The Open Banking framework, Considerations, implications and perspectives: Reading in the European experience

إطار العمل المصرفي المفتوح، الاعتبارات، التداعيات ووجهات النظر: قراءة للتجربة الأوروبية

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Abstract:

The financial services industry is undergoing massive changes; the days of traditional financial services – of merely providing products – are over. The open banking and the Second Payment Services Directive (PSD2) are upending the culture of financial services. It is a pioneering initiative designed to increase competition and innovation.

The article aims to identify open banking influence on the banking industry as the first significant attempt to use technology to rebalance markets in favour of consumers. The study concludes that open banking is a revolution in the digital transformation within the financial and banking sector, which will bring opportunities as well as risks and challenges for all actors involved in a commercial or financial transaction.

***Keywords:** Open banking system, Fintech, PSD2.*
Jel Classification Codes : G21-G23-O16-O33

الملخص:

تشهد صناعة الخدمات المالية تغيرات هائلة فقد ولّت أيام الخدمات المالية التقليدية المقتصرةعلى مجرد تقديم المنتجات والتحولنحوالابتكاروالتميز، إذ تعمل الخدمات المصرفية المفتوحة وتوجيه خدمات الدفع الثاني (PSD2) حاليا على تغيير ثقافة الخدمات المالية. إنها مبادرة رائدة تهدف إلى زيادة المنافسة والابتكار.

تهدف الدراسة إلى تحديد تأثير العمل المصرفي المفتوح على الصناعة المصرفية كمحاولة سباقة لاستخدام التكنولوجيا بغية إعادة توازن الأسواق لصالح المستهلكين. وقد خلص البحث إلى أن الخدمات المصرفية المفتوحة هي ثورة حقيقية في مجال التحول الرقمي داخل القطاع المالي والمصرفيستجلب العديد من الفرص، وكذا المزيد من المخاطر والتحديات لجميع الجهات الفاعلة المشاركة في المعاملات التجارية أو المالية.

الكلمات المفتاحية: نظام العمل المصرفي المفتوح، شركات التكنولوجيا المالية، خدمات الدفع الثانيPSD2
تصنيفات JEL: **G21-G23-O16-O33**

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Introduction:

The trend towards the use of access and network digital technologies, mutate market conditions, and the advent of new players have created a new banking industry profoundly changing; where banking institutions will change their business plan and their strategies to adapt with this recent industry which called “Open Banking”. This strategy has been made an obligation to open their information systems, in order to share the data they have with third parties.

Open Banking- the banking model of the future- is a major change in the retail banking sector, where traditional banks must face the loss of their monopoly on their key resource. However, redefine their place in a new ecosystem to survive and collaborate with FinTechs, banks and other third parties to offer and deliver new transparent financial services to customers looking for products that are better suited to their needs and are less expensive or even free.

The positive impacts of the development of Open Banking are multiple and affect all the actors involved in a commercial or financial transaction: customers, banks, Fintech, companies, etc. But the opening up of banks’ information systems to the public, which involves sharing their customers' data with third parties also involves multiple risks that can affect the different actors.

All of this is in line with regulators' concerns about the need to create an enabling environment to help accelerate Open Banking. Actually, the Europe and the UK have already taken the lead by creating and passing their open banking regulations and practices.

The recent announcement of the new version of the Payments’ Systems Directive (PSD2), which was implemented in 2018 across Europe. as well as the UK open banking initiative (OBWG) push towards the creation of an open banking environment in which all European financial institutions are obliged to open the payment data of their customers through the introduction of open application programming interfaces (APIs), which allows banks to connect their payment and data services to third parties in accordance with PSD2.

The basic aim of this research is to outline the main aspects of what regarding the open banking, and then move on trying to understand its main influence on banks and the banking industry. The second part describes the concept of Open Banking on several sides, the third part outlines the main pillars for adopting an open banking system, and the conclusion part outlines the European experience, as new trend that needs to be framed.

I-A reading of the concept of Open Banking on several sides:

In a rapidly changing world, and due to the brutal development of information technologies, the Open Banking is emerging and evolving at the heart of the digital transformation of the financial world as the most appropriate solution to take into account all current requirements. It has become an obligation for banks over the past ten years and one of the many innovations that are completely shaking up and transforming the market.

I-1- The open banking, a new concept of innovation in banking system:

Open banking as this trend is known as involves banks shifting from closed systems and acting as data gatekeepers to open systems where sharing data with more third parties will allow customers to get the most of their financial data and use the financial services that best suit their needs (MIT, 2018, p. P6).

According to Basel Committee, Open banking is defined as the sharing and leveraging of customer-permissioned data by banks with third party developers and firms to build applications and services; such as those that offer real-time payments, improved financial transparency for account holders, marketing and cross-selling opportunities (Basel Committee on Banking Supervision, 2019, p. 4). In other words, the open banking system is a global movement that promotes a customer’s right to share financial information with third parties (Deloitte , 2017, p. 5).

Open Banking requires firms to (Reynolds, 2017, p. 4):

- Make it much easier for people to exchange their financial transaction data with third parties online;

- Allow third parties to initiate payments directly from a person's account as a bank transfer as an alternative to credit or debit card payments;

- Make public and openly share their product information and importantly, their customer's satisfaction scores and separately other service level indicators.

With this new system, the freedom of customers to have their bank data may force banks to make it available to third parties, through Programming Interfaces (API : Application Programming Interface) with the major objective of stimulating competition and innovation in the sector. APIs help them reach new customers in a multifaceted and multichannel way through the means of communication (chatbots, social media, robotics, etc.) In this context, the APIs have been deemed as the most reliable and tested technology to facilitate secure and reliable access to customers' accounts, they make it possible for the software at one company to access information from the software at another company.

Open Banking is based on the opening of banks information systems and the sharing of their customers' data with third parties. It advocates the use of Open APIs to allow third parties (usually FinTech companies) to access information in order to develop their own applications so as to reach new audiences. For example (Horesnyi, 2017), an aggregator-type FinTech (part A) that can retrieve a client's banking information from a bank's API (part B), and present this same information to another FinTechs (the part C) to develop new applications. The chain would then be: {application user} - {API of C} - {API of A} - {API of B}, each of the links adding its own added value.

Therefore, Open banking and APIs cannot work without each other, because it is not a technical API project but a business strategy based on concrete technological opportunities, and to facilitate services and share data, banks build and deploy APIs through collaborations with third parties, which are generally FinTech.

I-2- From Open banking to Open X, sharing of interests between banks and FinTechs

In the 2010s, several FinTechs launched their offers based on an Open Banking strategy, offering alternative offers to banks, using digital technologies to provide financial services more efficiently and at less cost. In 2018, nearly 1.5 trillion dollars was raised to finance FinTechs and the trend is forecast to increase for years to come. Despite the rapid growth of FinTech, banks are resisting.

Banks and FinTech must therefore work together because their interests complement each other. The first ones have important resources and a large customer base but they are looking for flexibility, innovation, revenue, cost synergies, and time savings. Conversely, the second ones are smaller innovative financial players and specialized who wish to access the customer's portfolio while benefiting from the bank's infrastructure and compliance expertise.

It is precisely this situation that will perhaps allow creating of a new banking model, integrating FinTech technologies and giving birth to the bank of the future "BankFinTech". Banks have realized that cooperation BankFinTech is a key approach to foster innovation; Open Banking rebalances the report of power between large banking groups and FinTechs.

According to the World FinTech Report published in 2019, the FinTechs are struggling to scale up their operations, and the banks are struggling to collaborate with the FinTechs (Efma, Capgemini, 2019). Consequently, the actors of the sector seek to skip the stage of Open Banking to pass directly to Open X: a more efficient and structured form of collaboration, facilitated by the standardization of application programming interfaces (API) and sharing information from customer's data.

The era of Open X will give birth to an integrated market in which each player will play a specialized role, for transparent data and service exchanges, an optimal customer experience and accelerated product innovation. However, four major trends in the industry are reshaping the paradigm (Efma, Capgemini, 2019):

- A shift away from products and toward a focus on customer experience;
- A focus on data rather than assets;
- Shared access rather than ownership;
- Partnering rather than building or buying.

With Open X, the financial services sector will become an ecosystem or shared market, in which companies will re-inject recomposed products and services. In this context, banks, FinTechs and APIs must review their innovation strategy and their customer service to offer new services for the benefit of their customers.

I-3- Opportunities, risks and challenges of Open-Banking for banks:

The Open Banking system presents countless opportunities for the financial services industry, in general, but also for the various stakeholders. It will facilitate the creation of new products and services that were previously impossible to imagine from data management. This opening up of bank data and making them available to third parties raises many questions and controversies, in particular on the potential risks. It is clear that the resulting proliferation of data sharing practices with third parties will also pose a new set of risks to our financial system. To maintain the safety and soundness of our financial ecosystem, the open banking framework will need to not only to actively detect these emerging risks, but also to take appropriate actions to mitigate them.

Open Banking brings both opportunities and challenges and even difficulties to banks all over the world, especially in data management (Hao Wang, 2020, p. 812). Banks are required to grant other providers access to their customers' payment account data in order to stimulate competition, facilitate the development of new, innovative offerings, and allow customers to purchase more personalized and better quality services.

In 2015, Barclays Research found that nearly 40% of individuals would be willing to provide their data in order to receive personal financial management services, even before they were being sold items. Nearly 30% were undecided and only 30% rejected the idea. Later in 2016, Accenture conducted a research with consumers. It proved that 85% of people between 18-24 years old would trust third parties to aggregate their financial data. In contrast, 48% of 55-64 years old were neutral or positive (Reynolds, 2017, p. 7).

Open Banking exposes banks to healthy competition that will have the potential to provide more innovative and better services, which may include payment initiation, money management and investment advice, credit and insurance products, or cheaper energy offers. It also presents significant opportunities for banks to improve their customer experience, grow new revenue streams, monetize existing assets and participate in a larger, mutually beneficial ecosystem (Accenture, 2018, p. 9).

A survey by PwC suggests that consumer banking, payments are the sectors most likely to be disrupted, and bankers estimate they could lose up to 24% of their business (Reynolds, 2017, p. 7). In this context, banking institutions can choose embrace change through the opportunities that technology offers by interacting with the greater ecosystem of market participants and other service providers, or they might maintain their position by concentrating their efforts on developing competitive solutions for all client and product sectors while restricting access to their systems.

Banks are required to grant other providers access to their customers’ payment account data in order to stimulate competition, facilitate the development of new, innovative offerings and allow customers to ‘shop around’ for better-value, more personalized services.

Open banking has forced banks to rethink the issues of ownership, storage and use of that data (MIT, 2018, p. 5); for this, this innovation faces many challenges and difficulties. For fear of fraud and abuse, data owners are afraid to share and exchange data with anyone outside their institutions. In view of challenges, banks and financial technology companies are exploring new technologies to transform existing systems, products and services to cope with different data privacy requirements and regulations (Hao Wang, 2020, p. 812).

I-4-Potential benefits and risks of Open-Banking for customers:

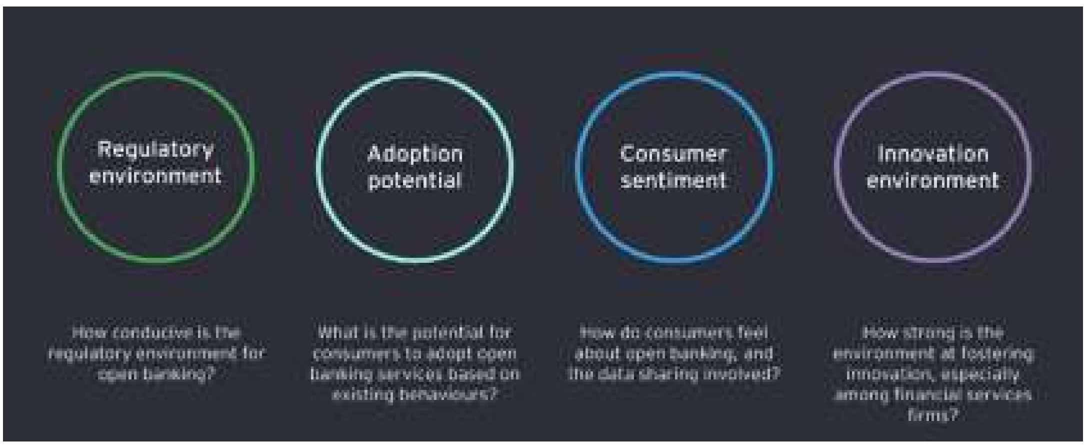
The most important advantages of the Open Banking system for the benefit of customers, is to give them more control over their bank account. In particular, to give them the ability to share their transaction data with other banks and third parties in a ways that benefits them.The other advantage is security. Thanks to APIs that make it easy for customers to have secure and reliable access to their accounts, when they sign into any website using their Google account, the Google Authentication API helps them login securely.

In the United Kingdom, for example, Open Banking is now live for all retail and investment banking customers. Currently, a customer's external bank account details such as account numbers, balances, transaction history, etc. sit squarely within their bank. They have no real ownership of them, and the only way to see them is through their bank’s website or application (Fernandes, 2020).

II-The main pillars for adopting an open banking system:

The days of traditional financial services – of merely providing products – are over. The digital transformation train has sped away, and open banking destinations are gaining traction around the world. But the global acceleration and adoption of open banking will be shaped by four critical pillars.

Figure n°1: The four pillars for adopting Open Banking



Source: (Hamish, 2018, p. 7)

II-1- Regulatory environment:

Regulations, competition, collaboration, demography, and customer and player acceptance are the primary drivers of open banking adoption in any location. Regulations, in particular have been a critical enabler in the implementation of open banking. Three scenarios emerge based on regulatory and player activity (Efma, Capgemini, 2019, pp. 30, 31):

- Regulated open banking: In these markets, regulators mandate open banking, so there is a significant push for quick adoption. Prominent players will surge to meet open banking compliance requirements, But, as banks meet minimum regulatory requirements, adoption rates may decelerate, A few markets that demonstrate this scenario are the UK, Canada, Australia, Hong Kong, and a select European Union countries.

- Supervised open banking: In these markets, regulators have not yet mandated open banking although player guidelines are in place. For many banks, legacy systems will act as a gate to open banking adoption. A few early adopters will start opening up, This market scenario exists in Brazil, Mexico, and Singapore.

- Market-driven open banking: In these markets, regulators offer basic open banking guidelines or none at all. Customers that are unbanked or underbanked, as well as the creation of a vibrant FinTech community, are eagerly pushing open banking adoption. Subsequently, numerous growth opportunities exist for players, Banks and FinTechsto openly share data for slow, but steady, growth Banks and FinTechs openly share data for slow, China, India, and the United States exemplify this market scenario.

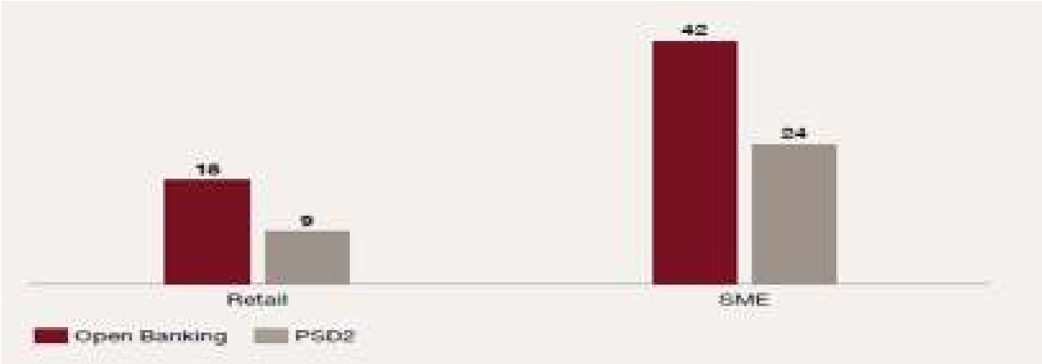
Generally, open banking regulatory frameworks may cover enabling third party access to customer-permissioned data, requiring licencing or authorisation of third parties, placing restrictions on screen scraping and reverse engineering practices as well as enforcing data privacy, disclosure, and consent obligations. Frameworks may also include regulations governing whether third parties can share and/or resell data to "fourth parties" who use the data for reasons other than those authorized by the consumer, as well as whether banks or third parties can be compensated for sharing data. Open banking frameworks may also contain expectations or requirements on data storage and security (Basel Committee on Banking Supervision, 2019, p. 12).

II-2- Adoption potential:

Information Asymmetries are a pervasive feature of banking and financial markets. Standard economic theory, suggests that markets work most efficiently when: customers are informed; there is transparency in pricing and in the quality of available products and services; and where the transaction costs of substituting between providers and barriers to entry for new providers are relatively low. Fundamentally, Open Banking seeks to reduce those barriers. Requiring banks to offer open access to data as part of their product terms and conditions, while also allowing clients to direct their bank to securely disclose their banking data with whom they choose, would lead to the development of comparison services more efficient to offer tailored product recommendations (Farrell, 2017, p. 7).

Customer knowledge of Open Banking has remained low among retail consumers since its launch on January 13, 2018, with only 18 percent knowing what it means. Open Banking, on the other hand, is already known by 42 percent of SMEs.

Figure n°2: Customers aware of the meaning of Open Banking/PSD2 (% of customers surveyed, 2018)



Source: (PWC, 2018, p. 26)

II-3-Consumer sentiment:

Open banking will succeed only if it wins the trust of customers and makes them feel comfortable about sharing their data with third parties. Moreover providers need to persuade customers that there is a valid reason to give up their information.

Figure n°3:Regulation, trust and consumer sentiment

Source: (Hamish, 2018, p. 7).

Realizing the true potential of open banking – both for consumers and financial institutions – hinges on gaining consumer's trust. That open banking can bring Regulators can help by creating settings that encourage innovation while also assuring consumers. Furthermore, consumer education regarding dangers and advantages can assist drive adoption — but probably the most powerful lever for shifting consumer sentiment will be showing them the payoffs that open banking can bring (Hamish, 2018, p. 7). To elevate consumer trust, banks, regulators, FinTechs and others will need to help ensure that progress is made in three key areas (Hamish Thomas, 2019, pp. 11, 12):

•Cyber protection: Using more sophisticated digital tools and techniques to keep consumers' data safe;

•Regulatory protection: Embedding a framework with sufficient consumer safeguards, including rights to recourse and penalties for any providers that contribute to causing damage against consumers;

•Adding value: Providing open banking services that make consumers feel support in achieving their goals.

II-4-Innovation environment:

Preparing to compete in this future will require banks to develop a clear strategic path, by first determining which role they will play in an expanding financial ecosystem, enabled by open banking and powered by technology. Banks will need to offer innovative products and services that appeal to customers and excel at providing exceptional customer service. Others may focus on providing banking operations and technology (Jeroen van der Kroft, 2018)

It will be up to banks to lead their digital future and offer innovative new financial products once regulators have done their part. Only then will they convince customers of the benefits of open banking and maximize its potential across the financial sector and beyond.

III- Open Banking European experience, a new trend that needs to be framed:

On UK, Open Banking is now live for all customers of country on both retail (that's a regular everyday account) and business plans. Your external bank account information, such as account numbers, balances, and transaction history, is now stored solely within your bank. You don't actually own them, and the only way to see them is through your bank's website or app.

III-1- Regulatory context of open banking in Europe:

The banking business has long been strongly regulated and strictly monitored. Opening a bank is a must for any financial institution in today's digital-first economy, as well as a means of enabling an ecosystem strategy for new business models. It is just three short years since the term 'Open Banking' has emerged in financial services field; it is now a global trend driven by the pace of FinTech innovation, progressive regulation and continued consumer demand (MIT, 2018, p. 2).

In Europe, The new (PSD2: Payment Services Directive) directive is a fundamental piece of payment legislation. The revised directive is a regulatory framework for payment services that came into existence in January 2016 and follows up from the original PSD of 2009 (PSD1) and he can have opened up the European banking and financial services market. Both the initial directive and PSD2 set out and extend the information requirements, rights and obligations of payment service of users and providers (PSPs) that facilitate the transfer of funds.

The new directive requires European banks to grant third party providers access to a customer's accounts to initiate payment services or to provide account information in a regulated and secure way. This will enable seamless and safe payments across the European Union borders (Efma, Microsoft, 2019, p. 4). It aims to better align payment regulation with the current state of the market and technology, and facilitate consumer's access to their banking data and driving innovation by encouraging banks to exchange customers' data securely with third parties. This move drastically affects the financial ecosystem and infrastructure of banks, FinTechs, and businesses using payment data for the benefits of consumers. However, the European Banking Authority (EBA) granted further potential exemptions and set the new PSD2 deadline to 31 December 2020 (THALES Group, 2019).

In parallel to the EU regulatory reform, the United Kingdom is furthest ahead in its drive towards an open banking system. The regulatory framework of open banking, launched in January

2018, covers the country's nine largest banks and provides standards for how data should be sharedwith third parties. Moreover, in the same context, the British government launched in 2016 the Open Banking Working Group (OBWG), which defined the Open Banking Standard. The OBWG was created in 2015 as a cooperation between the UK Treasury and the Open Data Institute (ODI) – the latter being the brainchild of Sir Tim Berners-Lee, inventor of the web. Its goal is to create an open banking framework for the banking sector in the United Kingdom, and it shares many of the same high-level goals as PSD2, such as developing APIs for banking data. Despite the fact that it is not specifically focused on payments, the Payments UK industry association has collaborated closely with the OBWG. The latter has produced a report outlining its recommendations for open standards and how they might be implemented (Devine, 2016, p. 11).

This regulatory constraint (PSD2) which will apply very concretely in the coming months. according to the new potential exemptions granted by the (EBA) and which is considered as one of the largest regulatory challenges that banks have faced in recent years (Efma, Microsoft , 2019, p. 3), will make it possible to make the payment account data of bank customers' accessible, in complete safety and free of charge, to third parties wishing to offer innovative services.

III-2- Impacts of regulating and supervising on banks, customers and other third parties:

The ecosystem is in varying stages of development in different markets, there are three forces: regulation, competition and consumer's demand. In an unstable world that always changes, regulation generally plays a main role creating rules to organize transactions between different parties.

" No one would have predicted that regulation would be one of the drivers of innovation a few years ago," says Derek White, global head of client solutions at BBVA. (MIT, 2018, p. 7). In his view, Regulation allows to play an essential role in encouraging and strengthening innovation in the Open Banking sector. He sees this as a result of two major trends: the first is the blurring of business borders and the emergence of "new economy" services, and the second is customers' growing interest in understanding and controlling their data and digital footprint.

Generally, and according to several specialists in this field, the key aims of the PSD2 are to integrate further and support a more efficient EU payments market, as well as to promote competition in an environment where new players such as FinTechStartUps and a new generation of payment products and services are emerging. PSD2 is expected to stimulate innovation in the sector, resulting in greater transparency, security, and service quality for customers, as well as lower prices. (MarkosZachariadis, 2017, p. 4).

The PSD2's essential elements, such as Strong Customer Authentication (SCA), Secured Communication, Risk Management, and Transaction Risk Analysis (TRA), have been maintained, verifying the directive's security goals. PSD2 requires banks to implement multi-factor authentication for all proximity and remote transactions conducted through any channel in order to protect consumers. To improve security, banks should be required to verify customers' agreement. (BEUC, 2019, p. 8). This obligation concerns the use of at least two of the following three functionalities (THALES Group , 2019):

- Knowledge: certain information that only the user knows, for example password, code, personal identification number
- Possession: Something, only the user, owns, for example, token, smart card, mobile handset
- Inherence: Something, the user, is, for example, biometric characteristics, such as a fingerprint.

In a similar context and in order to encourage further competition, PSD2 requires banks to grant third party (e.g. PSPs: PlayStation Portable) access to their customers' accounts and payment services securely following customer consent through API's. Following this obligation, the PSD2 regulatory framework spells out the roles and responsibilities of Account Information Service Providers (AISPs)* and Payment Initiation Service Providers (PISPs)* *. One of the ways in which PSD2 will open up the payments sector is through the creation of Third-party Payment Providers (TPPs). These will serve as a conduit between retailers and banks, eliminating the need for traditional payment processors. Third parties can now initiate bank-to-bank payment transactions on behalf of customers under PSD2.

PSD2 essentially means that any company – such as a social network or a mobile app developer – can process payments on behalf of its customers. It only requires the user's authorization and access to the bank's API, both of which must be granted by the bank.

"The idea is that the APIs would enable new business models," says Andrew Whaley, vice president of engineering at Arxan and former chief engineer at Barclays Bank, "so they would allow new players to come into the field". In theory, he explains, this would eliminate the existing 'middle men' – fee-charging payment service providers or card payment providers whose cost structures and processes differ greatly across Europe. "If it was possible, via an API, to – say – initiate a payment from your account to my account, then you could pay me without a card issuer being involved" (Devine, 2016, pp. 8-9).

But as Whaley, explains that there are serious questions about security and privacy that the new regulatory regime leaves unanswered (Devine, 2016, pp. 8-13). There are also, according to a report prepared by The European Consumer Organisation remarks concerning access to savings or investment accounts, since the PSD2 covers only payment accounts. PSD2 does not apply when an AIS provider seeks to obtain access to savings or investment accounts. Only the GDPR is in effect. This is a critical stage for the future. It is also a matter of implementation of Article 20 GDPR (General Data Protection Regulation) on the right to data portability which raises several questions. (BEUC, 2019, p. 8). Among the other data subject rights, the right to data portability will address these issues by giving data subjects more control over their personal data.

The GDPR regulation is part of the European Union Data Protection Reform, which is intended to make Europe fit for the digital age. The reform will allow people to regain control of their personal data. According to a recent Eurobarometer survey, two-thirds of Europeans (67%) are concerned about not having complete control over the information they disclose online. Seven out of ten Europeans are concerned about how firms may exploit the information given. The data protection reform will strengthen the right to data protection, which is a main right in the European Union, and will allow them to have confidence when they communicating personal data (UIO, 2017, p. 2).

Concluding this part, PSD2 has a key role to play in the digital transformation, along with open banking and regulatory application programming interfaces (APIs), which will evolve into a broader API economy. This will allow the market authorities to offer better choices and protection to consumers, and an increased competition in the marketplace. As a result it will also provide an opportunity for the transformation of banking products and services.

Conclusion:

Open banking is one of the major axes of the digital transformation of the banking and financial system. This vision, which was conceived twenty years ago, is now becoming a reality. The arrival of Open Banking is a revolution in the sector in the sense that it shook up the old rules of conduct of financial institutions which were governed by impermeability and closure to fill the gaps in current data access models. accelerate data-driven innovations and give birth to new services and applications that make life easier for customers and create new habits.This movement is directly linked to the emergence of FinTech, for banks and FinTechs, this is an opportunity to offer, in collaboration, new highly personalized services, both in the financial field (credit, savings, insurance, etc.) and non-financial ones (telephony, real estate, vehicles, etc.). This BankFinTech collaboration is a critical strategy to promoting innovation, particularly for banks, and Open Banking will assist them in rebalancing the power balance between giant banking groups and FinTechs.

The European experience is the most interesting in the open banking industry in the world. The Second Payment Services Directive (PSD2) and UK Open Banking Standards are revolutionizing financial services, creating new links between consumers, third-party applications and banks. They stipulate that European banks must open their system to third party financial institutions, in order to manipulate bank accounts, when customers request it.

In the same context, Open Banking also creates significant new opportunities for banking customers. Essentially, it gives them better control over their data and an ability to authorize third parties to access their bank account data to either collect account information or to initiate payments, this could allow banks to build trust with customers as a safe and secure data holder, which can potentially lead to value creation in financial services.

On the other hand, Open Banking provides some risks and challenges for banking and the financial system in general. The open access to sensitive data without establishing appropriate protections can also present considerable risks because bank data is accessible to third parties. In this context, the APIs have been deemed as the most reliable and tested technology to facilitate secure and reliable access to customers' accounts, they make it possible for the software at one company to access information from the software at another company within the limits of what customers allow. As a result, this point completely supports the first hypothesis.

However, because the PSD2 only applies to payment accounts, the new regulatory system (PSD2) poses significant security and privacy concerns for savings and investment accounts. PSD2 does not apply, only the GDPR (General Data Protection Regulation) applies. This point is critical to the process's future, and it provides policymakers and regulators with a significant issue. This supports the second hypothesis's validity.

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