



Open Retailing and Open Banking – Payments Industry Challenges

CONTENTS

EXECUTIVE SUMMARY	03
CONSUMERS AND MOBILE TECHNOLOGIES DRIVING CHANGE	04-05
GLOBAL PAYMENT TRENDS	06-07
RETAILING APPS COMBINED WITH PAYMENT FUNCTION	08
CARD SCHEME DYNAMICS	09
CARD-LESS PAYMENT SERVICES	10
NEW PAYMENT USE CASES	11-12
OPEN BANKING PAYMENT TRENDS	13-14
OPEN RETAILING – THE OPPORTUNITY FOR RETAILERS	15-16
OPEN PAYMENT PLATFORMS – THE CHALLENGE FOR THE PAYMENTS INDUSTRY	17-18
KEY FINDINGS FROM THE REPORT	19



Executive Summary

Global payment trends and digital technologies are driving change in the payments world. The omni-channel payment behaviour of increasingly online consumers and retailers counter-acting demand for omni-channel payment service acceptance is a real challenge for the payments industry. Consumers are also aware of and actively want to make use of mobile banking apps to pay directly from their accounts.

The challenge for the retailers is a need to embrace these new consumer shopping and payment expectations, and the need to learn from new consumer consumption and payment patterns. This is driving complexity for retailers since it means supporting new checkout means, new payment services, new payment channels, new payment technologies, and adapting to new way of enabling the shopping journey.

The payments industries challenge is the need to support the retailers demands for omni-channel payment processing and multiple-payment service acceptance. This is driving complexity for payment platforms since it means supporting omni-channel payment services, new payment technologies, digital payment security standards, and adapting to new ways of enabling the omni-channel payment experience for paying customers. This includes for example, in-store payments made with online banking apps.

This report highlights the impact of new payment challenges for both retailers and the payments industry. Beyond the pain of using payment services separated by channel, a new kind of Open Retailing payment platform approach could enable retailers to benefit from omni-channel payment services offered by their supporting payment service acquirers.

The challenge for the payments industry is to transform existing payment solutions by channel into omni-channel Open Payment service platforms that combine the omni-channel payment acceptance requirements of modern retailers with the card payment ecosystem and the emerging Open Banking payment ecosystem.

In 2018, it can be stated that the global payment services market is changing, and with it the payment processing platform requirements for the payments industry. The payments industry needs a strong global omni-channel strategy both for cards and card-less payment services to succeed.

Across the value chain, retailers and the payments industry need to invest in new technology as they adjust to shifting market conditions and consumer expectations. For many, these investments are necessary to respond to short-term changes, but in many cases, these decisions also form part of longer-term digital transformation plan. The decisions that are made in the coming years will lay the ground for the shape of future value chains and the businesses that participate in them.

Investments in payments technology and services have become mandatory. The need to support changing consumer payment preferences remains a major driver of change, particularly because of the increasing expectation that payment services will become a deeply embedded and largely invisible part of the customer payment experiences.

With the global payment trends and an Open Payment platform vision in mind, Payments Cards and Mobile collaborated with RS2 to analyse the mobile consumers payments behaviour and global payment trends. Although new payment services and the fast-changing payment behaviour of individuals may apply first in Europe, USA or China, most of the findings in this report are believed to apply to other regions - sooner or later.

The methodology used in this report is composed of results from recurring market research in the payments industry and in the retail sector. In addition, the views from leading retailers, payments industry champions, and industry experts were examined.

Radi Abd El Haj
CEO & Executive Director
RS2

The number of connected devices on the so-called Internet of Things will explode to 50 billion by 2020 (source: PCM Research). Mobile devices, the Internet, contactless checkout and digital payment services are seen as game changer for the payments industry and for retailers.

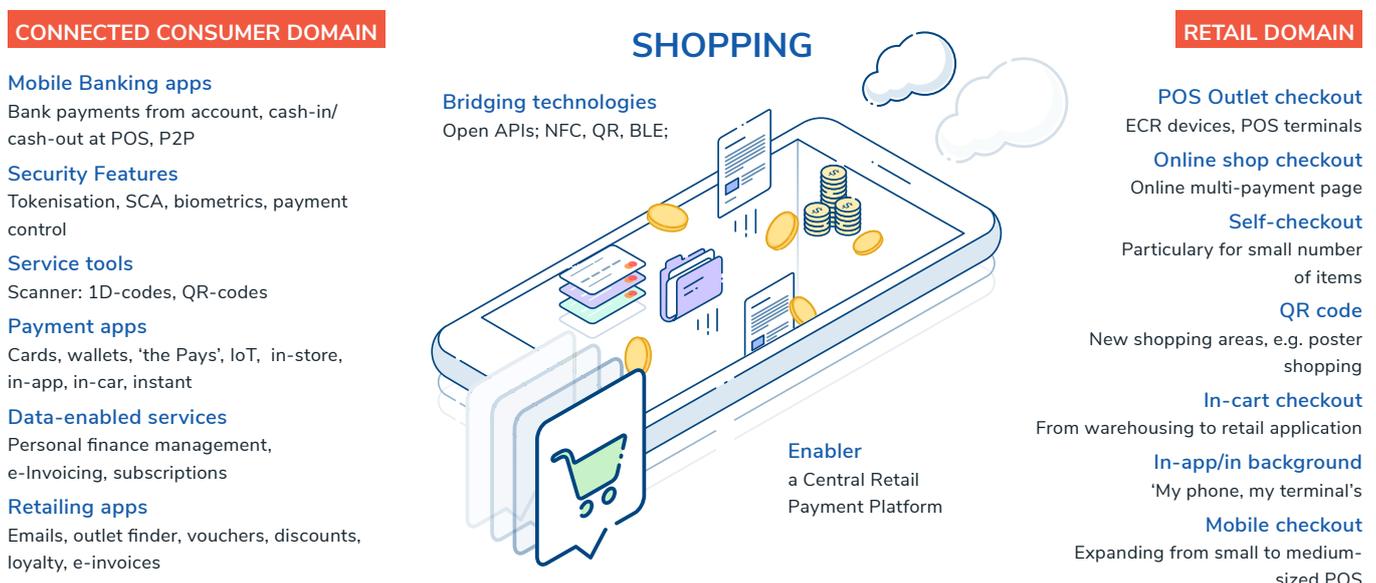
In the last decade, consumers have become increasingly connected, and they have embraced tablets, smartphones, wearables, messenger apps and social media. This change significantly impacts their shopping and payment experience.

The influence and role of social networks and chatrooms for consumers seeking information is increasing. It is a fast growing trend that consumers communicate their shopping experience and sales recommendations for products and services via social media. With the advance of contactless and online technologies in combination with mobile apps, smartphones and tablets, consumers have started to purchase anywhere, at any time, from any device, from any channel, and using any payment means of their choice. Especially, they demand a unique omni-channel payment experience without barriers between POS payments and online payments, independent of the channel they purchase from. Taking into account the advance of mobile banking payment apps, the consumers' mobile devices are going to become a kind of dashboard that enables omni-channel shopping and payments at the various digital checkout types offered by modern retailers. This high-level illustrative view illustrates a potential future Open Retailing infrastructure (see Figure 1) was shared in the discussions with key payment industry players and leading European retailers.

In 2018, connected consumers intend to purchase omni-channel and to benefit from new types of payment use cases, e.g.

- POS payments with contactless cards, wearables and other contactless card-form factors
- In-store payments with mobile devices:
 - Mobile HCE NFC payments on cards and/or on digital wallets (MasterPass, Visa Checkout, “The Pays”, PayPal)
 - IBAN-based in-app payments directly from bank accounts (e.g. HCE NFC, 1D-barcode, QR-code)
 - Payments with messenger apps (e.g. Alipay, WeChat App), initiated by QR-code or 1D-barcode
 - Cash-in/cash-out in-store on cards or per banking app directly to/from bank account (e.g. mPesa in Africa)
- Online payments on cards, from bank accounts, wallets or using messenger apps (e.g. Alipay, WeChat App)
 - One-click checkout with automatic, invisible payments
 - Click & Collect in-app payments with scheduled delivery in outlets

Figure 1: The Consumer’s mobile devices enable shopping at new Retail Checkout Types – Outlook

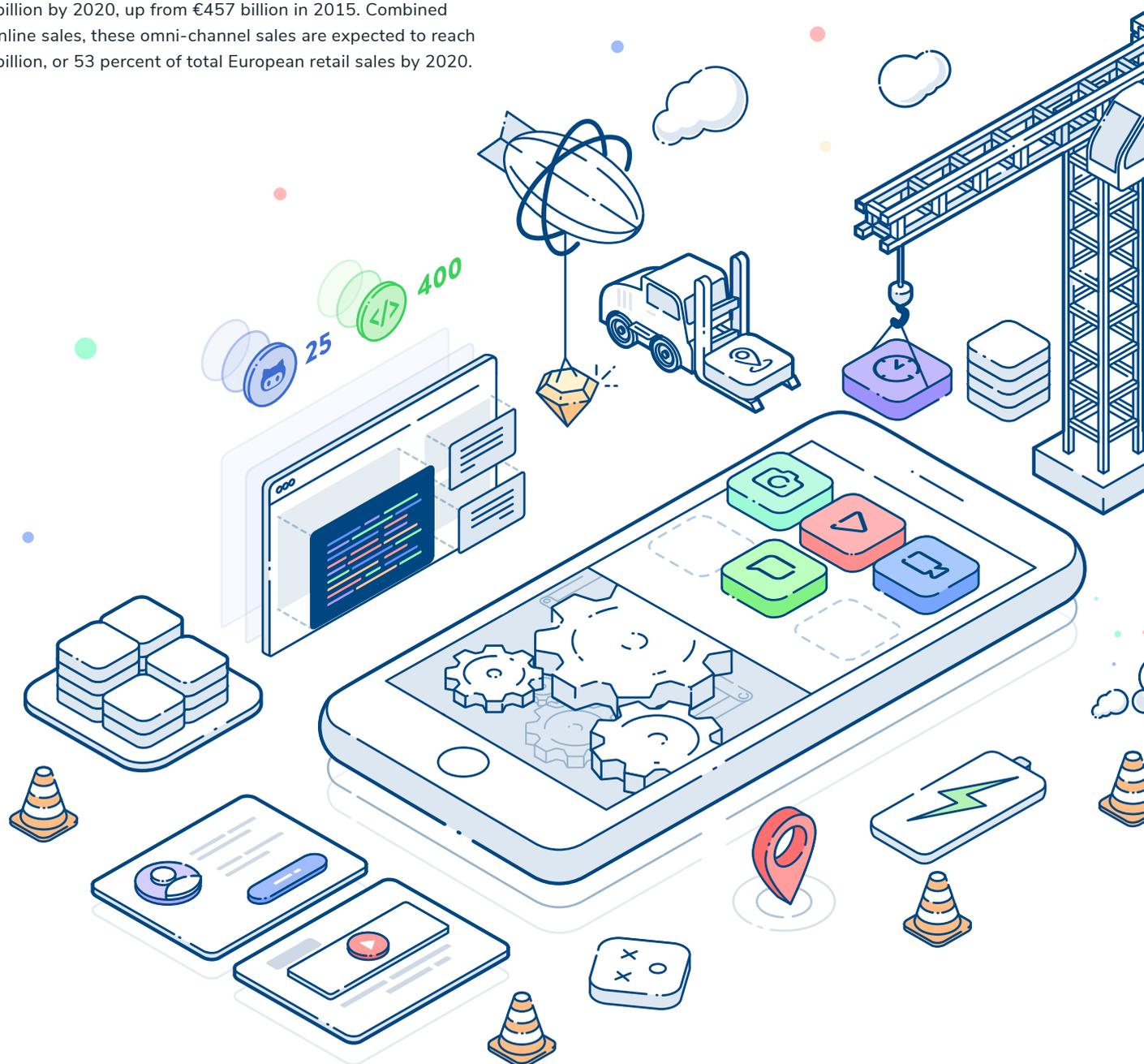


Source: PCM Research.

One of the main drivers of omni-channel payments is mobile. In 2017, there were around 7.8 billion mobile connections, representing 5 billion unique subscribers worldwide, according to mobile industry trade body the GSMA. When tablets and smartphones are the device of choice for accessing the Internet – and are the only means a consumer has of getting online in some countries – this has a significant impact on the customer payment journey and increases mobile-enabled B2C commerce.

According to research firm Forrester, purchases that consumers begin using a digital channel but do not complete online will reach €704 billion by 2020, up from €457 billion in 2015. Combined with online sales, these omni-channel sales are expected to reach €947 billion, or 53 percent of total European retail sales by 2020.

It is noted that mobile technologies and new payment behaviours of connected consumers have gained momentum in the USA, Europe, China, and other so-called mature countries. However, the rollout of digital technologies will apply to the EMEA region, Asia-Pacific, and the Americas sooner rather than later.



For a long time, payment services have been pretty straightforward. The advent of online shopping did not make things more complicated as online payments were seen as a completely separate channel.

However, the proliferation of payment channels and fragmentation of payment services has made payment service processing increasingly complex, and the blurring of previously separate payment channels is only set to continue.

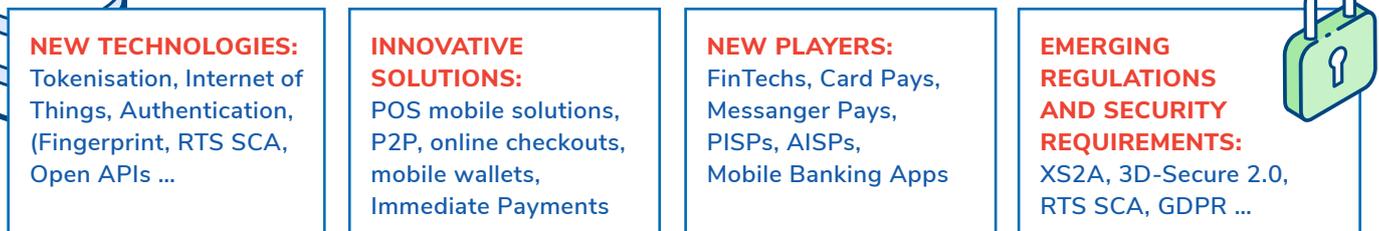
Contactless, mobile apps and mobile payment devices are going to be increasingly the new normal for consumers, and for the payments industry they offer the potential for competitive differentiation.

To succeed in a rapidly changing environment, the payments industry needs to invest in the foundations for digital payment service innovation. In parallel, retailers face the challenge to implement Open Payment infrastructure, enabling them to provide omni-channel payment journeys for consumers.

The payments industry and retailers face multiple digital trends and need to assess and position themselves. Taking into account the advance of mobile banking payment apps, the key challenges for Open Payment platforms supporting omni-channel shopping are illustrated in Figure 2.



Figure 2: Global Payment Trends affecting the Payments Industry



Q How can banks leverage the new technologies for revenues?

Q Which product innovations are relevant for payment business?

Q Which players should be partners, which players are competitors?

Q What are the effects of regulation and how should banks react?

DIGITAL BIG RETAIL PICTURE: CENTRAL OPEN RETAIL PAYMENTS PLATFORM AS ENABLER FOR OMNI-CHANNEL SHOPPING



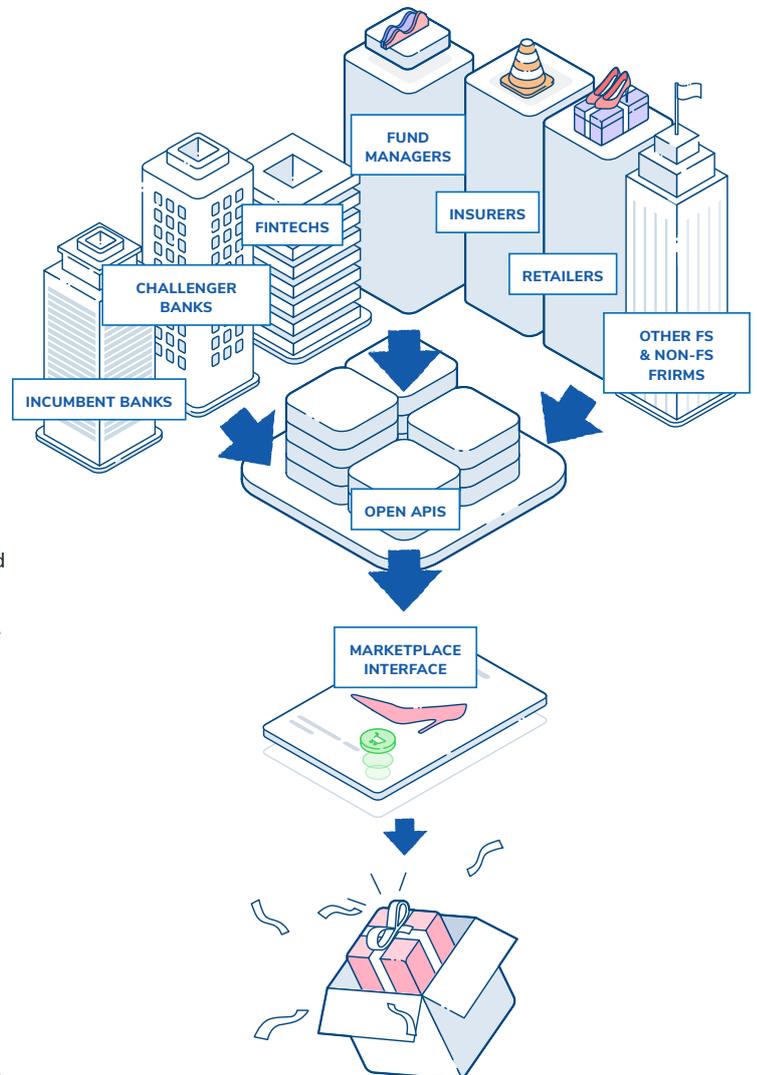
Source: Visa Inc., PCM Research.

Connected consumers have embraced mobile devices that enable them to shop cross-border and omni-channel. In the last decade, innovation has started to change the payment infrastructure, key amongst these are:

- Advanced payment security standards
 - EMV, PCI PTS 5.0, P2PE security, 3D-Secure 2.0, Tokenisation security combined with HCE NFC
- Market proven bridging technologies connecting payment services with any payment checkout type, e.g.
 - contactless, HCE NFC, 1D-barcodes, QR-codes, Bluetooth Low Energy (BLE)
- Most payment accepting POS terminal devices installed and in-store tablet solutions are now contactless enabled
 - stand-alone MPOS terminals for SME solutions
 - in-store retailing tablet solutions with integrated PIN-Pad and contactless card reader
- Mobile HCE NFC payments with card credentials stored in the cloud are accepted by contactless POS terminals
- Connected mobile devices allowing consumers to shop at outlets, in-store, in-app and in online shops, thus enabling consumer journeys that start in one channel and are completed or fulfilled using another
- Retail staff using tablets and retailer apps, combined with mobile POS terminals to service consumers in-store
- Small and mobile merchants replacing ECR devices and POS terminals with tablet solutions and MPOS terminals

It is noted that the global card payment service trends identified here are set on one hand by the international and domestic card schemes. On the other hand, innovative bank groups and digitally-driven FinTechs are trendsetters for card-less payment services like IBAN-based payments and wallets.

It is obvious that the card payments ecosystem has become more complex, and it competes with the emerging Open Banking payment ecosystem (see below).



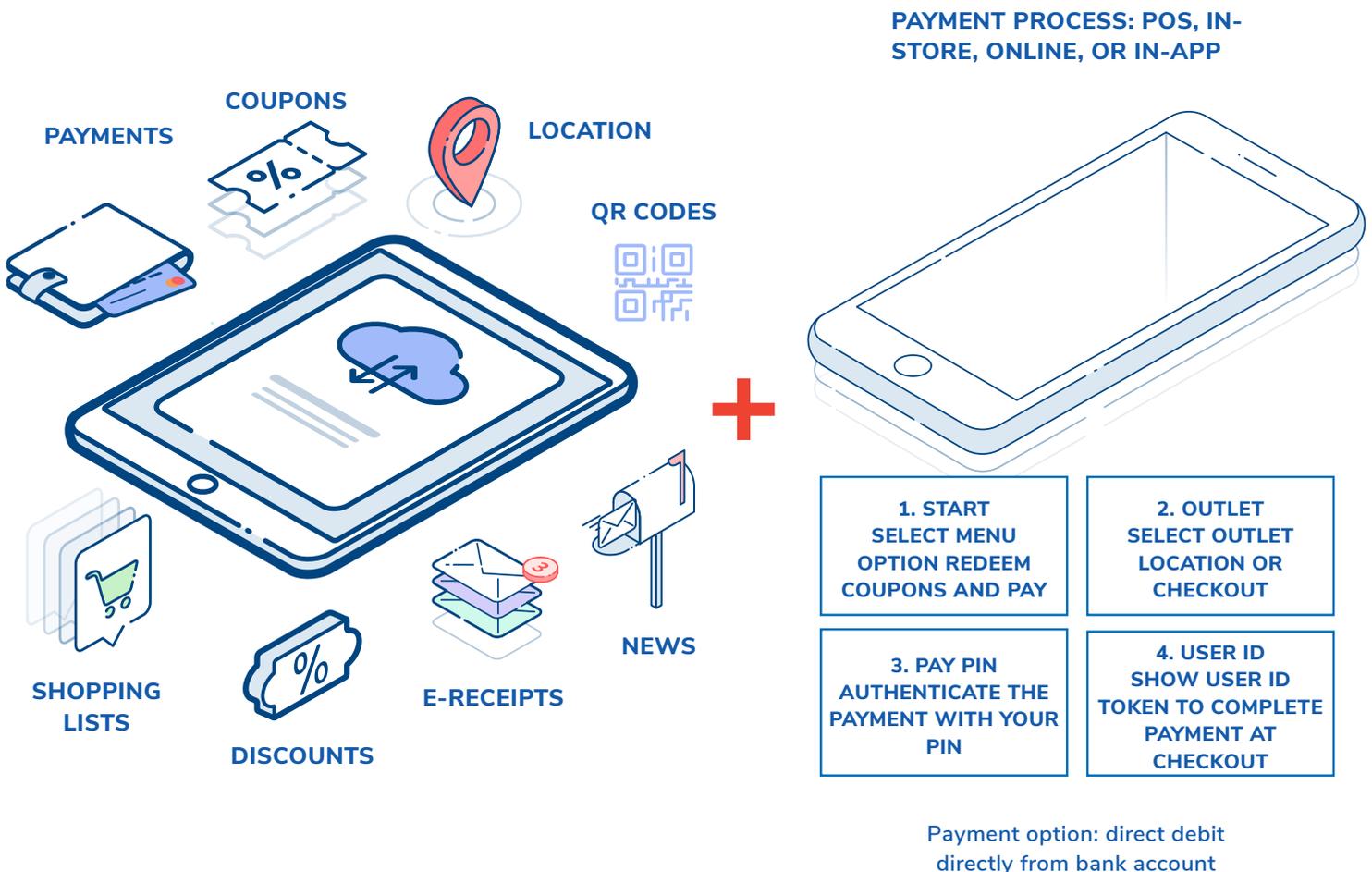
Modern retailers communicate with individual consumers through retailer-issued shopping apps offered for free download. Typical app functions include location finder, QR-code scanning, couponing, special offers/discounts, loyalty, news, shopping lists, purchase e-receipts and optionally, payment functions (see Figure 3).

According to retailer associations and statements from speakers at conferences, modern retailers understand mobile devices as enabler for more consumer convenience and the latent demand consumers have for seamlessly integrated mobile-based journeys into frictionless shopping experiences.

In addition, modern retailers have started to consider combining their retailing apps with payment functions issued by partner banks or selected payment service providers.

Payment functions identified in the markets include cards, digital scheme wallets, user-ID token for IBAN-based bank payments, online wallets issued by "The Pays", or messenger app payments.

Figure 3: Retailing App combined with Payment Apps



Source: PCM Research.

Driven by consumers, retailer demands and mobile technologies, both the international card schemes and the domestic card schemes are trying to become increasingly dynamic and push for the digitalisation of card payments. The intention of all card payment service providers is to enable payment services across all channels and new digital checkout types.

The international card schemes – Visa, Mastercard, American Express, Discover/Diners, JCB and UnionPay – provide rules and regulation for contactless cards, card form-factors like wearables, digital scheme wallets and mobile HCE NFC payments on cards.

In order to prevent card fraud losses of scheme member banks, the international card schemes introduced new levels of card security standards for online card payments on top of EMV and PCI standards. With 3D-Secure 2.0, online card payments shall be more secure by using one-time tokens as strong two-factor customer authentication. In parallel to PIN authentication, the scheme rules enable the launch of dynamic card security codes (DCSC) and biometric fingerprint authentication of card payments.

The scheme initiatives for digitalisation of payments continue with the launch of digital wallets combined with EMV tokenization security and card credentials in the cloud. Mobile HCE NFC payments on digital wallets at POS terminals and retailers in-store tablet solutions are seen as next logical steps. Tokenization security use combined with HCE NFC includes:

- Mastercard MasterPass, Visa Checkout, American Express Serve, French Paylib co-badged Masterpass
- “The Pays”: Apple Pay, Google Pay, Samsung Pay, PayPal and individual banking apps

Recent activities of Mastercard and Visa include a stream-lining of card payment brands. Driven by interchange fee regulation in Europe and other countries worldwide, Mastercard scheme member banks have replaced Maestro cards by Debit Mastercard cards. In parallel, Visa scheme member banks replace Electron cards by Visa Debit cards.

Finally, the international card schemes extended their co-badging strategy with domestic card schemes. Especially, all international card schemes intend to co-badge with the new domestic card schemes in Russia (MIR) and in Turkey (TROY).

The leading domestic card schemes competing with the international cards include, but is not exclusive to:

- Europe: Cartes Bancaires (F), girocard (D), Dankort (DK), BankAxept (N), Bancontact (B), Pagobancomat (I)

- Europe: Euro 6000 (E), Servired (E), Sistema 4B(E), MultiBanco (P), TROY (TR), MIR (RUS)
- Americas: Interac (CND), Elo (BRA)
- Asia: RuCard (IND), BCC (Korea)



Many of them have their roots in debit cards, but most also issue credit cards and prepaid cards. All domestic card schemes follow the EMV and PCI standards. The local member banks now issue contactless cards, and some are trialling mobile HCE NFC payments. Also, some domestic payment schemes trial 1D-barcode/QR-code initiated payments with their cards at retail cashier systems.

The domestic card schemes in Europe are also considering the opportunities and impact of immediate payments on card services. Notable is that the banks and the regulator in Turkey and Russia agreed to launch new domestic card schemes and to implement domestic payment gateways. From a political point of view, the key reason identified is to be more independent from foreign payment services for all domestic payment transactions. The same attitude can be found in all other CIS countries.

Another important trend is that the Belgian domestic card scheme plans to merge with the mobile payments app, Payconiq, supported by a host of Belgian and Dutch banks. The merger with Bancontact is part of a bold move by Payconiq to create a multi-functional pan-European mobile wallet capable of initiating payments online, on the high street and from peer-to-peer (P2P) via a direct connection with the customers payment account at one of the participating banks.

Lead by Visa and Mastercard and followed by American Express, Diners/Discover, JCB and UnionPay, the rollout of advanced security features and new card payment services started in the USA and is in a business-driven rollout process to other countries in Europe, the Americas, Asia-Pacific and the MEA region. The domestic card schemes follow the trail of the international card schemes in their home markets.

To date, cards have not only dominated POS payments, but in many markets, they have been the primary means of online payment. However, driven by new consumer demands, technology innovation and in the light of mobile banking and payment apps, the payment service landscape for the payments industry is in a dramatic transformation process.

Card-less payment services for retailers can include credit transfers and direct debits. In many instances, these payment types are applied to specific use cases and checkout types only.

In addition, prepaid products, payment services on prepaid accounts and online wallets along with independent payment service providers, compete with cards for market share and “Top of Wallet”. The leading online wallets include Amazon Pay, PayPal, Skrill, Webmoney, Yandex.money, Alipay and WeChat Pay.

IBAN-based bank payments directly from bank accounts play an increasingly significant role in the B2C e-commerce space. Bridging technologies like NFC, 1D-barcodes, QR-codes or BLE (Bluetooth Low Energy) enable any card-less payment service to be accepted omni-channel at POS terminals and all other checkout types.

In total, there are more than 80 branded bank payment services alone in Europe. Based on retailer information and payments industry player reporting - in 2018 the following set of card-less bank payment services are relevant for the individual online merchant in Europe (see Table 1).

From end-2017, immediate payment services (e.g. Faster Payments UK, Instant SEPA Credit Transfer) are new card-less payment services relevant for the merchants. And yet, it is not only the veterans like the United Kingdom, Switzerland, or Singapore that are moving to add new immediate payment functionalities.

As of late 2017, more countries and regions offer immediate payment services, including the European Banking Association Real-Time 1 (EBA RT1), SEPA Instant Payments (SCT-INST), The Clearing House (TCH) Real-Time Payments (RTP) System, Zelle Network, and the Australian New Payments Platform (NPP).

Thanks to a unique legal framework for payment services in Europe, the rollout of card-less IBAN-based bank payment services started in Europe goes hand-in-hand with the rollout of mobile banking apps.

At a later stage, there may be a business-driven rollout process of immediate bank payments in the Americas, Asia-Pacific and the MEA region, especially in those countries where bank payments last for more than d+1. For example, India’s government supports the idea of a “Cashless India”.

Table 1: Selected card-less Bank Payment Services relevant in Europe

PAYMENT SERVICE TYPES	SELECTED RELEVANT PAYMENT SERVICE BRANDS
IBAN-based payments directly from bank accounts	Channels: online, in-app, also: POS
Direct debits:	IBAN-based SDD, BACS (UK), ELV (D), paydirekt (D)
Credit transfers:	IBAN-based SCT, Sofort, MyBank, iDEAL (NL), eps (A), giro pay (D), Pingit (UK), MobilePay (DK), Vipps (N)
Immediate Payments:	Faster Payments (UK), instant payments (SCTINST), Swish (S)

Source: PCM research

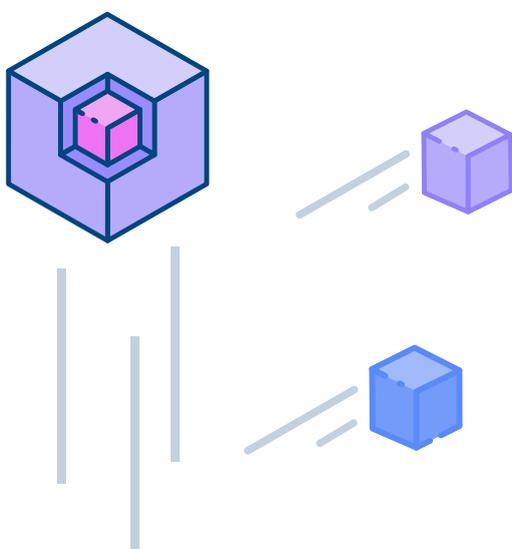


Having in mind the afore mentioned global trends, the dynamics of the card payment ecosystem and the emerging card-less Open Banking payment ecosystem, challenge the payments industry and their payment platforms.

In 2018, there is a complex set of omni-channel payment use cases at retailer checkouts, e.g.

- POS payments with contactless cards, wearables and other contactless card-formfactors
- In-store payments with mobile devices:
 - Mobile HCE NFC payments on cards and/or on digital wallets (MasterPass, Visa Checkout, “The Pays”, PayPal)
 - IBAN-based in-app payments directly from bank accounts (e.g. HCE NFC, 1D-barcode, QR-code)
 - Payments with wallets and messenger apps (e.g. Alipay, WeChat Pay), initiated by QR-code or 1D-barcode
 - Cash-in/cash-out on cards or per mobile banking app directly to/from bank account (e.g. mPesa in Africa)
- Online payments on cards, from bank accounts, wallets, or using messenger apps (e.g. Alipay, WeChat App)
 - One-click checkout with automatic invisible payments
 - Click & Collect in-app payments with later delivery in outlets

In addition, new technology driven payment use cases with future impact on the payments industry include messenger Pays (WhatsApp), Open Banking in-store, invisible payments, conversational commerce payments and in-car payments.



Messenger Pays – More and more consumers chat with businesses through messenger apps like Facebook Messenger, WhatsApp, Talk and WeChat. In addition, consumers may demand to use added payment functions like WeChat Pay, Alipay, Google Pay. For example, The Chinese WeChat Pay enables payments via 1D-barcode initiated Quick Pay, QR-code payments, and in-app payments (see figure 4).

Mobile Banking payments in-store – More and more mobile banking apps combine payment functions like digital wallets or IBAN-based bank payments direct from the account. In other words, online banking comes to retailer outlets in-store. Bridging technologies include 1D-barcodes, QR-codes and NFC. It is noted that strong customer authentication remains part of the online banking service, e.g. mobile TANs.

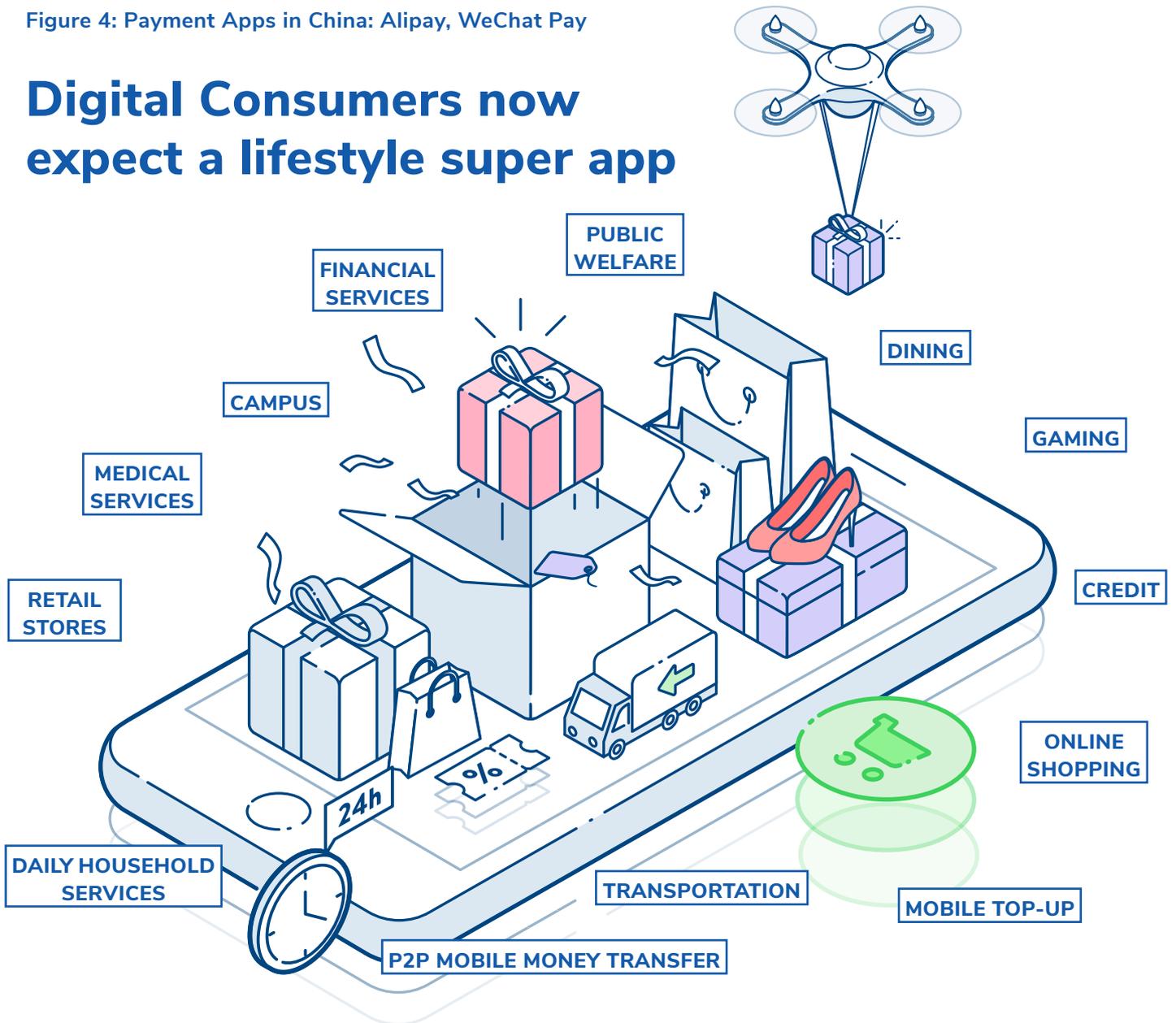
Invisible Payments – The most cited examples that have removed the checkout and payment experience altogether are Uber and Amazon. At the end of an Uber journey, the passenger just gets out of the cab. There is no checkout and payments happen in the background. Similarly, at the Amazon Go store in Seattle, customers choose the items they want from the shelves. When they have finished, they leave. Amazon charges their online accounts and sends a receipt. Amazon Dash button is a similar Click & Collect button with added invisible payment.

Conversational Commerce Payments – Conversational commerce refers to the intersection of digital assistants and consumers while shopping. Meaning, the trend toward interacting with online shops through digital assistants like Amazon’s Alexa, Apple’s Siri, Google Assistant and Microsoft’s Cortana. In addition, consumers may configure their invisible payment means individually in the digital assistant app. The conversational verbal purchase process is then like: “Alexa, buy me a pepperoni pizza” with invisible payment and immediate home delivery.

In-Car Payments – is a new trend in the Internet of Things (IoT) world. The car industry invests in internet connectivity for cars. This enables drivers to purchase in-car from online shops and pay in-car. In-car payments can be Click & Collect payments, invisible payments or conversational commerce payments.

Figure 4: Payment Apps in China: Alipay, WeChat Pay

Digital Consumers now expect a lifestyle super app



Alipay (Owner: Ant Financial)

- Payment service provider of Alibaba Group
- Initially, the PSP for Alibaba online shops
- Founded in 2004, mobile app since 2009
- Alipay Wallet with cards and card-less payment channels
- 175m payment transactions/day, 60% mobile
- 520 million Alipay users
- Globally available for Chinese clients



WeChat

- Social media platform (2016: 806m users)
- Platform combining social media functions similar to Facebook and Whatsapp
- Founded 2004, mobile app since 2009
- Integrated digital account WeChat Pay
- QR-code, 1D-barcode initiated in-store payments Quickpay
- Online payments, in-app payments, overseas shopping
- Globally available for Chinese clients

Source: PCM research

The most recent significant impact on the payments industry is the emerging Open Banking payment ecosystem.

In lots of countries having a digital economy strategy, the national central bank and the domestic regulator have taken action to lay the ground for a digital economy without barriers, to drive the digital payments transformation and to implement an Open Banking regime. Thus, some countries are in the process of creating a unique legal framework for cash-less B2C and B2B payments and bank payment services that supersede pre-existing national legislation.

The most important intention of such regulatory initiatives to implement a new Open Banking regime, is to allow trusted payment providers (TPPs) to access bank accounts and payment data of bank clients, if and only if, the individual bank client grants explicit permission to do so. In addition, the regulators encourage the use of Open API sets to connect TPPs with banks.

The regulatory action is in line with technology innovation and de-facto competition between bank and new types of FinTechs. For a decade, digital banks, mobile banks, and TPPs have offered IBAN-based bank payment services to compete with traditional banks. Apart from agreed partnerships, banks had seen the access to accounts as unfriendly or illegal. To the contrary, FinTechs have claimed the right to access account information and payment data of bank clients for cross-bank services.

With the implementation of an Open Banking regime, the legal gap for banking services initiated by third parties would be legally closed. Furthermore, Open APIs allow banks to partner with trusted FinTechs of their choice to offer a new type of barrier less digital banking experience, including additional non-bank apps with value-added services.

More than 200 leading bank groups and hundreds of FinTechs worldwide already practice partnerships between banks and TPPs, and the Open Banking payment ecosystem in Europe has gained momentum.

Europe is in the driving seat to implement an Open Banking payment ecosystem, because the revised Payment Service Directive (PSD2). PSD2 became effective in January 2018 and is the key directive for a new Open Banking regime and borderless banking and payment services in the EEA region of 28 EU + 3 EWR countries (see p14).

Although PSD2 has no relevance outside the EEA region, it is viewed as a kind of best practice blue print for Open Banking payment ecosystems for other countries. It is believed that the

USA and other leading digital countries outside Europe will have similar objectives.

For example, the Australian Government has confirmed its decision to establish an Australian Open Banking regime, following a report into Open Banking released in February 2018.

The Government representatives are about to implement the recommendations set out in the Farrell Report titled "Review into Open Banking in Australia", supporting the creation of a new data-sharing regime in the financial services industry. The Australian Government is going to create a Consumer Data Right, which includes the establishment of the Open Banking framework. Following this announcement, the Australian Competition and Consumer Commission, in consultation with the Office of the Australian Information Commissioner, will develop draft rules for Open Banking while the creation of data and security standards will be developed by the Commonwealth Scientific and Industrial Research Organisation's Data61.

Digital Banking Apps – One significant impact of the emerging Open Banking ecosystem in Europe for the payments industry is the development of mobile banking apps combined with payments direct from the account.

In addition, bank clients can use an additional app to get account and payment information across-banks. It is very likely that consumers are going to embrace the new Open Banking services and would like to use mobile payments while shopping.

Increasingly consumers mobile devices are going to become a kind of dashboard that enables Open Banking, omni-channel shopping and payments at the various digital checkout types offered by modern retailers (see Figure 1).

New payment use cases - will be demanded by digital banking clients. They include in-app-based payments on wallets, in-app bank payments direct from bank accounts, payment initiation enabled by payment initiation service providers (PISPs) or retailers, person-to-person mobile money transfers, contactless bank payments in-store via either NFC, 1D-barcode or QR-codes, invoice payments in outlets and cash-advances in retail outlets ("cash-in-store").

The new challenge for the payments industry is how to enable in-app bank payments at all checkout types of modern retailers.

Based on its digital economy vision, the EU Commission has created a unique legal framework for cashless B2C and B2B payments that supersedes pre-existing national legislation and is binding for financial service providers and payment service providers throughout the EU and adapting countries.

The revised Payment Service Directive, PSD2, is the key directive for borderless banking and payment services. However, the most significant impact on the payments industry and their payments platforms is the Open Banking Mandate of the revised PSD2. It sets the stage for a pan-European Open Banking payment ecosystem:

- PSD2 sets the mandate on Open Banking and payment services in Europe
- PSD2 grants trusted payment providers (TPPs) the right of access to bank accounts payment data
- PSD2 regulates the open access to customer payment account data (XS2A) and banking infrastructure
- PSD2 mandates the rules for Strong Customer Authentication (SCA) to be provided in the Regulatory Technical Standards (RTS) to be published by EBA, the European Banking Authority.

The PSD2 proves regulated open access to customer bank account data by trusted payment providers, if and only if, the customer gives explicit permission for the respective transaction.

The underlying trend of the 'Open Banking' concept is the increasing level of control available for bank customers on how, when and where they want to use their banking services. Open Banking would allow them to access their account data at different banks through one interface either by using the mobile banking app of their bank or of a chosen third-party service provider.

The regulator intends to open up the European electronic payment and banking market for new types of payment service providers that can offer competitive innovative payment and banking services. PSD2 regulates the role of two types of new third-party payment service providers (TPPs) and their services.

• Payment Initiation Service Providers (PISPs)

With explicit customer permission, PISPs may initiate a payment transaction directly from the customer's bank account.

• Account Information Service Providers (AISPs)

AISPs consolidate the customer's account and transaction details from multiple accounts at multiple banks in one portal.

Strong customer authentication and secure communication are key to achieving the objective of the PSD2: enhancing consumer protection, promoting innovation and improving the security of payment services across the European Union.

The European Banking Authority (EBA) is mandated to define necessary requirements for SCA and XS2A in the Regulatory Technical Standards (RTS). EBA published its final draft of the RTS at the end of February 2017. The earliest date of the RTS coming into force is 18 months after the RTS is adopted by the EU Commission.

Effective from January 2018, Europe has a unique legal framework for Open Banking, a game changer for the banking industry and emerging payment service providers - an irrevocable shift to open banking in Europe has become inevitable.



Many retailers have been focusing on big bricks-and-mortar store networks for decades. In the past, retailers had underestimated the potential of new checkout types and online channels, treating them as a separate business line.

However, in the last decade, the retail industry has fully embraced online shopping to help satisfy increasing consumer demand for speed, convenience and a frictionless user experience. Consequently, the retail environment is experiencing change at a faster pace than ever before.

Online technologies and the demands of connected consumers drive the changes that are rapidly transforming the retail sector. They offer retailers new opportunities to generate differentiation and additional revenues or gain market and customer share, through better customer engagement and frictionless omni-channel payment experiences for consumers.

According to large retailers, consumer expectations for retailing services are a seamless, omni-channel shopping and payments experience, combined with value-added services across all retail channels, regardless of the challenges this poses the retailer. Retailers are expected to be able to offer the answer to this new consumer behaviour pattern and deliver seamless omni-channel consumer experiences.

Historically, large merchants have operated, and/or outsourced payment platforms separated by channel and by country, and many retailers use fragmented payment platforms by country for POS, e-commerce and mobile commerce channels.

While large retail groups may operate in-house solutions, small and medium sized merchants usually outsource payment service platforms to their supporting payments industry partners, e.g.:

- POS terminal network processors and POS terminal management to POS network service processors (NSPs)
- POS terminal maintenance services to POS terminal vendors or their local partners
- The online payment service gateways for online shops are managed by Payment Service Providers (PSPs)

However, retailers experience threats from their existing card payment platforms that are mostly not built to support omni-channel and card-less payments. The historical split between e-commerce payments, POS payments and mobile in-store payments still remains strong with common problems for retailers being:

- Lack of new payment use cases and new payment services demanded by consumers
- Acceptance of card-less payment services is limited to online channels
- No way to accept the same payment services across all shopping channels and checkout types

Open Retailing Payment infrastructure Retailers Opportunity

Global payment trends, the Open Banking Payment ecosystem, mobile banking apps combined with payment functions, new checkout types, and new payment use cases offer a completely different strategic direction and opportunity for large merchants and for innovative small merchants. It is crucially important for retailers to connect with the Open Banking payment ecosystem, and it is an opportunity for retailers in a rapidly changing payment environment.

In analogy to the buzzword Open Banking payment ecosystem, the retailer requirements for a modern omni-channel multi-payments platform supporting omni-channel shopping can be summarized with the buzzword Open Retailing infrastructure platform.

In the light of omni-channel retailing strategies and global payment trends, modern retailers innovate their checkouts in order to support any payment means from any channel and add new payment means, e.g. immediate payments and mobile banking payments. In addition, leading retailers say they need a strong omni-channel payment acceptance strategy to succeed.

According to recurring annual talks with retailers, integration of POS terminals, mobile POS terminals and payment pages of online shops in one Open Retailing payment platform connecting omni-channel payment means demanded by consumers with multiple-checkout types is vital for retailers and one of their most significant challenges.

Open Retailing payment Infrastructures can simply hide the multi-payment service complexity behind the scene. In addition, it can provide the basis for customer ID verification, purchase validation, upstream/downstream services and support - seamlessly and to the consumers convenience. As payment management becomes more strategic for them, large retailers say that they see payments as a competitive differentiator for their retailing business.

In short, modern retailers are looking for Open Retailing payment platforms enabling omni-channel payment acceptance services for cards, IBAN-based bank payments direct from bank accounts, online wallets, digital wallets, prepaid products, in-app payments and mobile HCE NFC payments in-store.

Modern retailers see omni-channel payments combined with a flexible central payments platform as a prerequisite and an increasingly common starting point for omni-channel retailing. And many retailers now see payment management more strategically and as a competitive differentiator for their business. Figure 5 illustrates the modern retailers high-level view of a flexible Open Retailing payment infrastructure connecting checkout types with the card payment ecosystem and the emerging Open Banking payment ecosystem.

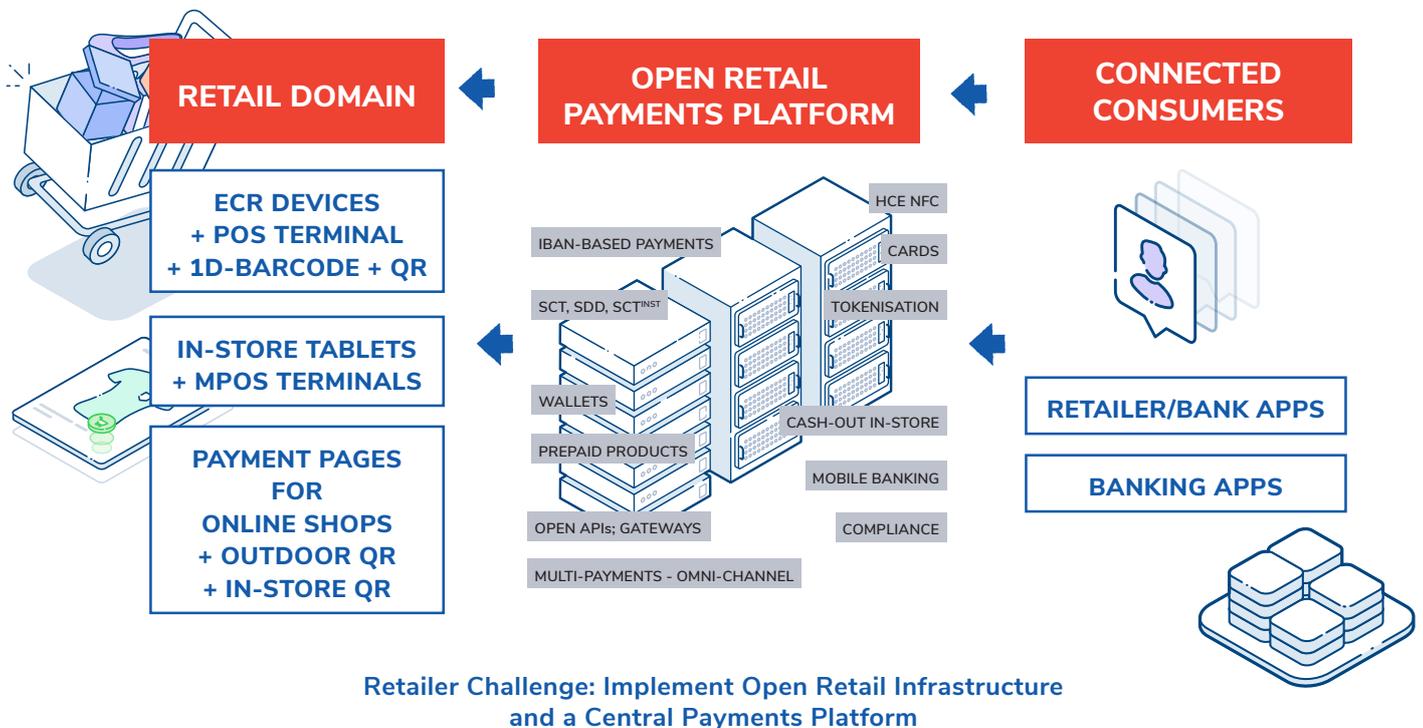
Retailers recognize that omni-channel payment platforms demand a higher level of complexity and integration, in combination with continuous regulatory upgrades to meet the need of regulators and card schemes.

Small merchants say they tend to follow the general adoption of new payment means, and they consider working with third-party providers to support their omni-channel infrastructure and their multi-payment acceptance service needs.

Large retailers say they tend to be much more reactive to new payment means and omni-channel payments especially if their competitors are also responding to the changing consumer behaviour. Also, they say that they push for some innovation on their own since this is a way for them to attract their consumers. Modern retailers say that the worst-case scenario will be for them to not be able to support those changes because their platform can't manage it.

In 2018, modern retailers say they see Open Retailing payment infrastructures as a realistic opportunity due to the global payment trends and the fast-changing payment ecosystems. Like global payment trends, there may be a business-driven rollout process first in Europe and the USA, then followed by the Americas, Asia-Pacific and the MEA region.

Figure 5: Open Retailing Payment Infrastructure – Opportunity for Retailers



Source: Retailer comments, PCM Research.

To succeed in a rapidly changing environment, the payments industry needs to invest in the foundations for digital payment service innovation. In addition, retailers face the challenge to implement an Open Retailing payment infrastructure providing omni-channel shopping journeys for consumers.

Today, the payment platforms of acquirers and processors are usually connected to the card payment ecosystem and accept cards and card form-factors. Only in the online shopping world do acquirers and processors support merchants accepting card-less payment services. And they are not connected to the Open banking payment ecosystem - so far.

One significant impact of the Open Banking payment ecosystem is the emergence of mobile banking apps combined with bank payments directly from the account. In addition, payment initiation service providers (PISPs) and account information service providers (AISPs) are going to be new business partners for acquirers, processors and retailers.

Large retailers say it would be a pre-requisite for their omni-channel strategies to stay connected with the fast-moving digital payments world and to be capable of cooperation with the new types of card-less payment service providers.

The challenge for the payments industry is to transform existing payment solutions by channel into omni-channel Open Payment

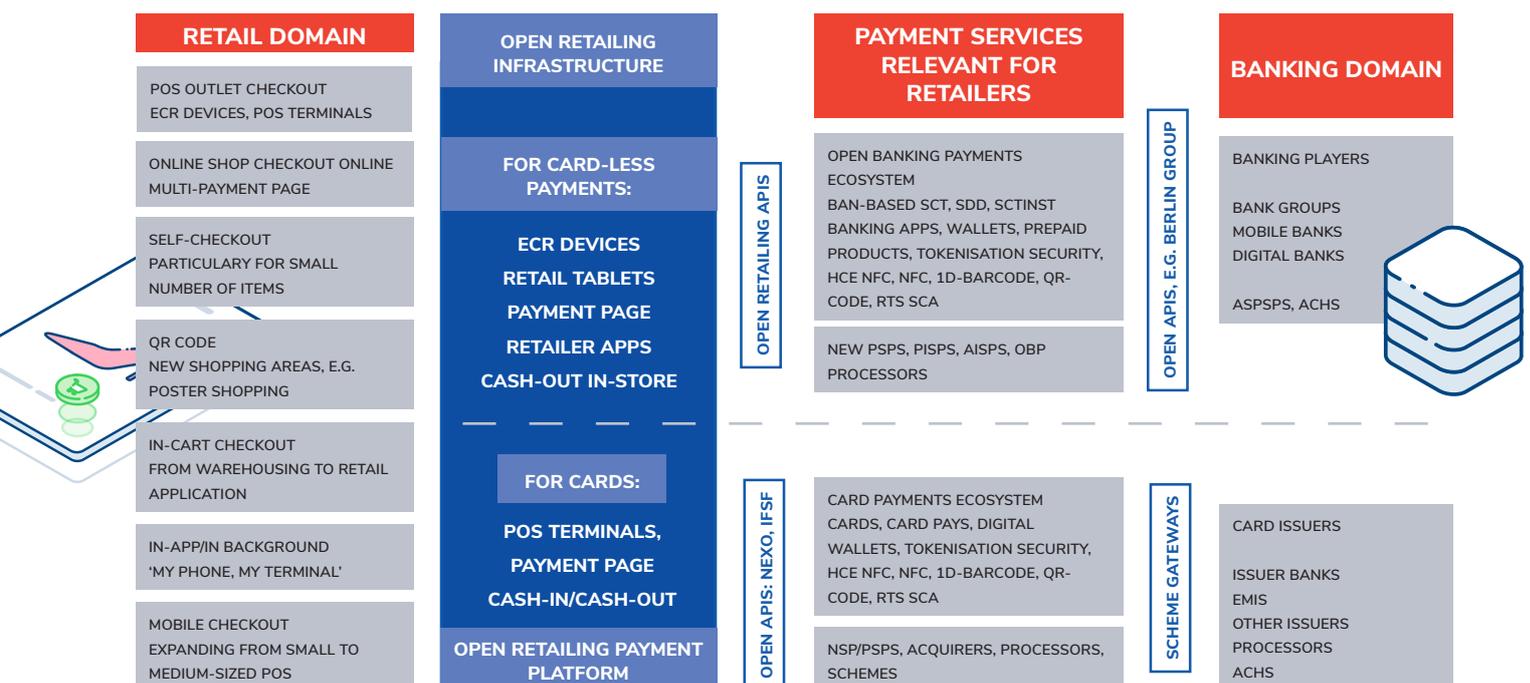
service platforms that combine the omni-channel payment acceptance requirements of modern retailers with the card payment ecosystem and the emerging Open Banking payment ecosystem.

Combine Open Retailing with Cards and Open Banking – The challenge and opportunity for acquirers and processors is to develop a new kind of Open Payment platform that interacts with any relevant payment ecosystem:

- The digital card payment ecosystem
- The card-less Open Banking payment ecosystem
- Trusted payment providers like “The Pays”: Apple Pay, PayPal, Alipay, WeChat Pay

In this report, the key term Open Payment is a synonym for combining omni-channel Open Retailing with card payments and Open Banking payments. Figure 6 illustrates the important role a new kind of Open Payment platform would perform in connecting the individual merchant with both the card payment ecosystem and the Open Banking payment ecosystem.

Figure 6: Open Payment Platforms – Interface to Digital Payment Services



Source: PCM Research.

With omni-channel payment strategies in mind, building a new kind of Open Payment platforms is a fundamental opportunity for the payments industry, especially for acquirers and processors.

Key drivers for an Open Payment platform include financials, compliance, easy adoption of payment innovation, flexible omni-channel payments processing and checkout configuration, new security standards like tokenisation security, transparent reconciliation of payments and a frictionless omni-channel payment user experience.

Among others, the benefits of an Open Payment platform for acquirers and processors would include:

- Key services for omni-channel payments processing, easy to add new payment services
- Flexible device management, e.g. checkout network processing, in-app processing
- Customer insight: e.g. purchasing patterns, payments behaviour
- Frictionless omni-channel consumer experience: cards, cardless, omni-channel
- Omni-channel compliance with card schemes and regulators
- Use of global payment standards, Open APIs, and state-of-the-art cloud-based modular platform technology
- Partnering with digital banks and trusted payment providers using Open APIs

The impact on retailer payment platforms is obvious: If retailers have flexible systems they are able to react quite quickly. If not, then this will be costly for them to bring those changes onto their platform. Modern retailers say that the worst-case scenario will be for them to not be able to support those changes because their platform can't manage it.

Across the value chain, retailers and the payments industry entities would need to invest in new technology as they adjust to shifting market conditions and consumer expectations. For many, these investments are necessary to respond to short-term changes, but in many cases, these decisions also form part of longer-term digital transformation plans. The decisions that are made in the coming years will lay the ground for the shape of future value chains and the businesses that participate in them.

Investments in payments technology and services have become mandatory. The need to support changing consumer payment preferences remains a major driver of change, particularly because of the increasing expectation that payment services will become a deeply embedded and largely invisible part of the customer payment experiences.

Global payment trends and digital technologies are driving the change in the global payments world. In addition, the omni-channel behaviour and seamless payment expectations of consumers matched by retailer's demand for omni-channel payment service acceptance is challenging the payments industry - especially acquirers and processors.

Based on continued discussions with stakeholders in the payments industry and modern retailers, since 2011, the key findings of the report include:

- With the advance of contactless and online technologies in combination with mobile apps, smartphones and tablets, consumers have started to purchase anywhere, at any time, from any device, from any channel, and using any payment means of their choice. Especially, they demand a unique omni-channel payment experience without barriers between POS payments and online payments, independent of the channel they purchase from.
- Contactless, mobile devices, retailer apps and online banking payment apps are increasingly going to be the new normal for consumers but can offer potential competitive differentiation for the individual merchant, acquirers and processors.
- Retailers need to embrace new consumer shopping and payment expectations. This is driving complexity for retailers since it means supporting new checkout means, new payment services, new payment channels, new payment technology and adapting to new way of enabling the shopping and payment journey.
- The global payment trends identified in this report include advanced payment security, bridging contactless technologies, in-store payments and tablet solutions with embedded PIN-Pads. These predominantly promoted by the international card schemes and domestic card schemes.
- Innovative bank groups and digitally-driven FinTechs are trendsetters for card-less payment services like IBAN-based payments and wallets. Modern retailers demand a new kind of Open Retailing infrastructure that supports omni-channel multi-payments with the card payment ecosystem and the emerging Open Banking payment ecosystem.
- Success in omni-channel shopping is underpinned by a fragmented set of cash-less payment services relevant for omni-channel merchants, such as cards, contactless card form-factors, IBAN-based bank payments, online wallets and prepaid products.

Open Retailing meets Open Banking – a new Open Payment platform era

The payments industry needs to support the new retailer demands for omni-channel payment processing and multiple-payment service acceptance. This is driving complexity for payment platforms since it means supporting omni-channel payment services, new payment technologies, digital payment security standards and adapting to new ways of enabling the omni-channel payment experience for the consumers.

In the emerging digital payments world, the channels POS/MPOS/e-commerce/in-store/in-app are going to consolidate long term into a new kind of Open Payment platform, which combines omni-channel payments acceptance for retailers with both the card payment ecosystem and the Open Banking payment ecosystem.

To succeed in a rapidly changing environment, the payments industry needs to invest in the foundations of digital payment innovation as the change in the global payment markets is universal.

Looking into specific domestic data of European countries, connected consumers are the new normal for retailers across Europe, making this a significant game changer for omni-channel payments.

Mobile technologies, global payment trends, Open Banking trends and the new payment behaviours of always-on consumers have gained momentum in the USA, Europe, China and other countries that share a digital economy vision. However, the rollout of the digital payments environment will certainly apply to the EMEA region, Asia-Pacific and the Americas.



RS2

With international offices all around the world, RS2 offers secure payment services, payments software and managed services to over 130 clients in more than 35 countries. RS2 processes thousands of transactions every second, in all major currencies and covers all aspects of the card business. All solutions are built using the renowned BankWORKS® software modules which allow a flexible and quality solution for your business.