

7 Things You Need to Know About ...

Digital Wallets

A quick guide to understanding Digital Wallets from the



01 | WHAT IS IT?

A digital wallet is a software-based system that securely stores payment information, enabling users to make electronic transactions and manage funds. Accessible via smartphones, tablets, or other connected devices, digital wallets streamline the payment experience for both consumers and merchants.

Types of Digital Wallets

Digital wallets can be generally categorized into two models: staged wallets and pass-through wallets.



Staged Wallets: Staged wallets act as intermediaries in the transaction process. Instead of passing the cardholder's payment credentials directly to the merchant, the wallet provider stages the transaction, creating two distinct payment steps:

Step 1: The consumer funds the wallet or authorizes payment through stored credentials (e.g., card or bank account).

Step 2: The wallet provider pays the merchant on behalf of the consumer.

Examples: PayPal, Venmo (in certain transactions), Vodafone's M-Pesa, Airtel Money, Starbucks, McDonald's

Considerations:

- Card brands may apply different rules, including requiring wallet providers to register as payment facilitators.
- Staged wallets often assume additional fraud and chargeback risk since they act as intermediaries.



Pass-Through Wallets: Pass-through wallets transmit the cardholder's credentials directly to the merchant for authorization. In this model, the wallet serves as a secure repository and delivery system for payment data but does not intermediate the transaction.

Examples: Apple Pay, Google Pay, Uber, Steam, Flywire, Ticketmaster

Considerations:

- These wallets rely on tokenization and encryption to securely pass payment data to the merchant.
- Card brands typically view pass-through wallets as extensions of the cardholder, applying similar rules and liability frameworks.

02 | HOW DOES IT WORK

Setting up a digital wallet

To set up a digital wallet, a user typically installs the wallet app on their smart phone or other mobile device.

The next step—in which a payment method is added to the wallet—is called “provisioning.” As part of this process, the Primary Account Number (PAN) of the issued card is replaced with a randomly generated token. The digital token is then added to the digital wallet to securely store the card information.

For “stored-value digital wallets,” the user pre-loads the wallet with funds—often via a credit, debit, or gift card—and the wallet allocates a separate “account” to that customer.

For “pass-through” and “staged” digital wallets, the user links a payment method to the wallet and saves the payment data within the wallet.

While many digital wallets can be used universally, others, known as “closed” digital wallets, are limited to specific retailers (e.g., the Starbucks app or the Steam Wallet).

Paying for goods via digital wallet

To pay for goods using a digital wallet, the user opens the wallet app on their device and then chooses the preferred payment method. Digital wallet apps almost always require security measures, like facial recognition or a Personal Identification Number (PIN), before they will initiate a payment.

Digital wallet apps commonly use Near Field Communication (NFC) or Magnetic Secure Transmission (MST) technology to send payment data from the mobile device to the payment terminal. NFC uses short-range electromagnetic induction to communicate between a device and a card reader across a short distance, typically no more than four centimeters. MST technology transmits data via magnetic fields. Essentially, devices using MST emit a signal that mimics the magnetic stripe on a traditional payment card. Digital wallets can also use QR codes to initiate payments. The user scans the code with their smartphone’s camera and then authorizes the payment via the digital wallet.

After the payment details are sent to the terminal, the transaction gets processed.

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03 | WHO IS DOING IT?

Digital wallets have become a transformative force across various industries, providing secure, seamless, and efficient payment solutions that enhance user convenience and streamline operations. The following examples demonstrate the impact of digital wallets in different sectors.

Retail and E-commerce	Digital wallets like Apple Pay , Google Pay , and PayPal have revolutionized how customers shop.
Banking and Financial Services	Digital wallets enable instant peer-to-peer transfers, bill payments, and online purchases. Platforms like Zelle , Venmo , and PayPal provide secure and convenient options.
Telecommunications	Digital wallets enhance customer experience and expand financial inclusion. Wallets like Vodafone's M-Pesa and Airtel Money enable users to conveniently pay bills, recharge accounts, and transfer funds.
Transportation and Mobility	Digital wallets enable seamless payments for public transport, ride-hailing, and tolls. Platforms like Uber Wallet and payment-integrated metro cards streamline transactions and reduce the need for cash.
Hospitality and Travel	Digital wallets, like Apple Pay , Google Pay , and PayPal , enable quick payments for bookings, upgrades, and in-service purchases.
Gaming and Entertainment	Digital wallets simplify payments for subscriptions, in-game purchases, and digital content. Platforms like Steam Wallet allow players to store funds and make instant purchases, while streaming services like Spotify and Netflix utilize wallets for subscription payments.
Education	Digital wallets simplify tuition payments and other expenses like books and cafeteria bills. Platforms like Flywire enable international students to easily pay tuition, avoiding high fees.
Food and Beverage	Digital wallets enhance operational efficiency and customer satisfaction. Apps like Starbucks and McDonald's integrate wallets that allow customers to preload funds and make quick payments.
Event Management and Ticketing	Platforms like Ticketmaster and Eventbrite use digital wallets to store electronic tickets and enable contactless entry. For example, Ticketmaster's SafeTix creates encrypted mobile tickets to prevent duplication and streamline access to concerts and other events.

04 | WHY IS IT SIGNIFICANT?

Digital wallets offer additional convenience to consumers, particularly younger consumers that rely heavily on their mobile devices. Digital wallets also increase consumer engagement and revenue by aligning with the demand for digital transactions. In addition, digital wallets offer merchants access to consumer buying habits, allowing them to tailor their marketing programs.

05 | WHAT IS THE DOWNSIDE?

While digital wallets offer plenty of advantages and are generally considered secure payment forms, they also present additional risks and challenges. The speed and ease of wallet transactions can give fraudsters an edge, often keeping them one step ahead of the detection systems.

Criminals can commit fraud in various ways. These can include traditional tactics such as phishing scams, malware attacks, and social engineering attacks. Some of the most common wallet-related fraud tactics include:



Wallet Takeovers:

Hackers gain access through phishing or data breaches to take control of wallets.



Social Engineering

Scammers trick users into sharing sensitive information, bypassing security measures.



Fake Websites

Criminals can use fake websites that result in consumers unknowingly sharing digital wallet information with bad actors.



Device Theft and Cloning

Fraudsters steal or clone devices to process fraudulent transactions.



POS Manipulation

There are also reports of criminals using mobile phones to switch the POS in a card present environment to offline and purchase goods with stolen credit cards. Once the merchant's POS is back online and the payment is declined, the criminal has already received the goods and left the retail establishment.

As a result, merchants and acquirers should be monitoring for these activities with the risk systems they employ.



Beyond these direct fraud risks, banks and processors often have limited visibility into wallet transactions, which makes monitoring and oversight more difficult.

To help combat these risks, wallet providers rely on biometric authentication, multi-factor verification, and automated fraud detection. Encryption and tokenization add further layers of security, but striking the right balance between security and a smooth user experience remains an ongoing challenge.

06 | WHERE IS IT GOING?

The use of digital wallets—and the fraud associated with these payment methods—has grown dramatically over the past decade and will continue to do so.

Digital wallets will continue to drive payments as they expand into underbanked regions. For example, in many developing countries, digital wallets are emerging as the primary method for accessing financial services.

The rise of digital wallets in the global economy brings its own set of challenges, including cyberattacks, data breaches, account takeovers, and miscoded authentication codes. In the future, digital wallets may also be subject to evolving regulatory and compliance scrutiny. Digital wallets can help reduce these challenges by adhering to card brand guidelines so there can be global compatibility.

07 | WHAT ARE THE IMPLICATIONS FOR PAYMENTS?

- Increased transaction speed and efficiency, benefiting both the merchant and cardholder.
- Tokenization usage, providing one-time tokens for transactions instead of actual card details.
- Improved fraud detection through AI and machine learning algorithms.
- Reduced risk of data breaches, as less sensitive financial information is directly handled.
- Expansion beyond payments to include digital credentials, access management, and professional assets (e.g., driver licenses, car keys, hotel room keys).
- Growing adoption rates, with over 50% of Americans now using digital wallets more frequently than traditional payment methods.

We must stay ahead of these trends, adapting our strategies to leverage the benefits of digital wallets while addressing the challenges. This includes embracing new technologies, enhancing security measures, and creating seamless, user-friendly payment experiences that meet the evolving demands of consumers and businesses alike.

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