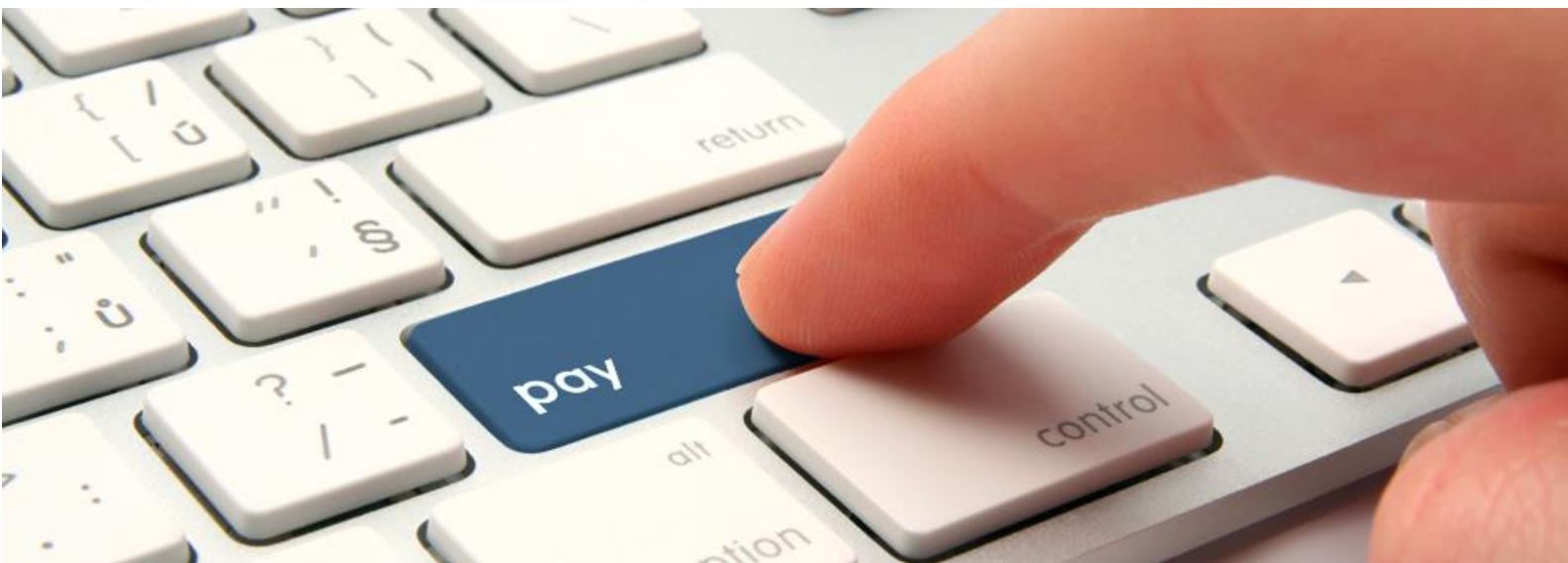


# Europe's Payments Revolution

## Stimulating Payments Innovation while Protecting Consumer Privacy

Inna Oliinyk and William Echikson



Inna Oliinyk is Visiting researcher at European Credit Research Institute, CEPS. William Echikson, heads the CEPS Digital Forum.

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## Overview

In September 2019 Europe's financial markets will undergo a revolution.

From that date, the Payment Services Directive (PSD2) will require banks to provide API software interfaces, allowing financial upstarts to tap customer data. This new access to bank data is designed to jumpstart fintech innovation, encouraging the creation of a myriad of innovative, secure user-friendly services that will benefit both individuals and small businesses.

Europe's digital financial services are already growing fast: e-commerce turnover jumped by 15% in 2017, compared to 2016 (Lone, 2017). More than 68% of Europeans have used either a digital wallet, mobile payment or a credit card to make online payments. Almost half of Europeans rely on mobile devices to shop and 45% of Europeans depend on digital peer-to-peer payments (Visa, 2017). Small businesses are also increasingly switching to digital and cloud-based financial tools in the areas of payments and bookkeeping.

The European Commission predicts that PSD2 will make online payments even easier, safer and cheaper (European Commission, 2018). We have spoken to fintech players, banks, consumers, small businesses and regulators to investigate whether PSD2 will achieve this laudable aim. Each group holds high hopes – while harbouring concerns.

For fintech entrepreneurs, do the upcoming changes offer enough access to bank data to innovate? PSD2 is technology neutral – it stipulates no common mandated API standards. This means that the more than 6,000 banks operating in Europe could develop individual sets of APIs, meaning that fintechs would have to deal with multiple different APIs.

Until now, fintech newcomers mainly accessed bank data to serve their customers through a process called 'screen-scraping' (European Savings and Retail Banking Group, 2017). Consumers allowed them access to their bank accounts, which was then 'scraped' and the records used to offer services. Regulators fear that screen-scraping represents an invasion of privacy, as well as an inefficient, and unsafe way to share data. To the chagrin of some fintech players, PSD2 bans most forms of scraping when banks provide APIs.

This change will cause a fundamental evolution in how banks access and employ customer financial data. Analysts predict that at least nine percent of all retail payments could move elsewhere by 2020 (Hafstad, et al., 2017). Some traditional banks compare the new API data sharing rules with expropriation, even though they also offer an opportunity for them to use their customer data to provide new services.

For all payment players, the changes required by PSD2 will come at a cost. Banks will need to update their old legacy IT systems, just at a time when they will be facing new, disruptive competition. Likewise, fintech will need to invest in new capabilities in order to connect with multiple APIs.

For individuals and small businesses using payments services, the impact is uncertain. Although PSD2 promises easy and safe access to a wide range of new services, many questions remain unanswered. How will API access work? Will customers have full control and knowledge over

what data banks are sharing? Will the security requirements frustrate as much as protect individuals and small businesses? PSD2 requires double authentication for most transactions. Instead of ‘one-stop-payments’, individuals and small businesses using payments services may have less streamlined experiences.

Another unresolved issue is privacy and data protection. In May 2018, the European Union instituted new data protection rules in the form of the General Data Protection Regulation (GDPR). Some GDPR provisions seem to contradict PSD2 rules, particularly about what constitutes consumer “consent.” According to a September 2018 report by BEUC Consumer Association, PSD2 may be read to allow profiling, outlawed under GDPR (Aliyev & Allix, 2018). This discrepancy remains to be ironed out.

At stake is Europe’s place in the future world of the 21st century global economy and digital payments. China is racing ahead, leapfrogging credit cards and installing next generation internet payment services such as Tencent’s WeChat and Alibaba’s Alipay. The US is counting on its modest regulatory requirements to generate innovation.

While no definitive conclusions can yet be made, this paper is designed to explain the high stakes involved for all players involved: banks, fintechs and small businesses and individuals.

CEPS acknowledges Intuit’s support for this research. The study was conducted in complete independence. It is based on interviews with payment regulators, consumer advocates, fintech leaders, and bank officials. The author takes full responsibility for its findings.

# Europe's Payments Revolution

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### 1. Payment Services Directive II

#### 1.1 From PSD1 to PSD2: a historical perspective

Before 2007, no legal framework existed for a single EU payments market. Only banks, money remitters and telecommunication companies were allowed to carry out payment services.

The European Commission filled this gap by adopting its first Payment Services Directive. PSD1 was designed to make cross-border payments easy, efficient and secure. It allowed non-banks into the payments market, establishing a 'passport' approval procedure for them to be considered payment services providers. This offered consumers and businesses increased choices in of payments services.

PSD1 brought substantial benefits. Annual funding for Europe's fintech industry expanded by more than four times from 2013 to 2017, according to a CB Insights report (Levi, 2017). The number of investment deals in the industry more than doubled: from 136 in 2013 to 466 in 2017.

PSD1 improved market transparency. Fees for payments fell across much of Europe, according to a study by London Economics and PaySys (Riefa, et al., 2013). In France, for example, prices for online transactions plunged from €4 to €0.30, according to the report. This was a boon for the pockets of customers and budgets of small businesses.

Not all was rosy. Fears emerged about the safety of unregulated companies offering sensitive payment services. In July 2013, the European Commission proposed to revise the Payment Services Directive. Hence, PSD2 was born.

#### 1.2 Access to account information

PSD2 regulates various aspects of payment services: security, authorisation and supervision of payment providers, and 'one-leg transactions' – payments where one of the providers is based outside the EU.

In developing PSD2, the fiercest debate revolved around access to bank account information. Before PSD2, Third Party providers gained access to customer data through a process called

screen-scraping. Bank account holders consented to the process, loaning the payment provider their credentials. Most often, these credentials were stored and reused.

Regulators feared leaks could compromise consumer bank accounts. PSD2 gives banks two choices: let third parties identify themselves and continue screen scraping (through ‘the user interface’) or provide access through a ‘dedicated interface’, such as an Application Programming Interface (API). Otherwise a ‘fall-back’ mechanism must be put in place. This dedicated interface is supposed to be a standardised set of requirements that allows one company’s software to connect with another company’s software. Banks will stay in control of the API and client’s authentication with the bank remains a mandatory requirement to use them. API proponents claim that this new system is safer than screen-scraping.

PSD2 covers payment accounts and defines a payment account as “an account held in the name of one or more payment service users which is used for the execution of payment transactions” (The European Parliament and the Council of the European Union , 2015).

This general definition will be further specified by national authorities within each of the European Union’s 28 member states. Depending on each country’s transposition, payment accounts may include current accounts, e-money accounts, flexible savings, and credit cards. Fixed term deposits, loans and mortgage accounts remain outside the scope of PSD2, meaning data from these accounts will continue to be available only through screen-scraping.

In March 2018, the European Council adopted one of the key elements of PSD2’s technical standards. It agreed to give banks 18 months to design, implement and test their APIs. Under the technical standards, banks must provide a dedicated interface and – if they do not receive an exemption from their supervisor - a fall-back option, used if Third Party providers remain unable to connect to their API after five consecutive trials (The European Commission, 2018). This is to ensure efficient functioning in the access to bank data and to avoid any obstacles which would be to detriment of the end user.

### 1.3 The industry debate

Banks favour a ban on screen-scraping in order to reduce the risks of data misuse and fraud. In fact, the sharing of personal credentials via screen-scraping previously represented a breach of many bank account terms and conditions.

The European Banking Authority shares these fears (Wallace, 2017). It says that banks are unable to identify who accesses screen-scraped data due to the danger of third parties “impersonating” genuine customers.

Some fintech players would disagree. Screen-scraping is asserted to be safe and its fast speed makes it visible to banks, says Ralf Ohlhausen, business development director at PPRO, a London-based payment solutions firm. While it takes customers up to a minute to type in a manual password to gain account access, he points out that screen-scraping delivers almost instant connection.

The Future of FinTech Alliance believes that a ban on screen-scraping represents bank protectionism (The Future of FinTech Alliance, n.d.). The association is also unhappy with allowing banks to come up with their own APIs, a freedom that it fears will lead to fragmentation. Just as banks are concerned about the technical and financial challenges posed by PSD2, fin tech players fear that they will endure large sunk costs (Wood, 2017) attempting to migrate to new standards.

The technical standards have attempted to address these concerns by allowing a fall-back option after five cases of API connection failure.

Some players in the banking sector criticise this fall-back mechanism and label it as unsafe (Chapman, 2017). They say it will cost large sums to develop two systems at the same time, one for APIs and another for 'identifiable' screen-scraping, i.e. a fall-back mechanism.

In response, the technical standards incorporated an exemption from the contingency measures. The European Banking Authority is now consulting on the details of guidance for competent authorities on how to give that exemption.

The interests of consumers are key and BEUC – the European Consumer Organisation – argues in favour of a ban on screen-scraping, which it deems dangerous (Goyens , 2017).

While convenience, not payment security, represents a legitimate priority, European consumers, small business users and startups have concerns about how to have a safe, secure and convenient payment service. When consumers find the authentication process easy, they use digital services 10 to 20 percent more than customers who are frustrated by authentication, reports a McKinsey Consulting study (Hasham, Rezek, Vancauwenberghe, & Josh, 2016). The same could be said for entrepreneurs and owners of small businesses who wish to free up as much time as possible on administrative work, so that they can focus on growing their business.

Roughly a third of the population prioritises ease and convenience over security, McKinsey says. These payments services users do not want to enter multiple passwords. Only 10% place a higher value on security. The remaining 60% say they are willing to make "reasonable trade-offs in both convenience and security."

## 2. Stakeholder analysis

Banks, financial service providers, consumers and small businesses see both opportunities and threats in the new PSD2 regulations.

### 2.1 Banks

For banks, the new rules under PSD2 can potentially represent a threat to their business models. According to the EBA, most European banks continue to rely on large scale customised legacy mainframe IT systems (European Banking Authority, 2016). These systems are sometimes outdated and may not suit the modern digital environment (Oracle, 2011). Unless modernised, the antiquated bank IT will be unable to offer new services and will frustrate

payment services users with long waiting times and a requirement to click through multiple windows. In this regard, the EBA also considers the entry of fintechs as both a challenge to and opportunity for European banks (European Banking Authority, 2016). In 1998, Microsoft founder Bill Gates expressed the challenge for banks, telling the United States Senate: “Banking is necessary, but banks – are not” (Gates, 1998).

Investment in new API technologies will increase bank IT costs – and fuel competition which may cut into their revenues. They could lose 9% of revenue from retail payments to newcomers by 2020, according to IT services and software provider EVRY (Hafstad, et al., 2017). By 2025, some suggest that banks will lose more than a third of payment revenues to newcomers (Citi GPS, 2018).

Some banks have concerns about providing open access to valuable payment account data without receiving anything in return. Although they recognise the opportunity to provide new payment services, Ana Botin, executive chairman of Spain’s Santander, has spoken out on PSD2, arguing that banks should get access to fintech customer data to insure fair competition (Financial Times, 2018).

More than fintech start-ups, banks worry about internet giants such as Apple and Amazon. While financial service start-ups often provide complimentary services, Botin argues that big tech companies threaten core bank operations. Internet giants have almost unlimited resources to access and analyse customer data, she says. The ECB recognises these fears, but underlines that resistance among banks to PSD2 objectives only helps global giants increase their presence in Europe by constraining fintech enterprises (Mersch, 2018).

As a result of PSD2, banks are creating proprietary API standards, allowing them to control access to payment account data. This might hurt fintech minnows, while failing to stop the internet giants who already own reams of data, says PPRO’s Ralf Ohlhausen.

According to a recent report by Deloitte, only a third of Central and Eastern European banks are at the stage of implementing PSD2. In Western Europe the share is somewhat higher, crossing the 50% threshold (Deloitte, 2018). Most are in a “wait and see” or “still evaluating” mode, the report says. They are leaving compliance to IT and legal teams, even though the regulation could lead to considerable strategic challenges in the payments market. “The figure is especially startling given that two-thirds of banks anticipate that PSD2 will affect all bank functions with numerous interdependencies with other regulations,” the report warns. “The clock is ticking.”

Not all is black and white. Two out of three banks in a PwC survey “want to leverage PSD2 to change their strategic position” (Folcia & Firnges, 2017). This could represent even more innovation in the payment services market, representing increased competition for individuals and benefitting small businesses. About half of banks aspire to be what Price Waterhouse calls “a platform aggregator”, allowing partners to integrate their services on the bank platform. All banks “need to analyse their products and services portfolio and determine their disintermediation risk for each product and service they offer”.



## 2.2 Fintech

PSD2 is intended to spur competition by allowing fintech newcomers to provide innovative services. Newcomers already offer a wide range of financial services ranging from peer-to-peer investment to expense analysis and account overviews.

Entrepreneurs and small businesses will attempt to incorporate 'security-by-design' into their products and practices. They will be under legal obligations to ensure protection of personal data (i.e. GDPR requirements). At the same time, businesses will try to avoid burdensome user experience that will slow down payments. For this reason, it is important that PSD2's mandated dedicated interfaces operates efficiently and smoothly.

Under PSD2, start-up payment services providers will need to comply with rules for being either a Payment Initiation Services provider or an Account Information Services provider. Payment Initiation Services providers will be allowed to initiate payment operations while Account Information Services providers will be able to aggregate payment accounts data.

At present, most rely on screen-scraping. A PSD2 mandated screen-scraping ban might limit access to data, resulting in two main challenges:

- Each of Europe's 6,000 banks might develop different APIs, with different ways of connecting. Developers would struggle to keep up with this proliferation.
- Efficient, fast and stable connection must be guaranteed. Otherwise, connections could be cut off.

Common technical standards could be one answer: the European Fintech Alliance has published a manifesto advocating the creation of unified pan-European API standards. At the same time, the Alliance wants to force banks to develop strong contingency measures if the API connection fails (The Future of FinTech Alliance, 2018).

## 2.3 Consumers

PSD2 is designed to help consumers by increasing both security and choice.

By increasing security, consumer organisations believe PSD2 will increase consumer confidence in new payment methods. As evidence, they point to studies showing that consumer confidence in new online payment service providers remains weak. According to a report by Accenture, 76% of consumers rank the traditional bank as their first preference (Accenture Payments, 2016). In second place, the poll shows consumers prefer their online retailer to conduct the payment.

Consumers are unhappy with the present payment options offered by banks. A CCG report shows that a majority of millennials are looking for new digital services, automatization and convenience (Schaus, Spataro, & Nguyen, 2016). Some 47% of respondents mentioned PayPal as their favourite payment method and only 6% use their bank's payments app.

A majority seem to prefer convenience over security. Consumers want to make their purchases with a single click, as on Amazon's patented payment system. When asked to use a card reader or other device to buy a product online, vast numbers of consumers fail to complete their purchases, according to McKinsey (Hasham, Rezek, Vancauwenberghe, & Josh, 2016).

## 2.4 Regulators

The European Commission's Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA) drafted both PSD1 and PSD2. Officials asked and received feedback from stakeholders and attempted to balance their interests.

What the regulators failed to do was to create a strict Europe-wide framework. Each European Union member state must transpose the complicated rules, opening the door to fragmentation. National authorities will define what and how much bank data can be accessed. Penalties for non-compliance, exemption criteria, regulation authorities and other rules will differ from country to country.

In other ways, too, regulators chose divisive compromises. After banning screen-scraping, they adopted contingency measures aimed at ensuring high-quality API standards for fintech companies. To address the subsequent complaints from banks, regulators followed up with criteria for exemption from contingency measures. The European Banking Authority added to the confusion by failing to give clear indications of exemption criteria: the consultation on the guidelines for exemption criteria started in June 2018 and no definitive statement has yet been made.

In June 2018, the European Banking Authority consulted stakeholders to determine the list of key indicators and statistics required to ensure high-quality API connections. These guidelines are scheduled to be published by January 2019, two months before the beginning of the API testing period.

## 3. PSD2 implementation

### 3.1 Adoption across Europe

After PSD2 was approved, EU member states had two years to transpose it into national legislation. This period ended in January 2018. Yet only 17 of the 28 EU members have so far put the necessary legislation in place. According to the latest update from the European Commission (25 May 2018), four European member states have only partially transposed PSD2, while seven others are in the process of confirming drafts (Financial Stability, Financial Services and Capital Markets Union, 2018).

Countries failed to meet the transposition deadline because of its complexity, because of its overlap with GDPR – and because in some cases, PSD2 contradicts existing domestic law. The Netherlands planned transposition to be completed by the spring of 2018. It missed the deadline, unable to decide which regulatory body is responsible for regulating bank APIs.

Under current practices, the Dutch Central Bank and the Dutch Financial Markets Authority share responsibility for regulating access to bank account information. This overlap of responsibilities creates a legal ambiguity yet to be resolved by the government. The legislation is still in draft format, before the Lower Parliament.

Member states enjoy a large amount of flexibility when transposing PSD2. They are allowed to define the scope of payments accounts, determine the relevant regulatory bodies and detail the registration process and penalties.

Many regulatory differences exist between EU member states. For example, while France considers savings accounts come under PSD2, Belgium does not. The fragmentation may add to the complexities for small businesses doing cross-border operations, complexities the European Commission seeks to reduce with the Digital Single Market.

Although legally obliged to transpose PSD2, countries do not face strict penalties if they fail to meet deadlines. The European Commission has launched infringement procedures over PSD2 against four member states, but the cases will take years to be decided by the European Court of Justice.

Differences in national transposition could create operational complications for all stakeholders. Even though payment service providers are only obliged to obtain a license in a single European member state to operate across the European Union, the different national interpretations of PSD2 look set to fragment the market and may limit cross-border payment services.

### 3.2 European API initiatives

As part of PSD2 implementation, a number of initiatives are attempting to ensure a common API framework for accessing payment data.

The Berlin Group, an independent coalition of 25 payments industry players from 10 Euro-zone countries, has developed interoperable API standards. This standard has the potential to secure communication to accounts in Germany. Several other similar national European initiatives exist such as Polish API and STET in France.

The European Commission, with the support of European Central Bank, created the API Evaluation Group, which advises competent authorities on the specification of API standards. Representing different stakeholders this group attempts to define the basic principles, provide guidance and evaluate ongoing API initiatives.

Perhaps the most important and influential API initiative is in the UK. Called Open Banking, it stipulates common APIs for the country's nine biggest banks. This experiment will be evaluated later in the paper.

All these initiatives remain informal in scope: their standards are neither official nor mandatory. So far, the groups have attempted to define basic principles and evaluate ongoing API initiatives. It also remains to be seen how national regulators will view and use them.

### 3.3 PSD2 overlap with GDPR

Europe's new General Data Protection Regulation came into force on May 25 2018. GDPR gives Europeans control over their personal data. Strict penalties are imposed on companies that violate its terms – up to 4% of annual worldwide turnover.

Although PSD2 and GDPR enjoy similar goals – both aim to put consumers in control of their own data – the two regulations overlap when specifying data flows and access to accounts. Under PSD2, for example, consumer data can only be used to provide specified services. GDPR, on the other hand, allows for more services to be offered if the customer consents. The notion of explicit consent remains somewhat unclear under both directives.

The European Commission still needs to clarify how these privacy rules are to be respected under PSD2. Another unanswered question is, once a consumer authorises a transaction to another consumer, should the bank and the payment service provider have access to the data of both parties or should only the direct service provider have access? PSD2 and GDPR are unclear on this point.

Sophie in't Veld, a Dutch Member of the European Parliament asked the European Data Protection Board for guidance. The European Data Protection Board responded by tightening restrictions on PSD2:

- Data cannot be used for a purpose other than that for which the personal data has been collected. The “silent” partner data can be processed if and only if “the interest of data controller is not overridden by the interest of fundamental rights and freedoms of the data subject which require protection of personal data”.
- The notions of explicit consent are not the same for PSD2 and GDPR. Explicit consent under PSD2 represents an additional requirement of a contractual nature and is not the same as consent under the GDPR. Payment providers will be required to obtain both PSD2 and GDPR consent.

Just as these guidelines may increase the difficulty for banks of gaining consent, they are concerned about being caught between two contradictory regulations. If a bank suspects a potential data breach, and it declines a request for access to its data, it could breach PSD2 rules. If a bank accepts the connection and a data breach happens, the bank will be responsible for it under the GDPR and face a large fine. Which legislation should banks prioritise? Almost certainly, they will choose GDPR, not PSD2, because the privacy regulation carries large potential fines. The end result could be a weakening of PSD2.

## 4. On a global scale

### 4.1 Open Banking: the UK Case

The United Kingdom has moved ahead of the rest of the continent in payment regulation, implementing what it calls Open Banking.

In its 2016 market research, the Competition and Markets Authority found that small and medium-sized enterprises suffered from a limited choice of retail banking and payment services (Smith, et al., 2016). Open Banking launched in January 2018, making it too early to deliver a definitive judgement on its success.

Open Banking represents an innovative response aimed at stimulating competition. It is a private body funded by the country's nine largest banks, overseen by British regulators. Under Open Banking, the banks use a single common API standard – initially just for access to retail and business current accounts, though soon to be broadened out to cover all payment accounts. While smaller banks can install proprietary APIs, Open Banking motivates them to use the common APIs.

Open Banking goes beyond PSD2, covering a wide scope of payment services. For example, it allows price comparison websites access to consumer current accounts. PSD2 does not.

Early signs are encouraging. Online bank Monzo has built its entire business on cloud services and applauds Open Bank's attempt to forge common APIs. "Although our API is not the same as the UK standard, it is very similar," says Monzo engineer Simon Vans-Colina. "It takes less than a day to configure for it." He likes the UK experiment because it insures that "our API standards are stable and will not change."

For Open Banking to become a long-term success, common API standards are essential. Not all banks were ready to meet the January 1, 2018 deadline. Nine months later, some are still not able to deliver stable and fast access to accounts.

Even subtle technical variations cause large problems, according to Gavin Littlejohn, the Chairman of Financial Data and Technology Association, a London-based fintech trade. Under the common APIs, banks often interpret them in different ways. "It might even take (newcomers) up to two weeks to establish the secure communication channel," says Littlejohn.

### 4.2 The global race for digital payments: China & US

While the UK imposes Open Banking and Europe grapples with PSD2, China and the USA are moving ahead to encourage payment innovation.

In China, three quarters of online payments are done via mobile phone (Chen, 2017). In 2016, mobile payments expanded by 4.8 times over 2015, reaching 9 trillion US dollars. During the first ten months of 2017, mobile payments accounted for 16.7 trillion US dollars.

Two internet giants – Alibaba’s Alipay and Tencent’s WeChat – dominate, with 55% and 37% market shares respectively (Chen, 2017). In China, mobile e-wallets are allowed to connect directly with bank accounts. This permits almost instantaneous payments, top-ups and withdrawals.

The absence of a historic credit card infrastructure and the country’s rapid growth of e-commerce are fuelling this mobile phone payment explosion. Until now, the government has taken a hands-off approach.

Today, though, regulation is on the horizon. In 2017, the Chinese government created a nationwide clearing house for online transactions. It fears e-wallets may facilitate money-laundering. “The current direct connection model bypasses the central bank’s clearing system, making it difficult for regulators to track and monitor the capital flow of those payments, leaving loopholes for money laundering and other irregularities,” said Wang Pengbo, a Beijing-based consultant at Analysys (Zhang, 2017). Starting from June 30 2018, digital payments must be routed through the centralised clearing institution.

While China is coming to grips with the potential and threats of the growing digital finance sector, America lags behind. US mobile payments last year totalled a mere 112 billion US dollars, compared to China’s 9 trillion US dollars (Carter, 2018).

History explains much of the gap. Americans have long benefited from credit cards. Despite the emergence of new payment providers, from Paypal to Apple wallet, the vast majority of Americans continue to buy online with their credit or debit card (Stein, 2017).

This credit card system is expensive. For each 100-dollar purchase, the merchant must pay 2.75 dollars to credit card providers and banks in fees. These fees total 90 billion dollars per year (Surane & Cannon, 2018).

Strict regulation prevents the emergence of much digital payment innovation. A new payment provider in the US must often obtain state-by-state registration, apply for its own banking license or partner with an established bank. All of these options are time-consuming and expensive.

The Office of the Comptroller of the Currency has discussed the possibility of introducing a specific “fintech charter” (Skadden, 2016). State Bank Supervisors are working to unify their own regulatory requirements. If adopted, the credit card hold over US payments may loosen.

With PSD2 and Open Banking, Europe enjoys an opportunity to leap ahead of the US in digital payments.

## 5. Case-studies

### 5.1 Kreditech

Based on interview with  
the Deputy CEO Alexander Graubner-Mueller



Background: Headquartered in Hamburg, Kreditech offers online consumer loans and an integrated financial services platform with custom-tailored products and services. Entrepreneurs Sebastian Diemer and Alexander Graubner-Muller founded the company in 2012. Since then, Kreditech has processed more than 31.6 million loan applications, 2.3 million of which it approved. It employs 350 people and operates in four markets. Kreditech's revenue more than doubled from 2014 to 2016, reaching €71.4 million in 2017.

EU countries of operation: Poland, Spain

Business Model: Kreditech analyses a borrower's creditworthiness by examining their social network activity, browser history, and geolocation settings. Its algorithm customises the size of the loan and interest rate. This online credit search allows customers with little or no credit history to obtain loans, Kreditech says.

PSD2: PSD2 could improve Kreditech's algorithm by allowing access to customer payment data.

If banks provide low-quality API standards, it could be more difficult to produce the credit ranking. An absence of common European open banking standards will result in higher implementation costs.

Kreditech worries about fragmentation. The differences in transposition across Europe could increase the costs of compliance. When asked about the legal ambiguity, co-founder Graubner-Muller replied. "It is yet to be defined and nothing is clear for the moment."

Overall, Kreditech still treats PSD2 as more of an opportunity than a threat. Mr. Graubner-Muller believes "PSD2 will enable an easier switching between financial institutions and newcomers like Kreditech, and increase the transparency of the company's credit scoring".

### 5.2 PPRO

Based on interview with  
the Business Development Director – Ralf Ohlhausen



Background: Headquartered in London, PPRO is an alternative payment platform. It was founded in 2006 by Phillip Nieland and Tobias Schreyer. Since then they have become one of the fastest-growing European fintech start-ups. It now employs more than 200 people and operates in several European countries.

EU countries of operation: UK, Germany, Romania, Luxembourg, etc.

Activities: PPRO offers prepaid credit card payments and e-money accounts for consumers without credit cards. For merchants, it offers a wide range of alternative payment methods: real-time bank transfers, e-wallets and electronic cash payments.

PSD2: The new rules will be key to the company's success or failure. In order to offer its payments solutions, PPRO requires access to customer bank accounts. It is participating in the API evaluation group and pushing for common pan-European API standards.

Since such common standards are far from sure, Mr. Ohlhausen says his hopes that PSD2 will mean a breakthrough are "medium". Uneven transposition could still prevent market participants from developing a unified strategy for a single European market.

"For some countries, PSD2 will be truly a step ahead in terms of innovation and access to accounts, as there was none before," he said. "For others, it will be rather a step back, since many countries had an advanced fintech regulation."

Ohlhausen fears banks are not ready to comply with PSD2's data-sharing requirement and predicts that banks will be reluctant to provide high quality APIs. When asked who would benefit the most from PSD2, Ohlhausen responded: "the tech giants, followed by consumers and big retailers". Bank card payments will bear the biggest losses.

### 5.3 Monzo

Based on interview with  
the DevOps, Infrastructure and Platform Engineer – Simon Vans-Colina



Background: Headquartered in London, Monzo is a challenger online-only bank. In April 2017, Monzo received a full UK banking license and is now able to offer current accounts. It was founded in 2015 by Tom Blomfield. By the end of 2017, Monzo had 750,000 current account holders and employed 275.

EU countries of operation: UK

Main activities: Monzo is a digital online-only bank. It does not have physical branches and does not provide chequebooks. All operations and transactions are conducted with a banking card or mobile phone. Before 2015, the bank could only provide pre-paid bank cards. These restrictions have been lifted and it now offers current accounts. The company plans to start offering loan products.

PSD2: Under PSD2, Monzo is required to develop, implement and test secure communication API standards. Since Monzo is built on modern internet cloud services, it has an advantage over traditional banks who must deal with overhauling complex legacy systems. Monzo hopes the new standards might help it increase its competitive advantage and attract new clients.

Even though Monzo now employs proprietary API standards, it favours common ones. "We will attempt to replicate the common standards as closely as possible so it would take less than a day to configure the connection," says Mr. Vans-Colina.



Monzo already uses APIs to work with a dozen payment services. Low-cost money transfer firm TransferWise was the latest to join its platform in June 2018.

A challenge is subscription renewal. Under PSD2, a customer is supposed to renew his or her subscription every 90 days. Otherwise, customers lose access to services offered by Monzo's partners. Monzo will implement an automatic re-subscription dashboard. "If confronted by regulators, we are willing to defend our views on this issue in open discussion," Simon added.

Simon predicts PSD2 will lead to a large loss of market share for traditional banks. He expects them to fight access to customer data and to prove unable to innovate and offer effective e-payments.

## 5.4 BBVA



**Based on interview with the Senior Policy Advisor—Brit Hecht**

Background: Founded in 1857 and headquartered in Bilbao, BBVA is now the second largest bank in Spain with 14.8 million customers in 2015. In 2017, its revenue reached €25,270 billion.

EU countries of operation: Spain, Belgium, France, Germany, Italy, Ireland, Portugal and others.

Main activities: BBVA is active in all banking fields including retail credit, capital markets, corporate loans and digital banking. In March 2015, Francisco Gonzalez, Chairman and CEO said: "Our goal is to turn BBVA into a totally digital company, including all our products and services" (González, 2015). The bank has created a special fintech-focused venture capital firm (Propel Venture Partners).

PSD2: BBVA's digitisation plan includes development, implementation and testing of secure API communication standards. Mr. Hecht said BBVA will allow API access to bank accounts. While it could charge for such access in the past, it will offer it free of charge for now, in an attempt to get service providers to use its platform.

When asked who would profit the most from PSD2, Mr. Hecht responded: "customers". With screen-scraping banned, he says they will enjoy enhanced security. Hecht criticised the fall-back mechanism, in effect allowing the use of screen-scraping under certain circumstances. In his view, screen-scraping is like handing out keys to an apartment. Under the fall-back mechanism, he says banks lose all control of customer data yet remain responsible for any security breaches.

BBVA is determined to reduce its potential liability by developing high-quality API standards. It supports the PSD2 requirement for re-authentication every 90 days as a positive security feature.

## 6. Policy Recommendations

PSD2 represents a valiant effort to balance the interests of various stakeholders. Whether it will end up as a success or failure depends on its implementation. Successful implementation requires the following measures:

- **Impose Strong Common API Standards** – Fragmentation of standards required for access to bank data represents a threat. The standards should be harmonised across the EU.
- **Clarify Privacy Rules** – At present uncertainty exists regarding the interaction between PSD2 and GDPR. PSD2 privacy rules need to be coherent with GDPR.
- **Clarify Exemption Criteria** – Regulators should impose clear rules for when banks can be granted an exemption, allowing them not to develop the fallback option. They should monitor and hold consultations among stakeholders to ensure fair access to this data.
- **Expand Scope**: PSD2 covers only payment accounts, not savings or other financial accounts. It should be expanded to cover these additional accounts in conformity with sufficient privacy protections. The expansion will strengthen the access of data required for innovation.
- **Global Discussions** – The EU should examine with its major trading partners the possibility of global API standards. This would speed up payments innovation and allow for more consumers to be included.

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