



The reigning retail-payments ecosystem: its trajectory, threats, adjacent opportunity space and changing dynamics on the edge

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* Views expressed are strictly the author's.



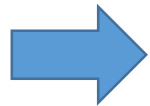
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Retail-payment systems

- General-purpose bankcard payment networks were the greatest payments and retail-banking innovation in the 20th century.
- >300 traditional and alternative retail-payment schemes worldwide
- Global traditional “card” networks
 - Mastercard
 - Visa
- Tier-two global card networks
 - American Express,
 - China UnionPay
 - Discover/Diners Club
 - JCB
- A planet-wide patchwork of national systems
 - Accel, Acept, Pago Bancomat, BCC, Cartes Bancaires, Dankort, Elo, NYCE, Interac, Mir, Rupay, Star, Troy, Mister Cash, Multibanco, Euro6000, Redsys, Sistema 4b, et al

Electronic-payments growth drivers

- Globalization, economic & population growth, and long-term secular trend of electronic payments displacing cash, checks, and other forms of credit.
- Growing affluence and aspirations spur increased propensity of consumers and small businesses to consume revolving credit.
- In 2018 global general-purpose card-purchase transactions increased a sizzling 24.9% yoy. ^{-a)}



Global networks enjoy better economics and more sustainable growth than national systems

(a- Nilson Report 1154, May, 2019, p. 9. Includes Amex, Visa, Mastercard, Diners Club/Discover, JCB and UnionPay. UnionPay growth was a whopping 67.7%. Mastercard and Visa were a more terrestrial 19.6% and 11.9% respectively. American Express, JCB and Discover were 10.9%, 13.7% and 10% respectively.

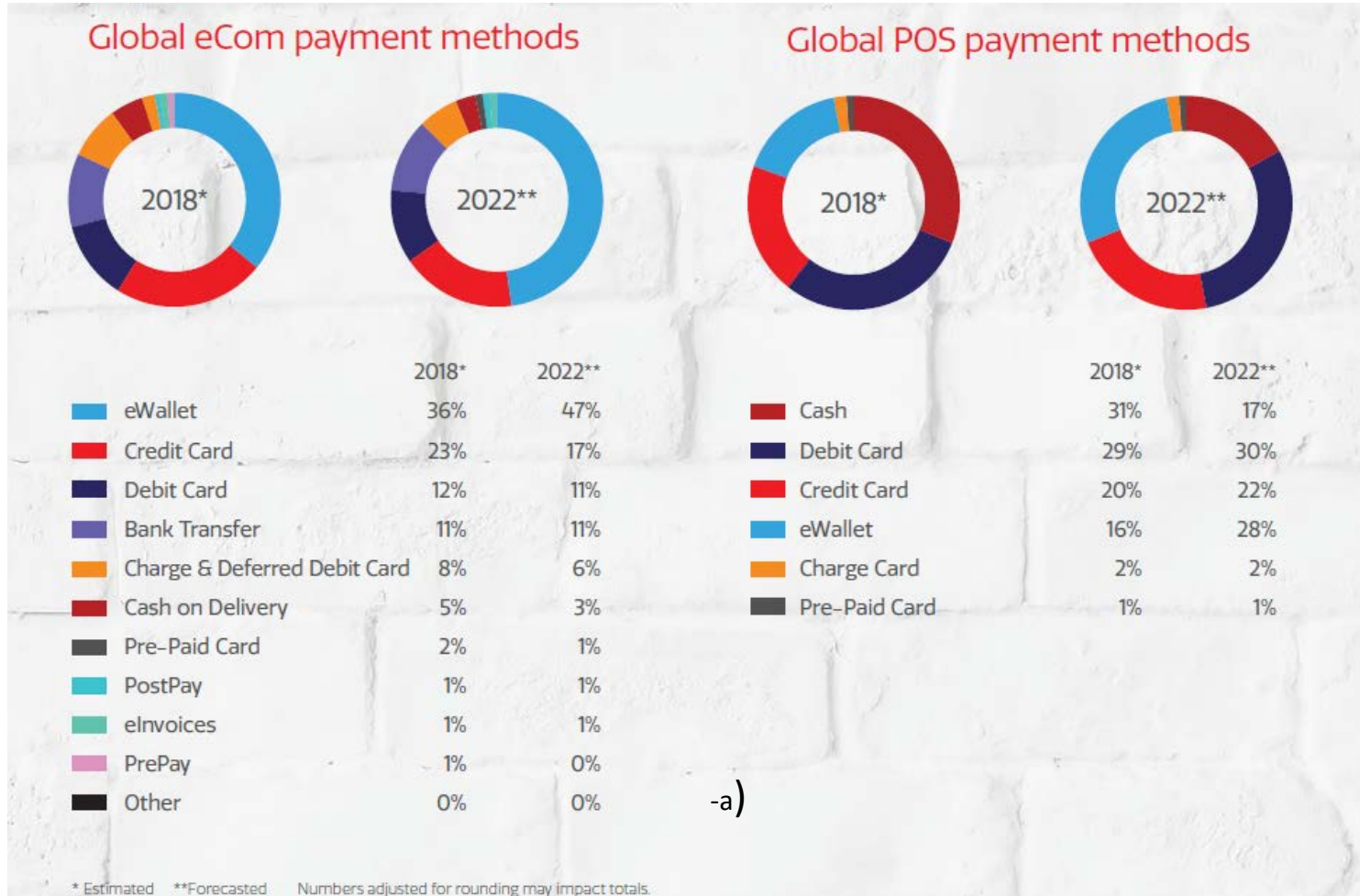
Threats to the reigning payments systems

- Alternative payments systems
- P2P systems going to retail
- Real-time payments
- Cryptocurrencies
- Regulation

Stresses to the traditional business model

- Attacks on interchange persist
- Network fees are in the cross hairs
- A handful of jurisdictions including India and China regulate merchant discount fees
- A wave of new providers of installment retail credit competing with credit cards.

Alternative payments systems



- Highly relevant in some markets, irrelevant in others
 - M-Pesa
 - PayPal
 - Paytm
 - iDeal
 - Sofort
 - Trustly
 - Alipay
 - WeChat Pay
 - Et al
- Threaten card networks
- In many markets a plus for merchant acquirers & processors.

Alipay and WeChat Pay stand out among alternative payments systems for their scale and global ambitions

- Alipay has more than 700 million users in China and 900 million users worldwide –a)
- 130% yoy growth in Chinese tourists using Alipay abroad –b)
- Assembling and stitching together a fully and partially-owned portfolio of payments assets abroad, including KakaoPay (Korea), Mynt/GCash (Philippines), Touch'n Go (Malaysia), Dana Wallet (Indonesia), True Money (Thailand, Cambodia, Burma, Vietnam, Philippines and Indonesia), bKash (Bangladesh), EasyPaisa (Pakistan), and Paytm (India)
- Using a distributed-digital-ledger Alipay launched cross-border payments with GCash
- WeChat Pay has ~ 900 million users. –c)
- Domestically Alipay and WeChat Pay are challenging CUP at the physical pos. Abroad they're partnering with acquirers to build acceptance.

(a- China Daily, "China's Alipay now has over 900m users worldwide," November 30, 2018

(b- Ant Financial, September 17-18, 2018 Investor Day. 130% yoy growth August, 2018

(c- Mobile Payments Today, "Allied Wallet adds WeChat Pay with 900 million active users," October 12, 2018

Alipay and six European mobile wallets collaborating on payments interoperability, EAPS 2.0?

Travelling in Europe with Mobile Phones

Bluecode, ePassi, Momo Pocket, Pagaqui, Pivo, Vipps and Alipay join hands to promote mobile payment interoperability for travelers in Europe and from China.

Total European merchants: 190,000

Total European users: more than 5 million

■ Countries covered by the same QR code format

● Where are the wallets from

- | | | | | |
|---|------------|------|---|----------------------------------|
| 1 | ePassi | pivo | 4 | PAGAQUI QUERO, POSSO E PAGAR! |
| 2 | bluecode | | 5 | vipps |
| 3 | MOMO GROUP | | | |



P2P payment systems at or attempting to go to retail

- M-Pesa
- MobilePay
- Swish
- Jiffy
- Venmo
- Square Cash

Real-time interbank payments

- Real-time interbank payment systems are sweeping the globe.
- Real-time payments have been implemented in 29 countries including the US, plus the ECB's instant payments scheme is being rolled out across SEPA countries.
- Many policymakers and merchant lobby groups pine for interbank-payment transaction economics at retail.

Target Instant Payments System (TIPS)/The Visible Hand

- A pan-SEPA platform offering instant payments between participating banks at €0.002 per transaction.
- EU regulators socializing yet another payments intervention.
- Valdis Dombrovskis, the EC's VP for euro and social dialogue, declared February 26th the EC was “reflecting on whether a stronger regulatory push would be needed to speed up” use of the ECB's instant-payments system to “disrupt existing payment solutions – including cards.” –a)
- In February ECB board member Yves Mersch urged promoting TIPS and establishing interoperability between legacy national payment system, and perhaps harnessing TIPS, to create a euro-champion to compete with Mastercard and Visa. –b)
- At the Merchant Payments Ecosystem conference in Berlin on February 20th the ECB's head of market innovation and integration Helmut Wackett, extolled TIPS for bringing instant payments to retail. –c)

(a-Remarks by Valdis Dombrovskis, February 26, 2019 at 3rd Annual Conference on “FinTech and Digital Innovation: Regulation at the European Level and Beyond” in Brussels.

(b- Speech by Yves Mersch, Member of the Executive Board of the ECB.
at the American European Community Association, Brussels, February 7, 2019

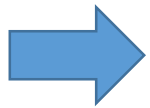
(c- ECB's Helmut Wackett presentation at the Merchant Payments Ecosystem conference in Berlin, February 20, 2019.

Cryptocurrencies: Ballyhooed Bitcoin not fit for licit retail payments. Perhaps Facebook's digital coin will be the charm

- Facebook's first payment system failed. It's pulling out of P2P payments in the EU
- The world's largest social-media platform Facebook is on the brink of establishing an association to launch a new payment system.
- More than a dozen interested firms including Visa, Mastercard, PayPal and Uber have pledged to invest ~ \$10 million a piece in the Libra Association, which will govern Facebook's digital coin. -a)
- It'll be a stablecoin, backed by a basket of fiat currencies.
- Stripe, Bookings.com and MercadoLibre have agreed to accept the digital coin
- With 2.4 billion active users Facebook has the reach and resources to give it go.
- More targeted ads, engagement and incentives could spur commerce and produce more ads and payments. That would boost fees and increase the social network's flywheel effect. Could use its stablecoin to pay users to watch ads and discount payment and advertising fees for merchants to incent use on platform, in adjacent e-commerce and potentially at the physical pos.
- Regulatory hurdles will be high
- A white paper introducing Facebook's stablecoin will be released this week.

EU regulatory environment

- With only 135 card payments per capita within the EU in 2017 - up 10.9% yoy ^{-a)}, plenty of growth headroom, but regulators view payment systems as a utility and are hostile in particular to Mastercard and Visa.
- 2015 EU interchange price caps hurt issuer revenue. Following the interchange caps 70% of card-product changes made by 78 EU issuers were unfavorable, in terms of higher fees and/or reduced rewards. ^{-b)} Interregional interchange wasn't covered by the legislation.
- EC jawboned Mastercard and Visa to reduce interchange on cards issued outside used inside the EEA at the physical pos to 30 and 20 basis points for credit and debit respectively effective October, 2019. Agreed to 150 and 115 basis point caps for online credit and debit respectively.



Curious mercantilist asymmetry to the EC's intervention as didn't cap interchange on EEA-issued cards used elsewhere.

- In 2020 the EC will revisit its interchange price controls.
- Merchant lobby beating the tom-toms for curbing network fees.

(a- ECB

(b- First Annapolis, Navigator, March, 2017, p. 5

EU regulatory environment

- PSD2 intended to enable competition from new quarters, and to weaken banks' and traditional card networks' payments franchises
- Payment initiation
- Payment-transaction data harvesting
- Prescriptive risk management
 - Mandates strong two-factor authentication
 - Exemptions for specified low-risk transactions if bank below permissible fraud thresholds
 - 0.13% to exempt transactions below €100
 - 0.06% to exempt transactions below €250
 - 0.01% to exempt transactions below €500
- Takes effect September, 2019. Many not ready. Possibility of e-commerce collapse
- At Money2020 this month Stripe CEO Patrick Collison warned readiness was "poor" and that the EU could lose €57 billion in commerce in SCA's first year
- Likely PSD2 beneficiaries may cause consternation in Brussels.

US payments regulatory environment relatively benign

- Vestiges of Operation Choke Point being reined in
- Fed likely to reduce the debit-interchange cap when it next revisits it
- However, a President Warren and a Senate Majority Leader Durbin in 2021 would be a tectonic shift

In China UnionPay remains a protected monopoly card-network

| | 2015 | 2016 | 2017 | 2018 |
|-----------------|--------|-------|-------|-------|
| Purchase volume | 29.82% | 2.7% | 21.5% | 35.1% |
| Transactions | 47% | 32.0% | 53% | 67.7% |

-a)

- December, 2017 31.2 million pos terminals, up from 10.6 million in 2013, -
b) and 7.6 billion payment cards -c)
- UnionPay acceptance but not issuance relevant globally
- Regulators' grip on Alipay and WeChat Pay tightening

(a- Nilson Report 1154, May, 2019, p. 9, Nilson Report 1130, May, 2018, p.9, Nilson Report 1109, May, 2017, p. 9 and Nilson Report 1085, April, 2016, p. 9

(b- Bank for International Settlements

(c- Nilson Report 1154, May 2019, p 9

Statistics on Payments, Clearing & Settlement, BIS, December, 2017, p. 79

Extending to adjacent space: P2P, interbank, B2B domestic and cross-border payments

- Idea is to leverage formidable global retail-payment network assets in adjacent payments markets
- Cross-border remittances were ~ \$689 billion in 2018 ^{-a)}
- Total B2B payments ~ \$120 trillion ^{-b)}
- Visa/Western Union
 - Western Union to use Visa's credit-push service Visa Direct to support realtime payments for businesses and consumers worldwide. ^{-c)}
 - Visa 3.3 billion cards. Global network
 - Western Union planet-wide money-transfer compliance
- Thinly capitalized UK cross-border payments firm Earthport struggled to realize its compelling vision of interoperating to provide cross-border payments to banks, businesses and money-transfer networks.
- Its May, 2019 acquisition by the world's largest payment network should enable Earthport to realize the opportunity and gives Visa an asset with which to up its game supporting noncard cross-border B2B payments.

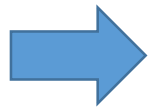
(a- The World Bank

(b- Mastercard

(c- Alex Rolfe, "Money2020: Visa and Western Union partner on global payments," Payments Cards and Mobile, June 5, 2019

Extending to adjacent space: P2P, interbank, B2B domestic and cross-border payments

- Visa launched B2B Connect for high-value bank-to-bank cross-border payments.
 - Near real-time notification and payment finality.
 - Live covering 30 global trade corridors.
 - Aiming for 90 markets by yearend.
 - FIS and Bottomline Technologies bringing the platform to their client banks.



Visa is taking aim at Swift. Greater threat to Swift than Ripple

- Mastercard acquired UK banks' monopoly interbank payment processor Vocalink
 - The card network can compete for and potentially interconnect real-time interbank payments worldwide
 - Transaction economics thin gruel compared with retail payments
- Mastercard invested in AvidExchange, which provides accounts-payable and payments-automation solutions to SMEs.
 - Integrating with platforms used to manage B2B payments extends the addressable market.


On the edge

- Since their IPOs Mastercard and Visa have proactively enabled innovation and broader participation on both sides of the network rather than serving as gatekeepers.
- On the acceptance side of the network over the last decade there's been a firestorm of innovation, new and nontraditional entrants, and additional value wrapped around payments
- In the last several years there've been new entrants in oligopolistic issuer processing
 - Marqeta
 - Tribe
 - With Moorwan as an issuer UnionPay issuing credit and debit cards in Europe
 - Stripe
- Additionally issuer processors traditionally serving emerging markets, are attempting to move upmarket
 - RS2
 - HPS
 - FSS

Consolidation

- Fiserv/First Data
 - Both have US debit networks
- FIS/Worldpay
 - Both have US debit networks
- Global Payments/Total Systems

 Is it pursuit of scale for scale's sake or is there a possibility of realizing synergies from creating a broader payments ecosystem?

 Impact on networks Visa, Mastercard, American Express and Discover likely to be negligible

Closing thoughts

- For traditional card networks and alternative payments systems network effects rule
- If management aren't complacent and keep regulators at bay, networks with critical mass should enjoy robust growth and transaction economics for the foreseeable future.

Q&A