disintermediation is also a challenge for traditional banks, as they could be displaced by new players. In this respect, some experts consider that BigTech could be a threat due to the volume of data they have access to and their enormous customer base.

Faced with this situation, banks under pressure from competition might adopt a strategy that exceeds their risk appetite or, on the contrary, they might see their customer base shrink because they did not adapt in time. The pace of change in the IT environment and the ease of customers to switch banks are factors that increase this risk.

3.5 Human resources-related challenges

Identifying, attracting and retaining talent is a challenge in any specialised sector, including for banks when trying to recruit expert profiles to carry out their digitalisation strategy. There has been a change in the motivations and priorities of younger generations. Until a few years ago, workers sought stability and remained at the same company for their entire working life. However, the situation today is different and young people have other interests: salary, personal and professional development, and flexible working hours, among others, that foster mobility between companies. As regards innovation, it is sometimes hard to compete with large IT firms offering attractive working environments and a range of work incentives that are difficult for banks to provide. Moreover, attracting talent is not enough; ongoing learning and training plans must also be available.

Further, adopting a digitalisation strategy entails a cultural change throughout the organisation, which in certain circumstances can be difficult to assume for those workers who may be reluctant to embrace the change.

Digitalisation, which is founded on automated processes, can lead to a loss of knowledge of the business logic among employees. Banks should take appropriate measures to prevent their processes from becoming black boxes.

3.6 Other risks: compliance, legal, conduct and reputational

The risks described in this section are common to any process. However, they may be significantly greater in digital transformation initiatives, given the involvement of new actors and interconnections.

Banks might be sanctioned as a result of non-compliance with regulation after digitalising certain processes. Such non-compliance includes infringements of

the General Data Protection Regulation, hereinafter GDPR,[15] and those related to the prevention of money laundering and terrorist financing, among others.

In this post-crisis climate, with increased regulatory pressure, credit institutions have to dedicate a significant amount of resources and time in their compliance departments. RegTech (Regulatory Technology) solutions have been developed to make this work easier, and are based on the use of technological innovations to facilitate regulatory compliance.

The fast-paced development of the market and the emergence of new actors with disruptive ideas sometimes lead banks to consider innovative solutions entailing some degree of regulatory uncertainty.

Digitalisation and the growing use of structured and unstructured data from different sources may increase conduct risk in various circumstances. Included here are the unauthorised use of customers' personal data under the GDPR, unethical employee behaviour and advice that is biased towards interests not aligned with those of the customer.

As described in section financial inclusion below, digitalisation contributes towards raising the percentage of people who can access financial services. However, in this new digital scenario, banks must also be socially responsible and prevent the financial exclusion of certain population groups, such as the elderly, people with some form of disability or those with difficulties in accessing digital channels. Banks must also monitor the outputs from their systems so that they do not deviate from expected behaviour by inadvertently discriminating against certain groups, for example when using machine learning models.

Lastly, the materialisation of any of the risks listed in this or the foregoing sections can expose banks to reputational damage; such impacts are difficult to measure, but can be very significant.

4 Opportunities

4.1 Improved efficiency and effectiveness

Regardless of the type of organisation, one of the core objectives of any digital transformation initiative is to improve efficiency and effectiveness in both internal and customer-centered processes.

15 General Data Protection Regulation, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&from=E.

The starting point for a true digital transformation of a bank is the review of its processes. Optimising processes, be it through automation, process simplification or eliminating redundant or unnecessary tasks or any other means, is the basis for implementing a successful transformation strategy. First, optimisation can increase process efficiency by reducing the time spent and resources used. Second, by automating tasks, organisations achieve more effective processes, minimising the number of errors and inconsistencies. Both the optimisation and the automation of processes increase productivity.

Another way to improve the efficiency and effectiveness of a bank is through applying innovative technologies. By way of example, the use of advanced data analytics techniques enable an organisation's sales force to have optimal schedules for their commercial visits, reducing their efforts and reaching customers with a tailored offering, which increases the commercial success rate. Moreover, through the use of mobile devices, customers can sign contracts anytime and anywhere, cutting product marketing times.

4.2 Enhanced customer experience

Customers in the digital era demand convenient and swift access to products and services. For this reason, enhancing customers' experience when they interact with the bank and understanding their behaviour are cornerstones of many marketing strategies.

Digitalisation makes it easier for banks to get closer to their customers, helping give them a 360 degree view of the customer through comprehensive management of their data. This in-depth knowledge of consumers enables a tailored offering and the implementation of an effective marketing strategy. By way of example, customer data analysis gives banks the ability to predict future needs based on past events. For example, they can offer personal loans to cover regular payments when consumers are not expected to have sufficient funds, so that payments adjust their income.

Another way to leverage information is through analysing the "customer journey", i.e., the path followed by a customer from the moment they express a need up to when they acquire a product. Banks can use these analyses, for example, to identify those points in the sale process where customers opt not to proceed with an operation.

At the same time, improving the experience offered to customers accessing banking services contributes towards attracting and retaining new and existing clientele.

4.3 New business models

In a constantly changing environment like ours, and in a low-interest-rate scenario, traditional banks need to reinvent themselves. In this respect, the digitalisation of the banking sector generates new business opportunities, as it enables institutions to obtain new sources of income and offer innovative products that contribute towards expanding their customer base.

Aware of these opportunities and of the risk of not adapting to the current environment, most banks are immersed in digital transformation processes aimed at improving the offering of digital channels in order to meet their customers' needs.

The trend is clear. Banks are trying to follow a customer-centric strategy, underpinned, above all, by the value of the data available, either their own or public or third-party data.

Data play a key role in a digital transformation strategy and are considered an asset in themselves. The potential of the data will vary depending on their quality and banks' ability to convert them into business intelligence. Although the volume of information is growing at a dizzying speed, technology has evolved to allow massive amounts of structured and unstructured data to be swiftly processed. A greater analysis and processing capacity enables, for example, to offer tailored products and services to customers, identify cross-selling opportunities and predict customer churn.

Open banking has also emerged as a potential opportunity for banks in their business models. Through open banking, new financial and non-financial services can be offered in co-operation with other organisations, using the bank's own or third-party platforms.

4.4 Cost reductions

Reducing costs is naturally another objective of digital transformation processes. Among the alternatives launched by credit institutions to achieve this objective are: optimising the branch network, co-operating with other entities to develop shared initiatives, outsourcing services or freeing up resources by automating manual tasks, so that employees can carry out more value added tasks for the institution. It should be noted that the cost of running an individual process after automation is generally negligible.

The digitalisation of documents is another method to reduce costs, as it grants immediate access to information, speeding up the processing of such information, avoids unnecessary travel and cuts down on paper usage.

Box 1

WHAT DO BANKS THINK?

For the banks surveyed, the most significant risks stemming from digital transformation are: increased cyber security risk, loss of customers as a result of not appropriately developing their strategy, greater reliance on third parties, compliance and legal risk, and greater reputational and operational risk in general (see Table 1). Other threats are the competition from BigTech and difficulties in monetising their investment.

Naturally, banks also identify opportunities from their digital transformation. As can be seen in Chart 1, noteworthy in this area are improvements in both efficiency and the customer experience, new business models, the growth in the customer base and cost reductions. Other opportunities identified by banks are the capacity to increase their commercial and operational productivity, and the possibility of providing a tailored service remotely.

As can be seen in Chart 1, APIs[1] and open banking, cloud computing, natural language processing, and big data and data analytics are considered by all the banks surveyed to be technologies that present opportunities. In contrast, only around half considered that cryptoassets and the Internet of Things[2] (IoT) offer opportunities in the short to medium term.

1 Application Programming Interface (API) is the formal specification of how one software component should interact with another software component.

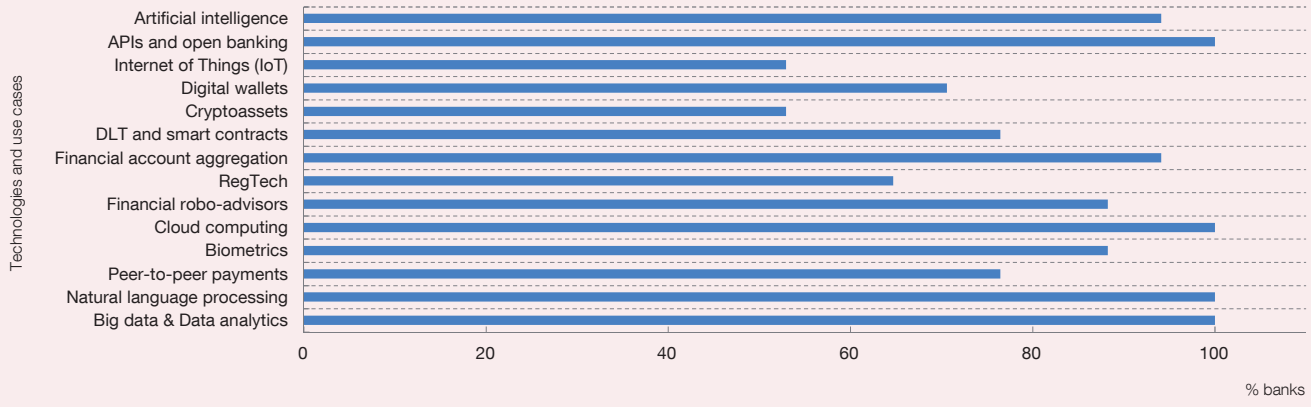
2 The Internet of Things (IoT) refers to the digital interconnection of everyday objects that are connected to the Internet, such as smart watches, refrigerators and pill boxes, among others.

Table 1
RISKS AND OPPORTUNITIES OF DIGITALISATION ACCORDING TO SURVEYED BANKS

Risks	Opportunities
Increased cyber security risk	Improved efficiency
Loss of customers as a result of not developing their strategy on time	Improved customer experience
Increased reliance on third parties	New business models
Compliance and legal risk	Growth in customer base
Increased reputational risk	Cost reductions

SOURCE: Authors' own creation.

Chart 1
TECHNOLOGIES AND USE CASES THAT PRESENT OPPORTUNITIES



SOURCE: Authors' own creation.

4.5 Financial inclusion

According to World Bank data, financial inclusion[16] in Spain stood at 94% of the population in 2017. Based on these data, 94 out of 100 Spanish adults had a bank account. In the euro area, this percentage was only exceeded by Germany, with 99%.

Among the factors contributing to the trend in inclusion are the widespread use of the Internet and smart phones and banking digitalisation. Through these tools, banks can reach millions of potential customers, as the new methods of communication remove the need for physical proximity or branches to attract and interact with customers. Access to customers has been democratised. Banks can set up business relationships straightforwardly with unbanked people, and position themselves in areas where they do not have branches or sales agents.[17]

The cost reductions obtained through digitalisation also contribute towards giving vulnerable groups or those at risk of exclusion access to basic financial services. In addition, it allows to provide retail investors with financial advice that was previously beyond their reach due to the high cost involved (see Box 1 on previous page).

5 Supervisory challenges

In this scenario, supervisors must be aware of the risks and opportunities stemming from digitalisation and the use of new technologies. Supervision of banks' IT risk in general and, specifically, of the use of innovative technologies poses a number of challenges for supervisors, which are described non-exhaustively below.

As in the case of credit institutions, competent authorities must be able to attract and retain talent. Further, the pace of IT change is very quick and ongoing training programmes must be in place to update supervisory knowledge.

It is essential that supervisors maintain a close dialogue with the industry in order to keep up to date on the state of the art of technology and the status of IT risk in the sector. Contact with the different actors in the ecosystem and a regulatory sandbox are some of the ways for achieving this objective, while at the same time provide a mechanism for clarifying regulatory matters and supervisory expectations.

16 According to the World Bank, "financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way."

17 Article 21 of Royal Decree 304/2014 sets out the requirements necessary for institutions when establishing business relationships or carrying out operations with customers in a non-face-to-face basis.

The concentration of services in third parties entails risks that could have an impact on financial stability, as a problem with a provider or a third party could systemically affect the entire sector.

Identifying these potentially systemic third parties is no easy task and is further complicated by the possibility of a high number of providers involved in a chain outsourcing. It should be noted that the criticality of a provider does not depend on the amount of a specific contract, as providers with a lower individual cost could have agreements with many banks or could offer services to large providers and become a single point of failure. Further, if these systemic providers could ultimately be identified, supervisors would have limited capacity to act, as those providers are outside their mandate.

Cooperation and coordination with other national and international authorities are key and go beyond the financial sector, for instance to areas related to personal data protection or cyber security, involving other authorities outside the sector.

6 Conclusions

The rapid developments in technology, the hyper-connectivity in a digital society, the emergence of new competitors and a setting of low interest rates and the reduction in margins have driven incumbent banks to reconsider their business models and improve their internal processes.

Banks are leveraging new business opportunities and developing products and services that open up new sources of income. The use of open-banking solutions is a good example of this.

Banks often collaborate with third parties as part of their digital transformation; this may include acquiring or investing in start-ups, outsourcing services, participating in consortia, or launching business accelerators or incubators. In this respect, banks have to appropriately manage risks in their relationships with third parties and they obviously continue to be responsible for compliance with regulatory requirements in their outsourcing arrangements.

As with other sectors, many banks are putting the customer at the centre of their strategies, as they seek to gain a 360 degree view of their customers that enables them to personalise their offer, meet their expectations and offer an optimal user experience.

As regards data governance, entities should ensure a proper internal governance framework, establishing the data owners, the golden sources and access levels, and ensuring at all times confidentiality, integrity and availability of their data.

Banks are also immersed in internal transformation processes. They are adapting their culture to evolve towards more collaborative working environments, and digitalising their processes to improve effectiveness and efficiency and to reduce costs.

Digital transformation undoubtedly offers major opportunities for consumers and institutions. However, it also poses risks for banks and challenges for supervisors, which must be duly managed.

In our experience, supervisory dialogue with the different market players paves the way for closer proximity to the industry. All parties can benefit from this dialogue: supervisors can keep up-to-date about the market situation, and institutions can learn about supervisory expectations. Supervisors must also co-operate and coordinate with other national and international authorities in the financial sector and with other relevant authorities in the context of digital transformation.

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