



The Four Horsemen of Technology in Payments and Financial Services

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* Views expressed are strictly the author's.



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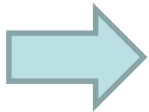
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Introduction

- Global tech giants challenge to payment systems and banks
- The players' ambitions
- Contrasting platforms
- Regulation, the good and bad
- Trust
- GAFAs' beachheads in payments & financial services
- Engagement
- Conclusions/Predictions
- A doomsday scenario



Principal impact will be on retail, P2P and bill payments, only modest impact on credit and DDA products, and almost none on wholesale and corporate banking.



Microsoft co-founder Bill Gates in 1994 derided banks as “dinosaurs.” A ripple of fear went through the banking industry.



- The tech giant’s efforts in financial services came to naught.
- Microsoft Money launched in 1991 was shut down in 2009.
- Its EBPP effort TransPoint was sold to Checkfree (now Fiserv)

The players' ambitions

- A fresh wave of tech titans Google, Apple, Facebook and Amazon is at the gates, and uses and has ambitions in payments and financial services
- 36% of bank executives think in the years to 2020 the biggest competition from a nontraditional entrant will come from a technology or e-commerce company such as Amazon or Apple. Among North American bankers the percent rises to 52%. –a)



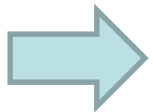
Banco Santander chief Ana Botín characterizes the GAFAs as a threat. “If you think about the big guys now, it is not the banks, it is these four large tech companies that are worth more than us. They have more cash. They have less regulation.” –b)

(a- “The 3Rs of retail banking,” The Economist Intelligence Unit, 2015. A December, 2014 survey of 208 global banking executives.

(b- “Democratizing finance: Botín charts Santander’s digital course,” by Martin Arnold. FT, February 2, 2015

The players' ambitions

- Licensed by government banks take deposits and provide a range of payment services and credit. In every country the banking industry strikes a political bargain with the state. –a)
- Payment systems make transaction fees.
- Payments and financial services are a means of GAFAs enhancing their core platforms.



Can help and hurt payment networks and banks.

GAFAs versus bank and payment platforms

Reach

Advantage GAFAs, global payment networks

Market power/share

Advantage GAFAs, global payment networks

Brand

Edge to GAFAs and global networks

Trust

Parity?

Consumer data/insight

All have rich troves of consumer data

GAF A versus bank and payment platforms

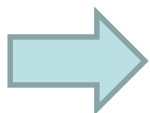
- 7 billion mobile cellular subscriptions –a)
- Global mobile OS platforms
- US smart-phone penetration reached 79.3% in February, 2016 –b)

	Share (%) of US Smartphone Subscribers		
	Nov-15	Feb-16	Point Change
Total Smartphone Subscribers	100.0%	100.0%	N/A
Android	53.1%	52.7%	-0.4
Apple	43.1%	43.9%	0.8
Microsoft	2.8%	2.5%	-0.3
BlackBerry	1.0%	0.8%	-0.2

-b)

Top 15 Smartphone Apps February 2016 Total U.S. Smartphone Mobile Media Users, Age 18+ (iOS and Android Platforms) Source: comScore Mobile Metrix		
	Top 15 Apps	% Reach
1	Facebook	77.7%
2	Facebook Messenger	61.7%
3	YouTube	59.4%
4	Google Play	49.9%
5	Google Search	48.5%
6	Google Maps	47.8%
7	Gmail	44.1%
8	Pandora Radio	41.8%
9	Instagram	38.4%
10	Amazon Mobile	33.5%
11	Apple Music	31.1%
12	Yahoo Stocks	29.8%
13	Google Drive	29.0%
14	Apple Maps	28.2%
15	Pinterest	25.0%

-b)



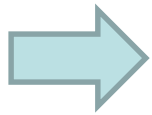
GAF A control/influence over their markets formidable

(a-International Telecommunications Union

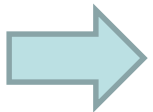
(b- Comscore

GAFAs versus bank and payment platforms

- Banco Santander serves 107 million customers with 14 thousand branches in the UK, US, Latin America and continental Europe. In contrast Facebook and Visa directly and indirectly serve several billion people worldwide.
- Société Générale 31 million customers
- Chase 90 million payment-card accounts. Claims to touch just under half of US households
- BofA 60 million customers



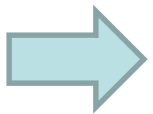
Globally banking is fragmented. Even in concentrated markets such as Australia, the UK, Brazil and Canada, banking more fragmented than social networks (Facebook), search (Google), mobile OS (Apple and Google) and e-commerce (Amazon).



Even largest banks reach dwarfed by GAFAs.

GAFAs versus bank and payment platforms

- Bank Itau buying Redecard and Chase bringing merchant acquiring inhouse are the only significant recent instances of banks increasing their stake in payments.
- Banks have spun off scores of payment network and processing assets including MasterCard, Visa, WorldPay, Vocalink, Vantiv, Nets, Worldline Equens (Sligos, Banksys, Equens et al), Evertec, Signet, GZS, Deutsche Bank's acquiring business, La Caixa's acquiring business, HSBC's acquiring businesses in UK and Asia, Spectrum, ICICI Merchant Services et al



Banks ceding ground in payments. However, payments remain a critical source of revenue and engagement.

GAFAs versus bank and payment platforms

➔ Like with the GAFAs, in payment systems network effects rule

- Dominant global branded retail payment networks MasterCard and Visa

- Visa 3 billion cards, 40 million merchants
- MasterCard 1.6 billion cards, 40 million merchants



- Tier-two and aspiring global

- Alipay, Amex, China UnionPay, Discover/Diners Club, JCB, PayPal

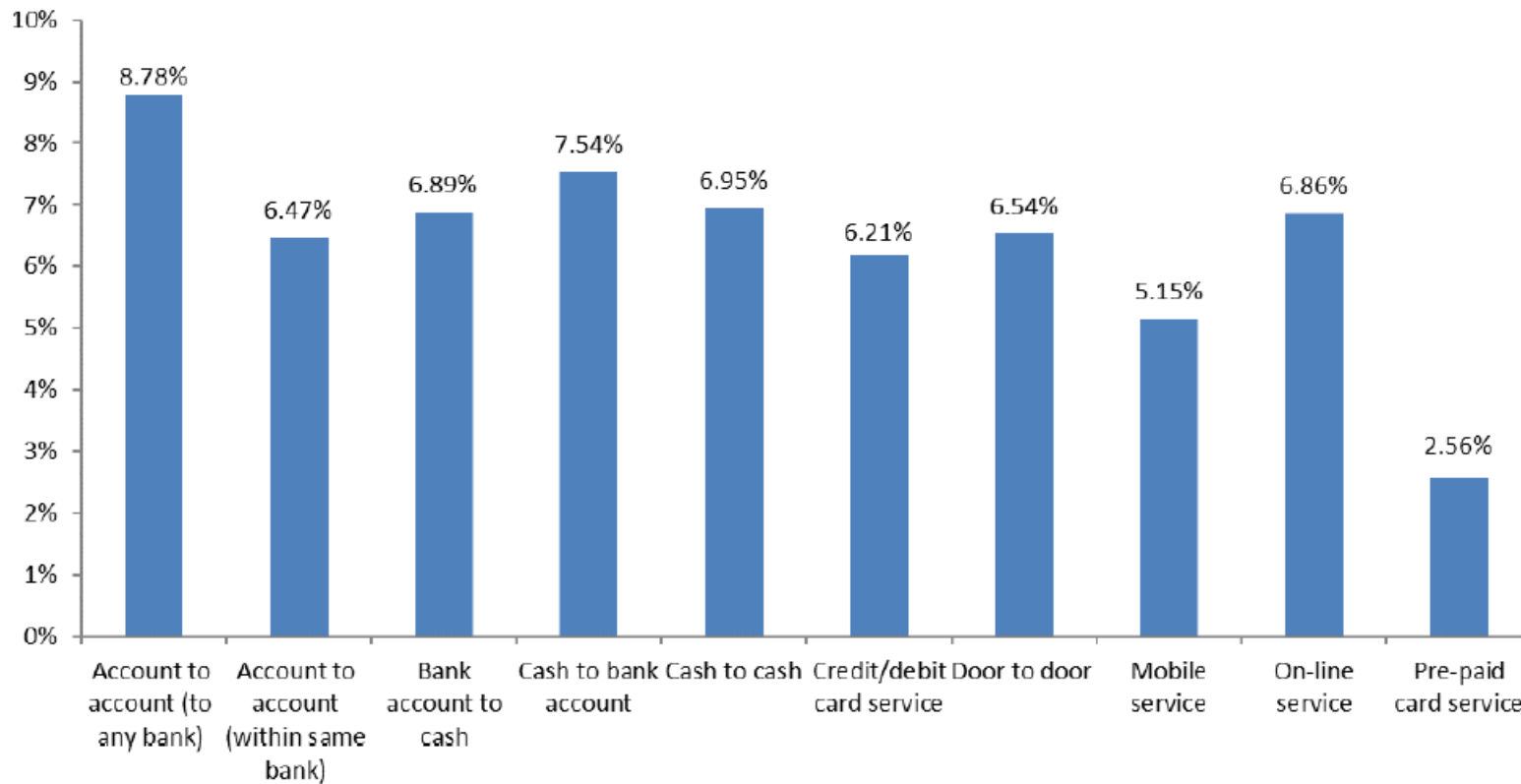
- National and aspiring national

- Traditional card networks: Interac, Star, Cartes Bancaires, Girocard, NYCE, Pulse, BCC, Bancomat Mister Cash, Elo, Rupay, Troy, Mir, Ideal, Verve/Interswitch



- 2014 ~\$533 billion cross-border remittances –a)
Banks and money-transfer networks generate transaction and exchange fees.

Figure 13 Average cost by product type in Q2 2016



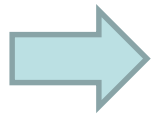
-b)

(a- World Bank. In 2015 it fell to \$368 billion. (b- Ibid.

GAFAs versus bank and payment platforms

- Money Transfer
 - Western Union
 - MoneyGram
 - Euronet
 - Transferwise
 - Azimo
 - WorldRemit
- P2P
 - Facebook
 - Square Cash
 - Google
 - FIS Paynet – leveraging NYCE debit network
 - Fiserv Popmoney – using Accel debit network
 - Zelle (Early Warning)
 - Paym – Vocalink (MasterCard)

GAFA versus bank and payment platforms



GAFA platforms are powerful compared with most payment systems and retail banks.

China's BAT versus traditional payment and bank platforms

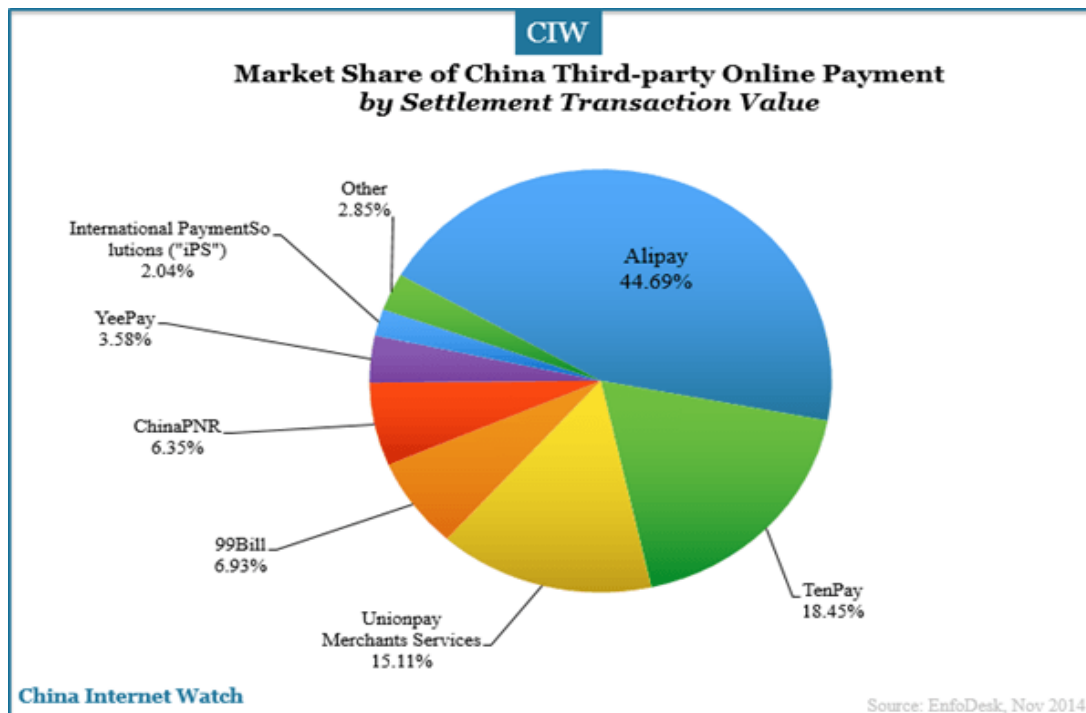


- Baidu, Alibaba, and Tencent are national tech giants. International reach limited
- China Unionpay enjoys a payment-card network monopoly.
- Several hundred banks, but 4 state-owned banks still dominant.

China's BAT versus traditional payment and bank platforms

- Unlike traditional card payments, e-commerce and mobile commerce are vigorously competitive.

3rd Quarter, 2014 Estimated Market Share China Online Payments



-a)

China's BAT versus traditional payment and bank platforms

- AliPay has 450 million users and direct processing connections with ~ 200 banks
- Alipay and Tenpay using barcode-based payments are competing with UnionPay at the physical pos.
- Alipay rapidly building acceptance abroad
- Ant Financial making a broader financial services play.

-a)

Regulatory moat

- Historically payment networks almost unregulated, but that's slowly changing, for the worse.
 - EU capped interchange and synthetic interchange, and mandated separation of payment scheme and processing
 - Dodd-Frank put price controls on debit interchange and banned debit-network exclusivity
 - RBA imposed interchange price caps and banned banning surcharging in Australia.
- Banking is among the most heavily regulated industries
 - Dodd-Frank imposed regulatory straitjacket on US banks and conferred enormous power to the administrative state
- In contrast the GAFAs relatively lightly regulated.
- Nonetheless, GAFAs don't have to become payment networks, processors or banks to participate and extract rents

Trust capital

- Banks have traditionally enjoyed a trust advantage over nonbank challengers. That may not however be true relative to GAFAs.
- Percent of consumers who would likely or very likely bank with a tech company with which they do business –a)
 - Square 50%
 - PayPal 41%
 - Apple 29%
 - Google 26%
 - Amazon 26%
- 77% of Americans between 18 and 34 said they would be likely to bank with at least one non-financial services company –a)
- 19% of European consumers surveyed from November, 2015 through January, 2016 said they would buy banking or insurance services from companies like the GAFAs. –b)

(a- “2014 North America Consumer Digital Banking Survey,” Accenture

(b- The Fujitsu European Financial Services Survey 2016

Google

- Leverages its enormous search, email, mobile OS, YouTube, Google + and browser assets to facilitate commerce and boost advertising revenue
 - 64% search share in the US –a)
 - 71% search share globally –b)
 - 56.5% browser share –c)
 - > 1 billion You Tube users
- Its digital wallets, P2P payments and bill payment offering are designed to increase engagement on the Google platform and consequently increase facilitated commerce and ad revenue

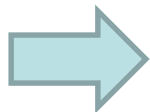
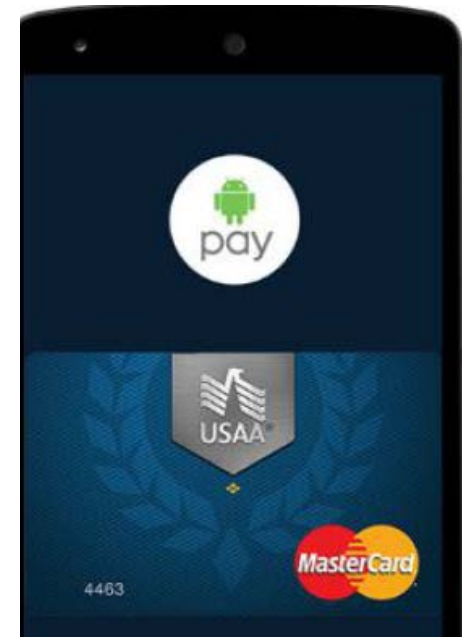
(a- February, 2016 Comscore

(b- August, 2016 Net Applications

(c- August, 2016 Net Applications

Google

- To date unsuccessful:
 - Google Checkout launched in 2005 failed
 - Google wallet repurposed as a P2P product. Gmail supports P2P payments
 - Launched Android Pay, which is more open than Apple Pay
 - Gmail electronic bill payment “Pony Express”
 - Experimented thus far unsuccessfully with buy buttons
 - Global push –a)

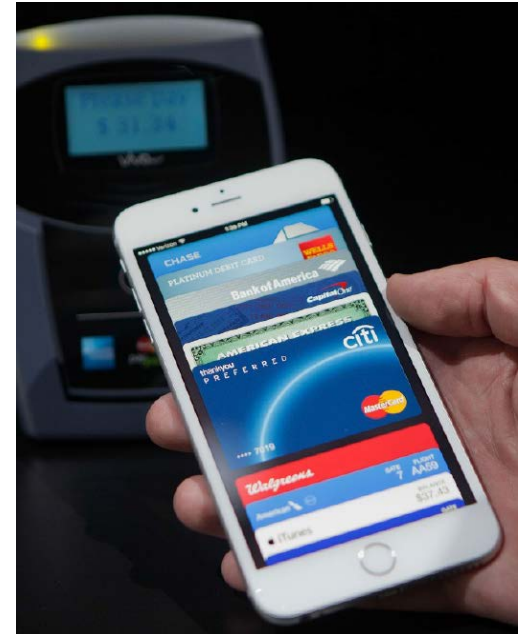


World’s search gorilla and largest mobile platform has to find a path to getting it right.

(a- “Google to partner with Mitsubishi UFJ Financial to launch Android Pay inside Japan,” Reuters, August 30, 2016. Later this year Bank of Tokyo Mitsubishi –UFJ will support Android Pay for debit. Courting East Japan Railway, NTT Docomo, Rakuten, JCB and Japanese digital money providers

Apple

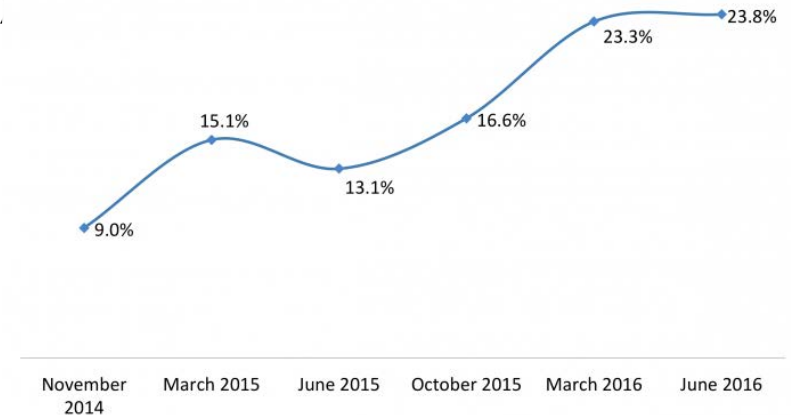
- Mobile-engagement Phenom
- Beloved brand, loyal, high-income consumers
- Dominant revenue stream is selling mobile devices.
- Platform control, ~ 43.9% US smartphone market –a)
- Co-branded credit card provided by Barclays
- Chase is merchant acquirer and processor
- Apple Pay intended to enhance iOS platform and Apple customer engagement and loyalty.





- Apple Pay accounts for 75% of US contactless payments –a)
- As of June live in 9 national markets and payments up 450% yoy, albeit off small base. -a)
- As of June, 2016 23.8% of eligible users had tried Apple Pay –b)
- In Australia Apple is fighting with banks over fees and opening up iPhone for bank digital wallets
- In Japan will support FeliCa (Japanese proximity-payment protocol) for use of public bus and train passes.

US Apple Pay Adoption
Among eligible users



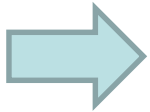
Source: PYMNTS/InfoScout

BI INTELLIGENCE

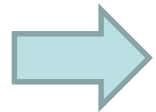
(a- "Apple Pay accounts for 75% of all contactless payments in the US," NFC World, July 27, 2016
(b- "Apple Pay is struggling to catch on," Business Insider, June 28, 2016

Apple

- Apple extracting interchange from card issuers typifies banks' risk. Issuers paying to play, because of the Cupertino giant's ability to shift spend, not security.



It's early days. The Cupertino tech giant will persist and look to enable more value in Apple Pay.



Apple doesn't want or need to be a payments company to use payments to enhance its platform or to capture additional economics from banks.

Facebook

- World's uber-social network.
 - Maestro of consumer engagement
 - 1.7 billion active users
 - 1 billion WhatsApp users
 - .9 billion Facebook Messenger users
- } 60 billion messages daily

World's most-popular messaging apps, as of April

Company	Owner	Countries leading in
WhatsApp	Facebook	109
Messenger	Facebook	49
Viber	Viber Media	15
Line	Naver	4
WeChat	Tencent	3
Telegram	Telegram Messenger	2
Kakao Talk	Kakao	1

SOURCE: SIMILARWEB

WSJ

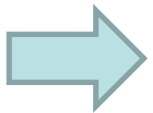
Facebook

- Didn't hire former PayPal chief for insight into social networks.
- Offers money-losing P2P payments to increase consumer engagement.



Facebook

- Experimenting thus far unsuccessfully with buy buttons.
- Conducting a trial of Qwik in Thailand enabling users to pay via a credit or debit card or bank transfer to pay for products listed on Facebook Pages with a couple clicks. –a)
- Money-transfer specialist Azimo integrated Facebook Messenger enabling senders and receivers to connect through friend lists for cross-border remittances.
- Chat and chat bots (e.g. Bill Hero) offer rich possibilities to front-end payments and basic retail banking.



Will up its wallet game. Subject to its ambitions, the social-network Gargantua ultimately could be the most threatening to the existing ecosystem.

Amazon

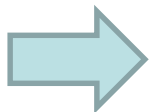
- World's leading retailer and logistics platform
- ~ 304 million active customers ^{-a)}
- ~ 60 million Prime members in US
- Amazon's mobile-payment-acceptance effort competing with Square, iZettle, Intuit, PayPal Here, Worldpay Zinc and Sumup failed.
- A compelling 5%-off credit card with Synchrony and 3%-back co-branded Visa card with Chase, which is also its merchant acquirer and processor.
- Offers short-term working capital loans to boost vendor participation on its platform. US, Japan, Canada, China, France, Germany, India, Italy, Spain & the UK are target markets. ^{-b)}

(a- Statista.com estimate as of December, 2015

(b- "Amazon is going to start offering business loans to sellers in China," Reuters, June 29, 2015

Amazon

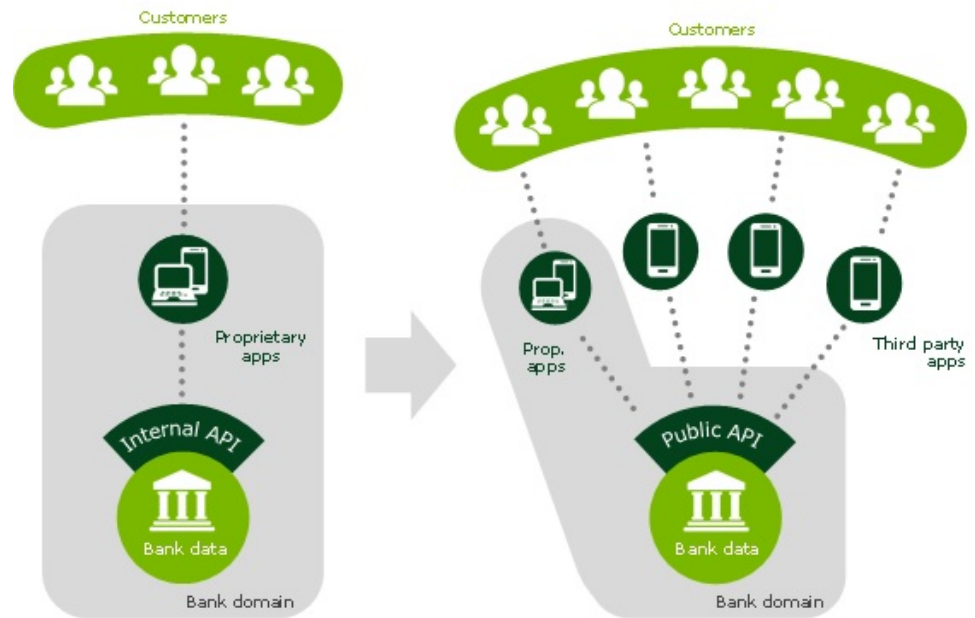
- Extending payments outside Amazon. Opportunity ultimately circumscribed because many retailers view Amazon as a competitor
- Introduced Prime carrier billing with Sprint
- July 21st announced multi-year discounted student-loan partnership with Wells Fargo. No fee sharing. However, August 31st Amazon and Wells Fargo shelved it.



May distribute more financial products

Engagement

- Application Programming Interfaces are the digital connectors enabling two software applications to communicate
- Standards-based APIs enable “open” payments or banking. There has been a tsunami of hype about FIs implementing APIs to open up their platforms
- EU PSD 2 requires open access to bank customer accounts.

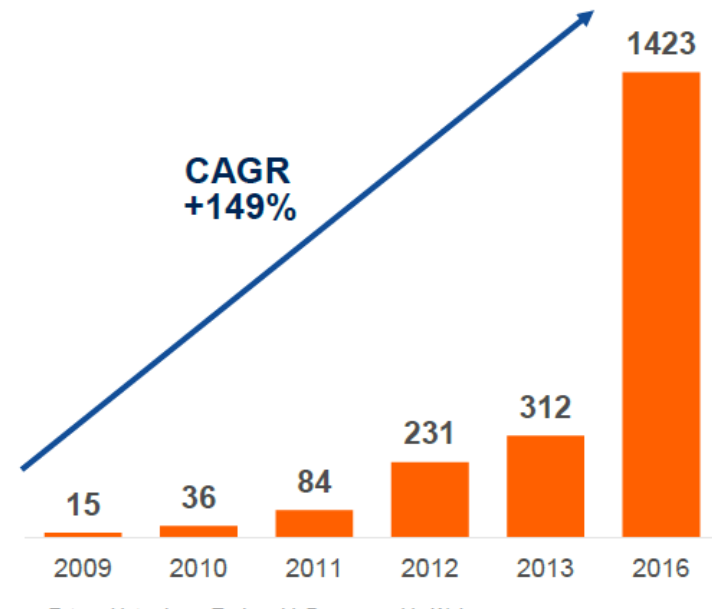


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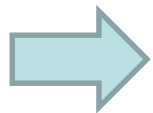
Engagement

- U.S. decoupled debit
- There are degrees of open. Totally open risks relegating banks to utility status.

Growth in payment APIs
(No. of APIs)



-a)



With GAFAs' engagement and market heft, it may be hard to resist encroachment and providing access to many core services.

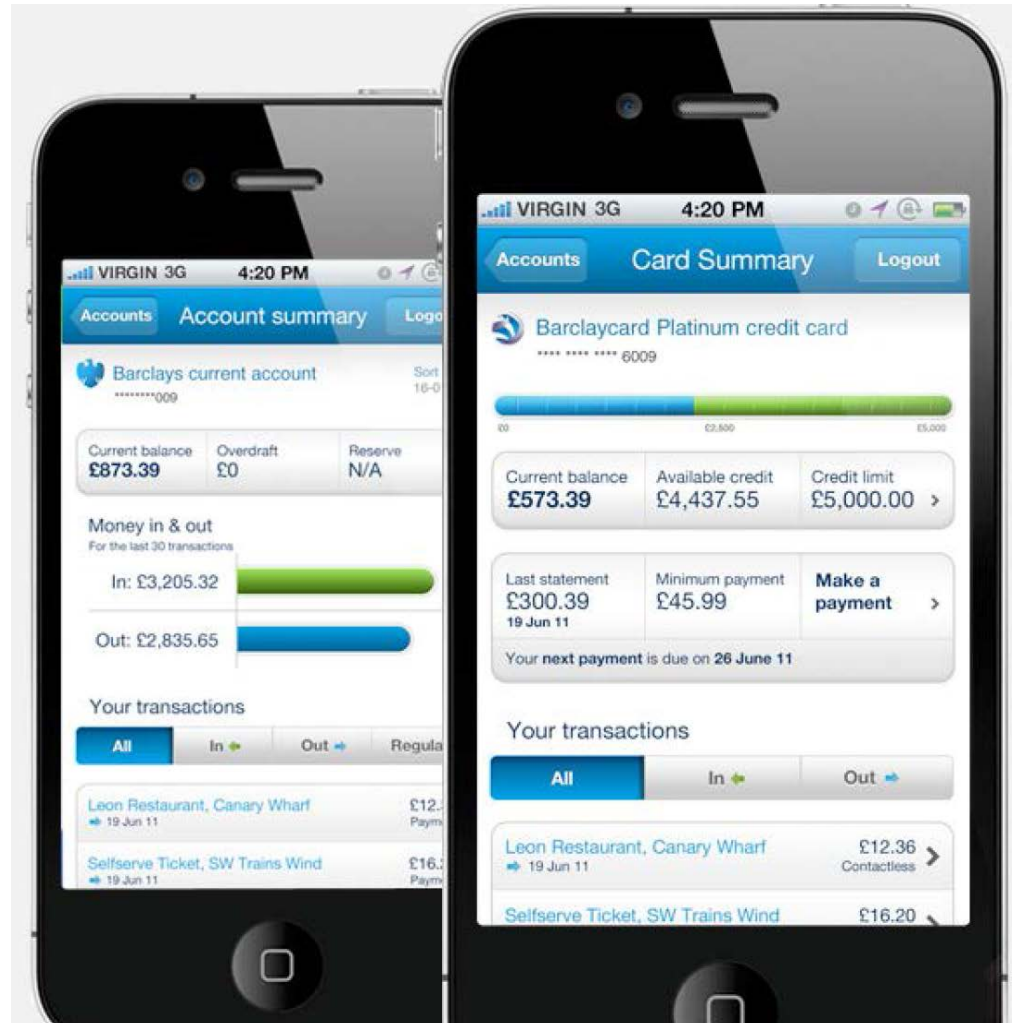
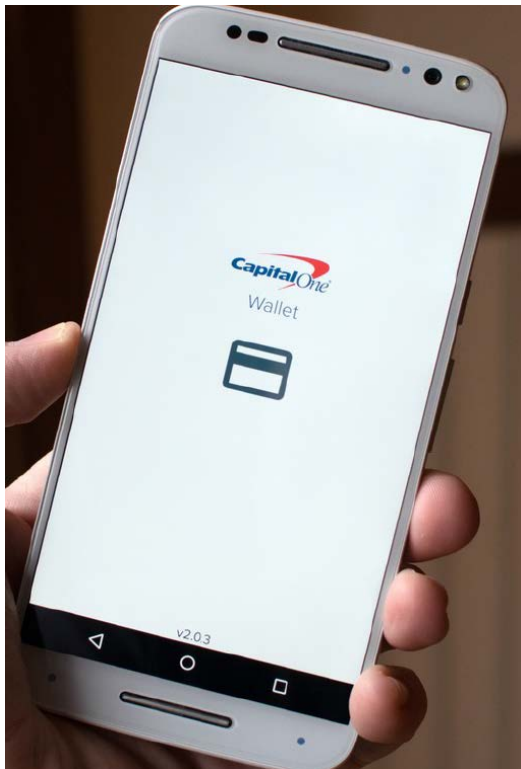
(a- Discover estimate)

Engagement

- Each GAFAM can be viewed as a consumer portal and engagement platform which to suit its own purposes will use payment networks, processors and banks to enhance its business.
- The digital wallet
 - Amazon, Apple and Google have general-purpose digital wallets. Facebook wallets are proprietary, for now.
- The portfolio of apps and in-app wallets on the handset and on the desktop.
- Furthermore, in providing subsidized financial services such as P2P payments, bill payment, digital wallets and co-branded and private label credit cards to enhance their platforms, the tech colossi can diminish bank visibility and fee income.

Engagement

➔ Most major banks would prefer their customers use their mobile wallets and apps, but have little choice but to support Apple Pay, Android Pay and Samsung Pay. Same true in China with Alipay



Engagement

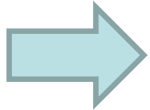
- Payment networks' acceptance and spend mass is a powerful bulwark. Must maintain network brand visibility and rules at the point of payment. If and when GAFA platforms can influence spend mix consider increasing and paying them a piece interchange. –a) Services such as tokenization, encryption, and risk-based authentication can reinforce network centrality.
- Processors need scale and to build a broad and deep roster of payment schemes à la Adyen and Worldpay, robust risk management and easy integration.
- Larger banks should promote their own apps and wallets and reward-advantage them. Greater customer penetration is even more important in a world of payments and services anywhere anytime and massive tech intermediaries. Also, should push affinity and co-brand relationships where commercially practicable.

Conclusions/Predictions

- GAFAs won't engage in or materially impact wholesale and corporate banking.
- They won't become payment networks or processors, and would not benefit from deposit taking or providing credit directly.
- P2P payments reinforces Facebook and Google platforms. Apple but not Amazon may join them.
- Offering retail payments back-ended by banks and payment networks makes sense for all GAFAs.
- Bill payment will enhance Google's platform. Apple and Facebook but not Amazon may join it.

Conclusions/Predictions

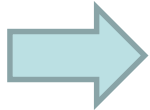
- As payment concentration points while they'll generate incremental transactions, long-term they may squeeze bank and network brands and transaction economics.
- Amazon and Apple have credit cards. None of the GAFAs will engage in credit unrelated to their businesses. Google at least at the margin makes consumer credit markets more efficient. Amazon could retail a supermarket of FI consumer credit products (à la Bankrate).
- GAFAs will diminish bank engagement and brand capital.



None of the GAFAs want to be payment networks or processors or banks. The two that may have the network capacity to upend the existing payments ecosystem are Facebook and Google.

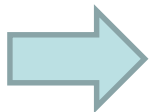
A doomsday scenario

- GAFA digital wallets and dash boards become the primary vehicles through which consumers manage retail payments across all channels, loyalty & reward programs, promotions, domestic and cross-border P2P payments, and bill payment, and financial assets and liabilities.



Fees or rents collected for transactions and accounts and credit established through GAFA platforms. Payments and retail banking commoditized.

- Google and/or Facebook reach deep into their wallets, establish ubiquitous retail and P2P payment-acceptance brands and directly or indirectly control payment schemes' rules and economics.



Payment and money-transfer network economics eviscerated.

Q&A