

Overview of Mobile Banking & Payments in the U.S.

Promising Pathways to Wealth-Building Financial Services

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Agenda

- U.S. Mobile Banking and Payment Trends
- Mobile Opportunities
- Regulation
- Conclusions

Mobile Definitions

- **Mobile Banking**

- Use of mobile phone to access bank or credit card account, or other financial account, including payroll or prepaid debit card to view balances, transfer funds between accounts, pay bills, receive account alerts, locate ATMs, etc.

- **Mobile Payment**

- Use of mobile phone to pay at POS or online for goods, services or digital content, transit, P2P. Payment initiated via SMS, browser, mobile app, NFC chip, or barcode. Payment information may be stored in a secure location on the mobile phone, or in a remote file server, known as the cloud.

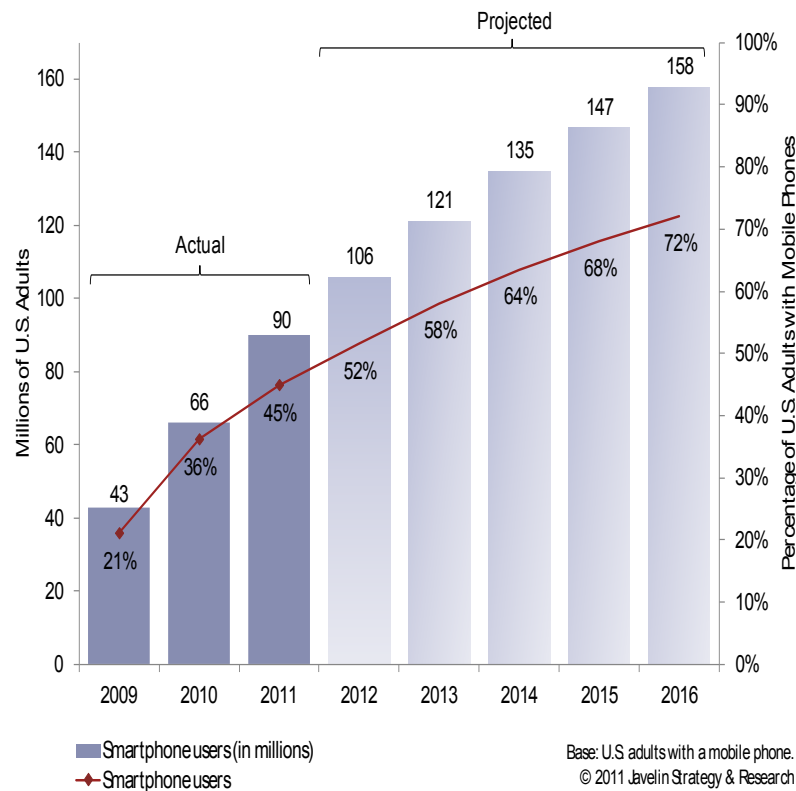
U.S. Mobile Payment Trends

- Consumer mobile payments are increasing
 - PayPal mobile transactions increased 500% 2011 over 2010, estimate \$3B in mobile payments in 2012
 - Google mobile shopping searches grew 220% 2011 over 2010
 - Driven by more smartphones and mobile apps
 - Incented by mobile coupons, discounts, and rewards
- Online, mobile, and POS channels are converging
- More non-bank activity in payment system (Google, PayPal, Apple, Square, carrier billers)
- Mobile wallet developments
- EMV Chip + PIN security in U.S.
- Cloud alternative for storing mobile payments competing with NFC

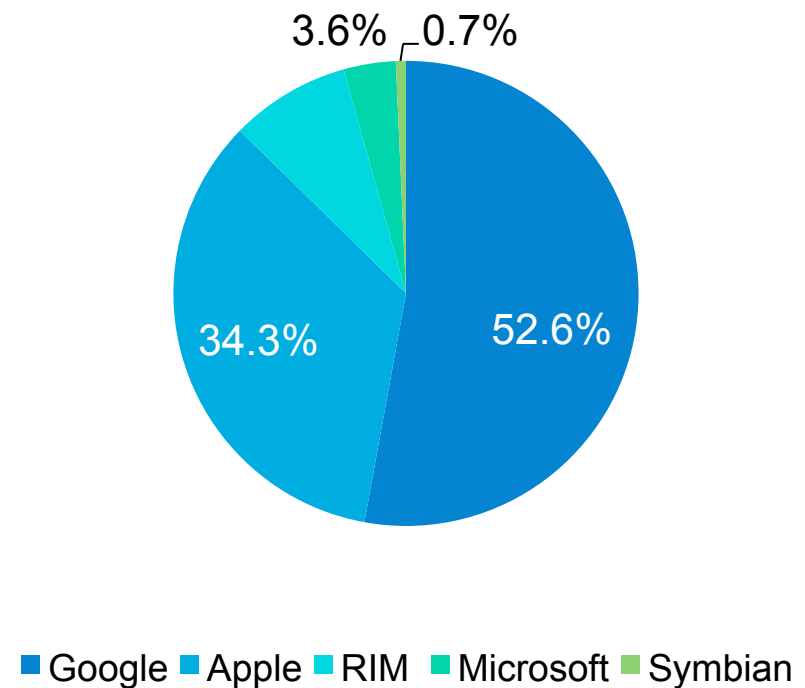
Smartphone Adoption Driving Mobile

- Need smartphone to make contactless (NFC, barcode) mobile payments; download apps and access web; receive mobile coupons, discounts
- Smartphone adoption by feature phone owners grew 9.5% in past year

U.S. Adult Smartphone Adoption 2009-2016

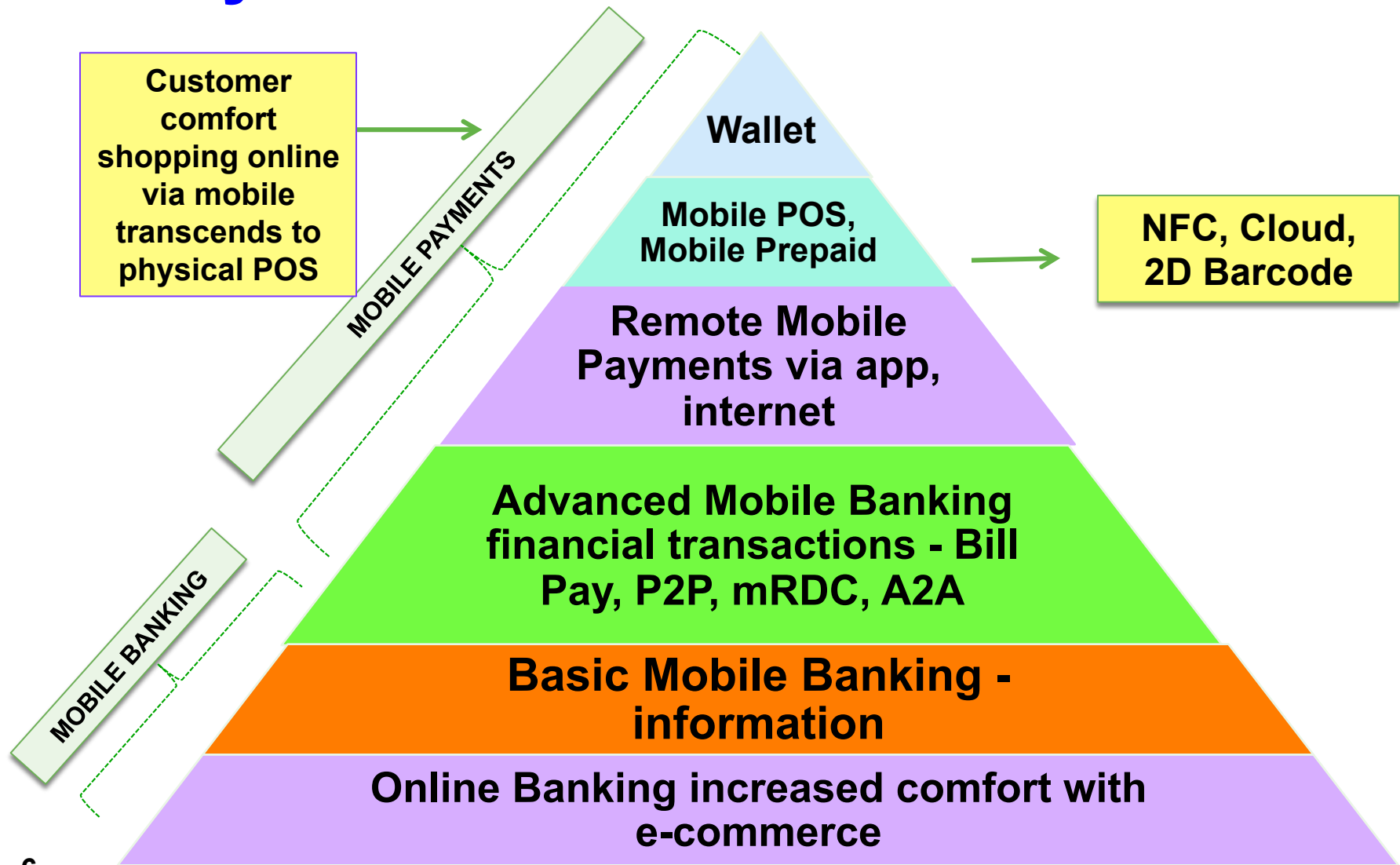


Top U.S. Smartphone Platforms Aug 2012

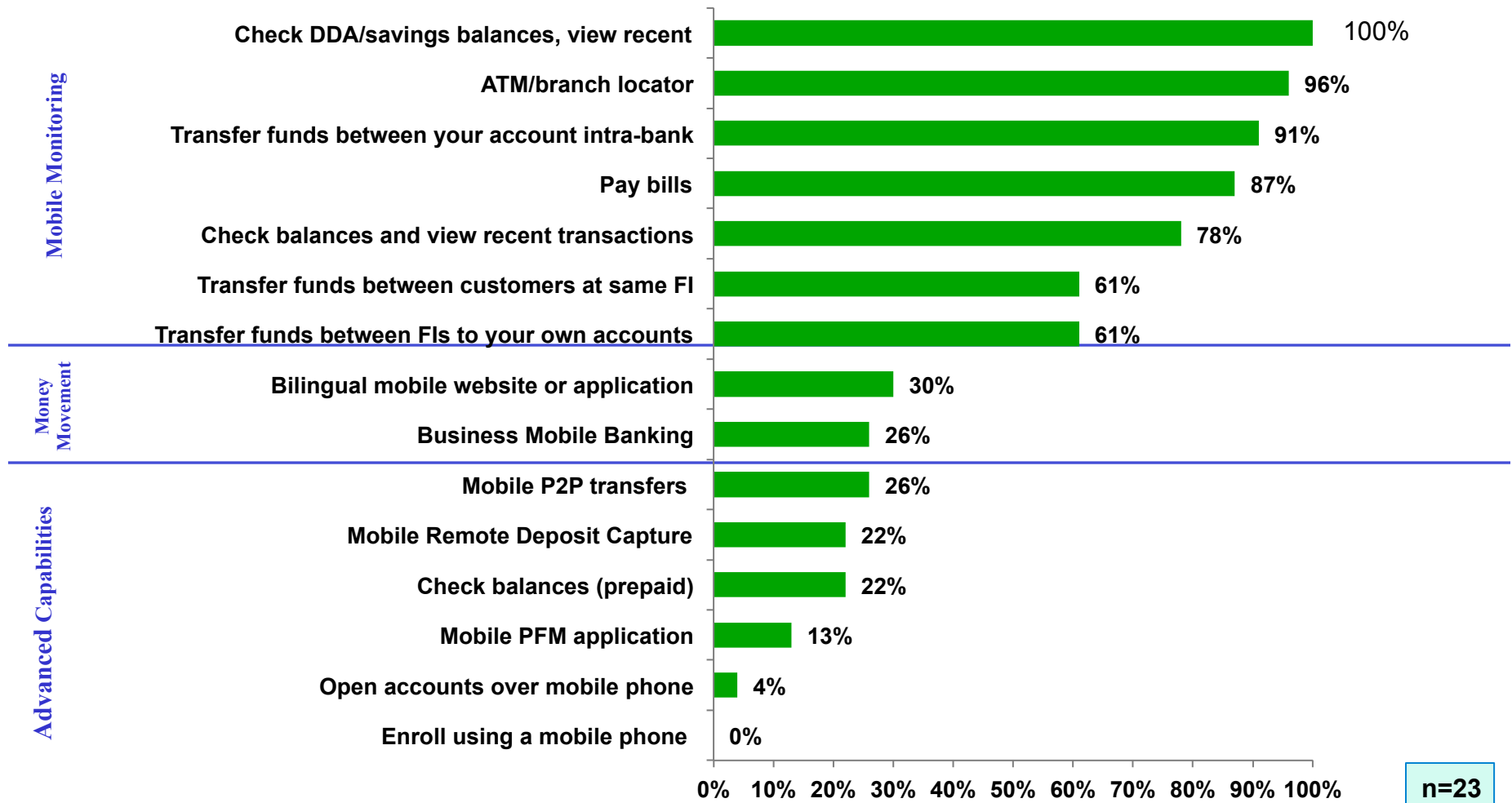


Source: comScore, Aug 2012, Oct 2012

U.S. Mobile Banking and Payments Evolution



Mobile Banking Services Offered by FIs Today



- 23 of 25 biggest banks in U.S. offer mobile banking
- Mobile enrollment can widen pool of eligible customers but only 9% of top 25 banks do mobile enrollment and only for SMS text banking

Percent of Financial Institutions

Source: Javelin Strategy & Research, August 2011

How Mobile Financial Services Can Help the Underserved

- **Replace alternative mobile financial services, e.g. check cashing, money orders**
 - Mobile banking safer than cash and cash alternatives for domestic and international payments
 - Eliminates need for cash - Bill pay and expedited bill pay more convenient than cash payments
 - Reloadable prepaid mobile account provides means to enter financial mainstream
- **Accessibility and Convenience**
 - Bilingual mobile services and customized mobile apps to increase understanding
 - Easy access to mobile services anytime, anywhere (7x24) – saves time and reduces branch visits
- **Control over finances and budget**
 - Manage cash flow in real time with ability to check balances
 - Alerts to avoid overdrafts, monitor and manage spending and savings
- **Value added services**
 - Faster transactions and available funds with electronic deposit or mRDC to prepaid debit account
 - Mobile text messages or mobile apps for financial education and information on mobile services
- **Reliability and security**
 - Provide immediate information on suspicious activity to prevent fraudulent transactions
 - Increased security using mobile phone as added layer of authentication

Mobile Payment Stakeholders

All stakeholders have ability to develop mobile financial services individually or collaboratively for the underserved

Traditional Payment Stakeholders

- Financial institutions
- Merchants
- Credit card, ATM/Debit & Prepaid networks
- Third party core payment processors
- Online payment service providers
- Transit authorities
- Government

Mobile Technology Stakeholders

- Mobile carriers
- Smartphone platform providers
- Mobile solution providers
- Direct Carrier Billers

Mobile Payment Opportunities

Platform/ Channel	Mobile Banking	Mobile Payments
<ul style="list-style-type: none">• SMS text• Browser• Mobile app• NFC/ contactless• 2D Barcode• Direct Carrier Billing	<ul style="list-style-type: none">• Mobile banking<ul style="list-style-type: none">• Alerts• Balance checking• Remittance/Money Transfer• P2P• Bill Pay• Remote deposit capture• Govt. EBT transfers• Payroll deposits• Mobile device authentication• Cash back at ATM	<ul style="list-style-type: none">• Mobile Payments<ul style="list-style-type: none">• Transit• Ticketing (airline, event, parking)• Online donations• Other digital content• Internet purchases• Custom marketing for rewards & coupons; messages to help save money, find best prices• Location based services• Mobile wallet

Mobile P2P



- P2P electronifies personal checks or cash used for informal payments
- Small dollar money transfers via ACH less costly than wire
- Bank/card model
 - MC MoneySend, Amex Serve, Fiserv PopMoney
- Bank-owned – ClearXchange
 - Bank of America, Wells Fargo, Chase
- Non-bank
 - PayPal
 - Dwolla
 - m-Via (Boom)

A screenshot of a mobile application interface for POPmoney. The status bar at the top shows 'AT&T', signal strength, Wi-Fi, and the time '10:50 AM'. The app header features the 'POPmoney' logo in green. Below the header, the text 'Pay Other People' is displayed in orange. The login form includes an 'Email:' field with the text 'charlietest@cashedge.com', a 'Password:' field with masked characters, a 'Save Email:' toggle switch set to 'ON', and a large green 'Log in' button.

Issues

- More cross-border remittances
- Money laundering
- Need for more KYC

Mobile Remote Deposit Capture

- Mobile app uses camera to capture and transmit check image to FI for deposit, usually immediate availability
- Value to consumers and small businesses with low check volumes from remote locations
- Banks and non-banks
 - USAA, Chase, BoA
 - PayPal enables banked and unbanked consumers to deposit checks to PayPal account



Fraud Controls

- Multi-factor authentication
- Secure (encrypted) transmission
- Limit on daily customer deposit amounts
- KYC, customer due diligence
- Monitor frequency of use
- Detection of duplicates, double-posting

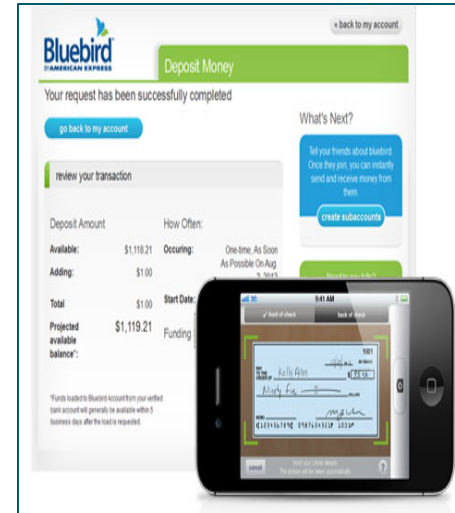
Mobile Prepaid Account as Bank Account Alternative

- Using mobile phone to store and access prepaid accounts is becoming a popular way to offer financial services to the underserved
- Mobile prepaid account can include multiple banking and payment options
 - Balance/transaction checking, Online bill pay, savings account
 - Lower cost/free ATM use, FDIC insurance
 - Inclusion in a mobile wallet with other payment/loyalty accounts
- Involving mobile carrier and other non-banks creates need for complete disclosures with common terms for easy comparison of features, fees and protections

Mobile Prepaid Examples



- AMEX/Walmart Prepaid debit account
 - Mobile app for P2P, mRDC, view transactions
 - AMEX branded prepaid debit card for POS payments
 - No minimum balance
 - No monthly, annual, or overdraft fees
 - Not FDIC insured; complies with state MT laws



- Purchase MoneyPak at participating retailer
- Load cash onto MoneyPak card at cashier to fund PayPal account using mobile browser, app or online



- Use mobile app to take photo of purchase receipt at participating merchant to apply rewards to virtual loyalty card
- Fund Wipit prepaid mobile account with cash at 10K+ authorized retailers



Mobile Opportunities for Government Payments

- U.S. Treasury **Direct Express** program loads federal benefits to a MasterCard prepaid debit card
 - 95% of Direct Express cardholders who receive Social Security benefits are satisfied
 - 91% said Direct Express card is safer than paper checks
 - 93% said card is more convenient than cash for purchases
- Can a mobile phone/wallet application support EBT?

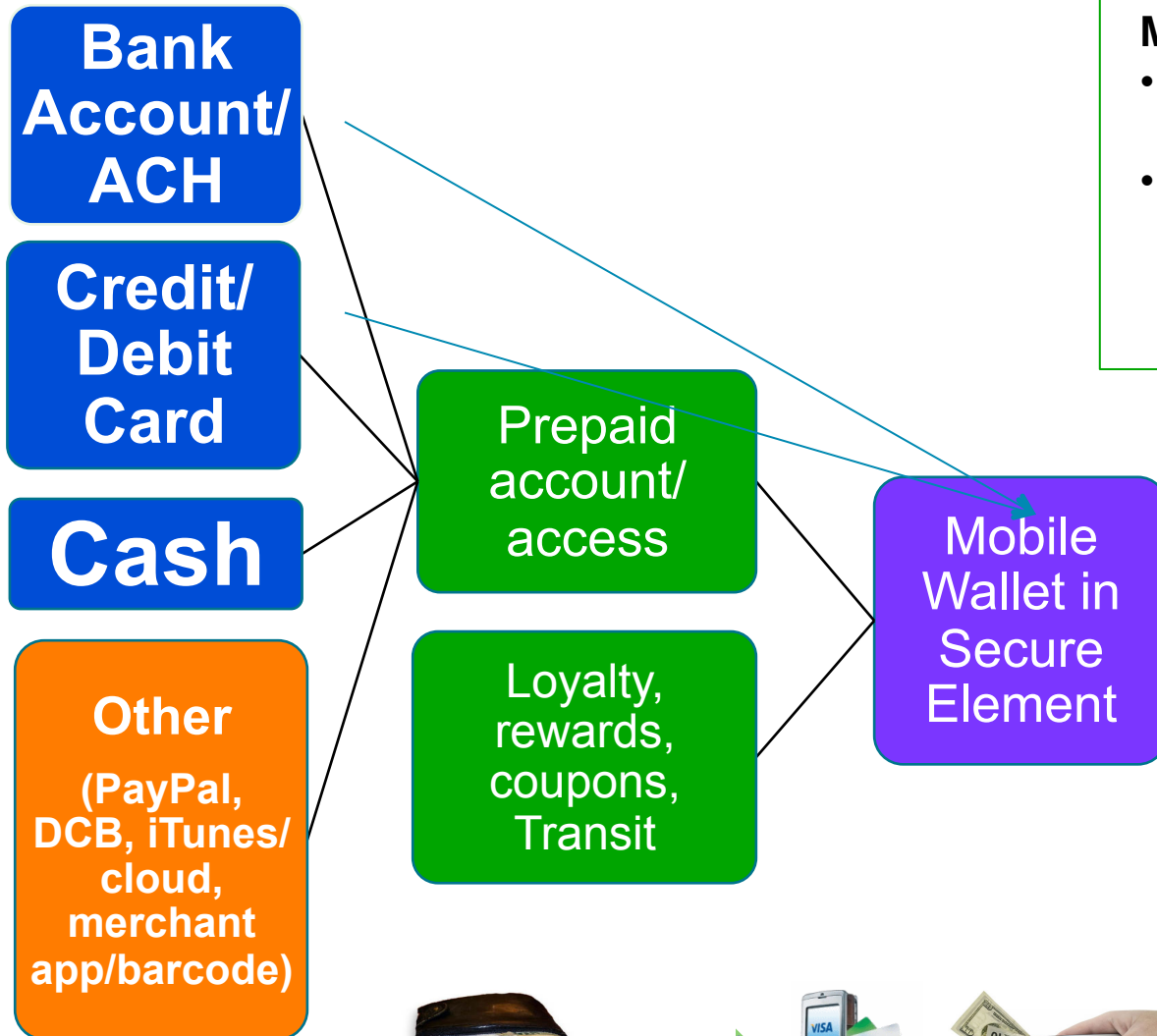


Mobile Payment Opportunities in Transit

- NJ Transit and Google Wallet (ongoing)
 - Use Google Wallet to buy tickets at NY Penn Station, Newark Liberty Airport's rail station, NJ Port Authority bus terminal, 7 bus lines
 - NJ Transit averaging 10,000 Google Wallet transactions a month
- NY MTA and MasterCard contactless payment pilot - 2010
 - 17,000 customers
 - 26 MTA subway stations, 8 MTA bus lines
 - Plan full contactless rollout in all buses and subway stations by 2015
 - Technology will work with NFC mobile payments
- Utah Transit Authority and Isis Wallet launch October 2012



Mobile wallets provide convenience and control



Mobile wallet

- Application stored in secure element
- Controls access to payment credentials (payment cards, bank account, coupons, loyalty, transit tickets, etc.)

Secure element

- Encrypted, tamper-proof chip that stores payment credentials, applications, financial data
- Where execution of payment application occurs



Current Industry Mobile Payment Initiatives

- Focused on retail POS and mainstream banked consumer
- NFC Wallets – Google and Isis
- Closed loop retail POS mobile apps
 - Starbucks
 - PayPal – Home Depot, other retailers
- Apple Passbook app stores loyalty cards
- Mobile payment acceptance apps with plug-in card reader (e.g. Square, Intuit)
 - Assume merchant has a bank account
- How can they support needs of the underserved?

Mobile Regulatory Landscape

- Most non-banks rely on traditional funding sources: credit, debit, prepaid, ACH
- Underlying payment methods used to fund mobile wallet covered by existing regulations and rules
 - **Pay now (debit)** - Electronic Funds Act (EFTA) and Reg E
 - **Pay later (credit)** - Truth in Lending Act (TILA) and Reg Z
 - **Pay in advance (prepaid)**
 - *Gift cards* - Federal Credit CARD Act, limits on fees and expiration date, State laws
 - *General Purpose Reloadable (GPR)* - EFTA and Reg E protections
- CFPB can regulate non-bank providers of consumer financial services

Mobile Regulatory Landscape

- Data privacy coverage for mobile payments is unclear
 - Current mobile carrier policies are not standard; inconsistent on opt-in vs. opt-out requirements
 - Gramm Leach Bliley privacy rule
 - FIs must protect and disclose use of sensitive non-public customer information (FTC, Fed Reg P)
 - Customer must opt-in to share PII with 3rd party
- Prepaid access providers (stored value) and Money Transmitters are money service businesses (MSB), subject to BSA/AML compliance
- Money transmitters also subject to state licensing for activities

Status of Mobile Payments Regulation

- Federal Reserve and Mobile Payments Industry Workgroup met with bank regulators, FTC, and FCC in April to discuss regulatory clarity
- Primary concerns – consumer protection, privacy and data security
- Consumer ‘awareness before engagement’
- Important for non-banks and new companies offering mobile services to understand how to protect consumers, but for now banks still liable
- General consensus – still too early in mobile payments evolution to regulate
- Focus on education and communication between industry and agencies
- Industry stakeholders want to be involved, in the loop, when need for mobile regulation arises

Conclusions

- Service providers must educate underbanked consumers to build trust and make them more comfortable with mobile financial services
- Mobile payment services must show value proposition and incentive to change behaviors
- Financial service providers should find ways to leverage prepaid and other payment options to develop mobile products that meet the needs of the underserved.
- Partnering and packaging services may provide revenue opportunities and engage a new market segment with potential for longer-term financial inclusion.