

FinTech and cloud in banking

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Check Against Delivery
Seul le texte prononcé fait foi
Es gilt das gesprochene Wort

Introduction

Thank you very much for inviting me here today to open the first EBF Cloud banking conference.

The use of technologies in financial services is not new. Financial institutions have, for a long time, been implementing technological solutions to support the provision of services to their customers and to ensure compliance with their regulatory obligations. They have also long relied on outsourcing arrangements with external service providers for the provision of technological solutions. However, the recent acceleration of 'FinTech' which is becoming more prevalent appears to be elevating this process to a new level. This is due to recent significant investments in new technologies and the blend of new firms entering the market meaning that we now have incumbent financial services institutions, specialised start-ups as well as global technology companies all providing financial services in various forms.

Today I would like to cover three aspects related to innovation. First I will elaborate on observed changes in the banking landscape mainly driven by technological innovation. I would like to dedicate the second part to the use of cloud computing in banking, indicate its benefits and risks, and summarise supervisory expectations for using this technology. In the last part I would like to consider FinTech in a broader context and explain the EBA's approach on this topic.

When I use the term FinTech, I am referring to the FSB definition: 'technologically enabled financial innovation that could result in new business models, applications, processes, or products'

with an associated material effect on financial markets and institutions and the provision of financial services¹.

As a result of the EBA's mandates set out in our founding regulation, namely to monitor and assess market developments, new financial activities and to adopt guidelines or recommendations to promote the safety and soundness of markets and convergence of supervisory practices, the EBA has been closely following the changes brought about by innovation and FinTech.

In particular, the EBA has undertaken work on a broad range of topics including virtual currencies, lending-based crowdfunding, robo advice, strong customer authentication and also outsourcing to cloud service providers. Taking into account the work already done and recognising the growing importance of this work, we are currently working on the broader matter of the EBA's approach to FinTech, where we recently carried out a mapping of current supervisory practices to FinTech across the EU and published a Discussion paper on our planned approach. I will explain more on this in the third part of my speech.

The EBA is also actively contributing to the EU and international policy debates related to innovation and FinTech. This work is closely linked with other initiatives such as the Digital Single Market Strategy² published by the European Commission in 2015, as well as its consultation on FinTech for a more competitive and innovative European financial sector in 2017³. The European Parliament's FinTech report on the future of the financial sector⁴ was published this year and also the Basel Committee⁵ and IOSCO⁶ have published their reports on FinTech this year as well.

FinTech and Innovation changing the landscape of banking

The reports all highlight that the banking landscape is evolving and has been over recent years due to technological innovation in finance and progress of the digital economy. The overall changes in this context can be categorised as follows:

- *Changes in consumer behaviour* - in terms of demand for easy access and speed which can be translated into innovative digital products,
- *Changes to the approaches of incumbent banks* - in embracing innovation and adopting new technologies, and
- *Changes in competition deriving from new entrants* in the banking sector who are providing some of the typical banking products in more innovative ways forcing a transformation of the financial system.

¹ <http://www.fsb.org/what-we-do/policy-development/additional-policy-areas/monitoring-of-fintech/>

² <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52015DC0192>

³ https://ec.europa.eu/info/sites/info/files/2017-fintech-consultation-document_en_0.pdf

⁴ <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2017-0211+0+DOC+PDF+V0//EN>

⁵ <https://www.bis.org/bcbs/publ/d415.htm>

⁶ <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD554.pdf>

The use of technology in finance goes back 50 years to the introduction of the ATM. However, its presence has gained traction with the introduction of internet banking in the 1990s, progressing further in recent years as we have moved to mobile banking, the use of cloud services in banking and the increased presence of virtual currencies, crowd funding, robo advice and big data in the last decade. And now we find ourselves in a situation where FinTech is the norm - the days when a bank was a thick-walled building with an underground safe and secured data centre is evolving to the model of fewer branches, less hardware and digital communication only. This model can shrink a bank to an application on your mobile, running its business fully on cloud and providing digital services only.

But this financial innovation carries both advantages and disadvantages; it has the potential to transform the financial system across a broad range of products and services, which can help improve efficiency and customer satisfaction and it can reduce operational and compliance costs for banks, making the financial sector more efficient and competitive, which also benefits consumers. However, it has amplified risks falling under the wider operational risk sphere specifically security risks, risks of availability and continuity of systems and data, and outsourcing risk, specifically with regards to outsourcing to the cloud.

To better understand all the risks and opportunities, we need to understand the context in which these changes are taking place – European banks are recovering from the financial crisis, and although they managed to build up their capital buffers, they are under pressure from low profitability, which is largely driven by the low interest rate environments, and many banks face issues with legacy assets, and, notably, high levels of non-performing loans. The drag of legacy assets and higher provisioning costs, and low levels of interest income (which is the major source of revenue for traditional banks) puts pressure on banks' overall profitability and raises challenges for the long-term viability of their business models. This then leaves traditional banks (incumbents) in a situation where they need to adapt to address both the profitability issues as well as the evolving customer demands for simple and transparent digital services, whilst at the same time facing increased competition from new technology-based entrants offering banking products and squeezing banks' margins even further. Therefore, we are seeing active interest from incumbents as a result of the evolution of FinTech as they are recognising, and acting on, the need to adapt their business models. Effectively then, many incumbents in Europe are embarking on 'digitalisation projects' which can be grouped into two types:

- *Disruption to current ways of customer interaction*, which involves changes to enhance the customer experience through the use of innovative technologies, with the aim of satisfying customer needs and helping banks to find new streams of revenues and to protect existing revenues;
- *Transformation of internal processes*, which, by employing new technologies, aims to digitalise and optimise operations, with the aim of reducing banks' operating costs.

In comparison with incumbents, the new FinTech companies are more agile and not rooted into existing routines, principles, solutions and technologies without the so-called 'legacy' IT issues,

and not burdened by the vast branches' networks, and are therefore able to easily and relatively cheaply introduce innovative technologies and products.

This has resulted in an increased use of electronic access, so internet-based companies and non-bank companies are finding their way into core banking activities both through interactions with incumbents as well on their own. For example:

- incumbents acquiring or forming commercial partnerships (joint ventures) with existing FinTech companies to offer products or services originally developed by independent FinTech companies⁷;
- incumbents setting up, or participating in, innovation and accelerator hubs for start-up companies in FinTech developing new technologies, which can lead to products being offered commercially⁸;
- Additionally, on their own, FinTechs are entering the world of retail banking, using digital products that live on your phone, with potential features like real-time balance information, deep-dive spending data, biometric security, no foreign exchange charges, simple money transfers and artificial intelligence for more predictive banking.

A recent PWC study said that over 80% of banks are increasingly concerned they are losing revenue to innovators while 82% expect to increase FinTech partnerships in the next three to five years⁹.

In the last EBA Risk Assessment Report¹⁰ we indicate that most banks admit the rapid growth of FinTech firms has markedly impacted their business especially in retail banking and payments and settlements. This was reiterated by the findings of the EBA mapping exercise, of which I will go into more detail later.

Cloud computing as a type of FinTech and its benefits and risks

Where does the use of cloud fit into banking? As I mentioned, financial services firms have long implemented internal technological solutions to support the provision of services to their customers. They have also long relied on outsourcing arrangements with external service providers for the provision of technological solutions. Furthermore, as already mentioned, banks are increasingly working with digitalisation of their processes with a view of reducing operating costs and the cloud is just one of the types of technological outsourcing banks are using for these purposes.

⁷ e.g. *Deutsche Bank* having a partnership with a robo-advisor or *BBVA* has a strategy to buy out promising FinTech start-ups around the world, with a completed acquisition including Mexican B2B payment platform *Openpay* or big data firm *Madiva Solucion*];

⁸ e.g. the Swedish *Nordea* in-house accelerator programme aims at developing services of interest for the bank (Nordeaaccelerator.com, 2017)

⁹ <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2017.pdf>

¹⁰ December 2017 report – to be published

The British Bankers' Association (now UK Finance) published a paper earlier this year entitled 'Banking on cloud'¹¹ which indicated three key drivers for cloud adoption:

1. Agile innovation: Use of cloud allows for flexibility and scalability of ICT services. It gives banks the ability to respond faster to changing customer and technological needs. They can scale-up or scale-down technology as necessary and innovate according to their needs.
2. Risk mitigation: The use of cloud opens up the options for banks to choose new solutions for mitigating technology risks faced by banks' ICT systems such as opening up their capacity, dealing with redundancy of old systems and resiliency concerns, and to apply the most up-to-date methods for security controls.
3. Cost benefits: From the cost perspective, the use of cloud enables banks to achieve a 'pay per use' model, which can significantly reduce the cost for the ICT infrastructure. The need for such cost cutting comes at a time when banks are trying to reduce their operating costs elsewhere in order to regain profitability in the current low interest rate environment.

As banks continue to use cloud computing with its multiple benefits we must also consider the risks that such an innovative technology carries. New operational risks arise from the use of the cloud and existing risk models must be adapted to take account of these risks. The specific risks depend on the type of *service model* used (i.e. its components such as servers, network and software) as well as the *deployment model* (i.e. whether it is public, private or hybrid cloud). However, we can generally say that whereas cloud services can offer a number of advantages such as those mentioned above, it also raises a number of challenges which we can group into three main categories:

1. Firstly, *data management, protection and data location*. Banks operate under strict rules in the EU for data protection and security, however cloud service providers may slice and store data across multiple locations worldwide. These locations are not always disclosed in order for the cloud service providers to be able to maintain operational and commercial flexibility and these jurisdictions, or the cloud service provider in these jurisdictions, might apply lower standards leading to security breaches and issues with disaster recovery and continuity of service;
2. Secondly, *dependency on external providers for regulated services*, which can lead to concentration risks not only from the point of view of individual institutions, but also at industry level where large suppliers of cloud services can become a single point of failure when many institutions rely on them. The situation can get quite complicated if several major banks use the same cloud provider. Such concentration brings systemic risks with it;
3. And thirdly, effective oversight and supervision. A bank as a regulated entity is expected to have sufficient oversight over its IT infrastructure. If there are multiple layers in a cloud supply chain, this makes it difficult to properly identify and monitor this risk.

¹¹ <https://www.bba.org.uk/news/reports/banking-on-cloud/#.WifkoP0V9aQ>

These risks provide new challenges for banks especially as they apply existing operational risk management policies to technologies that are very different to traditional outsourcing arrangements, therefore updated and relevant risk mitigation techniques for the use of the cloud needs to be a priority for banks.

EBA work on cloud

Recognising the niche context of outsourcing to the cloud as opposed to more general outsourcing, the EBA identified the need for developing *specific* guidance following interactions with several stakeholders, including a dedicated Cloud workshop with banks and cloud providers organised in October 2015. From these discussions we identified that there has been a high level of uncertainty regarding the supervisory expectations that apply to outsourcing to cloud service providers and that this uncertainty forms a barrier to institutions using cloud services.

As a response, the EBA initiated the work on the 'Recommendations on outsourcing to cloud service providers' with a consultation paper which was published in May 2017, and whose final version is due to be published this month. The Recommendations set out the supervisory expectations for the use of cloud by banks and addresses recommendations to both competent authorities and supervised institutions.

The Recommendations focus on a number of points specific to cloud outsourcing namely:

- *Adequate security of data and systems* – i.e. ensuring an adequate level of protection of data confidentiality, as well as integrity and traceability of data and systems.
- *Guaranteed supervisory access and audit rights* – Banks are expected to contractually ensure an unrestricted right to access and audit for auditors and supervisors. This includes physical and virtual access to the data and systems in the cloud.
- *Consideration of location of data* – the institution must ensure that the data security and availability is not compromised by legal risks or compliance issues related to data storage location.

Additionally, the Recommendations also cover notification from the bank to the supervisor when they are outsourcing services assessed as material, requirements for institutions to mitigate the risks associated with 'chain' outsourcing where the cloud service provider subcontracts elements of the service to other providers as well as recommendations for arrangements for continuity of service in the case that a service fails or deteriorates.

These Recommendations have served to draw attention to the fact that regulators understand the need to clarify how banks can use this very distinctive type of outsourcing safely and in a way that complies with regulations. We understand that to address the associated risks requires skills not previously embedded in traditional operational risk teams within banks and therefore in order to make the most of the benefits associated with the cloud it is imperative to help both banks and cloud service providers clearly understand the regulatory requirements. For that reason, the EBA

will work closely with banks and supervisors going forward to ensure practical implementation of these Recommendations.

EBA work on FinTech

And now let me move to the most recent EBA work on FinTech. In spring 2017 the EBA undertook a mapping exercise to gain a better insight into financial services offered and innovations applied by FinTech firms in the EU, and their regulatory treatment. This is the first time any such exercise has been conducted at EU level and its result has been used to inform the EBA's proposed future work. The outcome of the mapping exercise, published as part of the EBA Discussion paper on FinTech, suggests that there are over 1500 firms established in the EU that meet the definition of 'FinTech firm' while more detailed information has been analysed on a sample of 282 of these FinTech firms.

Based on this sample of firms, the data suggests that 47% fall under some form of EU regulation (PSD, MiFID, CRD or EMD), 15% are subject to national registration or authorisation regime and around 31% are not subject to any regulatory regime under EU or national law. These numbers, together with a deeper analysis of regulatory and supervisory treatment of FinTech firms presented in the Discussion paper indicate the first area of EBA work on FinTech which is focused on authorisation and registration regimes and supervisory sandboxing approaches.

The second area where the EBA is undertaking more work covers the risks and opportunities for incumbents, and the impact of FinTech on their business models. We will respond with practical guidance to supervisors, in the shape of a dedicated chapter in the supervisory handbook and supervisory training, and if needed also with additional guidelines for institutions and supervisors. The impact on incumbents' business models has been analysed by using structured interviews with supervisors and a sample of banks. The EBA will publish the outcome of its analysis in 2018 in a form of a thematic report.

In addition to these first two areas of work which stem from prudential concerns, as part of our mandate we are also looking at consumer protection and retail conduct of business issues, anti-money laundering and combating the financing of terrorism (AML/CFT), and we are also considering further exploring the impact of FinTech on the resolution of financial firms.

The EBA Discussion paper received a lot of attention and we received over 60 responses which are currently being analysed. Overall, there was support for the EBA work on FinTech and agreement with the scope of the planned work. Respondents expressed concerns about current regulation putting incumbent banks at a competitive disadvantage with other actors while there is a demand for a shift from 'entity-based' to 'activity-based' regulation and the application of proportionality. In addition, the industry asks for greater attention on the opportunities that arise from FinTech while expressing concerns around third-party service providers and cyber risk.

Conclusion

In conclusion, FinTech - including the cloud, is driving a major change in financial services and we must ensure that regulation and risk management policies keep up with the efficiencies and modernity of FinTech while at the same time, FinTech does not underestimate the reasons for regulatory compliance. To do so it is necessary to have meaningful exchanges between the key stakeholders to ensure that innovation is encouraged in a way that allows for the risks to be mitigated. This is why today's event -bringing together cloud service providers, regulators and banks - is very welcome. I look forward to your input in the debate and to continuing the engagement going forward.

Thank you very much for your attention.