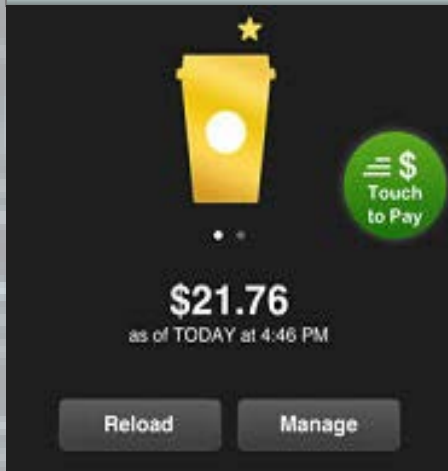


Mobile Transacting: Landscape is (Still) Muddled



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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




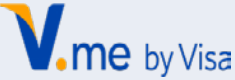


What's Wrong With It

- 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

1st-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-out⁸ 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

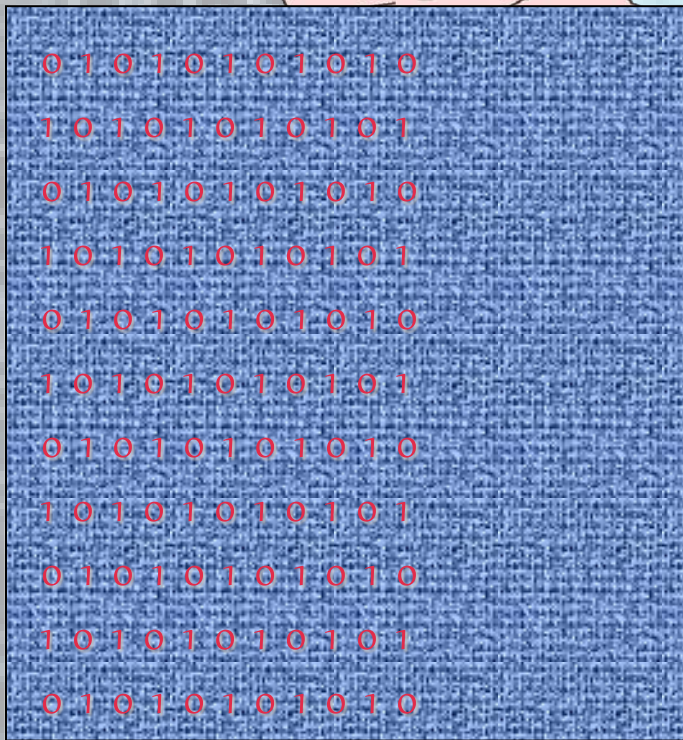
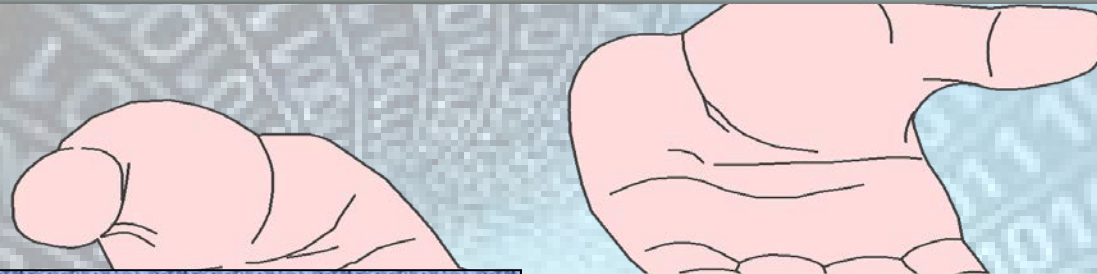
The big battle (and big payoff) is **how to monetize** the personalized, targeted **data**, and who gets to do it (and profit from it)

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

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