

TOKENIZATION WHAT IT IS AND WHY IT MATTERS

Tokens eBook



VISA

Introduction

The direction of commerce is clear – digital adoption continues to rise with many more payments shifting online.

Digital commerce acceleration has highlighted issues that still beset some online payments. Compared to face-to-face transactions, the rate of declined transactions is higher, as are the fraud-to-sales ratios, and the user experience is not always optimal.

Powerful new technologies, like network tokenization aim to provide the same standard of excellence to digital payments as with in-store payments.

Tokenization is essential to the success of eCommerce payments.

It gives stakeholders a real opportunity to reduce fraud costs, increase consumer trust and confidence as well as create a better customer experience for all.





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eCommerce is evolving rapidly as are the challenges

The origins of eCommerce trace back to the 1970s, when technology and connectivity started enabling new online experiences. Since then, consumer demand has accelerated quickly and shows no signs of slowing.

However, this growth has brought new challenges, with fraudsters spotting an opportunity in eCommerce. Efforts to combat this risk have created new points of friction in the digital checkout experience, resulting in increased customer frustration and dissatisfaction, higher levels of abandonment, and lost sales.

Increasing demand for eCommerce

\$794bn

in U.S. online retail sales
in 2020¹

4bn

digital wallet users
by 2024²

\$48trn

expected to shift to
digital payments in
the next decade³

Managing fraud risk

\$6.4bn

estimated card-not-present
fraud impact to U.S. retailers
in 2021⁴

\$443bn

estimated false declined
online payments in 2021 in
the U.S.⁴

33%

U.S. consumers do not
return to a merchant after
experiencing a false decline⁵

1. <https://www.emarketer.com/content/us-e-commerce-growth-jumps-more-than-30-accelerating-online-shopping-shift-by-nearly-2-years>

2. <https://www.capgemini.com/gb-en/news/capgeminis-world-payments-report-2020>

3. <https://www.accenture.com/gb-en/insights/banking/payments-digital-disruption-opportunity>

4. <https://offer.clear.sale/false-declines-e-commerce-fraud-prevention-report>

5. <https://www.digitalcommerce360.com/2020/07/16/33-of-us-consumers-drop-retailers-after-a-false-decline-heres-how-to-prevent-those-losses>

What is tokenization?

Tokenization helps secure digital payments by turning sensitive payment details into randomized values called tokens.

Network tokenization underpins the global payments ecosystem and helps to mitigate fraud, improve authorization rates, and create new customer experiences.

By incorporating unique features like Issuer validation during cardholder ID&V, token domain controls and a token cryptogram, network token transactions can be more secure than an equivalent PAN transaction. And, because a token does not contain any personal information, fraudsters cannot use it - even in the event of a breach.

How it works

Tokens can be used right away to make a payment or can be stored by a merchant or mobile wallet to make a payment in the future. When a payment is made, the token is passed through the payment process for approval, just as a card or account number would be. This keeps the underlying account information more secure and better protected from theft and potential fraud.

A high level overview of the tokenization process is shown below.

The potential benefits

Tokenization delivers an extensive range of benefits to all parties:

Reduced CNP fraud

By up to 28%¹ for eCommerce transactions, without adding any friction to the consumer payment process

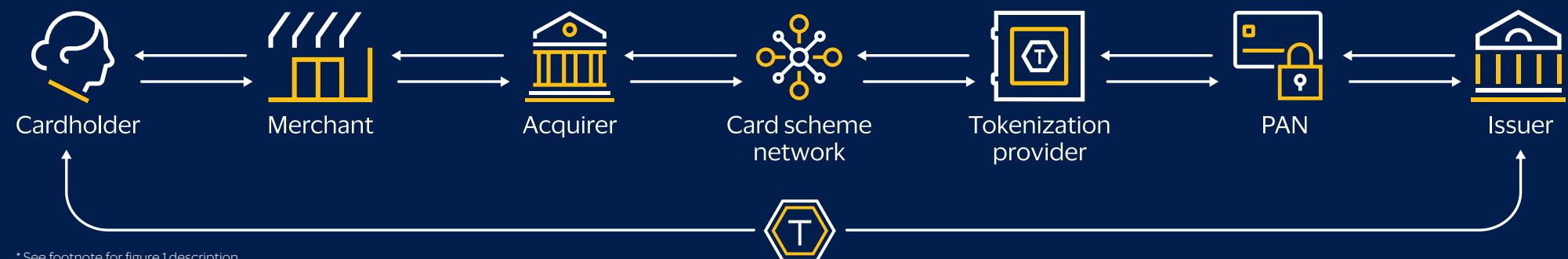
Authorization uptick

An average increase of 3%² in approval rates by reducing unnecessary declines

Seamless checkout

Streamline checkouts & offer new to help build stronger consumer trust and loyalty

How tokenization works



* See footnote for figure 1 description

Figure 1 description:

The diagram illustrates how the network token is passed through the payment process for approval. The parties involved are denoted by icons, including the cardholder, merchant, acquirer, card scheme network, tokenization provider and issuer.

1. VisaNet, Global, Jan-Mar 2022. Visa credit and debit global card-not-present transactions for tokenized vs. non-tokenized credentials. Auth rate defined as approved count of unique transaction authorizations divided by total unique authorization attempts, based on first auth attempt only

What types of tokens are there?

Consumers demand seamless and secure digital experiences regardless of where, when and how they pay.
Five key payment tokens have been developed to enable the latest digital commerce experiences, in-store, online and in app – each with their own value, use cases and requirements.

The five main types of tokens	eCommerce (Enabler) token	Card-on-file (COF) token	ACH token	Secure Element (SE) token	Host Card Emulation (HCE) token
Value proposition	Helping consumers to checkout online swiftly and securely across multiple merchants	Helping merchants protect customers' sensitive credentials and enable new shopping experiences	Protecting account-based transactions to reduce fraud for real-time and ACH payments	Enabling secure digital commerce experiences from mobile wallets	Enabling secure digital commerce experiences from mobile wallets
Designed for	Enablers	Online merchants	Central banks, clearing houses, merchants that store account credentials	Digital wallets (predominantly Apple)	Digital wallets (predominantly Google)
Credentials tokenized	Card credentials	Card credentials	Account credentials	Card credentials	Card credentials
Provisioned to	Cloud and device-bound	Cloud restricted to specific merchant	Cloud	Secure element in the cloud	Cloud and device-bound
Purchase channel or location	Online and in-app	Online and in-app	Account-on-file	In-store and in-app	In-store and in-app
Experiences enabled	Online and in-app shopping including retail, fast-food, rideshare and more	Merchant & consumer-initiated payments, including innovations like BNPL, installments & subscriptions	Peer-to-Peer Paying bills Direct debit Standing order	Contactless payments In-app shopping via digital wallet checkout	Contactless payments In-app shopping via digital wallet checkout



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Visa's value

Driving the future of eCommerce

Visa is focused on helping stakeholders deliver exceptional and secure digital user experiences.

Its tokenization solutions have been adopted by banks, merchants, technology providers and clearing houses across the globe, noticeably reducing fraud and delivering significant authorization uplifts.

As adoption rates continue to grow, so will we, delivering more benefits to more stakeholders and end users, changing the way we work, live and pay.

Visa tokens minimize payment fraud while maximizing authorizations to reduce costs and drive revenues

3%

average authorization uplift compared to PAN-based transactions¹

28%

average reduction in fraud resulting from network token use²

189

global markets³

1.2m
merchants⁴

4bn

tokens issued

8,500
issuers enabled⁵

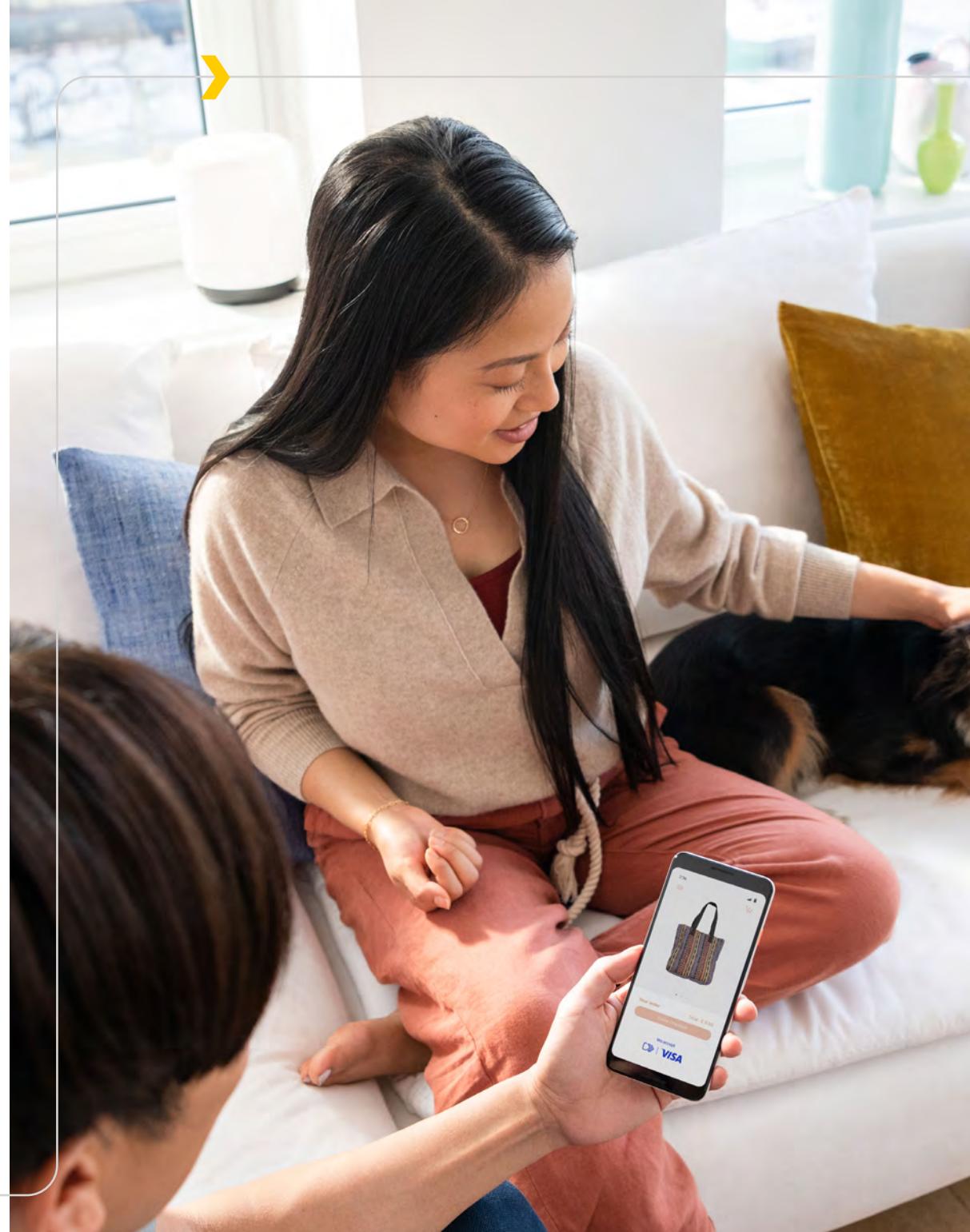
1. VisaNet, Global, Jan-Mar 2022. Visa credit and debit global card-not-present transactions for tokenized vs. non-tokenized credentials. Auth rate defined as approved count of unique transaction authorizations divided by total unique authorization attempts, based on first auth attempt only

2. Visa, Inc, Q4 2021 Earnings Call

3. VisaNet Data, Global, July 2022

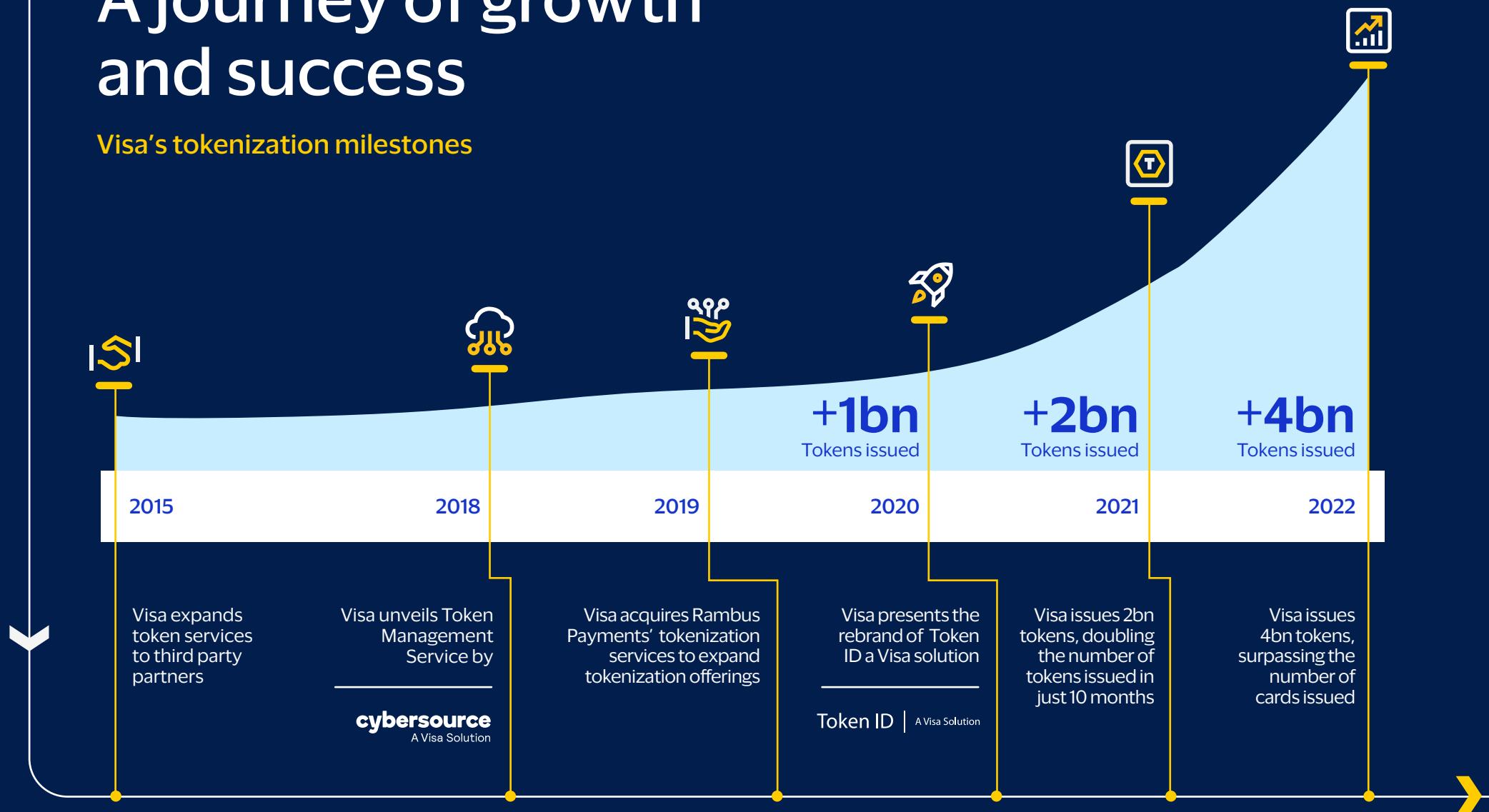
4. Global VisaNet and NSPK Data (excluding Russia): Select Global Token participating Merchants, July 2022

5. VisaNet Data, April 2022, Global



A journey of growth and success

Visa's tokenization milestones





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Building the business case for tokens

There are a range of factors to consider when defining a token strategy. Addressing these will help identify an optimal solution that will scale to meet your growth objectives. The most common factors & questions include:

- What are your objectives - fraud reduction, authorization uplift, data protection or new use cases?
- Are you already using tokens?
- If yes, are they supporting your business objectives? If not, why?
- What types of payment token might you need to scale your business?
- Which regions do you operate in?
- What network acceptance do you have?
- Who do you need to connect with in order to manage tokenization?



Managing misconceptions

Although everybody in the payments process can benefit from payment tokenization, many myths and misconceptions remain amongst decision makers. Unless these are addressed, these myths can become a barrier. The most common misunderstandings, along with their appropriate truth are set out below:

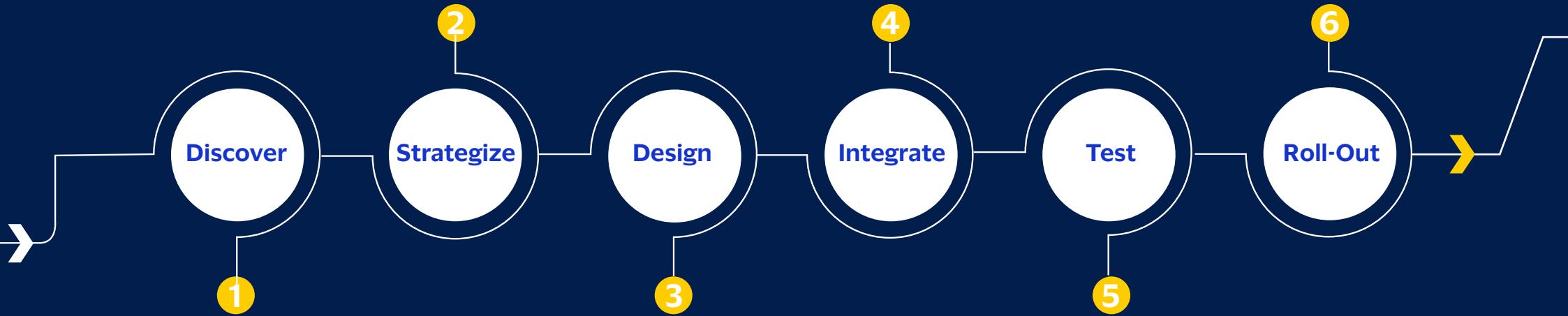
Common myths and misconceptions	The facts
1 Most card issuers are not able to support tokenization	More than 95% of US payment volume (PV) is from issuers that already support network tokens
2 Tokens are complex, time consuming and expensive to implement	Tokens can be implemented with a few simple APIs and minimal disruption
3 I need to connect directly to the Visa scheme in order to use Visa tokens	Depending on the product used, Visa offers customers complete flexibility over which payment scheme they integrate with
4 I already use other types of token, so I don't need network tokens	Due to their domain controls and other capabilities, network tokens can deliver higher authorization rates and lower levels of fraud than alternatives
5 Tokens have a negative impact on customer loyalty programs	Tokens can enable much more information to be collected about customer purchase behavior, ensuring better data insights to benefit loyalty programs

Implementing a token solution

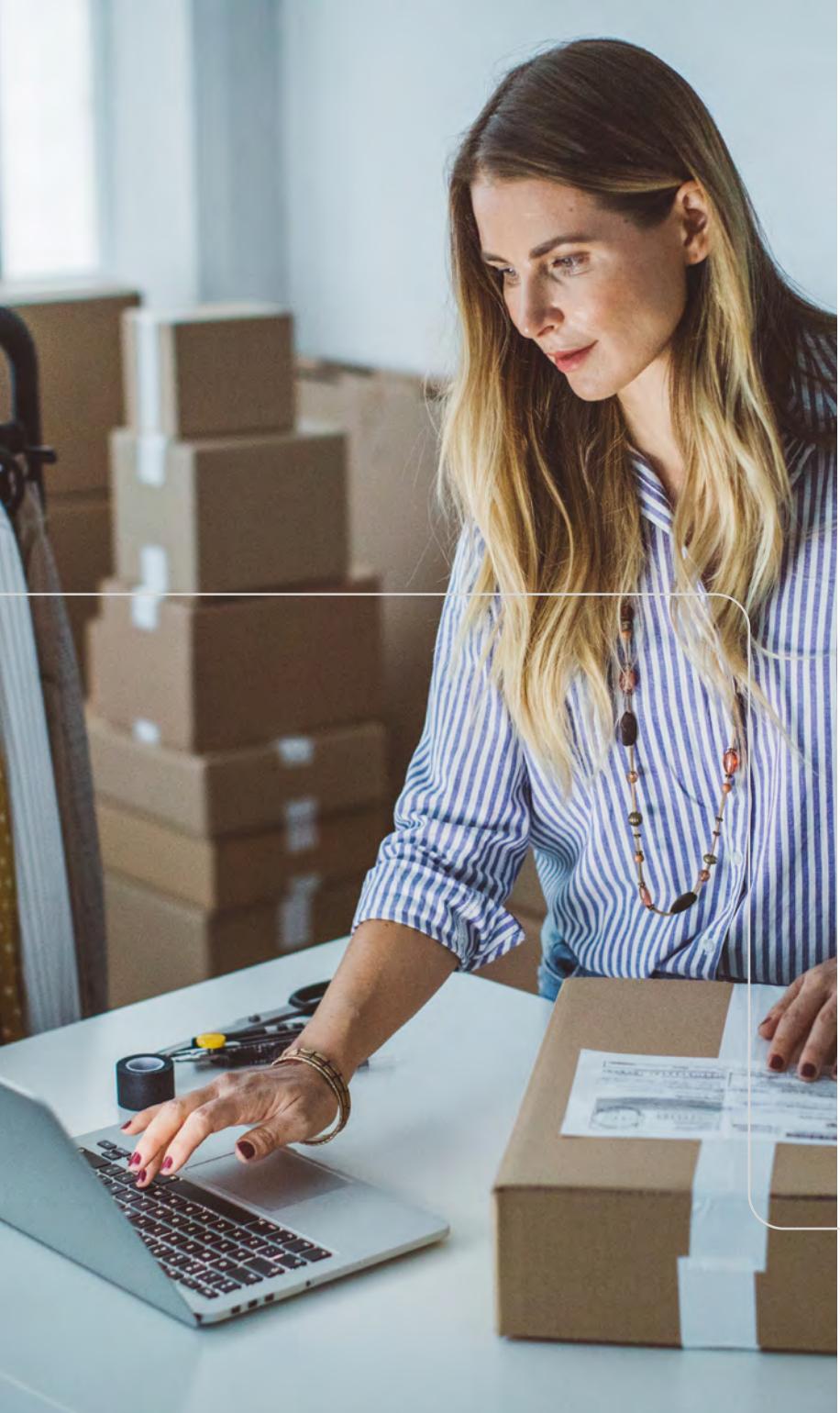
Following Visa's established delivery journey makes implementation easier than you may think.

By following 6 proven steps, most clients are able to begin roll-out.

The typical implementation roadmap



Learn more about Visa's token technologies by visiting our dedicated [Visa Tokenization webpage](#)



Glossary

API (Application Programming Interface) – a type of software which allows two applications to interact with one another.

Automated Clearing House (ACH) – a US-based electronic bank-to-bank payments network.

BNPL (Buy Now Pay Later) – an option for a customer to spread the cost of a product over a certain period of time.

Card-Not-Present (CNP) transactions – occur when neither the cardholder nor the card is physically present, e.g. online shopping.

Card-on-File – Cardholder credentials stored by a merchant, its agent, a payment facilitator or a staged digital wallet operator stores about a cardholder.

Click to Pay guest checkout – a process which allows consumers to store payment details in one central source, enabling one-click checkout without having to create an account with a merchant.

Domain controls – a restriction on the use of network tokens, for example, to a specific device or merchant, to help prevent cross-channel fraud.

eCommerce – refers to the buying and selling of goods or services using the internet.

EMVCo – EMVCo is a global technical body that facilitates worldwide interoperability and acceptance of secure payment transactions by managing and evolving the EMV Specifications and related testing processes.

False decline – when a consumer attempts to make a legitimate purchase but it is incorrectly declined by their card issuer.

PCI DSS (The Payment Card Industry Data Security Standard) – a set of requirements that must be met by any organization which processes, stores or transmits credit card information to ensure they maintain a secure environment in which to do so.

Peer-to-Peer payments – the transfer of payments between two parties using individual accounts or cards through their banking app.

Primary Account Number (PAN) – the long number, usually 16 digits, that uniquely links a cardholder and their account.



