VISA

The Impact of Credential-on-File (CoF) Payments

Visa Digital Solutions

May 2017

CONTENTS:

The Impact of Credential-on-File (CoF) Payments
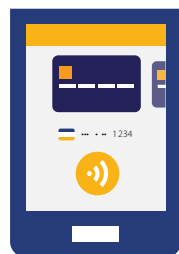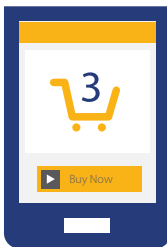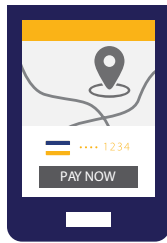
Introduction

With e-commerce and m-commerce already representing 24% of all Visa card payment volume in the U.S. in the last quarter of 2016[1] and spending in those channels forecast to increase from $398B in 2016 to $692B and from $116B in 2016 to $336B by 2020 respectively,[2] issuer strategies to support Credential-on-File (CoF) payments for their cardholders are becoming increasingly essential. The accelerating shift from "bricks" to "clicks" requires issuers to **develop a holistic CoF strategy to maintain their long-term consumer relevance in digital payments.** Visa Checkout has evolved to serve these changing consumer needs in different digital use-cases and can help issuers maintain top-of-wallet. This is especially important given the difficulty of supplanting competitors who are first to place their cards in these digital scenarios (77% of Android Pay, Apple Pay, and Samsung Pay purchases were made using the default card in December 2016, an increase from 70% in May 2016)[3] and the penetration of ACH in this segment (in a recent study, ACH accounted for 38% of total non-recurring CoF payments).[4]

Summary

Credential-on-File (CoF) payments refer to payments made using a funding method that the customer has stored for current and repeat transactions online (as opposed to "Form Fill payments" which refers to consumers actively selecting the payment method and entering their payment and address details on every transaction). Visa estimates that up to $98.3B in payment volume was funded by non-card mechanisms, including ACH, among the top 500 U.S. online retailers in 2015 for certain product categories,[5] presenting an opportunity for issuers seeking to shift online payment volume away from non-card methods towards debit and credit cards. As customers use their cards in situations where they have traditionally chosen ACH or other funding mechanisms, they will likely view their card as having greater value and increased relevance in meeting their payment needs. With **the migration of offline to online payments accelerating,** as demonstrated by the 2016 holiday spending trends,[6] we expect **the CoF trend to have a material impact on issuer economics.**

The increasing prevalence of CoF payments is reshaping consumer behavior. According to a Deloitte study ("Default" Payment Methods, 2016):[7]

- 84% of the digital transactions were made using on-file credentials, making CoF payments the dominant form of payment (online, in-app, and recurring transactions for CNP payments and proximity payments at the POS for CP transactions).

- We were surprised that ACH was the most used CoF payment method for digital purchases, even when excluding recurring payments, accounting for 38% of total non-recurring CoF payments.

- Convenience was the most important reason cited by respondents for choosing ACH in 55% of such transactions, followed by trust in the bank and its security in 29% of such transactions,[8] which may be driven by higher incidence of CNP fraud.

Understanding Credential-on-File (CoF) Payments

There are distinct differences in consumer payment preferences based on merchant categories. For recurring payment categories, such as rent, bills and utilities, consumers preferred using ACH. For most discretionary spending, such as e-commerce retail purchases, digital media, and department stores, credit cards were used.[9] Nonetheless, even the discretionary spending categories present a significant opportunity for issuers to migrate payment volume from non-card to card options. Leveraging Deloitte's consumer payment preference data and IR 500's 2015 e-commerce payment volume for top U.S. merchants, Visa analysis estimates that up to **approximately $98 billion in payment volume was made through non-card methods** at the top 500 U.S. online merchants in 2015 for product categories like electronics, digital media, and e-commerce goods. The overall opportunity is likely to be larger when the long-tail merchants are included in the analysis. Issuers can use the information they have about their customers' payment activity to identify those that should be migrated from ACH to cards, and can partner with Visa to **motivate their customers to use debit and credit cards.**
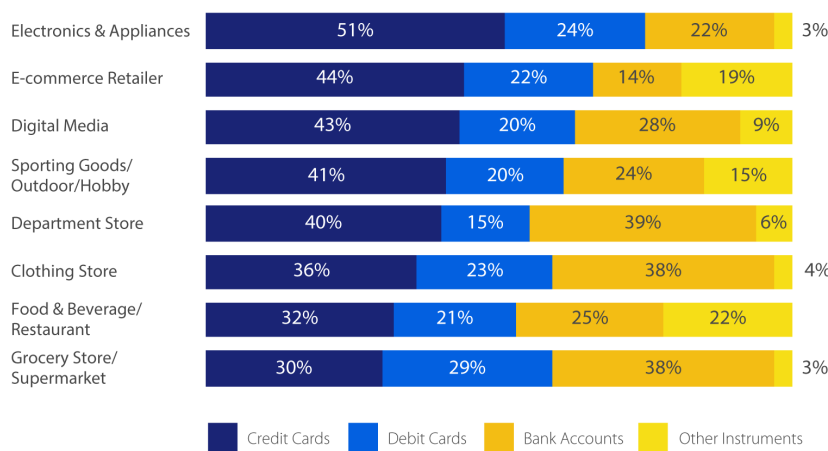
Maintaining Top of Wallet Status

Common issues: In an increasingly crowded digital payments space, it is crucial for issuers to maintain their top of wallet position in cardholders' digital wallets once they have established it. The main reason cited for changing a default payment card was card expiration, with more than 40% of respondents removing their card as the funding method due to their card expiring.[10]

Visa value: Visa offers a variety of tools that can help create and maintain top of wallet position:

- The Visa Account Updater (VAU) integration enables seamless updating of card information after a card expires or is otherwise reissued without manual data entry by the cardholder.
- Visa Checkout supports Visa Token Service e-commerce tokens, which help preserve top of wallet status by continuing to transact even when the underlying card is reissued. The cardholder is not prompted to replace their card with an alternative payment method due to an expired credential since the token is mapped to the reissued card.

Credential-on-File funding mechanism by product category[1]

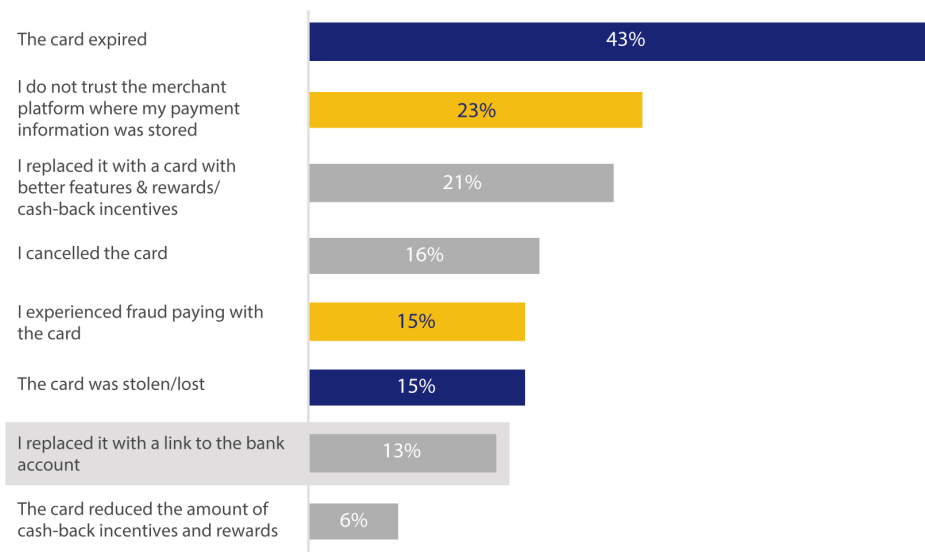| Category	Credit Cards	Debit Cards	Bank Accounts	Other Instruments		2015 Web Sales[2]	Card Opportunity[3]
Electronics & Appliances	51%	24%	22%	3%		$36.7B	$9.2B
E-commerce Retailer	44%	22%	14%	19%		$135B	$46B
Digital Media	43%	20%	28%	9%		$31.6B	$11.7B
Sporting Goods/Outdoor/Hobby	41%	20%	24%	15%		$8.4B	$3.3B
Department Store	40%	15%	39%	6%		$10.6B	$4.8B
Clothing Store	36%	23%	38%	4%		$48.8B	$20.5B
Food & Beverage/Restaurant	32%	21%	25%	22%		$6.3B	$2.8B
Grocery Store/Supermarket	30%	29%	38%	3%			
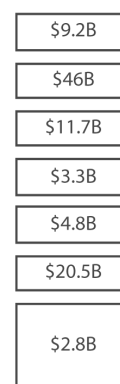
$98.3B

[1]Deloitte Center for Financial Services, "Default Payment Methods", 2016; [2]Internet Retailer, Top 500 Guide, 2016; [3]Visa Analysis.

Unsurprisingly, security concerns also play a significant role in consumers deciding not to use a particular card as their default payment method – 38% of respondents removed a card because they lost trust in the website or app in which the card was stored, or they experienced fraudulent activity while paying with the card.[11] From a fraud perspective, Visa Checkout has a variety of risk management tools that evaluate risk at every point of user interaction:

- During enrollment, Visa Checkout checks for high-risk users based on factors like suspicious email or high velocity behavior and denies enrollment if applicable.

- During login, Visa Checkout assesses login information such as device fingerprint, geolocation, and IP address and can either step up the consumer for authentication or prevent login when abnormalities are detected.

- When a consumer adds cards, Visa Checkout evaluates the card billing address, CVV/AVS response codes, Visa Advanced Authorization score and account activity before allowing the card to be enrolled into Visa Checkout.

These enhanced security capabilities contributed in Visa Checkout's fraud volume as a percentage of sales being 63% lower and its fraud count as a percentage of transactions being 56% lower than non-Visa Checkout volume at top Visa Checkout merchants.[12]

Reasons for removing a card in the last year[1]

The card expired	43%
I do not trust the merchant platform where my payment information was stored	23%
I replaced it with a card with better features & rewards/cash-back incentives	21%
I cancelled the card	16%
I experienced fraud paying with the card	15%
The card was stolen/lost	15%
I replaced it with a link to the bank account	13%
The card reduced the amount of cash-back incentives and rewards	6%

Visa Checkout Features

Automatic Updating of Payment Credentials

-VAU integration
-Token Lifecycle Management

Risk and Authentication Capabilities

-E-commerce tokenization
-Device fingerprinting
-Geo-location
-Account history
-Velocity evaluation
-Additional risk tools

Source: Deloitte Center for Financial Services, "Default Payment Methods", 2016.
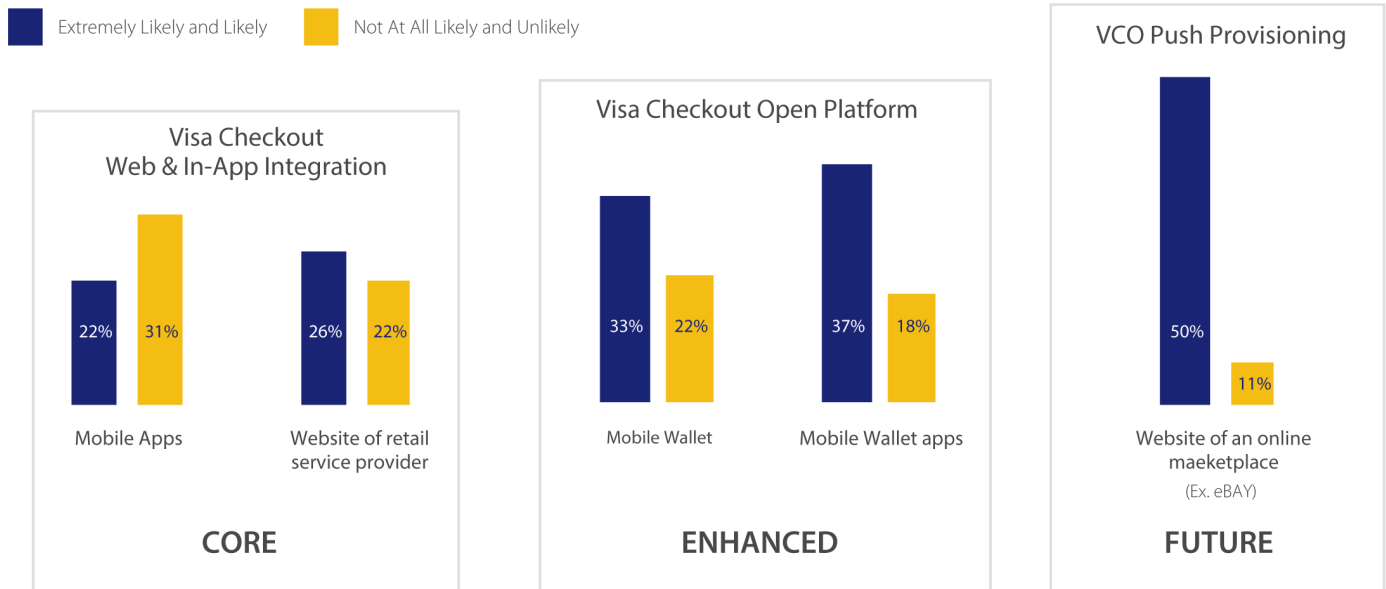
Digital Payment Trends

Intent to use CoF payments is expected to rise over the next 2 years, although Visa estimates that increased usage will not be uniform across all digital use cases and will likely be correlated with **consumer perceptions of security.**

- For example, 96% of respondents regard online market places (e.g. Amazon) as moderately or highly secure. Relatedly, 50% of respondents indicated that they are extremely likely or likely to increase their use of CoF payments with merchants in this category.[13]

- On the other end of the spectrum, mobile apps, such as those used for ordering ahead at restaurants, and retail websites suffer from a security perspective: a sizeable 20% of respondents (for restaurants) and 15% of respondents (for retail websites) view them as low or not very secure. Accordingly, only 22% of respondents indicated that they are extremely likely or likely to increase their use of CoF payments in mobile apps and only 26% indicated the same for retail websites.[14]

Likelihood of increasing the use of Credential-on-file payments over the next two years

- ■ Extremely Likely and Likely   ■ Not At All Likely and Unlikely

Visa Checkout Web & In-App Integration

Mobile Apps: 22% / 31%
Website of retail service provider: 26% / 22%

CORE

Visa Checkout Open Platform

Mobile Wallet: 33% / 22%
Mobile Wallet apps: 37% / 18%

ENHANCED

VCO Push Provisioning

Website of an online maeketplace (Ex. eBAY): 50% / 11%

FUTURE

Likelihood of future use data provided by Deloitte Center for Financial Services, "Default Payment Methods", 2016. Note: Future concepts and models are under continuing development. Features, functionality, schedules and implementation details may be subject to modification, delays or cancellation by Visa at its discretion.

As the move to CoF payments accelerates, **Visa Checkout** is evolving to meet the shifting payment preferences of digital buyers.

- **Core Value (Security):** Offering a seamless and secure online and in-app payment solution to merchants remains critical as consumer trust in mobile apps and retailers to store their payment credentials is low. Conversely, 96% of Visa Checkout-enrolled customers feel secure making a purchase with the service.[15]

- **Enhanced Value (Acceptance):** The Visa Checkout Open Platform (VCOP) enables mobile wallets enabled by Visa Token Service (VTS) to leverage Visa Checkout's online acceptance footprint, driving a frictionless consumer experience while preserving issuer economics and keeping issuers at the center of the payment experience.

- **Future Value (Network Effect):** Visa Checkout is currently developing a feature called VCO Push Provisioning that promotes the issuer top of wallet at participating large CoF merchants. This feature will enable Visa Checkout to leverage its merchant and issuer integrations and connect the two parties in a secure and scalable manner.

By enabling issuers to provide their customers the option for the customer's payment credentials to be pushed directly to a participating merchant through the Visa Checkout enrollment flow, issuers ensure their cards will be the funding source for future spend at the merchant. Participating merchants are able to acquire new customers and enroll them seamlessly into their loyalty programs (if applicable) at a lower cost than traditional acquisition methods. Consumers are able to seamlessly make purchases at their preferred merchants **without ever having to manually enter their payment information.**

## Building Capabilities for the Digital Customer

As the lines between merchant and wallet provider blur, Visa is building a complimentary capability to make it easier for issuers to allow consumers to push their credentials into all tokenized solutions (wallets, merchants, or Internet of Things devices) from their issuer's online banking app. Today, these types of integrations can be time-consuming and resource intensive as they require custom integrations with each wallet provider. **In the future, Visa's capabilities will enable issuers to integrate once with Visa and push to all participating merchants and wallet providers.**

In addition to making it easier for consumers to establish payment relationships seamlessly and securely with their preferred merchants and wallet providers from the issuer channel, Visa is also developing features that will make it easier for consumers to **navigate the increasingly complex set of financial relationships across several devices and platforms.** With the shift to online payments, it is becoming difficult for the average consumer to keep track of their digital spend. These capabilities will allow a user to open their online

banking app or web page and view all of the merchants and digital wallets where they have stored their cards for future use. From monthly payments to online subscriptions, consumers will be better able to keep track of their money and make better-informed financial decisions. When those cards are reissued, the issuer will also be able to show the consumer where their card has been updated automatically (via VAU or Token Lifecycle Management) and where they need to update their card information manually. Beyond investing in marketing, exposing features that solve customers' pain points around financial management and seamless payments will help issuers maintain their primary status in the CoF payments space.
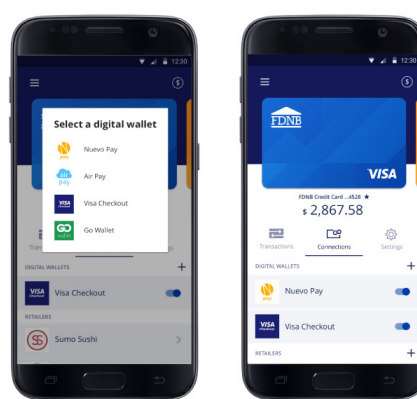
"Where you Pay"

View and manage your digital payments
(Payment providers and e-commerce Merchants)
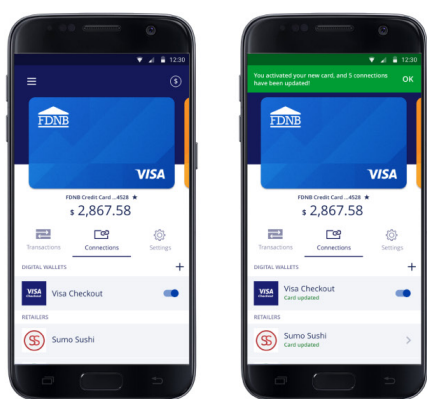
"How you Pay"

Enroll in new services (e.g., Apple Pay, VCO)
through your online or mobile banking.

Note: Future concepts and models are under continuing development. Features, functionality, schedules and implementation details may be subject to modification, delays or cancellation by Visa at its discretion.

The Future of Credential-on-File Payments

Universal connectivity, tokenization, biometrics, cloud computing and the Internet of Things (IoT) are expected to significantly impact the way consumers transact and interact with their payment providers over the next few years. These developments may also expand the ubiquity of on-file payments from the browser to the device, to the cloud, to the IoT and will enable new payment capabilities. By 2020, it is expected that **24 billion devices will be connected to the internet worldwide.**[16]

Many of these connected devices such as appliances, cars, and utility meters will have a credential on-file to place orders, pay tolls, or pay bills. As the IoT scales, converting transactions previously initiated by consumers to transactions done seamlessly and on demand, payment volume attributable to connected devices will increase rapidly. In fact, it is estimated that the worldwide addressable market for processing this type of device-initiated payments will surpass $10 billion by 2020.[17]

Closing Thoughts

The rapid growth of Credential-on-File payments is changing the digital payment preferences of cardholders. Moreover, **the rise of connected devices will change consumer expectations** and behavior as they transact via myriad new devices, from smart watches to connected cars.

What issuers should consider to take advantage of the CoF payment trend:

- ☑ Analyze cardholder behavior to determine whether they see a shift from cards to ACH as an online default payment method and the merchant categories impacted by this migration
- ☑ Develop digital strategies that defend and extend top of wallet status across the use cases where CoF payments are dominant
- ☑ Facilitate the updating of stored default payment information when cards are replaced or renewed by ensuring BINs are enrolled in VAU and actively managing token lifecycle updates
- ☑ Defend CoF payment market share by communicating the value of debit and credit cards and providing potential incentives or increased usage
- ☑ Deliver compelling, ubiquitous end-to-end customer payment products that are secure, reduce friction and provide value beyond the payment itself like Visa Checkout
- ☑ Integrate Visa Checkout within digital banking properties to leverage its Push Provisioning feature (once available) that will enable issuers to partner at scale with participating merchants, maintaining and capturing CoF spend while reducing the cost and time associated with establishing merchant partnerships individually

While the growth in CoF payments poses new challenges, issuers who develop and execute successful digital strategies to retain and extend their top-of-wallet position stand to gain as the payments landscape experiences **major transformations**.

For more information, please contact your Visa Account Executive or email Visa Digital Solutions at askdigital@visa.com.

Notice: This is provided for informational purposes and use in support of Visa programs, products, and services only and subject to Visa's participation terms and conditions and the Visa Rules. This discussion includes programs, concepts and details under continuing development by Visa. Any Visa features, functionality, implementation, branding, and schedules may be amended, updated or canceled at Visa's discretion. The timing of widespread availability of programs and functionality is also subject to a number of factors outside Visa's control, including but not limited to deployment of necessary infrastructure by issuers, acquirers, merchants and mobile device manufacturers. In addition, certain existing features are not available in all countries.

---

[1] VisaNet data, U.S. only, October 2016 – December 2016.

[2] eMarketer, US Ecommerce Performance StatPack, December 2016.

[3] Visa Contactless Awareness and Usage Study, U.S. Market, January 2017.

[4] Deloitte, "Default" payment methods, 2016. The study is based on two primary research instruments: the first is a mobile diary study of 1,091 participants that recorded 30,973 real-time and near-real-time transactions in total. The results were complemented by a one-time survey of 3,000 customers to identify further payment trends. For additional details on the methodology, refer to the Appendix section of the study.

[5] Visa analysis leveraging the rates for default payment instrument within product categories presented in Deloitte's Default Payment Methods study and IR500 online payment volume for the top 500 merchants in the U.S. for 2015 grouped by merchant categories that corresponded to the Deloitte product categories.

[6] Visa Insights, 2016 U.S. Holiday Spending Recap, January 2016.

[7] Deloitte, "Default" payment methods, 2016.

[8] Ibid.

[9] Ibid.

[10] Ibid.

[11] Ibid.

[12] Based on Visa Checkout and VisaNet data from July 2015 to June 2016. Visa analysis of representative VCO merchants and excludes certain merchants that report their payment transactions differently between Visa Checkout and VisaNet. Merchants included in the fraud analysis make up approximately 90% of total Visa Checkout payment volume.

[13] Deloitte, "Default" payment methods, 2016.

[14] Ibid.

[15] Millward Brown Visa Checkout Customer Experience, March, 2015; commissioned by Visa. Based on data from an online survey of 1,241 U.S. consumers.

[16] BI Intelligence, There will be 24 billion IoT devices installed on Earth by 2020, June 2016.

[17] IDC FutureScape: Worldwide Payments 2017 Predictions, November 2016.