

# Trends in credit cards payment due to social media

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**Abstract:** The aim of this research article is to illustrate how financial payment system like credit card has been transformed due to intervention of social media like Twitter. The paper investigates how Twitter has developed new payment transaction service called Square. It also demonstrates how position of credit cards has been transformed in this modern technological era.

**Keywords:** Plastic payment card, History, Twitter, Square. iTunes, Paypal.

## 1. INTRODUCTION:

Credit card is the "...plastic card, with coded information on a magnetic strip or microchip, is offered at the point of sale and the purchase is charged to the credit card account. The method is exactly the same as with a debit card. A statement is sent monthly with a given time to pay, usually two or three weeks. The consumer has the choice of paying the balance in full or paying only part and paying the rest later. It is flexible, in that the card holders can choose how much to borrow (with a prearranged limit) and how quickly to repay."<sup>1</sup>

Credit cards are used to make payments between customers and merchants. In order to be a part in credit card system, one must become a "card holder" – that is; he or she must approach a "card issuing" bank to open an account on his or her behalf. Once he or she obtains the plastic card, he or she enjoys unlimited spending power. In many cases, the card issuing bank will assign a "credit limit" to the card holder based on the examination of his or her financial creditworthiness. Exhibit 1 depicts the flow of information, when a transaction is made via credit card.

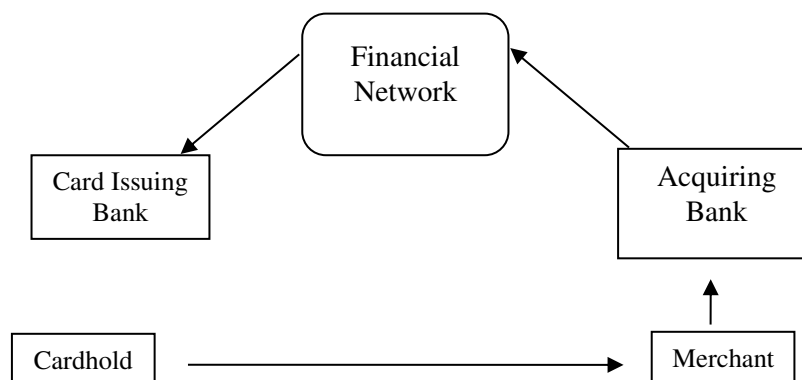


Exhibit 1: Information flow in a credit card transaction.

Source-D. O'Mahony, Electronic Payment, in H. Bidgoli (Ed.), The Internet Encyclopedia, 1 (2004), Figure-2, 637.

The phenomenon of the universal credit card is an aspect of the easy personal credit of modern times. Actively promoted by such giant firms as Diners Club, Inc. (the pioneer in the universal credit card field, 1950), American Express Company, and Hilton Credit Corporation (both of which entered the field in 1959), universal credit cards are responsible for a dynamic and still growing segment of non-installment consumer credit.<sup>2</sup> In addition to the travel and entertainment (T&E) cards, bank cards have become a dynamic part of the credit card industry. In France, the banks now issue credit cards with chips.

Plastic payment cards became a global currency. Since inception, much has happened in the second half of the last century to make plastic ubiquitous. In 1970, a bit less than a generation after the industry's Manhattan birth, only 16 percent of households had payment cards, and...20 percent of retailers accepted them. With few households with cards and few places to use them, the average spending on plastic per household (across all households) was only a little more than \$47 per month (about 1.5 percent of the average monthly household income). Today, most large retailers, supermarkets, and mail-order firms take plastic, along with a rapidly increasing number of fast-food restaurants, health-care providers and other businesses. And payment cards are the main currency for Internet transactions. Almost everything on Amazon.com and eBay is bought with digits taken from a payment card, either directly or through an intermediary such as PayPal that allows individuals to take credit cards. Most consumers make

at least some purchases with a plastic card. And in 2002...average households charged \$1,280 per month on payment cards (about 25 percent of their average monthly household income).<sup>3</sup>

New York, NY-based Siemens Corporation issued 2,500 employees a Visa corporate chip card (a credit card to be used for company travel) that automatically processes that negotiated rates at eleven Sheraton hotels, and four National Car Rental agencies. Siemens introduced the chip-based *corporate card* because it believed it was losing money from travel agents and employees who did not always claim the discounts that Siemens had already negotiated with its travel and hospitality vendors.<sup>4</sup>

## 2. HISTORY OF CREDIT CARDS:

The American Express Corporation (AMEX) is the oldest signature-based payment card company. AMEX made a dramatic impact on the awareness and vitality of smart cards in the United States. It was started in 1850 as an express company—sort of a cross between bicycle couriers and United Parcel Service. In 1891, it introduced its first hit product—the travelers' check. Its first charge card, the American Express Green Card, was launched in 1958. It started a credit card named *Optima* in the late 1980s. Initially a case study in poor planning, *Optima* developed into a solid product by the mid-1990s. The AMEX's most popular card American Express Blue Card was launched in 1999.

AMEX Blue Card was the first significant U.S. smart card—the first general-purpose payment card with a computer chip on the card. Blue Card's microchip contains a VeriSign X.509 digital certificate, and is supported by an electronic wallet existing on the server. The digital ID stored in the Blue smart card facilitates cardholder verification to AMEX web servers for Web purchases. The electronic wallet holds much information like the cardholder's account number, the expiry date, and other personal detail of the cardholder. The electronic wallet automatically fills in the purchase request information, when the cardholder selects a credit card for a purchase. On approval of the transaction, the card provides a transaction receipt. As AMEX Blue credit card supports an on-line wallet, it encourages cardholder to put whatever cards (e.g., MasterCard or Visa) he feels is appropriate in the wallet. The software firewalls protect the confidential account information contained in the non-AMEX cards. Relying on the image of the chip, Blue was advertised as a "high-tech" card "custom designed for the 21<sup>st</sup> century consumer." In reality, however, Blue offered no tangible benefits unless used with a special chip reader, the card also had a traditional magnetic stripe on the back. Nevertheless, whether it was the card's high-tech imagery or attractive pricing, there were 2.2 million Blue Cards in the hands of U.S. consumers just over a year after its launch.<sup>5</sup>

Bank of America, one of the credit card pioneers and currently the seventh-largest credit and charge card issuer, is now the leading debit card issuer in the United States. It has twenty-one million debit cards, with seventeen million of those offering signature debit functionality on the Visa system. Its prominence is partly a function of being the second largest commercial bank in the nation. But it is also a result of Bank of America's decision in 1994 to make a big push in debit generally and its decision to issue debit cards to 90 percent of its checking account customers, rather than the 70 percent that is more typical in the industry. Bank of America also offers its customers the choice of debit cards with frequent flyer miles from U.S., Airways, Alaska Airlines, or AmericaWest.<sup>6</sup>

MasterCard was started at the same time as Visa card. Cards with the orange-and-red MasterCard balls are second only to Visa cards in abundance. Visa overtook MasterCard with respect to the number of cards issued in 1978. MasterCard reversed its relative decline in 1992, after embracing novel card programs run by non-financial giants like AT&T. Discover is the newest among the major brands of signature-based payment cards. In 1985, Sears, Roebuck and Co. introduced the Discover Card. This orange-on-black card became one of the greatest business stories of the 1980s—helped by Sears's seventy-plus experience with a store card and its decision to offer the card to twenty-five million creditworthy Sears cardholders. By 1991, the Discover Card was accepted by more merchants than the American Express card. In 1993, Sears spun off its investment and credit arm into Dean Witter, Discover and Co., which later merged with Morgan Stanley, and the card continued to prosper. Though its growth slowed substantially after its initial success, Discover was still the fifth-largest issuer of credit cards in the United States in 2002. (Sears is no longer even in the store card business: it sold its card operations to Citigroup in 2003)...Citigroup was the second-largest issuer with 14 percent and the largest of the co-operative issuers. In 2002, it had forty-five million MasterCards and thirty million Visa credit cards in circulation in the United States. It shifted allegiance toward MasterCard from Visa in 1998. (In addition to being a MasterCard and Visa issuer, Citigroup also owns two other card systems: Diners Club and Carte Blanche)...Citibank, part of Citigroup, was the third-largest commercial bank in the United States with assets of more than \$515 billion in early 2003. Like most MasterCard and Visa members, it provides checking account services to consumers along with many other depository and lending services. Payment cards accounted for about 20 percent of Citigroup's overall profits in 2002—almost as much as its retail banking operations.<sup>7</sup>

American used credit cards to purchase almost \$2.1 trillion goods and services in 2010, up \$122 billion from 2009, when the recession caused a dip.<sup>8</sup> Exhibit 2 depicts the top ten credit and charge issuers, ranked by transaction volume in 2002.

## Top ten credit and charge card issuers, ranked by gross volume, 2002

Issuer	Volume (\$ billions)	Share of industry volume
1 American Express	234	16
2 Citigroup	204	14
3 Bank One	155	11
4 MBNA America	131	9
5 Discover	94	7
6 J.P. Morgan Chase	87	6
7 Bank of America	62	4
8 Capital One Financial	61	4
9 U.S. Bancorp	45	3
10 Household	37	3
<i>Total (top ten)</i>	1,110	78
<i>Total (all issuers)</i>	1,432	100

Note: Numbers may not add up to totals due to rounding.

Source: *The Nilson Report* (various 2003 issues).

Exhibit: 2

Source- D. S. Evans and R. Schmalensee, *Paying with Plastic: The Digital Revolution in Buying and Borrowing*, 2<sup>nd</sup> ed. (2005), Table-1.1, 16.

Today, non-banks like First Data and GE Capital stand behind more credit cards than banks, and those two and First USA, FiServ, NaBanco, Litle and EDS process more credit card transactions than any bank except Citicorp. The contribution plastic money swung up as more people are using plastic instead of cash, even, for purchasing small items such as coffee and sandwiches.<sup>9</sup> In most developed countries, this process is quite routine, customers often bombarded by advertising and direct marketing from different companies offering credit card facilities. In other countries, credit cards sometime hard to obtain, and in many cases, strict restrictions are placed on their users. In developing countries, the overall financial infrastructure is poor. Perhaps, checks are the most popular form of basic payment instrument that bank can offer. In such nations, the usage of payment cards is confined to particular areas such as gas or petrol station or they are not issued at all.

Credit cards are important way of lending money. The major international brand names are MasterCard, Visa and JCB (Japanese branding organization). D. O'Mahony (2004)<sup>10</sup> in his article titled "Electronic Payment" stated that "...1 billion Visa cards...have been issued are spread throughout the globe. It can be seen that the area covered by Visa's Central Europe, Middle East and Africa division is responsible for just 2% of these. Often unusual local factors lead to a payments situation that is anomalous compared with similar countries. Turkey, for example, has embraced the use of payment cards to the almost total exclusion of other forms of payment." The geographical distribution of Visa cards is illustrated in Exhibit 3.

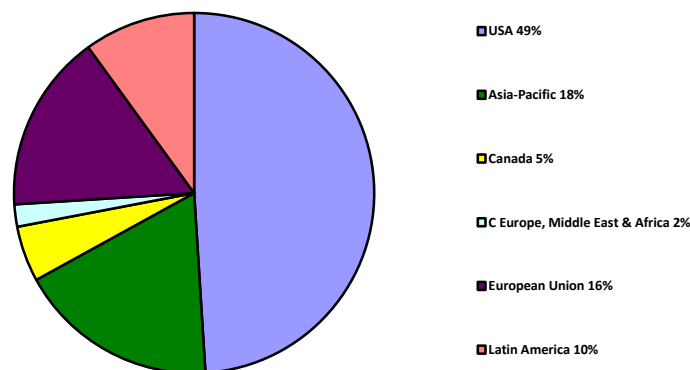
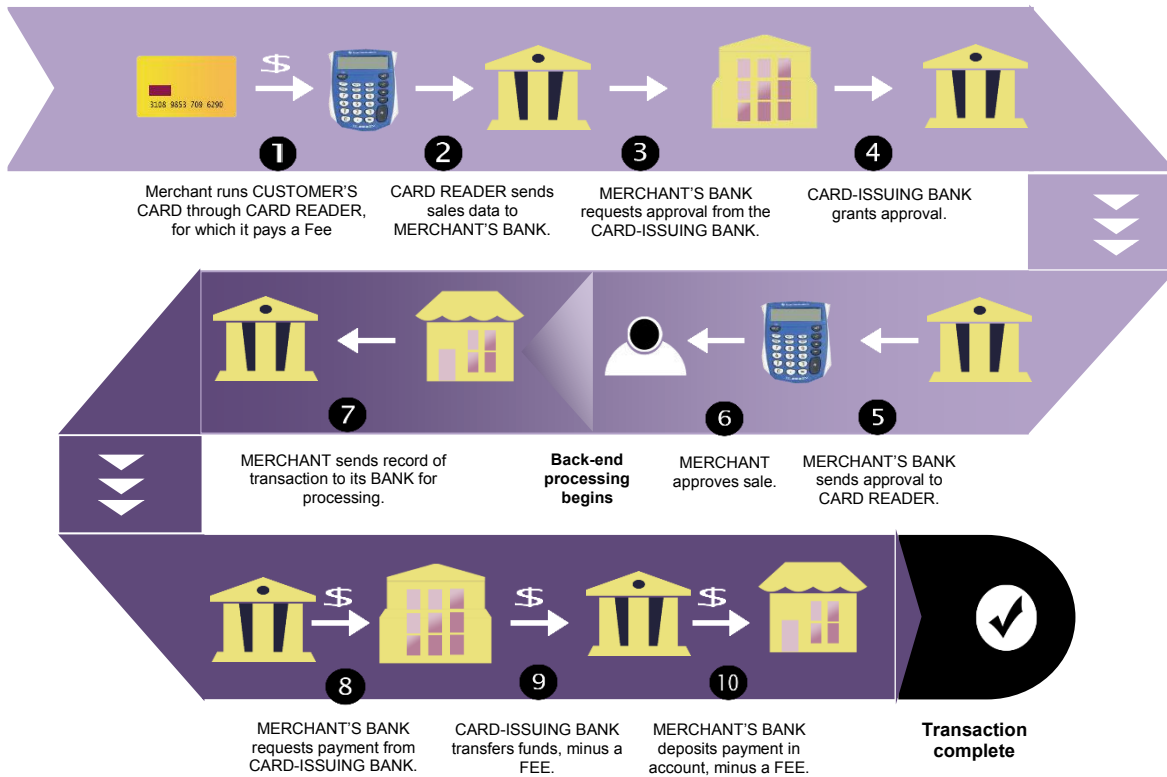


Exhibit 3: Geographical distribution of VISA Cards issued around the world in December 1999.

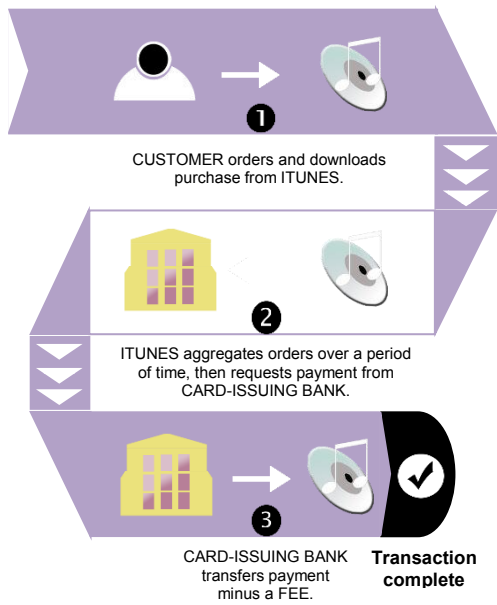
Source- D. O'Mahony, *Electronic Payment*, in H. Bidgoli (Ed.), *The Internet Encyclopedia*, 1 (2004), Figure-3, pp-638.

One of the interesting usages of credit card is 'mail order/telephone order' (MOTO) transaction. Under this process, merchants are permitted to accept orders by post or over the telephone with the customer simply quoting the details of credit card verbally. This procedure is also referred to as "card not present"—under which the merchants are unable to tell whether the customer possess his or her card or not. In this case merchants can't verify their clients' signatures.

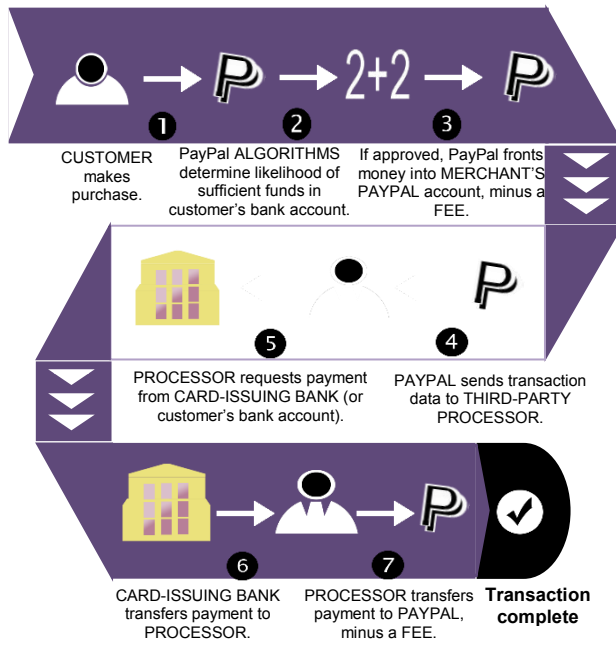
Daniel Roth<sup>11</sup> in his article named “The Fortune of Money: Cash, Checks, and Credit Cards- who needs them? The new global currency is flexible, frictionless, and (almost) free” described 3 ways to move money in the market: Credit cards, iTunes, and PayPal. Exhibit 4 depicts transaction process involved via Credit Cards, iTunes and PayPal respectively.



Credit Cards-The swipe is just the beginning. The actual transfer of money from a buyer to a vendor can take days and cost up to 3.5 percent of the sale price.



iTunes-Apple’s online store cuts credit card fees and friction by bundling a customer’s purchases over time and processing them as one transaction.



PayPal-Merchants don’t have to wait to get their money; PayPal fronts them the funds immediately, then waits to get reimbursed by the customer’s bank.

Exhibit 4

Source- Roth, Daniel: “The Fortune of Money: Cash, Checks, and Credit Cards- who needs them? The new global currency is flexible, frictionless, and (almost) free” in: Chris, Anderson (editor-in-chief): *Wired* (March, 2010), pp-74-75.

### 3. INNOVATION IN CREDIT CARDS:

Since their introduction, credit cards have had a seductive hold over the psyches of American consumers. As symbols of status and accomplishment, lines of credit have had an empowering effect, leading cardholders to take overly optimistic views of their purchasing power. But as a result of the recession, these fragile illusions of wealth have come crashing down. Now, in the aftermath of sweeping legislative reform, Americans' complicated relationship with credit has reached a historic crossroads...February was supposed to mark a victory for consumer rights. While part of Congress's Credit CARD Act of 2009 kicked in the last year, the legislation's most critical provisions, which include restrictions on rate increases and over-the-limit fees, had a start date of February 22.<sup>12</sup>

In Christmas of 2008, Jack Dorsey, the creator and chairman of Twitter, was visiting his parents in St. Louis. At that time, he was at loose ends. Twitter had five million users, but in October he had been replaced as chief executive by his better-known cofounder Evan Williams, who, rich from the sale of an earlier company to Google, had funded the original development of the communications network. Dorsey was wondering what he should do next. He felt it should be something big and complex.<sup>13</sup> In St. Louis, he met Jim McKelvey, a serial entrepreneur. The moment Dorsey choose to start a new venture, the economy was in recession and McKelvey was in semiretirement from technology, but still he thought it was the best time to begin a new project.

Dorsey's latest venture 'Square' aims to upend the banking industry, which enables every smartphone to become a credit card reader, eventually replacing the plastic money. Square is the child of two trends, one technological and the other social: the proliferation of networked mobile technologies and decline of cash in favor of payment cards. Dorsey is trying to bring Twitter-like simplicity to the complex world of credit card processing. He developed a small, rectangular card swiper (square in shape) that plugs into the audio jack of mobile devices; hence, no bulky credit card terminal is required. He also provides super simple software that helps business organizations to track sales, taxes, and other financial data. His real innovation in this venture is that, Square provides facility for anyone to accept credit cards. Creating an account to accept payment is a little bit complicated. User has to download an app from the Android Market or Apple App Store to an iPhone, iPad, iPod Touch, or Droid device. He must read the terms of Square's service; type in name, address, contact number, and Social Security number; and answer a series of personal question for identity verification. After two days, a free Square arrives in mail, but before that, he can take payment by manually typing in a credit card's number, security code, the card holder's zip code, and expiration date. An email is sent from the service company for user's bank routing and account number, which will posted to a secure Web page.

Through Square model, card reader can fit into user's phone. The user slides the card via a magnetic card reader, launches an app, and taps a number. The app turns phone into an encrypted file, then phone sent the file to Square's back-end servers that transmits transaction via global payment network, and the card owner sign on the phone's touchscreen to perform the transaction process. Exhibit 5 depicts the working procedure of a Square model.



A user demonstrates how Square works: The card reader fits into the phone's audio jack. The vendor slides the card through the magnetic reader, the card holder provides a signature on the phone's touchscreen, and the transaction is processed in less than 60 seconds [if the wireless connection is good].

Exhibit 5

Source- L. R. Michal, A Twitter Guy Takes on Banks, in J. Huey (Ed.), *Fortune*, 163 (2), (February 7, 2011), 38.

Keith Rabois, Square's chief operating officer, who formerly directed business development in PayPal and LinkedIn in an interview stated that "The way the payments industry works is obfuscation. Everyone teases you with low rates like [a] 1.7 percent [charge on transactions], but the real rates are much higher." Accepting payment with a debit card might incur the lowest rate for the merchant; a charge card such as American Express might demand a 2.79 percent fee on transactions; but a credit card, which is asking the merchants to subsidize its rewards program, might charge 4 percent. Square's innovative payment system eliminates all of this: there's no credit check, no hardware costs, and no fixed costs. For any transaction, Square charges 2.75 percent plus 15 cents, a blended fee from which it repays the card companies and earns its profit.<sup>14</sup>

Unlike banks, Square doesn't ask its customer to set up a merchant account, pay monthly fees, or sign a multiyear contract. Its pricing structure – Square charges vendors 2.75% plus 15¢ per transaction – isn't the cheapest deal in town, but it may be the most straightforward. As a result, the company, which launched two years ago, says it

is signing up about 50,000 small businesses each month, including many entrepreneurs who don't have a fixed location. (Think babysitters, food trucks, flea market vendors.)<sup>15</sup>

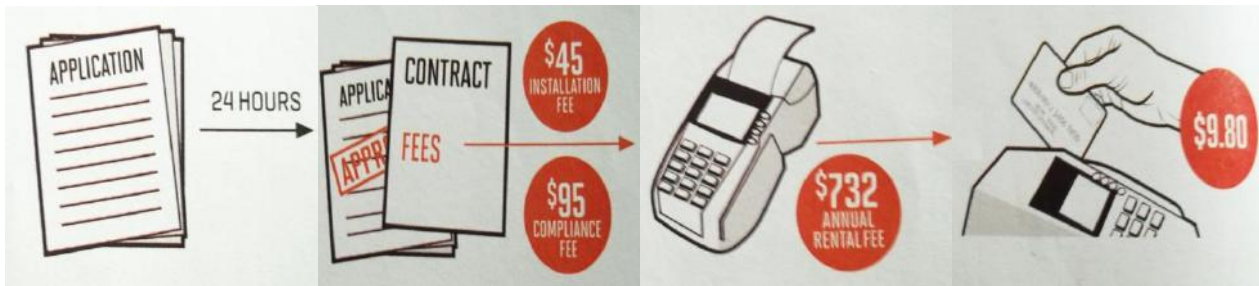
Already, Square appeals to a large number of people, who are unusually passionate about what is, after all, a financial service. Fifty thousand people enrolled in a pilot program, which began shortly after Dorsey announced the company on Twitter. From the system's official launch last October through December, 100,000 activated accounts. In January, 65,000 signed up. Rabois says that company hopes to process \$1 billion in transactions in 2011. (It would be a stretch: today, it is processing \$2 million to \$10 million per week.)<sup>16</sup>

Exhibit 6 depicts the way Square model of payment is simpler and convenient to users in comparison to the traditional model of card reader.

## *Hip to Be Square*

SMALL BUSINESSES ARE FANS OF SQUARE'S SIMPLICITY. HERE'S HOW IT STACKS UP TO OTHER CARD READERS.

### TRADITIONAL MODEL



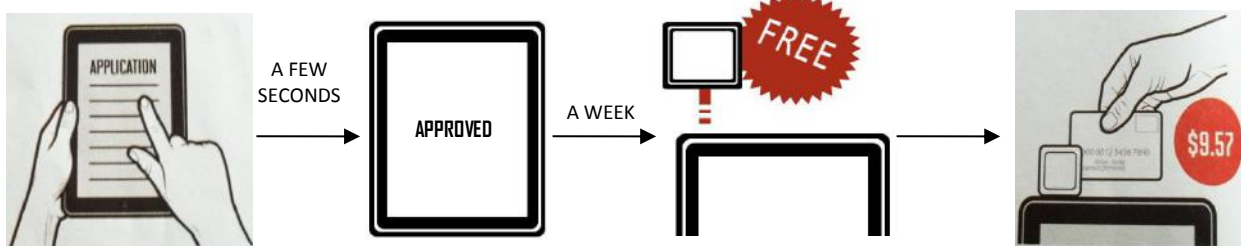
Tom's Taco Stand decides it wants to accept credit cards, so Tom applies for a merchant account at his local bank.

A day later the bank accepts Tom's application. Tom agrees to pay one-time installation and annual compliance fees.

The bank leases or sells Tom a credit card reader that wirelessly transmits card numbers for approval.

Tom pays his bank a 2% cut of a credit card sale he makes. For a \$10 taco plate purchased with plastic, he pockets \$9.80.

### SQUARE MODEL



Tom decides to try Square. He downloads the Square app to his phone or tablet and answers a few basic questions online.

A minute later Square approves Tom's account. He does not pay ongoing fees.

Within a week Tom's Square reader arrives in the mail. He is able to plug it into his device and start accepting plastic.

Tom pays Square 2.75% plus 15¢ for a credit card sale. A \$10 plate yields Tom \$9.57.

Exhibit

Source- L. R. Michal, A Twitter Guy Takes on Banks, in J. Huey (Ed.), *Fortune*, 163 (2), (February 7, 2011), 40.

Rabois says the company's first likely customers are around 27 million American businesses that cannot accept payment with cards. Additionally, there are 33 million Americans who sell goods and services occasionally, taking payment in person in cash or checks. There are seven million American business owners who, like Muir, already have a credit card terminal but want a better way to process mobile payments. Finally, Square wants to begin offering payment systems outside North America in 2012.<sup>17</sup>

Square introduced an innovative way to perform financial transaction via modern mobile computing devices. By plugging a magnetic reader into the audio jack of a modern phone, one can smartly process card payments instead of cash. But Square is not really a hardware company. The company assumes that soon more phones will appear in market, with in-built card-readers or new technologies may eliminate readers totally.

A different kind of endorsement has come in the form of large corporations joining the mobile payment business. VeriFone has launched Payware Mobile, Intuit has launched GoPayment, and TF Payments has launched FocusPay: all allow users to accept credit cards by fixing magnetic card readers to smart phones. These large companies have observed the same general trends that sired Square, and they know that global media payments totaled \$79 billion in 2010; the sum is expected to grow to almost \$119 billion in 2011.<sup>18</sup>

Despite of many advantages, Square experienced a number of challenges. First, like any other innovative ventures, Square's heritage is in great challenge. Dorsey's friend Jim McKelvey, a glass blower and inventor, has enlisted the name of Robert Morley, in developing the card reader. In late 2008, Dorsey and McKelvey started working on Square model. McKelvey was already exploring various ways he could use a smartphone to sell his creative works. In June 2009, Morley, a professor at Washington University in St. Louis, filed a patent for the device, listing himself as the sole inventor. On January 2011, Square filed a lawsuit against Robert Morley and asked McKelvey to be listed as co-inventor on the patent. Apart from patent dispute, the users who tried to get onto the service suffered from shortages of hardware and credit risk. Larger payment companies, such as PayPal, have spent years fine-tuning their underwriting processes. Square initially planned to minimize risk by capping daily credit card transactions at \$100. But the company quickly realized that wouldn't work for users like photographers and wedding planners, who sometimes need to ring up much larger tickets in one day.<sup>19</sup>

#### 4. CONCLUSION:

Credit cards play an important role in today's economy. We are moving towards a cashless society. Various modes of wireless and alternative payment channels are evolving. Most of the young generation are using mobile commerce for their financial transactions. With the growth of smart phones, mobile phones are used most and more for secure banking transactions. Social media such as Facebook and Twitter are creating their own payment systems for their social network and other linked external sites. Facebook is embracing system like Spare Change, which permits customers to get digital currencies during their small term expenditure. Similarly Twitter users have Twitpay, which allow for micropayment service. Payment service like Square will add another innovative mode of payment system for social media clients.

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