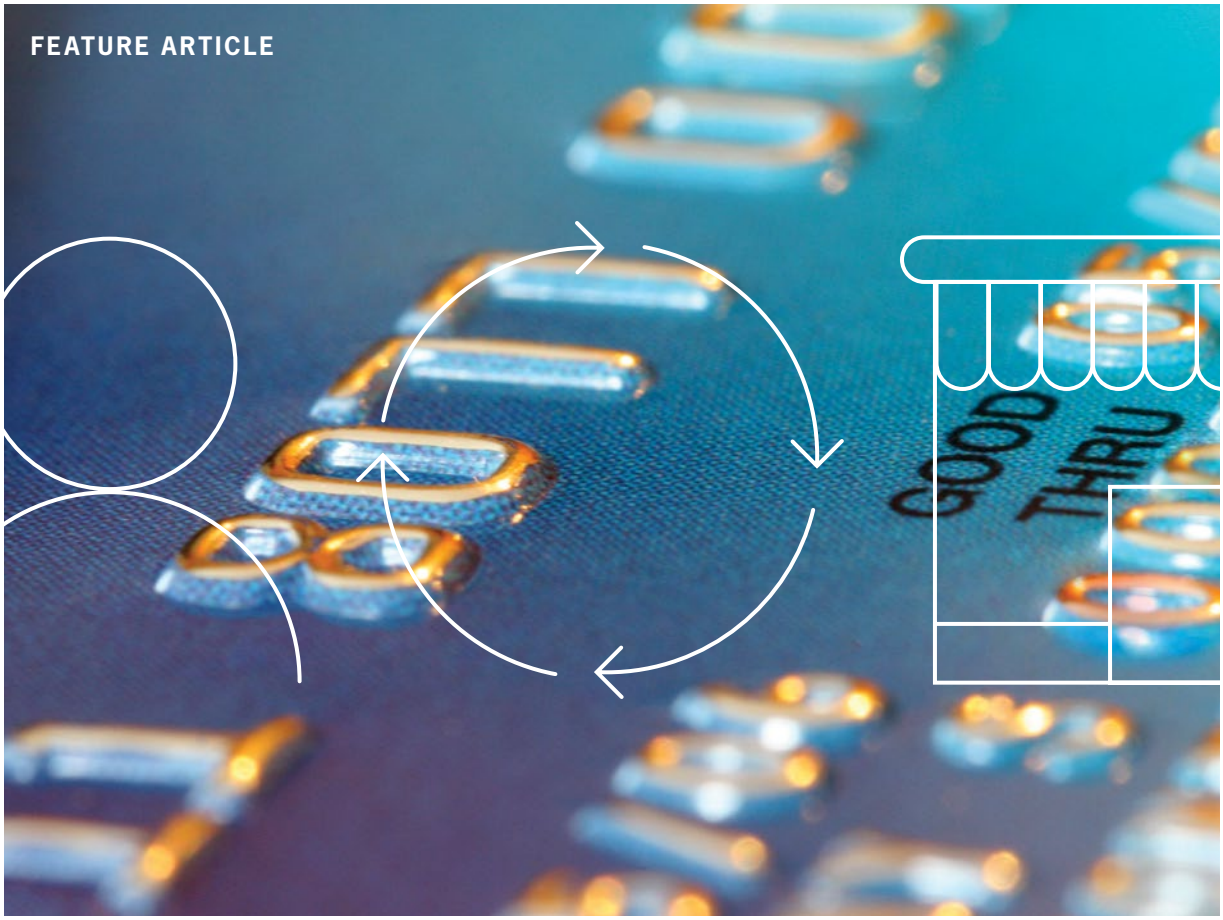


Payments: The Quiet Revolution

BY DAN NOYD

Payments is one of the key segments of the financial industry and accounts for a significant portion of investment in the Financial Technology (FinTech) sector. Over the past five years the industry has begun to dramatically transform.

WHAT IS IT?

Payment processing (a.k.a. payments) is the term used to describe how credit, debit, check, fixed value, ACH, and money order transactions are transferred between consumers and merchants. The legacy payments industry is mature (it's been around since the 1960s) in the U.S., but there are several high-growth international markets that have yet to be fully tapped. Additionally, while the core technology/process that supports the payments industry is a well-oiled machine, there is a constant stream of new payment technologies that promise to improve the machine and new non-payments companies looking to throw their hats in the ring. Perhaps most significantly, there is now a sizeable group of upstarts that are threatening to disrupt the industry entirely.

Before we get into the specifics, let's start with an overview of how payments works.

ROLES

There are several different roles in the process of money getting from the consumer to the merchant:

CONSUMERS – people or companies buying the goods or services (e.g., me, you, etc.)

MERCHANTS – people or companies selling the goods or services (e.g., Verizon, Joe's Hamburgers, etc.)

PAYMENT PROCESSORS – companies that provide the ability for merchants to accept credit, debit, check, or money order transactions (e.g., FirstData, Global Payments, Bank of America, Chase, etc.)

ISSUERS – financial services companies that maintain an account on behalf of the consumer (e.g., Chase, Bank of America, Wells Fargo, etc.)

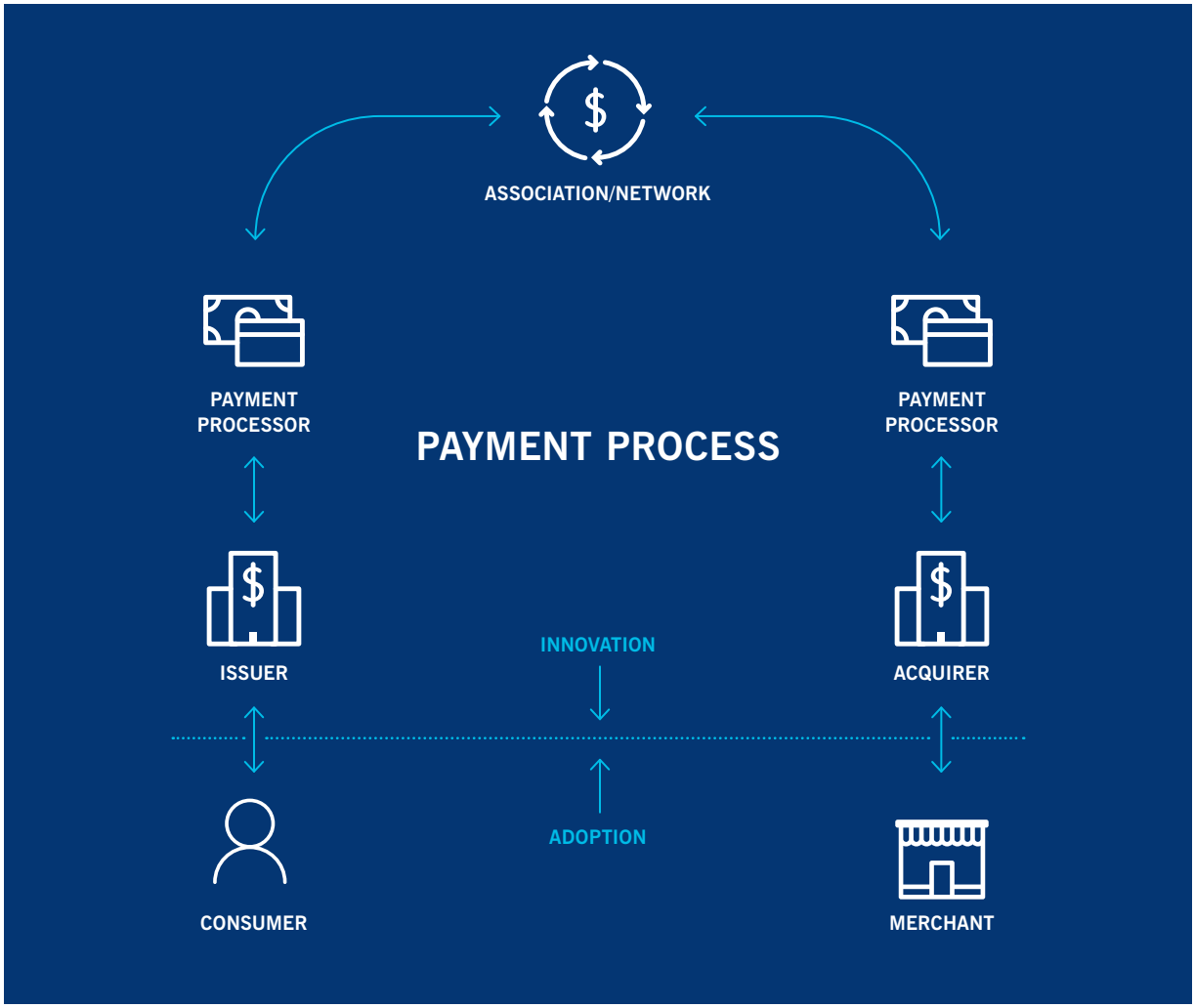
ACQUIRERS (a.k.a. Merchant Bank) – financial services companies that maintain an account on behalf of the merchant (e.g., Chase, Bank of America, Well Fargo, etc.)

ASSOCIATIONS/NETWORKS – companies that provide a framework by which all parties must comply for the transaction to take place (e.g., AMEX, Visa, MasterCard, Discover, JCB, etc.)

The payment processing industry is complex because companies can (and frequently do) play more than one role. For example:

American Express is a card association, issuer, and payment processor. By contrast, Visa and Mastercard are only card associations. This explains why you can have a Chase Visa (Chase is Issuer and Visa is Card Association) but not a Chase AMEX.

Chase (like most major banks) provides services as an issuer (consumer bank), acquirer (merchant bank), and payment processor – so depending upon the parties (merchant and consumer) involved, they may handle part of the transaction or the entire transaction.



PROCESS

Every credit card transaction has two key components:

AUTHORIZATION:

1. Consumer wishes to purchase good or service and presents card or card information to Merchant.
2. Merchant enters card or card information into POS (point-of-sale) equipment, which sends to Payment Processor.
3. Payment Processor sends transaction information (card number, name, and amount) to Issuer.
4. Issuer approves/denies transaction.
5. Issuer sends approval/denial to Payment Processor which sends to POS.
6. POS returns approval/denial message to Merchant.
7. Merchant does or does not allow consumer to purchase good or service based upon authorization result.

SETTLEMENT:

1. At the end of the day Merchant will aggregate all transactions from over the course of the day.
2. Merchant sends aggregated transactions to Payment Processor.
3. Payment Processor distributes transactions to each of the Issuers that have been involved with transactions from the day.
4. Issuers (via the Federal Reserve) send money to Acquirer.
5. Acquirer aggregates money from Issuers into Merchant's bank account.

HOW IS IT CHANGING?

The payments industry is undergoing a revolution. As mentioned earlier, the industry is not new; however, new technologies are taking a legacy industry and trying to improve or remake it: cheaper, easier, more accessible, faster, and more secure for the merchant and/or the consumer.

Sounds like a lot? That's because it is. Right now payments is the Wild West. Legacy payments companies are trying to reinvent themselves to avoid future extinction, large players that have traditionally been outside the industry are making an entrance, and new upstarts are constantly attempting to disrupt the status quo. But if we break it down to the basics, we hope we could start to make sense of how the revolution is evolving and what the future landscape may look like.

At the most basic level, when we say that the market is becoming cheaper, easier, more accessible, faster, and more secure for the merchant and/or the consumer, what do we mean?

CHEAPER – Payments is a mature industry that is priced as a commodity market. Consumers and merchants are not willing to pay a premium for enhanced payment services or experiences. However, until cost goes to zero there is opportunity for price to be driven down. This in turn has driven innovation, most often in terms of displacement of the existing payments infrastructure (and associated costs) with one that is simpler, more efficient, and therefore inherently cheaper. Given that the existing payments infrastructure has been honed over the last 50 years, supplanting it is neither an easy task nor an overnight occurrence.

EASIER – Consumers typically like the experience of buying a good or service, but do not get excited about the experience of making a payment. Similarly, merchants typically like the experience of making a sale, but do not get excited about the experience of making the transaction. As a result, any improvement in the ease with which a payment can be made provides value to consumers and merchants alike. In other words, the process of making payments should be as unobtrusive as possible.

MORE ACCESSIBLE – Because payments is a mature industry there are several types of payments technology (credit, debit, ACH, etc.) that are nearly ubiquitous. That said, there remain both consumers and merchants, particularly outside of the U.S., that can be brought into the world of payments.

FASTER – The existing types of payments are fast by 20th century standards but not necessarily by 21st century standards. As a result, an opportunity exists to expedite the payment process, which benefits both consumers and merchants by allowing money to flow freely.

MORE SECURE – With payments fraud becoming an ever increasing problem, security has greater relevance for both merchants and consumers. While in many cases the liability for fraud is not directly assumed by the consumer or merchant, the experience of having to deal with the issue is both inconvenient and aggravating. Additionally, consumers are becoming increasingly concerned about privacy as more companies are realizing that payments has enormous potential for data mining and advertising.

NEW PRODUCTS AND TECHNOLOGIES

In order for a new product or technology to have something to offer to the payments industry it must promise to be cheaper, easier, more accessible, faster, and more secure for the merchant and/or the consumer. As evidence, let's look at some of the myriad of new products/technologies that are making headlines (some good, some bad) in the payments industry:

BITCOIN

Much ado has been made about Bitcoin, which is an alternative currency that runs over an open-source, decentralized network. What makes Bitcoin unique is that it is not associated with a central government (the way the U.S. dollars, British pounds, etc., are). But why is Bitcoin catching on? For one, Bitcoin is cheaper since the core processing capabilities get around the interchange fees. Bitcoin can be faster since the

transaction runs over a peer-to-peer network. Also, Bitcoin is (arguably) more secure than the traditional currencies. From a pure security standpoint Bitcoin has pros and cons. A pro is that Bitcoin is a crypto-currency, which means that each unit is based upon a sophisticated algorithm. However, since Bitcoin is not regulated by a central authority it presents opportunity for fraud in chargeback situations. But Bitcoin is anonymous, which makes it inherently more private than more traditional payments. This privacy is also one of the things that causes concern for governments since it presents an untracked method for the exchange of goods (including those that are illegal).

ISIS

Isis is a mobile payments solution created by a consortium of three major U.S. wireless carriers, Verizon, T-Mobile, and AT&T. Isis uses NFC technology to communicate with the merchant POS and is at its core a mobile wallet that resides on a person's wireless device. Because the mobile wallet is protected with a password, this make the solution more secure than traditional payments. Additionally it is easier for the consumer because it is designed to replace the traditional wallet that a person may carry.

LOOP

Loop is a new technology that has recently emerged out of MIT. It is a piece of hardware that attaches to a mobile device and when combined with an integrated mobile wallet, allows that mobile device to interact with legacy magnetic swipe POS terminals. Because the mobile wallet is protected with a password, this make the solution more secure than traditional payments. Additionally it is easier for the consumer because it is designed to replace the traditional wallet that a person may carry.

SQUARE AND NCR SILVER

Square and NCR's Silver product are simplified versions of the traditional POS terminal. While the payment transactions themselves still run on the traditional networks, the cost structure is flatter (i.e., fixed percentage per transaction) and thus the products are cheaper for small merchants (typically low volume) than the traditional payment products. Additionally, because these small merchants can now accept payment, consumers are more accessible.

But just because a new product or technology makes payments cheaper, easier, more accessible, faster, and more secure doesn't mean that it will get traction. Let's talk about NFC and EMV for a moment – both of which were highly touted technologies that have not been implemented as quickly as initially forecast.

NFC

For the better part of the last decade Near-Field Communication (NFC) has been viewed as the technology that would revolutionize payments. It hasn't — at least not yet. Why not? NFC allows two enabled devices to communicate wirelessly and securely. NFC is more secure than the traditional magnetic stripe that it is designed to replace. Additionally it is easier for the consumer because it is designed to replace the traditional wallet that a person may carry. So why hasn't it caught on? While NFC does make payments more secure, it hasn't overcome the hurdle of adoption. In order for NFC to work it needs to be in devices that consumers carry – primarily these are mobile handsets. For years mobile handset manufacturers refused to put NFC chips into handsets because of the incremental cost. Merchants, on the other hand, are not able to accept NFC payment without upgrading their point-of-sale hardware. As a result, NFC fell into a chicken-and-the-egg trap; merchants didn't want to upgrade their POS devices without a sizeable population of consumers using NFC; consumers (via the mobile handset makers) didn't want to pay the incremental cost for an NFC chip in their mobile devices if merchants didn't have the POS devices to accept NFC payments. As a result, the adoption of NFC has been slower than initially forecast.

But as complex as it may be, at the end of the day there are only two parties driving adoption — consumers and merchants.

EMV

EMV is a payments security technology. The acronym stands for Europay, MasterCard, and Visa – a nod to the companies that initially developed the standard. People may be more familiar with the term "Chip and PIN," which describes how the technology works — using a microchip embedded in the physical card combined with a PIN known only by the cardholder. Like NFC, EMV is more secure than the traditional magnetic stripe that it is designed to replace. Also, like NFC, the card has been slow to catch on in the U.S. and the reason was the same as with NFC — challenges with adoption. Unlike NFC, issuers can easily create and distribute cards to consumers that include EMV technology. However, much like NFC, merchants are reluctant to make the significant investment of having to replace existing POS devices to accept EMV payments. As a result, the adoption of EMV has been slower than initially forecast. But why aren't merchants willing to make the investment in the new POS devices that accept EMV payments? The new solution would be more secure, would it not? The answer is that yes, it would be more secure — but not to the merchant. In the current world merchants aren't liable for cases of fraud (assuming they take reasonable precautions); that risk is held by the issuer or acquirer. As such, they don't feel the pain of a fraudulent transaction and therefore aren't truly incented to adopt a new technology that will decrease fraud. But all of that is about to change. Starting in October 2015 associations are shifting liability for fraud to merchants that do not utilize EMV-compliant POS devices. It is expected that this will improve adoption.

NFC and EMV have not caught on (yet) because consumers and merchants haven't driven adoption of the technology. Consumers and merchants haven't adopted the technology because they don't see the value as it benefits them. This challenge brings us to my last point.

SUMMARY

Payments is an inherently complex industry with many players involved: consumers, merchants, payment processors, issuers, acquirers, associations/networks, etc. But as complex as it may be, at the end of the day there are only two parties driving adoption – consumers and merchants. If a new technology or product does not provide real value (cheaper, easier, more accessible, faster, and/or more secure) for consumers and/or merchants, then it will not succeed. Conversely, it is most often the issuers, acquirers, and associations/networks that are driving innovation. This is the Innovation Quandary of the payments landscape — innovation is being driven from the back (issuers, associations, and acquirers) and adoption is being driven from the front (consumers and merchants). This dichotomy will ensure that only innovation that provides real value (cheaper, easier, more accessible, faster, and/or more secure) to consumers and/or merchants will flourish. Thus we can thus use these criteria as our litmus test of the viability of an innovative idea, product, or technology in the payments industry.

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