

PERSPECTIVE



## Goodbye to Plastic? The Changing Face of the Cards and Payments Industry



- Gururaj Deshpande

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The introduction of plastic was a sweeping change that transformed the payments space a few decades ago. The advent of new technologies, however, is fast fuelling another dramatic evolution in payment methods, moving from cash to card to mobile wallet to wearable devices. With innovations delivering increasing convenience and benefits to consumers, the cards and payments industry is poised to reinvent itself.

Using a credit card has been a convenient way of payment until recently. But the new-age consumer, following the penetration of mobile technology into almost every market, views cards as plastic clutter that makes the wallet bulky, adding more items to carry around. Moreover, incidents of theft and hacking of cards are forcing users to seek options that are more secure and difficult to mishandle. As a result, the cards and payments industry has gone beyond cashless and contactless transactions and is set to go 'card-less'. So is this the end of the road for plastic?



### New alternatives to plastic

The environmentalists' call to 'say no to plastic' is today finding an echo in the payment space too. Reluctant to burden their wallets with any more plastic consumers are eyeing new alternatives. But if plastic is fading away, what are the alternatives? Will new methods of payment completely eliminate the need to carry cards, or is there a middle path? Let us take a closer look at some key developments in the cards and payment industry to better understand the future of plastic and payments.

### Stored value cards

These plastic cards, which store a monetary value electronically, emerged a few years ago when banks started offering them to their customers as a service. With no requirement to open a deposit account, stored value cards can be used for a number of retail transactions. Prepaid phone cards, transit fare cards, and gift cards are some examples of closed-loop cards. Open-loop cards can be used multiple times by recharging them with money. However, along with the benefit of ease of use this method has a serious downside – the risk of misuse for cross-border money-laundering, evading regulatory authorities. And, of course, it is still plastic.

## Mobile point-of-sale

Pioneered by Square Inc, mobile point-of-sale (POS) technology allows sellers to accept payments from cards using handheld smart devices. Square Reader is a tiny device that can be attached to a smart phone or a tablet. The Square Register app works with Square Reader to instantly process card payments. Receipts can be sent via email or text message and the phone can be used as a mobile POS.

As opposed to traditional time-consuming POS terminals at checkout or expensive card processing machines, businesses can use mobile POS technology to save time, space, and cost – while enhancing customer experience. Mobile POS also enables small businesses to process card payments cost-effectively.

Some key POS innovations and trends include the iPad POS checkout device with built-in customer relationship management (CRM) and sales analytics, NFC tags on shelves that allow self-checkout using smartphones as mobile POS, eBay's shoppable windows technology, and POS apps that allow customers to order, pay, and win loyalty points.

A more recent development in the mobile POS area is Amazon Local Register, Amazon's new POS service that competes with other mobile card reader payment solutions such as Square Register and PayPal Here. Amazon Local Register brings together a mobile app and a secure card reader to allow small businesses to process card transactions using smartphones and tablets.

## Digital wallet

A bunch of technologies that enable digital wallet or e-wallet allow the user to transact electronically via computers, smartphones, or tablets. Many smartphone apps enable digital wallet services and require the use of mobile phone number and a personal identification number (PIN). SOFTCARD, earlier known as ISIS, is one such digital wallet. Another is Google Wallet, available in the US. It offers easy ways of payment. Receipts, transport passes, tickets, gift cards, etc., are stored in the digital wallet and users can receive loyalty points, discounts, and special offers from retailers. However, many users are not ready to give up plastic and switch to digital wallet completely yet.

## Contactless wearables

Going a step further from mobile apps, wearable smart devices such as wristbands, watches, and glasses allow users to transact without having to pull out their smart phones or other devices. Barclays, for example, has announced the launch of a wristband called bPay band that customers can use for contactless payments as well as for entry to music and sports events. Disney's wristband 'MagicBand' allows visitors to access their plans and vacation choices on the Disney website, enter parks, and even unlock their hotel rooms. The Heritage Bank's wearable technology product Power Suit allows the wearer to purchase items at any Visa payWave terminal by swiping their sleeve. The Australian bank has partnered with Visa and a tailoring company for this innovative product. CaixaBank has launched a Visa wristband that allows users to make payments at more than 300,000 businesses across Spain. The convenience quotient of wearable devices is very high and the trend is catching on fast.





### On-the-spot cardless credit

Affirm, a San Francisco-based startup established by the co-founder of PayPal, has created a new way to lend money to consumers. The company offers on-the-spot financing for online shoppers. They offer the consumers the opportunity to take out a loan with an upfront charge, rather than purchase products using a credit card and run the risk of late fees and interest.

### Cashless person-to-person payments

The technology of person-to-person payments (P2P) helps customers transfer funds from their bank account or credit card to another individual's account using the Internet or a mobile phone. PayPal dominates the mobile retail payments space today and is ahead in mobile bill payments too. New players like Venmo offer free mobile P2P payments. Square has launched Square Cash, which allows P2P money transfer over e-mail.

### Social payments

Leveraging the social media phenomenon, retailers have invented a completely new way of payment. Customers can pay for a product not in money but through tweets or Facebook posts sharing the information about the product with their friends. This marketing strategy helps the retailer reach a wider audience and can deliver a much higher value than the price of the product. Furthermore, even monetary payments can be made using social media. Customers receive a link in a private message on Facebook or Twitter. They can select their mode of payment, complete the transaction, and receive confirmation.

### Card-less cash

Following the example of The Royal Bank of Scotland, some banks today offer their customers a card-less cash facility through banking apps. Customers do not require debit cards to withdraw cash from automated teller machines (ATMs). Instead, they can download the banking app on their smartphones and request cash through the app. A PIN is generated which can be punched into the ATM to draw cash. Commonwealth Bank Australia (CBA) has rolled out Australia's first card-less ATM cash withdrawal service. Spain's Banco Sabadell too has launched a service that enables customers to draw cash from ATMs using their mobile phones.

### QR code payment

Quick Response (QR) code, a two-dimensional barcode with optical label, contains information about the item to which it is attached. QR codes can be specifically designed to work with payment provider applications. PayPal uses QR code for payments through smartphones. This helps customers store their bank account information in their phones and eliminates the need to carry plastic on them. Using PayPal, customers can scan the barcode of items in a store and use their phones to pay and check out. QR code technology can be used to pay bills as well.



### Card-less POS solutions

Biyo (previously known as PulseWallet), an innovative electronic transaction POS provider, uses the unique vein patterns in users' palms to achieve secure identification. This technology completely eliminates the need to remember passwords. It also offers quick authentication and easy tracking of e-wallet and previous transactions online or on mobile. The solution uses PalmSecure biometric technology by Fujitsu Frontech North America Inc.

### NFC technology

NFC is based on radio frequency identification (RFID) technology. NFC standards enable smartphones and other devices to establish radio communication with each other. Although the technology is used for contactless mobile payments where the card becomes redundant, NFC can also work with other systems such as cards. For example, Google Wallet allows consumers to use an NFC-enabled device at terminals that also accept MasterCard transactions. Through ApplePay, Apple

uses NFC technology in its iPhone6 and along with TouchID, or Apple Watch, it provides a secure way to pay. This solution is a development that successfully addresses the security aspect while having the advantage of being usable with wearables.

### Bluetooth low energy

Cell phone signals are often blocked in indoor spaces and indoor devices cannot be located via GPS. Bluetooth Low Energy (BLE) communication is effective in such cases. BLE communication has a frequency range of up to 50 meters and can be used for payments and peer-to-peer fund transfers. PayPal Beacon which uses BLE communication technology lets the customer auto-check into the merchant's mobile, through the PayPal app, as he or she walks in. Customers can receive offers in store, place orders, and pay without using their phone.

Apple's iBeacon is built into its devices and iOS7 mobile operating system. About 200 million iOS devices can serve as transmitters as well as receivers. Third-party

manufacturers have also created beacons that can send iBeacon messages to Apple devices. BLE paired with a wearable device that can receive notifications will enhance customer experience.

### Alternative currency

Bitcoin, an open source payment network with alternative currency of the same name, allows new uses, not conceivable with other payment systems. The system operates without a central authority or banks. Using peer-to-peer technology, the network collectively manages transactions and issues Bitcoins. To transact, users need to install a Bitcoin wallet on their computer or mobile phone and generate a Bitcoin address. Every time the user wishes to transact, a new address must be created and shared with the other party involved in the transaction. Bitcoins can then be exchanged for any currency. However, the method involves the risk of currency fluctuations – as has happened in the past with the virtual currency on a roller-coaster. Wider acceptance of Bitcoins may reduce the transaction risk in future.

## More retailers offering card-less transactions

Many large retailers like McDonald's, KFC, Burger King, and Subway use Cloud-based mobile wallet apps which not only allow mobile payments, but also provide loyalty capabilities and offers to their customers.

Starbucks, a leader in mobile payments, has launched a mobile card app that allows consumers to pay by letting patrons display a barcode to be scanned at the point of sale. Starbucks has successfully combined the convenience of mobile payment with automatic loyalty rewards. Apple Store App's EasyPay feature allows buyers to scan the barcodes of items they wish to purchase in-store and pay for them directly using the app.

Do these developments indicate a complete shift to card-less payments? And what does this trend mean to banks and credit card companies?



## How are traditional payment companies playing their card?

While some banks offer card-less withdrawal facilities to address consumer demands, many large banks and credit card giants are trying to retain and revive plastic. American Express has introduced prepaid cards with a very low fee for the benefit of the unbanked. These cards save the customers the bank fees involved in banking or credit accounts. But the card company also launched its Twitter Sync feature to allow customers to get discounts and offers by tweeting offer hashtags. Now the company has integrated payment into Twitter enabling customers to pay for certain products by tweeting purchase hashtags.

Visa Inc offers customers Visa Checkout that allows them to pay without leaving their location. Visa Checkout enables the use of any major credit or debit card and helps create a consistent purchase experience across online and mobile.

Sequent Software, a provider of digital issuance and open wallet platform-as-a-service, has recently received a United States patent for its technology that turns apps into wallets. This simplifies mobile payments further and banks can leverage the technology more easily to offer mobile transactions.

## A card-less world? Not just yet

Trends indicate a strong new generation consumer preference for card-less transactions that offer convenience and ease of use as well as other attractive benefits such as loyalty points and rewards. As newer technologies make it to the mainstream, the world of payments will keep moving towards a card-less future. Nevertheless, it is hard to say when – or even whether – plastic will be eliminated completely.

However, some issues are critical for the deeper adoption of plastic-less payment methods. User experience offered by alternate payment methods will play a key role in their being widely accepted. Security issues are another area of concern. With suitable infrastructure and well-established processes, traditional financial institutions such as banks are better equipped to manage fraud and security, minimizing the risks to their customers. Payment methods using new technologies must offer strong security. NFC, for example, does not include any built-in hardware-driven safety measures and mobile payments on NFC must use Secure Element (SE), a cryptographic module in the device. But Host Card Emulation (HCE), a new technology, allows phones to emulate cards on NFC-enabled devices,

without SE. The combination of HCE and cloud can enable mobile payment through an easy app update.

Tokenization, a payment card technology that protects card data by replacing a card's Primary Account Number (PAN) with a unique identifier, a randomly generated alphanumeric sequence or 'token', is another security measure for safer card transactions. This keeps the sensitive data restricted to the retailer's system. Decryption keys can convert the 'token' back into the PAN. Mobile payment gateways can use tokens instead of actual credit and debit card numbers to complete transactions, eliminating the need to store actual PAN data and ensuring greater security. Such innovative technologies are strengthening the security of new payment methods. However, risks created by malware, complex supply chains, and the insufficient maturity of regulation and anti-fraud tools need to be mitigated effectively before card-less payments become the way to pay.

## About the Author



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Gururaj Deshpande (Guru) heads Offshore Delivery for the Cards and Payments unit at Infosys and is based at the Bangalore headquarters of Infosys. With 20+ years of global IT experience under his belt, Guru has performed various roles through his career - Project and Program Management, Transition Management, Customer Account and Relationship Management, Operations, Presales, and IT Delivery Management. Guru has worked with large marquee customers globally across USA, Australia, Europe, Singapore, and South Korea . In his recent years, Guru has led IT delivery for customers in the Financial services domain across the areas of Cards, Payments, Asset Management, Investment Management, Financial Advisories, and Banks.

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