

An issuer guide for creating digital payment experiences.

Wallets Unstitched

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Vallets Drivers





BACKGROUND

The term digital wallet describes a range of propositions that allow customers to store and use their payment instruments digitally. Increasingly, these wallets are also beginning to reflect the contents of a physical wallet and include such things as loyalty cards, tickets and a range of currency balances.

As customers use their smart devices more and more to browse. compare prices and purchase goods and services online and face-to-face, digital wallets have become an increasingly critical part of card payments.



THE IMPORTANCE OF WALLETS

The growth of digital wallets compels today's issuers to understand the landscape and the important role partners can play in successfully meeting the relevant challenges and opportunities.

Whether designing a new card programme or enhancing an existing one, the choices organisations make regarding their digital wallets will play an increasingly important part in defining their digital experience and their ability to stay relevant including achieving and maintaining top of wallet status.

This translates to important implications related to: Competitive advantage

Enhanced customer engagement

Valuable customer data





GLOBAL ADOPTION AND DRIVERS

Digital wallet payments are on the rise globally and are expected to reach





GROWTH BY REGION

REGION	CURRENT ADOPTION RATE	PROJECTED CAGR	KEY DRIVERS
APAC	Highest adoption rate globally (70-80%+)	8-12%	 Integration with (e.g., WeChat Pa
			Limited access
			 Government init inclusion (e.g., Ir
EUROPE	Varies by country (30-70%) with Nordic markets leading the way.	15-20%	 Diverse mobile v players (e.g. TW)
			 Increasing smar
			 Growing awarer
			 Government init payments (e.g. 0
IIK	~60% of smartphone users	5-10%	Strong contactle
UK			 Popularity of Ap
			 Government sup
			 Security concernance
211	~40% of smartphone users	10-15%	Convenience an
00			 Security feature
			 Integration with
			 Growing accept

- popular messaging apps ay in China)
- to traditional banking services
- tiatives promoting financial ndia's BHIM)
- wallet landscape with domestic /INT in Switzerland)
- rtphone penetration
- ness of security benefits
- tiatives promoting digital Open Banking)
- less payment infrastructure ople Pay and Google Pay
- pport for contactless payments
- rns around traditional wallets
- nd speed of contactless payments es like fingerprint authentication loyalty programs and rewards tance by merchants



WALLET TYPES

Breaking down digital wallets

Wallets can often be categorised based on their acceptance:





Open Wallet

Wallets, such as Apple Pay, Google Pay and PayPal, offer broader acceptance and can be used for payment wherever that wallet brand is displayed. To increase the reach of these wallets across browser, in-app or face to face payments, they may also support further capabilities such as NFC (tap to pay) or QR codes (scan to pay) for payment initiation.



Walmart 🔆 🏹 TESCO

Closed Wallet

A wallet that is accepted at a single merchant such as Walmart , Starbucks, Tesco or BP typically allows the use of a card-on-file capability to store payment details and minimise cardholder effort at point-of-sale. These are often also linked to merchant loyalty programs.





Further categorisation

With a growing number of players across markets offering different features and functionalities, categorising digital wallets by type helps demystify them further.





Merchant-specific with card-on-file or stored value features. These wallets often incorporate loyalty and rewards elements and can be a rich source of data for their issuers.



PAYMENT CHANNELS

Designing with the endcustomer and programme economics in mind.

Designing the best end-customer experience starts with understanding where and how you would like your end-users to use their cards – as well as the commercial impacts of each type of transaction.

Leveraging digital wallet capabilities can also have a significant impact your program economics. Key considerations include interchange, issuer liability, transaction declines, fraud losses and processing fees all all of which be determined and influenced by how your customers use their cards.



PAYMENT CHANNELS

Customers may use their card in one of several ways:



Sec Face-to-face

The cardholder is present and provides the merchant their card physically or via a mobile wallet:

Physical card can be presented in three ways:

- Contactless transaction (requires the issuing BIN and card to be contactless-enabled)
- PIN transaction linked to the chip on the plastic card
- Magnetic swipe (increasingly rare) linked to cardholder signature on the back of the card (and possible ID check by the merchant)

Mobile wallet

The cardholder presents a mobile device (e.g. smartphone, watch, wearable) to the contactless terminal and is authenticated by the agreed method linked to the mobile device (e.g. biometric, passcode, etc.).

Manual entry

The cardholder or merchant enters the card details on premise or for example via Mail Order/Telephone Order (MOTO) transactions.

- Card number
- Expiry date
- Card Verification Value (CVV)



E-commerce

The cardholder is not present and pays the merchant remotely one of several ways:

Digital wallet / Card on file

Many online merchants offer customers the ability to store their cards in digital wallets in order to accelerate checkout. There are several flavours of these types of services:

- Merchant-specific (e.g. Ticketmaster)
- Aggregated (e.g. Amazon 1-click, Paypal)
- Mobile Wallet (e.g. Apple Pay, Google Pay)

Manual entry of card details via an electronic form:

- Card number
- Expiry date
- Card Verification Value (CVV)

Note: Regional requirements vary, but one-time or first-time entries are likely to require the issuer to incorporate 3D Secure authentication to process the transaction.



TOKENISATION

Tokenisation's integral role in digital wallets

One of the key factors in the success of digital wallets has been tokenisation. This is the process of substituting a sensitive data element with a non-sensitive equivalent, referred to as a token, that has no extrinsic or exploitable meaning or value.

- Only cards that are tokenised can be stored in a digital wallet
- Tokenisation can be enabled through a wallet partner's integration with the payment networks (e.g. Visa, Mastercard) who serve as the Token Service Providers (TSP's) for cards issued
- Only Card BINs that are digital wallet-enabled with a TSP can be tokenised
- Virtual cards can be used online but cannot be stored in a mobile wallet (such as Apple or Google) unless the BIN is Wallet Enabled
- Tokenisation is likely going to play a growing role in how card features are added in the future



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TOKENISATION

Digital wallet transactions are seen by many as safer than a contactless card transaction when leveraging the authentication offered by a smartphone or device.

However, to achieve these benefits, it is critical to apply the correct amount of rigour in authenticating and validating the card and customer when registering the card within the wallet.

Here are some all-important considerations for programme managers when planning for cardholder onboarding and ongoing maintenance processes.



Card-on-file

As card-on-file has become an increasingly common way to facilitate digital one-click payments, tokenisation has become the norm to meet PCI/DSS compliance and prevent the risk of storing sensitive card data. Increasingly, tokenisation is also being positioned to enhance the experience to decouple the PAN (permanent account number) and enable a customer-on-file experience so that cardholder details do not need to be re-entered upon reissuance of cards.

As recurring payment and subscription models become increasingly prevalent, tokenisation is also critical in enabling whitelisting services to bypass SCA (strong customer authentication) step-up authentication requirements.

Some PSPs have also begun to leverage tokens to support incremental propositions such as digital receipt delivery and multi-merchant acceptance.

] NFC

By leveraging contactless NFC technology, the inception and launch of Apple Pay drove the first network tokens, including Mastercard Digital Enablement Services (MDES) and the Visa Token Service (VTS). Network tokenisation has now become the norm for all major mobile wallets.

Linternet of Things (IoT)

As connected payments become a core enabler of IoT, we are likely to see payment tokens embedded in an increasing number of connected devices, whether they be wearables or vehicles, and could transform payments for industry applications such as fleet.



CARDHOLDER ONBOARDING

Understanding provisioning paths

When designing a programme it's critical to understand how the onboarding of a mobile wallet impacts the customer experience.

This is because when consumers onboard or enter their card details into a mobile wallet they can do so via different processes which the industry identifies by coloured paths.

FRICTIONLESS

SET-UP

STEP BY STEP SET-UP



CARDHOLDER ONBOARDING

During either method, a process is carried out to determine the level of authentication a user will have to go through to successfully add their card to their chosen wallet.

In-App "Push" Provisioning

This is the "Green" path whereby the cardholder uses the card issuer's app to provision the card directly into their Apple or Google wallet, for example. This is often the most desirable path to design for and requires certain messaging and authentication capabilities from the issuer's issuing and processing partner.

Manual Provisioning

In this scenario, the user manually provisions their card directly through the **Wallet Service Provider's** (WSP) app (e.g. Apple, Google). As such, the enduser will need to have access to the card details (Name of Cardholder, PAN, Card Verification Value [CVV], Expiry Date) as they are required to be keyed in manually. Manual provisioning prompts what's known as a "Yellow, Orange" path requiring step-up authentication. During either method, a process is carried out to determine the level of authentication a user will have to go through to successfully add their card to their chosen wallet.

When the **Token Service Provider (TSP)** decides the provisioning path is Yellow, Orange or Red (the card is not recognized and not integrated into the wallet), the card's issuer is required to carry out step-up authentication involving additional identification and verification checks to enable successful card provisioning.

Once set up, TSPs will require a card image to associate in the wallet with the issuer's card.



CONSIDERATIONS

Planning and launching a digital wallet

Following is a general sequence of activities for working with a digital wallet provider to deliver a product.



REQUIREMENTS GATHERING

- Validate business requirements
- Customer journey mapping
- Definition of roles and responsibilities

BUSINESS

- Understand associated wallet fees
- Assess your GTM plan for launching in multiple markets and the BIN set-up requirements

TECHNICAL

- Agree your step-up processes for Yellow/Orange Path
- Define your risk appetite for manual provisioning
- PCI/DSS considerations if displaying PAN in wallet

IMPLEMENTATION

- Request processor support for completing enrolment forms
- Testing with the Token Service **Provider Sandbox**
- Certification processes with the Digital wallet providers

LAUNCH

- Certification processes for Merchant Card on File and/or M4M tokens
- Card Design Requirement

• Timing considerations/ phasing for launching multiple digital wallets



POST LAUNCH

Thinking about the future of your digital wallet.

Because of the growing importance of digital wallets in defining the customer experience and achieving top of wallet status, it's become increasingly important for issuers to consider how those wallets will perform into the future, for example:

What happens when?

Cards need to be replaced in a wallet. (i.e. how will it work?)

Cards need to be loaded onto new devices

Emerging features raise the bar on customer experience or security, requiring action Discussing how your programme will perform in these and other scenarios is critical to delivering a winning product. This is why choosing the right partners to help you develop, launch and maintain your digital wallet is so important.



Wallets Unstitched

About Thredd.

Thredd is the issuing processing partner of choice for the world's leading fintechs, digital banks, eRetailers and embedded finance providers across the UK, Europe, Asia, and North America, supporting some of the most notable successes of the modern fintech era from early-stage start-ups through to globally recognised unicorns.

The company continues to drive digital transformation in financial services redefining the way businesses pay and move money, weaving vision, next-gen technology and human expertise.

Get in touch

