BBVA | RESEARCH

Digital Economy Outlook

FEBRUARY 2016 | DIGITAL REGULATION UNIT

Index

Summary

RegTech, the new magic word in FinTech: Using innovatice technologies to address regulatory compliance

Addressing regulatory requirements is, in terms of cost and resources, one of the greatest burdens that financial institutions are bearing today, and it is becoming increasingly complex. Now, a number of innovative FinTech companies are trying to ease the problem by using innovative technologies.

Focus on innovation in Australian banks' DNA

The Australian banking sector has performed remarkably well during the recent past. Banks weathered the global financial crisis without problems and currently enjoy strong financial fundamentals underpinned by a favourable economic environment over the last few years, a conservative risk appetite and a focused strategy which places great emphasis on innovation. Digital transformation is easier if banks are financially healthy, their customers demand digital products and the infrastructure supports digital innovation.

Remote opening of financial products in Latin America

To promote Financial Inclusion, several Latin American countries have relaxed the regulation of certain simple financial products for low-risk customers, in some cases allowing them to be opened remotely. In addition to promoting Financial Inclusion, these policies could encourage the digitisation of financial services in the region.

Big Data management and use in the financial services industry

Future economic activity, innovation, and growth are intrinsically linked to Big Data. This article offers a brief overview and context of Big Data (types of Big Data, its impact on business models and the financial services industry); discuss different actors involved in data management, explore data ownership paradigms, and associated responsibilities with ownership; and conclude with a look at some emerging issues related to data localization in the Financial Services space.

Financial services trends for 2016

At the beginning of the year analysts use to publish their forecasts and views of the trends likely to affect a given sector. We have reviewed the publications relating to financial services and made a selection of the most salient trends. The dominant themes as far as technology is concerned are artificial intelligence, the use of APIs and data leveraging. Prominent among value propositions are the digitisation and personalisation of customer relationships, while in innovation payments take pride of place along with the development of FinTech.

1 RegTech, the new magic word in FinTech

Using innovative technologies to address regulatory compliance

Addressing regulatory requirements is, in terms of cost and resources, one of the greatest burdens that financial institutions are bearing today, and it is becoming increasingly complex. Now, a number of innovative FinTech companies are trying to ease the problem by using innovative technologies.

Dealing with regulatory changes

Financial regulation has been in a state of major change since the global financial crisis. **A stronger focus on risk prevention is making requirements increasingly complex**: financial institutions must deal with meeting the requirements of multiple regulatory jurisdictions with fast-changing requirements while regulators demand access to an increasing amount of granular data to ensure compliance.

For financial institutions, addressing those regulatory requirements is highly burdensome, complex and costly. According to The Institute of International Finance (IIF), compliance can cost a financial institution over $1bn every year. McKinsey found that regulatory fines and settlements in 20 large US and EU universal banks increased by 45x in the 2010-2014 period[1]. And an estimate for financial institutions is now around 10-15% of total workforce dedicated to governance, risk management and compliance. The main issues for financial institutions are compliance costs, reliance on manual processes in data management and traditional issues related to the quality of data, such as accuracy, lack of common definitions or different formats. **The amount of data produced by financial institutions is increasing and regulators demand access** to improve their vision of systemic risk and of the behaviour of the different agents involved in the financial ecosystem. The challenge is now **how financial institutions will be able to address compliance in an efficient and less resource-consuming way while improving the quality of data reported to supervisors.**

In this scenario, **a new breed of companies under an umbrella concept labelled RegTech has emerged inside the FinTech ecosystem**, arousing interest from regulators, central banks, corporate banks and traditional risk and regulatory consultancy firms. In fact, due to their potential to improve the relationship between regulators and financial entities, there are currently two initiatives respectively led by the UK Financial Conduct Authority (FCA) and by the IIF aiming to foster the deployment of these companies as an important piece of the development of an efficient financial ecosystem.

What is RegTech?

The term RegTech refers to a set of companies and solutions that marry innovative technology and regulation to address regulatory requirements across industries, including financial services. RegTech companies focus on the automation of manual processes and the links between steps in analytical/reporting processes, the improvement of data quality, the creation of a holistic view of data, the automated analysis of data with applications that are able to learn during the process, and the generation of meaningful reports that can be sent to regulators and used internally to improve key business decision making.

Why this sudden interest in regulation coming from the FinTech world? The business opportunity is clear, but companies are also realising that a better understanding of what drives a market's regulatory framework is key to successfully disrupting it. RegTech can be a big game changer for the incumbents – both banks and regulators. It may not seem as revolutionary as Uber was in the transport business, but financial services have been so deeply transformed by regulation that the landscape has been altered beyond recognition. In

1: McKinsey (2016) *A best-practice model for bank compliance*

fact, regulatory changes are considered a source of disruption by 87% of Banking CEOs, according to a recent study by PwC[2].

Every business area where regulation and compliance have an impact is a candidate to explore RegTech solutions. Some examples include international tax regulations to enforce tax transparency, international accounting standards, regulatory reporting and liquidity risk management. Anti-money laundering and combating the financing of terrorism (AML/CFT) regulations is an area with strong regulatory requirements too, as are advisory services and investor protection.

Needless to say, the use of technology for compliance is not new. However, **RegTech promises agility, speed, increased integration and analytics**. RegTech cannot deliver a solution for static requirements: it has to be a self-learning machine. That is why RegTech is usually cloud-based, which significantly cuts the costs and reduces the implementation time.

RegTech is an emerging trend and there is neither a closed definition nor a track record to confirm its potential benefits. However, companies in the RegTech space are focusing on:

- **'Big data' applications and techniques**: there are a number of novel technologies available for real-time processing, 'big data' storage and integration of heterogeneous and textual data.
- **Data mining and advanced analytics tools**: there is an increasing range of machine learning, computational statistics, complexity and statistical physics algorithms (such as Deep Learning) that offer the potential of powerful data mining and simulation techniques for enhanced decision making.
- **Visualisation tools**: due to the complexity and quantity of data involved, regulators require powerful tools for the visualisation, understanding and reporting of multiple heterogeneous data sources without the need for extensive expertise in programming.
- **Biometrics and social media analysis** such as Know Your Customer (KYC) tools for AML/CFT compliance.
- **Real-time and system embedded compliance/risk evaluation tools** have the potential to improve operational efficiency and effectiveness, for example in trade surveillance, financial crime risk monitoring, anti-money laundering, customer profiling and conduct risk monitoring.
- **Software integration tools**: innovation in software that allows off-the-shelf accounting and compliance tools to interact directly with regulatory reporting systems.
- **Predictive coding**, which looks to identify patterns of activity, such as unusual use of communications, non-routine patterns of leaving the office, non-completion of training, or missing mandatory leave, which may flag potential conduct concerns.
- **Open platforms and networks** for sharing of data, format standards and common processes.

A first step towards dynamic regulation

RegTech's promise is to **leverage existing systems and data to produce regulatory data and reporting in a cost-effective, flexible and timely manner without the risk of replacing/updating legacy systems.**

However, **this is only a first step towards a more ambitious vision on data-led dynamic regulation**. Major efforts are being made to predict compliance problems through the use of advanced dynamic anomaly and pattern response systems, prediction markets alongside statistical systems, and automated surveillance. Another area of development is "firm-wide compliance architectures" with in-built compliance, using thousands of predictive analytic 'sniffers' automatically across the firm, that are automatically attracted by any new process and identify anomalies for human attention. As a future goal, what these initiatives are trying to reach would be, in the words of Andy Haldane, Chief Economist of the Bank of England:

> *[…] I have a dream. It is futuristic, but realistic. […] It would involve tracking the global flow of funds in close to real time […], in much the same way as happens with global weather systems and global Internet traffic. Its centre piece would be a global map of financial flows, charting spill-overs and correlations.*[3]

2: PriceWaterhouseCoopers (2015) *Achieving success while managing disruption*
3: Haldane, AG. (2014) *Managing global finance as a system*. Bank of England.

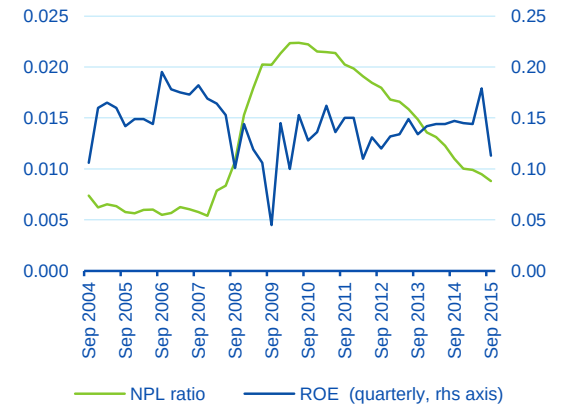
2 Focus on innovation in Australian banks' DNA

The Australian banking sector has performed remarkably well during the recent past. Banks weathered the global financial crisis without problems and currently enjoy strong financial fundamentals underpinned by a favourable economic environment over the last few years, a conservative risk appetite and a focused strategy which places great emphasis on innovation. Digital transformation is easier if banks are financially healthy, their customers demand digital products and the infrastructure supports digital innovation.

Profitable, efficient and with an extraordinary asset performance

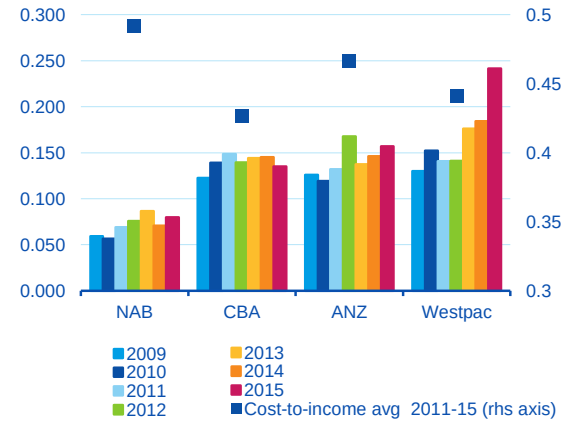
Australian banks have enjoyed very strong asset performance in the last few years. Asset quality metrics are currently very good, with the overall ratio of non-performing loans to total loans at 0.9% as of September 2015, close to minimum levels. The benign environment and good risk management have translated into low delinquencies and an extremely low cost of risk (below 20 bps) with provisions accounting for less than 10% of pre-provision income supporting sound profitability levels. Despite a small decline, when compared to pre-crisis levels, the return on equity (ROE) remained at around 14% in the last few years, one of the best in developed economies, and in spite of the increased capital requirements. Solvency has also improved, but does not stand out at international level (CET1 ratio of 10% at system level as of September 2015, but according to the local regulator would be 300 bps higher if the adoption of Basel III in Australia were not so conservative).

Figure 2.1
Profitability and efficiency of Australian banks



Source: BBVA Research based on the Australian Prudential Regulation Authority

Figure 2.2
IT expenses/Total expenses & cost-to-income ratio



Source: BBVA Research based on banks' annual reports

Besides good asset quality, another driver of profitability is the very efficient cost base, with cost-to-income ratios in the 45%-50% range and with current operating expenses accounting for a smaller portion of total assets than in the past (1%, versus 2% 10 years ago). These outstanding metrics were achieved while IT spending went up. This includes ongoing projects linked to the enablement of more efficient capability in both (i) back-end structures ("the behind the scenes") which aim to obtain lean and efficient processes and modernise their core platforms and (ii) digital distribution (front-office re-design and digitalisation). IT investments also focus on the delivery of compliance with increasing regulatory obligations.

In our view, Australian banks have been in a sort of virtuous circle, as it is undoubtedly easier to make investments and dedicate resources to new ventures when the economic environment is positive and the business is in good shape (retail-oriented business model with prudent risk taking). The investments contribute to increased customer satisfaction and higher profits in a positive feedback loop. In addition, the

Australian market is particularly prone to the adoption of new technologies, pushing banks for quick responses. The proliferation and widespread adoption of mobile devices, with over 65% of Australians owning a smartphone, the high rate of internet penetration (85%) and one of the highest levels of contactless payments in the world all favour a digital and entrepreneurial ecosystem.

Customer needs and their satisfaction drive banks' strategy

The four largest banks (Commonwealth, Westpac, NAB and ANZ) have broadly similar business models and they all share the view that: 1) digital innovation is crucial to meet increasingly demanding customer needs; 2) digital disruption is also changing the competitive landscape, lowering entry barriers for new players and 3) investing in innovation is essential even if it is at the cost of lower profits in the short term. Banks have been quick to grasp the need to move ahead of customer needs. Australian banks have been pioneers (or early adopters) of internet banking, mobile banking, cloud computing, contactless payments and in the continuous development of user friendly applications for their customers. They all let customers apply for a range of banking products through their mobile banking apps within minutes. The simplification of processes and products is targeted while it is frequent to see banks' communications referring to service, customer satisfaction and the need of building deeper relationships with customers as a core element of their strategy.

The strategy permeates throughout the organisations. Commonwealth's (CBA, the largest bank's) website states "innovative thinking is at the forefront of everything we do" and Westpac's vision is "to be one of the world's greatest service companies, helping our customers, communities and people to prosper and grow". Customer satisfaction through digital channels (internet or mobile) is around 90% versus below 80% through phone and below 90% through branches (although it is also more expensive).

Case study: Commonwealth Bank of Australia

CBA was the first Australian bank to introduce internet banking in 1997, through NetBank. In 2008 it started the modernisation of its core banking systems (Core banking modernisation) to deliver a better platform and simplicity in IT systems while at the same time achieving cost savings. It started to develop apps for smartphones and tablets focused on changing customer needs. In early 2009, NetBank was adapted for mobile phones and customers were able to verify fund transfers, transactions and BPAY (local electronic payment system) payments. In 2010 the bank launched the CBA Property Guide app for iPhone, enriching the data available in the home buying process (e.g. affordability, market prices in the area, similar houses, tips and sales data).

At the end of 2011, CommBank's Kaching app was released, allowing customers to carry out the above-mentioned transactions not only by mobile, but also through e-mail or Facebook. Then, Kaching and other separate apps blended in the CommBank app, available today for iPhone, Android, Windows Phone users, for tablets and Apple smart watches. Extra apps features are the Tap & Pay technology at contactless terminals and the Lock, Block and Limit that controls the security and spending. Another app is the CommSec, focused on research, trading and wealth management. In March 2015, the bank developed Albert, a pioneer EFTPOS (electronic funds transfer at point of sale) tablet for businesses, which pairs with the customer's mobile phone or tablet using Bluetooth. Albert takes advantage of additional apps, such as Daily IQ, which identifies customer behaviours, Split Bill, for restaurants, and Community Giver, to raise funds for charities on every payment.

In addition, technology has been adopted in other areas. In October 2014, the bank opened the Innovation Lab in Sydney to share ground-breaking ideas with customers and entrepreneurs. More recently it acquired TYME, a South African firm focused on Know Your Customer solutions that can be used to open accounts by mobile.

According to the bank, it has a customer base of 15 million and there are over 5 million active online customers with 29 million logins per week in NetBank and the CommBank App. Technology is said to be a key factor in productivity gains, which delivered savings of $260 million over the full year of 2015.

3 Remote opening of financial products in Latin America

A policy of Financial Inclusion with implications for the digitisation of the sector

To promote Financial Inclusion, several Latin American countries have relaxed the regulation of certain simple financial products for low-risk customers, in some cases allowing them to be opened remotely. In addition to promoting Financial Inclusion, these policies could encourage the digitisation of financial services in the region.

In Latin America and the Caribbean only 51% of those over the age of 15 had an account with a formal financial institution in 2014, according to the 'Global Findex' survey by the World Bank. This high percentage of unbanked individuals has turned the promotion of Financial Inclusion into a political priority for governments in the region, because the use of formal financial services is associated in the economic literature with the improvement of levels of welfare and the alleviation of poverty.

The difficulty in accessing bank branches and the demanding documentation requirements for opening accounts are some of the obstacles that are behind the financial exclusion of broad sectors of the population. For this reason, new financial products (electronic money or basic accounts) have been introduced into the regulatory frameworks, with 'know your customer' (KYC) requirements that are proportional to the transactional limits of the accounts. The documentary requirements have thus been relaxed and the opening of such accounts remotely through electronic means has been allowed.

Electronic money is a financial instrument that stores value electronically against the receipt by the issuer of the equivalent funds. It is accepted as a means of payment by third parties and can be transferred between users and converted back into cash. Moreover, the basic accounts are sight deposit on which transactional limits are imposed in return for making the KYC process less demanding.

Because of the increased regulatory flexibility for the opening of such products, the first fully digital onboarding processes developed by Latin American financial institutions have been those used for basic or e-money accounts. This experience should be extended to other financial products as the regulatory framework establishes safe mechanisms to verify the identity of new customers for standard bank accounts, which involve a higher risk of money laundering since they are not subject to limits.

Below we explain the regulatory frameworks that have been established by different Latin American countries in order to introduce products aimed at the Financial Inclusion segment.

Table 3.1
Regulation of the remote opening of financial products

	Mexico	Chile	Colombia	Peru
Electronic money	Does not exist	✔Prepaid cards	✔Only in the simplified procedure	✔
Basic accounts	✔Only Level 1 and 2 accounts	✔No specific framework, subject to regulations on sight accounts	✔	✔
Standard accounts (without operational limits)	✖	✔Restricted use until face-to-face ratification	✔Restricted in practice due to the fingerprint capture requirement	✔

Source: BBVA Research based on national legislation

Mexico

- **Basic accounts:** Anti-Money-Laundering regulations (AML) establish three levels of low-risk accounts, but only Level 1 and 2 accounts can be opened remotely.
  - **Level 1:** anonymous accounts without specific customer identification requirements. Acceptance of the contract can be expressed through the first use.
  - **Level 2:** The identification file must always include the full name, date of birth and address and, if the opening is remote, also the gender and federal entity of birth. Validation of these data against the National Population Register (RENAPO) is required. Express consent when providing the data is considered sufficient as formal acceptance of the contract.
  - **Level 3:** the same data as for opening Level 4 accounts is required, but no physical documents are demanded. A prior personal interview is required and the signature or fingerprint is needed for acceptance of the contract.
- **Standard accounts (Level 4):** The customer identification file includes data and copies of identification documents (up to 9 documents in addition to those required for Level 2 accounts).

Chile

- **Electronic money**: there is a regulation on prepaid cards, with limits depending on whether they are nominative or anonymous, and whether they were opened in person or remotely.
- **Basic accounts:** There is no specific regulation. Within the framework of sight accounts, BancoEstado offers a simplified account associated with the tax identification number (RUT). Electronic opening is possible, but the signature must be registered to use the account.
- **Standard accounts:** remote opening with electronic signature is permitted, but the account is subject to transaction limits until the obligation of ratifying the signature and doing the subscription and the necessary verifications is met within a 30-day period.

Colombia

- **Electronic deposits:** Those with a simplified opening process (subject to limits) can be opened electronically using information from the national identification document. Those with an ordinary process (without operational limits) are subject to the ordinary KYC procedures and require the physical presence of the customer.
- **Basic accounts:** For the opening of savings accounts under a simplified procedure (CATS), banks only need the information contained in the customers' identity cards, without the need to keep the signature register or collect the fingerprint.
- **Standard accounts:** the regulation allows the customer interview to be remote, the signature to be electronic and the fingerprint to be captured using biometric mechanisms. Nevertheless, the requirement of registration of the fingerprint makes it impossible in practice to open accounts digitally because customers have no technical means to capture their fingerprint.

Peru

- **Electronic money:** can be opened remotely. Simplified accounts, subject to limits, are governed by the simplified due diligence regime, which requires verification of the name and national ID number with the National Registry of Identification and Civil Status. Non-simplified accounts are subject to the general system of due diligence.
- **Basic accounts:** subject to a simplified system of due diligence. Opening accounts remotely is thus permitted, requiring information from the national identity card and the address.
- **Standard accounts:** subject to the general system of due diligence. Opening by electronic means is permitted, but the regulation is more demanding as regards the identification and verification of the customer, without specifying the mechanisms for this.

4 Big Data Management and Use in the Financial Services Industry

Abstract

Future economic activity, innovation, and growth are intrinsically linked to Big Data. This article offers a brief overview and context of Big Data (types of Big Data, its impact on business models and the financial services industry); discuss different actors involved in data management, explore data ownership paradigms, and associated responsibilities with ownership; and conclude with a look at some emerging issues related to data localization in the Financial Services space.

Big Data: An Overview and Context

Data is exploding as each passing day more and more people join the Internet. In 2015, it was estimated that 3.2 billion people accessed the Internet, growing 18.5% since 2013. It's no surprise that all the data generated by consumers, businesses, and governments is having a profound impact on everyone and everything. In fact, it is believed that future economic activity, innovation, and growth are intrinsically related to it. For businesses today, data offers opportunities to serve customers better, manage infrastructure more efficiently, and help identify new market opportunities. If we look to a future where data and information are infused into companies or industries, we can expect exponential growth to occur (according to the Law of Accelerated Return). If true, we are poised to see many industries to follow the chipmakers and see a doubling of price/performance every 12 to 18 months. In this section, we will review the different types of data, discuss its impact on business models in general, and in the financial services industry in particular.

Types of Data

In general, data sources can be internal or external and can be structured and unstructured. Examples of internal structured data include financial data, HR records, web profiles, sales records, CRM and inventory data. Examples of external structured data include census data, real estate records, travel history, and credit history. Examples of internal unstructured data include online forums, web feeds, internal documents, and sensor data. And example of external unstructured data includes social media sites (Facebook, Twitter, Pinterest, etc.) and other information available on the web (blogs). In the future, we can expect the Internet of Things (IoT) including wearables, sensors and interfaces, to materially add to data growth. Companies can derive value from utilizing the different types of data to pursue innovations. In this regard, it is important to point out that banks have access to a special kind of data – "transactional data," which are highly relevant "decision" data.

Data and Business Models

According to the SingularityU, the business model that will most take advantage of exponential technologies and growth will be digital platforms. If so, data will have profound impact in every industry and companies as platforms take over. Some of the ways that data will help platform business models include: provide timely access to data so that businesses can speed up time to market or help improve quality; since everything can be measured, everything can be improved (IoT/sensors and workforce performance); enable 1-to-1 relationships (customization on demand); automate decision-making; and create new "products" and/or business models. In the future, we see two main types of businesses: customer experience (CX) platforms (serving customers by curating the right mix of digital offers to provide the best experience) or "x as a Service" providers (serving platforms by offering scalable core infrastructure via the Cloud).

The potential impact of data in Future Financial Services

Given that in PSD2 (the revised Payment Services Directive in Europe) points to platform business models, namely the so-called third-party providers (TPPs), we will use it as an example to illustrate the role of data and how it may affect competitiveness in the retail payments space. Since TPPs will rely heavily on data, especially customer data, to provide the best experiences related to making payments and accessing account information; having access to data will greatly determine their success. It will be interesting to see how this evolves once the PSD2 goes into effect and to observe what the incumbents will do under the upcoming General Data Protection Regulation (GDPR). Will banks become TPPs themselves? Or will they opt to run a business servicing TPPs? Will the cost of compliance determine this choice? Either way, banks are on route to becoming a platform or becoming a banking service provider in the payments space and should plan accordingly.

Data Ownership and Responsibilities

While the industry heads towards digital platforms, banks today must continue to operate the current business model (the traditional banking business). Not surprisingly, data plays an important role here as well. In this section, we will take a look at the different actors involved in the "data factory," discuss data ownership, and the associated responsibilities.

An Overview of actors in the "data factory"

A current list of actors in the data business are **suppliers** (provide data inputs to the system); **acquirers** (accept data inputs from suppliers); **creators** (internally provide data inputs); **processers** (accept data inputs and generates data outputs); **packagers** (convert data to information – collates, aggregates, and summarizes); **delivery agents** (deliver data/information to data consumers); **consumers** (end-users of data/information); **middle managers** (manage resources and processes); **senior managers** (manage super-systems); and **deciders** (P&L owners to decide and plan). By looking at the various roles at the factory, we can conclude that big data will impact all levels of the company (operational, tactical, and strategic).

Who owns the data? A look at some data ownership paradigms

The question seems simple, but deriving an answer is anything but simple. There are several different ways to understand data ownership. Existing ownership paradigms include **creator** as owner (the party that creates the data); **consumer** as owner (the party that consumes the data); **compiler** as owner (the party that selects and combines data/information); **enterprise** as owner (all enterprise data inputs and data outputs); **funding organization** as owner (the party that commissions - the one who pays for the creation of data); **decoder** as owner (the party who unlocks encoded data); **packager** as owner (the party that formats the data); **reader** as owner (the party that subsumes the data); **subject** as owner (the subject of data, e.g. privacy data or image copyrights); **purchaser/licenser** as owner (the party that buys or licenses data); **everyone** as owner. In the EU it seems as though the "subject as owner" is the prevailing paradigm of ownership. Any change in paradigm will prove to be interesting.

Data Control or responsibility of data ownership

Regardless of who may actually own the data, there are known issues the data owners should address. They include defining data in the organization; managing data access and security; providing user community support; preparing, formatting, and delivering data; performing data maintenance; assuring data quality; managing business rules; managing metadata; managing standards; managing data suppliers; and ensuring anonymity (when needed).

Emerging Issues: Data Transfer/Localization

According to Institute of International Finance, data transfer means the ability to move data across borders; and is oftentimes discussed under broader heading of data localization. Many jurisdictions have requirements that data (related to account holders) gathered in the jurisdiction be stored/processed only on servers located in the jurisdiction. Data localization, in its various manifestations, has created a patchwork of various requirements that banks need to address such as consumer privacy, cyber-security, sovereignty, financial regulatory concerns, and protectionism. Some of the short-term business issues that are emerging for banks are the cost of administration; legal ambiguity and conflicting requirements for use of customer data; the inability to provide services in certain markets; financial crime compliance; and increased operational risk.

5 Financial services trends for 2016

At the beginning of the year analysts use to publish their forecasts and views of the trends likely to affect a given sector. We have reviewed the publications relating to financial services and made a selection of the most salient trends. The dominant themes as far as technology is concerned are artificial intelligence, the use of APIs and data leveraging. Prominent among value propositions are the digitisation and personalisation of customer relationships, while in innovation payments take pride of place along with the development of fintech.

Table 5.1
New value proposition

Personalizing Customer Experience	Artificial Intelligence
Real time and seamless payments	Platforms and APIs: everything as a service
"Optichannel" multiscreen delivery	Data science
Robo advisory and DIY investing democratizate Wealth Management	Blockchain
New fintech cathegories: Insurtech and Regtech	IoT (Internet of Things)
Banking / startups collaboration	Cybersecurity as a key issue
Marketing evolution to micromoment content marketing	Data protection and privacy
Alternative lending expansion and consolidation	Virtual / Augmented reality
Digital only relationship, including identification processes	
War for talent	
Job automation	
Neobanks	
Fintech bubble	
Sharing economy disrupts work markets	

Source: internal analysis

The trends characterising the development of financial services in 2016 are headed up by technological innovations. The impact of the latest developments in artificial intelligence stands out as a megatrend affecting not just financial services, leading to changes in two critical aspects: on the one hand the analysis and exploitation of data, which continue to grow in number with the use of mobile services and the spread of connected sensors; and on the other hand the automation of tasks relating to information management. The technology appearing as most disruptive is “blockchain”, despite its development still being in the very early stages. For the moment we find it being applied in the capital markets and payments, although other possibilities are being explored, such as the use of intelligent contracts, which may affect banks' entire value chain. Mention is also made of other technologies such as virtual reality, augmented reality and wearables, but with less importance being attached to them. The internet of things will have a significant impact on the economy according to the analysts, but as far as financial services are concerned its application is still in the very early stages, with the exception of the insurers' segment.

Half-way between the purely technological and disruption of business models is the spread of models based on platforms and the use of APIs (application programming interfaces) to offer all kinds of services in disaggregated form, allowing participation by communities of developers and third parties who base value propositions on the services offered on the platforms.

Notable among transversal themes are security, with concern for privacy and the protection of data (personal and other) from possible attacks, not only on major systems but on user's devices through operating systems' back doors. The defence of businesses centres on resilience based on risk prevention and rapid response and recovery. The second general theme with an impact on all industries is the changing nature of work, both in the labour market, which is being affected by the sharing economy, and in the new professional needs which are bringing about the so-called fourth industrial revolution and giving rise to competition to capture the best talent and the workers of the new generations.

From the point of view of business, the customer experience continues to be crucial: ubiquitous access to services, opting for the best channel at any given time, personalisation and digitisation of all relational processes, specifically in banks, the moment when the customer is identified, which until now has retained non-digital components imposed by regulation. Marketing is undergoing a process of disruption, with changes in the way people consume information (in ever shorter chunks) and ad-blocking technologies which are forcing companies to refocus their marketing strategies.

In the purely banking business the areas receiving most mention as regards expected changes continue to be payments, alternative loans and wealth management. As regards payments, the impact of regulation stands out, particularly in Europe with the publication of PSD2 and the introduction of real time payments. Many of the trends noted by the analysts are geared to the user experience, turning payments into a seamless process integrated into the purchase. As for the alternative lending, it is expected to continue growing, although it will undergo processes of consolidation among existing companies, and to extend to new products such as mortgages. Wealth management will be affected by advances in artificial intelligence, with further extension of roboadvisors, which together with the increase in the number of platforms on which clients can manage their investments themselves will extend the scope of management products previously available only to high net worth individuals.

The panorama for new technology firms presents several points of interest. The first is the distrust provoked by the spectacular increase in investments in these businesses, with some sources talking of a market slowdown and certain analysts even describing the fintech sector as a bubble. Although fintech companies are still seen as a threat to the banking business, the trends point to an approchement and collaboration with banks through purchases, investments or agreements. In this competitive environment special attention is paid to the neobanks, which with a comprehensive offering of services and banking licences are surging ahead under the protection of regulatory facilities in certain countries such as the UK.

In the ecosystem of startups, as well as fintech, we are starting to see companies in other segments that also affect the finance industry, and we are starting to hear talk of "regtech" - companies that use technological innovations to facilitate regulatory compliance, and "insurtech" - disruptors in the insurance sector (from companies using the internet of things to insurance among private individuals).

Methodology

In carrying out this analysis we have relied on public sources, performing a thematic search of general trends and trends specifically related to financial services. We selected a total of 38 sources of information, from which we extracted a total of 199 trends.

We then clustered the trends and with this information we drew up the heat map representing the forecasts for 2016, based on the number of mentions received by each trend in the selected sources.

DISCLAIMER

This document has been prepared by BBVA Research Department. it is provided for information purposes only and expresses data. opinions or estimations regarding the date of issue of the report. prepared by BBVA or obtained from or based on sources we consider to be reliable. and have not been independently verified by BBVA. Therefore. BBVA offers no warranty. either express or implicit. regarding its accuracy. integrity or correctness.

Estimations this document may contain have been undertaken according to generally accepted methodologies and should be considered as forecasts or projections. Results obtained in the past. either positive or negative. are no guarantee of future performance.

This document and its contents are subject to changes without prior notice depending on variables such as the economic context or market fluctuations. BBVA is not responsible for updating these contents or for giving notice of such changes.

BBVA accepts no liability for any loss. direct or indirect. that may result from the use of this document or its contents.

This document and its contents do not constitute an offer. invitation or solicitation to purchase. divest or enter into any interest in financial assets or instruments. Neither shall this document nor its contents form the basis of any contract. commitment or decision of any kind.

In regard to investment in financial assets related to economic variables this document may cover. readers should be aware that under no circumstances should they base their investment decisions in the information contained in this document. Those persons or entities offering investment products to these potential investors are legally required to provide the information needed for them to take an appropriate investment decision.

This report has been produced by the Digital Regulation Unit:

Chief Economist for Digital Regulation Unit
Álvaro Martín
alvaro.martin@bbva.com

Vanesa Casadas
vanesa.casadas@bbva.com

Israel Hernanz
israel.hernanz@bbva.com

Alicia Sánchez
alicia.sanchezs@bbva.com

Javier Sebastián
jsebastian@bbva.com

Pablo Urbiola
pablo.urbiola@bbva.com

Sang Gu Yim
sanggu.yim@bbva.com

With the contribution of:

José María Álvarez
josemaria.alvarez.ines@bbva.com

Olga Cerqueira Gouveia
olga.gouveia@bbva.com

Lucía Pacheco
lucia.pacheco@bbva.com

BBVA Research

Group Chief Economist
Jorge Sicilia Serrano

Developed Economies Area
Rafael Doménech
r.domenech@bbva.com

Spain
Miguel Cardoso
miguel.cardoso@bbva.com

Europe
Miguel Jiménez
mjimenezg@bbva.com

US
Nathaniel Karp
Nathaniel.Karp@bbva.com

Emerging Markets Area

Cross-Country Emerging Markets Analysis
Alvaro Ortiz
alvaro.ortiz@bbva.com

Asia
Le Xia
le.xia@bbva.com

Mexico
Carlos Serrano
carlos.serranoh@bbva.com

Turkey
Alvaro Ortiz
alvaro.ortiz@bbva.com

LATAM Coordination
Juan Manuel Ruiz
juan.ruiz@bbva.com

Argentina
Gloria Sorensen
gsorensen@bbva.com

Chile
Jorge Selaive
jselaive@bbva.com

Colombia
Juana Téllez
juana.tellez@bbva.com

Peru
Hugo Perea
hperea@bbva.com

Venezuela
Julio Pineda
juliocesar.pineda@bbva.com

Financial Systems and Regulation Area
Santiago Fernández de Lis
sfernandezdelis@bbva.com

Financial Systems
Ana Rubio
arubiog@bbva.com

Financial Inclusion
David Tuesta
david.tuesta@bbva.com

Regulation and Public Policy
María Abascal
maria.abascal@bbva.com

Digital Regulation
Álvaro Martín
alvaro.martin@bbva.com

Global Areas

Economic Scenarios
Julián Cubero
juan.cubero@bbva.com

Financial Scenarios
Sonsoles Castillo
s.castillo@bbva.com

Innovation & Processes
Oscar de las Peñas
oscar.delaspenas@bbva.com

Contact details:

Azul Street, 4
La Vela Building - 4 and 5 floor
28050 Madrid (Spain)
Tel.: +34 91 374 60 00 and +34 91 537 70 00
Fax: +34 91 374 30 25
bbvaresearch@bbva.com
www.bbvaresearch.com