

A First Data White Paper

Four Important Trends Shaping the Future of Credit Cards

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Introduction

Despite signs of growth, the economy is still emerging from the worst recession in recent memory, a phenomenon that hit credit card issuers particularly hard. With consumers spending less (whether driven by austerity or reluctance to take on more debt) and regulatory pressures constraining fees and interest rates, credit card issuers have experienced a material impact on income. Coupled with increases in delinquencies and charge-offs, card issuers have had to weather nearly unprecedented turbulence.

POSBank's Multitude Card

Singapore's POSBank recently launched the Multitude Card, a multi-function card targeted to the youth segment. While PIN transactions are automatically allocated to debit, contactless transactions and those authorized by signature can be assigned to either the cardholder's checking account or a line of credit. In order to qualify for a Multitude Card, customers must be over 21 and already have, or apply for, a POSBank DDA account.

The challenge of trying to alter consumer behavior is a significant barrier to introducing a successful multi-function card—so by focusing on the youth market, the Multitude Card must overcome customer habits that are comparatively less entrenched, and as a result, it could be a better indicator of how the technology can thrive over the long term.

As a result, some card issuers have undertaken aggressive cost reduction programs—but while this approach has allowed most to survive the turmoil, continuing to cut costs alone is not a sustainable long-term strategy. In the face of economic uncertainty, a persistent reliance on cost-cutting could lead an organization into permanent decline if conditions do not rapidly improve. Institutions that are too heavily focused on cost-cutting may continue to reduce services, headcount, product functionality and technical innovation, eroding the tools for recovery and growth when the external environment does improve.

This leaves organizations with a dilemma: determining when to switch from an intensive focus on managing costs to investing in the foundations for growth. History shows that the sooner an organization invests, the quicker and more sustainable its recovery will be—suggesting that reacting swiftly to some of the current positive trends in economic data and investing now may be the most effective strategy. Furthermore, doing so may provide an issuer with the advantage of being first to market with new products, particularly as consumer behavior shifts and the collective demands upon card issuers change.

Investing for the future is not only desirable, but will very quickly become essential for the lending community, as consumers increasingly seek out products and issuers that can meet their emerging desires for greater control and flexibility. As such, understanding where to invest is critical, and investigating how the industry and consumer demand may change is integral to ensuring that investment will ultimately satisfy the objectives of the organization as well as the needs of its customers. It is with this in mind that we review four important opportunities for innovation and technological advancement in the credit card space.

Chase's BLUEPRINT

BLUEPRINT is a tool that allows Chase credit cardholders to choose whether to pay the minimum due, pay the balance off in a specific time frame or in specific increments, or pay the balance in full—all on an item-by-item basis. Rather than automatically applying a standard model to repayments, BLUEPRINT allows the customer to apply certain treatments to specific transactions or categories of transactions. For example, BLUEPRINT users could choose to pay off any grocery purchases in full, while opting to pay off the cost of a vacation over a 6-month period. BLUEPRINT users see how their transactions are split across the pay-off options on their monthly statements. It also includes a web application that allows consumers to move transactions from one pay-off plan to another each month, as their needs and cash availability changes.

The BLUEPRINT proposition is, in part, an innovative reaction to regulatory requirements encompassed in the Credit CARD Act of 2009, and puts enhanced capabilities to manage credit in the hands of the consumer. However, while the concept is appealing to many, the challenge lies in making the functionality accessible to everyone. Some consumers may find the process of using BLUEPRINT to be quite complex—and it furthermore requires an active approach to account management on the part of cardholders. There may also be challenges around ensuring that customers understand the costs and risks in changing the payment schedules for their borrowing.

Multi-function Cards

A common challenge faced by the global credit card industry is combating attrition and diminishing wallet share, particularly as consumers exhibit an increasing preference for debit over credit. To cope with this, credit card issuers are implementing aggressive anti-attrition, pro-retention strategies. Historically, rewards programs were the preferred mechanism for encouraging consumers to choose your card over a competitor's. As these programs decrease in perceived value for most customers (except those who use the cards heavily and pay off their balances each month), issuers are searching for another tactic to encourage customer loyalty. Consumers have multiple, often conflicting, factors to evaluate when choosing which card or type of card to use for a particular transaction (e.g. an account's balance, the cost of using the card, the size of the purchase, the willingness to incur debt). But what if a single card was able to meet more than just one need? This is the concept behind the multi-function card.

Multi-function cards have the capability of giving the holder access to multiple accounts on a single plastic; the most common multi-function card structure gives consumers the ability to access both a debit and credit account on the same card. The first multi-function card was developed and tested in Australia nearly ten years ago, though multi-function cards have not since taken hold in that market, currently representing less than 1 percent of cards in circulation there. In Brazil, Banco Bradesco, one of the country's "Big Four" banks, has offered a multi-function card for several years. And in France, Credit Agricole, France's top retail bank, has tested a number of similar products. To date, though, no lender has successfully introduced a "game-changing" multi-function card to its market.

Despite the regions having very different markets, with consumer preferences and usage of credit cards varying quite significantly, these examples have one thing in common—a relative lack of consumer engagement. This could be due, in part, to the various issuers failing to promote the card as aggressively as required to shift consumer behavior, or it could be because consumers were simply not ready to embrace such a change. However, consumers' openness to innovation has been able to overcome this inertia in some regions, particularly among younger consumers.

While multi-function capability has generally been used to enable consumers to choose between credit and debit accounts, the functionality can also allow different categories of accounts, or different modes of credit to be accessed. A multi-function card could also allow consumers to choose between a personal or business account (useful for tax purposes), or credit accounts with different repayment terms, similar, in a sense, to the BLUEPRINT tool launched by Chase in 2010 (see sidebar).

Although it has perhaps responded slowly to the opportunities created by a multi-function card, the United States—the nexus of the global credit card market—may soon be about to lead the way once again. A new card product, called MultiAccount

First Data and South Korea's SK C&C offer mobile contactless payments service

First Data has partnered with South Korea's SK C&C to offer turnkey NFC-based TSM and mobile wallet services to its US banking and merchant customer base. The two companies will deliver a complete set of mobile commerce services to First Data's financial institution and merchant customers, including a TSM (trusted service manager) platform and mobile wallet software. Credit, debit, prepaid and gift cards will all be supported.

This partnership's service alleviates the challenges lenders realize when trying to facilitate payments across multiple carriers, devices and protocols. This TSM will create a common interface between phones, banks and phone networks that will allow mobile NFC payments to be accepted in a seamless and cost-efficient manner.

and developed by Pittsburgh-based Dynamics Inc, is not only able to provide multi-functionality, but accomplishes it with a simpler interface than dual magnetic stripes. This company has employed the same miniaturization technology used by mobile handset manufacturers to increase the capabilities of smartphones (e.g. super-slim batteries, miniature diodes and thin, but robust buttons) to create a plastic card with buttons on the front that give consumers the choice of selecting a credit or debit account to pay for each purchase. The card then instantly "writes" the appropriate information to the magnetic stripe.

Already trialed by Citi, and being tested further this year, the MultiAccount card could revolutionize the concept of multi-functionality and push it from curiosity to mainstream adoption. However, it should be noted that the cost associated with issuing these types of plastics is relatively high (currently estimated by Auriemma Consulting Group as being at least 10 times more expensive than issuing a standard plastic), which may prohibit these cards from being issued to the general public or as part of a mass reissuance strategy. Due to the increased cost, it seems more likely that this technology will act as a bridge technology to mobile wallets (which will enable consumers to store account information for multiple payment methods on their phones, using mobile applications and contactless technology to make payments at the point of sale).

Mobile Payments

In addition to changing the way they use their existing cards, consumers are also increasingly reliant on non-card forms of payment. The emergence of PayPal as a force in global payments has created a bedrock upon which other non-card payment models are being erected, not the least of which is payments made via mobile phones. Smartphones have had the processing capacity to manage the complexity and volume of data required to make and manage payments for years, though their capabilities have rapidly expanded over the past 12 months with the introduction of numerous mobile-enabled payment tools (e.g. PayPal for Mobile, Square, and several private-label programs). While competition (primarily from Google's Android), is gaining momentum, it was the iPhone, or more specifically, the affiliated "apps" marketplace, that initially took advantage of the fact that many consumers essentially have a portable computer in their hands. Across a variety of handsets and operating systems, consumers are now able to check their account balances, review recent purchases, and perform more complex tasks (including using the phone as a payment mechanism), potentially allowing them to dispose of traditional card-based payment methods entirely.

Despite the omnipresence of handsets capable of managing transactions, in the more established credit markets true mobile payments have been relatively slow to evolve. Consumers are, however, using mobile technology in other related ways: moving money between accounts, depositing virtual checks and, in more advanced cases, managing their rewards and loyalty schemes. One relatively low-tech but inspired solution, Scanaroo, allows consumers to take photographs of any barcode-based

SQUARE

Square allows consumers with a compatible mobile phone (at present, an iPhone, Android or BlackBerry) to accept card payments for anything, anywhere. Once the account is set up and the user authorized to receive payments, customers can swipe cards through the small, inch-square reader that plugs into their phone's auxiliary port. With no contract and low fees (approximately 2.75 percent) it opens up the option of accepting card payments from friends, family and colleagues. The app even allows the acceptance of card-not-present payments, for a slightly larger transaction fee.

Despite clear benefits to the subscriber, the overall market impact that the Square product could have in increasing the ease and convenience of making and accepting credit card payments, the net effect is surely positive.

loyalty cards and store them in an iPhone application, essentially allowing consumers to carry a number of loyalty cards on their phone. Perhaps the most prominent mobile payment solution introduced recently comes from Starbucks, which has released an iPhone app that allows customers to pay using their phones (once they have funded the affiliated prepaid account). However, while there are many examples of how phones may one day replace cards in established credit card markets, the vast majority of consumers still carry plastic credit cards.

Due to the geographical challenges persisting throughout much of Africa, most residents have limited access to formal banking services, and with the industry remaining largely unregulated, fees and charges for everyday banking are much higher in Africa than anywhere else in the world. For example, in Kenya, despite relatively well-structured financial markets and an appetite on the part of the government to regulate and control banking, only 10 percent of the 40 million residents has a bank account. In contrast, mobile phone ownership reached 77 percent in 2009. (*Source: World Bank's Kenya Economic Update, December 2009*).

One company to take advantage of this is M-pesa, Kenya's leading mobile payments service, which boasts nearly 30 percent of the country's population as registered users. Customers pay cash or checks into their M-pesa accounts at any approved agent (of which there are 20,000 in Kenya, compared to less than 1,500 bank branches), receiving an SMS message advising them that the money has been deposited. They can then transfer funds by forwarding an M-pesa code to a friend, family member or business—who can subsequently take their mobile phones to any M-pesa agent to withdraw the cash. In Kenya, M-pesa has nearly 12 million customers making over \$6.2 billion worth of transfers and payments per year. Fees and charges do apply, but are typically much lower than those associated with formal bank accounts in Africa—and are charged at the point of deposit rather than the point of transfer or payment, meaning that receiving and "cashing" a payment is free.

Closer to home there have also been some key advances in hardware development, most notably Square's launch of a miniature magnetic stripe reader that attaches to a mobile phone, allowing anyone to accept card payments—without a full card terminal, web portal or merchant account (see sidebar).

The general consensus is that mobile phones will be the de facto platform for financial services innovation for the near future. And beyond using these devices to facilitate payments, it is expected that mobile devices will be the preferred (and most effective) channel to deliver customer service messages (e.g. fraud alerts, payment reminders) and marketing offers going forward. Retailers and financial institutions alike are also predicted to leverage the ability to determine a customer's current geographic location to enhance account management, marketing and sales efforts.

First Data & Tyfone

First Data has formed an alliance with Tyfone (a mobile financial services platform developer) to develop a commercial mobile wallet offering for financial services companies and/or merchants. Tyfone has the capability to place the information typically held on a contactless (NFC) enabled payment card onto a MicroSD card. These cards give consumers the ability to hold payment account data alongside of other information (e.g. documents, music, etc.). Further, this technology allows consumers to turn their phones into NFC payments devices (provided they have MicroSD slots), without involvement from the phone manufacturer or wireless carrier. To date, the interactions with these additional parties has caused the delay of the introduction of this payment mechanism; First Data's alliance gives issuers a streamlined 'work-around' to a problem lenders have faced while developing this technology.

Contactless Cards

Today, contactless cards (which enable a customer to wave or tap a card instead of swiping it) remain relatively underused, and although both the number of transactions and customers with such a card are growing, overall volumes continue to be low. For example, in the United States and United Kingdom, less than 5 percent of contactless cardholders has actually made a contactless purchase. (*Source: Auriemma Consulting Group*) Indeed, the success of contactless cards has been mixed to-date, with many customers seemingly indifferent about using the contactless option at all, and others embracing the concept wholeheartedly and using it wherever possible. One of the UK's leading credit card issuers, Barclaycard, initially launched its contactless capability in a highly-promoted branded product, the One Pulse card. The One Pulse card allows customers to not only make contactless transactions at retailers with contactless readers, but is also compatible with London Transport's "Oyster" scheme, allowing customers to access the capital's transportation network without a ticket or pass (the cost of the journey being charged, via the contactless POS, to the cardholder's One Pulse credit card account).

This product has gained a core of enthusiastic users, who benefit from the full proposition and no longer carry a separate subway pass and credit card—instead just using their One Pulse cards. This group of customers has adopted the card as its primary payment tool and, as such, has been using the card and making contactless transactions more frequently. In addition, following the success of One Pulse, Barclaycard has also included contactless capability on many of its other cards. However, for customers living in areas where contactless penetration is much lower, and where some of the benefits of One Pulse are less valuable (the Oyster scheme is restricted to London) the volume of contactless transactions has remained low. Consumers in these markets assign limited importance to contactless transaction functionality and are generally unable to articulate the benefits of using a contactless card.

It remains unclear if the lack of widespread interest in these cards is due to an ingrained preference for traditional payment mechanisms or to an informed view that there is little benefit (or too great of a risk) to using contactless cards. There has recently been some coverage of the fraud risk a contactless card represents. With RFID cards responsive within a field of approximately 40 cubic inches, it is possible to capture a holder's card details without their knowledge by using a modified contactless terminal—the primary challenge is getting the transmitter within that space. Coupled with a mobile device, it is possible that a customer's card details could be captured and sent to a third party within seconds—a potentially serious fraud threat. As a result, there is a growing market for "RFID-proof" wallets and card carriers, as well as contactless card technologies with advanced security features.

Although contactless cards are continuing to become more prevalent (at least in terms of numbers if not usage) it could be argued they are a means to an end. It is the uniting of contactless technology with mobile phones that will really lay the foundation

STAR CertiFlash

First Data's STAR® Network is the second largest PIN-based debit point-of-sale network in the U.S. in terms of both merchant outlets and transactions. Currently, all U.S. PIN-based transactions are initiated by swiping a magnetic stripe card through a POS terminal. Using a new solution called STAR CertiFlash, STAR becomes the first PIN-based network to promote proximity transactions initiated by contactless chips.

Levels of security include tying payments to a one-time card number generated through cryptographic keys, a unique key assigned to each chip, which is used with other transaction data to create a dynamic cryptogram that identifies each transaction and validates it as coming from that particular chip, an account transaction counter, which adds a number to each successive payment to guard against both attempts to replay transactions and brute force attacks, and integration with existing fraud mitigation scoring tools used by STAR debit account processing clients.

Issuers will be able to offer cards, fobs, stickers, and mobile phones with the CertiFlash application. The technology for one-time card numbers on a contactless chip is owned by First Data, which developed the CertiFlash application to coexist on the chip with contactless applications from Visa, MasterCard, American Express, and Discover. Furthermore, the CertiFlash technology is also intended to accommodate the eventual migration of both credit and debit payment cards to EMV Chip+PIN standards.

for rapid and sustainable growth. In an effort to provide customers with that functionality sooner, some issuers have been embedding those same RFID antennas into stickers—enabling consumers to then turn any item into a contactless credit card by applying the sticker. These deployments will go some way toward helping organizations understand the long-term value of developing contactless payment solutions, whether as a card, sticker or some other form factor. They may also allow the payments community to begin to influence consumer behavior and address some of the public's concerns regarding security and identity theft more effectively.

Should issuers be successful in overcoming consumer reluctance and/or indifference to using contactless technologies, it could pave the way for mobile phones to replace cards in their entirety, just as we have seen in Africa. Once contactless terminals are as ubiquitous as magnetic stripe readers, and stickers or integrated solutions that allow a mobile phone to become a payment device are commonplace, there is little argument for carrying cards at all.

Fraud Protection

Despite issuers and solutions providers working together to deploy progressively more advanced security measures, as well as the international success of the EMV "chip + PIN" initiative, fraud remains a material risk. While RFID cards are a potential weakness that is at least being addressed by the card industry, traditional magnetic stripe skimming and card-not-present fraud remain prevalent. However, various recent innovations are beginning to address that gap more effectively.

Originating in Africa as a mechanism for authorizing money transmissions, Visa's Emue card has "on-board" PIN protection, comprising a small display and "rolling codes" similar to on a VPN token. Another product with the same objective is the Hidden card created by Dynamics Inc., which features five buttons on its face, with a portion of the cardholder's account number hidden by a paper-thin flexible display. A cardholder uses the buttons to enter a personal code in order to "unlock" and display the hidden numbers, activating the card for use. Consequently, should a fraudster gain physical possession of the plastic, they still do not have the ability to see the entire credit card number or use the card—rendering the card worthless.

While these technologies are certainly compelling from a fraud prevention perspective, advanced plastics do have one, very significant obstacle: cost. Although this will decline as the technology becomes cheaper to manufacture, many business cases will not be able to accommodate the higher physical costs of such cards (which has been estimated to be at least \$10 per unit, compared to less than \$1 for a typical card)—which may be passed on to the customer as a "card fee" (if customers opt-in to receive the product) or as an annual fee for the account generally. Either way, this challenge could delay the pace of change.

In addition, advanced fraud protection solutions like these often require consumers to change their existing, ingrained behavior—a challenge that has in the past

undermined other initiatives to improve security, even when supported by the largest and most influential organizations in the business. In recent years, both Visa and MasterCard have developed online fraud prevention tools (Verified by Visa and Mastercard SecureCode). These solutions both require customers to register their card details and set a PIN or password that must be entered to authorize an online transaction. Consumer reception of both tools has been somewhat mixed, primarily because it slows down customers at the checkout and requires them to remember an additional password. While these solutions offer an additional layer of protection (for merchants, consumers and issuers), they can disrupt the customer experience and can result in an adverse reaction from cardholders.

Conclusion

It appears likely that the future of the credit card market will be free of physical cards—requiring a true convergence of the four trends examined in this paper. How long this will take will be determined in part by issuers' willingness to embrace the concepts discussed here and invest in long-term innovation opportunities, but also by the unpredictable evolution of consumer preferences. With that in mind, the key initiative of the credit card industry over the next five years should be to build the foundations for a cardless future, including addressing any security concerns inherent in contactless technology, working with mobile operators and others outside the industry to create a sustainable mobile payment ecosystem, and continuing to develop innovative new payment mechanisms. Regardless of the scope of the innovation, any successful changes must reconcile ever-changing consumer expectations with deeply entrenched behaviors in order to produce as smooth and as graceful of a transition as possible.



The Global Leader in Electronic Commerce

First Data powers the global economy by making it easy, fast and secure for people and businesses around the world to buy goods and services using virtually any form of payment. Serving millions of merchant locations and thousands of card issuers, we have the expertise and insight to help you accelerate your business. Put our intelligence to work for you.

About the Author

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Prior to Phil's position in the Financial Services product area, he served in a variety of roles within First Data over a career spanning 35 years. He started his First Data career as an account representative, managing client relationships for some of the industries' pioneer credit card issuers. In the subsequent years, he managed back-office operations (settlement and chargebacks), client services, contract renewals and business development (domestic and international).

Phil is a Magna Cum Laude graduate, Phi Beta Kappa, of the University Of South Dakota with a bachelor of science degree in mathematics, and minors in economics and business administration.

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