

# Payments Industry White Paper

25<sup>th</sup> May 2020

## OVERVIEW & INDUSTRY HISTORY

The Stenham Equity UCITS Fund currently holds concentrated investments in four payment companies comprising almost a quarter of the portfolio - the highest exposure to payments since the inception of the Fund. As such, we thought it would be useful to help investors understand why we think pockets of the payments industry are attractive to allocate capital to and further discuss the myriad of implications for the sector as a result of this crisis.

The first movement of money dates back some 3,000 years but even before that transactions were occurring through a system of bartering. In 1946, the cash withdrawal card that we know today was invented with the first credit card being issued by Barclays Bank in 1966. Since then, there has been significant innovation in payments on both sides of the transaction (merchant and consumer). Our thesis prior to the novel coronavirus outbreak was that the global payments industry was in the early innings of the next major step change whereby transactions will meaningfully shift towards more digital methods. Now, and as a result of this crisis, we believe our original thesis has markedly improved and have experienced 3-5 years of secular change in 3 months. This we believe will provide a multi-year runway of growth and value creation for a few select companies which we have positioned to participate in.

## DECIPHERING THE PAYMENTS STACK

Before unpacking how the coronavirus impacts our payments company investments, we thought it would be useful to explain the often misunderstood payments value chain. When somebody has completed an Uber trip and steps outside of the vehicle, they will receive a notification on their phone from their bank, notifying them of the amount debited from their account and paid to Uber. What actually happened in those few seconds? How did it happen? Who was involved? While the Uber example is a seamless and elegant payment experience, what occurs in the background is convoluted and involves various intermediaries interacting with one another to complete the transaction. We could analogise a payments transaction as a swan swimming from one side of the pond to another. We see the swan gracefully gliding through the water but underneath there is a lot happening that we don't see. Figure 1 illustrates an example of an online payments transaction.

**Figure 1: Online Payments Transaction**



Source: Adyen IPO Prospectus

Let's start with the **issuer**. An issuer would provide the shopper's credit and debit card and earn a fee called an interchange fee. The interchange fee would capture most of the economics in a transaction given the credit risk. An example would be Barclays Bank or JP Morgan. The **card networks** (henceforth "the Networks") are the gatekeepers and serve as the backbone of the electronic payments system. They own the infrastructure (the network) and set the rules for how intermediaries process the transaction. Their function involves what is called "switching" transactions between acquirers and issuers. They earn a small fee based on the dollar amount of a transaction and importantly don't take any credit risk despite their logo on your debit card. Visa and MasterCard are the two largest card networks. You can think of **acquirers** as the merchant's bank and are their primary contact to provide access to the Networks. Acquirers and processors are often one and the same and earn a fee called an acquirer's mark-up. Examples of acquirers would be First Data or a fully integrated disruptor such as Adyen. Lastly, a **gateway** is essentially a point-of-sale software system that facilitate acceptance of a payment online. A gateway is essentially what a physical point-of-sale terminal is in the online world. They too earn a small cut of the transaction. An example of a gateway would be PayPal, Stripe or Adyen.

The loose sequence and flow of payments data in the value chain would be as follows. A shopper presents their card details at the Amazon checkout; the transaction data is then routed to the acquirer through the gateway; the acquirer performs relevant risk management checks and then routes the transaction to the Networks who identifies the relevant issuer; the Networks then route the transaction to the issuer who validates the identity of the cardholder. This data is then sent back through the chain and to the gateway who then confirms and issues a receipt. The second part of the online transaction involves settlement between the acquirer and the issuer exchanging purchase information to complete the transaction.

## CARD NETWORKS

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Given the Fund's exposure to the Networks, we will offer some further colour on why we still believe they warrant a position in the portfolio today. In the next payments paper, we will outline our thoughts on two other investments who operate in different parts of the value chain. If somebody were asked to spend their entire life trying to identify the best business in the world, odds are they would conclude that the Networks are worthy of such a noble claim. The Networks are duopolies and have various sources of structural competitive advantages. The most notable being their defensibility. Both companies have barriers to entry akin to the chicken or the egg causality dilemma. A competing network would struggle to gain any traction in taking share away from the Networks. Why? Customers would not sign up if merchants don't accept it. Merchants won't accept it if said network is not at critical mass with consumers. Visa, for example, currently has 3.3bn cards in circulation, is accepted at over 46m merchant locations across over 200 countries and their network facilitates 65,000 transactions per second.<sup>1</sup> The sheer ubiquity would make it very difficult for a new network to overcome the chicken or the egg barrier to entry.

### What do they do?

The Networks operate a two-sided model with consumers and issuers on one side and merchants and acquiring banks on the other. Simplistically, instead of having each entity (billions of consumers and millions of merchants) having a direct relationship with one another, the Networks act as a centralised operator with their network infrastructure and the applications which sit atop the network. As mentioned above, they act as the gatekeepers of the payments system and set the rules and operating standards.

The utility of the Networks can be expressed in the following brief example. If you were on holiday in Vietnam and you want to purchase a t-shirt, the Network's rails ensure that your local bank account can communicate with the local merchant's bank account.

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<sup>1</sup> Source: Visa 2019 Factsheet

Furthermore, the network supports the local currency, complies with local regulations, minimises fraud and ensures that it is an automatic, real time and zero downtime experience. To join the Networks “club”, all you have to do is pay a small fee on every transaction. For both merchants and consumers, it is an extremely high value proposition. A heuristic we have garnered over the years, is that “extra-ordinary” businesses are ones that create a lot of value for their customers at a fractional cost of that value. The Networks certainly fit that bill.

### **What has this all translated into?**

Take Visa for example, who were previously owned by the largest U.S. banks and was then spun out, restructured and went public in March 2008 at \$16/share. Since that time, the company’s share price has compounded at 24% per annum (Visa’s market capitalisation is now 50% higher than JP Morgan) and their free cash flow per share has grown from \$0.10/share to \$5.4/share.<sup>2</sup> We believe the opportunity set ahead for the Networks has now improved which we outline below.

### **Cash is not King**

C.R.E.A.M. is a now famed acronym that spells out “Cash Rules Everything Around Me” and is a rap song by the American hip hop group, Wu-Tang Clan, which was released on January 31, 1994. We can’t (and won’t try) offer our opinion on the lyrics or melody nor its place in US pop culture, but rather, posit the significance in helping to understand how the payments industry has changed in the years since. Back then, our friends, Wu-Tang Clan, were right; physical cash did rule the payments industry and was the near exclusive way to make a transaction. Consumers would (and still do) circumspectly input their four digit pin into an ATM, select the amount they wish to withdraw, push some more buttons and voila, some physical paper denoting different amounts would neatly slide into their hands. Merchants would frantically press a few buttons on their cash registers and are then met with a sudden “ding” noise. The antiquated box opened and the cashier would neatly place a £5, £20 or £50 note in their correct and divided station.

These days, I often find myself not carrying a wallet at all and when I walk across the street to my local café every morning, I tell the cashier of my unrelenting need for a flat white (no sugar) coffee and simply hold my phone over their Verifone terminal, wait for Apple’s neat facial recognition technology to authenticate myself and voila, I have my caffeine fix for the day. In China, who by all respects are living in the year 3020 from a consumer internet standpoint, you can pay with your face. This means that Chinese citizens can literally pose in front of a point-of-sale terminal equipped with a sophisticated facial processing camera in a Shanghai McDonalds and voila, they can sink their teeth into a Big Mac hamburger. This invisible transaction occurs without ever taking out cash, their wallet or their phone.<sup>3</sup>

## **COVID-19 CRISIS IMPACT**

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### **Impact of the crisis on Payments**

Before the novel coronavirus outbreak, the payments ecosystem was being digitalized (cash to cashless payment methods) at an increasing rate. For example in 2019, US card penetration was 60% vs 50%<sup>4</sup> only 5 years ago. According to LINK, the UK’s largest cash machine network, the number of free cash machines in the UK has fallen by 10,000 to 45,000 in the last 4 years and expect this number to drop further to 15,000 resulting in one free cash machine to every 4,400 people vs. 1,480 today. Higher cash to card penetration was the result of e-commerce and m(obile)-commerce adoption (you can’t pay for your Nando’s on the Deliveroo app with cash); government action (India demonetisation in 2016); consumer payment method preferences (contactless) and merchant’s upgrading their infrastructure to

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<sup>2</sup> Market values for Visa, JPM, FCF/share and price performance are sources from Factset

<sup>3</sup> Our view is that while technologically fascinating, it is also equally dystopian from a consumer privacy standpoint.

<sup>4</sup> Source: MasterCard 2019 10-K Filing

accept said shopper payment methods.

We now believe that this crisis and the resultant shelter-in-place orders around the world have compressed 3-5 years of secular and permanent change in 3 months. In early March, we started observing drastic measures being taken by businesses, governments and central banks to limit the amount of cash in the system. The US Federal Reserve began quarantining physical dollars that were being repatriated from Asia before being recirculated into the system.

The World Health Organisation (WHO) advised consumers to use contactless payments as banknotes were deemed super spreaders of the coronavirus. According to one study, a £20 banknote will be used 2328 times over an average life of 113 months. In the new world, it is easy to see how that £20 bank note in your wallet is a germ-carrying agent. As a response, Walmart, for example, tweaked its self-checkout system to go completely contactless when consumers used Walmart Pay. The list goes on but the important development to note is that the perception of dirty cash has never been worse. As the adage goes, “never let a good crisis go to waste”, this is terrific news for the Networks.

I was in San Francisco in early February attending the Visa Investor day. They went into great detail about their largest competitor, Cash Inc. According to Visa, there is still \$18tn (~21% of global GDP) in cash and cheques in the global monetary system today vs Visa’s \$11.0tn<sup>5</sup> (13% of global GDP) and MasterCard’s \$6.5tn<sup>6</sup> (8% of global GDP) in gross dollar card volume. Now, and with the aforementioned developments, we believe cash to card penetration will inflect meaningfully higher.

### Contactless

In the first quarter, the Networks commented that 60% of face-to-face transactions excluding the US were contactless, and a 40% increase year-over-year (YoY). To date, 60 governments around the world have raised the limits on contactless transactions. Here in the UK, they were raised by 50% to £45. In Canada, they were raised 150% to CAD \$250. This is a terrific development for both Networks. Contactless adoption is essentially pouring gasoline on the cash displacement fire. Low value, high frequency transactions (<£10) which historically have been cash heavy are now being increasingly digitalised.

**Figure 2: Cash and Cheque Opportunity**



Source: Visa Investor Presentation

In the US, surprisingly, contactless penetration was only 5% at the end of 2019. In more sophisticated payment markets like Australia, contactless penetration is 90%. The US is quickly catching up however as both sides of the transaction equation are equipped. The 10 largest bank issuers are issuing near field communication (NFC) enabled cards that facilitate a contactless transaction. The largest 25 merchants have upgraded their terminal infrastructure to accept contactless payments. At the end of 2019, there were 190m NFC cards which is the most NFC cards in any

<sup>5</sup> Source: Visa 2019 10-K filing

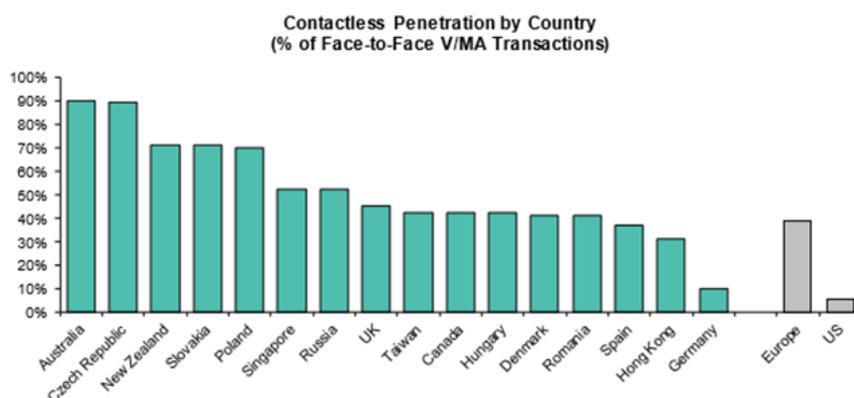
<sup>6</sup> Source: MasterCard 4Q 19 earnings call

market in the world (US consumers now just need to acclimate themselves with the elegance of tapping to pay).

The crisis was a shock to the global payments ecosystem- insofar that legacy mediums of transacting were favoured for digital and all at once. We asked ourselves what recent precedent is there to help us inform our view on the impact to the Networks. The Indian demonetization case study offers an interesting insight. In November 2016, the Indian government (often seen as the largest disruptor in India) withdrew 80% of all physical currency in circulation including stipulating that both 500 and 1000 denominated notes would not qualify as legal tender. Unsurprisingly, digital payments adoption took off. In the 3 years post the demonetisation government action, card volumes grew 40% on average per annum vs +25-30% in 2015.<sup>7</sup>

The implications of increased contactless for the Networks are profound. Importantly, the Networks become more insulated from macroeconomic sensitivity as more high frequency, low value payments are digitalised, meaning debit will be a higher mix than credit in their respective volume mix. We believe contactless adoption will increase the Networks’ already significant competitive advantage and allow them to defend against imitation (e.g. QR Codes). Increased contactless adoption will also expedite the trend towards higher card penetration and away from cash.

**Figure 3: Contactless Penetration by Country**



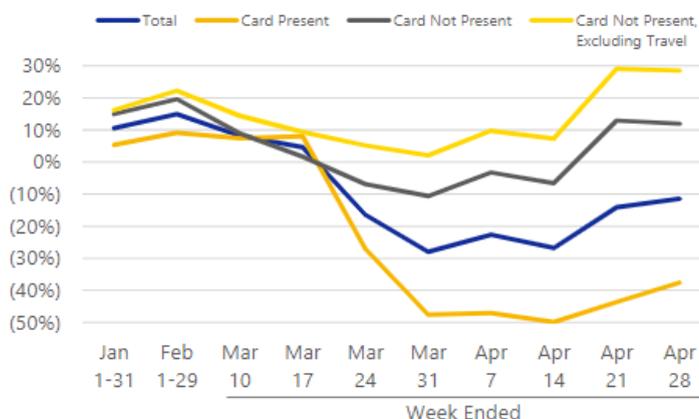
Source: Visa, MasterCard, Bernstein Analysis

**E-commerce**

Cash, Inc. doesn’t compete with the Networks in the online world. This crisis has brought forward e-commerce adoption and penetration of total retail sales. In the old world, only 14% of retail spend globally was online. A recent BofA note showed that US e-commerce penetration had increased to 27% from 16% in a matter of 8 weeks. Native offline verticals such as groceries and drugstores were forced to shift online meaning that consumers who were not familiar with their computer, had to take the technology leap and quickly embrace e-commerce. In Latin America, for example, there were 13m active card members who transacted online for the first time. Figure 4 illustrates Visa’s card volume growth on a year-over-year (YoY) basis from the beginning of the year through to April 28<sup>th</sup>. The yellow line is card not present ex travel (i.e.: e-commerce) volume growth. In mid-March, e-commerce growth declined to essentially flat but has since accelerated to +30% YoY and helping to offset card present (offline) which declined ~60% from mid-March to the end of March.

<sup>7</sup> MasterCard 3Q 19 earnings call

**Figure 4: Disaggregating Visa’s 2020 Card Volumes**



Source: Visa 1Q 20 Earnings presentation

While it is anyone’s guess how things will look when global economies reopen, we believe a sizeable amount of that commerce will stay online given the added convenience and by extension habituation of e-commerce. Again this is terrific news for the Networks. \$0.15 on every dollar around the world is spent on Visa cards in the physical world, but when you move into the world of e-commerce, it is \$0.45 or 3X that market share<sup>8</sup>.

## CONCLUSION

The crisis has expedited two key secular trends in payments namely, cash displacement and e-commerce penetration. While there will be some transitory headwinds (cross border travel), this crisis is a net beneficial event for the Networks’ operating businesses. Given the duopoly in which the Networks operate, this ultimately means higher future cash flow generation and concurrent equity values.

As always, we appreciate your continued support and investment. Should you have any questions please do not hesitate to reach out.

Kind regards,  
Michael Willar

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<sup>8</sup> Visa’s 1Q 20 earnings call