



FEDERAL RESERVE BANK *of* KANSAS CITY

“Smart” Retail Payments Developments

Five Hot Spots to Watch

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Topics

- Examples of “Smart” Developments in Retail Payments to Watch
 - Smart Cards
 - Smart(er) Phones
 - Smart Marketing
 - Smart Wearables
 - Smart Security
- The technologies underlying them, the opportunities driving them, and the challenges in front of them.

Definition

“Smart”

“Equipped with electronic control mechanisms and capable of automated and seemingly intelligent operation.”

Source: Dictionary.com

Smart Cards

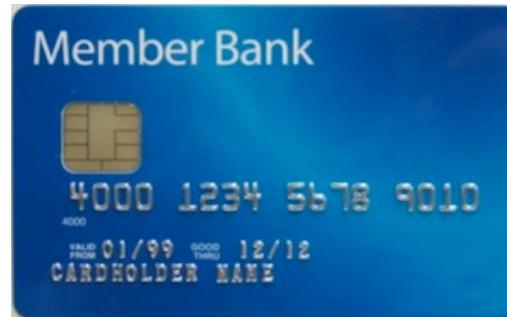
Technolog(ies) - EMV standard integrated circuit chips

- 575 million chip cards by end of 2015
- One in two of U.S. payment cards will be chip-enabled.

Example(s) See “chip card” and chip card reader images below.

Opportunit(ies) Fraud reduction

Challenge(s) Concerns about ROI, shifts in fraud from card-present to card-not-present transactions, consumer education and adoption



Sources/Images: Business Wire, Smart Card Alliance, EMV Connection

Smart(er) Phones

Technolog(ies)

Mobile Wallet Applications

- Most desired wallet item: **Everything!**

Example(s)

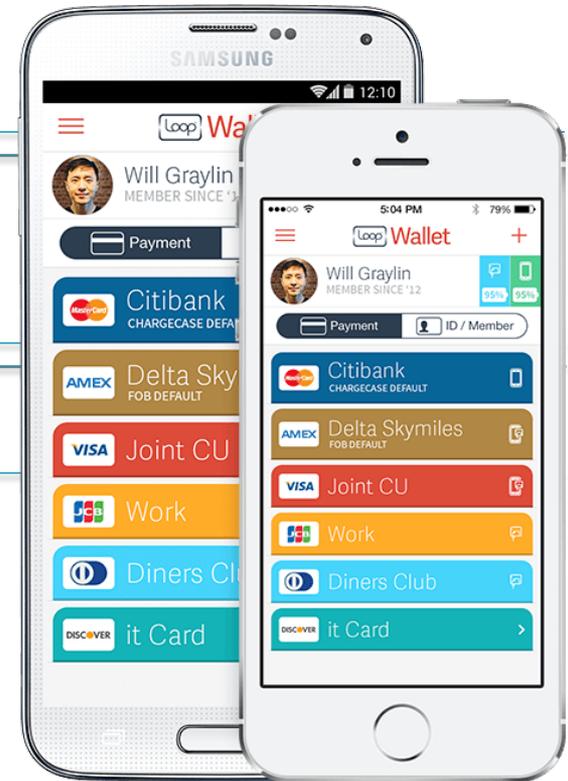
PayPal, Google, Amazon, Passbook, Loop (pictured)

Opportunit(ies)

“Leave your bulky wallet behind.”
(Eliminate plastic and cash)

Challenge(s)

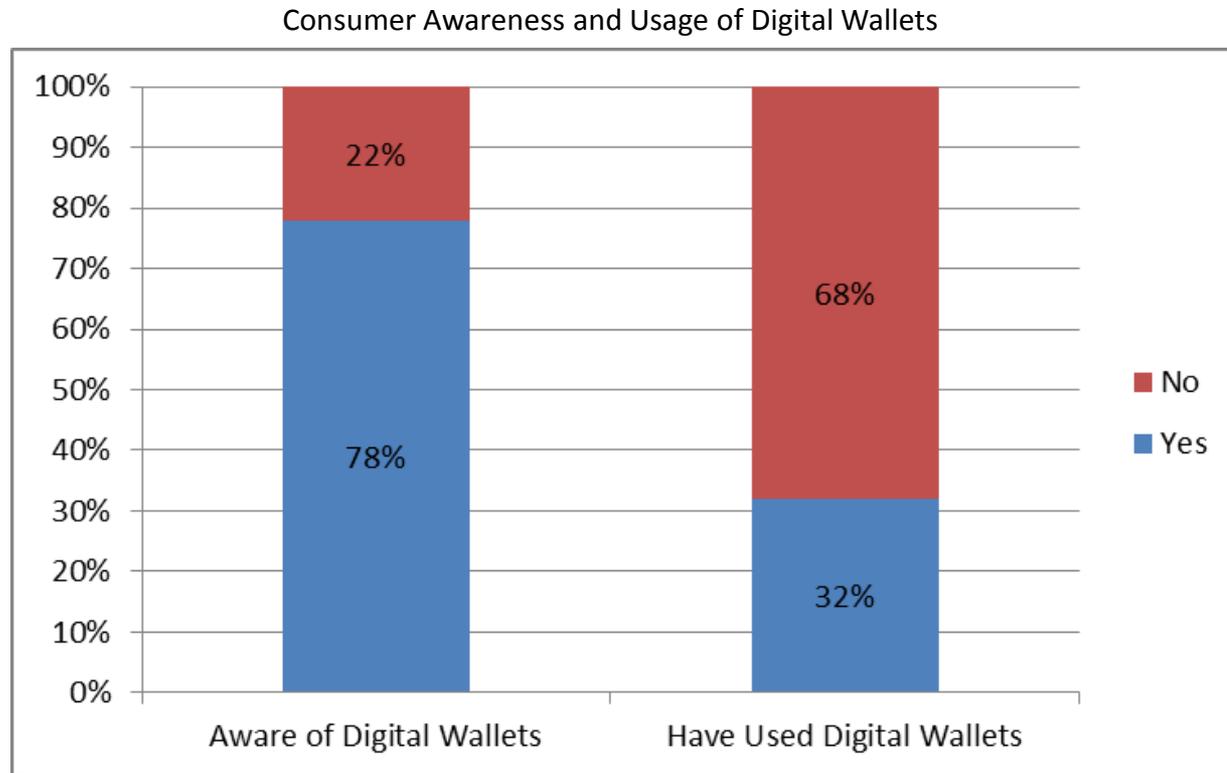
Chicken and Egg.



Sources/Image: TSYS, PYMTS.com, LoopPay

Smart Phones: The Challenge

Despite awareness, digital wallet adoption rates are low

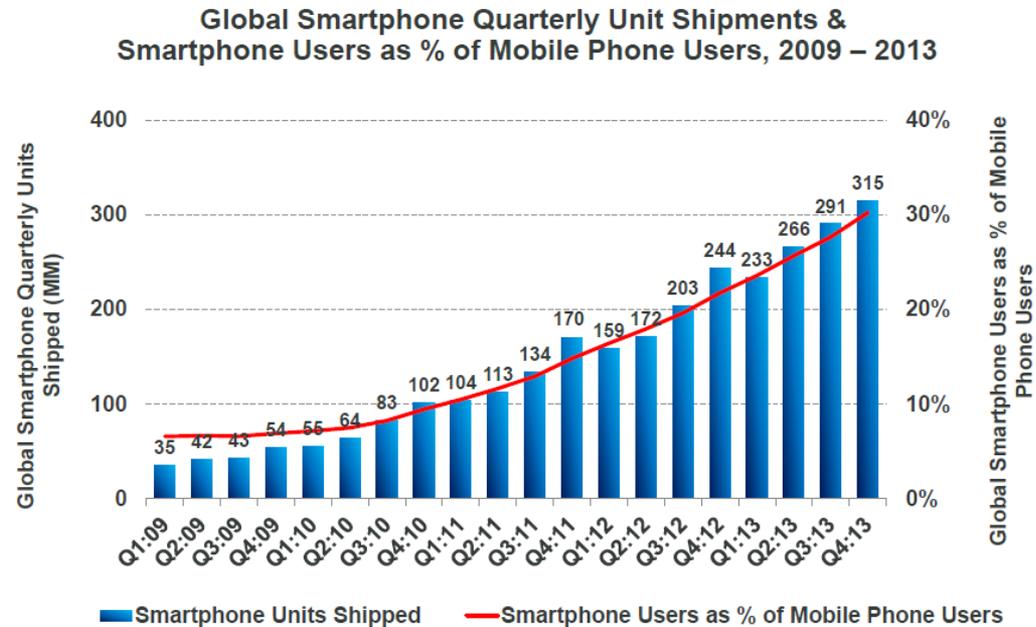


Source: Thrive Analytics Digital Wallet Usage Study 2014

Smart Phones: The Opportunity

Smart phone growth suggests upside

Smartphone Users = Still Lots of Upside...
@ 30% of 5.2B Mobile Phone User Base



@KPCB

Source: Smartphone shipments per Morgan Stanley Research. User base per KPCB estimates based on Morgan Stanley Research and ITU data. Smartphone users & mobile phone users represent unique individuals owning mobile devices, as noted on slide 8; Mobile Subscribers based on number of connections & may therefore overstate number of mobile users.

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Source: KPCB Internet Trends Report 2014

Smart Wearables

Technolog(ies)

Multi-function devices with miniature computers

Example(s)

Google Glass (pictured) and Eaze – “Wear your wallet”
The Power Suit – “Off-the-cuff payments”
Ring – “Turn your finger into a magic wand”
MagicBand (pictured) – “Unlock the magic”

Opportunit(ies)

Taking a mobile device to the next level – a smaller, fashionable version of a life necessity

Challenge(s)

See previous slide on the challenge for smart phones and digital wallets.



Image: Walt Disney World



Image: ieee.org

Smart Wearables: Ring in Action

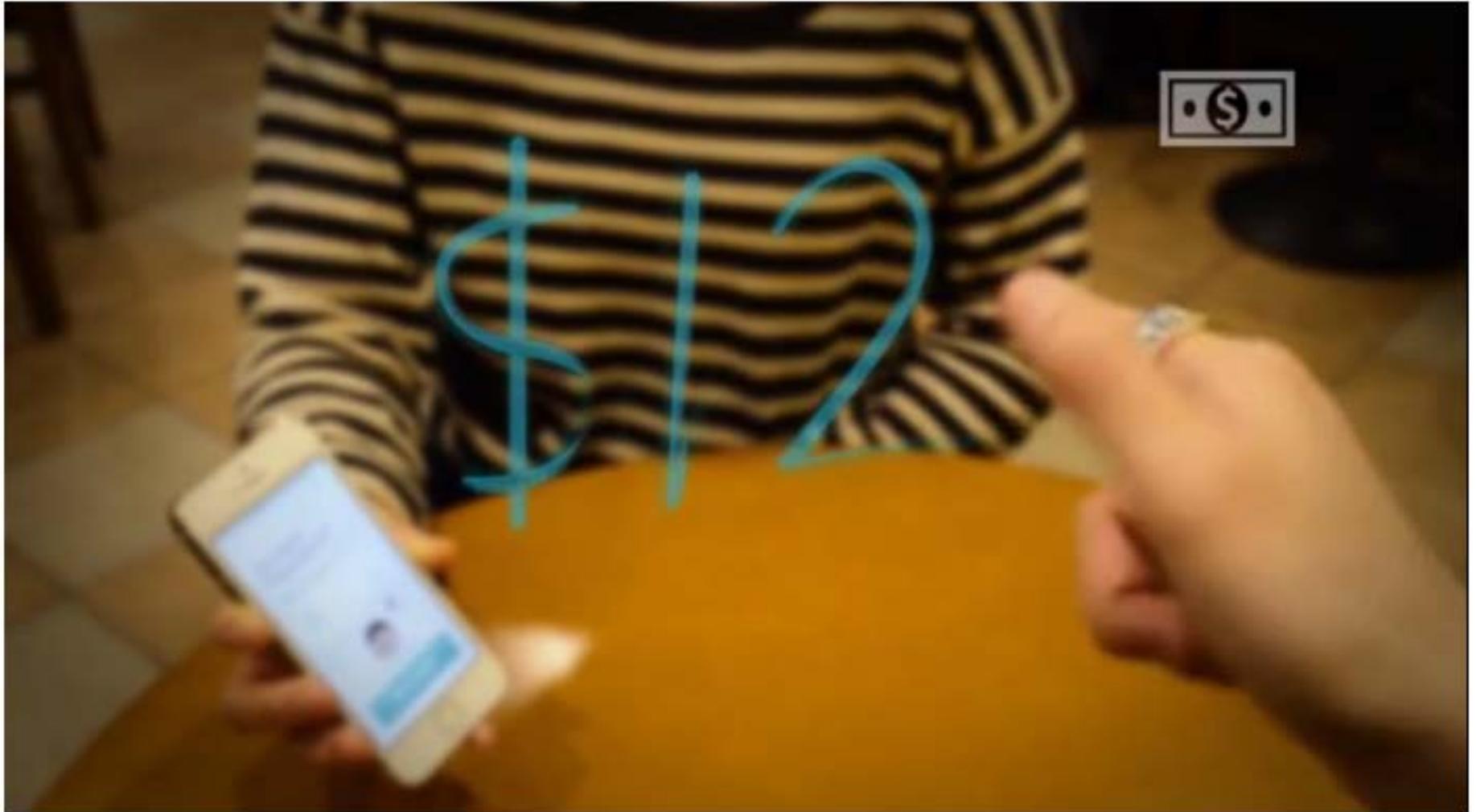


Image: Logbar inc.

Smart Wearables: Glass in Action



Image: Eaze

Smart Marketing

Technolog(ies)

Beacon technology

- Low energy, Bluetooth-enabled, in-store marketing
- Offers hands-free payments

Example(s)

PayPal Beacon
iBeacon (Pictured)

Opportunit(ies)

Beacon + Big Data =
**Customized mass
marketing in real time.**

Challenge(s)

Pestering and privacy
concerns

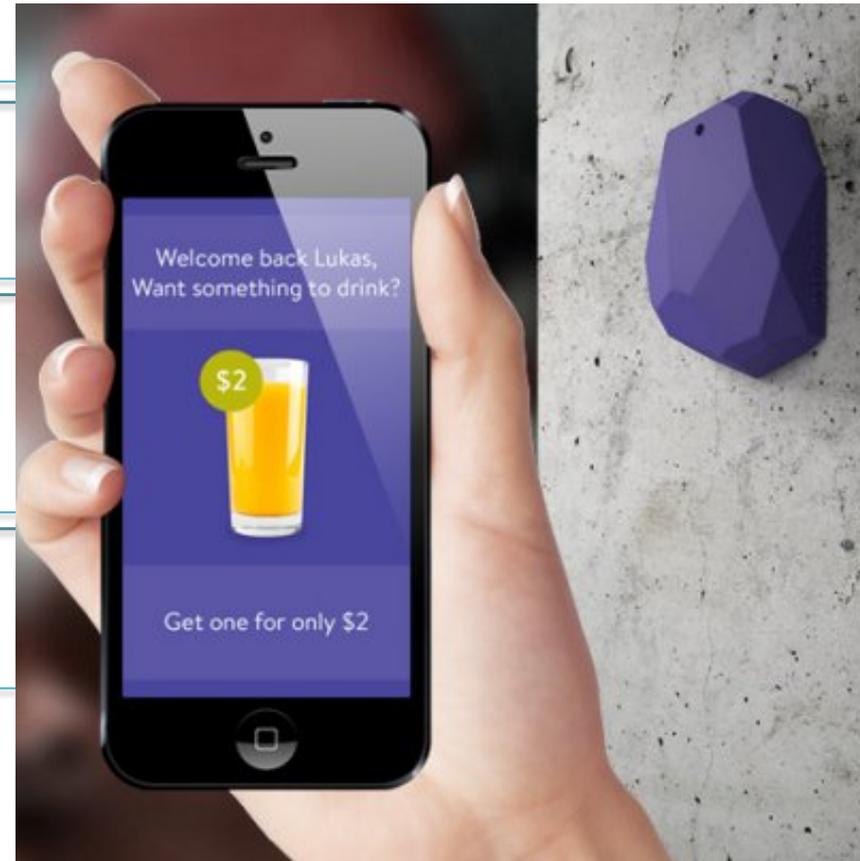


Image: Estimote

Smart Security

Technolog(ies)

Sensors + Biometric and Behavioral Data Analytics

= **A cognitive thumbprint for authenticating the online user**

Example(s)

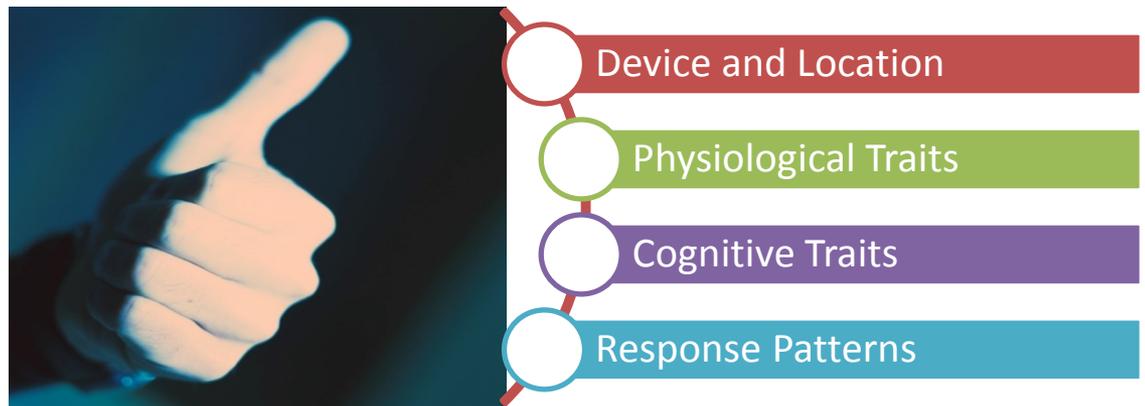
BioCatch

Opportunit(ies)

Fraud protection, while minimizing customer obstacles to securing their own passwords and devices; gathering valuable data on fraudster behavior patterns, and deploying that data for fraud prevention

Challenge(s)

Creepy?



Closing Comments

Federal Reserve Financial Services End-to-End Strategic Focus

Safety and Security

- Maintain and enhance Federal Reserve Financial Services network security
- Enhance understanding of end-to-end security
- Collaborate and promote industry best practices

Speed

- Develop solutions to enhance payment speed
- Understand market demand for faster payments
- Continue migration of paper to electronic

Efficiency

- Develop solutions to promote efficiency
- Understand needs and barriers
- Promote standards adoption to improve efficiency

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Contact Information



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