

Digital Wallets and the Future Beyond Plastic

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With mobile phones in widespread use, the payments industry is gearing up for a future beyond card plastic as consumer adoption of mobile-device payments steadily increases.

According to the Federal Reserve Board's Division of Consumer and Community Affairs (DCCA) "Consumers and Mobile Financial Services 2015" report, connectivity is reaching deeper than ever. Eighty-seven percent of Americans now have mobile phones and nearly three quarters of those devices are Internet-enabled, up from 61 percent just a year earlier.

Banks looking to support digital payments initiated with mobile devices will need to adapt their internal systems to support digital wallets and the facilitation of tokenized transactions. To simplify this for Discover® Debit issuers and accelerate time to market, Discover will soon introduce its Discover Digital Exchange (DDX), a comprehensive solution that enables Discover Debit issuers to participate in mobile payments.

With DDX, Discover Debit issuers can participate in the mobile payments ecosystem to conduct retail point-of-sale and in-app tokenized transactions with added protection.

PIECES ARE IN PLACE FOR BROAD ADOPTION

As merchants, issuers, and consumers look to the future of mobile payments, one thing is clear – the user experience needs to be seamless and secure. Anyone who has seen a family at a restaurant staring at their respective smartphones understands the behaviors driving change. Consumers are deeply connected to their devices and apps. The electronic security blankets help navigate and enhance many aspects of our lives, and smart devices are becoming ubiquitous – crossing social and economic chasms in a way that only television has done in the past.

Walker Sands' 2015 "Future of Retail" study illustrates how those mobile phone devices are becoming an optional payment vehicle. Forty percent of respondents said they used a mobile payment application in the past year – a five-fold increase from the previous year. Market research from PwC

("Payments on the go: Making sense of the evolving mobile payments landscape") predicts that by 2019, U.S. mobile payments will hit \$142 billion, not including payments made on tablets or card payments made at the mobile point-of-sale or with a mobile card reader.

Drilling further down, in its 2015 "Technology, Media and Telecommunications Predictions" Deloitte forecasts that 32.5 million of the 600-650 million NFC-equipped mobile devices will be used at least once a month to make contactless in-store payments at retail outlets.

ENABLING MOBILE AND DIGITAL PAYMENTS

For banks to participate in the emerging mobile and digital payments ecosystem, access to the infrastructure to facilitate mobile payments is necessary. They must be equipped to participate in various mobile wallets, authorize tokenized transactions, and manage tokens throughout their lifecycle. This is an undertaking that requires changes to internal processes, systems, and operations.

At Discover, we set out to create a single, comprehensive, and straightforward program to provide a secure environment for Discover Debit issuers to participate in mobile and digital payments. The DDX platform builds on the characteristics that make Discover Debit a preferred debit solution – its flexibility and customization allows issuers to maintain brand and customer loyalty, with personalized support services.

Discover also developed the DDX solution to not only comply with today's global EMVCo Payment Token Standards, but also to be adaptable. We recognize the high likelihood that the mobile payments environment will continue to evolve rapidly.

Ultimately, the Discover Digital Exchange provides a single access point to facilitate mobile payments. It brings together the following:

- **Mobile Services** – Connects to wallet providers and enables NFC and in-app mobile payments
- **Token Services** – Stores and provisions tokens, handles de-tokenization for transactions
- **Transaction Services** – Provides consumer notification and validation services on behalf of issuers
- **Support Services** – Offers the DDX Web portal, the user interface to manage issuer on-boarding, servicing, billing, reporting and analytics

TOKENS TAKE OVER

One component enabling the secure shift to new payment vehicles is tokenization, technology for online and digital payments that helps to prevent exposure of sensitive consumer payment account information. A "token" can be safely stored on a mobile device or with a merchant, essentially serving as a surrogate digital account number for the primary account number (PAN) – the traditional 16-digit payment card number found on plastic cards.

By keeping the PAN a level removed from the transaction, tokens provide an extra layer of protection. If an account were to somehow be compromised, a new token can be assigned without the expense of issuing a new card.

As you might expect, provisioning and managing tokens in this new payment environment can be complex.

As adoption advances, each consumer's account is likely to be associated with many tokens across the spectrum of digital wallets, apps, and online merchants. The Discover Digital Exchange brings order to what could otherwise be a chaotic environment.

DDX generates and provisions tokens into Apple Pay or any DDX-compliant wallet in which a Discover Debit issuer chooses to participate. Through the DDX Web portal,

issuers can easily activate, revoke, or suspend tokens. Having access to a single, secure, standardized user interface to oversee token status and history puts issuers in control.

One of the challenges in the rapidly evolving payments landscape is securely and accurately mapping tokens to the true PAN when the merchant seeks authorization.

The response to the merchant is equally complex, requiring a translation of the PAN back to the token. With DDX, it is simple and happens in an instant.

The solution is compatible with both devices and operating systems. It also applies across the spectrum of conceivable tokenized transactions, including NFC transactions, in-app mobile purchases or digital purchases online. Moreover, regardless of whether a digital wallet uses a chip-based Secure Element (SE) or cloud-based Host Card Emulation (HCE), DDX supports it.

ROADMAP FOR DIGITAL WALLET READINESS

As digital wallets cross the gap from early adopters to what Geoffrey Moore, author of *Crossing the Chasm*, famously described as the "early majority" mainstream market, debit issuers should consider the following questions:

- What is the overall consumer adoption in your market?
- How many merchants in your market are equipped to accept NFC payments?
- What is your road map to support digital wallets, and will you develop your own branded wallet?
- How will you retain your place as a trusted relationship with your cardholders in this new ecosystem?

Coming to conclusion on these questions will put your financial institution on the right path. Discover Debit with DDX provides flexibility to customize a mobile payment solution that aligns with your unique needs.

Now that larger numbers of consumers are trying digital wallets, using payment apps, and experimenting with NFC-equipped devices, more banks will want to take the next step in the months to come. With DDX, Discover Debit issuers are ready to move rapidly into the mobile payments ecosystem.

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