



THE STRAWHECKER GROUP
The Trusted Advisor To The Payments Industry



mPayments: Product & Security Review

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Overview

- **Mobile** is a payment (transfer of funds in return for a good or service) where the mobile phone is involved in the initiation and confirmation of the payment. The location of the payer is not important: he may or may not be 'mobile' or 'on the move' or at a Point of Sale. Buyers make different judgments than sellers and therefore any payment solution balances risk mitigation, usability and cost between buyer and seller.
- **EMV** (Europay MasterCard & Visa) technology embeds a microchip in a credit card for secure payments at the POS. Combining EMV on cards or smart phones with Near Field Communication (NFC) technology, creates a contactless payment method. Because EMV is hardware-based, it requires an investment in new cards by card issuers and new POS terminals by merchants and acquirers. EMV may also be referred to as "Chip and PIN" (or by Visa as Chip and Choice), as in addition to the embedded microchip being read via the POS hardware, the Consumer will also authenticate the transaction by entering their PIN to complete the transaction
- **NFC** (near field communication) is a short-wave radio communications technology that provides a way for two devices to communicate small amounts of data when they're placed about four inches apart. NFC requires an initiator and a target. The initiator generates a radio frequency field with a 4 centimeter range – the target then picks up the frequency and receives the data it contains. It's appeal is that it is compatible and interoperable with other current systems, e.g. transit and security. In essence, it is not a new technology and works with existing hardware, secure elements and communication protocols
- **Bar Code** consists of a scannable strip of black bars and white spaces above a sequence of 12 numerical digits. Some industry observers point out that bar-code-based payment is much less secure than NFC or cards using smart card technology.
- **QR Code** (Quick Response Code) is the trademark for a matrix barcode (or two-dimensional code). Currently being used to provide offers by retailers, quick access to commercial websites and even for payments.



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Impacts & Influences

Impacts and Influences on Merchants and Consumers at the POS:

- Most retail merchants are fiscally tied to existing POS hardware, but are still looking to improve feature and functionality. Traditional POS users dependent on equipment upgrades or replacements to support mobile acceptance.
- Consumer use of electronic wallets is still minimal, and typically limited to merchant-specific programs.
- Migration from traditional swipe to NFC, EMV or bar code largely a chicken-or-egg question; merchants will be slow to upgrade equipment before being convinced that enough consumers are carrying new credential types.
- Enhanced payment data and behavior inherent in mobile wallets which is very attractive to most players in the value chain; a driving factor for social networks and similar alternative payment brands.



Influences on Retail Segments Relating to Mobile Acceptance:

- Restaurant and QSR verticals likely to see benefits that are associated with mobile acceptance, through features such as pay-at-the-table, and table management.
 - Presto, from E la Carte, is a tablet-based payment application that allows patrons to select and purchase from restaurant menus at the table
 - Open Table has tablet-specific functionality for its customer merchants
 - Majority of QSR merchants are NFC enabled
- National Drug Store chains are NFC enabled.
- Mobile POS solutions will enable many new verticals as viable markets for card-present acceptance.



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Technologies Currently In-Play

Consumer Hardware:

- 98% of mobile smartphone platforms in the market are built on common architecture (ARM). Apple and Android platforms are dominating the payment applications market.
 - *Apple iPhone / iPad* - single manufacturer; exclusive application distributor
 - iPhone 5 released in late 2012 and did not have NFC; however it is rumored that iPhone 5s will have NFC capability
 - *Google Android* - multiple hardware manufacturers; closest to the open-source development community
 - Motorola
 - HTC
 - LG
 - Sony Erikson
 - Samsung
 - *Blackberry / RIM OS* - Less prominent development community; significant user loyalty tied to Microsoft integrations
 - *Nokia / Symbian OS* - Very minor players in US and shrinking
 - *Samsung / Visa: Announced Feb 2013, Samsung has agreed to load its NFC enabled mobile devices with Visa's payWave technology*
 - *DeviceFidelity* - Unveils iCaisse4X, a new NFC case with extended battery for the iPhone 4S and the iPhone 4 – May 15, 2012. The innovative In2Pay® iCaisse4X extended battery pack with NFC uniquely enables the iPhone for full near field communication (NFC) capabilities including mobile wallet, reader and peer-to-peer mode, while adding several hours to the battery life of the iPhone.



About TSG

The Strawhecker Group (TSG) is a management consulting company focused on the electronic payments industry.

TSG's Service Groups

Payments Strategy - Payments Strategy encompasses the full spectrum of advisory services within the Payments Industry. The depth of these services is built on deep industry knowledge - Partners and Associates of the firm have average industry experience of more than 20 years. With clients from card issuers to merchant acquirers, TSG has the experience and expertise to provide real-time strategies.

Strategic Acquisitions - In the Payments Industry, success in buying and selling relies heavily on relationships and industry knowledge. At TSG, these areas are our forte. Over the past three years, we provided services to 30 of the top 50 U.S. Acquirers and have prepared more than 50 valuation assessments of payments properties; with individual values ranging up to \$2.3 Billion. In aggregate, these analyses represent more than \$5 billion in value.

TSG Metrics - TSG Metrics, the strategic research and analysis division of TSG, provides the Payments Industry with highly focused research and industry-wide studies. TSG Metrics takes data, boils it down to information, transforms it to knowledge and presents it to provide wisdom to its client partners.

TSG's Unparalleled Experience

TSG consists of Industry leaders with extensive experience leading teams through explosive growth periods, mergers and acquisitions, and international and domestic expansion within the Payments Industry. Both Partners and Associates of the firm have held key senior management positions at leading industry companies including First Data / First Data International, VISA USA, MasterCard, TSYS, Humboldt Merchant Services, WorldPay, Heartland Payment Systems, Cardservice International, iPayment, Alliance Data, RapidAdvance, Accenture Consulting, Redwood Merchant Services, Chase Paymentech, as well as other leading financial institutions and Payments companies.

TSG's Influence Shapes the Payments Industry

Over the last three years, TSG has completed over 300 projects for more than 175 different clients including financial institutions, merchant acquirers, card issuers, card associations, technology providers, ISOs, processing companies and the investment community. Additionally, the firm and its Associates sit on several Industry committees whose focuses range from emerging product development to governmental regulation advisement.

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