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Digital Economy Outlook

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Summary

Regulatory sandboxing: a risk-based approach to promote innovation in financial services

Stringent authorisation requirements and regulatory uncertainty hinder innovation in financial services. Regulatory sandboxes could therefore provide both incumbent and new players with regulatory flexibility to test innovative products with real customers.

Cyber-attacks: one of the main threats in 2016

Technological developments have introduced new challenges. The impact of technological development has transformed society and the way in which people, business and institutions interact, creating new networks between them. It has also introduced important risks and challenges. Cyber-attacks have increased exponentially around the world, becoming a major risk in 2016. New governance and policies will be needed to ensure cyber-security.

Bim: the Peruvian mobile wallet of the unbanked

A new digital platform promises real financial inclusion in Peru. Bim, the Peruvian mobile wallet, has the potential to become the trigger for real financial inclusion by incorporating scale economies. As a part of the Peru Model for the unbanked, behind Bim there is a comprehensive ecosystem of actors and financial services interacting in a single architecture.

Regulation of digital consumer credit

Digital consumer credit is an answer to the demands of consumers that require ubiquitous, fast and simple products. In this scenario, new regulations focus on consumer protection and do not keep pace with the digital transformation, which is taking place.

Robo-advisers: the automation of financial advice

Automation marks the evolution of asset management. In the world of financial advice, automated tools are increasingly being integrated into the process of providing advice to clients on their investment decisions. Although the current models retain the human factor to a greater or lesser degree, automation poses a number of regulatory and business challenges.

1 Regulatory sandboxing

A risk-based approach to promote innovation in financial services

Stringent authorisation requirements and regulatory uncertainty hinder innovation in financial services. Regulatory sandboxes could therefore provide both incumbent and new players with regulatory flexibility to test innovative products with real customers.

What are regulatory sandboxes and why are they necessary?

In the computing world, sandboxes are isolated environments in which a program or file can be executed without affecting the application on which it runs. They are used to test new programming code or untrusted programs. In its regulatory version, sandboxes would be 'safe spaces' in which businesses could test innovative products, services business models and delivery mechanisms without immediately incurring all of the normal regulatory burden of engaging in the activity in question. This definition is provided by the UK's Financial Conduct Authority (FCA) in the report in which they set out their plans to implement a regulatory sandbox by the spring of this year. Other financial regulatory authorities, such as the Australian Securities and Investments Commission (ASIC) and the Monetary Authority of Singapore (MAS) are considering similar initiatives based on the FCA's approach.

Testing new solutions with real customers allows innovative firms to quickly learn, improve their value propositions, get more access to funding or, conversely, give up on non-viable ideas at an early stage. Real market testing is common practice in innovation ecosystems across industries, but it is particularly hindered in financial services due to the greater regulatory burden in terms of prudential requirements, consumer protection and financial integrity. Having to comply from the beginning with stringent requirements increases the time and cost to market, and prevents some innovations from even being tested with real customers. Moreover, as new services and business models sometimes challenge the existing regulatory framework, innovative businesses face uncertainty on how different regulations apply to them and how authorities will interpret the rules and respond to their propositions. This regulatory uncertainty increases the investment risk and makes it harder for start-ups to raise funds. By providing regulatory flexibility and certainty, regulatory sandboxes can help both incumbents and new players to overcome these obstacles to innovation.

Implementing a regulatory sandbox

Firstly, clear **criteria for projects to enter the sandbox** have to be defined and made publicly available, to avoid discretionary decisions. The FCA plans to set the following criteria: the new solution has to be within the financial services scope, be a genuine innovation, offer a good prospect of identifiable benefit to consumers, have a genuine need for testing within the sandbox and be backed by appropriate efforts to understand the applicable regulations and mitigate the risks.

Secondly, implementing a sandbox involves appropriately balancing the regulatory flexibility it provides and the safeguards it puts in place to keep consumer risks under control during the testing. Nonetheless, the scale of the activities carried out within the sandbox has to be limited to avoid risks to the financial system.

One of the ways to provide innovative firms with regulatory flexibility is **simplifying the authorisation process**. To that end, the FCA plans to offer a "tailored authorisation process", restricted to testing, with requirements that are proportionate to the activities the firm is going to conduct. It would reduce the one-off costs that unauthorised firms face when willing to test their products or services in the real market. Yet the restricted authorisation process may still be too burdensome for some start-ups. Therefore, the British authority suggests the industry set up a not-for-profit authorised company that would act as a "sandbox umbrella" that allows unauthorised innovators to offer their services as appointed representatives under its

shelter. The umbrella company would be in charge of assessing the readiness of firms to test their solutions and monitoring them while they act as appointed representatives.

Regulatory flexibility can also be provided through **waivers or modifications to particular rules** if testing activities would otherwise breach them. On the contrary, when innovative firms face regulatory uncertainty but there is not a clear breach involved, the sandbox could give certainty by:

- Issuing '**no enforcement action letters**' by which the financial regulatory authority commits not to take enforcement action during the testing as long as the firm follows the conditions agreed. The FCA plans to issue such letters while reserving the right to close the trial. In the US, the Consumer Financial Protection Bureau (CFPB) is also implementing a policy on no-action letters.
- Providing **individual guidance** to firms on the interpretation of applicable rules in respect of the testing activities they aim to carry out.

The degree of regulatory flexibility that a sandbox may offer, either through lower authorisation requirements or waivers to particular rules, is constrained by the country's regulatory framework and the powers conferred to the authority implementing the sandbox. In the case of EU Member States, EU Directives and Regulations are also binding. Considering the existing constraints, the FCA argues in its report that some legislative changes would be desirable for an effective implementation of regulatory sandboxing in the UK. The most feasible would be introducing a new regulated activity of sandboxing for testing – with lower requirements – and amending the FCA's waiver powers to make it easier for the authority to waive rules for a firm within the sandbox. Nonetheless, these changes are only possible at the UK level in areas where EU legislation does not apply or where the UK has additional rules to those that exist under EU legislation.

The regulatory flexibility provided by the sandbox has to be accompanied by appropriate **consumer safeguards**, since testing in the real market involves risks of consumer detriment. The FCA has identified four different possible approaches to protect customers that participate in sandbox activities:

- Limit testing activities to customers who have given informed consent to participate, as it is in the case of clinical trials. Customers would be informed of the potential risks and the available compensation.
- Provide customers of sandboxing firms the same rights as customers who engage with other authorised firms (e.g. complain to the firm, then to the corresponding ombudsman and have access to the compensation scheme, if a firm fails).
- Require firms in the sandbox to have the resources to compensate any losses to customers.
- Agree on a case-by-case basis the disclosure, protection and compensation appropriate to each testing activity. This is the option preferred by the FCA as it offers flexibility to combine different approaches.

Conclusion

An appropriate implementation of regulatory sandboxes requires clear criteria for firms to enter the sandbox, proportionate requirements and consumer safeguards and transparency and control during the testing. If these conditions are met, regulatory sandboxes can significantly benefit firms, consumers and regulators at the same time. Firms would face lower cost and time-to-market of innovative solutions and would have better access to finance due to reduced regulatory uncertainty. Consumers would benefit from new value propositions brought up by innovation and from increased competition between both incumbents and new players.

Meanwhile, sandboxes would allow financial regulatory authorities to better understand the functioning of new products or services, and their benefits and risks, before the regulatory framework is amended. Moreover, at the same time that firms test their new solutions in the sandbox, financial authorities would "test" the regulatory flexibility they provide and the consumer safeguards they put in place. In this sense, the regulatory sandbox can also be seen as "regulation in the sandbox".

2 Cyber-attacks: one of the main threats in 2016

Technological developments have introduced new challenges

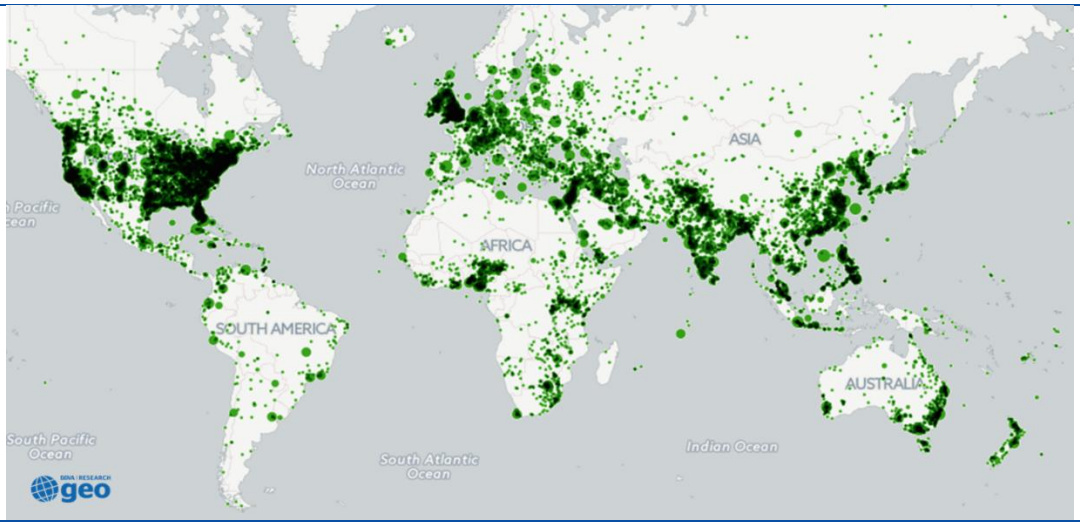
The impact of technological development has transformed society and the way in which people, business and institutions interact, creating new networks between them. It has also introduced important risks and challenges. Cyber-attacks have increased exponentially around the world, becoming a major risk in 2016. New governance and policies will be needed to ensure cyber-security.

Cyber-attacks have soared in recent years…

Digital technology and **"cyber hyper-connectivity" have become a key feature over the last decade**. Business, social interaction, political engagement, economic decisions and even healthcare activity are permanently and continuously connected to the Internet and the links between them have greatly increased. That is, dependence on connectivity is increasing exponentially, as are ties between people, firms and institutions. This situation offers **huge social and economic opportunities** but also leads to **important challenges** and the necessity of developing new polices and new methods of governance, since the impact of technology has transformed business operations, institutions and the way in which society interacts.

The rise of cyber dependency and technological advances over the last ten years have also opened the door to **new vulnerabilities and threats, triggering security concerns**. This is the case of **cyber-attacks**, which include espionage, cybercrime (mainly), hacktivism and cyber warfare (See Figure 2). In just three years, the threat posed by cyber-attacks has risen exponentially as they are increasingly committed against businesses in critical sectors such as banking, energy, transportation, communication, water and healthcare, upsetting the entire world from the US to the Pacific and East Asia, as Figure 1 shows. Therefore, **cyber-attacks have become one of the main global risks** and among the most likely and most potentially impactful in recent years according to the World Economic Forum's Global Risks Report 2016[1].

Figure 2.1
Media coverage of cyber warfare, cyber-attacks, data breaches and other computer- and online security-related issues around the world



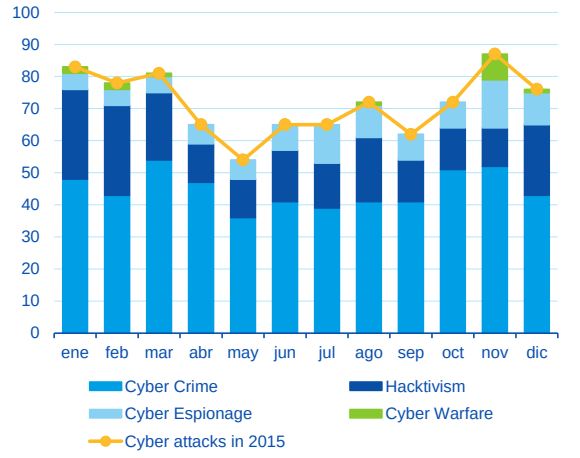
Source: BBVA Research and www.gdelt.org

1: Further information about the report can be found at the following link: http://www3.weforum.org/docs/Media/TheGlobalRisksReport2016.pdf.

… giving way to unconventional ways of fighting…

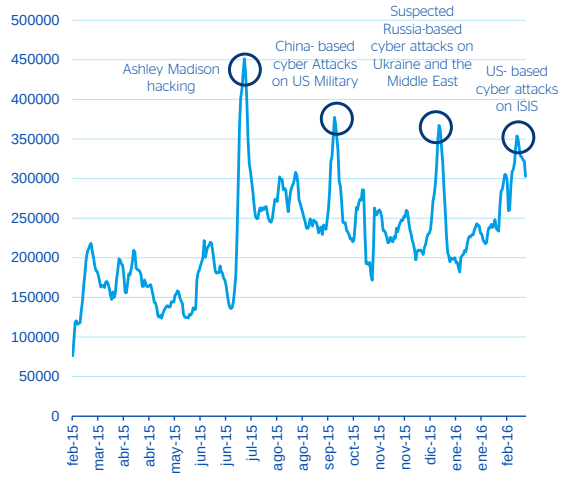
Cyber-attacks have also introduced a **new way of fighting** them that complements the traditional method of disrupting enemy command networks. This technique was used in 2015 by some global powers, such as the **US, Russia and China** (See Figure 3). In February 2016, the Pentagon acknowledged that it had its storehouse of new **digital weapons to attack ISIS** communications networks. The incorporation of digital weapons into the US military arsenal is considered a milestone since it is the first time that the US military has acknowledged doing so during an active war. In addition, the personal data of US security staff were hacked several times by ISIS during the year, opening an unconventional battle between them. **Russia** was very active during the year and is **suspected of launching coordinated multiple attacks** like the unprecedented cyber-attack on a power grid in Western Ukraine at the end of the year, causing a severe blackout in the area affecting more than 700,000 households. Russia could also be behind a series of cyber-attacks in Turkey, which led to the disruption of online operations and credit card transactions in December, after tensions between the two countries worsened. Finally, **China** was also **accused of hacking American corporate intellectual property** several times in September, violating its recently minted cyber-agreement with the US.

Figure 2
Number of cyber-attacks in 2015 and the motives behind them



Source: BBVA Research and Hackmageddon

Figure 3
Media world coverage of cyber-attacks in 2015



Source: BBVA Research and www.gdelt.org

… and leading to further concerns and policy-making implications

A failure to ensure security and address technology-related risks could have far-reaching consequences for the world economy, business and society. **Cyber-attacks could introduce worrisome spill-over effects, leading to serious economic damage, geopolitical tensions or a widespread loss of trust in the internet**. Ensuring cyber-security is therefore crucial to avoid increasing protectionism and a slowing down of the pace of technological innovation over the coming decade.

Cyber-security is becoming a key element in the main international institutions' agenda across all sectors as they address these emerging business and social risks, and benefit from digitalization and technological progress. **A comprehensive strategy for the cyber ecosystem** with well-defined roles and responsibilities for both governments and industry is necessary to align international approaches and to combat the problem. Some steps have been made in the right direction, but **still there is considerable room for improvement.**

3 Bim: the Peruvian mobile wallet for the unbanked

A new digital platform promises real financial inclusion in Peru

Bim, the Peruvian mobile wallet, has the potential to become the trigger for real financial inclusion by incorporating scale economies. As a part of the Peru Model for the unbanked, behind Bim there is a comprehensive ecosystem of actors and financial services interacting in a single architecture.

Bim and the Peru Model for financial inclusion

Bim is the brand of the new mobile wallet (*billetera móvil*) in Peru, which has a comprehensive public-private support system behind it. This digital platform aspires to become the flagship for financial inclusion in the Andean country, in which according to the World Bank, only 29% of adults have a bank account. Bim is the financial product, which is part of the Peru Model national strategy led by the association of financial institutions in coordination with the Peruvian government, regulators, mobile network operators and other relevant stakeholders.

Because of this collective negotiation among different actors, consumers now have the possibility of getting in touch with a very convenient single point of entry to the financial system and, at the same time, financial institutions can for the first time count on a financially viable way to do business with small clients. This single point of entry is reached by using a very basic mobile phone that does not require a data service tariff. The penetration of mobile phones in Peru is close to 80%.

Scale economies and network externalities

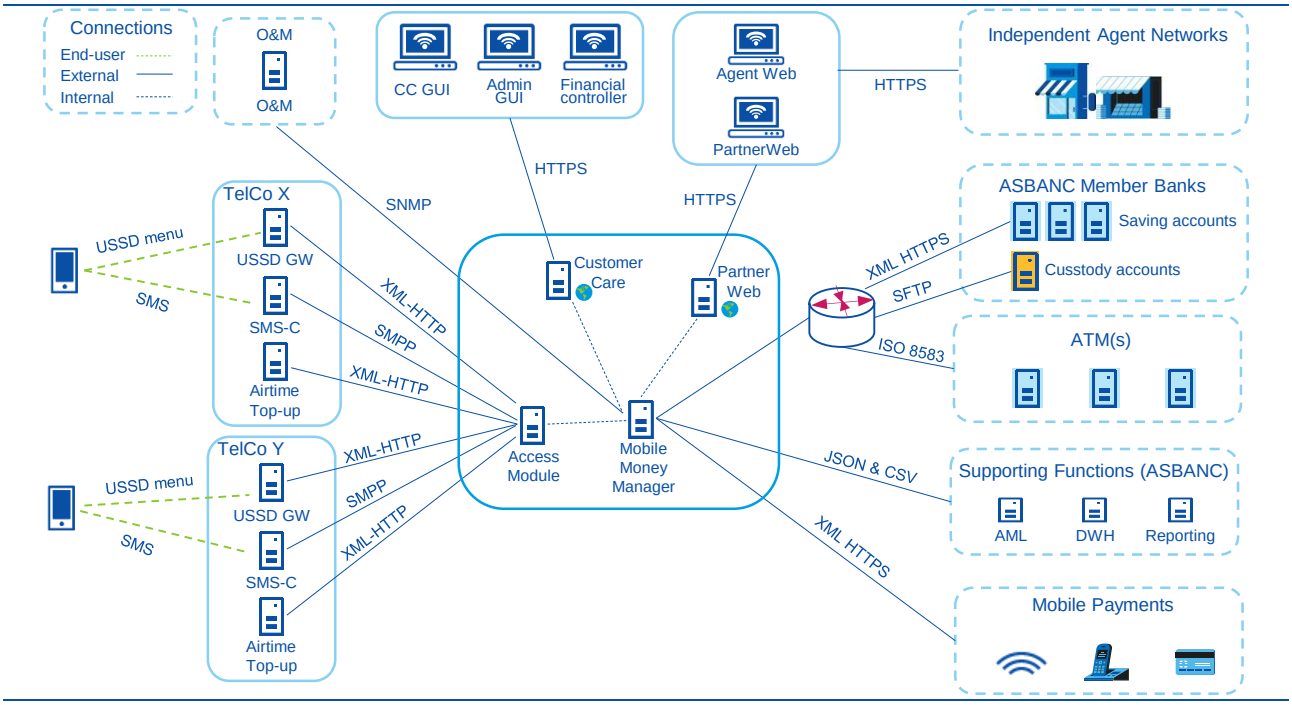
Bim's goal is to generate scale economies through the use of technology. Scale economies could also provide positive "network externalities" because of the greater economic utility generated by a product or service when it is used by more people. Direct benefits could be obtained from the interaction among users, while indirect benefits could be derived from financial firms, which are motivated by scale economies that allow them to create new products and services, which are compatible with the digital platform. A big financial ecosystem guarantees greater incentives and, therefore, the interoperability of this single financial platform could be capable of spurring financial inclusion.

Bim does not require that potential users have a bank account. By using their cell phones, clients only need to introduce their national ID number the first time to create their Bim account; but if they only want to receive a money transfer, it is enough to dial *838#. If clients want to deposit cash in their e-money account, they can do it by visiting one of the extended network of correspondent agents in rural and urban areas.

Bim architecture and interoperability

According to Digital Peruvian Payments (*Pagos Digitales Peruanos*), the firm in charge of Bim, its interoperability is assured thanks to the participation of all mobile network carriers that allow airtime and comprehensive automatic on-boarding through cell phones. Based on this, the model has the potential to incorporate all financial institutions wishing to participate (banks, microfinance firms and the recently created money issuers called EEDEs), each one with its own custody account and under the scrutiny of the national financial regulator. All stakeholders interact within a single digital architecture that has the potential to allow multiple financial services (see figure below).

Figure 3.1
BIM´s Architecture for Financial inclusion



Source: Trivelli (2015). "Peru Model: Interoperability by design" Presentation - ITU Workshop on Digital Financial Services and Financial Inclusion, Geneva (Switzerland). December

Capillarity is obtained because of the potential for having and sharing more than ten thousand correspondent agents. Beyond that, another highlighted feature of BIM is that it is managed under a common brand (Bim), a centralized contact centre and a web page, and it has standardized paperwork and a common menu display. There are 9 financial institutions currently operating, but this number could potentially increase to 40 in the short term.

How does this model help to unblock structural barriers to financial inclusion?

BIM has the enormous challenge of having to confronting some of the most important structural barriers that block financial inclusion in Peru, such as distances to a financial branches, service costs, trust in the system and complicated requirements on opening a bank account. For example, this digital solution is very convenient as it solves geographical problems by bringing banks to everyone's palm and easily interconnecting all telecom carriers and complementing this with an extended network of correspondent agents for cash-in and cash-out. Costs are more moderate than those associated with domestic remittance firms and other expensive alternatives, (e.g., around US$ 0.10 for transactions under US$30; US$0.40 for transactions between US$31 and US$ 140; and US$ 0.,60 for transactions higher than US$140). The barrier of excessive documentation is solved by simplified financial regulation, which only requires people to introduce their national ID number to open their account by using their cell phone. Also; and finally, the barrier of trust could be overcome by taking advantage of the familiarity that people already have with their very basic mobile devices (80% mobile penetration) as well as the information and financial inclusion campaign that the government and other stakeholders will put in place.

According to BBVA Research estimates, using the Bayes' Theorem, the Bim-Peru Model has the potential to focus on approximately 10 million people. The capacity of this platform's on-boarding will depend on how fast network economies can be unfolded in the following years. According to Asbanc (the Peruvian Banking Association), BIM could reach close to 3.5 million clients in four years. We think that this is a very feasible and achievable target.

4 Regulation of digital consumer credit

The need to balance innovation and consumer protection

Digital consumer credit is an answer to the demands of consumers that require ubiquitous, fast and simple products. In this scenario, new regulations focus on consumer protection and do not keep pace with the digital transformation, which is taking place.

Technology is changing people's daily lives. The way we now shop or enjoy leisure is very different to what it used to be only a decade ago. Consumer behaviour has also changed; they are no longer tied to a single channel when buying a product. Online and physical boundaries are blurring. Consumers can now purchase goods that were previously researched online in physical stores, paying with their mobile device. **The digital consumer demands a new breed of products and services that match their needs and interests in real-time.**

In this context, consumers require ubiquitous financing services that meet the characteristics of this new environment. Digital lending is increasing and it could reach up to $100bn in loan origination volumes by 2020 combining United States and Europe, according to Autonomous Research[2]. Consumer credit is no exception to this trend, and traditional products like student loans, revolving credit cards, automobile loans or POS credit are currently being challenged by the rise of digital alternatives.

Digital technologies to cater for digital consumer needs

Digital lenders offer a full online experience, with fast and automated processes and easier customer service, which means a significant improvement, compared to burdensome offline processes. An excess of red tape at the point of sale is one of the main problems that merchants face when offering credit solutions to their customers. This is also the case when applying for any type of consumer credit, which leads to unmet customer needs. **Reducing this friction implies changes in traditional procedures and in the financial services infrastructure.** Technologies that simplify the loan application process reduce the need to access a bank branch to sign a contract, through the use of video-legitimation or document scanning and automated verification. However, those innovations might be hindered by regulations that do not allow those procedures.

Assessing credit risk is another area where new digital lenders are challenging the incumbents. The credit business is based on information, since scorings can only be as good as the data on which they are built. Traditional inputs that lenders take into account are customer information from credit institutions, payslips or credit bureaus. US lenders complement that information with the customers' credit score, a number generated by a mathematical algorithm based on credit reports. However, this system can be problematic when addressing consumers that have not used financial services before (e.g. because they are young or new residents). Nevertheless, traditional inputs establish debt capacity but not the willingness to repay the amount borrowed. In this situation, **alternative scoring emerges as another source of information to provide a holistic view of the customer in order to provide a better assessment**. This new type of scoring can come from different sources such as invoice payments, purchase habits or the use of social networks. Technology provides new sources of behavioural profiling that allow a better understanding of the customer beyond traditional inputs or guarantees. There are currently several initiatives attempting to use those new data sources, especially in the United States, where the use of independent credit scoring agencies is an important part of the assessment.

2: Autonomous Research (2016) "Digital lending. The $100 billion dollar question". Autonomous Research LLP. <http://www.autonomous.com/fintech.html>

Protecting the consumer

The latest financial crisis has pointed out the importance of better risk assessments and the dangers of over-indebtedness for consumers, financial entities and for the financial system as a whole. Besides, recent events have also increased customer awareness on the importance of understanding the implications of contractual relationships with financial intermediaries. The creation of new ubiquitous and convenient services does not have to mean the reduction in consumer protection or the expansion of bad practices. Payday lenders have been an example of services that have caused problems of over-indebtedness because borrowers did not fully understand the contract. This is the case of the UK's digital lenders Wonga.com and Cash Genie. As a response to this issue, the UK Government has addressed regulatory changes to guarantee the legality of contractual clauses regulating this type of services, while ensuring customer protection. As a result, in April 2014, The Financial Conduct Authority (FCA) took over responsibility for regulating consumer credit markets and has unified all regulatory efforts under its umbrella. In the US, online payday lenders are also in the spotlight, as these regulatory issues are still unresolved. The latter was in the case of lenders based on Indian reservations, where established companies claimed that they were not subject to either State or federal laws.

Most regulatory initiatives address the problems of consumer credit focusing on consumer protection but not exclusively on digital services. In the EU, the European Consumer Credit Directive aims to provide the highest consumer protection levels, financial stability and responsible consumer behaviour. These views are reflected in several initiatives such as the Green Paper on Retail Financial Services, the Market in Financial Instruments Directive (MiFID) and the EU's consumer credit initiative[3]. The latter is currently available in the Czech Republic and Austria, and it explains consumer rights and builds awareness among borrowers before and after taking credit. In the US, the main legislation on this subject is the Consumer Credit and Protection Act, an umbrella regulation that came into force in 1969. However, several regulations have been passed to update issues not covered in previous versions. EU and US authorities are aware of the rise of new types of digital lenders and are concerned about the need to protect the customer and their financial literacy but **legislation does not necessarily keep pace with the innovations that are entering the market**.

Challenges ahead

After the recent crisis, all countries have changed their regulations to avoid similar problems in the future. Ensuring that consumers understand contracts and avoid over-indebtedness are key to improving this field from the regulators' point of view.

However, other issues arise that demand the authorities' attention. New needs and solutions come into the market that might not fit existing regulations. Digital technologies have speeded up this process and opened up a new breed of products and services that differ from traditional offerings.

In this environment, **the authorities have the difficult task of balancing consumer protection, financial stability and the benefits of innovation.** The expansion of digital lending should not mean neither worse credit assessments, nor the lack of appropriate information for the customer. Nevertheless, regulations should not deter innovations like technologies that improve credit processing or that allow a better understanding of the customer.

3: European Commission (2015) "Spread the word about credit rights - European Commission." European Commission. <http://ec.europa.eu/consumers/citizen/my_rights/consumer-credit/campaigns-material/index_en.htm>

5 *Robo-advisers*: the automation of financial advice

Automation marks the evolution of asset management

In the world of financial advice, automated tools are increasingly being integrated into the process of providing advice to clients on their investment decisions. Although the current models retain the human factor to a greater or lesser degree, automation poses a number of regulatory and business challenges.

Traditionally, the private banking and asset management sector has been considered conservative in its approaches, but technological and demographic developments are transforming the products and services characteristic of this business segment. Now new opportunities are opening up for financial institutions to capture clients who feel more comfortable with digital channels and who until now have not had access to personalised advisory services.

Asset management products, which until recently were limited to wealthy clients, are reaching new customer segments. Thanks to the cost reductions inherent in automated advice systems, the proliferation of passive investment products and changes in consumers' attitudes, the barriers to entry have been lowered considerably. By way of example, Vanguard, a traditional asset manager, now offers its automated Vanguard Personal Advisor Services (VPAS) to clients with portfolios starting at US$100,000.

The term “robo” suggests non-existent or very limited human intervention in the process, but in fact the degree of automation varies widely, and for the time being the field is dominated by hybrid models. We can summarise the main common characteristics defining these services under three headings:

- **Automation** of investment decision-making processes: either by means of tools used directly by the client, with little or no human intervention (e.g. Betterment and Wealthfront), or using hybrid models (e.g. Personal Capital and FutureAdvisor) with algorithms that use the information provided by the client to generate a recommendation to the investor.
- **Transparency**, **speed and flexibility** and **low cost of service**, with very modest or even zero fees for the client, and good digital experience.
- The products sold are generally based on **passive investment** models, especially through exchange-traded funds (ETFs), although the personalisation of portfolios is maintained based on the data provided by the client, allowing different risk profiles to be defined.

We can see automatic advisers as forming part of the world of FinTech, in which investments reached US$290 million in 2014 alone (more than double the amount invested in 2013)[4]. However, traditional managers (such as Charles Schwab and BlackRock) and the major banks[5] are also incorporating these tools into their portfolio of products to reduce costs and reach the new customer segments that prefer to interact through digital channels. Some of the pioneering start-ups have signed strategic alliances with traditional players: for example, Betterment has teamed up with Fidelity Institutional Wealth Service, and FutureAdvisor with BBVA Compass.

Market estimates for 2020 vary from consulting firm A.T. Kearney's projection of US$2 trillion in assets under management, counting both new clients and those taken from the traditional advisers[6], to the US$490 billion

4: “The Rise of the Robo-Advisor - Wealth Management Disrupters Garnering More VC”, *CB Insights*, 18 Feb. 2015 <https://www.cbinsights.com/blog/robo-advisor-wealth-management/>
5: Dunkley, Emma, Martin Arnold, “UK banks set to launch ‘robo-advisers’”, Financial Times, 22 Jan. 2016 <http://www.ft.com/cms/s/0/afb03182-c107-11e5-9fdb-87b8d15baec2.html>
6: Epperson, Teresa et al. , *Hype vs. reality: the coming waves of “robo” adoption,* A.T.Kearney, 2015 <https://www.atkearney.com/documents/10192/7132014/Hype+vs.+Reality_The+Coming+Waves+of+Robo+Adoption.pdf>

predicted by Cerulli Associates, from the current level of US$18.7 billion[7]. The bulk of the market is currently centred on the United States, although some firms in Europe (Nutmeg, Wealth Horizon) and Asia (Dragon Wealth) also have this type of service.

Regulators are assessing the risks and opportunities associated with automated advisers

The European financial authorities, as part of their market monitoring tasks, have shown interest in the automation of financial advice. In particular, they are assessing the various ways in which consumers can use automated tools to receive financial advice without human intervention or with very limited human intervention. In December 2015 the EBA (European Banking Authority), ESMA (European Securities and Markets Authority) and EIOPA (European Insurance and Occupational Pensions Authority) published a joint discussion paper on automation in financial advice[8]. The discussion paper describes the main characteristics of the automated financial advice tools observed, gives a preliminary assessment of the potential benefits and risks, for both consumers and financial institutions, and presents a general view of how the market might evolve.

The document firstly tackles the definition of the concept of automated advice, which takes in various kinds of tools, not only robo-advisers, but also comparison and finance planning tools. Some of the issues raised concern consumer protection as it relates to the information that consumers receive from these tools and its consideration as advice. Mention is also made of clients' proper understanding of the risks assumed by signing up for products, just as with advice given by human managers. As regards to the algorithms used, the matter of transparency in the process is raised, for both clients and supervisors, as is the need for products recommended by advisers to be suited to the specific needs of each client, as well as the possible risks deriving from failures in the functioning of the tools.

The salient benefits relate to cost reduction, with a positive effect on both the institutions, which will be able to enlarge their customer bases, and on consumers, who will gain access to services which hitherto have been reserved to affluent segments. Lastly, mention is also made of a possible improvement in the quality of service, which may reduce the bias deriving from human intervention.

Conclusions

The digitisation of advice is a reality that opens up new opportunities for institutions and clients. All advice tools contain a greater or lesser degree of automation, even if they include the human element. And clients' increasing familiarity with digital channels means that automated advisory tools for financial planning are in growing demand. It is likely that the supply of services will evolve towards more complex portfolio planning and management tools and with a more diversified product offering. Nonetheless, these changes are not expected to lead to the disappearance of specialised services for high-net-worth clients, which are difficult to automate, nor will human intervention be completely eliminated.

7: Leonhart, Megan, “Digital advice to hit $490 billion by 2020: Cerulli”, Wealth management.com, 4 Nov. 2015 <http://wealthmanagement.com/technology/digital-advice-hit-490-billion-2020-cerulli>
8: *Joint Committee Discussion Paper on automation in financial advice*, EBA, 2015 <https://www.eba.europa.eu/documents/10180/1299866/JC+2015+080+Discussion+Paper+on+automation+in+financial+advice.pdf>

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