

EMERGING PAYMENT PRODUCTS AND PAYMENT SYSTEMS

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Agenda

- Competing mobile payments solutions
 - NFC vs. Cloud
- New payments entrants
 - Isis
 - Google Wallet
 - Serve
 - Pay With Square
 - Dwolla
- Social media and payments
- Challenges and opportunities

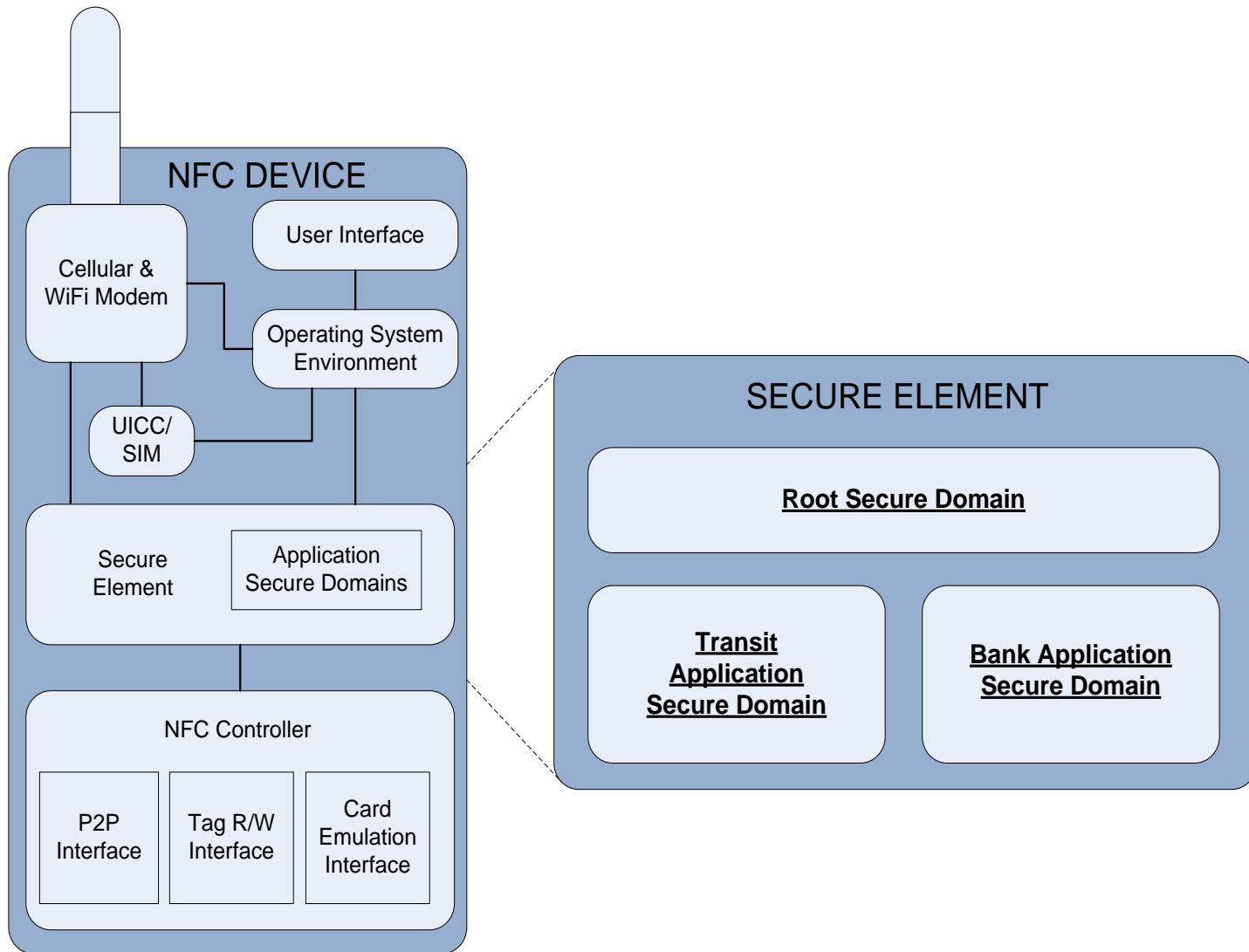
Competing mobile payments solutions

NFC vs. Cloud

NFC-Based Mobile Payments

- Payment for purchases is made using NFC technology: A short-range high frequency wireless communication technology - enables exchange of data over about a 4 cm distance
 - Emulates existing contactless payment standards (i.e., MasterCard PayPass, Visa payWave, American Express ExpressPay, Discover Zip)
 - Allows P2P transfers (NFC device to NFC device)
 - Can read “tags” to retrieve data or information
- Customer holds mobile device in close proximity to the merchant’s point-of-sale terminal to initiate payment

NFC-Based Mobile Payments



NFC-Based Mobile Payments

Advantages

- Uses a secure element (SE) to store account information
- Uses existing payment infrastructure
- Can be used for more than just payments
- “Card-Present” interchange
- Lower issuer costs – no plastics
- Less merchant exposure to data breach than mag stripe

NFC-Based Mobile Payments

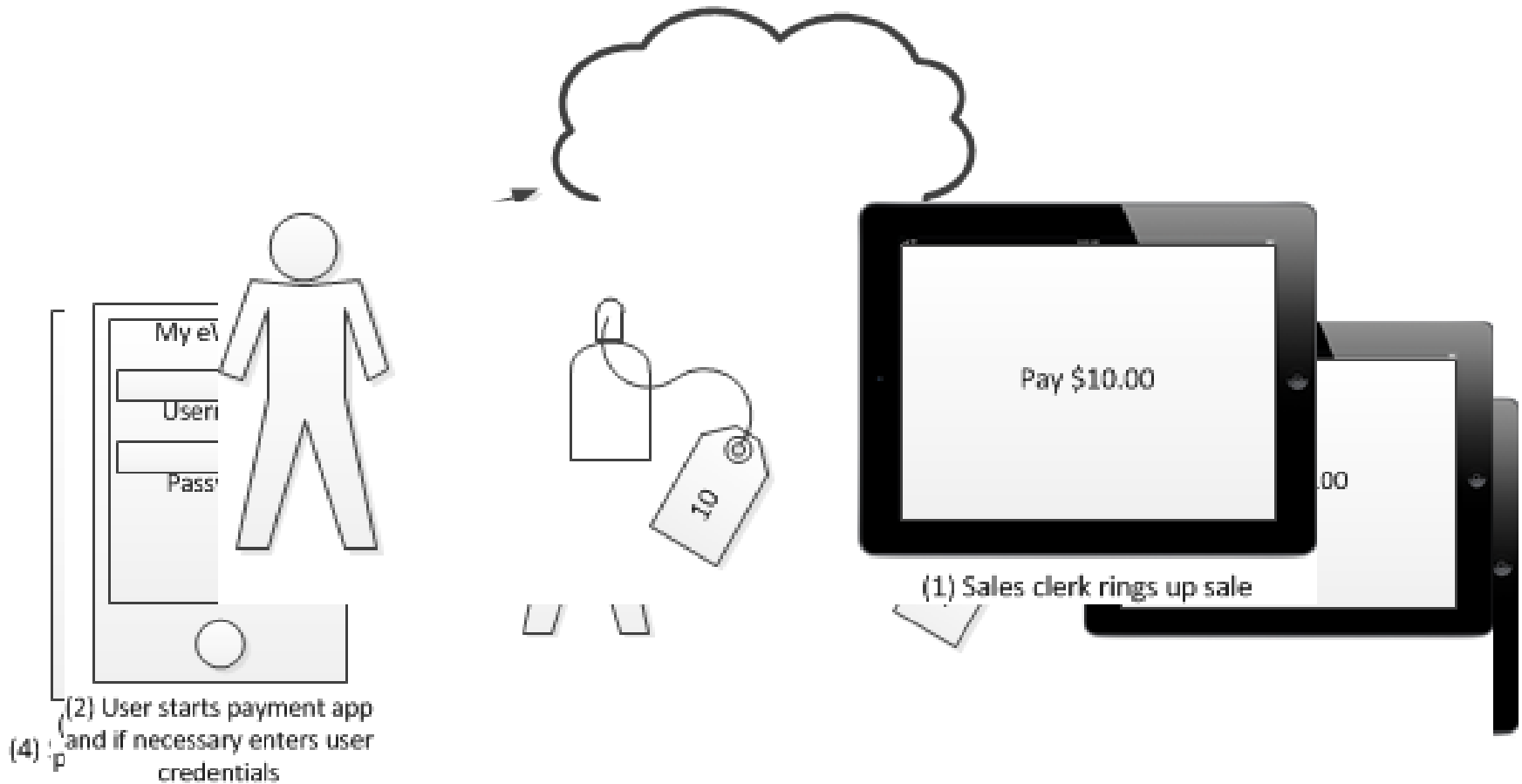
Drawbacks

- Requires terminal upgrades for 2-way NFC to realize full benefits
- Increases cost of mobile device
- Contractual complexity introduced by involvement of MNOs and Trusted Service Managers

Cloud-Based Mobile Payments

- Account credentials are saved online, not on the mobile device
- Two variations—
 - Token-based where payment for purchases is made by scanning a “token” that represents the user’s account credentials; the token is stored on the mobile device
 - Checkout-based where at time of payment, users are sent to the cloud payment service provider to check out or send money using account credentials saved with the provider

Cloud-based Payment Transaction



Cloud-Based Mobile Payments

Advantages

- Uses e-commerce payment processes
- No terminal upgrades required
- Simultaneous in-store and online shopping experiences for deeper customer engagement
- Avoid checkout line

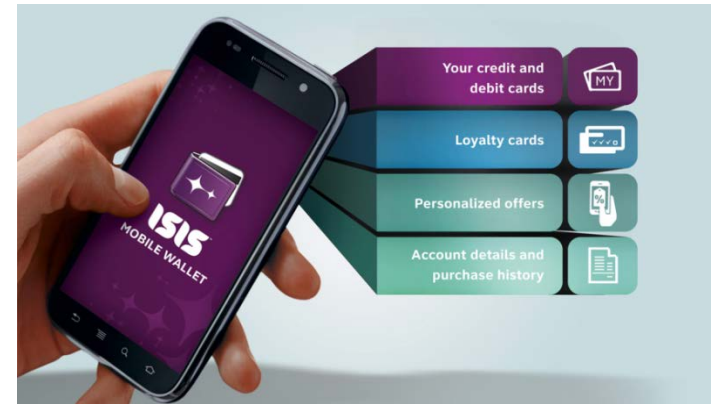
Cloud-Based Mobile Payments

Drawbacks

- “Card Not Present” interchange
- Requires Internet connectivity
- Requires online storefront for merchant
- Dependency on cloud providers

New payments entrants

- NFC-based payment system that stores account information in a removable SE in the mobile device (e.g., universal integrated circuit card or microSD)
- Joint venture among AT&T Mobility, T-Mobile USA and Verizon Wireless
- Uses the traditional payment networks for authorization and settlement



- “Open” platform where any issuer can enter into an agreement with Isis to enable their credit, debit and prepaid cards to be placed into the Isis Mobile Wallet
- Expected to be supported by various mobile devices offered by the joint venture members.
- Gemalto selected as trusted service manager
- Launch Date: Mid-2012
- Launch Cities: Salt Lake City and Austin

Google Wallet

- NFC-based payment system that stores account information in an embedded SE
- Offered exclusively on mobile devices using the Android mobile operating system (currently only four Sprint phones supported by the system)
- Supports only Citi PayPass eligible MasterCard credit cards and a Google Prepaid Card (intends to support cards from all issuers in the future)



Google Wallet

- Features SingleTap – allows consumers to purchase an item, redeem offers and earn loyalty credit with a single tap of the phone to a merchant's Google Wallet-enabled terminal
- First Data selected as trusted service manager
- Launch Date: May 26, 2011
- Launch Cities: San Francisco, New York City

Serve

- Online payments platform that enables users to send and receive funds to/from other users and is tied to a Serve card for purchases
- Users fund their account using their linked bank and credit/debit card account or add cash with a MoneyPak
- Serve Virtual Enterprises, Inc. is a subsidiary of American Express Travel Related Services Company, Inc.

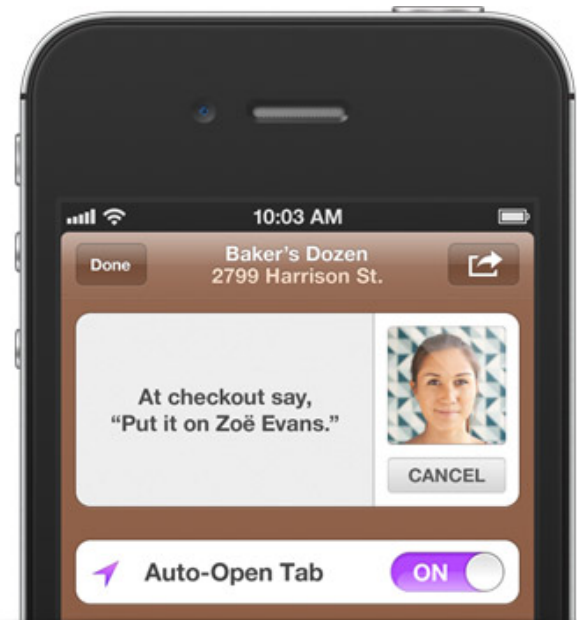


Serve

- American Express Travel Related Services Company, Inc. maintains all money services business licenses necessary for Serve to engage in its activities

Pay With Square

- Mobile payment application that enables users to pay at brick-and-mortar merchants simply by saying their name (merchant must be using Square Register)
- Uses the geolocation services of the mobile device to list nearby Square-enabled merchants; user can tap on a merchant to see in like hours of operation, menus, specials, coupons, comments, and can open a tab



Pay With Square

- When a user pays by saying his name, the merchant simply taps the user's picture on Square Register to complete the transaction
- Credit/debit card information is stored with Square and is not transmitted to or shared with the merchant during a purchase
- Uses geofencing to provide added security
 - Geofencing is to detect and list nearby PWS app users on Square Register
 - Enables the PWS app to receive automatic alerts or notifications when a user enters, leaves or moves within a specific geographic area of a Square-enabled merchant

Pay With Square

- Uses the master merchant model for aggregating transactions for merchants that use their service; merchants are not required to establish a merchant account

Dwolla

- Dwolla enables person-to-person and person-to-business payments
- Users perform cash-in and cash-out functions to/from their Dwolla account using their linked bank and credit/debit card
- Dwolla Instant option provides users with immediate access to funds once a cash-in is completed
- Users' Dwolla balance is used to send payments to other Dwolla users or to Dwolla-enabled merchants



Dwolla

- TMG Financial Services is the lender of record for Dwolla Instant (TMG verifies and underwrites the line of credit for Dwolla Instant applicants)
- Dwolla Corp., located in Des Moines, Iowa, is registered as a money transmitter in Iowa
- Proprietary, all-digital network

Social media and payments

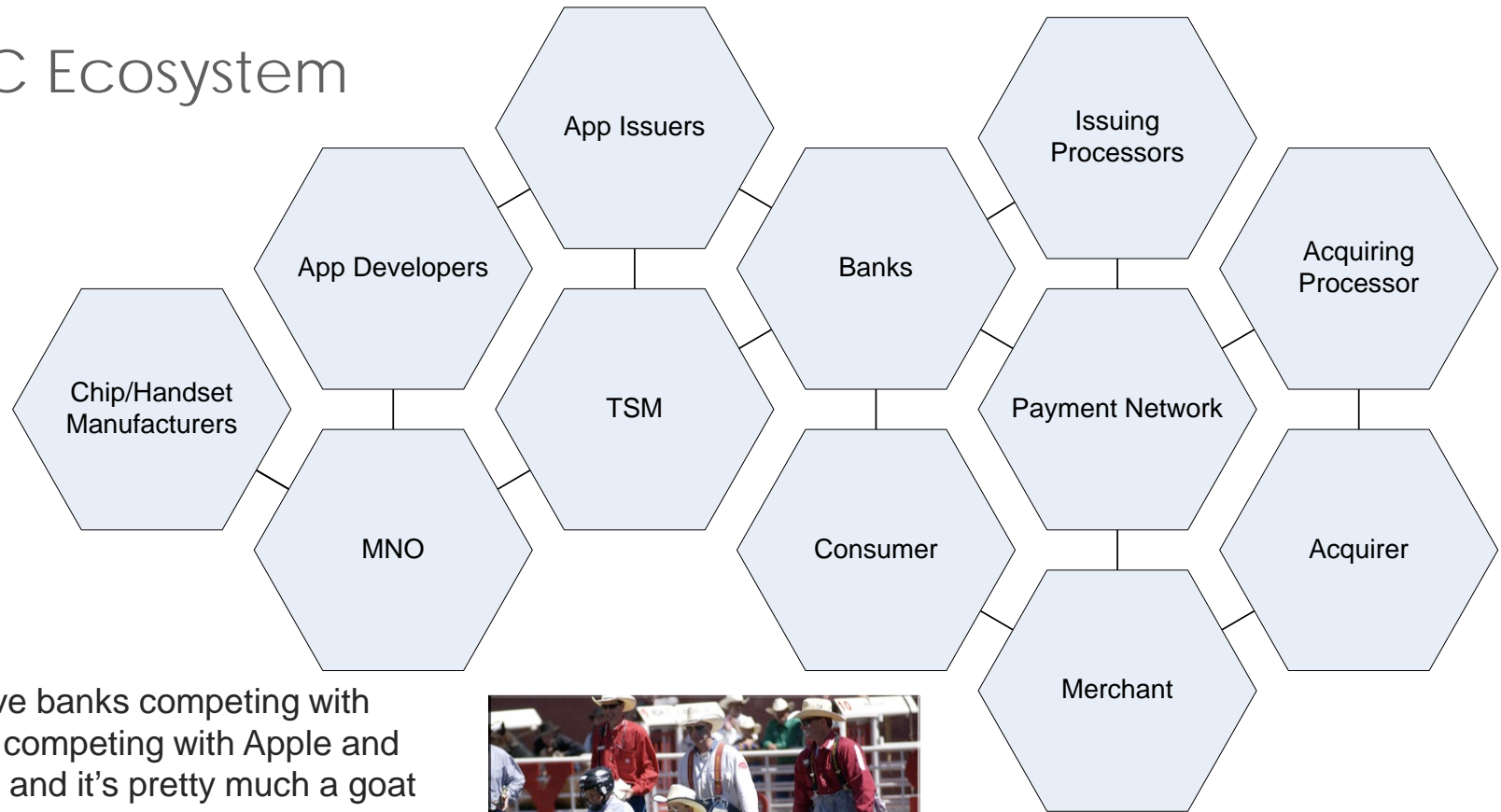
Social Media and Payments

- Social media networks and game developers are interested in creating proprietary payment systems.
 - Facebook Credits – virtual currency that enables people to purchase items in games and non-gaming applications on Facebook. One U.S. dollar is the equivalent of 10 Facebook Credits
 - Zynga Rewardville - virtual in-game currency and rewards program, allows players to earn exclusive Zynga-specific points and coins they can spend within the game or to unlock virtual goods to use and gift to others
 - Xbox LIVE Points – creating a seamless customer experience across media and virtual/physical experiences
- Some Issues
 - Transition from closed to open systems? 30% merchant discount?
 - Social media can offer robust authentication – how to integrate with personal financial information securely?
 - What role for traditional financial institutions as FaceBook, others obtain money transmitter licenses?

Challenges and opportunities

Challenges and Opportunities

NFC Ecosystem

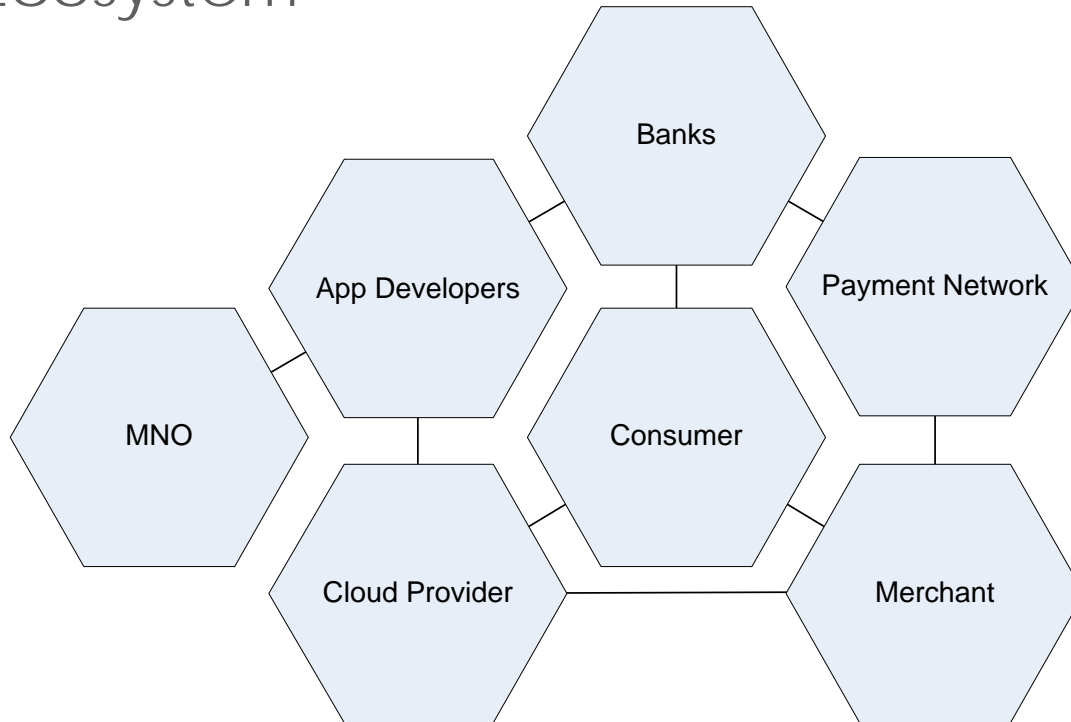


“You have banks competing with carriers competing with Apple and Google, and it’s pretty much a goat rodeo until someone sorts it out.” Drew Sievers, chief executive of mFoundry (developer of mobile payment software for merchants and banks)



Challenges and Opportunities

Cloud Ecosystem



Challenges and Opportunities

- Use and disclosure of data generated
 - Privacy laws and regulations vary among participants
 - Who has access to customer data, collects the data and owns the data
 - How data can be used
- Control of customer and experience
 - Customer may be a customer of multiple participants
 - Who owns the relationship and communicates with customers
 - Each entity has its own terms and conditions relating to customers
- Brand recognition and awareness
 - How can participants avoid being sidelined

Challenges and Opportunities

- Terms of use and other customer agreements
 - Whose take precedence?
 - Difficult to coordinate among multiple TOUs
- Participants subject to varying disclosure and compliance requirements
 - But dependent on one another...

Challenges and Opportunities

- Build/buy vs. outsource
 - If outsourced, bank's third party providers will be subject to examination
 - FFIEC IT Handbooks (Outsourcing Technology Services, Supervision of Technology Service Providers)
 - OCC Bulletin 2011-27, "Prepaid Access Programs," (June 28, 2011)
 - CFPB Bulletin 2012-03, "Service Providers," , (Apr. 12, 2012)

Challenges and Opportunities

- What is the revenue model?
- Sharing of costs to incentivize consumer and merchant adoption
- New revenue opportunities as a result of:
 - Offer platforms – merchant-funded offers
 - Targeted advertising
 - Use of behavioral and geo-location data
- Killer applications to lead the way?
 - Public transit, college/corporate campuses and cafeterias, other closed- to open- systems opportunities

Challenges and Opportunities

- How to overcome customer satisfaction with existing electronic payments?
 - Better combine loyalty, rewards, coupon clipping, targeted offers, comparison shopping
 - Ask George...

Challenges and Opportunities

- Are merchants more ready for change?
 - Avoid interchange (relevance post-Durbin?)
 - Dissatisfaction with PCI compliance cost and liability
 - Seek better offers platforms and access to purchase behavior
 - Capitalize on the mobile commerce channel

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