



U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE

November 25, 2015

TO: Members, Subcommittee on Commerce, Manufacturing, and Trade

FROM: Committee Majority Staff

RE: Hearing entitled “The Disrupter Series: Mobile Payments.”

I. INTRODUCTION

On December 1, 2015, at 10:15 a.m. in 2322 Rayburn House Office Building, the Subcommittee on Commerce, Manufacturing, and Trade will hold a hearing entitled “The Disrupter Series: Mobile Payments.”

II. WITNESSES

The Subcommittees will hear from the following witnesses:

- John Muller, Vice President for Global Payments Policy, PayPal;
- Sang Ahn, Chief Commercial Officer, U.S. Samsung Pay;
- Jessica Deckinger, Chief Marketing Officer, Merchant Customer Exchange; and
- Sarah Jane Hughes, University Scholar and Fellow in Commercial Law, Indiana University Maurer School of Law.

III. BACKGROUND

Two-thirds of American adults own a smartphone.¹ Global online, mobile, and contactless payments are estimated to grow from \$2.5 trillion in 2014 to \$4.7 trillion by 2019.² Over 36 million Americans will use mobile payment options in 2016 for over \$27 billion in transactions.³ Transactions on mobile devices and tablets are surpassing transactions on desktops and laptops.⁴ The mobile payments landscape is poised to be one of the most transformative technology developments for commerce this century.

¹ Aaron Smith, “U.S. Smartphone Use in 2015” Pew Research Center, April 1, 2015,

² “Annual Digital Payments To Reach \$4.7 Trillion by 2019, Juniper Research Finds” Juniper Research, June 24, 2014, <http://www.juniperresearch.com/press-release/payments-pr2>.

³ Don Reisinger, “Facebook Messenger’s payments feature available across US” CNET, July 1, 2015, <http://www.cnet.com/news/facebook-messengers-payments-feature-available-across-us/>.

⁴ “Annual Digital Payments To Reach \$4.7 Trillion by 2019, Juniper Research Finds” Juniper Research, June 24, 2014, <http://www.juniperresearch.com/press-release/payments-pr2>.

Products like Android Pay allow consumers to make a purchase either at a store or in an app participating in the network.⁵ The backbone of the payment system in the U.S. remains traditional banking products, including checking accounts and credit and debit cards. For example, in order to utilize Facebook's recently launched Messenger peer-to-peer payment tool, the Facebook user must connect a debit card issued by a U.S. bank to their account to send money to a friend.⁶

Innovations in mobile payment security

The mobile payment technologies offered by companies like Apple, Google, and Samsung also offer new security features. The physical phone can be secured with a passcode or password, set by the user, to prohibit unauthorized access in a way that is not possible with a physical wallet. Additionally, mobile carriers and operating system providers offer services where a consumer can have the data on their phone deleted remotely if it is stolen.⁷

Multifactor authentication and tokenization are two regularly cited examples of security tools that help protect consumers from fraud. Multifactor authentication simply means that there is an additional metric that is used to ensure that the user attempting to access an account is truly the person permitted to access the account. Multifactor authentication requires something that the user knows (i.e. their username and password) and something that the user has (i.e. their mobile phone) in order for the user to access their account. This prohibits a thief that obtains the username and password in a hack from being able to take over the account.

For example, Gmail allows users to enable two-factor authentication where a user enters their email address and password.⁸ Then a six-digit code is sent to the user by text message, call, or Google's mobile app and is only valid for a limited amount of time.⁹ The user may disable the service on a computer that they regularly use and Gmail will send notifications to the user when the account is accessed from a new computer.¹⁰

Tokenization is a process where a consumer's payment information (e.g. credit card number) is replaced in the payment chain with a randomly generated token that is used to authorize the payment. This limits the payment data's exposure risk when a payment is processed either in a store or online. A token may be card-based or single-use tokens. Card-based tokens create a relationship between the card and the token that is used for all payments with that card. Card-based tokens are useful for merchants' analytics and customer relationship management functions, recurring payments, and repeat remote (card not present) transactions.¹¹

⁵ <https://www.android.com/pay/>

⁶ "Payments in Messenger" Facebook Help Center, <https://www.facebook.com/help/863171203733904>.

⁷ See <http://www.pcmag.com/article2/0,2817,2352755,00.asp>.

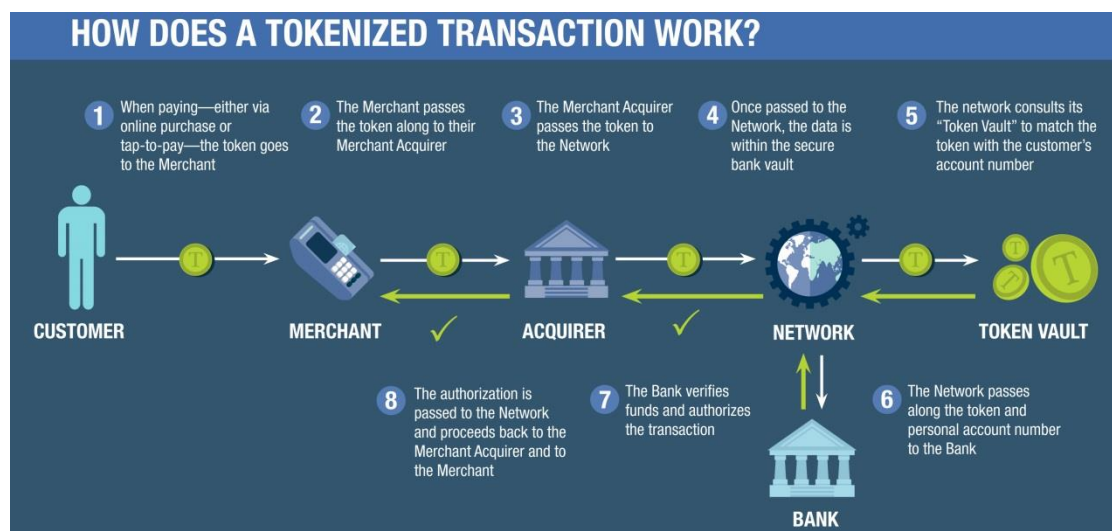
⁸ Earlier this month Amazon enabled multifactor authentication. "How to Enable Multifactor Security on Amazon" KrebsOnSecurity, November 23, 2015, <https://krebsonsecurity.com/2015/11/how-to-enable-multifactor-security-on-amazon/>.

⁹ <https://www.google.com/landing/2step/#tab=how-it-protects>

¹⁰ *Id.*

¹¹ <https://www.firstdata.com/downloads/thought-leadership/TokenizationEncryptionWP.pdf>, 8.

Single-use tokens are generated for each individual transaction and cannot be traced to previous purchases.¹²



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Near-field communication (NFC) technology and Magnetic Secure Transmission (MTS) enable mobile payments where the merchant has a physical payment terminal. NFC technology allows contactless payments to occur when an NFC-enabled phone is within a few centimeters of a physical NFC-enabled payment terminal. Payment information can be secured and passed between the devices through a wireless connection.¹⁴ Apple, Google, Microsoft, and Samsung all offer NFC functionality to power their mobile payment apps.

MTS technology was developed by LoopPay, which was acquired by Samsung earlier this year, and allows a traditional magnetic stripe reader payment terminal to accept mobile payments when the enabled device is held close to the activated terminal.¹⁵ While the original LoopPay technology was designed as an add-on feature for smartphones using either a phone case or separate dongle, Samsung has integrated the technology into some of its mobile phones.¹⁶

Innovation in the mobile payments ecosystem

Successful startups in this space range from the peer-to-peer social payment technology of Venmo, which was acquired by Braintree for \$26.2 million just months after launch,¹⁷ to

¹² *Id* at 9.

¹³ <http://www.paymentscardsandmobile.com/payment-card-tokenization/>

¹⁴ <http://www.techradar.com/us/news/phone-and-communications/what-is-nfc-and-why-is-it-in-your-phone-948410>

¹⁵ Scott Stein “Samsung’s LoopPay: What it is and why you should care” CNET, February 19, 2015, <http://www.cnet.com/news/samsungs-loop-pay-what-it-is-and-why-you-should-care/>.

¹⁶ Galaxy S6, S6 edge, S6 edge+, and Note5. <http://www.samsung.com/us/samsung-pay/>. Jason Del Rey “Samsung Paid Around \$250 Million for LoopPay, Its Apple Pay Competitor” re/code, May 13, 2015, <http://recode.net/2015/05/13/samsung-paid-around-250-million-for-loop-pay-its-apple-pay-competitor/>.

¹⁷ Braintree was acquired by PayPal in 2013, <http://thefinancialbrand.com/43203/paypal-venmo-social-mobile-payments/>.

developer-focused payment platform Stripe, which, after just five years, processes “billions of dollars a year for thousands of businesses,” including Kickstarter, Shopify, Salesforce, and Lyft.¹⁸ Square is an example of a company that created a product for small and microbusinesses to access payment networks with hardware and software that was simple to implement and use. Over the last year, Square has processed \$32.4 billion in credit and debit card payments.¹⁹ While consumers are familiar with the white dongle that allows Square’s customers to swipe credit and debit cards, they may be less familiar with the invoice, payroll, and analytics services that Square offers to its merchant customers.²⁰

The Starbucks mobile app is a product that was introduced in 2011 and grew 64.5 percent in 2014 to reach 300 million transactions. When a user downloads the Starbucks mobile app, they enroll in Starbucks’ loyalty program and can load money to their account from gift cards and credit and debit cards.²¹ Starbucks has integrated several features into the app, including Mobile Order and Pay that allows a user to place an order and pay on their way to Starbucks without having to wait in line.²² In the first quarter of 2015, Starbucks reported that one in seven Americans received a Starbucks gift card during the holiday season and that My Starbucks Rewards membership grew 23 percent year-over-year to 9 million users.²³

The examples included above are a small sampling of a dynamic marketplace that continues to show strong signs of growth potential.²⁴

Federal Trade Commission activity

In March 2013, the Federal Trade Commission (FTC) staff issued a report “Paper, Plastic...or Mobile?” after a workshop on mobile payments.²⁵ The FTC recognized the potential benefits to consumers and businesses that mobile payments present, but raised questions with respect to security and privacy of consumer information that continue to be debated and addressed in various product offerings.

In examining consumer data security in mobile payments, the FTC focused on how perceived security issues will impede consumer adoption and highlighted security-enhancing technologies, including end-to-end encryption, dynamic data authentication (i.e., tokenization), and storage of payment information on a secure element on a mobile phone (e.g., Apple Pay).²⁶

¹⁸ <https://stripe.com/us/press>

¹⁹ The Associated Press “Square’s Stock Soars 45 percent in First Day of Trading” The New York Times, November 19, 2015, http://www.nytimes.com/aponline/2015/11/19/business/ap-us-square-ipo.html?_r=0.

²⁰ See Square Payroll, <https://squareup.com/payroll>.

²¹ See <http://www.starbucks.com/coffeehouse/mobile-apps>.

²² <https://news.starbucks.com/news/starbucks-mobile-order-and-pay>

²³ Adam Jones “Starbucks Mobile Transactions Now 16% of Total And Counting” Yahoo! Finance, January 29, 2015, <http://finance.yahoo.com/news/starbucks-mobile-transactions-now-16-140510672.html>.

²⁴ Digital currencies (e.g. Bitcoin) are another emerging technology in the payments ecosystem which are not explored in this introductory examination of the mobile payments landscape.

²⁵ https://www.ftc.gov/sites/default/files/documents/reports/paper-plastic-or-mobile-ftc-workshop-mobile-payments/p0124908_mobile_payments_workshop_report_02-28-13.pdf

²⁶ *Id.*

The FTC staff report outlined the federal and state data security laws that cover mobile payments.²⁷ All twelve states with data security requirements for personal information include financial account, credit, or debit card information in their individual definitions of personal information.²⁸

IV. ISSUES

The following issues may be examined at the hearing:

- How have mobile payment options disrupted the traditional payments landscape? What hurdles exist for widespread consumer adoption?
- What technologies have improved security for consumers' payment information in the mobile environment?
- What privacy considerations should be examined in the mobile payments ecosystem?
- How has mobile payment technology increased market access for the underbanked and small businesses?

V. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Paul Nagle or Melissa Froelich of the Committee staff at (202) 225-2927.

²⁷ The FTC cites the Safeguards Rule, 16 C.F.R. Sec. 314.1 *et. seq.*, and the FTC's Section 5 authority prohibiting unfair or deceptive practices. https://www.ftc.gov/sites/default/files/documents/reports/paper-plastic-or-mobile-ftc-workshop-mobile-payments/p0124908_mobile_payments_workshop_report_02-28-13.pdf, 12.

²⁸ The twelve states are Arkansas, California, Connecticut, Florida, Indiana, Maryland, Massachusetts, Nevada, Oregon, Rhode Island, Utah, and Texas.