

# Payment System Gaps and Opportunities

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Federal Reserve Banks

Chicago Payment Symposium

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# Agenda

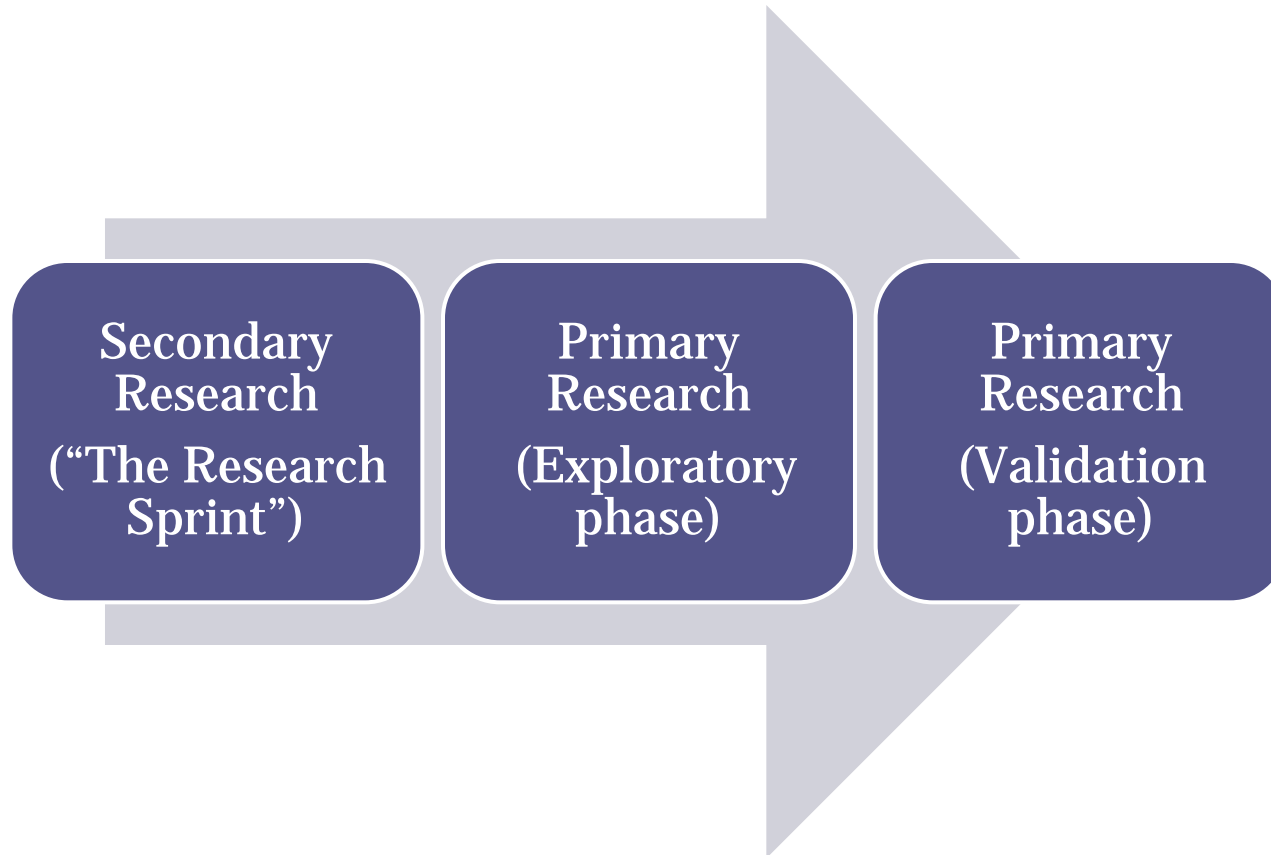
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- **Future Payment Team Overview**
- **Research Sprint Process Overview**
- **Gaps / Opportunities**

# Future Payment Team

- Created in the Fall of 2012 to gather intelligence in support of the Federal Reserve's refreshed strategic direction in payments
  - Improve the safety, speed, and efficiency of payments from end to end

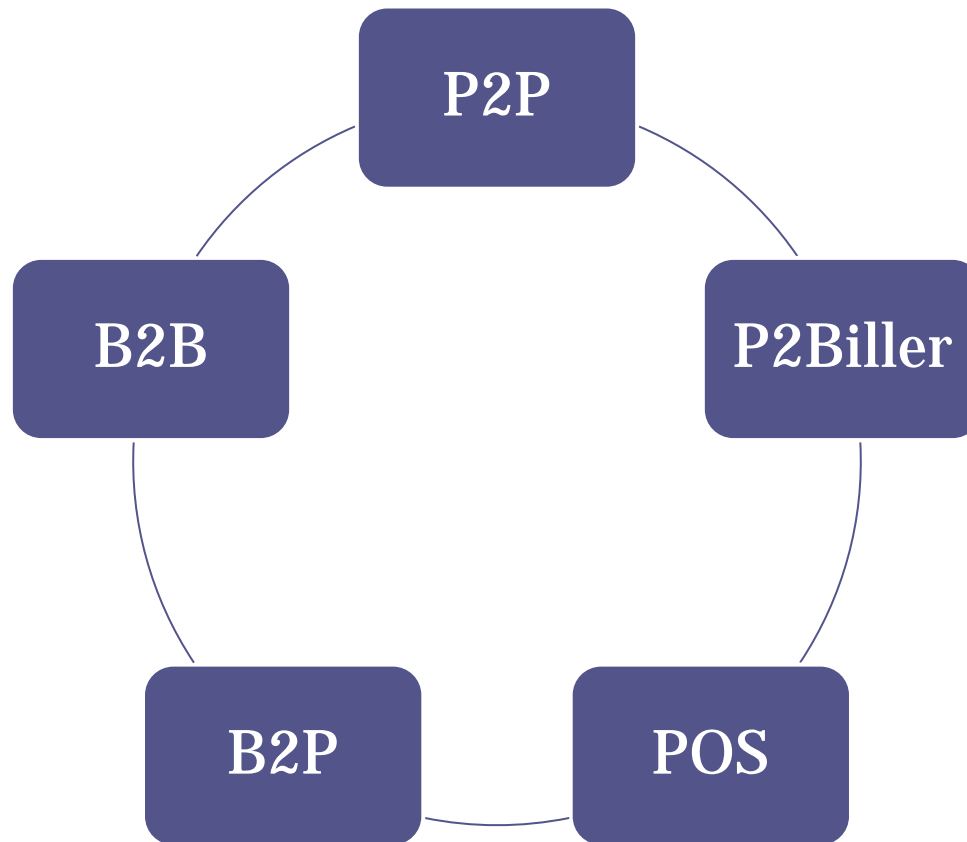
# Research Phases



# FPT Approach

- **Research Priorities**
  - **Needs Assessment**
    - Broken down by use case and attribute
  - **Gap Assessment**
  - **Barrier Identification**
  - **Barrier Resolution**
  - **Informed by Case Studies**
  - **With insights applied to current categories of emerging payment areas**

# Use Cases Studied



# Research Sprint Process Overview

- Gathered available secondary research sources that relate to payment attributes
  - Consulted close to 300 sources
- Organized the research into “stories”
  - Stories explain the needs of end users for speed and efficiency of payments in different circumstances (use cases)



# Gaps / Opportunities



# Continued End-User Check Writing

- While tremendous progress has been made electronifying interbank clearing and settlement of checks
  - End users are still writing paper checks by the billions
    - Across many different use cases, especially B2B, bill payment, business to person, and P2P
  - Checks continue to provide important features that are not replicated by electronic alternatives including:
    - **Ubiquity** – Where senders and receivers can reach nearly everyone without signing up for multiple services
    - **Convenience** - where payer doesn't have to know the payee's account information

# Faster Payments

- In a world where many other countries are moving to ubiquitous near real-time retail payment systems...
  - UK, Australia, Mexico, Switzerland, Singapore, etc.
- ...that support near real-time transfers (from the end user perspective) from any bank account sender to any bank account receiver...
- ...the U.S. payment systems remain slow by comparison

# Limited Participation Payment Communities

- Many recent payment innovations involve closed communities where both the sender and receiver must join
- This phenomenon exists across several use cases
  - P2P systems (Paypal, Dwolla, etc.)
  - B2B (Paymode X, Xign, PayNetExchange, etc.)
  - Bill payment (Online resources, FIS, Fiserv, RPPS, etc.)
  - Mobile payments (LevelUp, Square Wallet, etc.)
- Legacy payment systems have broader participation, allowing payments from nearly any sender to nearly any receiver

# Legacy payment instruments lack features desired by end-users

- In today's world, end users increasingly expect certain features at the time they are transacting the payment:
  - A real time validation process assuring the payee that an account exists and it has enough funds to cover the payment
  - Assurance that a payment will not be returned or reversed
  - Timely notification to the payer and payee that the payment has been made
  - Near-real-time posting / availability of funds to both the payer's and the payee's accounts
  - Masked account details
- Payment cards and wire transfers possess some but not all of these features
- ACH payments generally lack these features

# International Payment Challenges

- In general, international payments are slow, inconvenient, and inefficient
- This is especially true for bank account-centric international payments
- Closed networks have made advances in this space, but their networks are not as ubiquitous as open banking networks.

# The Mobile Technology Revolution

- **Mobile devices may transform wide ranging aspects of business and commerce**
  - **Digital wallet apps provide merchants with valuable contextual information**
    - Location based info, prior purchase patterns, coupons, etc.
  - **Payment instrument is often selected during the initial set-up phase**
    - Payment takes place in the background thereafter
- **Payment service providers are seeking to define their service offerings in this new world**

# Converting Businesses to Electronics

- **Businesses (especially large ones) have accounting systems that are complex and costly to change**
  - Makes it difficult to achieve automated, straight-through processing of invoices, payments, and remittance information
  - Legacy systems built surrounding the check are relatively inexpensive at the margin; new systems require capital outlay
  - Legacy standards (like EDI) are entrenched among large businesses and may inhibit adoption of more modern standards that are attractive to large and small businesses alike
  - Coordination challenges are daunting
    - Business case must be positive for all parties

# Safety and Security

- **Work still underway to evaluate the gaps and opportunities in this category**



# Feedback Summary

## High Level Reactions

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### Prevalent Views

**Real-time information , mobile enablement and ubiquity are high priorities.**

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**Persistence of end-user check-writing is not a high priority pain point.**

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### Divergent Views

**Faster payments: evoked strong and diverse opinions. There is a divergence of views regarding what needs to be faster: clearing and settlement or information.**

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**All agreed that international payments present challenges, but prioritized differently relative to their international volume.**

# Feedback Summary

## Summary Segment Priorities

**High Medium Low**

	Financial Institutions	Alternative Payment Providers	Technology Solution Providers	Corporate/ Merchant	Government/ Regulatory
Mobile Technology Revolution	H	H	H	H	L
The Need for Faster Payment Information	H	H	H	H	M
The Need for Faster Payment Transactions	M	H	H	M	M
Closed Loop Challenges	H	M	H	M	L
International Payments Issues	M	M	M	M	L
Business Check Writing	L	L	L	M	H
Continued End-User Check Writing	L	L	L	L	H

## Questions for discussion:

- Do you agree or disagree that the issues noted are gaps or opportunities that should be addressed to achieve enhanced payment system speed and efficiency?
- How would you rank order the gaps / opportunities from highest priority to lowest priority?
- Are there other gaps or opportunities that we have not identified?

# Business Priorities

Chicago Payments Symposium  
September 24-25, 2013

# Checks are still a way of life

- Actual number of checks written is declining
- Number of checks processed definitely declining
- Still need solutions to eliminate checks further:
  - **C2B**
    - Millions still received in lockboxes per month (utilities)
    - How do I pay my maid? How do I pay my hairdresser?
  - **B2C**
    - Sometimes still the best & easiest way to pay (i.e.-refunds)
  - **B2B**
    - It's just easier (sometimes)

# Corporate Payments Strategy

- 1. Promote electronic payments and straight-thru processing**
- 2. Maximize utility of payments controls**
- 3. Support development of global rules, standards and practices**

# Corporate Payments Strategy

- **Promote electronic payments and straight-thru processing**
  - Gain broad industry adoption of Wire ERI
  - Improve access to info needed for electronic payments
  - Create a “small business remittance” solution for ACH
  - Establish conditions necessary for corporates to support business conversion
  - Support development of new value-added services from alternative payments providers
  - Create a BAM/eBAM solution that can be implemented by all.

# Corporate Payments Strategy

- **Maximize utility of payments controls**
  - Improve effectiveness of spending controls for P-card and other commercial cards
  - Create a more merchant-friendly program for fraud control and risk management
  - Enhance fraud controls
  - Add new ACH windows with optional “status notifications” of pending items



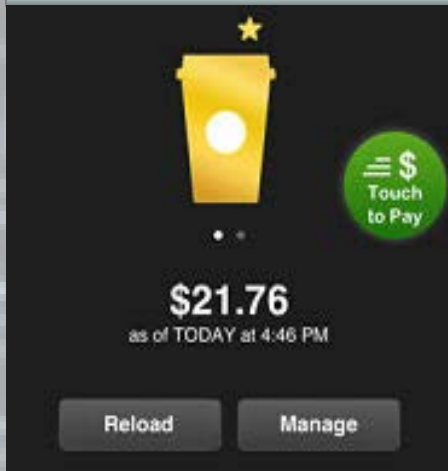
# Corporate Payments Strategy

- Support development of global rules, standards and practices
  - Improve corporate guidance into the network rules and standards development process
  - Harmonize standards for cross-border payments
  - Promote education for consumers, customer service personnel and treasury practitioners
  - Remove obstacles to achieving 100% payroll electrification

# Summary

- **Real-time validation of bank accounts**
- **Same-day ACH**
- **Small biz ACH solutions**
- **Straight-thru processing**
- **Safe mobile access for Treasury Services**
- **Greater transparency in cross-border payments (settlement/timing, fees)**
- **Participation in the rule-making that affects us!**

# Mobile Transacting: Landscape is (Still) Muddled



Steve Mott

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Chicago Fed Payments Conference

23 Sept 2013

# Landscape for Mobile Transacting

- Pain points drive opportunity
- Technology choices abound
- Mobile wallets move into second phase:  
Toward a moveable feast, but how?
- Apps drive new sources of value
- Apps give consumers ability to choose

# Solutions Come From the Apps

## Consumer Pain Points

Waiting in line

Missing out on loyalty rewards due to lack of access/inability to redeem/ lack of integration

Difficulty making efficient shopping choices and optimizing venues

## Mobile Solution/ Opportunity

Line-Busting App

Mobile containers with loyalty loading and conveyance utility attract wallet share

Mobile search and app information streamlines fulfillment pre-, during and post-shopping

## Business Pain Points

Losing business due to long wait times

Rewards don't generate competitive sales--just a cost of doing business

Shopper frustration leads to smaller baskets and wandering customers

# Too Many Technology Choices



# What's Wrong with NFC Payments?

## Conventional Wisdom

- Wallets: geared to digitize leather wallets/pocketbooks
- NFC: leverages contactless and plastic card status quo
- New interface (ISO 18092) set up two-way offers to drive usage and adoption
- Offers will drive usage and adoption
- Payments stay the way they are; existing players flourish

## What's Wrong With It




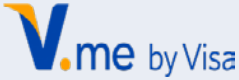


- No compelling business case for just doing payments
- Offers minimal security/no relief from PCI; fails on efficiency
- Can be used for tokenized payments/access to cloud with or without NFC
- Better offers require sku data; data not protected
- NFC costs more than plastic; card costs get worse

# EMV: A Giant Head-Fake to Get NFC?







- Poor security/efficiency makes \$8.6 billion projected investment cost a non-starter for most
- EMV isn't Durbin-compliant, so debit is 'off-the-grid' right now (opening door for pushing credit...)
- Merchants fear EMV is a 5-year diversion to get merchants to terminalize to NFC
- NFC enables proprietary plays on mobile marketing, and is easily enabled with EMV on new terminals
- Card-emulation mode looks like a bust, but its rejection is giving rise to tokenization solutions that mitigate PCI issues and might improve prospects for adoption of both EMV and NFC



# 1<sup>st</sup>-Gen Wallets Defect from NFC, move to Online/QR

Wallet Provider	Target Channel	Deployment Strategy	POS Orientation
	Began focused on POS, now back to online; wallet (ex-CSAM version) morphing to embedded payment API, with P2P function via gmail, enables Apple, carriers	Hedging bets on SE/NFC; OTP online (liabilities?); cards and phones for POS and leverage on TXVia acquisition gone; data still the big prize	Was seeding market with NFC terminals; 1.5 virtual MC prepaid option used existing rails with CNP rate no abandoned with shift to digital
	Online leverage not driving volume yet at POS; three dozen national merchants committed	Cards and phones for POS, with two-way offers coming; acceptance via Discover	Cards and numbers now, other modes coming; looking for consumer applications
	Focused on POS, considering online; nearing a national roll-out with questions remaining about pilot use and partner loyalty	NFC 14443 for POS; 18092 on the way? Banks resisting business case for loading cards; adoption in question	Straight NFC for terminals, with offer push; rumored to be under pressure to do QR code options
	Focus was on digital/online, but now pushing POS; dozens of online merchants and handful of (paid) merchants testing	OTP online, NFC 14443 for POS, but considering 2D barcode, others; opening up to private label network deals	Using EMV to lead market to proprietary PayWave? Offering full encryption if issuers, merchants want it
	Leveraged contactless lead at POS, now moving online; several key merchants in testing for Fall 2013 debut	OTP online (maybe liabilities?); NFC at POS for now but supporting QR options w/white-label wallet	PayPass is its global standard, pitching open platform that can work anywhere, including QR codes and off-card pricing
	Current focus on mobile-at-POS with more than three dozen merchant owners; launch news expected at Money2020	Believed to be offering decoupled debit & cross-accepted PL credit facility on NYCE private label rails	OTP QR codes resolved in cloud via Gemalto wallet; big emphasis on data/privacy protection

# Merchant, Consumer Security Lacking

Wallet Provider	Transaction Security	Data	Consumer Privacy
	<p>Didn't care about NFC issues; shift of emphasis from offline POS to online space they know</p>	<p>Bought TxVia to get own prepaid product, but now shifting from payment fees to collecting data</p>	<p>Apple privacy work-around still scary; banks, merchants, DC agencies fear track record on consumer data issues</p>
	<p>Cards good, numbers not; 18092 tokens are OK; Braintree brings embedded/shared API</p>	<p>Not clear on policy yet; offers need data that can come from creating merchant network</p>	<p>110 mil. consumers trust it (50 mil. in U.S.); Braintree has 40 mil. users, 4,000 cool merchants</p>
	<p>Cookie-cutter NFC 14443 card-emulation is bad</p>	<p>Doesn't talk about this; offers will require data</p>	<p>Big plans for big data offers and applications</p>
	<p>OTP online and off OK; NFC/EMV as-is exposes account; full encryption option exists</p>	<p>Received numerous patents (e.g., DNA data) to lock in/out rich data for itself</p>	<p>Pushing reliance on big member banks for consumer protection; side-stepped by TCH</p>
	<p>OTP + Intel improves on NFC/EMV weaknesses; QR an option now</p>	<p>Not talking about this yet, but well aware of merchant concerns</p>	<p>Expecting to lock up partners in data and privacy contracts</p>
	<p>Encryption and account tokenization is expected</p>	<p>Pushing hard: merchant ownership and control</p>	<p>Consumer opt-in/opt-out<sup>8</sup> with teeth</p>

# Other Contenders in Wallet Marketplace

- Apple's Passbook strives for digital convenience



- Facebook: 2-step mobile checkout; Braintree rails for one-step credit



- Sprint's Touch wallet fades



- Amex's Serve platform repurposed as a wallet



- Burger King (and Subway and Dunkin) do their own



- Lemon: wallet 'management' system for multiples



# Apps Empower Consumer Experience

Bigger, sophisticated merchants already **defending and driving business** with mobile apps

Early user adoption motivates **embedding of payments and routing** in apps and cultivation of merchant-specific offers and loyalty

**Users are oriented** to apps, not wallets; too many incompatible wallets and erratic merchant adoption will confound them

Apps **will grow** in depth and breadth—and independence

A handful of generic wallets might persist; handsets likely to **become containers** for embedded payment/marketing utilities

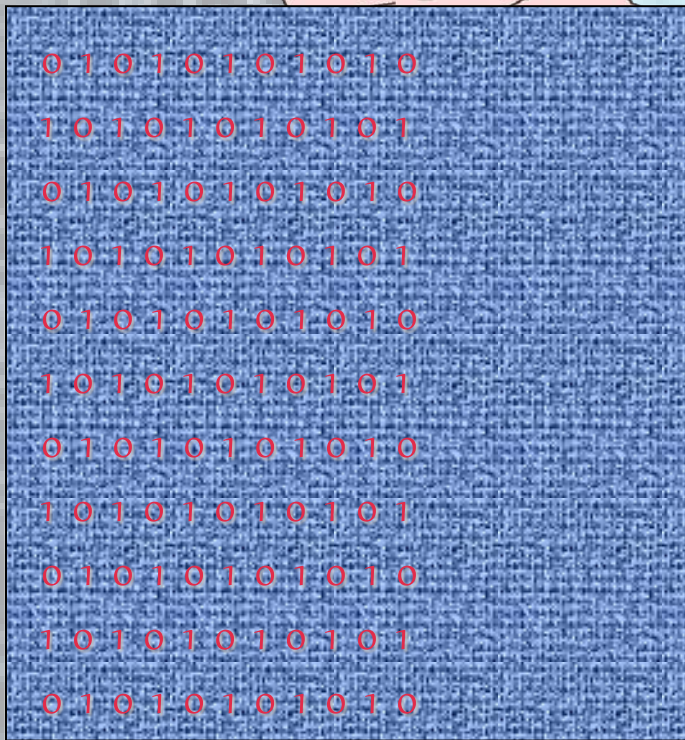
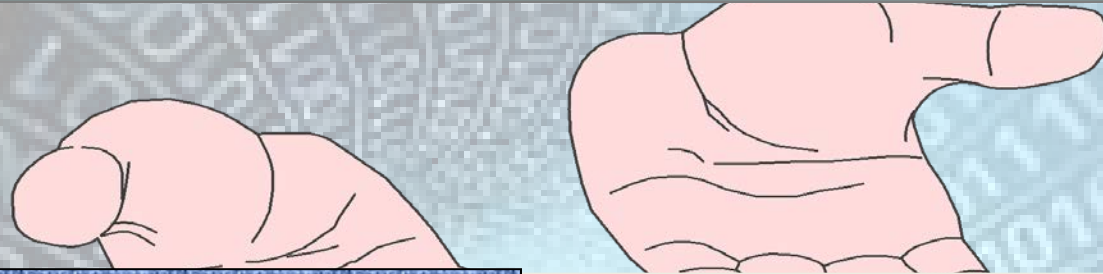
The big battle (and big payoff) is **how to monetize** the personalized, targeted **data**, and who gets to do it (and profit from it)

It's still VERY early in the game...

# 'Principles' of Consumer Adoption

- Convenience counts (Starbucks)
- Rewards, Loyalty, Offers: Monetize value of consumer to business partners; must be
  - Opt-in
  - Relevant
  - Targeted
  - Available for Referrals and Bounties
  - Choice of Privacy Tiers (digital IDs?)
- Behavioral Conformity is very powerful
- Payments Choice and Transparency are now a reality

# Steve Mott's Contact Coordinates



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