Payment System Gaps and Opportunities

Ken Isaacson
Federal Reserve Banks
Chicago Payment Symposium
September 25, 2013
Agenda

- 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

Secondary Research (“The Research Sprint”)

Primary Research (Exploratory phase)

Primary Research (Validation phase)
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

- P2P
- P2Biller
- B2B
- B2P
- POS
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

<table>
<thead>
<tr>
<th>Prevalent Views</th>
<th>Real-time information, mobile enablement and ubiquity are high priorities.</th>
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<tbody>
<tr>
<td></td>
<td>Persistence of end-user check-writing is not a high priority pain point.</td>
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<table>
<thead>
<tr>
<th>Divergent Views</th>
<th>Faster payments: evoked strong and diverse opinions. There is a divergence of views regarding what needs to be faster: clearing and settlement or information.</th>
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<td></td>
<td>All agreed that international payments present challenges, but prioritized differently relative to their international volume.</td>
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## Feedback Summary

### Summary Segment Priorities

<table>
<thead>
<tr>
<th></th>
<th>Financial Institutions</th>
<th>Alternative Payment Providers</th>
<th>Technology Solution Providers</th>
<th>Corporate/Merchant</th>
<th>Government/Regulatory</th>
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<tbody>
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<td>Mobile Technology Revolution</td>
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<td>The Need for Faster Payment Information</td>
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<td>The Need for Faster Payment Transactions</td>
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<td>Closed Loop Challenges</td>
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<tr>
<td>International Payments Issues</td>
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<td>Business Check Writing</td>
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<tr>
<td>Continued End-User Check Writing</td>
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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?
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 electronification
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

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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

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

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
Too Many Technology Choices
## What's Wrong with NFC Payments?

<table>
<thead>
<tr>
<th>Conventional Wisdom</th>
<th>What's Wrong With It</th>
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<tbody>
<tr>
<td>• Wallets: geared to digitize leather wallets/pocketbooks</td>
<td>• No compelling business case for just doing payments</td>
</tr>
<tr>
<td>• NFC: leverages contactless and plastic card status quo</td>
<td>• Offers minimal security/no relief from PCI; fails on efficiency</td>
</tr>
<tr>
<td>• New interface (ISO 18092) set up two-way offers to drive usage and adoption</td>
<td>• Can be used for tokenized payments/access to cloud with or without NFC</td>
</tr>
<tr>
<td>• Offers will drive usage and adoption</td>
<td>• Better offers require sku data; data not protected</td>
</tr>
<tr>
<td>• Payments stay the way they are; existing players flourish</td>
<td>• NFC costs more than plastic; card costs get worse</td>
</tr>
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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
### 1st-Gen Wallets Defect from NFC, move to Online/QR

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

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