POLAR CAPITAL

Polar Capital Global Technology Team

June 2021

Fintech/Payments

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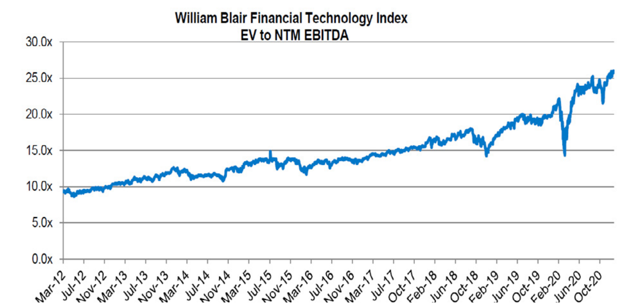
2020 review

2020 was a strong year for fintech as the sector benefitted from the acceleration of digital payment adoption trends and further penetration of digital technology into financial services. The divergence between legacy and next-generation players was particularly stark in both business performance and share price appreciation. The broad-based William Blair FinTech Index returned 22% in 2020 versus 16% for the S&P 500, its fourth year of steady outperformance, while the more growth-oriented Global X Fintech ETF (FINX US) returned 54%. Companies with e-commerce exposure such as ADYEN (+184%) and PYPL (+117%) performed strongly given the tailwind from lockdowns and consumer preference for online spending, as did those with neobank-like exposure including SQ (+248%), STNE (+110%) and PAGS (+67%).



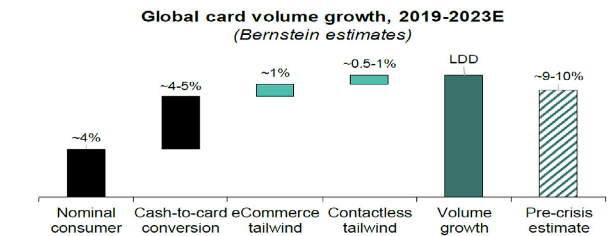
Source: William Blair

These next-generation companies were able to adapt to develop pandemic-friendly solutions to support their merchants including omnichannel and contactless checkout. Many were involved in the rapid distribution of government stimulus to individuals and small businesses as the incumbent banking infrastructure struggled against intense demand. The networks underperformed (Visa +16%; Mastercard +20%) as strong digital payment and contactless volumes were insufficient to offset material headwinds from reduced international travel. The incumbent merchant acquirers also struggled in the context of declining in-store payment volumes (GPN +18%; FIS +2%; FISV -2%). This was in contrast to the overall William Blair Financial Technology Index which saw the NTM EV/EBITDA multiple expand from 20x in 2019 to 26x 2020, versus a long-term average of around 14x.

The COVID-19 impact

Digital payments: the networks

The adoption of digital payment methods has accelerated due to higher e-commerce penetration levels and the increased adoption of contactless payments. The SARS epidemic in China (2003) had a similar impact. According to WorldPay, the pandemic accelerated the decline of cash by more than three years as 2020 results exceeded the previous projection for 2023. Cash was only used for one fifth of global PoS (point of sale) payments by volume, down one third from 2019. On top of the hastened demise of cash, bulls have argued the pandemic has brought five years of digital payments TAM (total addressable market) expansion in nine months, driven by strength in three areas for Visa and **Mastercard**:



Source: Bernstein

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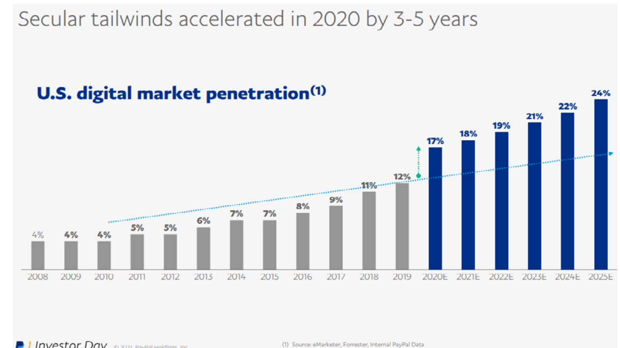
- Beyond consumer to business (C2B) payments into B2B, P2P, G2C: $30trn to $100trn TAM
- Beyond pure e-commerce into omnichannel: $3trn to $10trn TAM
- Beyond digital wallet into financial services

These estimates look reasonable and near-term risks to the dominance of the networks look contained. There has been some concern that COVID-19 has hastened the demise of the card networks or eroded their competitiveness, but there is not much evidence for this so far – all the buy now/pay later (BNPL) and major crypto players have partnered with them and real-time payments are not yet gaining traction for C2B payments in any major way. It is likely that numbers have now bottomed, and big stimulus (especially in the US) will translate into higher nominal GDP, which means more volume across the networks. The travel recovery, ongoing consumer spending and merchant digital habits (see chart below) all points to signs for some modest rerating.

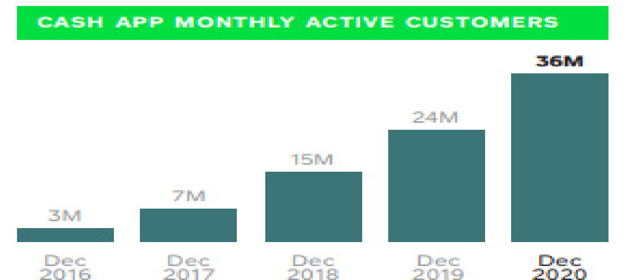
The threat of governments promoting domestic payment rails (the digital infrastructure that transfers money from one individual or business to another) remains, given UPI in India, PIX in Brazil, FedNow in the US and the EU's EPI initiative. However, these have historically struggled to keep pace with the speed of technological change over time. The card networks have proved capable at adapting to regulatory challenges to maintain their natural monopolies. Regulatory risk remains ever-present and Visa's termination of the $5.3bn Plaid acquisition following DoJ pressure points to a more stringent oversight environment, but it looks unlikely that there will be any material regulatory changes.



Source: Paypal

Digital wallets: e-commerce, stimulus and bitcoin

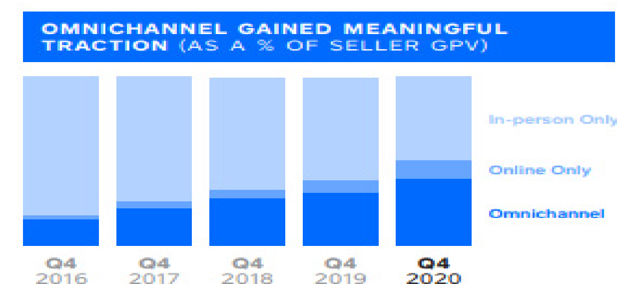
We believe **PayPal** (PYPL) and **Square** (SQ) both saw strong growth in their mobile wallet offerings during the year. For PayPal this was primarily a function of surging e-commerce brought about by shelter-in-place restrictions as the company was able to add as many new users in the second quarter of 2020 as they had in the whole of 2016. Many of these users were older and would have been less likely to become users without the pandemic's impact, and new functionality (BNPL, in store QR code payments, crypto trading and wallet funding) helped support engagement. PayPal has offered bullish five-year guidance, forecasting 20% growth to >$50bn revenue in 2025 and 750 million users. The central tenet of this thesis is the development of the core PayPal wallet into an explicit financial Super App given PayPal's scale (374 million users), a trusted financial brand, an open platform that can partner with anyone and growing functionality.



Cash App monthly transacting actives have scaled more than 10x over the past four years to more than 36 million at the end of 2020.

Source: Square

PayPal will also be able to capture value in more ways in the future: typically for a $1,000 pay cheque, a consumer spends $300-$400, pays $300 in rent/bills, invests $100-$200 and withdraws $100. Addressing all these activities over time increases PayPal's TAM 6x to $110trn. The credibility of the super app opportunity is supported by the experience in Asia, where digital/mobile wallets already make up 60% of e-commerce payments and 40% of in-store payments.



Omnichannel and online sellers represented more than half of total Seller GPV in the fourth quarter of 2020, up nearly 3x from four years ago.

Source: Square 4Q20 Earnings Report

Square initially looked challenged by the pandemic given its Seller business exposure to small and medium-sized businesses and restaurants, but the company was able to pivot rapidly to address the needs of their merchants (integrated e-commerce, curb-side pickup, contactless payments etc). By Q4 2020, half of Square's Seller gross payment volume was coming from online and omnichannel commerce, up from one third in 2018. The main driver of

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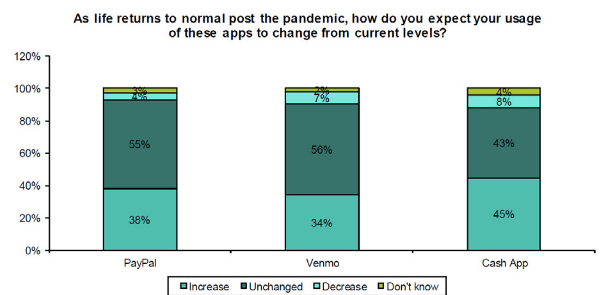
performance, however, was the dramatic increase in Cash App usage on the back of stimulus cheques which could be deposited directly into Cash App and the rise of retail stock and crypto trading, both of which are offered within Cash App. In 2019 there was one Cash App revenue stream >$100m (instant deposit); exiting 2020 there were four >$100m (instant deposit, cash card, cash for business, bitcoin), all of which grew >100% y/y in 2020. SQ's stock also became increasingly tied to the rise of bitcoin given Jack Dorsey's outspoken support for the cryptocurrency, his decision to move some of Square's cash into bitcoin, and SQ's revenue stream tied directly to bitcoin trading volumes (c2% margin). We believe Cash App could be in pole position to become the financial super app for its target demographic (lower-income, younger, underserved consumers) and bulls argue it is worth $90bn assuming Cash App reaches 60 million users (from 36 million today) at $1,500 loan to value per user, based on $100 average revenue per user (ARPU) from $41 today. Neobanks Chime and MoneyLion generate ARPUs of $208 and $176 respectively. As with PayPal, the addressable markets are enormous and Square's execution to date has been very strong. According to a survey conducted by the Harris Poll in 2020, 64% of Americans would consider purchasing or applying for financial products through a technology company's platform instead of a traditional financial services provider. This rises to 81% for Americans aged between 18 and 34.

We believe PayPal and Square remain extremely well positioned to be winners in the consumer fintech space given the reach of their platforms, brands, two-sided networks and unfair customer acquisition cost advantages (SQ <$5). Usage looks unlikely to decline post-pandemic (see chart opposite), especially as investments in innovation offer new functionality and services. Mis-execution, onerous regulation and intensifying competition from neobanks and BNPL players (discussed later) represent meaningful risks to future growth, but this is an area to which we should maintain exposure.



Source: Bernstein

Disrupting financial services

One of the most significant changes in 2020 has been the meaningful expansion of the broader fintech addressable market. Financial services have been forced online and the availability of cheap, scalable public/private partnership financial infrastructure combined with efficient online customer acquisition has prompted a flourish of innovation and capital raising. The massive amount of capital flowing into payments and fintech has also seen new entrants trade growth for profitability in a manner incumbents cannot. We believe the most significant of these trends include: neo-banks, banking-as-a-service, payment facilitators, BNPL, cryptocurrencies and CBDCs (central bank digital currency – a new form of digital money issued by the Bank of England). There is also a consideration of how financial services differ from technology in nature, and the risks and opportunities this brings for technology-led players moving into finance.

The most significant investment conclusion is that COVID-19 will likely mark the break point between the old world of financial services (dominant incumbent banks, generic offerings, finance as a ring-fenced activity) and the new world (a plethora of specialised players, personalised offerings, finance embedded within other activities). The impact of AI has barely been felt in the financial services market. This must be balanced against the unique risks and challenges that fintech brings with it.

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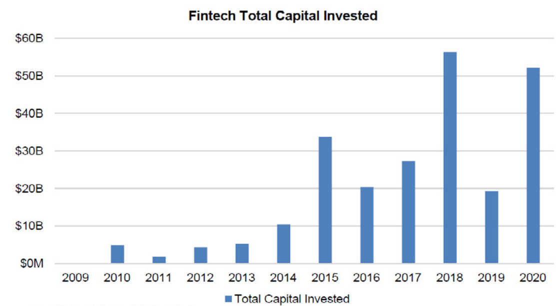
The fintech opportunity

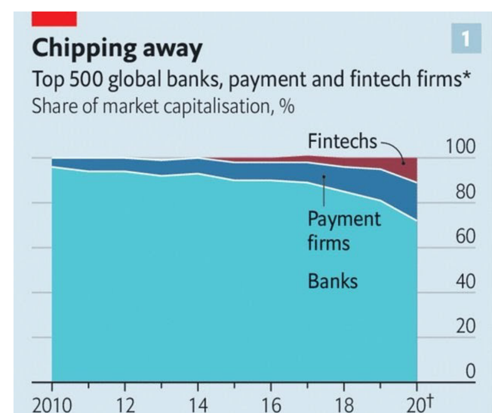
Financial services companies represent >$5trn of market cap across 800 stocks in the US and the COVID-19 crisis could well represent an acceleration in the structural disruption of the industries in which they operate. The four largest US banks (JP Morgan, Bank of America, Citigroup, Wells Fargo) have c$10trn in assets and the top five in Europe are similar. Disruption will be driven by a combination of rapidly shifting consumer preferences/expectations, a much more supportive regulatory backdrop (financial inclusion and efficiency trumps credit risk or systemic seizure for now) and a faster pace of innovation than we have seen hitherto. The leading private fintech companies have already reached into the hundreds of billions of dollars in aggregate valuation including payments facilitator Stripe ($110bn), BNPL player Klarna ($31bn), Brazilian neobank NuBank ($25bn) and US neobank Chime ($14.5bn). The distinction between digital and offline financial services is breaking down as it has in retail, entertainment and numerous other sectors and, as is the case in these other sectors, our base case has to be that winners under the previous model will struggle to win in the new one and incumbents will be disrupted.



Source: William Blair

Bigger picture disruption: financial ecosystem not financial services

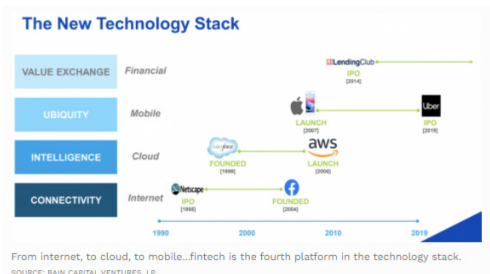
Sector lines are being blurred as technology delivers and captures more and more value in historically non-tech sectors. The retail sector used to meet our shopping needs, the transport sector used to meet our mobility needs but the traditional financial services sector still meets most of our financial needs and is delivered in much the same way. We have seen technology positively disrupt many other sectors and this is one path financial services is likely to take. SQ and SHOP have done this most obviously but there are plenty of examples indicating consumer willingness to store and spend funds outside the traditional banking sector: for example, there is >$1bn held in the Starbucks app. COVID-19 has accelerated the digitisation of financial services, particularly in the provision of services historically undertaken in a non- digital manner such as opening accounts, offering credit and B2B payments.



Source: FT

A new stack?

Bulls take the financial ecosystem argument further and make the case that embedded financial services (powered via payments) is the next transformational platform after the internet, mobile and cloud. The combination of these platforms initially just allowed offline financial services to be done online, but the stack has now matured to the extent that fintech itself is close to being its own platform. We believe the most important implication is that many more companies will monetise and differentiate via financial services. Uber is an early example of this, where the seamless nature of the payment experience (for both customer and driver) has been a key driver of competitive advantage.

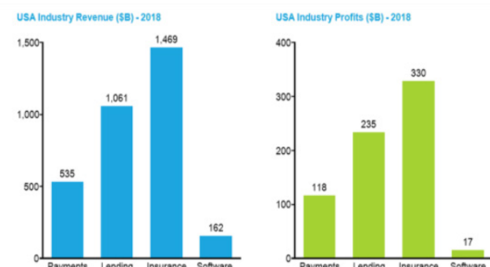


Source: Bain Capital

Why fintech is not the same as tech

There are some significant and persistent differences between finance and technology, however. There are good reasons, born of bitter experience, why finance is more heavily regulated than tech:

- **Uninformed buyers:** Comfort and product knowledge levels among customers can be low and therefore habits remain strongly ingrained. People have historically changed their primary bank account less frequently than they have changed their spouse, and financial literacy remains relatively low. Some who are highly skilled and operate



Source: McKinsey

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confidently in their professional and personal lives still have the bulk of their savings sitting in cash ISAs. It is a non-trivial task to engage consumers to change financial habits.

- **Downside risks are much more significant:** The downside risk of adopting digital-first practices for businesses and consumers in most activities is fairly limited. A cinemagoer can try Netflix for free and then cancel. A marketer can buy some adverts on Google and measure the results. Moving to a digital bank that goes under could be catastrophic and moving to automated AP/AR could lead to irrecoverable losses. Expensive and inefficient incumbents have survived fairly well: Western Union has only seen its revenues fall from $5.5bn in 2015 to $5.3bn in 2019 despite many cheaper options. It was also notable that the Chinese regulator was willing to accept Alibaba's huge influence in online retail but appeared to draw the line at Ant Financial's in credit.

- **A hard nut to crack:** The history of non-financial companies moving into full-service finance (ie the lending of money and the underwriting of credit/losses) has been mixed. Auto makers were successful in establishing financing arms to increase the affordability of their products, but this left them very exposed in 2008. GE's financial services efforts virtually bankrupted the company. Even SMB lender Kabbage (big proprietary SMB dataset with an emphasis on using machine learning) was forced to sell to Amex this year when its credit book turned bad.

- **Maintaining returns harder at scale:** This is the exact opposite of increasing returns to scale that is seen in very low marginal cost industries like software and has significant ramifications for valuations. The first generation of fintech companies (eg P2P lending) were initially successful and then quickly ran into material growth barriers. Many found mispriced parts of the market but as they grew they started to look more like the market – they often get to a particular point when their ability to deliver returns, maintain credit quality and ultimately growth, rapidly tends towards the market. Square lending money to an SMB might be a new market if other lenders had not lent before, but it does not of itself improve the credit quality of the borrower. Financial services have historically managed a c10% return on invested capital, which raises meaningful questions over why digital wallets or neobanks can generate longer-term returns of 20-30%.

Emerging trends

Neobanks: 'Neobank' is a catch-all term for a new generation of online-only banks offering retail banking services directly to consumers. Most promise better service levels, a digital-led customer experience and useful features like bill payment and subscription management. They typically avoid some of the least popular fees and charges on which many offline retail banks rely (eg overdraft fees). Neobanks tend to have a specific niche either in demographic (branch serves hourly-wage workers and goes to market via their employers) or focus on a service (MoneyLion –'a private bank for everyone else' – is strong on AI-driven financial advice and bundles in a robo-adviser). US neobank Chime raised money at a $14.5bn valuation, up from $5.8bn earlier in the year and peers Dave, N26, Revolut, Starling et al have all posted impressive growth in both users and deposits. Some larger technology and payment players such as Square (Cash App) and Google (Plex) have also adopted neobank-like strategies.

Why now?

Neobanks have flourished recently due to their ability to acquire customers efficiently online and to utilize public/private partnership financial infrastructure to scale quickly, without having to take on onerous capital and regulatory requirements (see 'Banking-as-a-service' below). Most currently monetize primarily via the collection of debit interchange fees as consumers spend on their neobank debit cards. The long-term growth story relies on the higher levels of engagement neobanks can achieve versus banks. Dave (another neobank) noted that members with cheque accounts are materially more engaged and check their Dave account 20-30x per week. There is also a demographic story for some of the millennial-focused neobanks, that by acquiring customers younger they may be in a position to cross-sell wealth management and savings products down the line (older customers are more profitable in wealth and savings, though not in credit).

Bear case:

- **How much differentiation?** It is not hard to issue a card from a public/private partnership bank (see 'Banking-as-a-service' below) and bears see companies like Chime essentially as a deposit broker. Many neobanks can be distilled down to a good app with a debit card attached at this stage.

- **When to lend?** The challenge neobanks will face is that three-quarters of the financial sector's profits still come from lending money, and it is not yet clear how neobanks will be able to maintain growth rates at scale without lending money. Every regulator needs to know what you are doing if you start lending money. Tech players are offering credit cards with banking partners now – are Chime and co really going to be able to compete with them on distribution, brand or product?

- **Regulatory threat:** Many of the business models adopted by neobanks make use of a carve-out for small/community banks with <$10bn assets that was part of the Dodd-Frank regulation post-global financial crisis (GFC). These small banks are permitted to charge higher interchange fees on debit card spending, while larger banks are required to cap them. There is some regulatory risk that this

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exemption is tightened given neobanks are taking share rapidly from the smaller banks the legislation was designed to protect. A change in legislation/pressure from Visa and Mastercard to voluntarily reduce interchange would be a major headwind to neobanks' business models, but it is not expected and many neobanks already have banking licences (Monzo, Revolut, N26, Varo), or are in the process of acquiring them (Square). The traditional US banking sector has responded by increasing tech expenditure from 6% of revenues in 2015 to 8% in 2020, but this is highly unlikely to be enough to constrain the next generation of players who can acquire and serve customers more cheaply, engage them at higher rates and monetize via a wide range of business models.

Will neobanks take material share?

Core banking has been hard to disrupt as an activity which exists to transform savings into investment and allocate resources efficiently in the economy. Technological innovation has been long-standing with ATMs (1970s), telephone banking (1980s), new supermarket entrants like Walmart and Tesco (1990s) and the rise of online banks around 2000. Even the GFC and the wave of bank-crimping legislation that followed has not had much of an impact on the market structure or the way in which most people and institutions use financial services. The regulatory inertia is meaningful, and the 'move fast and break things' approach is systemically dangerous in banking in a way it is not in, say, online advertising.

However, we believe there are several reasons to expect that neobanks (or perhaps quasi- banks that sit within Big Tech) might make greater progress than previous generations of disruptors. First, the growth of the digital economy brings a proliferation of non-financial data combined with AI that neobanks can use to design products and serve customers in a dramatically more sophisticated and personalised manner versus traditional banks. We know that simple digital footprint information (email provider, mobile carrier, OS etc.) performs as well as traditional credit scores in judging borrower risk, and that MELI's (Mercado Libre, operates online marketplaces dedicated to e-commerce) internal ratings predict default risk better than credit scores. What we have not (yet) seen is neobanks using AI to build highly personalised financial products which respond dynamically to customers' circumstances and needs, but this represents an enormous opportunity.

Banking-as-a-service

Banking-as-a-service providers offer fintech infrastructure (API-led software; Application Programming Interface is software that allows two applications to talk to each other), compliance, licences which gives non-banks (ie entities not regulated as banks) the ability to offer banking products and services to their customers in a seamless manner. It is the second generation of cloud infrastructure for finance (ie everyone has access to best-in-class services running on a shared infrastructure). There are normally three parties: user-facing brands, licenced banks and technology providers. This is the model that neobanks Chime (private), Dave (private) and Square's Cash App use, as well as BNPL providers like AFRM and next-generation consumer loan underwriters like UPST. Banking-as-a-service partner banks such as CASH, LOB, GDOT and TBBK have performed strongly. In December, Stripe announced a plan to partner with Barclays, Citigroup and Goldman Sachs to offer its customers banking- as-a-service or 'embedded finance'. Stripe already powers Shopify's payment processing, and the new initiative would allow Shopify (via Stripe) to offer merchants bank accounts, debit cards and other SMB financial services

Source: Andreessen Horowitz

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on Shopify's platform via APIs. Shopify already have their own business bank account, Balance, but the partnership should quickly expand the scope of financial services that Shopify/Stripe/partner banks can offer.

In our view one of the the most significant impact of banking-as-a-service is it has collapsed the cost and time to launch a bank or provision financial services in a similar way to how AWS made it much easier to launch a software company by offering the infrastructure required as a service. The AWS era is coming to financial services but, significantly, much of this will come in the form of non-FS companies launching FS products. SHOP and MB already make c50% of revenue via FS.

Furthermore, we believe the other significant impact of banking-as-a-service is the ability for Big Tech to become involved in the provision of financial services, using their unparalleled distribution, technological and product capabilities and (somewhat?) trusted consumer brands. Google's Plex product is an early example of this, but there is also strong evidence that Amazon and Facebook are moving aggressively into the space. As Jamie Dimon, chief executive officer of JPMorgan Chase, put it recently: "Google, they're entering the banking business kind of as a marketplace…that's a real competitor". There is also a threat that the wave of new tech-led players entering the financial services space using banking-as-a-service could accelerate the disaggregation of monolithic banking services into a set of APIs in the same way cloud- based APIs have undermined the monolithic software stacks that companies have run on for decades. An IMF Working Paper (July 2020) argued that the rise of new communication channels can lead to the vertical and horizontal disintegration of the traditional bank business model.

Amazon is unbundling the bank

Source: Andreessen Horowitz

PayFacs

A payments facilitator (PayFac) allows smaller merchants to accept payments in many different geographies via multiple different methods (requires AR, chargebacks, alerts, taxes, compliance, fraud checks in each geography and so on). There are 'horizontal' PayFacs like Stripe, Square and Braintree (PYPL), who have an API sitting on top of relationships with large banks, and 'vertical' PayFacs which often serve ISVs and marketplaces. These PayFacs form an important element of the fintech infrastructure as they allow any company to offer (and collect the economics from) payment services.

Vertical software-as-as-service (SaaS) companies like MindBody, Toast and Shopify have made use of PayFacs to embed financial services to increase the stickiness and improve the economics of their products. The trend began with the reselling of payments services but has swiftly moved onto the provision of capital, cards and insurance. Andreessen Horowitz research has suggested the addition of a fintech business model can increase revenue per user by 2-5x versus a standalone software subscription as for every $1,000 spent monthly on software and services around $200 is spent on traditional software like CRM/ERP/marketing and $800 is spent on other FS (payments/payroll/background checks/benefits). SaaS companies also often have data advantages (volume, speed, quality, depth) over other FS providers when looking to provide loans/insurance and players like Finix allow SaaS companies to become PayFacs themselves. We expect to see every SaaS company worth their salt bundling payments – HUBS, CRM, ZEN and many others are already doing this. There are 200,000-250,000 software companies globally and <10% offer payment capabilities, so this represents a material opportunity.

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