

WHITE PAPER



A FUTURE OF OPPORTUNITY FOR PAYMENT SERVICES DRIVEN BY CHANGES TO EU PAYMENT REGULATIONS (PSD2)

mobica

A FUTURE OF OPPORTUNITY FOR PAYMENT SERVICES

ABSTRACT

PSD2 (Payment Services Directive) is one of the biggest overhauls of the financial industry within the EU. With great change comes great opportunities and the financial institutions that engage and grasp the greatest vision will have the biggest impact. Banks will not just be competing with other banks but now also newer third party non-banks that are closer to consumers. With the opportunities that technology is providing the potential for growth within the FinTech market place is about to explode, with banks compelled to adopt PSD2 in 2018, allowing access to valuable data traditionally restricted within the bank itself.

In this white paper, Mobica discusses the impact the Directive has on users following recent changes to the banking industry. Defining PSD2 and providing an overview of Mobica's partnership with a FinTech innovator to develop a prototype solution inspired by the Legislation which won the 2016 Barclay's Rise Hackathon. Followed by a discussion of how Mobica expects the open banking platform of PSD2 to grow and how new technologies present additional opportunities within this sector. Mobica sees the biggest challenges as coming from three aspects: firstly, ensuring customer acceptance of this new marketplace with secure easier payment methods; secondly, how the open banking platform can benefit traditional banks, customers and Fintechs; lastly, what technologies in isolation or combination allow for Strong Customer Authentication (SCA), whilst improving the customer experience.

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WHAT IS PSD2 AND WHAT ARE THE IMPACTS?

What is PSD2?

[1] PSD2 is a revision to the Payment Services Directive (PSD) originally adopted in 2007. This legislation provides the legal foundation for a European Union (EU) single market for payments, to establish safer and more innovative payment services. The objective is to make cross-border payments as easy, efficient and secure as 'national' payments would be within a Member State.

Since 2007, the original PSD Directive has brought substantial benefits to the European economy, easing access for new market entrants and payment institutions, and so offering more competition and choice to consumers. It offered economies of scale and helped the Single Euro Payments Area (SEPA) in practice. The PSD has meant more transparency and information for consumers. For example, it has cut execution times, strengthened refund rights, and clarified the liability of consumers and payment institutions. A very tangible benefit is that payments are now easily made throughout the whole EU and much more quickly meaning payments are usually credited to the payment receiver's account by the next day.

What are the main objectives of the PSD2?

PSD2 updates and complements the EU rules put in place by the Payment Services Directive (2007/64/EC). Its main objectives are to:

- Contribute to a **more integrated and efficient** European payments market
- **Improve** the level playing field for payment services providers (including new players)
- **Make payments safer** and more secure
- **Protect consumers**
- **Encourage lower prices** for payments

What are the benefits for consumers under this Directive?

The new EU rules should help stimulate **competition in the electronic payments market**, by providing the necessary legal certainty for companies to enter or continue in the market. This would then allow consumers to benefit from more and better choices between different types of payment services and service providers.

During the past few years, new players have emerged in the area of internet payments, offering consumers the possibility to pay instantly for their internet bookings or online shopping, **without the need for a credit card** (interestingly around 60% of the EU population does not have a credit card).

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These services establish a payment link between the payer and the online merchant via the payer's online banking module. These innovative and low cost payment solutions are called Payment Initiation Services (PSI's) and are already offered in a number of Member States (e.g. Sofort in Germany, iDeal in the Netherlands, Trustly in Sweden). Until now, these new providers were not regulated at EU level. The new Directive will cover these new PSI payment providers, addressing issues which may arise with respect to confidentiality, liability or security of such transactions.

Furthermore, PSD2 **will help lower charges for consumers and ban "surcharging" for card payments in the vast majority of cases** (including all popular consumer debit and credit cards), both online and in shops. The practice of surcharging is common in some Member States, notably for online payments and specific sectors, such as the travel and hospitality industry. In all cases where card charges imposed on merchants are capped, in accordance with the complementary regulation on interchange fees for card-based payment transactions (the Interchange Fee Regulation), merchants will no longer be allowed to surcharge consumers for using their payment card. This will apply to domestic as well as cross-border payments. In practice, the prohibition of surcharging will cover some 95% of all card payments in the EU and consumers would be able to save €730 million annually. The new rules will contribute to **an improved consumer experience** when paying with a card throughout the EU.

Consumers will be **better protected against fraud** and other abuses and payment incidents, with improved security measures in place. As regards losses that consumers may face, the new rules streamline and further harmonise the liability rules in case of unauthorised transactions, ensuring enhanced protection of the legitimate interests of payment users. Except in cases of fraud or gross negligence by the payer, the maximum amount a payer could, under any circumstances, be obliged to pay in the case of an unauthorised payment transaction will also be reduced from €150 to €50.

What this means for banks and therefore FinTech companies

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- **Market entrants**

Since the PSD was adopted in 2007, new services have emerged in the area of internet payments; where so called **third party providers (TPPs)** offer specific payment solutions or services to consumers. For example, there are services which collect and consolidate information on the different bank accounts of a consumer in a single place ("**account information services - AIS**"). These services will typically allow consumers to have a global view on their financial situation and to analyse their spending patterns, expenses, financial needs in a user-friendly manner. Other third party providers facilitate the use of online banking to make internet payments (so-called "**payment initiation services - PIS**"). They help to initiate a payment from the user account to the merchant account by creating a software "bridge" between these accounts, fill-in the information necessary for a transfer (amount of the transaction, account number, message) and inform the merchant once the transaction has been initiated.

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Until now, entering the payments market was complicated for TPPs, as many barriers were preventing them from offering their solutions on a large scale and in different Member States. With these barriers removed, more competition is expected with new players entering new markets and offering cheaper solutions for payments to more and more consumers throughout Europe. The TPPs will have to follow the same rules as the traditional payment services providers: registration, licensing and supervision by the competent authorities. In addition, new security requirements included in the text of the PSD2 will oblige all payment services providers to step up the security around online payments.

- **Single Market**

PSD2 will allow consumers and merchants to benefit fully from the internal market, particularly in terms of e-commerce. The Directive aims to help develop the EU market for electronic payments, which will enable consumers, retailers and other market players to enjoy the full benefits of the EU internal market, in line with the digital single market. Such further integration is becoming increasingly important as the world moves beyond bricks-and-mortar trade towards a digital economy.

- **The Banks**

Banks will have to make interfaces available for PSD2 to work by the end of 2018 through the use of software APIs that allow third parties to access consumer's information (with their permission). Open APIs will attract non-authorised abuse of consumer data, which ultimately the banks will be responsible for. This means security will inevitably have to increase, adding to the cost of the banking infrastructure. Banks have an opportunity to seize the moment and create a whole new way of interacting with their customers or fail and risk becoming further dissociated from their customers. The potential to lose customers and brand loyalty is one that has to be addressed early before third party non-banks establish themselves, further inhibiting the bank to cross-sell their products. Banks will also be able to market their products to groups of customers that have been aggregated together through third parties.

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- **The Lenders**

Traditionally the lender was limited to only analyse credit reference data to make lending decisions. Looking at how a customer had managed their loans / credit cards over the past few years. PSD2 would allow for a more accurate insight into a potential customer's financial affairs and assets, thus enabling them to offset the lending risk with up to date information. E.g., A person who has a spiralling increase in online gambling site payments, would present a greater risk to the lender than could have been previously exposed.

A consumer with no previous credit history also finds it difficult to get a loan. With their PSD2 data exposed a lender may be able to verify that their current account incomings and outgoings are suitably managed and so can offer them a competitive loan, thus increasing the lender's potential market size and enabling a consumer, who previously would have found it difficult, to get a competitive loan.

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MOBICA WINS HACKATHON WITH PSD2 APPLICATION

Mobica was approached by a FinTech innovator to help design and build a prototype App for entrance into the Barclays Hackathon event (<http://www.risehackathon.com>). The vision was to create an App that offered a single platform for servicing all the financial needs of a consumer and incorporating the legislation in PSD2 to offer tailored financial products and access to the latest FinTech applications. The App had to incorporate:

- A flexible and intuitive user interface
- A Strong Customer Authentication (SCA) process
- Features desirable for consumers and Financial institutions
- A place for competitive tendering of financial services
- The ability to scale and offer future financial products

With these directives in mind, Mobica focused on using the secure messaging platform provided by Twilio [2] at the heart of the App. This enabled the App to be free from the limitations of the APIs provided by the banks and allow for a more flexible consumer based experience. Furthermore, the chat platform would provide a high level of security via encryption whilst incorporating a user friendly chat interface that most would be familiar with. Coupled with the ability to store the user - client interactions in a storyboard format for historical reference. The chat platform, with modification, also provided a versatile environment to not only send text but incorporate user questions with selectable options and attach pictures or PDF account statements.

To incorporate SCA, Jumio's API was utilised [3]. This provides for an initial user registration using a photo of an official identification card, such as a driver's license. The user's current address can be determined from the ID using OCR technology, reducing registration time and securely establishing their home address. Secondly, the user takes a picture of their face and this is matched to the photo on the ID. For future authentication, the user will be asked to take a "selfie" and this is matched via facial recognition to that provided at registration. This provides a 'level one' authentication. For financial requests that would require additional verification, further levels of authentication with biometrics such as voice analysis or fingerprint scanning can be added. The former is slowly being introduced into Barclays' call centres for caller identification, demonstrating FI's acceptance of biometric identification.

Along with traditional forms, there is also the emergence of newer technologies using existing smart phone functionality. CallSign [4] are promoting using the combination of biometrics from the way a user normally holds their phone and how they swipe the screen. While not the ultimate form of validation, this adds another level of authentication that is difficult to replicate or fake.

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To reduce the additional costs of providing staff to answer customers' requests, Mobica also experimented with a GupShup [5] "Bot" as a natural language analyser. The bot could parse requests like "I want to cancel a standing order" and communicate a response using PSD2 information "these are your current standing orders, which would you like to cancel?". After selection by the user, the appropriate API is used to send a request to FI to cancel that standing order.

The App was developed in Java for the Android platform but can easily be ported to other mobile platforms such as IOS and Windows Phone. This decision was taken as most of the smartphone market is Android and allowed the customer to send demo APKs to potential investors to install on their own smartphone to explore its functionality.

The main features of the App included:

- Using PSD2, all transactions across all accounts can be aggregated and displayed on a single screen or filtered by account / transaction type.
- Enable the user to view individual account balances and facilitate the transfer of money between accounts, e.g. transfer from a saving account into a current account.
- The ability for a user to send a change of address notification to all their Financial Institutions (FI's) in a single operation. The FI's would then be able to send a notification back to accept the request and inform the user that their details had been amended.
- To allow a user to tender for a loan from all FIs and compare loan rates / view an institutions customer reviews and accept the loan tender.

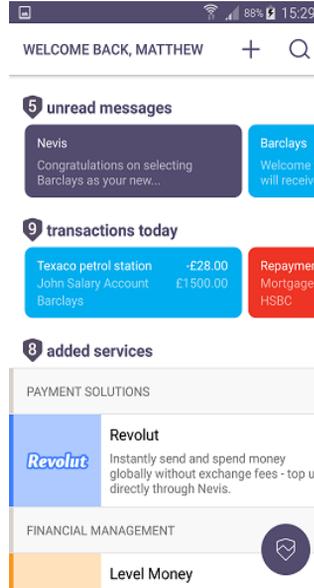
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SCREENSHOTS OF THE APPLICATION

1) Initial Splash Screen

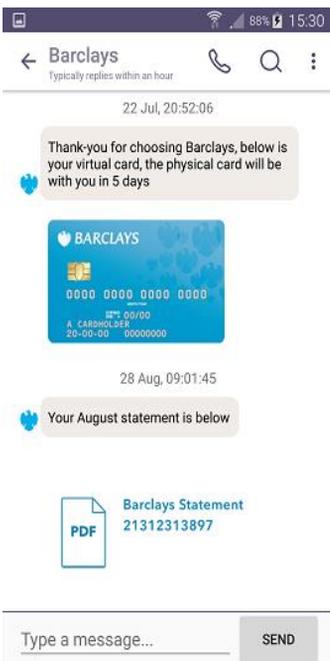


2) Main User Interface



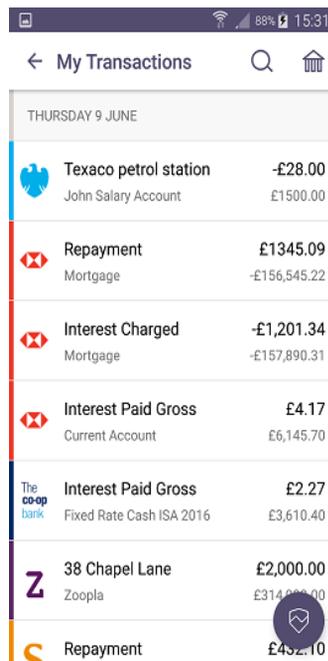
This contained any unread messages, access to their transactions screen, shortcuts to any additional financial services the user had subscribed to and a floating action button to allow the user to quickly navigate to a selection of actions they may want to perform.

3) Example Chat Interface



The chat interface allows users to communicate with various FIs and vice-versa. The platform has been modified to also allow images and selectable options, to minimise the typing required. If a user decides that speaking to a representative would better suit their needs, the phone icon at the top can be used.

4) Transactions Screen Across All Accounts



PSD2 allows for the aggregation of a customer's transactions across all of their accounts. This screen displays the transactions chronologically and can be filtered to display transactions from only certain accounts. The user can search or click to see more detailed information such as date and time.

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HOW COULD A PSD2 APPLICATION EVOLVE?

Linking your account information with geo-location could allow for predictive spending, keeping all of personal finances in a higher interest savings account until you need them. When you leave your house to go to the supermarket for instance, data can be analysed to see that on average on a Saturday you spend £60 with a maximum of £100 and move that amount from your savings into your current account to stop that dreaded insufficient funds message at the checkout. A new account could be set up to encourage children, or those that need incentives to exercise, to earn rewards - the more active they are the more gets deposited into the new rewards account.

Loyalty cards could become a thing of the past. We have all been in the situation when shopping at a particular store, when we have forgotten our loyalty card and miss the opportunity to gain loyalty points. As PSD2 data can expose the amounts spent at individual stores, there is no need to also swipe a loyalty card at checkout. At the end of each month, loyalty points / rewards can be calculated from a consumer's transactional data. This could entice more customers to use the App rather than a similar competitor's if they knew this service rewarded them more.

Linking how you pay for purchases with the addition of Near Field Communication (NFC), to be within the same App / platform, could also ensure the payment will be successful by transferring adequate funds to your current account before the payment request is made. Meaning that every second you don't need money in your current account, the money is kept in a higher interest one. Also, if the payment is guaranteed to incur unauthorised overdraft charges, the user can be prompted with this information before making the payment. This would be a definite selling point of a PSD2 app, as it shows potential users an upfront benefit of avoiding overdraft charges at point of use.

The combination of PSD2 and the Internet of Things (IoT) also presents possibilities. For example, the central heating system in your house can detect that you have turned up the thermostat and predicts that your new bill may be higher than usual. The system can make allowances for this and transfer a higher than usual amount into the "for bills" section, so the consumer can better budget their finances. Budgeting for some can be a time consuming stressful affair, prone to errors than can end up costing the consumer through penalties for missed payments etc. PSD2 data can be used to automate / manage this process, again benefitting the consumer.

The platform can be configured to automatically transfer any excess current account finances at the end of the month into a higher interest one without any consumer input.

Prediction of becoming overdrawn, with knowledge of current balances and historic PSD2 payment data, the platform can make this prediction and offer either a loan repayment holiday or suggest a temporary cheaper line of credit avoiding expensive overdraft fees.

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Although our prototype was limited to financial institutions aggregating customers' data and providing competitive rates for future financial products such as loans, there is no reason why the platform should not be extended in the future. The App could evolve to include utility services, such as Gas and Electrical suppliers. This would enable non-financial institutions to also make use of an established platform to offer their services direct to the consumer at competitive prices. While the prototype allowed for the user to inform all their financial institutions of a change of address, the inclusion of non-financial industries would also allow a user to inform all providers of a change of address instantly. Anyone who has gone through the pain of having to inform many institutions of a change of address would welcome this service. True, there are companies that currently offer this service, but you still have to provide details of all the companies you wish to inform. PSD2 transactional data already has the capability to expose this information, leaving the process almost pain free.

WhatsApp, WeChat, Google, Facebook and Amazon bring new challenges for the banks. As the ability to transact becomes easier, there will be increased focus around security measures as customers will want assurance that their financial data is safe. This is where trusted brand recognition will be key. In showing brands like HSBC, Barclays, Experian, the Post Office and Metro Bank in the prototype App the customer is given the reassurance their data is secured and protected as there will be a number of security measures taken to establish these relationships. Previous users of said services have already established an element of trust with these brands over the years. This makes consumers more likely to make the jump to trust them with their financial data than a brand they have no experience of, giving them a head start over the competition.

PSD2 will allow greater competition between established banks and new 3rd party providers. This will bring a benefit to the consumer of cheaper financial services, fee-less internet and credit card payments and freedom to easily switch banking providers. Most people tend to stay loyal to a bank because either it was the bank their parents used or the bank that has a branch close to where they live. The work involved for a customer to change financial provider will become almost hassle free, again adding to the need for the financial providers to offer consumers more competitive services and pricing.

Being able to expose customers' information to banks and non-banks, coupled with the ease of switching accounts, promotes one idea to mind. Customers may not really care which institution handles their money, just that they fulfil the following:

- Safety / protection
- Access to money when wanted
- Ability to discuss finances
- Getting the best deal

A consumer's "bank" would actually become an intermediary institution that would satisfy the above criteria. Rather than their finances being in a constant place, they could automatically switch depending on the best deal offered at that time. For instance, one month a cash ISA would be with Barclays, the next it is switched to TSB without the customer having to do anything. Similarly for current accounts, mortgages etc., gaining the best deal, all the time.

Furthermore, this "intermediary" service can monitor savings and current accounts, moving money between them periodically to give the best deals whilst preventing them from going

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Furthermore, this “intermediary” service can monitor savings and current accounts, moving money between them periodically to give the best deals whilst preventing them from going overdrawn. Why would a bank not want this intermediate service, which could attract a bigger customer base, by advertising that this month we ‘automatically’ saved our customers on average £100 without them having to do anything other than bank with us?

FI's could be approached to tender for a third parties customer base and offer a financial service at a more competitive rate. If the product was to be sold to thousands of customers in bulk, the products rates could be lowered to reflect this and benefit both the FI and the customers at the same time.

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CONCLUSIONS

PSD2 is one of the biggest overhauls of the financial industry within the EU. With great change comes great opportunities and the institutions that engage and grasp the greatest vision will have the biggest impact. Due to the nature of financial services, any third-party application must ensure the user is strongly authenticated. This can be achieved through many systems, but also has to be done in a way that does not impact on the user experience. A quick, reliable and accepted authentication process has to be established. Facial recognition, voice analysis and even how a person holds their phone can all be viable as standalone authentication or used in complement. But even these complex systems can be manipulated and are a strong as the weakest link in the chain. The biggest challenge for PSD2 and banking applications as whole will be user authentication.

As mentioned earlier, companies such as CallSign [4] have developed an authentication process by combining two biometrics, how the user holds their phone and how they swipe the screen. We will see more innovators in this sector especially as technology advances. For example, why limit fingerprint scanning to use just a thumb if the whole reverse side of the phone could be used as a full hand scanner? The inclusion of a camera powerful enough to photograph a person's retina would also add another level of hard to bypass authentication.

“Banking is necessary; banks are not” - Bill Gates, 1990.

This quote is more relevant today than 26 years ago with the emergence of PSD2. But for banks, it does not have to be the end. Banks will not just be competing with other banks but now also newer third party non-banks that are closer to consumers. People still associate banking brands as the companies that can manage their finances. This is the key advantage that traditional banks have over emerging third party non-banks. However, a failure to act or innovate will inevitably erode this key advantage, so they have to act now, evolve and seize the moment. Not thinking of how ‘banks’ can serve customers but rather what financial services does the customer require? What systems can be put in place that benefits the consumer’s financial world? What are the new non-banks offering that we are not? PSD2 can be a two way street for banks. They can access the same information as non-banks and therefore provide the same levels of services, but with the advantage of strong financial brand recognition.

The potential for growth within the FinTech market place is about to explode, with banks compelled to adopt PSD2 in 2018, allowing access to valuable data traditionally restricted within the bank itself. Provisioning for a more competitive market will benefit the consumer, the banks and FinTech’s alike. Other financial partners like Experian stand to gain the most initially as consumers will be reluctant to adopt PSD2 in its purest form, especially to third parties with an unknown brand.

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FINTECH

FINTECH DIVISION

Our fast growing, specialist FinTech division partners with the leading innovators within the payments industry. Together we're working to revolutionise the way that consumers pay and manage their accounts, while empowering our customers with new payments solutions, analytics and automation products – enabling them to grow their business and provide new value added services to their end users.

In an increasingly competitive and dynamic market, we work as a key partner to world leading financial services providers to develop, deploy and maintain a broad range of mobility and enterprise solutions.

If you have any enquiries about how the changes to PSD2 may affect your business, or would like to speak to one of our Fintech specialists directly for further guidance, please email fintechsales@mobica.com or call +44 (0)1625 446 140

ABOUT MOBICA

Mobica is a world-leading software services company who specialises in working with leading technology providers in the connected device market to bring next generation, time critical products to life. They do this through technology consulting, bespoke software engineering and a wide range of services including UX, UI and QA. Mobica operates in a host of sectors including; Automotive, Mobile, Semiconductor, Fintech, TV and Broadcasting and Marine, Aviation and Defense. Many of our solutions are used in everyday life, from smartphones and TVs, to cars, intelligent buildings and the internet of things.

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