

The new model for creating value for Banking based on Disruptive Technologies.

Financial Services

Video-report on Banking Trends 2016

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01

After the storm comes the calm... Except for Banks

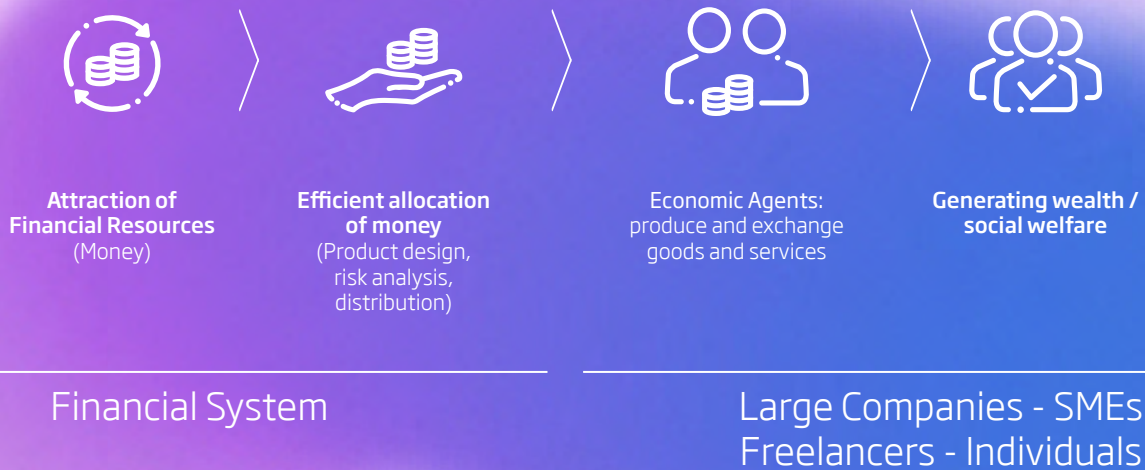
A solid and efficient financial system is a genuine social necessity. The mandate entrusted thereto by society is possibly the most important and nevertheless the most complex to execute, namely **contributing to the development** of persons and companies to thus increase prosperity in general.

As the recent crisis has shown, the repercussions of a financial system that is unhealthy or improperly handling its social mandate quickly appear in the performance of the economy. If the problems persist, they will compromise the integrity of long-term growth and social welfare.

During the seven years of the most important financial crisis in our history, the banking sector has made an extraordinary reconstruction effort through three parallel processes:



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Banking Concentration

Particularly intense in the United States and Western Europe, where the number of financial institutions in certain countries, including Spain, reduced by a third in a process that has not yet concluded. At the European level, a transnational consolidation process is expected to begin shortly.

New Regulation

With a view to preventing a repetition of past errors, new and more stringent standards regarding liquidity, product commercialization and capitalization have been put into place. Systemic entities have increased their capital over the last 3 years by \approx €540 billion¹.

A new regulation regarding uniformity when calculating risk-weighted assets and concerning a ban on or separation of certain business areas could appear in the near future.

Balance Sheet Cleanup

The transfer of the crisis to the real economy and the new regulation have resulted in massive asset write-offs. In some countries such as Spain, the rectification of balances has reached figures representing nearly 30% of the country's GDP.

¹ Source: Basel Committee.

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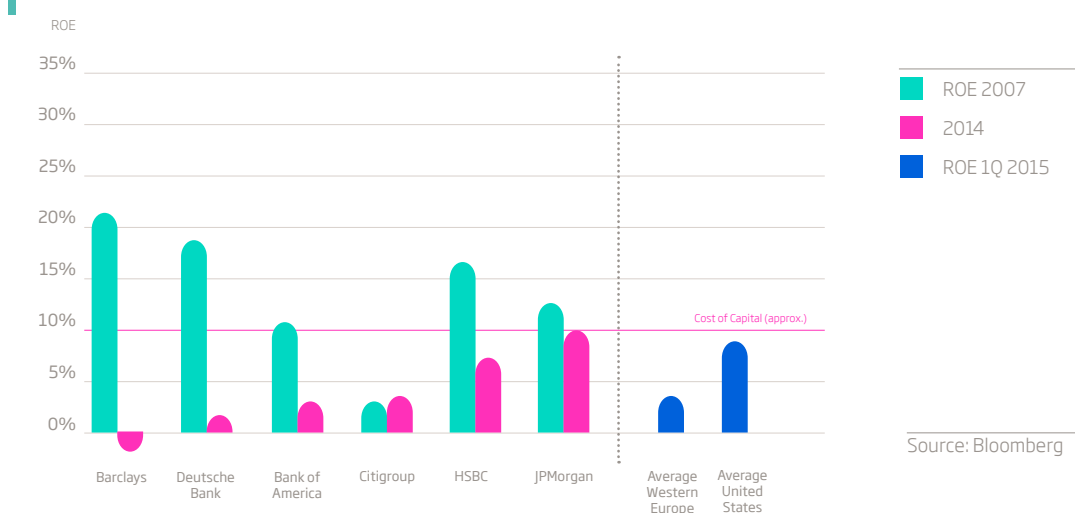
The entire bill for this was paid jointly with society and resulted in a more robust albeit more vulnerable banking system, which is now facing a structural problem regarding the profitability of own resources.

In 2015, the average RoE² for retail banking should be around 5%, but shareholders have not lessened their pressure and continue demanding that their investments have a return of at least 10% (Cost of Capital). Perpetuation of this negative gap could destroy the structural value at the banks. Today,

many universal banks are listed below their Book Value³.

In the medium term, attempts are being made to stabilize the RoE at 10%, which is a figure similar to the cost of capital, which leaves a limited margin for creating value and concerns regarding the economic viability of the sector.

Precrisis and Postcrisis RoE of some Systemic Banks

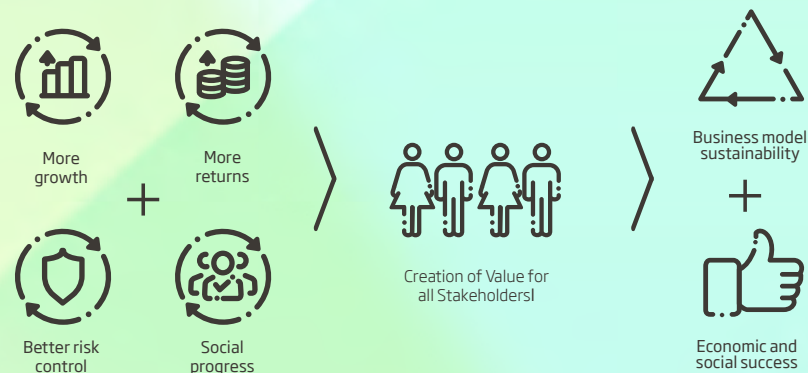


Banking and Society in general have an opportunity and the responsibility to harness this moment to overhaul the banking system. Firstly, it is necessary to eradicate the idea that we are going through a sort of Third World War pitting one against the other. Secondly, it is essential to work jointly in building a new, more sustainable business model that not only creates value for shareholders but also understands and looks after the other *stakeholders*. Symbiosis is a pressing necessity, but also possible with the help of technology.

² Return on Equity. RoTE is frequently used as an alternative indicator. Its difference with RoE, not relevant for the conclusions of this document and therefore no distinction will be made between them, lies in the use of *Tangible Equity* (= Equity - Preferred Stock - Goodwill) as the divisor instead of Equity.

³ Citigroup, Bank of América, Santander, HSBC, etc. Source: Bloomberg.

Innovation on Disruptive Technologies



While this challenge is complicated, banking has invaluable leverage to do so:



An enormous Customer base correlated with a wealth of data that can be characterized and used to the benefit of banking and the Customers themselves.



Impressive technological knowledge and infrastructure that, while certainly requiring some tweaking, have an enormous and robust transactional processing capacity.



Staff who, while requiring adaptation to the new environment, particularly to the front customer support, nevertheless comprises a pool rich in talent and qualifications that should not be overlooked.



A prestige highly superior to any competitor in some areas that will become critical in the near future (such as security) and have already begun to be a genuine demand throughout society as a whole.



An ecosystem of providers who understand the strengths and weaknesses of their customers from within, and know that their own future is intimately connected with the future of their customers.

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...And the most powerful factor of them all that will guarantee not only the survival of banking but also its success, is the commitment to the creation of value for all its *stakeholders*.

This complicated mission to understand and look after such a wide range of stakeholders is only possible by embracing innovation based on disruptive technologies⁴ applied to specific business cases.



⁴ Refer to the [Video-Informe on Banking Trends](#) created by Indra, December 2014



(download report)

02

Challenges facing the post-crisis Banking System

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The biggest challenge for banking in this age of disruption will be to break free from the patterns and comfort level of the past and accept the realities of the new digital marketplace – it is the non-banks that are setting the expectations for the new generation of banking consumers

Jim Marous

”

Acquiring the condition of bank and consolidating a position among the world's top brands is no guarantee of perpetual success. Banking permanently faces challenges that are managed with greater or lesser success by their managing teams. The reshuffling observed in the global ranking in only a single decade reflects the instability of the leaders themselves.

Ranking of some of the largest banks worldwide in 2003 vs. 2015

Name	Ranking 2015	Ranking 2003	Increm. Market Cap
Wells Fargo	1	4	167%
Industrial & Commercial Bank of China	2	>100	ns
JP Morgan Chase	3	7	204%
China Construction Bank	4	>100	ns
Bank of China	6	>100	ns
Citigroup	8	1	-40%
HSBC	9	2	-13%
Santander	5	12	36%
UBS	19	6	-11%
Barclays	23	9	9%
BBVA	31	19	20%
Royal Bank of Scotland	28	5	-37%
Deutsche Bank	46	16	-21%

ns.: not significant

Source: RelBanks and In-house Research.
Market Cap 16 March 2015 vs. 31 December 2003



Banking surviving the crisis faces six extensive yet interrelated main challenges:

1. The Challenge to Traditional Business Models:

- **Margin Erosion.**

The weakened macroeconomic growth of the mature economies has resulted in a period of very low interest rates that are expected to continue over time. This has eroded the Intermediation Margin⁵ of the entire banking sector, the first and foremost step in their income statement. Moreover, the transfer of the financial crisis to the production economy caused an explosion in default and provisions rates, which have yet to return to their pre-crisis levels.

- **Development of Shadow Banking.**

The financial crisis has weakened Customers' trust in their banks. Meanwhile, some technology giants have consolidated with thriving smaller technology companies who, even without much knowledge in banking, are better interpreting the psychology of customers and know how to eliminate most of the friction with which traditional banking provides its services. Overall, they attempt to gain ground on the market share of the most profitable traditional banking businesses yet far away from costly and complex banking regulations.

Interest rates, at historic lows, have also favored Fintech company financing.

2. Increased Regulatory Pressure.

The recent financial crisis revealed major operating weaknesses in the banking system. The reaction of governments under significant social pressure amounted to a regulatory *whirlwind*, which has been especially complex for systemic banking and shows no signs of easing up. Tougher requirements in solvency (virtually doubled), liquidity and commercialization of products foresee a future in which the banking business will differ from its current embodiment.

⁵ The Intermediation Margin (*Net Interest Margin - NIM*) is the difference between income from interests that a bank receives from credit transactions (loans) and the costs of interest for debit transactions (deposits). A context of low interest rates deteriorates the NIM.

⁶ Source: www.euribor-rates.eu

The regulation affects the return rate twice as much:

- There is a need for deleveraging, which undermines the return rate on the resources and limits the possibilities of growth.
- There is an increase in operating costs, primarily in technology and human resources.

3. Society's Loss of Confidence.

Trust may take a lifetime to earn but a breath to lose. Society holds the perception that traditional banks negligently handled their social mandate in the years before the crisis, consequently causing an explosion

of debt in the economy, condemning it to years of sluggish growth.

After the bailout, most customers rejected traditional banking and adopted a certain "revanchist" posture. Facing such customers, the challenge for business models is rather extensive.

4. New Technological Challenges.

While banking makes efforts on the road to transform its heavy technological infrastructure, potentially transformational developments continue appearing at an unprecedented rate.

“

In order to restore this trust in us, we need to rethink how we work, how we do things, how we behave towards our employees, Customers, shareholders and communities

Ana P. Botín, Chair of Banco Santander;
International Banking Conference (22 October 2014)

”

Banks have the impression that they are always going the wrong way:

- At the end of 2014, **Blockchain**⁷ technology was little more than an experiment. In September 2015, however, nine⁸ major banks agreed to frame a common standard to streamline its use in financial services. Blockchain enables the liquidation of complex international transactions in 10 minutes at a cost of €0.05.
- In July 2014, Facebook purchased **Virtual Reality** technology from Oculus Rift. This technology was heretofore employed for residual use and exclusively for leisure purposes. Facebook is currently mustering its three development centers to make it accessible to the general public (with an approximate cost of

€300). This technology is expected to extend across many aspects daily life, including banking. Samsung also announced some devices costing ≈ €100.

- Further developments include **Augmented Reality** (whose initial versions are beginning to be operational through certain services provided from mobile devices), **Cognitive Computing** (with the Watson computer as the standard), **Quantum Computing**, **Artificial Intelligence** (which could bring financial consulting to a new dimension) and **Biometrics** (critical in the solution for the issues currently affecting security and also capable of generating new user experiences -hereinafter referred to as UX).

⁷ The term Blockchain is used to refer to P2P encryption technologies in general with decentralized registries (Ripple, Ethereum, including Blockchain, etc.).

⁸ Goldman Sachs, JPMorgan, Credit Suisse, Barclays, Commonwealth Bank of Australia, State Street, RBS, BBVA y UBS.

Within a context of risk-adjusted returns, banking is facing some years in which it must continue assuming the cost of maintaining its *legacy* while building systems based on these new technologies, though it still remains unclear what such systems will be or when they will be generalized.

These enormous investments merit the effort if the end result successfully creates a technological model that provides support to the new emerging business models. Today that would require giving up at some point on RoE and taking swift action so as not to lose ground to the *new kids on the block*. Banking is at a critical “*do or die*” juncture.

5. The Construction of a New Customer Relationship Model.

The branch-based customer relationship model is in a virtual graveyard, caused by the customers' current practice using Smartphones to find, compare and let themselves be courted by competitors. And doing so gives customers a feeling of tremendous power.

Despite the enormous investments that banks are making to better understand their customers, given that they are the true *driver* of the transformation to banking 3.0, the new customer relationship model has yet to be defined.

Finding it would most likely mean that the bank should find another role in the community that is broader and in line with its founding principle, namely helping its customers progress.

Regarding treatment, Customers demand dialog on equal footing that is adapted to the new ways of life (e.g., social networking), which is fortunately possible and affordable with advances in technology.

In 2011, the Bank of America was obligated to repeal its plans to cover a monthly commission of \$5 for the use of its debit cards under the media pressure from consumers.

The new banking model requires a *customer centric* vision, and a deeper understanding of Customer psychology would thus become essential.

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When I think about the banking industry, the same word always comes to mind: Oligopoly

Philippe Gelis, CEO of Kantox

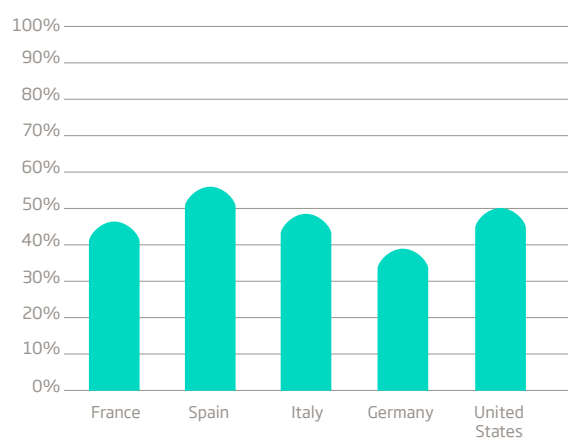
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6. The Market Structure Change.

The concentration is unquestionable when observing the banking market structure. In the United States of America, the five largest banks concentrate 50% of the banking assets⁹. In the United Kingdom, the four largest banks concentrate

70% of the *Personal Current Accounts* and 85% of the *Business Current Accounts*¹⁰. The situation is similar in the rest of Europe and has even worsened since the crisis, which would not seem to engender the best conditions for a competitive market.

Market share of the 5 largest banks (% total assets in the sector)



Source: ECB Structural Financial Indicators

2014

Nonetheless, numerous new competitors have entered the sector in the last 3 years:

- The technology giants have acquired relevance in profitable niches in the banking business, a space that has already been colonized by pioneers such as Paypal. Recent examples are Apple Pay, Robinhood (free broker from Google) or money transfers recently enabled by Facebook.
- Thousands of Fintech companies have thrived by harnessing technology to deconstruct the value chain of the banking business and thus gained ground in all traditional banking business areas.

The massive influx of competitors in the sector is causing a change from **Oligopoly** to a market that is known in Macroeconomics as **Monopolistic Competition**:

Are the products different?

		No	Yes
How many producers are there?	One	Monopoly	Not applicable
	Few	Oligopoly	
	Many	Perfect Competition	Monopolistic Competition

⁹ Wells Fargo, JP Morgan, Bank of America, Citigroup and US Bancorp. Source: Forbes.

¹⁰ HSBC, Barclays, Royal Bank of Scotland y Lloyds. Fuente: Competition & Markets Authority (CMA), May 2015.

Main characteristics of an Oligopoly according to the European Commission:

a) Market dominated by a few companies with a capacity to influence prices. Measured commercial policies.

✓ Banking concentration is the norm in Europe and the United States of America. The sector usually has simultaneous campaigns for passive capture, lowering mortgage *spread*, eliminating commissions, etc.

b) Uniform products that are therefore interchangeable per se (perfect substitutes).

✓ In the United Kingdom, the rotation of individual banking customers is only 3%. Products and services are very similar, which does not encourage customers to switch.

c) Strong entry barriers. The sale of products and services requires substantial investments in capital that only large companies can actually afford.

✓ The requirement of a banking license for a minimum capital or substantial investments in technology are bona fide barriers that could prevent the entrance of competitors.

d) Clear lack of transparency in the information. Buyer power is weak.

✓ Banking customers have a low bargaining power and banking product contracts are genuine adhesion contracts.

Main Characteristics of Monopolistic Competition:

a) Market supplied by numerous companies. The companies have a certain capacity to establish prices depending on their market share in an individual sub-market.

✓ Financial service providers have flourished. Nevertheless, traditional banks are still particularly strong in products, geographies, industries or age groups in which their presence is already consolidated.

b) Products have a certain differentiation, though not in price, rather in terms of in-sales and post-sales service, location, access to the product and delivery.

✓ The newcomers promote differentiation based on user experience, quickness, online access, etc., as a manner to attract the same banking customers.

c) Easy entrance of new competitors. The sale of products and services requires no substantial investments or a large company.

✓ Effectively, one of the reasons for this transformation as a whole is that the technology has broken the barriers of entrance based on significant investments, particularly in offices and costly systems (*mainframe*).

d) Greater transparency in the information. Greater buyer power.

✓ Transparency is one of the pillars in the Fintech value proposition. The technology has also contributed (insurance purchasers, etc.) so that new product information is online and more comparable, which empowers the buyer.

In an oligopoly, providers can establish the prices for their products and services, and pressure in terms of cost is therefore low. In a Monopolistic Competition market, the capacity to establish prices is less and the margins are narrower. Providers should have a greater role as price-accepters, recalculating downward the costs that they can assume to achieve the target RoE.



Why has there been such accelerated growth in the Fintech sector?

If the starting point was perceiving that technology can help eliminate the friction with which banking currently delivers its products and services and thus be able to meet the challenges in attracting and retaining customers, other concurrent circumstances have made decisive contributions in fostering it:

- Very low interest rates. In addition to leaving traditional banks vulnerable, it has convinced investors to finance, with virtually no limit, some businesses that are **presumably** more profitable and **presumably** not riskier than banking.
- The capacity, **perhaps only temporary** though certain for the moment, of *shadow banking* companies to handle arbitration in regulatory capital and supervision, a matter that is unavoidable for regulated banking.
- The progress in technology that has made banking productive process breakdown and digitalization possible. In the 1980s, John Reed, CEO of Citigroup forecasted that "*banks are just bits and bytes*". Nowadays anyone with a minimum programming capacity (new production factors) can attempt to find a solution for at least a small part of the issues facing banking.

- El impulso en la concesión de licencias bancarias por parte del gobierno de UK ha permitido que algunas Fintech operen ya como verdaderos bancos nacidos digitales (Atom Bank, Charter Savings Bank, etc.). Londres es hoy el principal *hub* mundial de empresas Fintech.

The UK government's trend in granting banking licenses has let Fintechs operate as genuine digitally-conceived banks (Atom

Bank, Charter Savings Bank, etc.). London is currently world's central *hub* for Fintech companies.

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In the future, BBVA will be a software company

Francisco González, Chairman of BBVA

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03

Fintech. The promised land?

A rapidly growing industry with an intimidating potential

The Fintech sector is growing into something considerable in terms of both number of companies (approximately 12,000), based on real and potential customers, as well as accumulated investment (approximately \$24 bn) ¹¹.

It is hailed as the Promised Land for the financial sector, an area that, according to the sector itself, banking will never reach, riding on the following declared value proposal:

EFFICIENCY +
SIMPLICITY +
JUSTICE +
TRANSPARENCY

¹¹ €1bn _ €1,000 million

03 Fintech. The promised land?

Now the banks that had only recently been ignoring them, have begun to fear them in view of their agility and appraisal from the market. The extent of this fear has driven many to include the acquisition of Fintech companies as part of their digital transformation strategy.

...not to mention Silicon Valley, which began in a garage and today there are many garages scattered all over the world.

How is Fintech affecting traditional banking?

- By moving it: Based on a superior UX with enhanced convenience rather than price.
- Reducing it: Whittling income and profits in choice areas selected for their returns.
- Disintermediating it: New Fintech focused technologies such as Blockchain are snatching one of banking's essential capacities, namely "value transfer".

But...Are They Really Disruptive?

In general, the current Fintech sector is not bringing different products with greater added value to the market. In a nutshell, this is re-engineering obsolete banking processes using technology in an attempt to capture the same customers and even, in some cases, with worse pricing offers (*lending*), and doing so without the tether of legacy, staff and bricks. This is not being very disruptive.

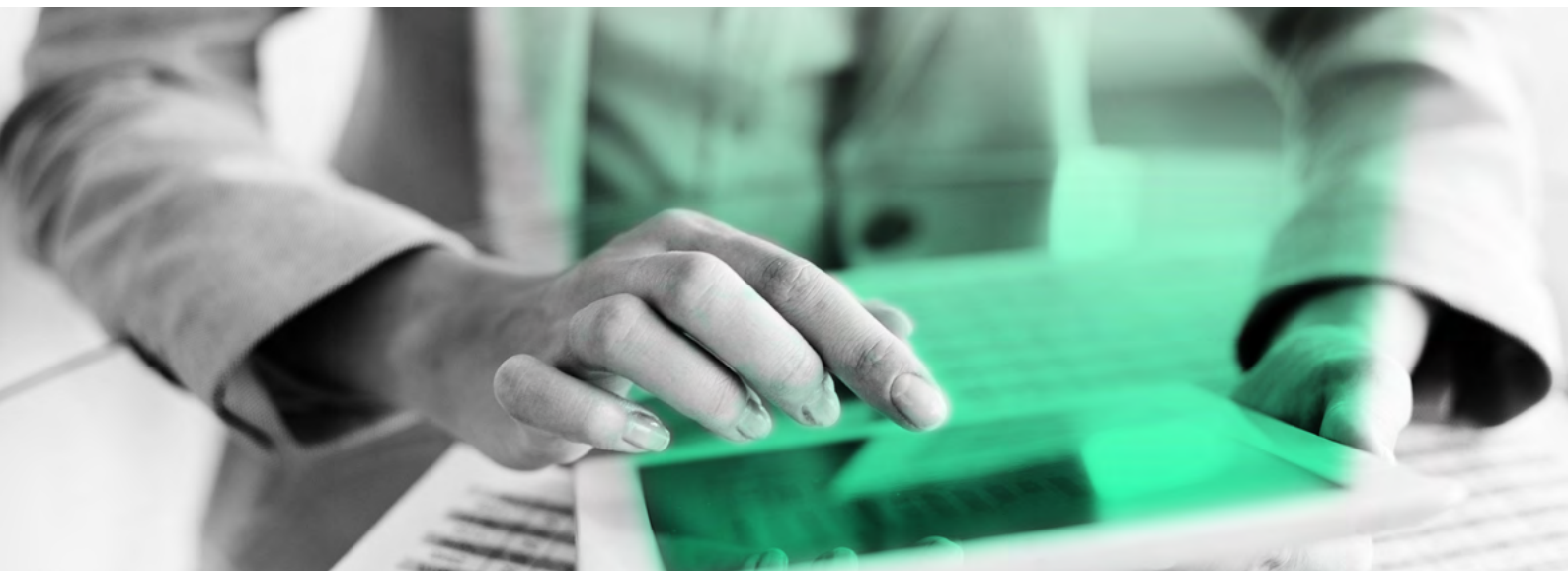
Innovation and benefits are rapid when dealing with process re-engineering and not the creation of new products *from scratch*. The involved companies are thus understandably targets of speculation by investors. The contrast is obvious with, for instance, biotechnology, where investment is scarce because the development cycle is much longer and the results are much more uncertain.

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Silicon Valley is coming

Jamie Dimon (CEO of JP Morgan Chase)

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Fintech, a concept that encompasses a range of contrasting realities

To better understand the dynamics and future of Fintech, a difference should be made between:



Startups and
small-medium sized
enterprises



Unicorns



GAFA

Startups and small-medium enterprises

With interest rates at historical lows, they have access to practically unlimited financing, which determines their sustainability since they are still burning cash and in the medium term they will lack the scale to reach *break even*. They are *monoliners* in a fragile financial situation and often fail to inspire enough trust to play a role in the financial sector.

For the current banking system, they represent more of an opportunity than a threat, since, in practice, they comprise thousands of qualified professionals working for free to come up with new, more efficient ways of doing business and banking processes. Additionally, they attract thousands of investors, who also freely conduct a *due diligence* on these business models and therefore filter the most viable ideas.

The result so far has been dozens of new working models that can be easily replicated by banking, which might be the key to bring such ideas to a scale that would attain significant returns.

According to Harvard Business, 75% of startups fail and, when looking specifically at Fintech, this percentage could most likely be raised to 90%.



Unicorns

Companies with a theoretical value over €1 billion, an appraisal calculated from the financing rounds in which the investors participate.

Their business model targets a broader base of customers, and many of them have been pioneers. Their presence has begun to concern the incumbents, and in the short term they may therefore become the target of regulation to prevent an assault on the "established order" (refer to the case of Uber).

It is essential to understand some questions regarding their theoretical value that will be useful for demystifying their capacity for transformation and survival:

- The appraisal of Unicorns is based on an overly optimistic speculation associated with their expectations for growth and future returns, which could be truncated when they become the object of regulation (as in the case of Uber). Given that they are unlisted companies, the information is not transparent, though very few if none at all generate a positive cash flow.
- As of October 2015, the Top 10 Fintech Unicorns had an aggregated value of \$42 bn. This value was calculated on the basis of an aggregated investment of only \$5 bn, i.e., 12% of their capital,

hence the appraisal of 100% of the company from this datum proves to be hardly rigorous.

On the same date, Paypal had a stock market value also worth \$42 bn. The difference is that Paypal has a net financial position (cash - debt) of \$4 bn, income of \$9 bn and a net profit of \$1 bn.

Appraisal comparisons cannot be made between Unicorns and banks or other already consolidated companies, since, even though both can be expressed in euros/dollars, the underlying appraisal assumptions significantly differ.

This group of companies could spawn the next digital finance giant (at the scope of Google, Amazon, Facebook or Apple), though in the medium term, they will appear more in the media as stars ringing the bells of bankruptcy until only 3-5 Unicorns remain (there are currently some 140 Unicorns throughout the sectors of the economy with an aggregated appraisal of \$500 bn).

In May 2012, Evernote became the first company to reach the Unicorn status and immediately published its intention to go public on the stock exchange. In October 2015, Evernote announced a layoff of 47 employees as it was unable to establish a profitable business model. There are other very similar cases such as Dropbox.



GAFA

Acronym for Google, Amazon, Facebook and Apple, though some have begun adding Alibaba. These entities triumphed during the “.com” period and have become natural digital monopolies. Today we even use the term *GAFAnomics* as a way to understand economic relations.

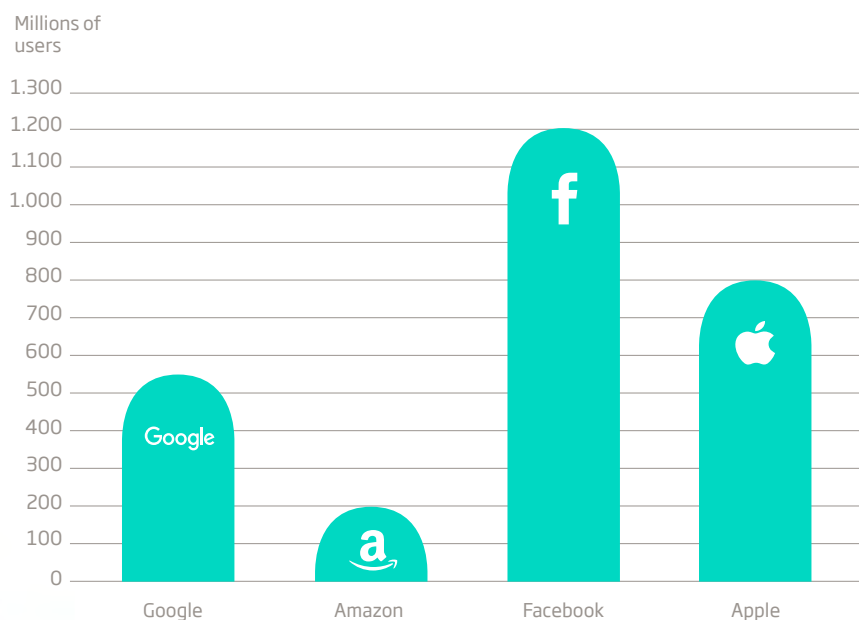
Their interest in the financial business focuses on business areas from which banks harvest high returns but with obsolete processes and elevated friction in the UX.

They have an incredibly immense technological capability, investment capacity and prestige among their customers. Some appear to be winning the battle for payments (Apple) while others for data

(Google, Facebook), though the added-value information on customer intelligence is in both of them. Moreover, GAFAs have less limitations than banks for using data, which is why they are becoming a genuine threat to the current business model of banks.

When the situation stabilizes, banks will have nudged closer to being GAFAs while GAFAs will have nudged closer to being banks. Regulation will also play its role here, since GAFAs could become an object of regulation in its financial business if they end up becoming systemic financial entities.

Google, Amazon, Facebook and Apple users worldwide



Source: ECB Structural Financial Indicators

2014

GAFAs currently control over 50% of the average user's digital journey

Many banks have already raised the white flag on the payment battle against the GAFAs, at least in their current state-of-the-art based on payment networks. Banks need to wait to recover ground from a disruptive advance that will change the rules of the game insofar as payment (*Blockchain?*).

Principles of GAFAnomics



a) Capture the attention of a massive amount of customers regardless of whether they pay you or not. This will provide them with an experience that will be useful in making their lives easier.

This enormous customer pool is the operating base:

- Providing them with good service will not only keep them but also have them do your marketing work (word of mouth).
- By harnessing scale economies in cost, you can offer more services at better prices.
- And, finally, you will build your best defense against encroaching competitors.

b) Create a stable relationship with your customers. You will have your *engagement* when they give you their data (email, telephone, contacts, etc.). Based on this data, you can generate income with "less" effort.

c) Innovate permanently to anticipate the future needs of your customers.

The most innovative companies (Fintech) are running a race against the clock to generate cash flow. The ones who have failed to innovate sufficiently (banks) are running to jump on board the innovation bandwagon. A symbiosis is expected, though everyone will pay a high price to do so. Fintechs by going bankrupt and banks by paying outrageous prices for outsourced innovation.

How will this all play out and who will end up victorious?

The following evolutionary stages are evident in banking's adoption of technology:

Semi-Manual Banking (< 2000).

Technology is primarily employed for supporting Transactionality (mainframe).

Business processes per se are manual and the efficiency of banking can be improved. Some needs for capital much lower than the current needs enable

reasonable business return rate. RoE \approx 10%.

Technological Banking.

- 2000 to 2010:

Technology becomes an efficient leverage as it generalizes itself for backing business processes (document management, CRM, communications, large CPDs, etc.).



The returns on banking explodes when harnessing economies of scale in the technology. RoE up to 20%.

- 2010 to 2020:

- Fintech 1.0: Current Phase, a transition. Fintech begins its battle with banks, who are also Fintech 1.0 to some extent, though differing in size, threats, strengths, weaknesses and opportunities. A rift of future opportunities has opened between innovators and *followers*.

The new regulatory requirements coupled with the ongoing impossibility of yielding returns on the new technological advances are burdening banking profitably. RoE 10-15%.

- A Bursting Fintech Bubble. There is no room for 12,000 participants. Mass extinction of Fintech companies, either from bankruptcy or the absorption of banks and/or GAFAs.

Which Fintechs 1.0 and banks will survive?

Banks: The survivors will have committed to fighting the battle to win customer relationships, creating an emotional connection and providing superior UX based on the "wealth" of data. The ones that will fail to survive or, at best, find themselves surrounded as mere *utilities* will have opted to provide their balance to whomever proves to best handle the datum.

03 Fintech. The promised land?

Fintech: Survivors will also include entities who have made commitments similar to the ones made by banks. The rest will either disappear or abandon the financial service business line.

- Fintech 2.0: New combination business models (banking-technology) and new digitally conceived financial actors (not only GAFAs but also digital banks created from scratch). The frontier separating old banks and current Fintechs 2.0 is unclear. RoE \approx 15%.

• Years > 2020:

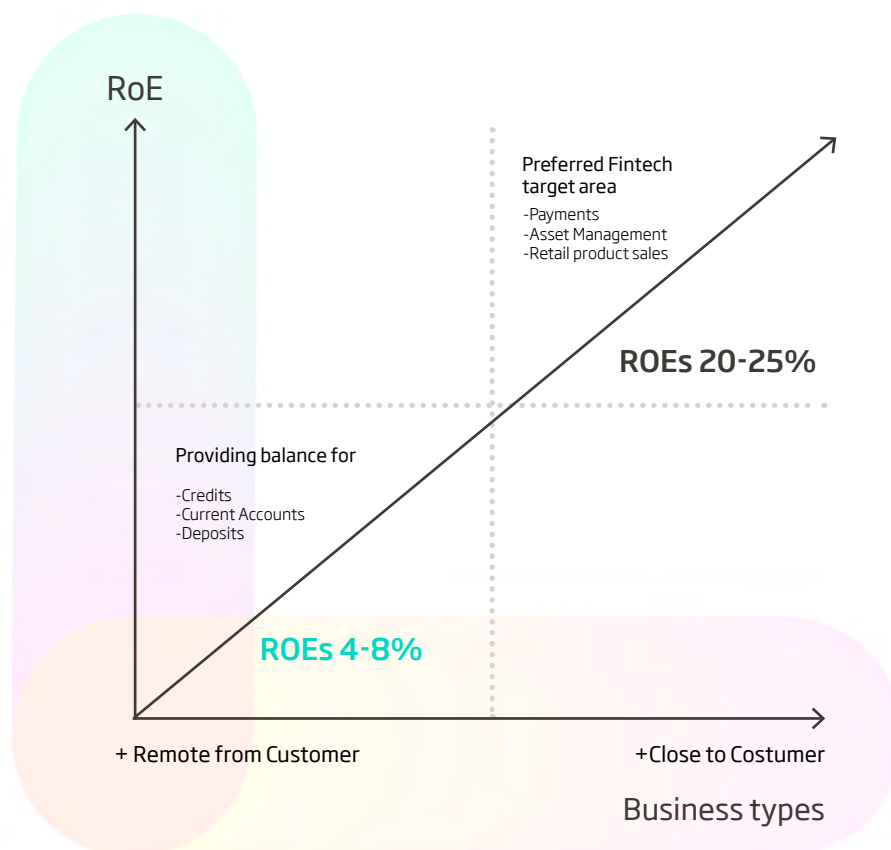
Final disruption. Not a single company but rather a transformational technology such as Blockchain (or similar) still in the experimental stage will begin changing the way in which we register transactions reconfiguring products and services, and enabling a large-scale change

in banking costs. Blockchain shall become a economic transactionality layer in the *Internet of Things*.

The victors will be the entities capable of building added-value services on this technology. However, this is nothing new.

In the ".com" bubble, internet per se was disruptive but the victors were the entities that mounted added-value services on it (GAFAs). Depending on them, the delivery method could be ad hoc applications or even embedded in other business process up to a point that you can be consuming them without being fully aware of it. RoE 15-20%.

RoE per banking business type and based on their proximity to the customer



03 Fintech. The promised land?

The real threat currently facing banking comes from the GAFAs, even though their current businesses can yield more profit than the financial line with much less volatility.

The explanation is not in the traditional banking business, which does not interest them for the elevated complexity and low returns, but rather in payments and the data associated therewith, which enables them to get closer to the final customers.

In addition to the sheer number of GAFA users, the management of their payments and data associated therewith has an enormous value that banks are incapable of mining while running the risk of losing with a very serious impact on their market capitalization.

	Growth of Incomes 2012-2014	Net Profit/Income 2012-2014	Beta**
4 Largest banks in the USA.*	0%	15%	1,10
Google + Apple + Facebook	19%	23%	0,96

* Wells Fargo, JP Morgan, Bank of America y Citigroup

** Measures the sensitivity of the share price compared to its reference stock exchange index

Are we currently in a technological bubble ready to burst, similar to the dot-com bubble? What would the impact be?

All indicators seem to be saying “Yes”. Concerns focus on the “when” it will occur and the “how much” will its real impact be.

In comparison with the .com bubble, there are similarities and differences that should be considered, in addition to some lessons from the last bubble that should be recalled.

Similarities

1. Technological turning point, with a multitude of disruptive development arising (the first being Internet and now the Smartphone).
2. Enormous liquidity and mass investments that have not been thought through but rather hastily made so as to “not miss out on a golden opportunity” or “strike first”.

Differences

1. Existence of a very powerful corporate technology and consumer base (refer to the number of GAFA users).
2. Companies have been financed by private capital (individuals and investment funds) with only a few companies opting to be publicly traded. Thus any possible bubble burst would be more contained.
3. This bubble is actually more global, since in the last 15 years, China and other economies, particularly Asian economies, have prominently incorporated into the shifting world economy.

Lessons learned from the .com bubble

1. An enormous squandering of money on inadequately selected investments. Example: purchases of Patagon by Santander (€540 million) or Lycos by Telefónica (€10 billion).
2. Some companies would eventually transform the world, though in a term much longer than expected. The term for consolidating a profitable global business is not 3-5 years but rather 10-

15 years (refer to the GAFAs). There are only a handful of investors willing to wait until the cows come home to get their returns.

3. EI 80-90% of the startups burn out only a few years after their creation. Business models that initially seemed to be the key ended up failing to provide value to the customer: i) search engines that added information (Lycos, Altavista, Terra, etc.) and ii) internet providers (formerly known as ISP - Internet Service Providers).

4. The concept of natural digital monopoly was born. In each business type (search engines, social networks, online trading, etc.) there is only room enough for 1-2 profitable global companies.

The overall value of the Fintech sector is approximately \$160 bn, which is the equivalent of, e.g., the market capitalization of Citigroup or Santander and BBVA included. A burst could dissipate 75% of this value, with some nuances:

- This effect could be increased by a simultaneous burst of the technology bubble associated with other sector (theoretical value of all Unicorns, including financial unicorns, is \$500 bn).
- This effect could be buffered because most of the investment is in private hands.

04

Payments, the first and most disconcerting waterway

One of banking's primary missions entails simplifying the movement of money among economic agents. The provision of this service is done through the so-called "payment methods"¹², of which the banks charge some commissions for use, normally representing $\approx 20\%$ on their total income¹³. More importantly still, this percentage is greater when measuring in terms of net profit, since the business requires much less infrastructure and personnel than intermediation.

Until only recently, payment methods were almost exclusively handled by banking¹⁴ which constituted a guarantee of stable income and a competitive mechanism for capturing and incentivizing the loyalty of customers. In 2015, worldwide income from this business was estimated at $\approx \$1,200$ bn, a figure that will most likely grow to $\approx \$2,200$ bn in 2025 (annual growth of 7 - 8%).

As if the foregoing were hardly sufficient to underscore the relevance of this business to banking, certain processes in recent years have actually increased its significance:

1. Globalization and the impressive economic development in Asia have triggered the number of retail, particularly international, transactions that are especially complex in terms of processing with the current system.

¹² Primarily Transfers, Direct Billing, Cards, Checks and even other residual means such as mobile device payments.

¹³ Primarily comprising the commissions covered from the holders of bank accounts, cards (exchange commissions, payment acquirer business, foreign currency conversion, annual maintenance fees and financing interests).

¹⁴ Even Visa was founded in 1958 by Bank of America and MasterCard in 1962 by a group of four banks in California.

2. The digitalization of the economy has boosted the transformation of payment methods. *The Internet of Things* will cause the explosion in magnitude of economic transactions and use of *retail* payment methods.

3. The development of technology for processing *big data* enables the use of transactional data as an invaluable tool for the digital transformation process. Understanding the behavior of customers through data or be capable of generating new sources of revenue for banking or third parties has proven to be critical in the new and more demanding competitive environment.

These processes have not concluded but are also expected to accelerate in the coming years.

In 2016, banks are still the world's leading actors in terms of payment methods, though it cannot be any other way because they have a commanding control over the networks through which money changes hands. Recently, however, it would appear that the script might be changing. GAFAs and many other small companies (Dwolla, Venmo, etc.) have

begun to build a layer of more convenient services for users and threaten to relegate banks to a role of mere infrastructure providers, far from any sort of customer relationship. This is hardly news, since a similar change occurred in the Telecom industry. Companies such as WhatsApp or Skype created a layer of services on the infrastructure and are capable of extraordinary value.

Some banking executives have begun to recognize that the battle for the current payment methods, operating on obsolete traditional networks, could be lost. Should this be confirmed, and banking is unable to turn the tide on the situation, its RoE could structurally run aground and with little maneuvering room regarding its Cost of Capital, therefore limiting its capacity to create value. Many entities would subsequently prove to be economically unviable.

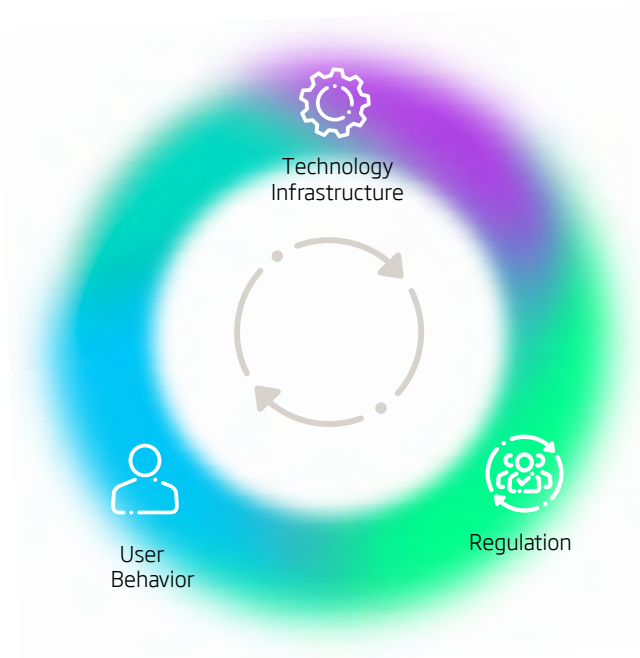
COMPANY	FOUNDATION	VALUE
TELEFÓNICA	1924	€57 bn
WHATSAPP	2009	Acquired by FaceBook in February 2014 for €15 bn
SKYPE	2003	Acquired by Microsoft in May 2011 por €8 bn

But is the payment business really a lost cause for banking with no hope for a recovery?

There are primarily three drivers determining the evolution in payment methods:

Each one's status and expected developments will be explained in greater depth below so that, by the end of the chapter, you will have a better understanding of:

1. The changes in regulations and new infrastructures that will change the panorama for payments.
2. The new income model and costs derived from this new regulation and infrastructures.
3. How the new relationship model (digital) that banking should build with the customers must be.



User Behavior

As always, there are two fundamental variables in this decision: convenience and price. Consumers have been convinced on this point for quite some time: they want to engage banking from their mobile devices and payments are merely one facet of it. If *wearables* were to share the convenience and security (via multiple biometric identification¹⁵), consumers would incorporate them even if that would mean assuming an additional expensive, since consumers are highly sensitive when it comes to dealing with their own money.

How are most payments made? By volume (in euros), transfers make up 90% thereof, a statistic conditioned by wholesale payments. However, by number of transactions (a more indicative statistic for retail payments and securing the precious "datum" regarding customer behavior), cash is still the top option in approximately 60% of the

transactions in Europe and the USA.¹⁶

Payment via mobile devices has still not taken off¹⁷ because it provides no advantage in convenience compared to the more common payment methods. In the USA, only 18% of consumers use it at least once weekly, for which Apple Pay has 65% of the transactions. Payment via mobile devices has yet to achieve maturity, which will no doubt arrive and absorb the 60% of transactions made in cash.

Moreover, the imminent regulatory and infrastructure/technology changes let us confirm that virtually everything remains to be done in the world of payments and nobody can yet be declared winner or loser.

¹⁵ Various simultaneous biometric identifiers among the different possibilities: fingerprint, iris, vein, voice, etc.

¹⁶ Source European Central Bank and Federal Reserve.

¹⁷ The sole case of a massive success in payment via mobile device is M-Pesa in Kenya, which works with SMS (again the technology proves to be irrelevant to the customer, since the essential is that the system works well and is cheap and convenient).



The regulatory change underway and imminent future

Today's payments (which are essentially no more than mere "*bits & bytes*") are actually slower and more expensive than what the current state-of-the-art could do. This is particularly salient with international payments, since there is no "open and cheap global highway" where money can be moved. Instead, money is moved across geographically restricted areas united by agreements. A change in the status quo would require supranational agreements and/or support from technologies such as Blockchain.

Though with varying levels of maturity and adoption, initiatives are nevertheless underway in Europe, the USA and Asia, attempting to boost development in payment methods through the following means of leverage:

- **Security:** Adoption of EMV (USA), Security Standards for payments via Internet / Mobile devices, etc.
- **Standardization:** SEPA, ISO 20022 Payment Standard, International Payment System in China, etc.
- **Competition and Transparency:** Regulation of the card *interchange fee*, PSD2 Directive (Europe), etc.
- **Innovation:** PSD2 Directive (Europe), *Switching* ("portability") of current accounts in Europe, etc.

In general, the forthcoming regulation has followed no guideline to assist banking. Instead, it has been drafted to promote standardization, competition, transparency, security and innovation, even though it could also impair banking such as the case of the limits on *interchange fees* in Europe, which would mean the sector would lose out on 15% of the revenue from such fees (approximately €8 bn/year).

Throughout Europe, there is a growing understanding that getting ahead in electronic payments is critical for the economy to fully harness the advantages of a

single market and get back on the path to growth. (the USA and Asia share this focus for their own economies). The main regulatory initiatives were two payment directives (PSD1 and PSD2).

A. European Payment Directive 1 (2009). Created and regulated the role of "*Payment Institution*", payment service provider entities (e.g., Paypal or other *remittance* entities) that, while operating de facto, were not subject to regulation.

It also established the incorporation of a **Single Euro Payments Area (SEPA)**, which regulates transfers, direct debiting and cards under the founding principle that payments within and across EU Member States should not differ. Its purpose was to create a more competitive payment market in euros in terms of prices and more innovative in terms of new services, with more secure transactions and greater transparency in costs for the users thereof. The migration of all countries to this new regulation concluded in Q4 2016.

B. European Payment Directive 2 (PSD2, October 2015). This Directive attempts to regulate new entities and functionalities appearing in the electronic payment area and should be fully operational in Q4 2017. Its most essential development is the opening of the payment business to new players (primarily non-banks) with a view to lowering the costs of payments and boosting new business models in such a critical area, which has nevertheless become stagnant because of a lack of drive from its actual star players, the banks.

The directive establishes TPP (*Third Party Providers*) to be registered and adhere to regulations. It also creates *Access to Account* (XS2A), a transformational concept that makes it mandatory for current banks to let TPPs access their customers' bank accounts upon prior express authorization thereof. These interfaces are carried out through APIs.

Who are the TPPs?

1. *Payment Initiation Service Providers (PISP):*

Entities that, from an online trading platforms, and commissioned by the buyer, initiate a payment process to the seller by directly accessing the buyer's bank account. This is done via software, creating a bridge between the business and the bank with which the latter cannot interfere or prevent.

In other words, there is a clear disintermediation of agents that were heretofore essential in the payment process such as the card platforms. The Customer - Business relationship is strengthened.

2. *Account Information Service Providers (AISP):*

Entities that, under the mandate and with express authorization from the customer, can gain access to transactional information from the customer's bank account, and the bank cannot interfere or prevent such access. From the analysis of these data, the provider can furnish added-value services (e.g., aggregated vantage point of the position in various entities, analysis of the composition of expenses and presentation of more suitable alternatives, etc.)

In other words, banks lose their exclusivity on the tenancy of the data on their customers and open the door for customers to be courted with added-value services that so far the bank was not providing. A further difficulty in moving toward a *customer centric* model.

Both figures represent an open field for Fintechs and banks to compete in equal conditions.

This regulation only applies to individual accounts but not online corporate accounts. The handling of microenterprise falls within the individual transpositions of the directive made by each country.

Other relevant matters regarding these two directives:

- They require greater transparency insofar as commissions, which will impair Acquirer businesses, since more visible *fees* will provide negotiating leverage to businesses. The *interchange* fee limit recently came into force, which negatively affected issuer incomes.

- Some identity authentication standards that are much stronger than the hitherto valid ones have been established.

- The necessary technology standards have yet to be defined. In any case, banks will need to build new interfaces and possibly change their approach to online authentication.

Even though the regulation has created an entrance for other entities into the payment business, and to do so on an equal playing field, banks are better positioned to benefit from the new competitive environment. Banks are not only so because they are the ones tethering relationships with customers (in many cases at both ends, i.e., consumer and business) day in and day out, but also because consumers are very hesitant to adopt new payment methods and, as we have already seen, society as a whole continues viewing banks as more trustworthy when it comes to managing their money. A trust that can be, similar to everything else in today's society, swiftly attacked and subject to erosion.





The New Infrastructure of Instant Payments¹⁸

The European Central Bank (ECB) is designing a real-time payment system that is expected to be ready for 2018. It will work similarly to the system already operating in a dozen countries (some European), with success in economies such as the United Kingdom not only in terms of adoption but also in benefits for banks and customers.

While implementation thereof would require a certain investment from European banks and some technological complications in connection with the current *legacy*, it will become transformational, since it would enable the following:

- Functionally, a clear replacement for cash as transactions can be made in real time and from a mobile / *wearable device*. *Wallets* (physical, Apple Pay or electronic, or Paypal types) will receive a significant boost as they can be unlinked from card networks, thus lowering transactional costs.
- Streamlining of economic exchanges that would normally be queued for payment confirmation (e.g., shipment of products in online trading, depending on the means used).
- Incorporation of accessory features (messages, etc.) that are better than the ones currently provided by Fintech companies such as Dwolla or Paypal who operate through private networks.
- Provision of added-value services such as discounts, immediate loans, expense alerts, etc.
- Optimization of *back-office* processing costs because of shared infrastructure development and management.
- Optimization of the management of Working Capital, which is perhaps the company's most important management variable.
- For banks, this lowers the risk of intra-day credit, with the resulting release of capital.

This new infrastructure should not be construed as an end per se or, in other words, a new product that banking can offer its customers. Rather, it should be viewed as:

1. A **platform** for the creation of added value services (case of WhatsApp on the communications infrastructure) and for enabling banking to monetize the investment and steer clear of the *commoditization* of the "real-time payment" product.
2. A **virtual reset** of currently known payment methods would level the playing field so banking and Fintech can compete on equal terms, thus providing banks with an opportunity to recover lost ground. The winner will be capable of creating better services on it.
3. In the **long term (8-10 years)**, all payment methods will end up converging toward real-time payments, hence a perfect understanding on how to create this infrastructure type is particularly necessary.

Mobile devices will enable this infrastructure grow rapidly. The *unbanked* sector will adopt it much more easily, since if a bank account offers them no particular value in operational simplicity, a real-time payment system will indeed do so. In the USA, the *unbanked* group spends \$90 bn yearly in interests and *fees* associated with payment instruments unrelated to banks.

This is a new paradigm for some economies that are now beginning to switch to this infrastructure. In Europe, the United Kingdom and its banks have been ahead of the pack for years, which is not trivial in any respect.

The regulator in the USA is also working to implement a similar system. Its interconnection with Europe in the framework of a free trade treaty, currently in negotiations, would be capable of creating extraordinary value.

¹⁸ 24x7x365 payment systems for instantly sending funds with the following characteristics: independence in the selected medium (transfer, direct billing, etc.), irrevocability of payment, digital processing and internal confirmation.

What role can Blockchain technology have in payments? Why does banking have such an interest in it?

Conceptually speaking, Blockchain is a record of transactions made between two parties (P2P). The record per se is not in the custody of any central institution. Instead, it is decentralized and freely accessible. The encrypted algorithm protects already executed transactions from being altered. The system allows all transactions to be traced and, ultimately, the "property" is identified unequivocally. Given the way it was built, in comparison with current systems, transactions can be done more quickly with less costs and risks but greater transparency. A transaction can be confirmed in 10 minutes at a cost of €0.05.

Based on these principles, applications are being developed to resolve use cases where technology does in fact bring a differential List of financial entities that are exploring Blockchain value in contrast to the current system. Some of these applications are already in production and cover areas such as *remittances* and *Foreign Exchange*, where transactions can be completed with no need for centralized *settlement*. While such systems are still taking their first steps, it is obvious that this technology represents a threat to the status quo (SWIFT network, etc.).

Publications by some authorities also are also doing their part to stir up expectations, although under a permanent halo of prudence precluding any conclusion that with Blockchain we have finally found the philosopher's stone. In February 2015, the Bank of England addressed the matter of encrypted currency as "a new payment *settlement* method between participants with no need for financial intermediaries". The European Banking Authority (EBA) also presented various use cases and underscored that this technology merits serious consideration in the European context insofar as migrating toward realtime payments. While the experimental stage has yet to conclude, it would appear to be clear that the technology is capable of resolving at least a part of the issues associated with payments, particularly for some of them such as international payments and payments in which the parties do not know each

Lista de entidades financieras que está explorando Blockchain



other and there is no “trusted third party” to handle centralized *settlement*. In this regard, a next step in the development of the technology would be *smart contracts*, automatic protocols that would permit the verification of performance of given contractual clauses and the execution of consistent actions.

Banks such as Germany’s *Fidor*, who logically can move swiftly and under boundary conditions that differ from the large universal banks, have already demonstrated their capacity to carry out real-time *settlement* for international transfers. Most banks are adopting a “wait & see” posture, and they are often referred to as “fast followers”.

It’s no wonder that the most universal banks have shown the most interest in this technology. In addition to having greater resources for research, these banks would benefit the most from the potential uses without having to deal with the *legacy* conundrum.

The time has come to understand and experiment with technology. The use cases should be selected, each one with its own *business case*, since surely Blockchain is still not the most economically efficient solution for everything, given that centralized *settlement* systems tend to be robust and capable of processing a huge volume of transactions. The Fintech world is already soaring at incredible speed and banking should do no less with a technology that, regardless of how the story ends, appears to be highly promising.

The world of payments is being ushered into a new epoch by regulatory and technological changes. The cake that will be sliced up and shared in the coming years will be much bigger than its current size, and “how” it will be done is still unknown. In this regard, it is apparent that the winners will have managed to create, once again under the prism of innovation, services of greater added value that amount to a mixture of attractive convenience for the customer, low costs and maximum security.

05

A different way of creating value to respond to the new context

Traditional banks or *newcomers*...
who will win? We are part of a
race that cannot be measured in
minutes or centimeters. Survival
depends on being capable of
creating more value from the
banking business.

Creating Value, exactly... but for whom?

One of the lessons learned from the financial crisis is that the traditional concept of "creating value", whose entire policy concerning income, expenses and risks revolves around shareholders, leads to an unsustainable business model for banking:

1. The Shareholder is only one of the stakeholders involved, since banking activities affect society as a whole. Thus, failing to understand or look after the demands of other stakeholders could result in very negative consequences for the sector.
2. With the entire banking sector listed on the market, the obligation of reporting quarterly statements renders an image of the sector as a myopic actor in terms of management, demanding rapid returns without measuring the consequences of actions. It also disincentives the substantial investments necessary for the transformation to a digital model.
3. We have still not stamped out the ideas of mercantilism, an economic doctrine predating the Industrial Revolution that views the creation of value as a zero-sum game. The traditional inner workings of a dishonest banking system therefore intends to transfer wealth from the customer to shareholder.

After the crisis, banking has been working to reinvent its business model. It can only become sustainable if built upon the creation of value for its 4 primary stakeholders: Shareholder, Customer, Society and Employee.

To do so, it is essential that banking assume a broader role in the community and embrace innovation on the basis of disruptive technologies. This is nevertheless no pioneering commitment, since GAFAs have already been paving the way over the years:

Google

Google began in 1998 as a search engine and became the global bellwether in only two years. Today the company's earnings soar above \$70 billion from advertising and it has leading services such as YouTube, Google Earth and Chrome, and even an operating system, Android, which runs on millions of telephones worldwide.

2015 Revenue
\$15.4 billion.

Market Capitalization
\$510 billion. (January 2016)



Amazon began in 1994 as an online library. It has been expanding its services over the past 20 years to become the world's largest retailer. The company provides music, movies, storage, loans and even its own virtual currency.

2015 Revenue
\$330 million.

Market Capitalization
\$300 billion. (January 2016)



Facebook began in 2004 as an internal contact network at the University of Harvard. Today Facebook owns a database of 1.5 billion people, the world's most popular instant messaging system (WhatsApp), and provides multiple services, including money transfers.

2015 Revenue
\$3 billion.

Market Capitalization
\$290 billion. (January 2016)



Apple launched its first computer in 1976, though given its poor technical quality, it progressively lost the battle with the IBM PC. When Steve Jobs returned in 1996, the company was reporting a loss of billions of USD and held a market share of 3%. Bankruptcy seemed inevitable. Today the company provides telephony, music services, storage, etc.

Revenue
\$53 billion.

Market Capitalization
\$560 billion. (January 2016)

Should banking seek new frontiers in an effort to exit banking's current return rate loop?



Shareholder

Motivated strictly for economic reasons. Value is created for the shareholders when, after a given period, their investment grows more than the minimum required rate of return for said investment, i.e., if the bank exceeds their initial expectations:

Obtained Return Rate

To be sufficiently large requires a business model for sustainable growth and profit in addition to a moderate risk, qualities that tend to erode because of the dynamics of the free markets themselves (and the barriers that make entry into the banking sector are becoming less over time). Innovation is the best defense for keeping the three parameters (growth, rate of return and risk) in good condition and thus preventing listing multiples from dropping, which would be a prelude to the destruction of value for shareholders.

The Minimum Required Return or Cost of Capital

This input can be calculated a priori for each bank²⁰ and lower values mean easier creation of value for Shareholders (*ceteris paribus*). In practice, it is virtually similar among comparable banks that work in a single market of reference, since the *10-Year Bond Yield* is the same, the business models are alike (with products that essentially resemble each other) and the banking regulation establishes highly similar capital structures (indebtedness). The decisions taken by *management* have little short-term influence on its result. It is currently a 10%, with a downward trend to 9.5% - 9.0%, still above the 8.5% average recorded in 1992 - 2007²¹.

The gap (*Obtained Return - Minimum Required Return*) is therefore the best variable for monitoring the *Creation of Value for Shareholders*. Given that the Minimum Required Return is similar among comparable banks and hardly influenced in the short term by management decisions, the Obtained Return (sustainable RoE) acquires a prominent role as management variable.

Some nuances regarding RoE:

Creation of value for Shareholders

$$\frac{\text{INVESTMENT} \times (\text{OBTAINED RETURN RATE} - \text{MINIMUM REQUIRED RETURN RATE})^{19}}$$

1. The RoE sustainability concept is a key factor. An elevated RoE only in a single year is not useful for creating value, since there must also be sustainability. Two banks with the same RoE in 2015 could differ greatly in terms of the Creation of Value for Shareholders depending on the sustainability.

2. While RoE is a good variable for management, it is nevertheless no magic, self-sufficient or indisputable parameter. For instance, it does not consider asset liquidity, which was given such importance in the most recent Basel regulations.

$$\text{PROFIT GROWTH} > \text{RWA}^{22} \text{ GROWTH}$$

3. Improving the RoE would require not only managing the efficiency ratio but also selecting assets that have a better return / capital consumption ratio. Some banks refer to this as the *Golden Capital Rule*:

¹⁹ Obtained Return essentially depends on sustainable Return on Equity (RoE) that has a capacity for growth. Minimum Required Return (or Cost of Capital) essentially depends on the risk inherent in the bank's business model.

²⁰ Cost of Capital = 10-Year Bond Yield + Bank Risk Premium. The Bank's Risk Premium depends on the perceived risk in the specific bank, which will in turn depend on its business model and debt level.

²¹ Source: Morgan Stanley.

²² Risk Weighted Assets.

In this regard, individuals and SMEs have greatly benefitted from the new regulation, thus the improvement of the return rate on these products is doubly interesting for the purposes of RoE.

4. Basel has changed the *economics* of the sector by changing the scale of the capital required by the bank to back its operations on assets. This affects not only the return rate (RoE) but also the possibilities of growth. The RoE figures will be much lower structurally so long as there is no genuine digital revolution in banking to change the scale insofar as profitability of operations.

If the RoE for the 37 largest European banks was 17.6% in 2007, it is expected to finish 2015 at 4.4%.

The hope of a return to return rates of yesteryear lie in:

1. The full digital transformation of banking operations, from *frontend* to *backend*.

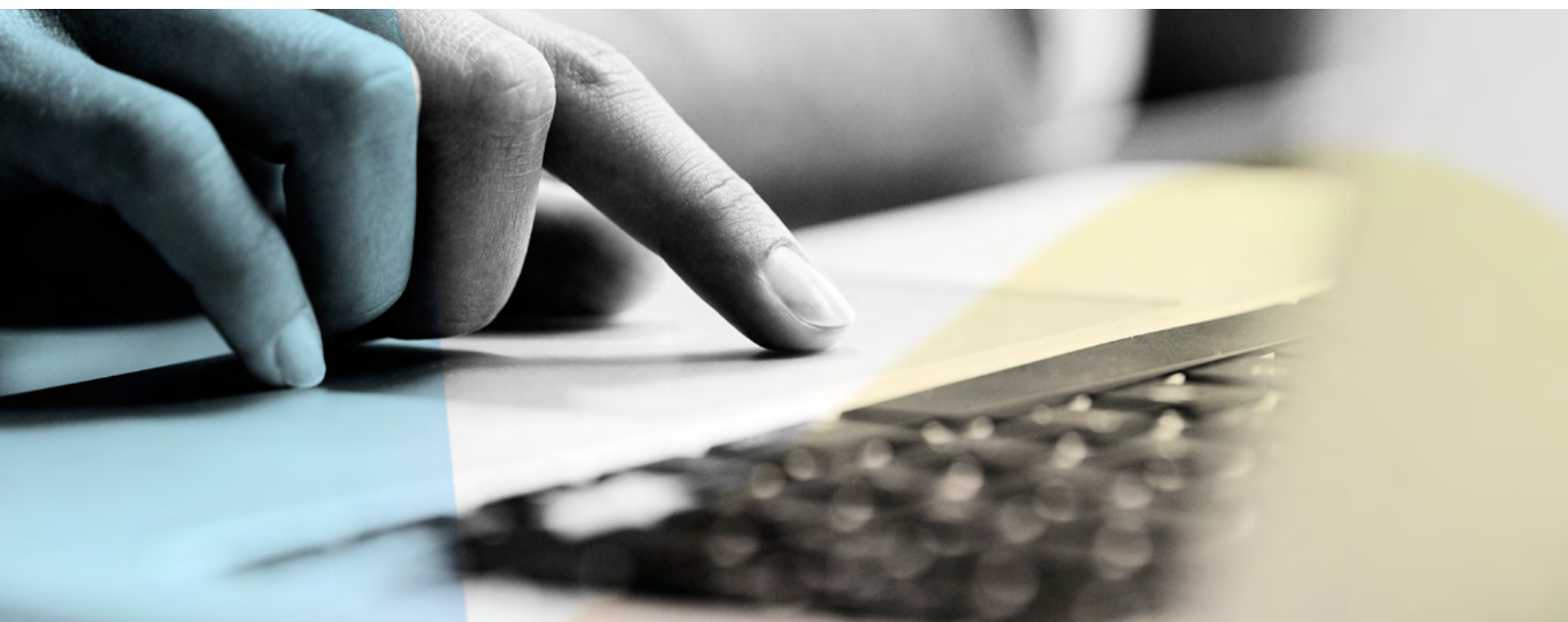
- Barclays, which had an efficiency ratio of 62%, recently launched a mobile app-based personal loan for existing customers in the UK. With a mere 6 *clicks*, the loan can be formalized and the funds transferred on the very same day. The efficiency ratio calculated for this operation is 20%.
- In the United States of America, an SME takes on average 33 hours to formalize a loan. This time is being shortened to 30 minutes by some digital loan agencies (Kabbage, etc.).

2. In defense of the payment business.

In Europe, *retail* banking alone has digitalized approximately 30% of the potential processes primarily through *stand-alone* (Apps, etc.) and *front-end* systems. A full digital transformation in banking would entail:

- Revenue increases above 25% based on improvement in customer capture and registration processes, better risk analyses for expanding the customer base, databased ancillary services, retailing linked with third parties (Facebook), etc.
- 20 - 25% reductions in costs. Primarily in process automation areas (with savings between 50 - 75%) and *front-end* transformation.

The products that banks should develop must be consistent with the critical variables enabling the creation of value for shareholders, intertwined with areas where, with greater impetus, greater revenue, reduced costs and improvements in risk management can be achieved.



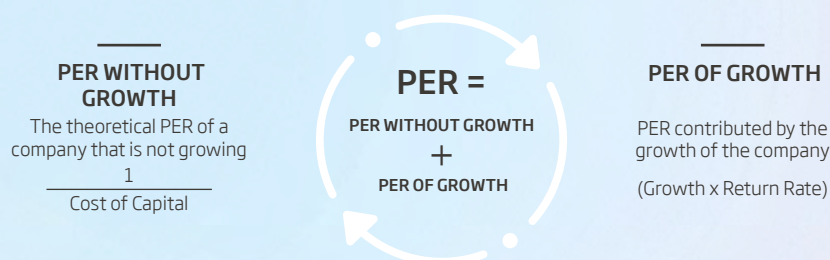
Are investors recognizing a premium in appraising the most innovative banks?

Intuitively, the listings of the most innovative banks should be exponentially superior to the *followers*. Moreover, financial theory is consistent with this simple intuition.

PER is the most widely used multiple by investors in listed companies and is calculated as the quotient between Market Capitalization and Net Income. A PER of 15 means that the Market Value of a company is 15 times the value of its Income. If its Net Income

increases by 1 euro, its Value will increase by 15 euros.

Financial theory demonstrates that the PER of a company is the PER that the business would have if there was no growth in the PER provided by the growth that investors expect for the future so long as this growth is profitable:



PER without Growth

This figure grows as the business risk perceived by investors shrinks. Innovation could play a relevant role in the effective control over the business risk (advanced scoring, etc.).

PER of Growth

It will increase as the bank grows, so long as the Growth is profitable (RoE > Cost of Capital). Innovation plays a key role for satisfying the growth and return rate conditions:

- We have already seen that a digital bank 3.0 will have a greater rate of return than a traditional bank.

- A bank 3.0 will grow more and then begin gaining market share from a traditional bank.

In practice, it would not appear that investors are paying higher multiples for innovative banks. This is explained in that efforts made in innovation are still being perceived as merely "cosmetic". While there are initiatives to adapt to the new environment (creation of incubators, funding for investments in Fintech, organization of *hackathons* or the incorporation of innovation managers), in reality nothing is truly transformational.

Investors have a limited vision. Some innovations of impact will arrive in the short term.

Why are some banks listed below their Book Value?

The theoretical value of a bank can be expressed as:

$$\text{MARKET VALUE} = \text{CURRENT BOOK VALUE} + \text{CREATION OF VALUE FOR SHAREHOLDERS}$$

When the Market Value < Current Book Value, there are two possible explanations:

1. Even in the face of *Creation of Value for Shareholders*, the community of investors will not give up its belief in the Current Book Value. It thinks that there are unrealized losses in the balance until a point that they exceed a possible *Creation of Value for Shareholders*.
2. The community of investors in fact believes the Current Book Value. However, the *Creation of Value for Shareholders* continues negative (value is destroyed). The return rate that the bank provides Shareholders is lower than required in their investment.



Customer

The future of the financial sector, not of the banks, is ensured because it proves to be an extraordinary invention useful for the progress of its customers. It works as a time machine, namely enabling an immediate possession of "things" that might otherwise be unaffordable until 5 or even 30 years later (a car, house, etc.). This is a way they can temporarily, and at their own discretion, modulate an income that they intend to have throughout their life.

However, something is most definitely amiss in banks' current business models given that, even though they have historically been capable of creating value for their shareholders, they are now openly pitted against their own customers according to the NPS studies for the sector.

The two main reasons explaining this divorce are:

1. The usefulness of banking has afforded customers with some uneasiness (friction) that, while inevitable and even tolerable in recent years, can nevertheless be overcome with technology. Banks, moored in their comfort zone and protected by the regulation and a de facto oligopoly, have made no investments in providing more convenient services unlike other sectors under the leadership of the GAFAs.
2. Customers consider that the services for which they are paying have a lower added value than the services furnished through their Smartphones.

The evolution of banking products toward version 3.0 requires a recognition that customers have gained greater leverage ever since they have been carrying around supercomputers connected to the internet in their pockets. It is logical to think that retail relationships should adopt a *customer centric* approach in the language and configuration of the products, something that banking has thus far failed to fully appreciate.

Is this banking business model sustainable? Not in the long term. Dissatisfaction creates fractures through which technological competitors can penetrate when barriers protecting against entrance in the sector fall. The good news is that the improvement in efficiency enabling digital transformation entails many marginal points that can be harnessed for attracting and retaining customers.

What must banking do to create value for customers?

Provide financing when it brings value to the customer, though today this is merely a *commodity*. Banks are not built to help customers progress and reach what they consider to be their own goals, in their areas of interest. And this help should be delivered with a quality level known as *customer delight*. Providing financing in turn and helping customers achieve their personal objectives and perceive an exceptional level of service is currently possible, though only with technological innovation.

These personal objectives have a concrete name that both parties will understand perfectly ("family", "leisure", "estate", "home", etc.). However, at this moment each party only sees its own reality, one talking about a mortgage while the other is thinking of a home, which does not help understanding...

A customer buys a car but NOT an auto loan. A customer buys a house but NOT a mortgage. Customers have topics of interests and buy "things" to satisfy these interests, banking products are the means and not the ends, i.e., they are "semi-finished products".

If new banking is *customer centric*... why should we continue using banking terms and not customer terms? Because they were conceptualized based on internal systems, processes and corporate structure of the banks per se and not based on the interests of customers.



Customer centricity calls for products to be redefined with a view to adjusting them to issues that really matter to customers or which might never be a point of convergence for customers and banking. It is nevertheless simple, the issues that matter to customers are few and clearly defined: their family, business, house, care, etc..

Banks can use disruptive technologies as leverage for covering areas of interest to the customers and thus increasing their role in the community.

The issues that matter to customers are the ones that, to their understanding, will enable them to progress. Products must therefore be redefined for this purpose. If Creating Value for Shareholders means exceeding expectations, we cannot allow ourselves to disappoint our customers insofar as their expectations, as can be observed in the NPS of the sector, low or negative. The customer is at the center of the business.

Customer Delight's potential to Go Viral combined with the Surprise Effect

When Radio and Television were the titans of one-directional communication, creating a brand was merely a question of spending on advertising. Soft drink and fast food brands, world leaders in consumer products, were among the top 10 companies investing in advertising.

But... is the advertising expense really necessary?

Biologically speaking, humans are predisposed to respond more intensely to events that surprise them, whether positive or negative. Surprising customers with a magnificent product or excellent service in the age of social networking means that one customer shares it with 500 Facebook friends within 3 hours and they in turn re-tweet the post to a further 500 friends...

In our era of social networking, where communication is bi-directional, we can hardly justify large advertising budgets:

- In the web 2.0, customers have a voice and their opinions can create or destroy a brand. Large advertising investments prove to be useless if the customers' *peers*, to whom they do trust, negatively criticize the brand.

- A satisfied customer is more than willing to do the advertising work and for free via word of mouth to *target* customers, much better selected than a mass marketing campaign.

Banks are nearly perfect machines for executing transactions though they fail insofar as service. The transactional processing capacity will become a commodity for lighter systems and the appearance of new technologies such as Blockchain. Newcomers have understood this and are concentrating on providing service, where they are having substantial success.

Customer delight is a step forward in cultivating customer loyalty and guaranteeing the sustainability of the new banking business model that banks are currently framing.

It is a matter of "*do or die*" and its cost can be assumed with all the savings that should arise with full digital transformation of operations.

Customers are more profitable when linked

Individual x4

SME x4

Corporate x5

What is the Net Promoter Score – NPS and why is its use becoming common?

Fred Reichheld's 2006 bestseller *The Ultimate Question* established the de facto standard for how companies analyze the expected loyalty of their customers, i.e., the NPS.

In short, NPS is measured by asking the following question:

On a scale of 0 to 10, 0 meaning "never" and 10 "absolutely", would you likely recommend this company to a friend?



Promoters

Score between 9 – 10. Loyal customers who continue buying and referring the company to their acquaintances, thus procuring growth. They actively spread the word.



Passive

Score between 7 – 8. Satisfied yet unenthusiastic customers. Vulnerable to tempting offers from the competitor. They provide little future company growth.



Detractors

Score between 0 – 6. Dissatisfied customers that could damage the image of the brand by word of mouth and seriously undermine growth.

$$\text{NPS} = \% \text{ Promoters} - \% \text{ Detractors}$$

(NPS > 50% considered to be very good)

It is in widespread use for the following reasons:

1. It is less invasive and cheaply acquired. The number of replies received is usually high and conclusions are thus statistically representative. The analysis is usually enriched by questions concerning the reasons behind the scoring.
2. It can be easily interpreted and processed. The resulting KPI²³ is normally used as a performance yardstick to compare the company with other units, countries or sectors. It "detonates" actions that seek to steer the organization toward customer centricity.
3. It is useful for measuring customer loyalty, which is key in the current context:
 - i. Gaining new customers in mature economies is a formidable task and providers become "plentiful" as the market morphs into Monopolistic Competition. Half the battle could therefore be won by gaining customers' loyalty. Economic models indicate a clear relationship between loyalty and NPS.

ii. The world's top 10 banks have >100 million customers each. Not all are active or work in exclusivity, and hardly loyal. Being loyal means that an iOS customer will never buy Android, a Gmail email user will never use Yahoo, etc..

iii. Loyalty (also known as a "link" in banking jargon) is the key to be able to sell more products to customers with greater recurring sales.

Econometric models reveal a clear relationship between improved NPS figures and the use of technology, since the latter simplifies the creation of cheaper and more convenient products for customers.

Contrary to what some may say, a comparison with other banks no longer suffices to analyze the NPS. It is essential to compare it with the likes of Google, Amazon, Facebook or Apple, since they could become competitors in the short term.

²³ KPI: Key Performance Indicator.



Company and Employees

In recent years, Corporate Social Responsibility has taken on a larger role in banking *Management* agendas. As the years have passed, the departments in charge of such matters have expanded their roles and are constantly growing in resources. This line of work contributes to the creation of a banking business model that is closer to customers and therefore sustainable over time.

While the intention of this report is not to list the objectives that banking should seek out, we will stress two areas that banking can nevertheless cover better than any other sector and that may prove to be significantly useful in achieving progress for the Company and other *Stakeholders*.



“Our societies cannot be truly free or responsible without a qualitative jump in 'financial literacy'. And all the available surveys concur in one disconcerting conclusion: an overwhelming majority of people do not understand the concepts of compound interest or inflation; the consequences of too much debt; the need to diversify financial investments, or even plan savings for retirement or contingencies.”

José Manuel González-Páramo, member of the Executive Board of the European Central Bank (2004 - 2012).



Social-Financial Education

Technology is transforming the lifestyle of all social groups, particularly its most avid consumers, children and young people. 86% of children under 14²⁴ has a mobile device from which they can make payments and even take decisions at an earlier age (cell phone contracts, credit cards, etc.). The system has the duty to respond to the following facts:

1. Generation X and the Millennials begin banking at the age of 22-24, usually after graduating from university or higher studies, getting their first job or becoming independent. Children and young people today are lowering the bar by 10 years, as soon as they get a mobile device from which they can handle their daily banking.
2. Economic development is propitiating thriving consumerism into society. Moreover, a purchase need not be accompanied by movement, since it is merely a *click* away with online payment.

3. The increasingly inverted demographic pyramid requires a perspective of longterm savings. Not everyone in today's population will be able to benefit from a pension protection system like our current one, and savings will need to begin earlier.
4. Consumers are faced with growing options for debt, which cloaks the seriousness of the problem (payment with credit card, *renting*, etc.).

Banking should increase its involvement in our communities and assume a leading role in the resolution of this educational gap, in which it is currently an orphan in the system. Unlike Google, Amazon and Facebook, banking has the right “mark” to assume educational leadership. Society should return to appraise the role of banks more positively and closer to reality.

²⁴ Source: Spanish National Institute of Statistics.

The Financial Inclusion of the Unbanked

The traditional banking *scoring* systems analyze (potential) customers via their payment /non-payment history regarding financial products contracted in the past. Regardless of the concerns that could be raised regarding the completeness or potential bias of this information (book value vs. cash *flow*; past vs. projected, not audited, etc.), its particular limitation lies in that the financial system excludes an enormous population group that has no minimum credit history, known as “the *unbanked*”.

According to the World Bank, 52% of the world’s adult population is *unbanked*, a percentage that varies considerably across the continents. The problem is not so far away from the western world and, in the USA 33, million people²⁵, i.e., 10% of the country’s population, are *unbanked*. In some countries such as Spain, for instance, there are 2-3 million employees²⁶ working in a shadow economy, i.e., with no paycheck, which thus makes access to the financial system particularly complicated.

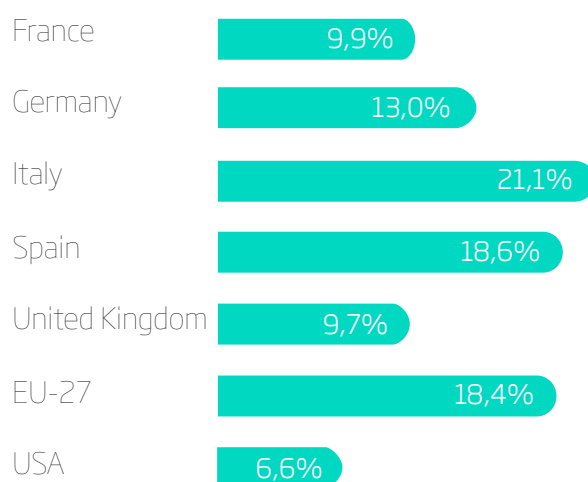
This report will examine the bank’s new possibilities to gain and analyze alternative data sources further below, and these prospects will enable us to reach new frontiers in credit risk analysis for this customer profile. Some of these alternative data are:

1. Data from telephone bills, since they correspond to non-random patterns.
2. Data from utility bills, which can demonstrate an economic capacity that is not necessarily on record in the “official” circuit.
3. Data gleaned from psychological behavior tests especially designed for this purpose.
4. Etc.

Progress in the development of these systems simplifies the financial inclusion of a large portion of the population. Firstly, it would enable a bank to extend its business coverage without having to scrap over new customers that can be gained in mature economies by eroding margins. Secondly, it would alleviate the burden of social exclusion that poverty entails and end up turning it into a chronic social problem.

Financial education is knowledge that helps create social equality among children, and will accompany them throughout their lives.

Shadow Economy as % GDP 2014



Source: Eurostat

It is obvious that new technologies enable banking to expand its role into communities and lead important social progress. Employees can also be significant beneficiaries, with initiatives such as Flexiworking at Santander, where new technologies are used so that employees can tailor their working hours with no need to show up at the branch unless necessary, which results in greater harmony between job and personal life and an increase in work productivity.

²⁵ Source: 2015 National Survey of Unbanked and Underbanked Households (Federal Deposit Insurance Corporation).

²⁶ Sources: Flexibility at Work 2014 (Randstad) and the Spanish Business Competitiveness Council.

Differences with the Old Model for Creating Value

Primarily two:

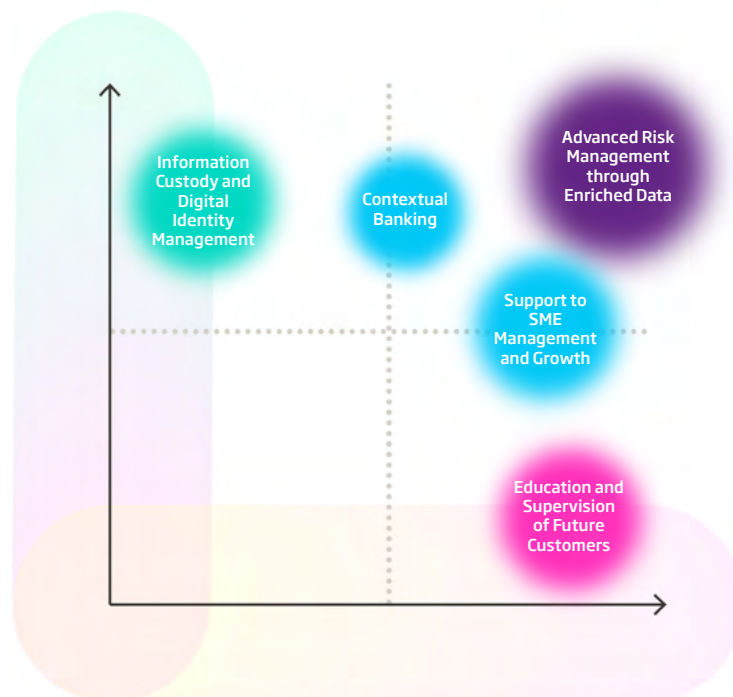
A. Attention to All Stakeholders

Before the crisis, the Creation of Value was interpreted in a single dimension, that of the Shareholder (represented in the chart on the Vertical Axis). Any action that resulted in greater growth, more returns and less risk created value for the Shareholder and, apart from only a handful of entities, the impact on the other Stakeholders (represented on the Horizontal Axis) meant very little.

After the crisis, however, the Creation of Value moved to another plane, taking on two dimensions. The axis incorporates other Stakeholders, who, regardless of their varying degree of interests, should be understood and looked after. Solely innovation based on disruptive technologies applied to business use cases will enable a balanced Creation of Value.

Creation of Value for Shareholders. Leverages:

- Greater return rates
- More growth
- Less risk



Creation of Value for Society, Customers and Employees, levers:

- More social progress
- More convenience
- Lower price

B. Estrategia Dual: Cost Management and Product Differentiation

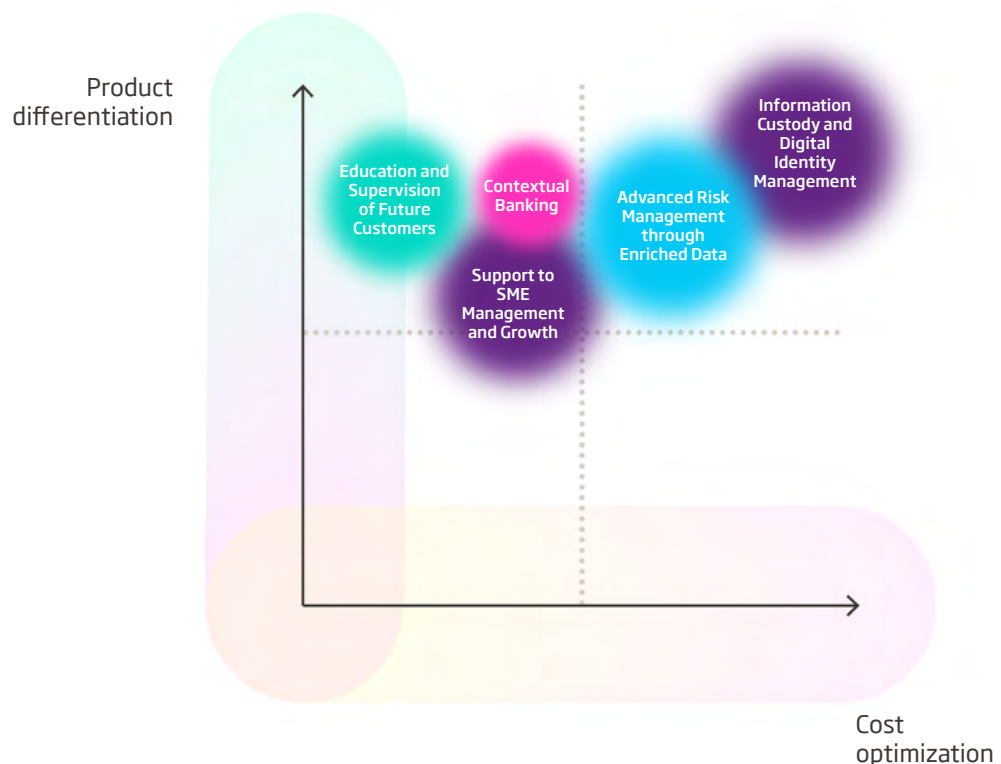
The idea that there are only two possible corporate strategies and that one must be selected is being ruled out:

1. **Cost Optimization Strategy.** This is the business model that has only recently been adopted by all banks. The Efficiency Ratio is the fundamental KPI that has invigorated a lowering of the costs of physical presence (branches) and staff adjustments.

However, in the digital era a bank cannot aspire to be the *best-in-class* only because of its efficiency ratio. Example: With all the cards from all the banks aligned in Apple Pay, why would a customer choose to use one bank card over another? What difference does our 40% efficiency ratio mean to our customers? Customers will use our card if it provides them with differential added-value services.

2. **Product Differentiation Strategy.** Business model followed by Apple with its iPhone. All telephone features are very similar but only Apple is capable of getting thousands of customers (though "fans" would be a more appropriate term) to sleep in the streets the first day a new model hits the retail market.

Modern technology makes the combination of both strategies possible. This has already been done by other companies in other sectors that were capable of assuming leadership in terms of costs with differentiated products (Zara, Ikea, Mercadona, Amazon, etc.). The challenge is rather complex and not all questions and answers lie within the banking perimeter.



05 --- A different way of creating value to respond to the new context

To achieve this, banking needs to reach excellence in 4 areas:



The most accurate and quickest in assessing risks



The benchmark in information security and digital identity for customers and non-customers



The best at extracting intelligence from massive data of enormous value for third parties



The best at providing customers with services of value that are a natural extension of the current banking services

06

New products and services enabled by disruptive technologies

Our capacity to digitally re-imagine the business of a bank requires no profound knowledge of state-of-the-art technologies. Instead, we only need to have a clear digital strategy and some leaders sponsoring the cultural change toward innovation. Digital maturity will be achieved when strategy and culture transfer to concrete use cases of the business, which is not quite as obvious as one might expect, as the efforts of numerous banks and technology companies can certainly attest.

Once Smartphones have tipped the balance in favor of customers, only *customer centric* businesses will survive. To avoid “putting the cart before the ox”, there are matters to address before we can talk about technologies:

1. **It is essential to enter from the field of psychology.** Customers have matters of interest in which they need to make progress. At the same time, they prefer to attempt it alone, which thus takes us to the first stage of Maslow's hierarchy of human needs, namely self-esteem:
2. **The next step requires:**
 - Changing the manner of interaction, though to do so will require a certain amount of skill in UX techniques to dispel the usual friction with which banking delivers its products.
 - Changing the manner of dealing with customers, which will require dialog, more easily and economically done today through tools such as instant messaging or social networking.
3. **After understanding the customer and dominating the technique for interaction, the remaining technologies are mere facilitators:** social networks, real-time decision making, predictive consulting, etc..

Strategy, not technology, is the *driver* of success in digital transformation. Technology is irrelevant to customers. Similar to Generation X customers, who will never say that the “hertzian waves are being received with interference”, but rather “the radio is picking up static”, today a child would say, “the iPad isn’t working” and never consider that the issue might be the home wifi network.

Can a customer’s purchase of a pair of Knockaround sunglasses be interpreted as buying a needed object, or is the customer buying fashion or even the lifestyle of Jessica Alba? This is... psychology!

If we cannot ascertain what Customer 3.0 is looking for that Customer 2.0 was NOT looking for..., how will we know what bank product to offer and through which channel?





Information custody and digital identity management

The pressing need of the financial sector for creating a new digital relationship model with its customers requires yet is not limited to the following:

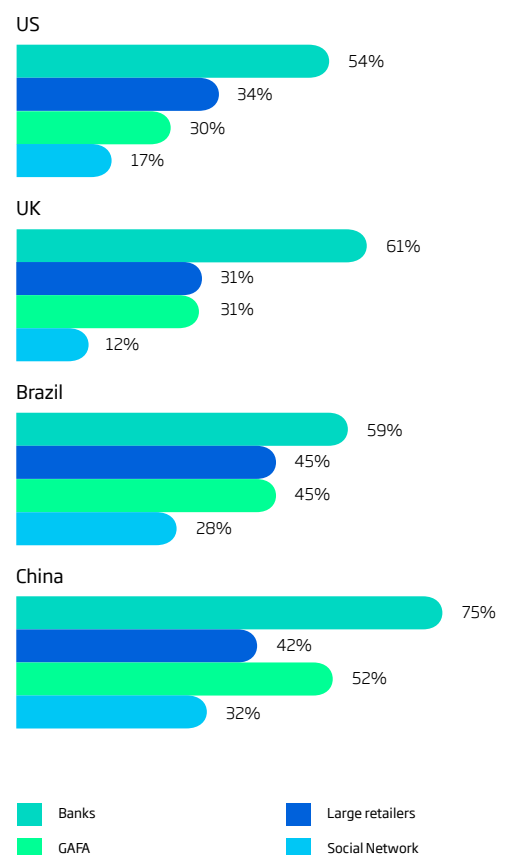
1. A new **delivery** model to replace the traditional branch-based model. This seems to have already been resolved through Smartphones as the new bankcustomer communications interface, though the device being outside the control of bank security is no trivial matter.
2. Some **added-value services** that require the personalization and contextualization of commercial proposals to the customer (contextual banking) based on the customer data that the bank has at hand. Given that these data rapidly become obsolete, it is essential to continue transmitting the maximum sense of security and observance of the pertinent legislation in force regarding the protection of personal data so that the data, which will gradually turn into "gold", continues flowing.
3. A **user experience (UX)** at the height of the bar set by GAFAs and Fintech. A Bank 3.0 would not have a good UX if, when taking on a new customer (*onboarding*), the customer needs to stop by the branch to sign a stack of papers or when the bank needs to delegate the identification of the user to a trusted third party.

The capacity to be able to accompany the user securely throughout the *customer journey* will prove to be the difference maker for gaining customer trust and mark the distinction between success and failure.

How does each participant in the new banking model view security issues?

- **Customer:** Considers security to be a hygienic factor ²⁷. Customers assume that their data are duly safeguarded and, so long as this is true, they have no qualms against sharing them. Banking is still considered by individuals and companies to be the most trustworthy sector for this task.
- **Regulador:** The new regulation in force (BCE, SecuRe Pay, PSD, EMV, etc.) attempts to provide

Consumers that Trust these Sectors as Custodians of their Data



Source: FICO and In-house research

the financial system with more protection and a greater capacity for fraud detection and reaction.

- **Financial Entities:** GAFAs and Fintech threaten their status as incumbents, protected by support including greater regulatory leniency and new legislation such as PSD2 that levels the playing field for the payment world.

²⁷ Customers who take them for granted when in hand but display immense dissatisfaction when they are not available.



Banking, particularly in Europe, has a window of opportunity (18 - 24 months) to leverage its potential on this greater regulatory requirement to build a sustainable competitive advantage based on the provision of trust and differential security.

- **GAFA:** Aware that the allure of the financial market can only be capitalized from maximum security insofar as handling information. Solutions such as Android Pay or Samsung Pay are openly against their underlying DNA of technological ecosystem and open business by being unavailable for devices that have been *rooted* at some point in time.
- **Fintech Startups:** Though champions of modern technology, movement agility and UX, they lack scale and systems. Their business models are not yet ready to be considered mature and they thus can guarantee neither security nor the fraud control that users and the regulator require.

Cybersecurity, as a discipline, provides two alternative solutions to these business issues:

1. Digital Identity Management

Grouping technologies can certify the user throughout the entire *customer journey*. This identification is critical to be able to provide added-value financial services and contextual banking, ensuring a modern UX (convenient, trustworthy and online) while guaranteeing full regulatory compliance and management of the risk associated with the particular business.

The three "moments of truth" that the system must be capable of handling have different technological, regulatory and business implications:

- Online and unattended registration of a customer (*digital onboarding*): The most critical process on which a genuine digital *end-to-end* experience can (and should) begin to be built. Once again, Smartphones are a central piece together with other hardcopy and electronic verification instruments, encrypting with certificates, biometrics and dynamic management of adaptive risk *scorings*
- Multifactor authentication of operations (transactional): Primarily associated with payments, representing the largest volume of operations. The combination of different biometric mechanisms, certificates, device Id and adaptive profiling in terms of security and business becomes key elements in a secure UX without friction while also compliant with SecuRe Pay
- Contextualized contracting (digital *up* and *cross selling*): Provides a means to the explosion of financial services in digital banking to begin to shape the new ecosystem. The capacity to identify, manage accreditation in the digital world, and profile behavior in terms of security and business constitute the core of the contextual provision of financial services... and also non-financial services

Thus, the provision of Digital Identity services, whether by the entities themselves or through trusted third parties, is a crucial building block when constructing and capturing sustainable value in the new ecosystem of contextual banking.

2. Fraud Control as a Service

Nonetheless, this ecosystem, in which new services arise (financial and non-financial) with the agility with which Apps can be published, translates into a sort of "chartered risk", a situation in which there is uncertainty as to whether all the involved agents are in conditions to act.

Firstly, the financial entities, subject to a regulation insofar as their role of systemic stabilizer, have increased their fraud control systems; and security, technological and operational risk policies. However, users' mobile devices do not form part of these systems. The Apps being developed are providing infinite opportunities for business but also new cyber-risk paradigms (e.g., evolution and sophistication of *phishing*), and the affected agents, some of whom must charter this risk, are not contributing to the security of this "new system" in an organized manner.

The capacities to glean information for fraud control, build analytical intelligence and make it available as a service to consume by the parties involved in this ecosystem are therefore becoming increasingly necessary and relevant. Similar to a file of financial holders or banking fraud lists that entities have been using for many years, there is a need to be able to control fraud by harnessing the information potential available from various sources:

- The device from which it was detected.
- The nature of the affected business operation.
- The nature of the fraud (identity, document, payment methods, etc.).
- The channel (at the office, website, mobile device, *call center*, etc.).
- Including the sector, since the frontiers between *retail*, Fintech and banking are gradually wearing away.

In this scenario, again, financial entities can use cybersecurity technologies to build a competitive position and make it sustainable, intermediating the new Fintech ecosystems in terms of fraud.





The creation of a new relationship (digital) with customers, who receives support to take steps toward objectives

“

Our objective is to simplify our Customers' relationship with the Bank: where they want, how they want and when they want

Ana P. Botín, Chairwoman of Banco Santander, General Meeting of Shareholders of Banco Santander 2015.

”

Traditional banking is facing a serious problem in the *delivery* phase of its *retail products*. Overall, this delivery occurs with a friction that customers are tolerating less and less, which crushes most of the phenomenal work done by the bank during previous phases in the value chain.

For some years now, this weak point has been exploited by Fintech and GAFAs, who can easily enter into products with greater levels of friction and the capacity to eliminate the friction with technology.

It would thus be no exaggeration to say that User Experience (UX) is the holy grail of *retail banking*. There are two levers for achieving excellence:

1. **Convenience:** Helping the customer gain access in the most convenient manner (without friction in contract underwriting: streamlined, at the right moment, in the right place, where the customer wants) to products that the customer considers will be useful for reaching his/her personal objectives.
2. **Price:** Helping the customer get them at the best price.

Price and Convenience are the two drivers of disruptive customer behavior.

Contextual Banking is the best way to create a new digital relationship model with customers based on the concepts of Price and Convenience. It also affords the possibility of an emotional connection with customers, when they see that “their bank” is there for them precisely when they need help to achieve personal goals.

What are Contextual Banking products?

Products that enable the start of a relationship with customers in the first phases of the *customer journey*, providing them with consulting to get the best price and instant financing.

Customers who view their banks as an ally helping them and providing them with access to the banking utility at the right place and right time, return the favor with loyalty (*engagement*).

Contextual banking is not greater functionally, but: i) right place; ii) right time and iii) simple product,

“

Our purpose is to make the financial lives of our clients better and help them be successful

Bank of America

”

simple execution, capable of being engaged in no more than 3-5 *clicks*. If more *clicks* are necessary, it is poorly conceived and will not work.

These products are also beneficial to banks. Among the long list of challenges facing banking, three are particularly prominent:

1. **Customer Capture:** Useful in seducing customers, similar to what GAFAs have been doing, providing them with the sensation that their bank is backing them just when they are making a critical purchase.
2. **Cultivating Customer Loyalty:** Advising customers to help them achieve their personal goals and at a better price, thus reinforcing their loyalty, particularly for customers who usually work with various banks.
3. **Protection against the Erosion of Margins:** Accompanying customers throughout the purchase process reduces the likelihood of competing with other financiers and earn customers at the cost of eroding margins.

Example of Contextual Banking when Purchasing a Vehicle

After 10 years with the same car²⁸, a MyBank customer is thinking about buying a new vehicle. The main concerns that could confuse the customer are:

1. How can I find a car that meets my needs and budget?
2. How do I know when I am getting the best price beyond the official prices?
3. Will I be able to get financing for the purchase? Oh boy, another hassle with the bank...

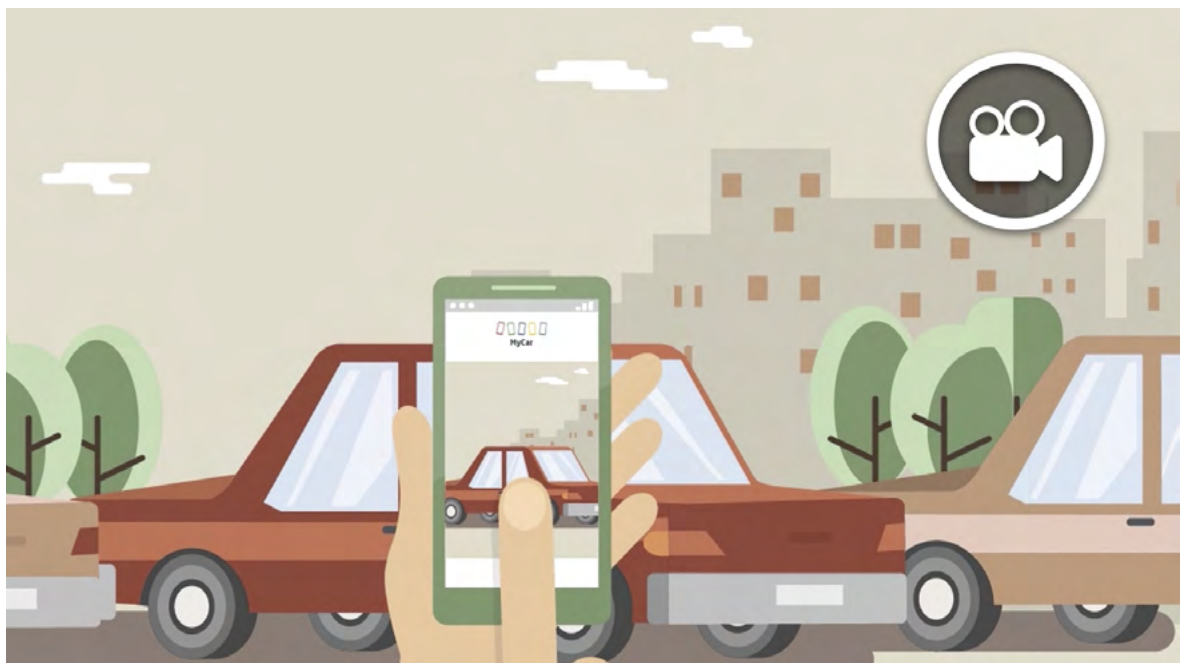
In line with this broad role that the Bank 3.0 must assume in the community, MyBank has equipped its mobile banking with a tool to help customers buy a car, accompanying them and providing advice throughout this entire end-to-end process. The tool is useful for:

“

Simplicity is the ultimate sophistication

Leonardo da Vinci

”



²⁸ The average age of automobiles is 8.5 years in Europe and 11 years in the USA

- Helping customers find the cars that attract them the most or recommended by his peers, providing information on them and even auto insurance quotes (*cross-selling* potential for the bank).
- Instantly knowing whether financing is available for the purchase and also how to configure the financing in amounts and terms. Requesting the account deposit.
- Receive better terms and conditions because of the existence of prices negotiated by the bank for its customers.

- Visiting the dealership with all the paperwork done online.

...and even when customers, for any reason whatsoever, do not complete the process, the bank will have valuable information with the need to be capitalized.

When banking is incapable of generating contextual banking products, GAFAs will generate them, using the products thereof as if they were a *utility*, and thus making them lose a substantial part of their value.

Banking, the *Minority Report* of Financial Product Consumption

Banking is a retail industry of financial products; just like Zara sells bags or skirts, banks sell loans or payments. The primary difference is that while Zara products are the customer's final objective, hence the objects that produce satisfaction, financial products are a means to achieve these objects. Customers would happily avoid such means if they could, since they perceive that their consumption generates friction and an elevated cost.

Minority Report is a science fiction film directed by Steven Spielberg (2002). In the year 2054, captain John Anderton (Tom Cruise) is Chief of PreCrimen, a special police force based in Washington. The movie depicts how visions of the future are used to prevent murders, including the time and perpetrator of the act. The city of Washington has had 6 years free of crime because of this system.

For many years, Amazon can be considered as the *Minority Report* of retail online. Amazon's understanding of its customers lets the company anticipate and suggest useful purchases that would even surprise the consumers themselves. This is being truly digital. In contrast, a traditional bank provides financing for a car or house after the customer has already done the searching. At this point, the customer can pit various financial entities against each other and thus unknowingly erode banks' return rates.

Banking should become the *Minority Report* of financial products. There are excellent resources available to do so:

- Highly valuable data and other data that could in turn cultivate other data in proximity of their customers' buying processes. Such an intrusion will only be permitted after the customer understands that the bank is helping to find the best prices, informing of the prospects of financing and whether the customer's can afford it through the use of PFM tools.
- Highly powerful technology systems and IT investment capacity to progress toward critical capacities such as real time. The derived expense might cause a decimal drop in RoE, though that should not become a stopper, since we are dealing with a matter of *make or die*.



The importance of helping SME management and growth

SME managers, similar to individual customers, are carrying supercomputers around in their pockets and are willing to manage their company with mobility tools.

SMEs are the principal driving force of economic growth in Europe and the United States. Similarly, SMEs in Europe and the USA generate 2 of every 3 jobs and represent 60% - 50% of the GDP, respectively²⁹. The new Basel regulation provides incentives for granting loans to SMEs as a means for economic stimulus, lowering the calculation in the needs for required capital.

SME is a segment that has so far been highly profitable for banking. In Europe, this segment represents 12% of banking's total revenue and 10% of its customers. During the crisis, however, the banking-SME relationship model revealed a certain instability for a few reasons:

- While still in 2015, 40% of banking operations are done through a branch. The bank should foster the

digital transformation of its operations and those of SMEs to get this percentage down to 15% by 2020, a goal shared by both parties according to the various surveys.

- Credit provisions have exploded during the crisis, which suggests some scoring systems still not sufficiently mature according to new disruptive technologies (*big data*).
- According to the different surveys, satisfaction levels are generally low because of the poor quality in the service associated with low-value intermediaries (personnel with insufficient training and advice skewed by business interests).
- The crisis has encouraged the widening of geographical frontiers for SMEs, though international payment transaction processing is slow and costly. New technologies such as Blockchain, which permits the confirmation of international transactions in 10 minutes at a cost of €0.05, could be the decisive impetus.
- SME Management, which is up against issues of increasing complexity, has raised its expectations as a whole, arising from the digital transformation process of the economy in general and its own experiences as individual consumers.



²⁹ Source: European Commission and the U.S. Small Business Administration.

Banking can only survive by enlarging its role in the community. One way to do so is by engaging in the progress of SMEs more intensely, which can be done by helping them find solutions to their daily issues through digital transformations. The problems include two prominent issues:

1. Customer capture and retention. Banking draws from highly valuable data of potential SME customers, which can be capitalized to benefit banking, the SME and the final customer. The evolution of the banking business model will entail the aggregation of data, from which value can be extracted. The frontiers between sectors are dissipating, permitting the creation of new products such as personalized coupons, offers based on geolocation, etc., in exchange for commissions from *retailers*.

In particular, modern technology enables intelligence to pervade bank card transactions to extract the consumption patterns of individual customers, which can prove to be extremely useful information for SME customers (primarily shops) and without generating any conflict with the individual. Shops can launch discount campaigns for customers identified scientifically (vs. the erstwhile *broadcast* marketing) which lived or worked in the shop's area of influence, and whose expense profile corresponds with the product / service.

Shops can schedule their campaigns (dates, time slots, discount %) online while individuals use their mobile devices (previous authorization) to receive - with the intermediation of the bank - convenient and cheap promotions, though not entailing a service of inferior quality (final recipients are unknown to the Shop).

This system is beneficial to everyone involved: The bank provides the incentive to pay with its card and receives a commission on the business for managing the marketing campaign; Marketing promotes sales; and the Customer gets savings in terms of *cashback* at the end of the month for accumulated discounted.

Technology (particularly data processing) is once again the magic ingredient that lets the bank stand apart from the competition.

2. The professionalization of management. The impossibility of economically and technologically assuming tools that would improve management in administrative operations (issuing invoices, liquidating expenses, etc.) and financial operations (*cash management*).

While traditionally these advanced systems were only accessible to large companies, SMEs can nevertheless gain access to them with the support of their banks, who have sufficient critical mass to do so. Once again, technology lets SMEs / freelancers optimize the management of their business from their mobile device or tablet:

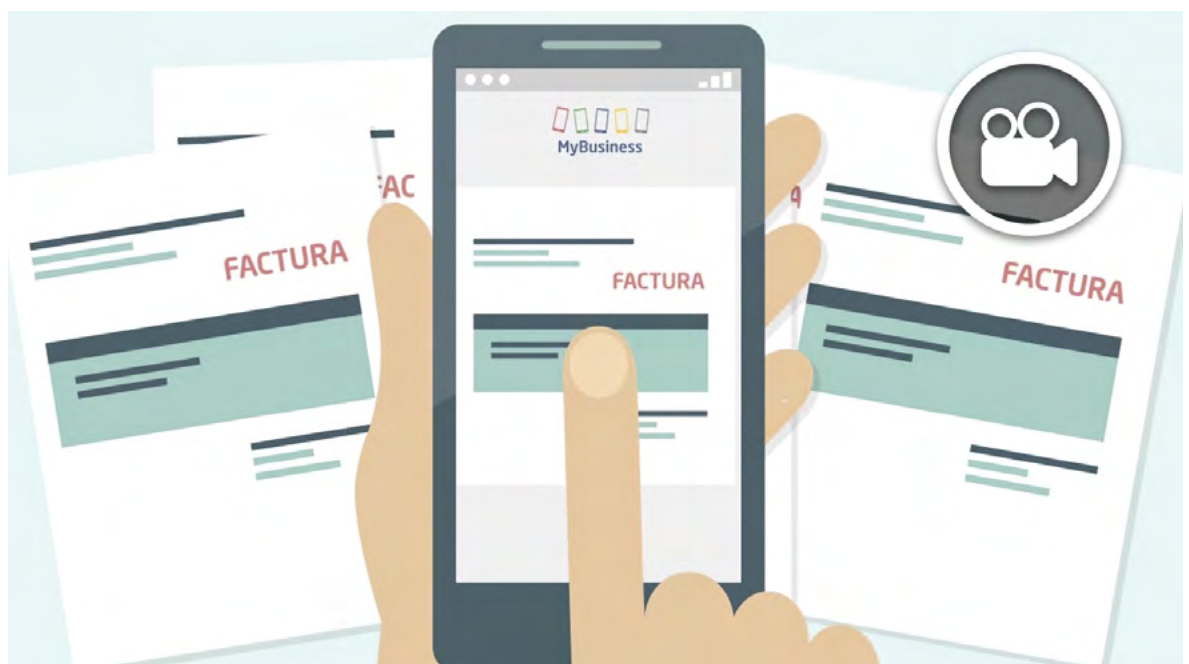
- By photographing bills and receipts, hardcopies and associated administrative tasks for handling them can be dismissed. OCR technology automatically captures data (tax identification number, amount, date, taxes, etc.) while storing an image that is legally valid for the corresponding tax authorities (hardcopy can be destroyed).

- SMEs can simply use their mobile device at any moment to check the status of their business revenue and expenses, as well as pending collections and payments.
- Electronic invoices can be issued in mobility, with all the information recorded and accessible from the cloud. Moreover, beginning in 2017, this will let them join the Spanish tax authority's immediate information supply system (SII) for submitting VAT declarations and operations with third parties, since the Spanish tax authority will have these data automatically.
- SMEs can recover the VAT borne against receipts by converting them into electronic invoices (estimated at ≈€200 / year per SME/ freelance). The bank can create an incentive on the use of this card for these payments.

Helping the SME in digital transformation will increase customer loyalty, fostering the transfer of operations through digital channels and therefore accelerating the redefinition and redimensioning of the branch network, savings that investments in technology will always yield a better *Return on Investment (ROI)*.

Some additional considerations:

- The differentiation of the banking product via services of value for the SME is crucial, since this segment always works with various banks. The net interest income should step down from prominence in favor of other lines of income.
- SMEs are not reluctant to pay commissions for services when they see the value in them.
- It is better to discontinue complex products that need "to be sold" by the manager. If its value is not clear, it will not work.
- The friction in interactions with customers must be lowered. In this regard, the *customer lifetime value* is affected more by first resolving certain UX issues before delighting the customer with advanced features.
- There is an ongoing industrial renaissance in traditionally mature markets that justify the investment in this segment and the development of new and differentiating skills such as financing Foreign Trade operations.





The commitment to education and the financial supervision of future customers

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The financial preparedness of our nation's youth is essential to their well-being and of vital importance to our economic future. In light of the problems that have arisen in the subprime mortgage market, we are reminded of how critically important it is for individuals to become financially literate at an early age so that they are better prepared to make decisions and navigate an increasingly complex financial marketplace

Ben Bernanke, chairman of the United States Federal Reserve (2006 - 2014)

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The financial crisis has also uncovered weaknesses on the customers' side. The most disturbing is the lack of basic financial knowledge, essential for creating consistent savings, responsible debt management, better personal risk managers and rational consumers capable of defending themselves from the social pressure of over-consumption.

The most traditional educational systems are based on the massive storage of knowledge by students that, while useful for resolving modern problems, will hardly be of any help 20 years in the future. In this regard, the professions and trades in which most of the active population will be working has not even been invented yet.

In contrast, financial education has no expiration date and is unquestionably a tool that helps both individual and society progress. It is thus surprising that financial education is not part of the basic education system except for countries such as the United Kingdom, which has proven to be a worthy model:

- For more developed countries have the capacity to invest in their educational system.

- For emerging countries, since they have population pyramids full of children and young people, who are the foundation for future economic development.

Cultivating future customers by educating them on concepts such as Savings vs. Investment, Budget framing, Good Consumer Practices, the Role of Banking, etc. is also a way of innovating in capturing and cultivating the loyalty of future customers (children) and current customers (parents).

While the education of children and young people is important, the supervision and control thereof is no less important, given that, precisely because of these technological developments, this age group begins making spending decisions 10-12 years earlier than the previous generation.

Payment method technology is fundamentally useful to meet this social challenge. There are products specifically designed to assist parents and children in their financial relationship and *real-time* supervision without hindering the broad spectrum of features available for real and online consumption.

Example of the use of payment methods for financial supervision

A 13 year-old teenager begins a certain social life with a weekly allowance. Instead of receiving his allowance in cash, MyBank provides customers with a prepaid card (TeenCard) with which the adolescent can manage expenses through purchases in an extensive network of shops adhering to the Visa system.

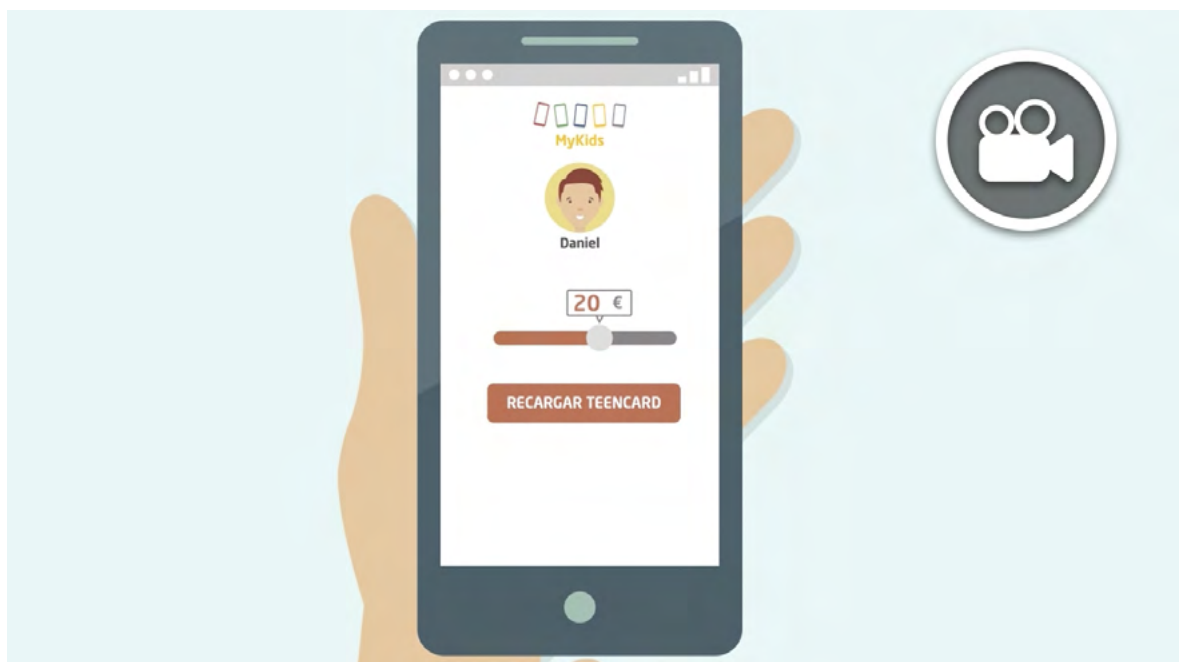
TeenCard can help the teenager take his first steps in managing personal finances:

- The system lets him see a breakdown of his expenses.
- It even lets him establish savings goals, which are monitored by the system.

- Within a few months, the card is capable of analyzing the teenager's economic behavior and will predict the available balance at the end of the next six months.
- The tool also provides multimedia lessons teaching good practices to improve an understanding of finances.
- The tool also lets parents establish motivational tasks for the teenager.
- TeenCard also permits payments between card holders.

Parents are informed via *push* messages of the expenses incurred by the teenager at all times, can chat with their child without having to close the application, and can even handle complicated situations such as loss (blocking it) or increasing credit.

The technology currently available (social networking, gamification, etc.) and others that will become generalized, increasingly accessible economically for the general public, provide unlimited possibilities to innovate, creating value for Customers, the Company and Employees.





Differentiation through advanced risk management systems with enriched data

Risk assessment and control is perhaps the most characteristic and differential process in the value chain of the banking sector because financial resources can be efficiently assigned through it. It is also obvious that proper risk management shores up the sustainability of the system, providing the necessary balance between credit growth and financial solvency.

Banks have both the responsibility as well as a need to gain excellence in this field. The responsibility to prevent the repetition of the errors of the recent past that drove the system to a financial crisis without precedent. The need because, as explained above, banking is currently facing a profound transformation that requires greater efficiency and differentiation to generate a competitive advantage over the newcomers who are much less experienced in comprehensive risk management (admission, tracking and, possibly, recovery).

Attaining this excellence requires a reassessment of the traditional process, which has already demonstrated its agility or capacity limits in the use of genuinely predictive variables on the behavior of a borrower. As we will now see, these subjects are not trivial for the new Banking 3.0.

Technology, the “magic ingredient”

Cheaper technology, increasing computational power and growing data collection capacity enable advanced risk assessment in the Admission phase:

- Much **quicker**, since it virtually eliminates all human intervention. Speed is the difference maker in at least the following cases:

- i. Enables access to opportunities for financing solvent borrowers that the competition often gets because of their agility. It is fundamental to combine this with customer activity monitoring (social networks, etc.), *paperless processing*, digital signature capacity and collateral assessment based on automatic property appraisal systems.

- ii. Enables the possibility of building a new relationship with Millennials, who are sensitive to quickness and the elimination of friction during the Admission phase. Their lifestyle will prove useful for gleaming more data on them to better characterize their risk.

- iii. Enables the possibility of building a digital relationship model for customers based on contextual banking products such as the ones explained in this report.

- Much more **accurate** by enriching the variables normally used for sanctioning risks, normally accounting based but neither updated nor audited. The data used are sector based, socio-demographics, cash flow, projections and automatic real-time appraisals of the collaterals.

Accuracy is the difference maker in at least the following cases:

- i. Enables the use of advanced *pricing* techniques for all customers, leading to more competitive prices.

- ii. Permits the incorporation of new groups into the banking system, which has proven to be crucial in current banking, which is working in very mature markets:

- Early capture of groups that, while meeting all the conditions for incorporation into the banking system (payslip, solvency, etc.), nevertheless have little transactional history.

- Groups that do not have the standard conditions for incorporation into the banking system (in countries such as Spain, there are 2-3 million workers in the shadow economy), even though they could be highly profitable customers.

Skillfully handling speed and accuracy in risk management provides a competitive advantage over newcomers and other banks.

Likewise, in the risk Tracking and Control phase, mathematical computation techniques can help forecast (with a sufficient number of observations) possible insolvency situations (early warning) or early signs of a customer's improving solvency. *Automated Valuation Models (AVM)* can also be used for continuous monitoring and forecasting of the solvency of an entity's asset.

These AVM systems are extensively used in the USA and UK, and many other entities all over the world, including Europe, have begun incorporating them at the expense of other statistical models such as the ones based on indices, which do not appraise each individual asset, are based on unrealistic historical

appraisals and use generic price update indices that are not very accurate.

AVM systems enable the perfect tracing of each sample used in the appraisal; and automatic and individualized, real-time appraisal (asset per asset) of the real estate collaterals and foreclosed assets in the massive portfolios held by banks.

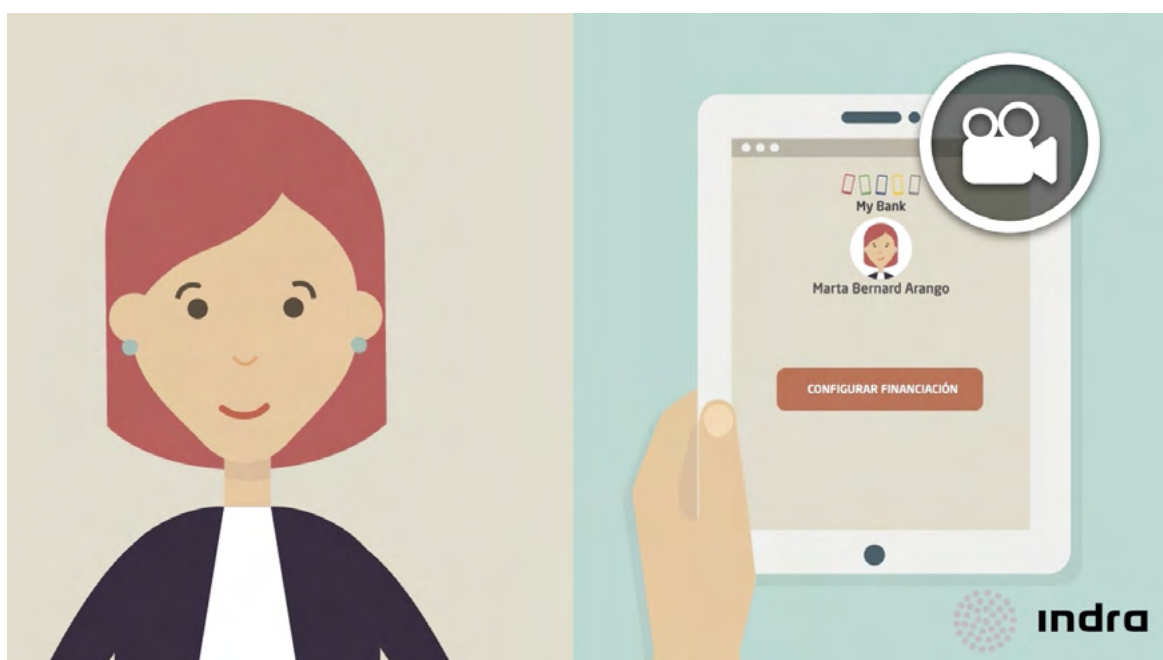
The Fintech *scoring* systems seem to be less demanding than traditional banking insofar as SME financing (approvals of 60% vs. 30%).

The concerns are:

1. Whether they are capable of discriminating more specifically or if they are more lenient without being checked in a complete economic cycle.
2. Moreover, given that most Fintech companies are merely intermediaries (they do not assume but only allocate risk), this might mean new low-quality asset dissemination without regulatory control.

Steps to secure Excellence in Risks

1. Standardization and systemization in the generation of models and variables
2. Aggregation of data for comprehensive exploitation thereof
3. Provision of greater intelligence and agility by enriching traditional *scoring* systems and advanced automatic collateral processing
4. Progress in fraud control by using advanced recognition techniques and information crosschecks
5. Adaptation of models and reporting to growing regulatory requirements
6. Implementation of plans and systems for improving recoveries



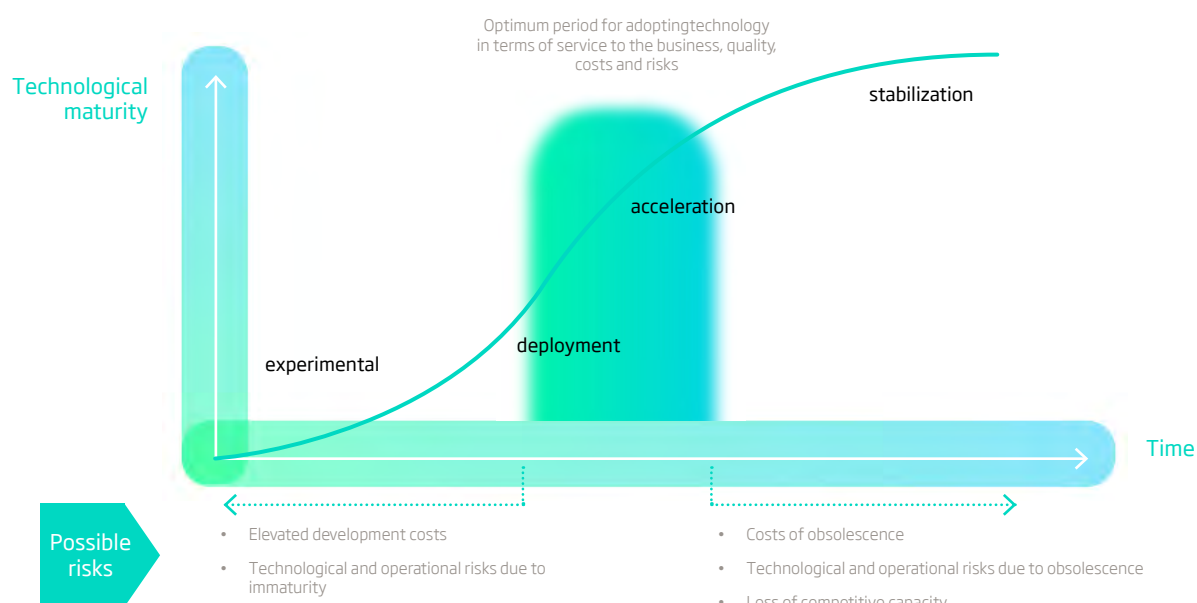
An improved risk control is also a way to create value. It enables growth without increasing the aggregated risk, yet lowering the Cost of Capital.

07

Expected technological developments in banking for the short, medium and long terms

The first issue that a bank's technology area should resolve is how to provide suitable support to business processes with the most efficient structure. The second issue to address is the appropriate moment to adopt technological developments. Both tasks would seem rather daunting in light of the plethora of emerging technologies currently available, each one in a different phase of maturity.

The adoption of a technology too soon or too late could entail substantial consequences in terms of cost. Thus, a good job in consulting cannot be limited to merely identifying the technological tendencies that will asymptotically end up being generalized. Rather, consulting should help the bank management team by forming an opinion in which they will go *mainstream*, which is most likely when the customers will make their decisions.

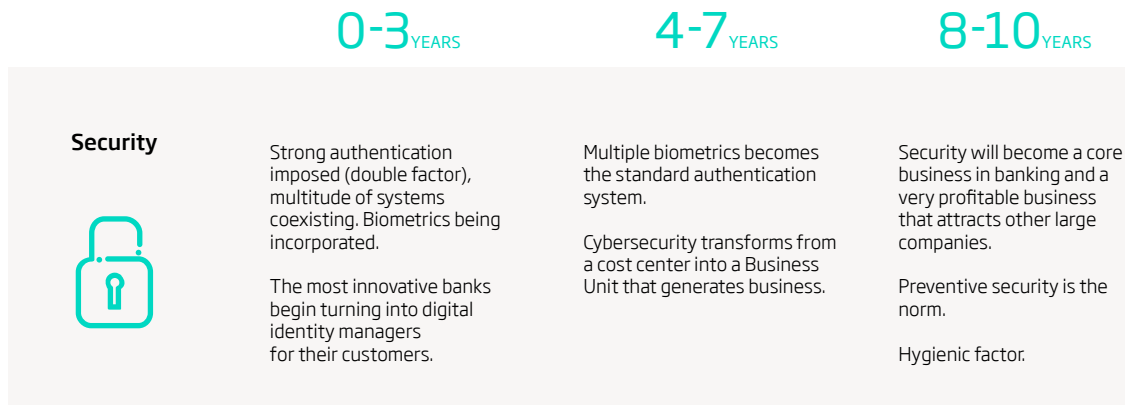


The developments expected for the short, medium and long terms entail:

		0-3 YEARS	4-7 YEARS	8-10 YEARS
Channels	Smartphone / Tablet / Wearable	<p>Increased banking features from mobile devices. Very few products require a trip to the branch.</p> <p>Possibility of signing up a new customer from a mobile device (<i>digital onboarding</i>). Mobile convergence – <i>social banking</i>.</p>	<p>Final impulse of contextual banking, assisted by real-time payment methods.</p> <p>Payments will finally transfer to mobile devices / <i>wearables</i>.</p>	<p>The differentiation between mobile/ PC online banking will have disappeared since the traditional PC will be replaced by hybrid mobile devices.</p> <p>Contextual banking and real-time payments will become the norm, and a multitude of added-value services will be built on the basis of the user data and infrastructure of <i>real-time</i> payments.</p>
	PC online	<p>The number of accesses to PC online and mobile device banking shall be equipped.</p> <p>Websites will be redesigned to make proposals simpler and more transparent.</p>	<p>PC online banking acquires the role that the branch used to have for a range of more complex products (long-term planning, etc.).</p> <p>Integration with support channels via telepresence services.</p>	
	Branch	<p>Branches will become leaner. An excessive number of branches / ATMs is viewed as an unnecessary cost and risk to manage.</p> <p>Different branch models will arise to take advantage of personal contact.</p>	<p>The gradual decline in cash will affect the number of ATMs.</p> <p>Branches will become a sort of luxury product and commission will be charged to operate from them.</p>	<p>Branches will become somewhat residual, adapted to groups of customers / highly specific products.</p> <p>Some banks forego branches with banking operations.</p>
	Remote	<p>Different manners will become mobile (calls, emails and a substantial use of instant messaging).</p> <p>Virtual reality will begin to be employed as a channel for some products of greater added value.</p>	<p>Voice will give way to the image.</p> <p>Increase in personalized consulting through various devices (mobile, virtual reality, TV, Smart TV, etc.).</p>	<p>They will gain relevance for selling added-value products and for cultivating more human relationships with customers.</p>
Products and Services	Payments	<p>PSD2 enters into force:</p> <ul style="list-style-type: none"> Opening the payment market to a multitude of international participants. The card business suffers, cheaper replacements appear. Information Aggregators impair the Bank – Customer relationship. 	<p>A <i>real-time</i> payment system begins operations:</p> <ul style="list-style-type: none"> Strong tendency toward <i>wallets</i> that disassociate from cards. Appearance of numerous added-value services that make use of online features. <p>The use of cash drops definitely (< 20%).</p>	<p>The different payment methods will be converging toward a <i>real-time</i> system on which a multitude of services will be built.</p> <p>Payment experiences will be less invasive, and the physical step of “proceeding to checkout” will virtually disappear.</p>

07 Expected technological developments in banking for the short, medium and long terms

		0-3 YEARS	4-7 YEARS	8-10 YEARS
Products and Services	Consumer Finance	Entry of multiple competitors offering a different UX. Margins narrow considerably (30% reduction in profit).	Acquisitions of Fintech companies and convergence toward contextual financing processes. Support in alliances that enrich information to gain customers.	Convergence of models. The difference between a fintech financing entity and traditional banking financier for consumer credit is indistinguishable.
	SME	Branch operations reduce by as much as 30%. Banks launch services linked to added value: help for cash management, marketing, etc.	SMEs outsource most of their operations in systems provided by the bank (marketing, invoicing, etc.). Risk analysis becomes based on <i>cash flow</i> , <i>analytics</i> and agility becomes a differential element.	Operations in branches are set at 15%. Some banks provide treasury and cybersecurity outsourcing services for SMEs.
	Banking Private	Lowered minimum ticket to access this segment, which requires industrialization that is not mature yet. Better customer preparation requires professionalization in the <i>front-office</i> .	Managers begin performing their duties backed by cognitive computing tools and complex algorithms.	Artificial Intelligence designs the portfolios and automatically makes investment decisions. The profession is evolving toward building relationships.
	Mortgages	Entry of Fintech to streamline the process. Some countries begin to dispense with on-site appraisals, replacing them with <i>Automated Valuation Models (AVM)</i> .	The entire pre-signing process is digitalized, achieving a <i>time to market</i> in days instead of weeks. AVMs gain prominence in the creation phase.	Post-signature processes begin to be digitalized through the incorporation of digital identity and transaction verification tools via consensus (Blockchain?).
	Risks Analysis	Experimentation begins with enriched data in addition to the more traditional systems. Accuracy is improved but not agility in risk analysis. AVM gains ground for compliance and REOs.	Problems arise with a large <i>crowdfunding</i> platform that has laxity in admission criteria. Every bank's methodology is a competitive tool vis-à-vis banking and non-banking entities.	Companies specialized in risks through <i>analytics</i> consolidate as <i>outsourcing</i> for banks that have not developed their own methodology or for universal banks in new expansion zones.
Capture		The high-liquidity stage continues, though with rising interest rates compared with the previous years.	Tools (App) extended to provide added value to savings (<i>impulse saving</i> , etc.).	



How traditional banking should approach innovation to accelerate transformation

Innovation requires an executive team with a long-term vision, which goes against the short-term return requirements of shareholders, presentation of quarterly results, KPIs (type RoE), etc. On the other hand, some say that there "is nothing left to invent" in banking and that the results have been recovering as of late...haven't they?

1. In terms of Revenue: Not all the products have been invented and (especially) not all banking services, particularly at this particular juncture when the bank must consider expanding its role in the community. In short, they are still to be defined. It is essential to seek differentiation in a market that is abandoning the oligopoly:

- Products: Innovation should focus its efforts on new ways of delivery (primarily channels) and on improving user experience (primarily contextual banking).
- Services: Innovation should focus its efforts on providing added value services, which are services that enable customers to progress (help for SME management, identity management, etc.).

2. In terms of costs: The containment of costs in post-crisis banking is linked to the downward trend in provisions, staff and number of branches. This path for similar banks has virtually worn thin, particularly in countries where the efficiency ratio for systemic banking is approximately 45%.

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None of my inventions came by accident. I see a worthwhile need to be met and I make trial after trial until it comes. What it boils down to is 1% inspiration and 99% perspiration

Thomas A. Edison

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Resources of Innovation. The Need for a Dedicated Team

In his book, *The Innovator's Dilemma*, Harvard Business School professor Clayton Christensen affirms that: "when big companies fail, it's often not because they do something wrong but because they do everything right"

He explains that large corporations doing well opt to continue doing the same things, yet each time a little bit better, since their internal processes favor the predictability of events until they finally lose their capacity for mold-breaking innovations. To change inertia, he proposes: "the only possible solution for a big corporation is to detach an entire team or even a company that will be responsible for working on "disruptive" innovations".

...he goes on to suggest that team should focus its efforts on cutting edge technologies to develop new business models and/or exploit older technologies, though differently.

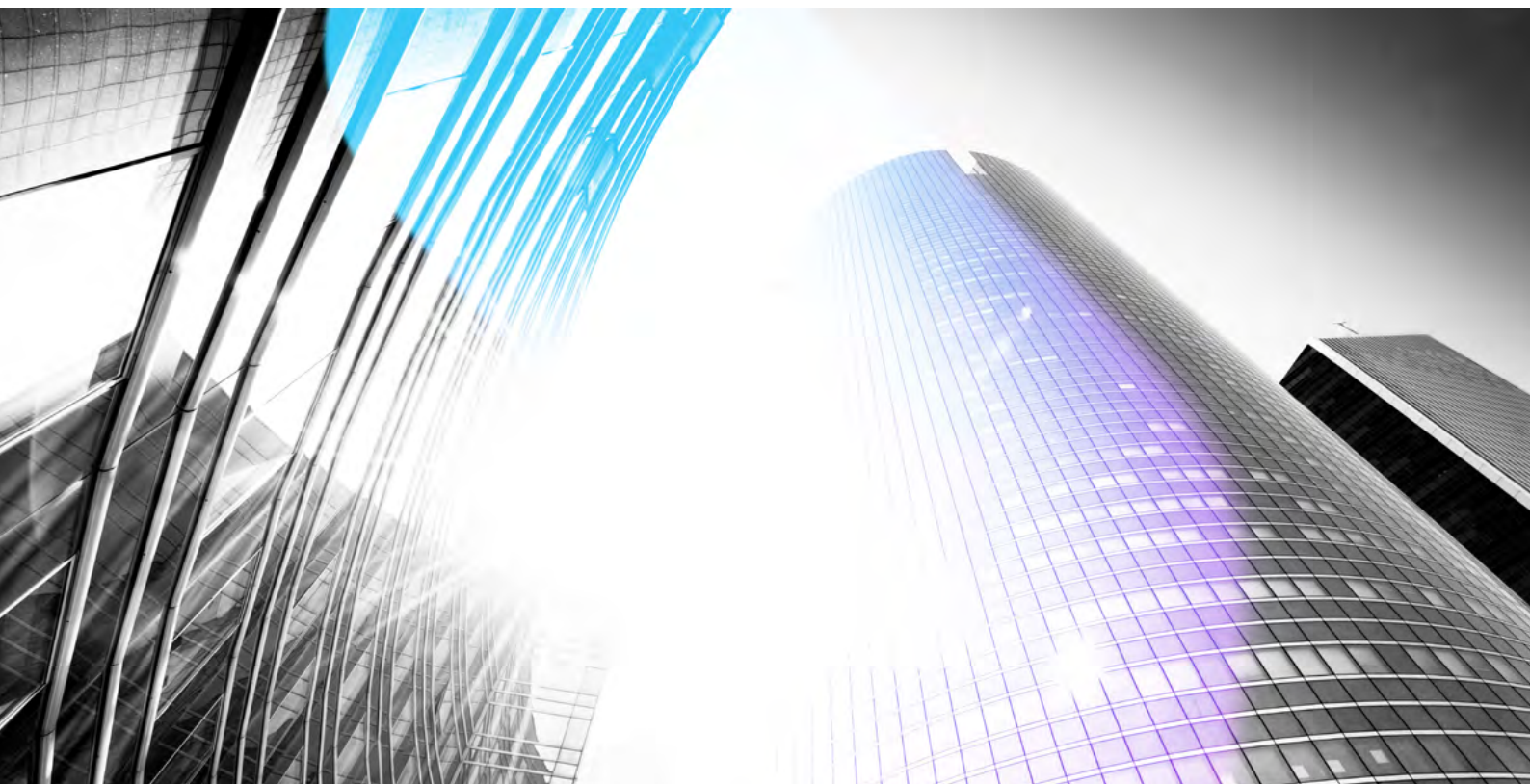
Many large companies recognize and deal with this difficulty by having specialized innovation and product development centers. They know that speed is the new competitive factor and thus adopt agile methodologies with tolerance for error yet no tolerance for inactivity.

This step is necessary, save the exceptional case in which the organization prioritizes innovation above all else, as if it were stamped into the DNA throughout the entire company. In practice, this occurs only rarely and our system's typical short-sighted vision normally imposes its will.

The relative size of a bank conditions its methods. Universal banks usually have strong dedicated departments (Wells Fargo, Santander, BBVA, etc.). Medium - small banks have less resources and encounter more difficulties in putting their own teams together. Outsourcing the tendency observatory and steering development is thus more convenient for them.

According to various sources, in 2014 European banks spent approximately €54 billion in IT, though merely 18% went to innovative ideas. The rest was invested to keep the current systems operational.

The ROI of the innovation is that your business will exist in 5 years.



Can a traditional bank be transformed into a bank 3.0?

While possible, it is nevertheless a very difficult and highly expensive project that can last at least a decade. In any case, no traditional bank has yet achieved it. Banks that can be considered as being fully digital were in fact born as such.

There are two main obstacles standing in the way of this transformation:

1. Physical Burdens: Enormous and intractable in the short term: technologybased (*legacy* systems), human resources (staff selected for traditional banking), regulation, trade union pressure, etc. Innovation is a race against time in that slower progress means less effective results.

2. Management Mindset: Michael Corbat (CEO of Citigroup) affirms that "You are what you measure". Current banking KPIs are still capital ratio, RoE, number of branches or ATMs, etc., and you would be hard pressed to find someone talking about *customer centricity* (lately NPS is paving the way). This conditions bank management as a whole and creates an insurmountable inertia for "not changing".

So...does a traditional bank really need to transform into a bank 3.0? It would no doubt be the bank's most complex project with the greatest investment ever made, not to mention the multitude of risks on the way. Moreover, the traditional business is still yielding profits and will continue doing so for at least the next 5 years, though only because Europe has 150 million inhabitants older than 60 who still use the traditional method of banking.

Perhaps the commitment should be that a brand has, in addition to the "analog / traditional" version, another "digital / 3.0" version with a peacefully coexisting model. It should be built from scratch, with no encumbrance, yet with the most independent management capacity possible and new KPIs.

Millennials choose their bank by price and convenience and not because it has a capital ratio CET1 of 10%, 4,000 branches or 5,000 ATMs. In 7-10 years, traditional banking will have fallen by the wayside and both models will converge naturally into a digital bank 3.0, which will always be a step ahead in price and convenience for customers.

There are various precedents with two business models, each one with separate technology, one much more advanced than the other, yet coexisting during some years and eventually converging in a peaceful and natural transition. Copper wire coexisted with ADSL, which in turn is doing so with fiber optics, though they are different business models, since fiber optics permits business (TV, etc.) which cannot be done on copper wire.

A very similar history could repeat itself in the financial sector.

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Often, invention requires “a long-term willingness to be misunderstood!

Jeff Bezos, fundador y CEO de Amazon

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The diagnosis of what is currently occurring in the banking sector was already made two years ago. Now is the perfect time to begin incorporating solutions to create a new digital customer relationship model through innovation.



The sector cannot sit around and wait for the long-awaited interest rate climb to improve its impaired RoE, since even in the best of cases it would rise by 2-3% (pp). It should respond firmly to meet the current challenges that are asphyxiating profitability and threatening its survival.



Obviously, in a capitalistic economy, the most suitable answer is the creation of value, with a post-crisis meaning of attending to and understanding the *stakeholders* of the banking business



Only a firm commitment to innovation based on disruptive technologies can create a new digital relationship with the customer, optimize costs, differentiate products and take care of all the *stakeholders*. It is the only way to achieve these objectives simultaneously.



Business management should seek value beyond the mere optimization of the efficiency ratio, which is insufficient in a wide open market. The differentiation of products is the key to defending the payment business, whose supranational boost has some solid bases.



In addition to defending the payment business, efforts should also focus on achieving excellence in risk management, digital identity management, data intelligence and ancillary services, which are a natural extension of the banking activity.

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Innovation Distinguishes Between A Leader And A Follower

Steve Jobs

”

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