U.S. Mobile Payments Landscape

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Marianne Crowe
Vice President, Payment Strategies
Federal Reserve Bank of Boston

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Agenda

• Overview of Mobile Payments Landscape
• Mobile Payments Industry Workgroup (MPIW)
• Opportunities and Challenges
• Conclusion
Mobile Banking does not equal Mobile Payments

**Mobile Banking**
- Mobile device connects to FI via app, browser or SMS to view account or credit card balances, transfer funds between accounts, pay bills, receive account alerts, locate ATMs, deposit checks.

**Mobile Payment**
- Mobile device used to pay for goods, services or digital content, transit, P2P at physical or remote location (POS or Internet).
- Payment initiated via SMS, browser, mobile app, NFC chip, QR code, or cloud technology. Payment funded via credit or debit card, bank account, charged to mobile phone bill, or prepaid account.
Adoption of Mobile Banking and Payments Differs

- **Have you used mobile banking?**
  - Yes: 28%
  - No: 72%

- **Have you used mobile payments?**
  - Yes: 15%
  - No: 85%

*Source: Board of Governors of the Federal Reserve System, “Consumers and Mobile Financial Services,” March 2013*
Many Activities Drive U.S. Mobile Payments Landscape

- Convergence of online, mobile & POS channels
- Incentive value – coupons, rewards, loyalty
- Increasing role of nonbanks (MNO, Google, PayPal, Apple, Square…)
- Wallet developments
- Data monetization role increasing
- Rapid growth in smartphones and m-apps
- Competing technologies: NFC, Cloud, QR
- Active merchant involvement
- Impact of EMV migration
- Privacy & Security concerns
U.S. Smartphone Ownership Rising

Need smartphone to make contactless mobile payments, download apps and access web, and receive mobile coupons, discounts

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>26.9%</td>
</tr>
<tr>
<td>2011</td>
<td>39.1%</td>
</tr>
<tr>
<td>2012</td>
<td>50.1%</td>
</tr>
<tr>
<td>2013</td>
<td>56.8%</td>
</tr>
<tr>
<td>2014</td>
<td>63.8%</td>
</tr>
<tr>
<td>2015</td>
<td>70.1%</td>
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<tr>
<td>2016</td>
<td>75.3%</td>
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</tbody>
</table>

Percent of mobile phone users, Source: eMarketer, March 2013
## Mobile/Digital Payment Opportunities

<table>
<thead>
<tr>
<th>Channel</th>
<th>Technology</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote</td>
<td>Internet</td>
<td>Donations</td>
</tr>
<tr>
<td></td>
<td>mCommerce (Goods &amp; Services)</td>
<td>Online purchases Digital content</td>
</tr>
<tr>
<td></td>
<td>Internet browser Direct carrier billing</td>
<td>Public transit Parking</td>
</tr>
<tr>
<td></td>
<td>SMS text Mobile app Cloud</td>
<td>Taxi-car service</td>
</tr>
<tr>
<td>Proximity</td>
<td>NFC/contactless QR code</td>
<td>Quick service restaurants Convenience/drug stores Other retailers Vending machines</td>
</tr>
</tbody>
</table>
Wallets can be both mobile and digital

- **MOBILE Wallet:** Application loaded into mobile phone that manages access to payment credentials and value-added services (e.g., bank, credit or debit accounts, prepaid accounts, transit tickets, coupons and rewards) stored in secure element in the phone to initiate mobile payment.

- **DIGITAL Wallet:** Application in mobile phone accesses payment credentials stored in cloud using phone number and PIN, or card.
Merchants are powerful force behind mobile payments

- Over 7 million merchants in U.S.
  - 1.1M retail; 750,000 food, lodging and entertainment
- MCX – Merchant-driven mobile payment platform being developed
- Cloud-based wallet app with QR code
- Merchant deals, loyalty programs
- 40+ U.S. merchants to date
  - 8 of top 20
  - Over 20 of top 100
  - Represents 90,000 store locations & $1 trillion in annual payments
- MCX/FIS partnership – EFT network for payment processing and settlement
- Launch TBD
Role of Mobile Payments Industry Workgroup (MPIW)

- Fed organized MPIW to understand industry role in mobile payments ecosystem
- Goal to build relationships and consensus on mutual points of value and challenges; and collaborate on creating a safe and efficient U.S. retail mobile payments infrastructure that can achieve critical mass

MPIW represents major U.S. mobile stakeholders—traditional payments and mobile technology organizations

- Financial institutions
- Merchants
- Card networks
- Clearing/settlement organizations
- Third party processors
- Online payment providers
- Payment trade associations
- U.S. Treasury
- Mobile Network Operators (MNOs)/carriers
- Handset/OS manufacturers
- Chip-makers
- Mobile solution providers
- Mobile carrier trade association
### MPIW Activity 2010-2013

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>January 2010</td>
<td>First MPIW meeting</td>
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<tr>
<td>March 2011</td>
<td>Developed framework for successful U.S. retail mobile payment ecosystem and published <em>Mobile Payments in the U.S.</em></td>
</tr>
<tr>
<td>April 2012</td>
<td>Met with federal and state regulators</td>
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<tr>
<td>July 2012</td>
<td>Published <em>U.S. Regulatory Landscape for Mobile Payments</em></td>
</tr>
<tr>
<td>September 2012</td>
<td>Met with retailers and start-ups to understand their perspectives on mobile payment opportunities and challenges (<em>Published summary report June 2013</em>)</td>
</tr>
<tr>
<td>January 2013</td>
<td>Met with mobile security experts to learn their perspectives on key mobile payment risks</td>
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<tr>
<td></td>
<td>• Formed subgroup to analyze mobile payment vulnerabilities and mitigations</td>
</tr>
<tr>
<td>May 2013</td>
<td>Published updated <em>U.S. Mobile Payments Landscape</em> report</td>
</tr>
<tr>
<td>June 2013</td>
<td>Met with device and handset manufacturers and POS terminal providers to discuss security and technical considerations</td>
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U.S. Mobile Payments Market is Diverse and Fragmented
Mobile Payment Industry Challenges

- Slow consumer adoption
- Multiple stakeholders
- Security and privacy concerns
- Limited venues for mobile payment use
- Uncertain business models
- Lack of interoperability and standards
- Fragmentation with diverse nonbank businesses
- Ownership of customer data
- Lack of regulatory direction
Mobile Payments have Multiple Points of Risk

- Need shared responsibility for monitoring & protection
- Must address security holistically
U.S. migration to EMV will reduce some fraud

- Liability shifts to non-EMV merchant acquirers
- EMV at Gas Pumps

- April 2013
- October 2015
- October 2016
- October 2017

- Acquirers & Processors 100% EMV
- Liability Shifts for ATM transactions
Mobile Payments Regulatory Landscape is evolving

- No one law or governing authority oversees mobile commerce
  - FRS, FDIC, OCC, NCUA, CFPB, FCC, FTC
- Regulations and laws applicable to underlying payment methods (credit, debit, prepaid, ACH) govern mobile payments
- Mobile carriers and alternative payment providers are less familiar with banking laws for consumer protection and privacy, KYC, BSA/data protection, money transmission, risk compliance
- April 2012 - MPIW met with bank regulators, FTC, and FCC
  - Key concerns – consumer protection, privacy, and data security
  - General consensus – still too soon to regulate
  - Focus on education and communication between industry and agencies
  - Involve industry stakeholders when need for mobile regulation arises
One View of the Mobile Payments Future

**KEY PRINCIPLES:**

- Technology convergence
- Open wallet
- Existing rails
- DDA
- Global interoperable standards
- Neutral TSM
- Regulatory clarity
Conclusion

- Non-banks will continue to play strong and disruptive roles
- Much work to be done to address fragmentation & reach critical mass
- No one industry will dominate
- More partnerships and collaboration
- Consumer adoption contingent on multiple factors
- Security & Technology standards will evolve slowly
Questions?

Thank you.

Marianne.Crowe@bos.frb.org

http://www.bostonfed.org/bankinfo/payment-strategies/index.htm