# Fintech 4.0 Update

# Robinhood and SoFi

1

# Success of Robinhood and SoFi

**Main revenue sources:**
1. **Payment for Order Flow**
2. **selling order information to high frequency traders**
3. **Margin lending**

**USP: Users can make unlimited free trades. It bills its product as "investing for everyone".**

<u>Why so popular:</u>
- easy to use interface on mobile-app (game-like)
- "boredom market hypothesis"
- social aspects: incentives users to invite friends and family offering cheap stocks for free

**USP: relatively low costs (variable-rate loans (with auto-pay) start at 1.99% and fixed-rate loans (with auto-pay) start at 2.99%)**

<u>Why so popular:</u>
- disrupted lending in the US, offering unique services that traditional banks lack: Student loan refinancing, 10 percent down mortgage loans without expensive mortgage insurance, personal loans and wealth management
- also offer client benefits like career strategy, job search services, and even networking dinners and happy hours
- lock-in of customers: for clients of SoFi that are refinancing student loans it gets easier to qualify for one of the other products (mortgage, personal loans) at a lower rate
- payment flexibility: SoFi allows borrowers to delay or suspend payments

# Robinhood's Payment for Order Flow and Protest

The main week of GameStop madness saw retail traders as net *sellers* of Gamestop

| | Retail buys | Retail sells | Net |
|---|---|---|---|
| Monday | 26,558,557 | 24,489,122 | 2,069,435 |
| Tuesday | 24,888,375 | 26,794,942 | (1,906,567) |
| Wednesday | 12,966,267 | 13,743,184 | (776,917) |
| Thursday | 9,972,227 | 10,078,110 | (105,883) |
| **Week so far** | **74,385,426** | **75,105,358** | **(719,932)** |

*"One more piece of background about payment for order flow. A few years back, Robinhood Markets Inc. had a crucial insight: Instead of charging a $5 commission and passing along 80% of the wholesaler's discount to customers in the form of price improvement, it could charge no commission and pass along 20%, keeping the other 80% for itself."*

# Success of Robinhood and SoFi





**Main revenue sources:**
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2. **selling order information to high frequency traders**
3. **margin lending**

**USP: Users can make unlimited free trades. It bills its product as "investing for everyone".**

Why so popular:
- disrupted the industry by offering trading for zero costs
- easy to use interface on mobile-app
- the U.S. is facing record-high unemployment, the stock market is currently riding high, and some see trading as a way to make money.
- for free and the money traded doesn't feel like "real" money
- social aspects: incentives users to invite friends and family offering cheap stocks for free

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# SoFi SPAC- merger

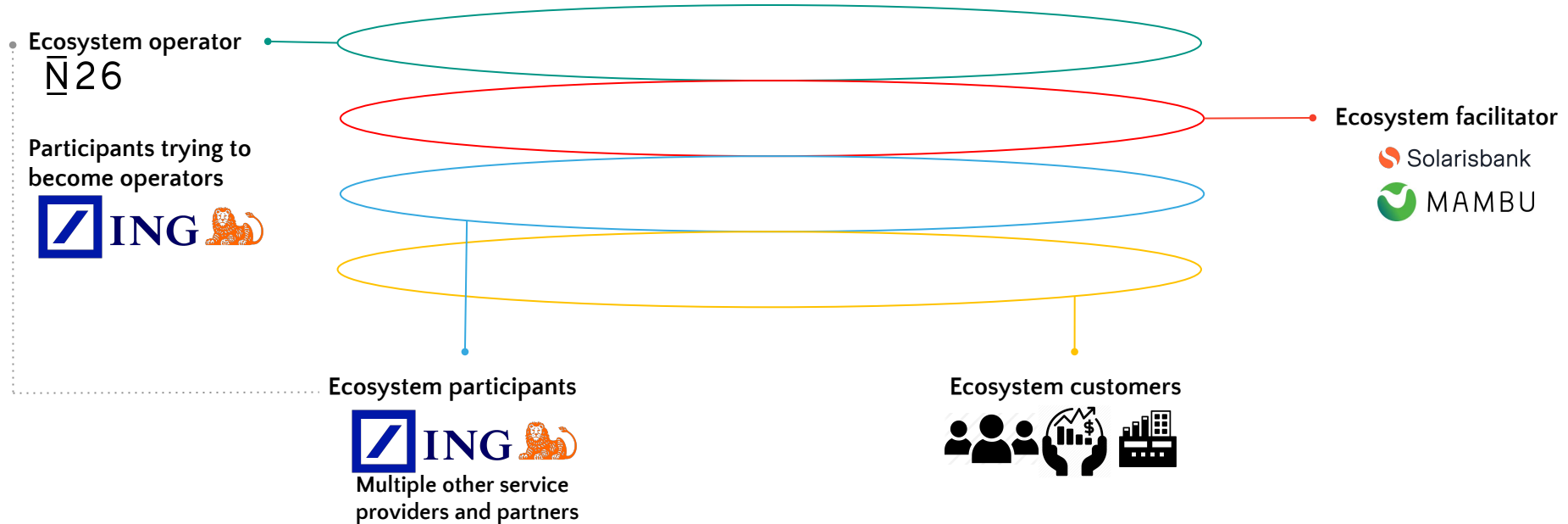## SoFi aims to become the Amazon of fintech through its Spac deal

- SoFi is scaling up its product and services range and needs investment into banking and technology both being capital-intensive businesses

- It **acquired payments and bank account infrastructure company Galileo** in June 2020 for $1.2bn in total cash and stocks
  - Galileo provides APIs that allow fintech companies like Monzo and Chime to easily create bank accounts and issue physical and virtual credit cards, among myriad other services. While simple in theory, banking regulations and financial rules place a huge regulatory burden on fintech companies, burdens that Galileo takes on as part of its platform.
  - From a strategic perspective, **SoFi's objective is that Galileo will help power its expanding suite of finance products** and **offer it another revenue source** outside of consumer services and tap into the B2B revenue component as well

- The company announced to go public via a merger with a special purpose acquisition company Social Capital Hedosophia Holdings Corp V, one of a series of blank-check companies formed by venture capital investor Chamath Palihapitiya.

- The deal would value SoFi at $8.65bn according to the company's statement and includes

  - $2.4bn in cash, encompassing $1.2bn from a confirmed private placement

  - $805mn in funding from the SPAC's balance sheet and additional funds from prior investment into SoFi closed last month led by T. Rowe Price

# Traditional banks and ecosystems

**2**

# The creation and participation in a financial ecosystem

**Ecosystem operator**

N̲26

**Participants trying to become operators**

*ING* 🦁

**Ecosystem facilitator**

Solarisbank

MAMBU

**Ecosystem participants**

*ING* 🦁
**Multiple other service providers and partners**

**Ecosystem customers**

## Ecosystem operators/initiator
Own and maintain the customer relationship and thus operate a platform according to the principle of "the winner takes it all". Decide on access to the ecosystem and connect participants with each other, to optimize customer value. Both Whitelabel as well as own-brand ecosystems known.

## Ecosystem facilitator
Enable ecosystems through technological infrastructure, necessary licenses, data or other assets for functionality. Provide services outside the core competence of the ecosystem operators, for example in the event of excessive costs for in-house development or excessive complexity.

## Ecosystem participants
Provide added value to customers in the form of services and/or data. Define the value proposition for the end consumer. Can act as a provider in various ecosystems which can also compete with each other.

## Ecosystem customers
Consume ecosystem services and products, Often with the support of the ecosystem provider. Generally use few ecosystems (single sign-on).

# The entire system depends on credit risk (issuer ⇔ cardholder) and fraud risk (merchant ⇔ acquirer)



**Figure 1. Illustrative Example of Four-Party Network**

Cardholder — Debit — $100

Merchant — $98.57

$1.43 Merchant Discount Fee

10¢

Underwrite

VISA/MC Network Provider

Underwrite

$1.03 Interchange Fee

30¢

Issuer — Cardholder's Bank

Acquirer — Merchant's Bank
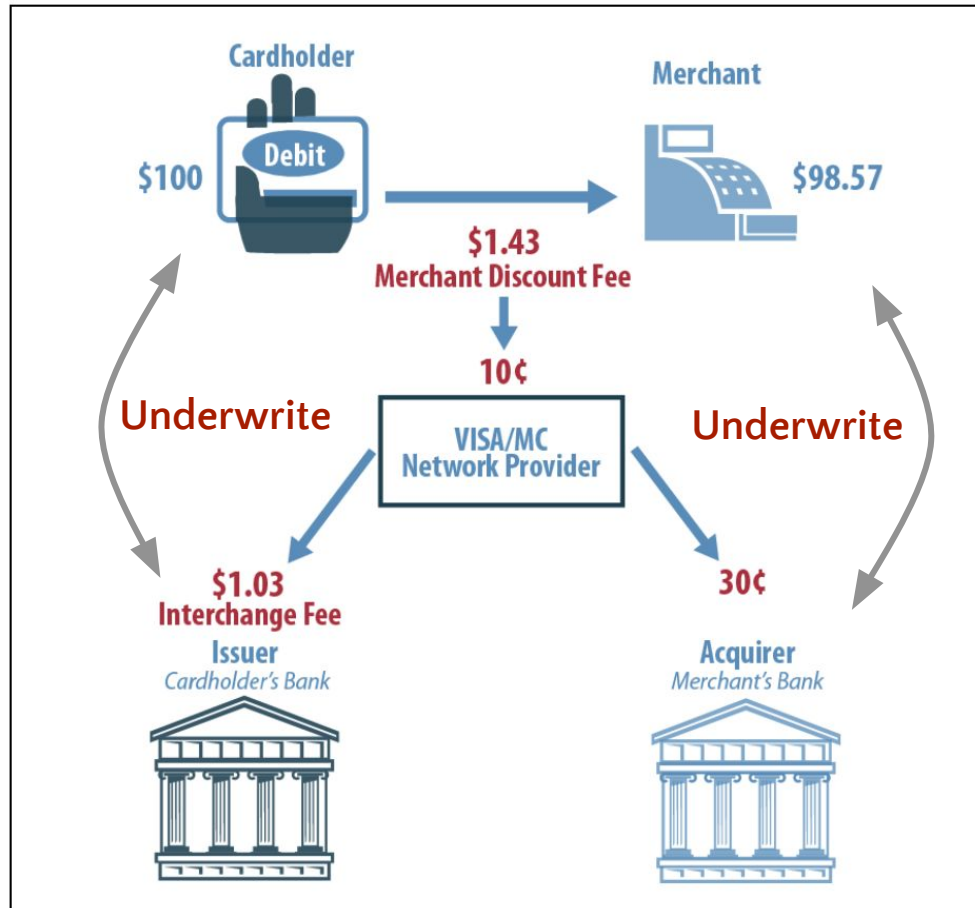
**Source:** The Congressional Research Service (CRS).

# Regulation and laws

# 3

# MasterCard Raking it In (Brexit)

**Mastercard gets 1.5% for UK ⬌ EU transactions because Brexit ends 0.3% cap of EU ⬌ EU transactions (EU Law)**

**Deutsche Bank soon switches to Mastercard**



yahoo!finance

## Brexit: MasterCard to raise interchange fees fivefold

**Saleha Riaz**
January 25, 2021 · 3 min read

^FTSE +1.40%    MA -0.55%    V -0.33%    GBP=X -0.396%    GBPUSD=X +0.3733%

Quote Lookup

**Related Quotes**

| Symbol | Last Price | Change | % Change |
|--------|-----------|--------|----------|
| **GBP=X**<br>USD/GBP | 0.7194 | -0.0029 | -0.396% |
| **GBPUSD=X**<br>GBP/USD | 1.3901 | +0.0052 | +0.3733% |
| **MA**<br>Mastercard Incorporated | 341.00 | -1.87 | -0.55% |
| **V**<br>Visa Inc. | 209.96 | -0.70 | -0.33% |
| **^FTSE**<br>FTSE 100 | 6,681.90 | +92.11 | +1.40% |

**Recently Viewed** >

| Symbol | Last Price | Change | % Change |
|--------|-----------|--------|----------|
| **BTC-USD**<br>Bitcoin USD | 47,445.93 | -1,213.83 | -2.49% |
| **MSFT**<br>Microsoft Corporation | 244.99 | +0.50 | +0.20% |
| **GME**<br>GameStop Corp. | 52.40 | +1.30 | +2.54% |
| **BB**<br>BlackBerry Limited | 13.04 | +0.58 | +4.65% |

From October, Mastercard will charge 1.5% of the transaction value for every online credit card payment from the UK to the EU, up from the current 0.3%. Photo: Getty Images

# Strong Customer Authentication (PSD2)

For card-not-present (CNP) transactions (ie online) the customer must supplement card details with

**SOMETHING THE CUSTOMER KNOWS**

(e.g., password or PIN)

**SOMETHING THE CUSTOMER HAS**

(e.g., phone or hardware token)

**SOMETHING THE CUSTOMER IS**

(e.g., fingerprint or face recognition)

# Exceptions to Strong Customer Authentication

| Exception |
| --- |
| Physical contactless < EUR 50 |
| Automatic parking machines and tolls |
| Whitelist (managed by issuer) |
| Recurring transactions |
| Very low prices (<EUR 30) |
| Secure corporate payments |
| **Transaction Risk Analysis** |

# Transaction Risk Analysis

Stripe/PayPal/Square

| Transaction value band | PSP fraud rate |
|---|---|
| <€100 | 13 bps/0.13% |
| €100-€250 | 6 bps/0.06% |
| €250-€500 | 1 bps/0.01% |

*"The Issuer has the ultimate say on whether SCA needs to apply"*

Current PayPal fraud rate is **32bps** vs merchant-wide average of **132bps**

# Peloton Case Study: Value Extraction, not Creation

**Over half Peloton sales are BNPL because customers already view it as a "subscription" (which Peloton also has at $39/mo)**
**0% APR made possible by Peloton paying BNPL (Affirm) 8–15% and STILL clearing 40% gross margin**



**BIKE FAMILY**

$2,345

Includes delivery and assembly

As low as $61/month for
39 months at 0% APR.
Prequalify Now

SHOP NOW

# Fintech–related regulatory and supervisory initiatives (1)



**Fintech-related regulatory and supervisory initiatives**
International standard setters, EU and UK

**Feb 2015**
EBA opinion on lending based crowdfunding

**June 2015**
FATF guidance on a risk based approach to virtual currencies

**Dec 2016**
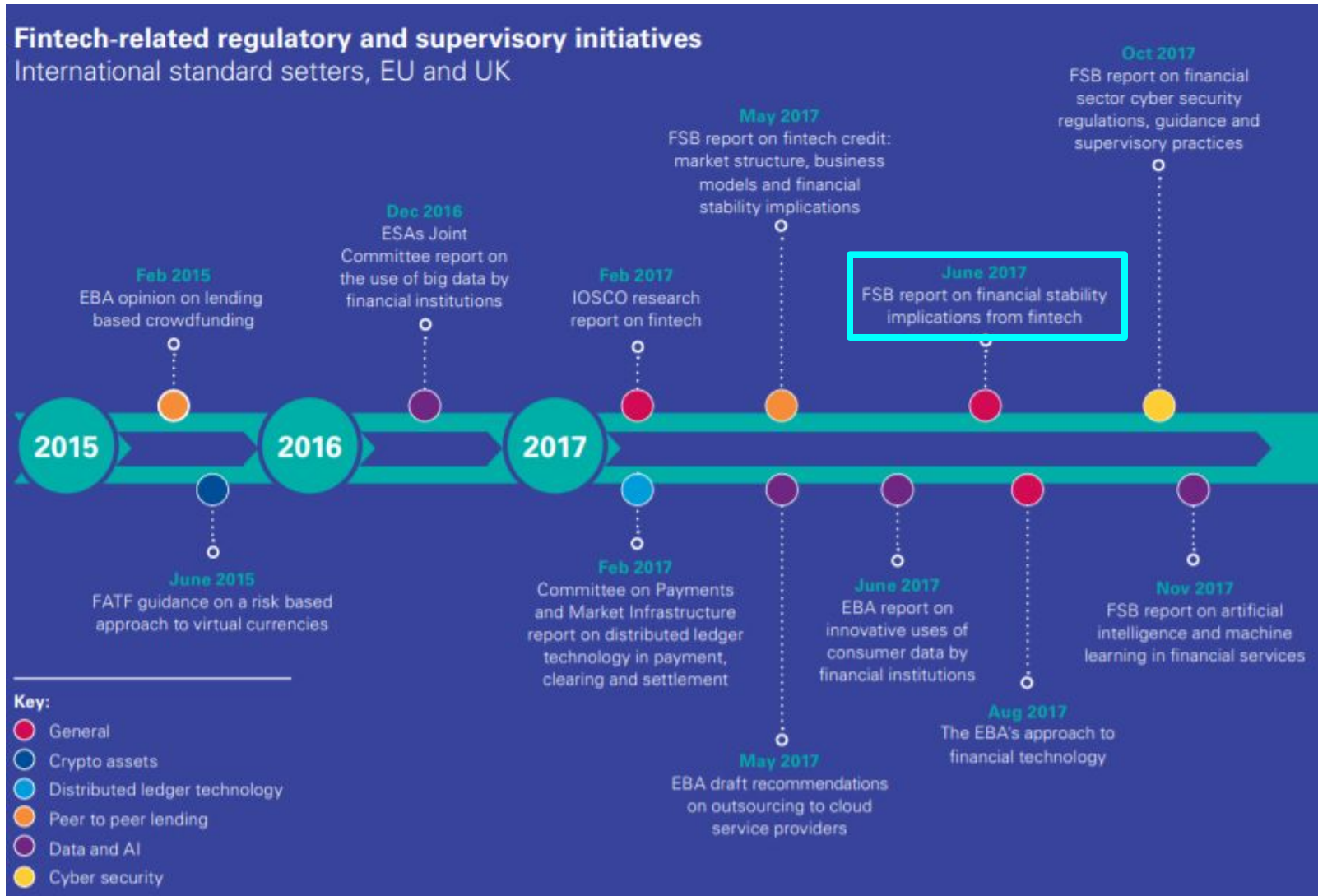ESAs Joint Committee report on the use of big data by financial institutions

**Feb 2017**
IOSCO research report on fintech

**Feb 2017**
Committee on Payments and Market Infrastructure report on distributed ledger technology in payment, clearing and settlement

**May 2017**
EBA draft recommendations on outsourcing to cloud service providers

**May 2017**
FSB report on fintech credit: market structure, business models and financial stability implications

**June 2017**
FSB report on financial stability implications from fintech

**June 2017**
EBA report on innovative uses of consumer data by financial institutions

**Aug 2017**
The EBA's approach to financial technology

**Oct 2017**
FSB report on financial sector cyber security regulations, guidance and supervisory practices

**Nov 2017**
FSB report on artificial intelligence and machine learning in financial services

2015    2016    2017

**Key:**
- General
- Crypto assets
- Distributed ledger technology
- Peer to peer lending
- Data and AI
- Cyber security

Source: KPMG

# Fintech–related regulatory and supervisory initiatives (2)



**Feb 2018**
Basel Committee Sound Practices for fintech developments for banks and bank supervisors

**Jun 2018**
PRA supervisory statement on algorithmic trading

**Oct 2018**
PRA, FCA and HMT report on crypto assets

**Dec 2018**
ECB cyber resilience oversight expectations for financial market infrastructures

**Jan 2019**
FCA guidance on crypto assets (regulatory perimeter)

**Mar 2018**
EU Commission Fintech action plan

**Jul 2018**
FSB report on the work of the FSB and international standard-setting bodies on crypto assets

**Dec 2018**
Basel Committee report on range of regulatory and supervisory practices on cyber security

**Jan 2019**
EBA report on crypto assets

**Feb 2019**
FSB report on fintech and market structure in financial services

2018

2019

Jan 2018
PSD2

**Mar 2018**
EU Commission legislative proposal for an EU framework on crowd and peer to peer finance

**Mar 2018**
ECB guide to assessments of fintech credit institution licence applications

**Jul 2018**
FCA consultation on loan based ('peer-to-peer') and investment-based crowdfunding platforms

**Dec 2018**
EBA draft guidelines on technology and security risk management

**Jan 2019**
ESAs Joint Committee report on regulatory sandboxes and innovation hubs

**Feb 2019**
FSB Global monitoring report on non-bank financial intermediation

Key:
- General
- Crypto assets
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- Peer to peer lending
- Data and AI
- Cyber security

# BNPL Regulation News

## Singapore's central bank reviews BNPL regulation over debt fears

Currently, Singapore is home to 1.1 million BNPL users, according to an October 2020 Finder survey.

https://www.fintechfutures.com/2021/02/singapores-central-bank-reviews-bnpl-regulation-over-debt-fears/

## FCA and UK Treasury "acting swiftly" to regulate fast-growing BNPL firms

The much-anticipated Woolard Review, published on Tuesday, calls on the UK's government to address the "urgent need" for "amendments to legislation" in the unsecured credit market "as soon as possible".

The Treasury, complimenting the review's call to action, acknowledged BNPL firms are "rapidly increasing in popularity", noting that the volume of BNPL transactions tripled in 2020.

https://www.fintechfutures.com/2021/02/fca-and-uk-treasury-acting-swiftly-to-regulate-fast-growing-bnpl-firms/

## Buy now, pay later: the role of EU regulation in shaping the 'new normal'

The EU must strike a balance between consumer protection and safety and innovation.

https://euideas.eui.eu/2020/12/17/buy-now-pay-later-the-role-of-eu-regulation-in-shaping-the-new-normal/

→ *Despite growing calls for reform from debt charities, these products remain largely unregulated. This is because the vast majority of products offered by BNPL service providers do not charge their customers interest. Therefore, they fall beyond the remit of regulation by the Financial Conduct Authority (FCA).*

# Current status and future limitations of data assets

**4**

# Open banking will allow customers to give their transaction data by choice

Open banking makes every single bank support what Plaid does
Petal Card does this
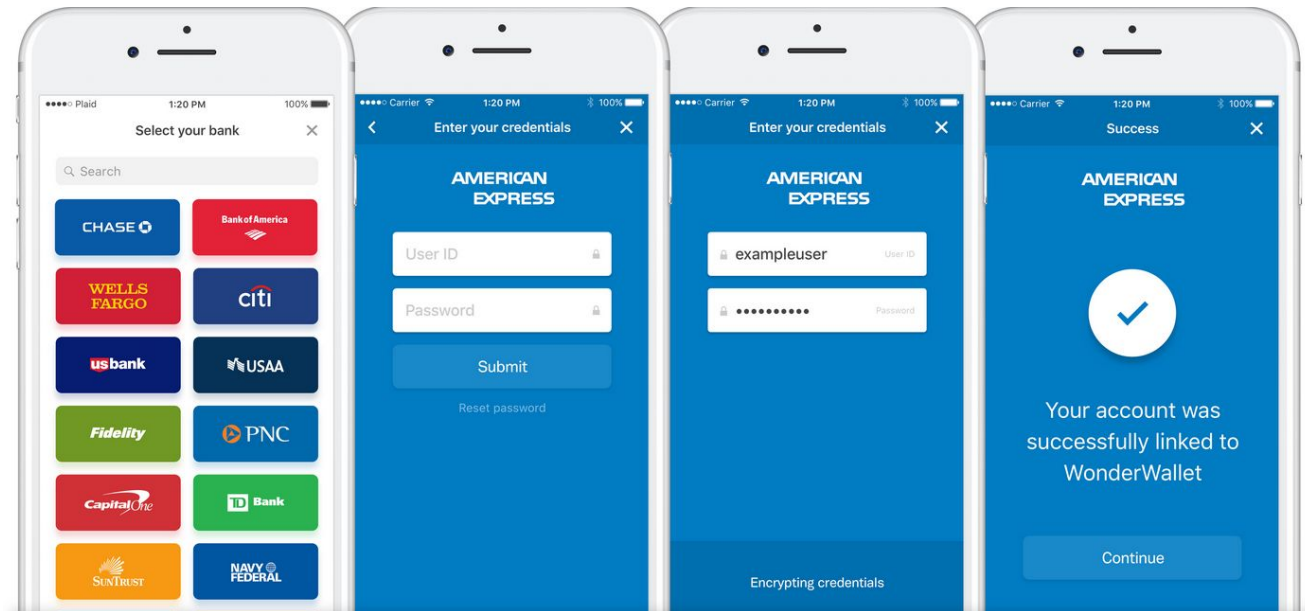
# Advantages of big data in banking services

1. **Efficient risk management that helps to detect errors and frauds in real time**
   - Business Intelligence (BI) tools that function on top of big data to provide analytics can identify the risks in sanctioning loans to potential customers.
   - Banks can analyze the market trends according to regional data available and decide on lowering or increasing interest rates in that segment.
   - Errors while copying data from forms manually are reduced to minimum. Other data entry errors are also rectified before they can affect the working of the bank, as big data analytics can point out anomalies in customer data.
   - With big data, banks can identify fraudulent transactions or entries at the onset as they vary from the acceptable standards set in the analytics dashboards.
2. **Analyze consumer behavior and provide personalized banking solutions**
   - Sales representatives and relationship managers can leverage the inputs from the big data analytics that help identify investment patterns of the customers, their financial and personal backgrounds, and their motivations to invest, so that they can provide personalized investment solutions that are a combination of accounts, insurances, loans.
3. **Regulatory compliance are easier to file using big data**
   - BI tools can help analyze the regulatory requirements by checking each individual application from the customers. When the regulatory compliance criteria are fed to the analytical dashboard, the business rules can be applied to big data to validate customer applications.
4. **Performance analytics using big data help in budgeting and innovation**
   - Branch goals are based on employee performance, and the targeted revenue for the year. Big data analytics can generate suggestions based on the figures available from the current sales of employees, and help bank allocate budget for each branch.
5. **Maximize lead generation**
   - Big data not only helps in existing customer retention but also in converting new customers through the personalized solutions

# Challenges of big data in banking services

1. **Difficult to harness siloed data**
   - **Banking services data is highly diverse, and stored in different departments.** It is difficult to profile a customer based on his/her investment behavior as his accounts, loans, insurances, etc. may be spread over various branches and departments of the bank. Big data needs to collate all such data first, in order to provide comprehensive intelligence.
2. **Legacy infrastructure needs to be upgraded before integrating big data capabilities**
   - **Most banking solutions are not equipped to handle constant influx of data**, which is a pre-requisite for big data, even if they have moved to cloud solutions. Integrating big data requires a complete revamp of most of the existing bank solutions in partnership with a big data consulting company.
   - This is not easy to implement, as the system needs to be constantly up even when the changes are being deployed.
3. **Dedicated resources and tie ups with big data consulting company mandatory for correct implementation**
   - As mentioned above, it is **highly unlikely that banks would have in-house data experts in big data**, and hence, partnership with firms specializing in designing, developing and deploying big data solutions is a must.
4. **Big data is not yet viewed as a strategic asset**
   - **Non-technical managers and top-level executives often bypass the need of big data by relying more on human decisions rather than the automated marketing solutions** offered by the analytics dashboard. This results either results in the bank not opting for big data or sidelining the actionable inputs from the big data implementations.
5. **Customer concerns about privacy**
   - Although the data logged by big data systems is anonymous at the high level, if the bank wishes, they can track behavior patterns of each individual customer. It is a**dvantageous in detecting illegal activities, but is a serious security threat to the customer if it falls into wrong hands**. Several concerns have already been raised with the Government about monitoring the use of big data.

# Google and banking

# Google Plex: The Mobile Banking App Every Bank Wants

*Google Plex is what banks want their mobile banking app to be: The hub for their customers' payments and financial management activities.*

Banks have three challenges in making that happen, however. They don't have the:
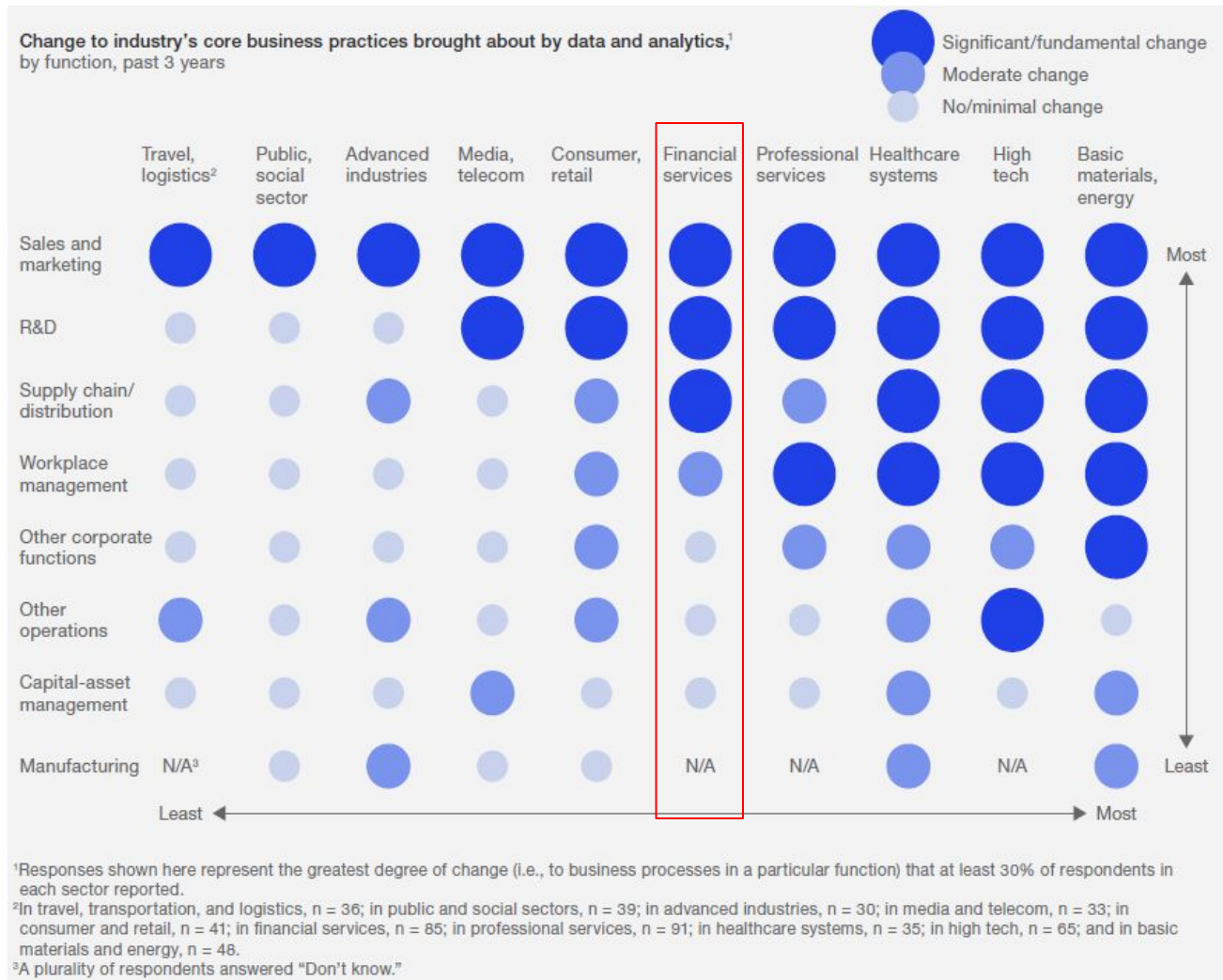
1) Data that Google has;
2) Merchant relationships that Google has; and
3) Technology resources and capabilities that Google has.

*"Google is pursuing the **multi-bank partnership** route because it sees bigger money ahead by **becoming a technology vendor to banks**."*
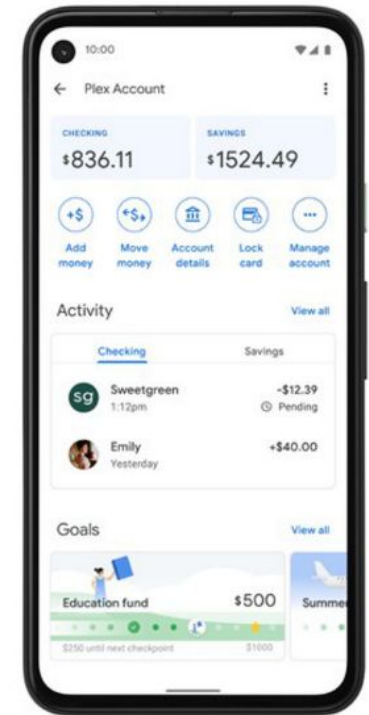
# Data and analytics affect business practices in financial services most in sales & marketing, R&D and supply chain functions



Change to industry's core business practices brought about by data and analytics,[1] by function, past 3 years

Legend:
- Significant/fundamental change
- Moderate change
- No/minimal change

Columns (Least → Most): Travel, logistics[2]; Public, social sector; Advanced industries; Media, telecom; Consumer, retail; Financial services; Professional services; Healthcare systems; High tech; Basic materials, energy

Rows (Most → Least): Sales and marketing; R&D; Supply chain/distribution; Workplace management; Other corporate functions; Other operations; Capital-asset management; Manufacturing

Manufacturing row: Travel logistics N/A[3]; Financial services N/A; Professional services N/A; High tech N/A

[1]Responses shown here represent the greatest degree of change (i.e., to business processes in a particular function) that at least 30% of respondents in each sector reported.
[2]In travel, transportation, and logistics, n = 36; in public and social sectors, n = 39; in advanced industries, n = 30; in media and telecom, n = 33; in consumer and retail, n = 41; in financial services, n = 85; in professional services, n = 91; in healthcare systems, n = 35; in high tech, n = 65; and in basic materials and energy, n = 48.
[3]A plurality of respondents answered "Don't know."

# Analytically enhances credit models can improve banks' returns in four ways (basically "be OakNorth")

**Higher interest income from loan business**

- Increase loan volume through sales campaigns, with lower turndown rate due to better customer preselection and cross-selling

- Increase margin and loan volume by gradually introducing risk–differentiated offers (e.g. packages or prices) and cross–selling of higher–margin products

**Typical impact:
5–15% higher revenues**

**Lower sales and operating costs**

- Targeted and effective origination process (e.g. risk prescreening, policy prefilters)

- More efficient underwriting process (e.g. digital channels, risk–based differentiated process across products)

**Typical impact:
15–50% greater productivity**

**Reduction of relative risk costs**

- Better selection of risks (e.g. with combined risk scores, risk clustering of customer segments)

- Improved risk monitoring and early warning across product categories

**Typical impact:
10–30% fewer loan losses**

**Improved capital efficiency**

- Better calibration and refinement of the models, leading to reduced risk–weighted assets

- Better data cleanliness to accurately represent risk measures and mitigants

**Typical impact:
10–15% fewer risk–weighted assets**

# TAM of ecosystem

5

# E–Commerce Payment Volumes

**Retail ecommerce sales worldwide**
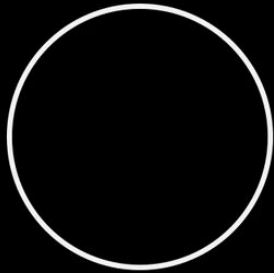
2014 to 2021 by trillions of USD



| Year | Sales |
|------|-------|
| 2014 | $1.3T |
| 2015 | $1.5T |
| 2016 | $1.8T |
| 2017 | $2.3T |
| 2018 | $2.8T |
| 2019 | $3.5T |
| 2020 | $4.1T |
| 2021 | $4.9T |

Data via eMarketer (Statista)

# E-Commerce Payment Volumes



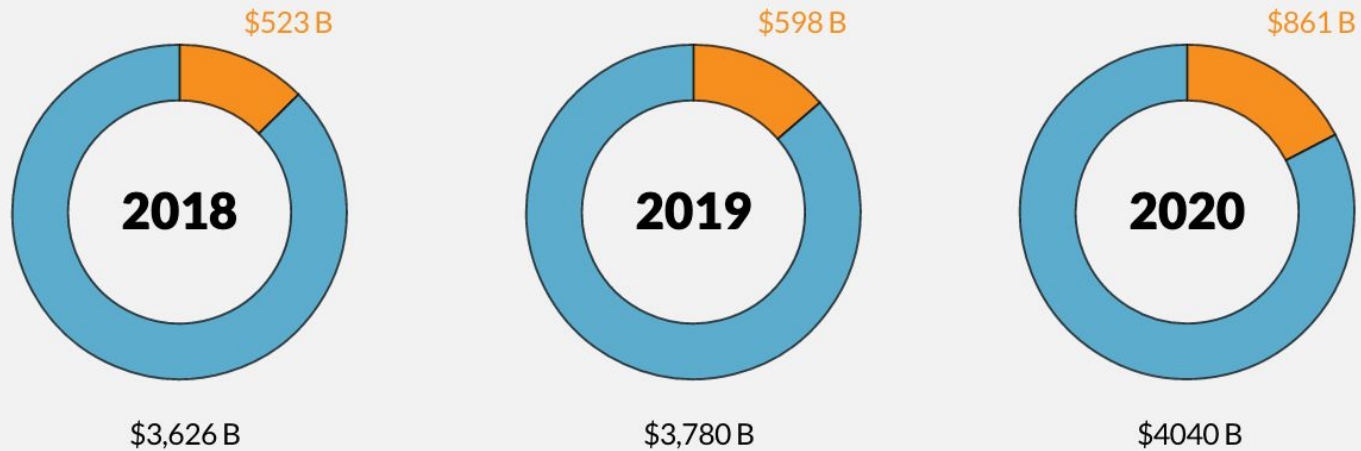**Worldwide ecommerce revenue B2C vs B2B**

$2.8T
B2C ecommerce

$10.6T
B2B ecommerce

Data via Statista

# E–Commerce Payment Volumes

## U.S. ECOMMERCE VS. TOTAL RETAIL* SALES

### In $billions, 2018-2020

$523 B

$598 B
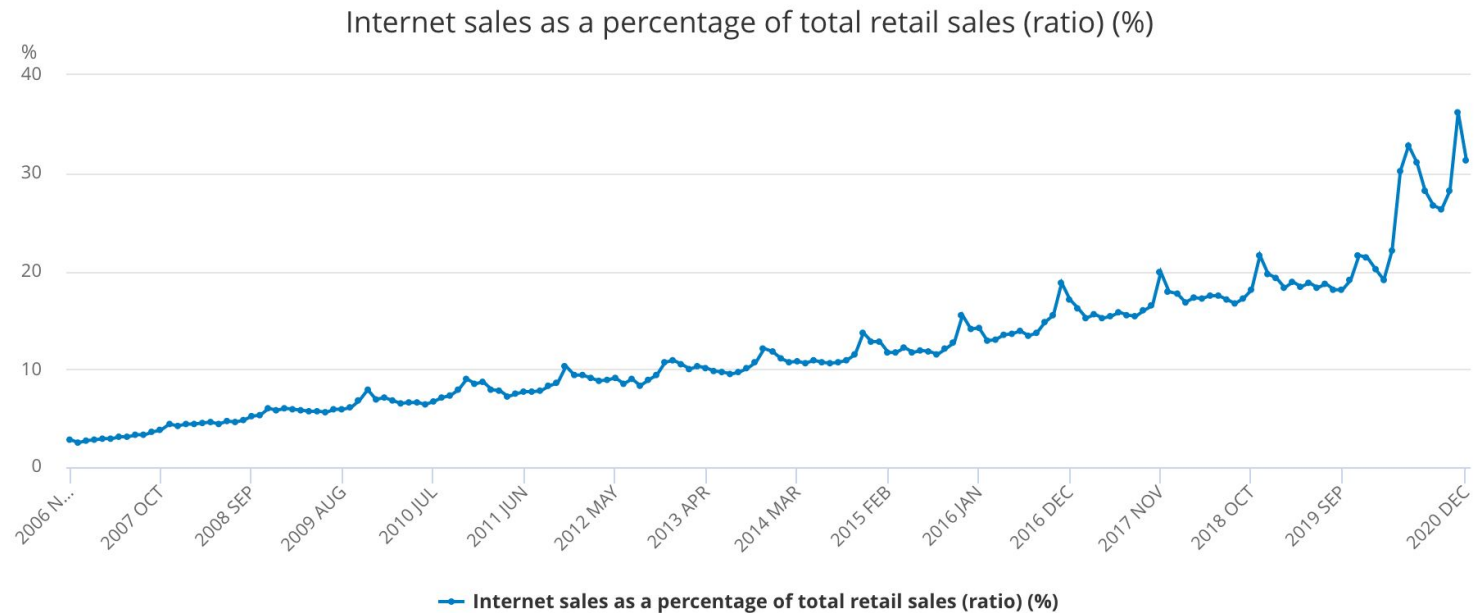
$861 B

**2018**

**2019**

**2020**

$3,626 B

$3,780 B

$4040 B

*Total retail figures exclude sales of items not normally purchased online such as spending at restaurants, bars, automobile dealers, gas stations and fuel dealers
Source: Digital Commerce 360 analysis of U.S. Department of Commerce data
*Updated January 2021*

# E–Commerce Payment Volumes

## Internet sales as a percentage of total retail sales (ratio) (%)



— Internet sales as a percentage of total retail sales (ratio) (%)

(UK only)

# E-Commerce Payment Volumes



**10 largest ecommerce markets in 2019**

By billions of USD

Canada $44

UK $93

Russia $19

Germany $77

South Korea $69

U.S. $561

France $55

China $740

Japan $87

Brazil $16

Data via Statista

# PayPal Q4 Transaction Revenue Rose 11.8% in 1st Quarterly Report Since Adding Crypto

https://www.coindesk.com/paypal-2020-results-outstanding-finish-to-a-record-year?utm_medium=email&utm_source=fintech weeklycom

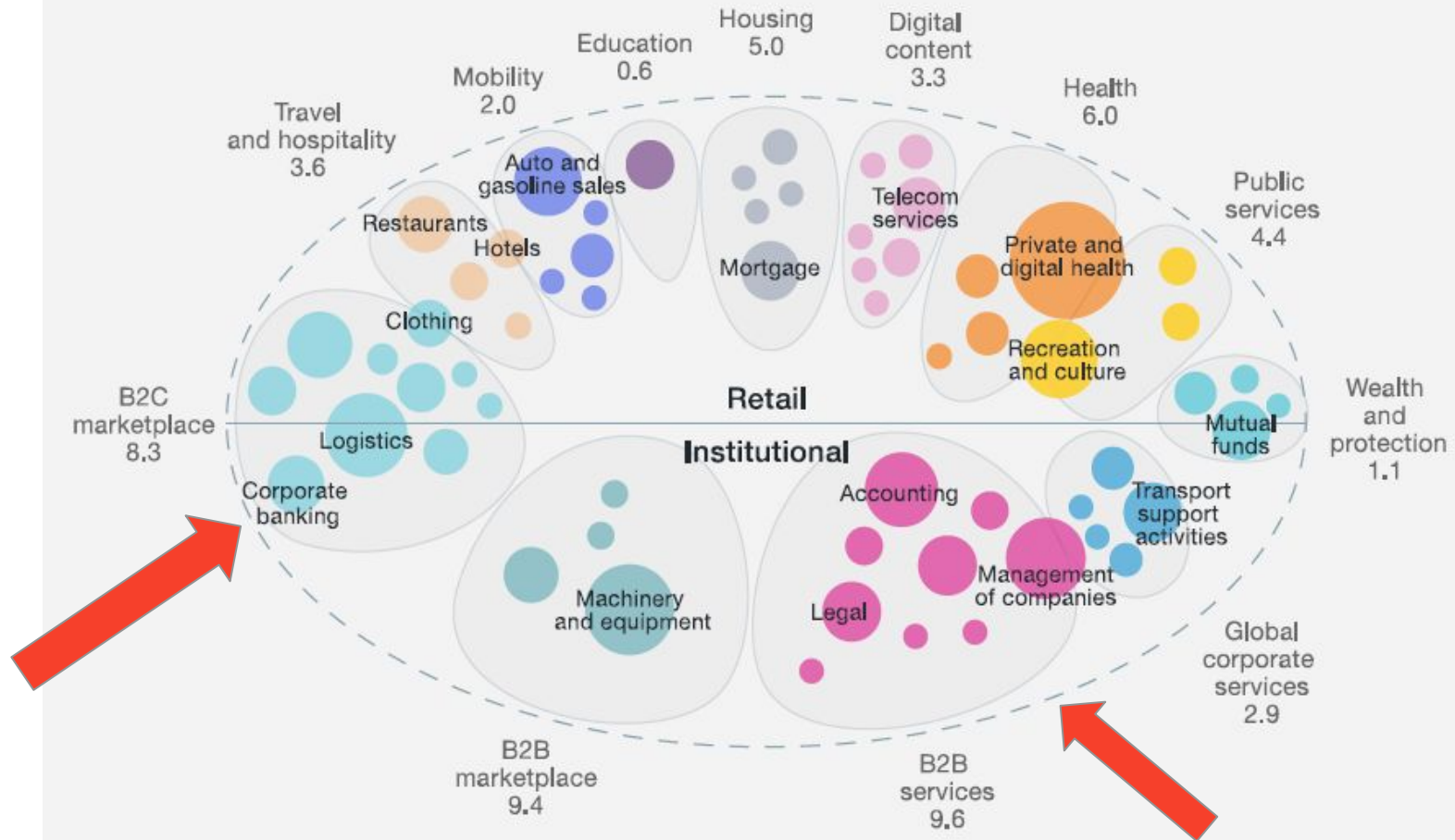PayPal's spending in technology increased year over year by **more than 30% to $732 million**

## Transaction Revenue of PayPal

| Period | Revenue |
|--------|---------|
| 2019 Q3 | $3.96B |
| 2019 Q4 | $4.54B |
| 2020 Q1 | $4.22B |
| 2020 Q2 | $4.95B |
| 2020 Q3 | $5.08B |
| 2020 Q4 | $5.68B |

coindesk

Chart: Shuai Hao/CoinDesk Research · Source: PayPal
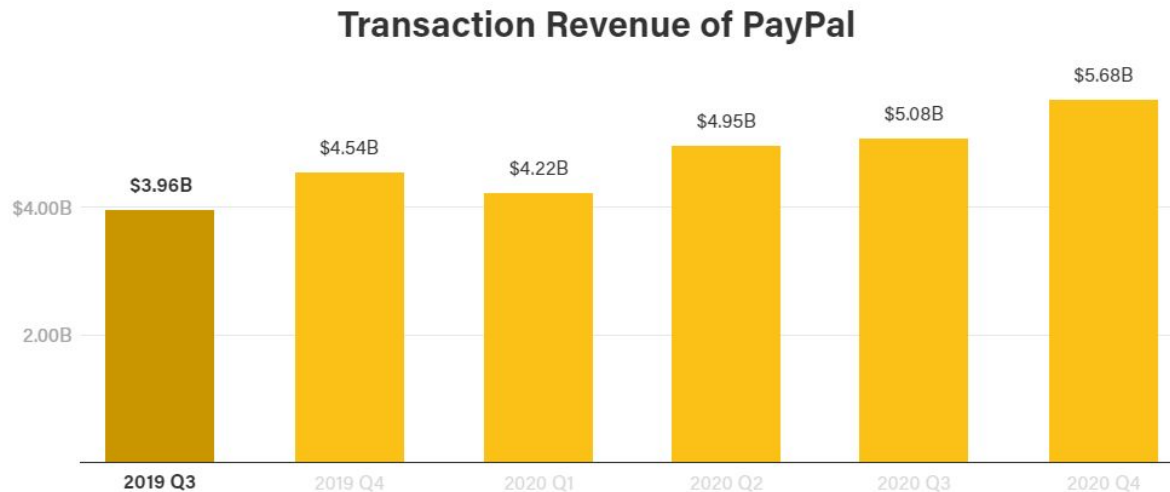
# New ecosystems are likely to emerge in place of many traditional industries by 2025.

Ecosystem illustration, estimated total sales in 2025,[1] $ trillion



Education 0.6

Housing 5.0

Digital content 3.3

Mobility 2.0

Travel and hospitality 3.6

Health 6.0

Auto and gasoline sales

Restaurants

Hotels

Telecom services

Public services 4.4

Private and digital health

Clothing

Mortgage

Recreation and culture

Retail

B2C marketplace 8.3

Logistics

Institutional

Wealth and protection 1.1

Mutual funds

Corporate banking

Accounting

Transport support activities

Machinery and equipment

Legal

Management of companies

Global corporate services 2.9

B2B marketplace 9.4

B2B services 9.6

[1]Circle sizes show approximate revenue pool sizes. Additional ecosystems are expected to emerge in addition to the those depicted; not all industries or subcategories are shown.

Source: IHS World Industry Service; Panorama by McKinsey; McKinsey analysis

# ESG - Environmental, Social and Governance

6

# What is ESG investing and its impact?

**ESG investing:** A method of analysing companies for potential investment using criteria regarding their behaviour in relation to the environment, society or the way the company is governed. ESG investing attempts to weed out companies that are not behaving responsibly, often through a scoring or ratings system. Investments might be 'traffic-lit", or given a total overall score that needs to reach a certain level in order to be included in the fund.
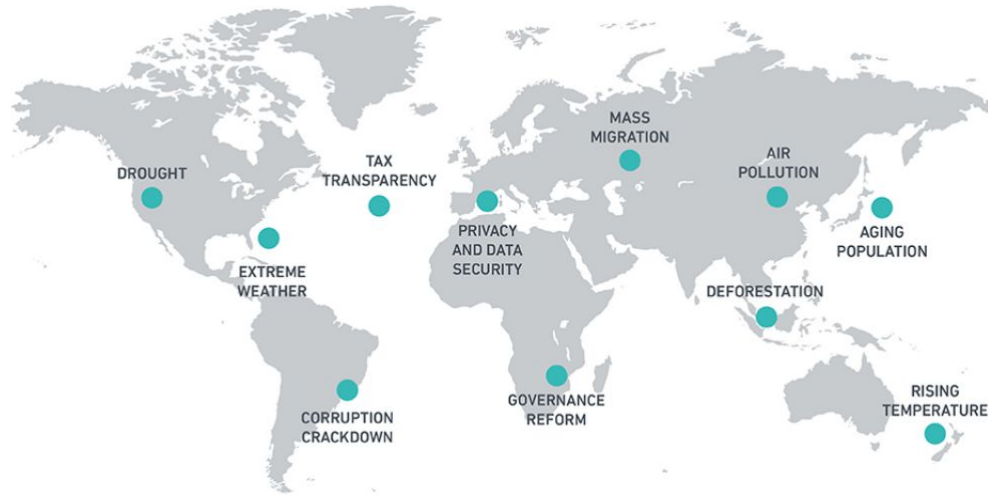
## Table 1. Examples of ESG Issues

| Environmental Issues | Social Issues | Governance Issues |
|---|---|---|
| Climate change and carbon emissions | Customer satisfaction | Board composition |
| Air and water pollution | Data protection and privacy | Audit committee structure |
| Biodiversity | Gender and diversity | Bribery and corruption |
| Deforestation | Employee engagement | Executive compensation |
| Energy efficiency | Community relations | Lobbying |
| Waste management | Human rights | Political contributions |
| Water scarcity | Labor standards | Whistleblower schemes |



Figure 2. PRI Signatories and Assets under Management
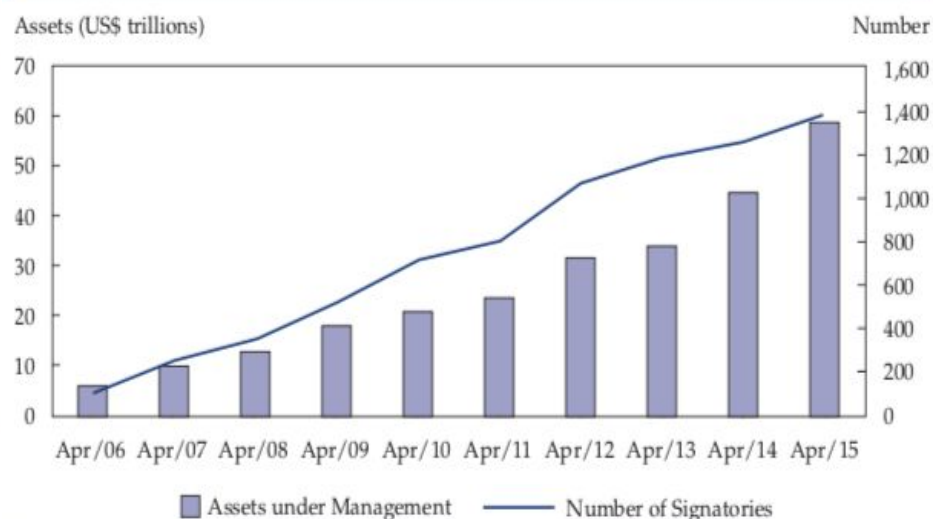
PRI= Principles for responsible investment

# Investor behavior is changing and data and analytics is evolving

DROUGHT

TAX TRANSPARENCY

EXTREME WEATHER

PRIVACY AND DATA SECURITY

CORRUPTION CRACKDOWN

GOVERNANCE REFORM

MASS MIGRATION

AIR POLLUTION

AGING POPULATION

DEFORESTATION

RISING TEMPERATURE

## How Millennials tailor their investments to their values

**US$ 30 trillion**

wealth transfer from baby boomers to 75 million millennials to take place over the next few decades.

**88%**

of high-net worth millennials are actively reviewing the ESG impact of their investment holdings.

**89%**

of millennials expect their financial professional to do a deep dive into a company's ESG factors before recommending an investment opportunity.

**57%**

of millennial investors have stopped investing or declined to invest in a company because of the impact that its products or services have on people's health and well being.

**95%**

of millennial investors were interested in sustainable investing as of 2019 up 9 percentage points from 2017.

**85%**

of individual investors were interested in sustainable investing as of 2019 up 10 percentage points from 2017.
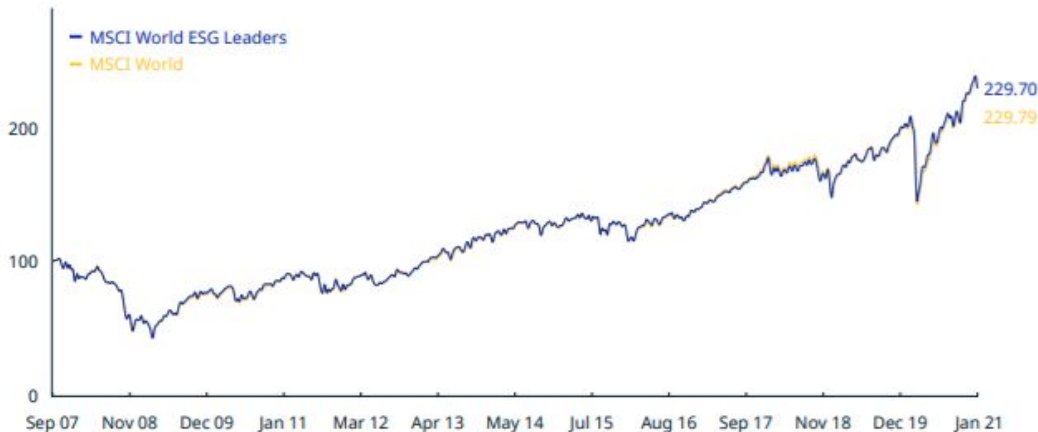
## ESG Rating AGENCIES

vigeo eiris

MSCI ESG Research

SAM Now a Part of S&P Global

ISS ESG

SUSTAINALYTICS

**1** Analysis begins with a deep governance assessment

**2** Focus on most relevant ESG factors by industry

**3** Focus on risk exposure, not just disclosure

**4** Identify leaders and laggards, not business type exclusion

MSCI ESG RATINGS

| CCC | B | BB | BBB | A | AA | AAA |
|-----|---|----|----|---|----|-----|

LAGGARD · AVERAGE · LEADER

# Example – best practices: MSCI World ESG Leaders Index

## CUMULATIVE INDEX PERFORMANCE – GROSS RETURNS (USD) (SEP 2007 – JAN 2021)



— MSCI World ESG Leaders
— MSCI World

229.70
229.79

## ANNUAL PERFORMANCE (%)

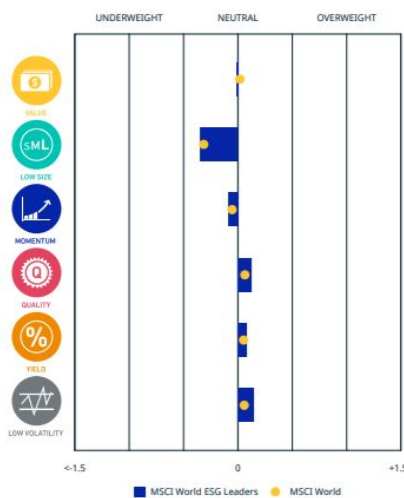| Year | MSCI World ESG Leaders | MSCI World |
|------|------------------------|------------|
| 2020 | 15.90 | 16.50 |
| 2019 | 28.91 | 28.40 |
| 2018 | -7.22 | -8.20 |
| 2017 | 21.69 | 23.07 |
| 2016 | 7.93 | 8.15 |
| 2015 | -0.55 | -0.32 |
| 2014 | 5.42 | 5.50 |
| 2013 | 28.22 | 27.37 |
| 2012 | 15.18 | 16.54 |
| 2011 | -4.90 | -5.02 |
| 2010 | 11.22 | 12.34 |
| 2009 | 33.20 | 30.79 |
| 2008 | -40.22 | -40.33 |

The indexes use a **best-in-class approach by only selecting companies that have the highest MSCI ESG Ratings**. They are free float-adjusted market capitalization weighted indexes designed to represent the performance of companies that have favorable ESG profiles compared to industry peers. Overall the indexes target a 50% sector representation vs. the parent index.

The indexes are designed for institutional investors seeking exposure to companies with a **strong sustainability profile and relatively low tracking error to the underlying equity market**. The indexes aim to help investors seeking to:
· Mitigate short- and long-term ESG risk
· Meet their fiduciary obligations
· Mitigate reputational risk
· Maintain broad market exposure
· Have sector diversification
· Avoid taking active country or sector bets

## FACTORS - KEY EXPOSURES THAT DRIVE RISK AND RETURN
### MSCI FACTOR BOX



UNDERWEIGHT | NEUTRAL | OVERWEIGHT

■ MSCI World ESG Leaders   ● MSCI World

### MSCI FaCS

**VALUE**
Relatively Inexpensive Stocks

**LOW SIZE**
Smaller Companies

**MOMENTUM**
Rising Stocks

**QUALITY**
Sound Balance Sheet Stocks

**YIELD**
Cash Flow Paid Out

**LOW VOLATILITY**
Lower Risk Stocks

MSCI FaCS provides absolute factor exposures relative to a broad global index - MSCI ACWI IMI.

Neutral factor exposure (FaCS = 0) represents MSCI ACWI IMI.

Companies that are not existing constituents of the ESG Leaders Indexes must have an MSCI ESG Rating of 'BB' or above and the MSCI ESG Controversies Score of 3 or above to be eligible. In addition, companies showing involvement in alcohol, gambling, tobacco, nuclear power and weapons are excluded from the Indexes. The selection universe for The ESG Leaders Indexes is the constituents of the MSCI Global Investable Market Indexes.

Source: MSCI

# Backup

7

# Payment processing ecosystem

# Payment ecosystem

# Paypal ecosystem



**Incumbent ecosystem partners**

- Drives customer acquisition and payments volume growth (e.g., 40 bank-led marketing campaigns in 2018)
- Provides PayPal with in-store card network tokens and necessary acquiring bank relationships

J.P.Morgan · citi · BANK OF AMERICA · VISA · WELLS FARGO · mastercard

~23mm Merchants

**Traditional eCommerce (Large & Small)**

macy's · Walmart

80% of Internet Retailer 500

**Platforms & Market Places**

Uber · mercado libre · Etsy

Other market places post eBay agreement

**Social Networking**

- PayPal powers Facebook Pay and also allows Venmo users to sync their Facebook friends list
- PayPal also powers Instagram Shopping

facebook · WhatsApp · Instagram

PayPal venmo Braintree

~300mm Consumers

**Travel Commerce**

airbnb · skyscanner

**Ride-Sharing & Food Delivery**

Uber · seamless · Uber Eats · GRUBHUB

- Daily use case spend categories, aids consumer engagement
- Plans to power Uber's mobile wallet - direct distribution channel to underbanked driver's globally

CREDIT SUISSE    Source: Company websites, Credit Suisse
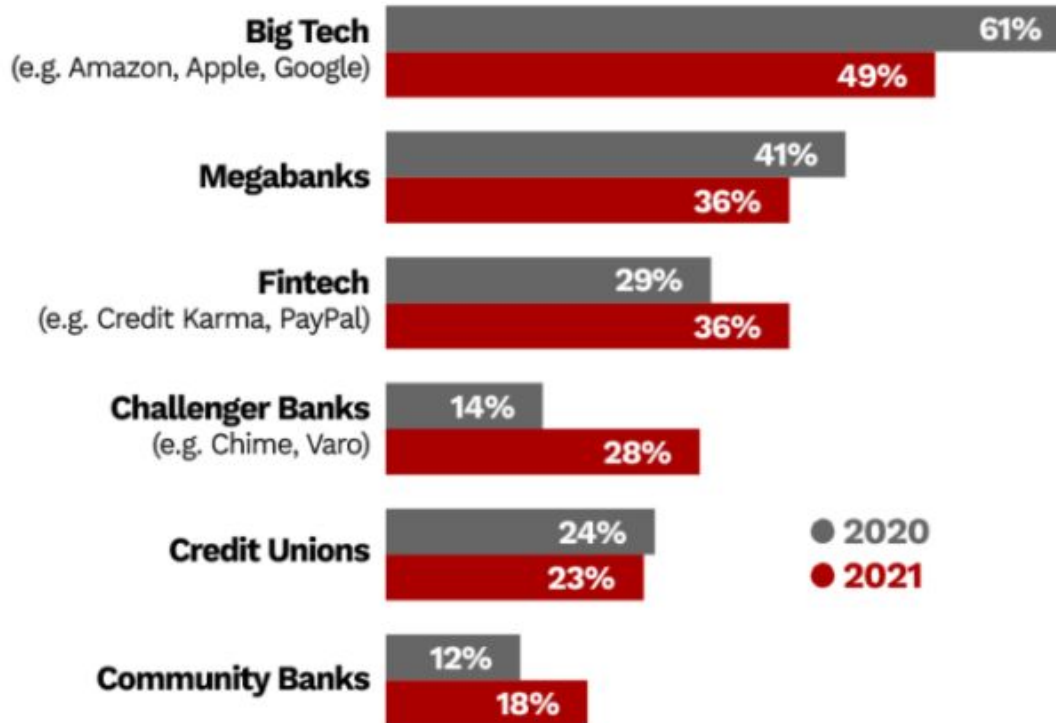
## Who financial institutions consider competitors

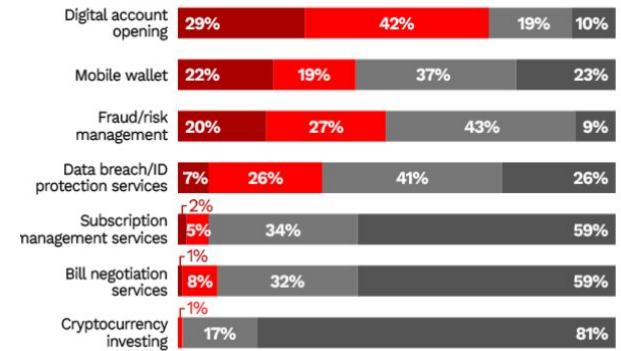**Percentage of bank and credit union executives that see each company type as significant threat in coming decade.**

- **Big Tech** (e.g. Amazon, Apple, Google): 61% (2020), 49% (2021)
- **Megabanks**: 41% (2020), 36% (2021)
- **Fintech** (e.g. Credit Karma, PayPal): 29% (2020), 36% (2021)
- **Challenger Banks** (e.g. Chime, Varo): 14% (2020), 28% (2021)
- **Credit Unions**: 24% (2020), 23% (2021)
- **Community Banks**: 12% (2020), 18% (2021)

● 2020  ● 2021

## What types of fintech partnerships interest banks and credit unions?

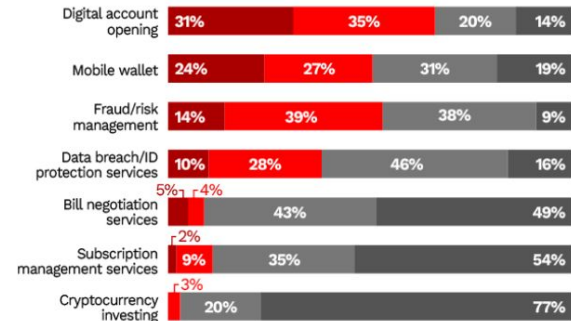### Banks
How interested is your institution in fintech partnerships that provide the following capabilities products or services?

| | Already doing this | Very interested | Somewhat interested | Not interested |
|---|---|---|---|---|
| Digital account opening | 29% | 42% | 19% | 10% |
| Mobile wallet | 22% | 19% | 37% | 23% |
| Fraud/risk management | 20% | 27% | 43% | 9% |
| Data breach/ID protection services | 7% | 26% | 41% | 26% |
| Subscription management services | 5% | 2% | 34% | 59% |
| Bill negotiation services | 8% | 1% | 32% | 59% |
| Cryptocurrency investing | 1% | | 17% | 81% |

### Credit Unions
How interested is your institution in fintech partnerships that provide the following capabilities products or services?

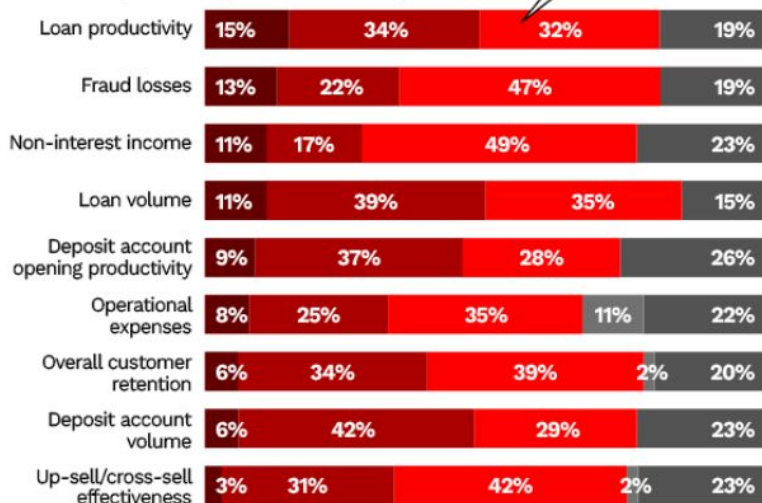| | Already doing this | Very interested | Somewhat interested | Not interested |
|---|---|---|---|---|
| Digital account opening | 31% | 35% | 20% | 14% |
| Mobile wallet | 24% | 27% | 31% | 19% |
| Fraud/risk management | 14% | 39% | 38% | 9% |
| Data breach/ID protection services | 10% | 28% | 46% | 16% |
| Bill negotiation services | 5% | 4% | 43% | 49% |
| Subscription management services | 9% | 2% | 35% | 54% |
| Cryptocurrency investing | 3% | | 20% | 77% |

● **Already doing this with a fintech partner**  ● **Very interested**
● **Somewhat interested**  ● **Not interested**

**SOURCE:** Cornerstone Advisors © February 2021 The Financial Brand

https://thefinancialbrand.com/107353/fintech–big–tech–partnership–trend–bank–credit–union–digital–innovation/?utm_medium=email&utm_source=fintechweeklycom

How fintech partnerships have impacted banks versus credit unions
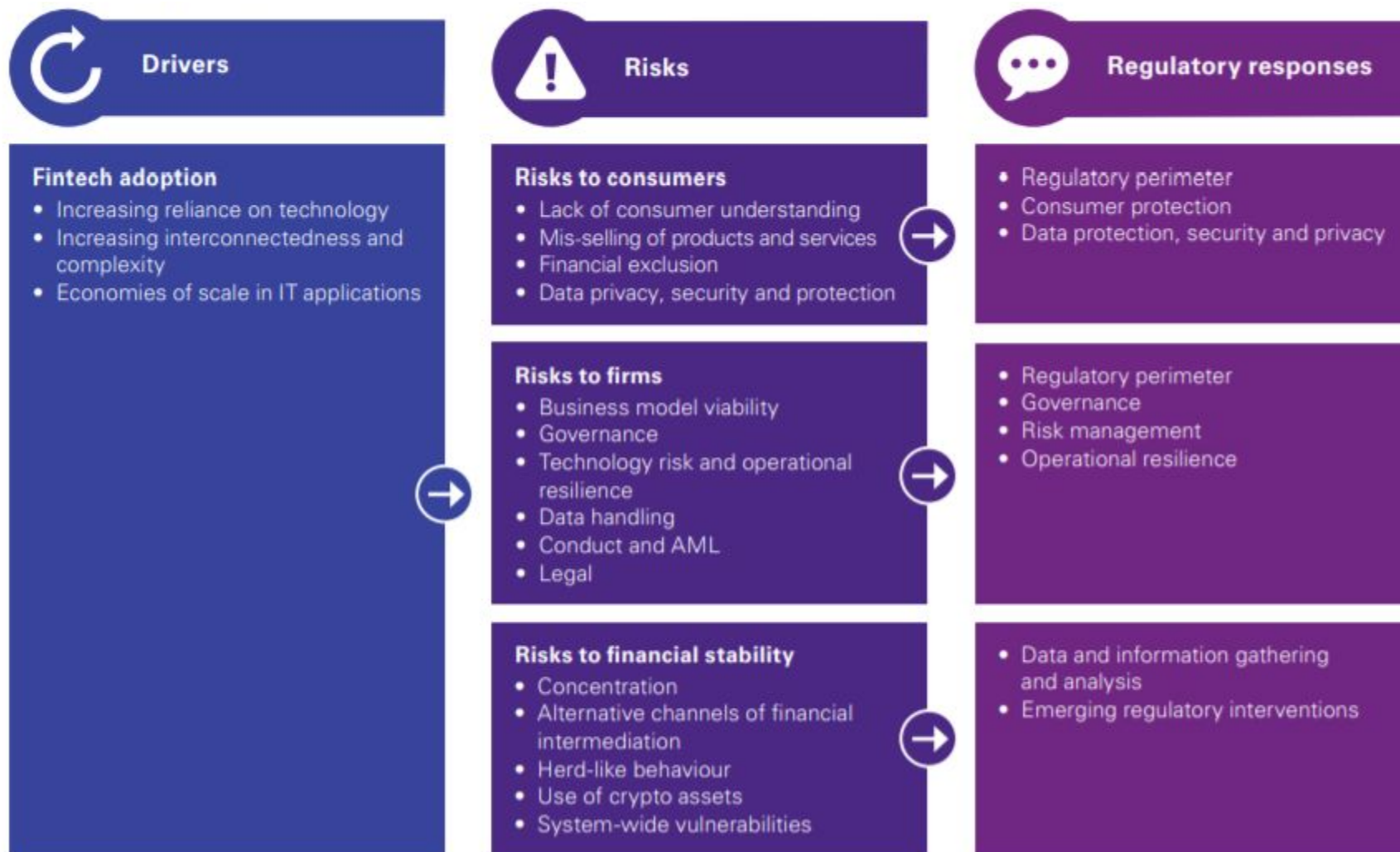
## Banks
How have partnerships influenced key metrics?

| Metric | Significant impact (>5%) | Moderate impact (<5%) | No impact | Negative impact | NA |
|---|---|---|---|---|---|
| Loan productivity | 15% | 34% | 32% | | 19% |
| Fraud losses | 13% | 22% | 47% | | 19% |
| Non-interest income | 11% | 17% | 49% | | 23% |
| Loan volume | 11% | 39% | 35% | | 15% |
| Deposit account opening productivity | 9% | 37% | 28% | | 26% |
| Operational expenses | 8% | 25% | 35% | 11% | 22% |
| Overall customer retention | 6% | 34% | 39% | 2% | 20% |
| Deposit account volume | 6% | 42% | 29% | | 23% |
| Up-sell/cross-sell effectiveness | 3% | 31% | 42% | 2% | 23% |

## Credit Unions
How have partnerships influenced key metrics?

| Metric | Significant impact (>5%) | Moderate impact (<5%) | No impact | Negative impact | NA |
|---|---|---|---|---|---|
| Loan productivity | 17% | 34% | 36% | 2% | 11% |
| Deposit account opening productivity | 15% | 26% | 32% | | 28% |
| Operational expenses | 13% | 23% | 43% | 6% | 15% |
| Loan volume | 13% | 45% | 30% | | 13% |
| Deposit account volume | 11% | 15% | 40% | | 34% |
| Non-interest income | 4% | 32% | 47% | | 17% |
| Up-sell/cross-sell effectiveness | 4% | 32% | 45% | 2% | 17% |
| Overall member retention | 4% | 36% | 43% | | 17% |
| Fraud losses | 4% | 23% | 53% | 6% | 13% |
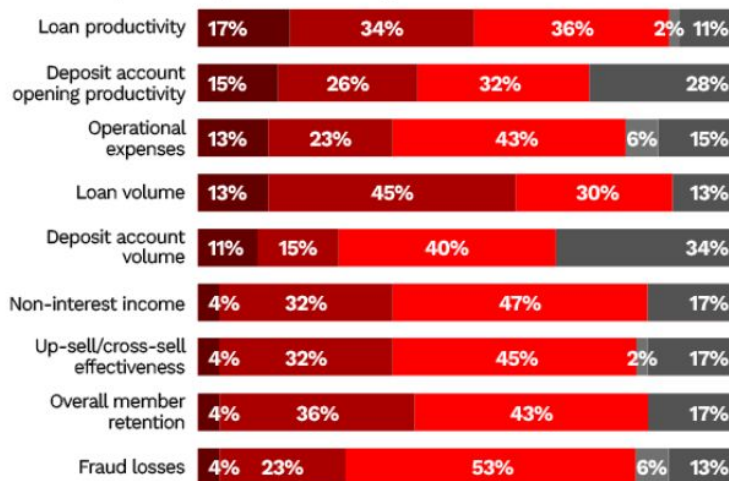
● Significant impact (>5%)   ● Moderate impact (<5%)
● No impact   ● Negative impact   ● NA

# Fintech regulation

| **Drivers** | **Risks** | **Regulatory responses** |
|---|---|---|
| **Fintech adoption**<br>• Increasing reliance on technology<br>• Increasing interconnectedness and complexity<br>• Economies of scale in IT applications | **Risks to consumers**<br>• Lack of consumer understanding<br>• Mis-selling of products and services<br>• Financial exclusion<br>• Data privacy, security and protection | • Regulatory perimeter<br>• Consumer protection<br>• Data protection, security and privacy |
| | **Risks to firms**<br>• Business model viability<br>• Governance<br>• Technology risk and operational resilience<br>• Data handling<br>• Conduct and AML<br>• Legal | • Regulatory perimeter<br>• Governance<br>• Risk management<br>• Operational resilience |
| | **Risks to financial stability**<br>• Concentration<br>• Alternative channels of financial intermediation<br>• Herd-like behaviour<br>• Use of crypto assets<br>• System-wide vulnerabilities | • Data and information gathering and analysis<br>• Emerging regulatory interventions |

# What are data assets?

*In simple terms data comprises – 'facts and statistics collected together for reference or analysis'.* The world is producing about **2.5 quintillion bytes of data per day**, with 90% of all data having been produced in just the last two years.

Because of the confidential nature of data in banking services, most of the financial institutions have been slow in adapting to big data even though they do realize that there are huge benefits in terms of customer centricity.

"Among the **106 TPPs that leverage PSD2 APIs to offer services to SMEs** (a figure that excludes those merely licensed under PSD2), **83 explicitly leverage account information APIs.** Within this total, 72 only use account data while a further 11 also offer some form of API-enabled payment service."

| Data source | Data category | Sub-categories | Illustration |
|---|---|---|---|
| **Authored data** • Typically created through some kind of creative, human process. • E.g. Architectural drawings, photographs | **Master data** • Describes people, places, and things that are critical to a firm's operations. | Customer data Supplier data Product data Employee data | Customer address Contact details Products, Features Employee name |
| **User Provided data** • Data purposefully provided by users into a system without any expectations. • E.g. Social media, ecommerce reviews | **Transactional data** • Describes an internal or external event of transaction. | Sales data Payment data Touchpoint data Geospatial data | Customer purchase history Payment date Call record Current Location |
| **Captured data** • Recorded from events occurring in the real world or in software. • E.g. Financial transactions, Web browsing logs | **Reference data** • Information that is used solely for the purposes of categorising data. | Jurisdictions Control data Currencies Industry standard data | Provinces Holiday calendar Currency codes Country codes |
| **Derived data** • Generated by combining, aggregating and otherwise processing other data. • E.g. Credit scores, aggregated transactions | **Metadata** • Characterises other data, making it easier to retrieve, interpret, or use the data. | Descriptive data Tables, columns Lineage data Audit trail data | Author, Abstract Type, Relationship Modifications Accesses, Changes |
| | **Unstructured data** • Data lacking a consistent format or syntax to describe objects and attributes. | Audio data Text data Video data Picture data | Recordings Reports Surveillance footage Social media postings |

Source: PwC

# Open banking and its impact on lending and payments

**Open Banking is making it easier for non-banks in the lending space**

- One traditional barrier to those wishing to enter the SME lending space has been the application experience.

- Open banking offers the potential to simplify this process by leveraging TTPs to **streamline and bring greater automation into the loan application process**, either as a direct lender or as a broker or introducer.

- Incumbent banks should consider how best to respond to these challenges. In some cases, these **new entrants are providing credit where incumbents are either unwilling to lend or are price uncompetitive**. This is largely a strategic consideration of course but those banks that wish to more aggressively chase SME loan business should look to the approach of TPPs in this space and consider how to incorporate these uses of open banking APIs into their own offerings.

**11 SME lenders, loan brokers, or marketplaces licenced under PSD2 at the end of Q1 2020.**

7 of these TPPS are licenced in the UK, with 2 in Germany and 1 in each of the Netherlands and Sweden.

**API initiated payments are being leveraged by a number of TPPS (third-party-providers)**

15 TPPs licenced under PSD2 at the end of Q1 2020 that offer services leveraging PISP APIs.

11 TPPs that offer direct acceptance of API-initiated payments in digital commerce.

142 TPPs in total licenced as PISPs under PSD2 at the end of Q1 2020.

# Five drivers increase the value of data

**05** Trading emerging
Budgets, market places, supply & demand

**04** New use cases emerging
AI, new products & services & bus models

**03** Data sources becoming secure and trustworthy
Blockchain

**02** The value from data analytics is growing
Data ownership, strategies, capabilities, culture

**01** The amount of data is growing
Devices, IoT, Digitization

Bettina Goerner

# The right method for valuing data

| 1 | 2 | 3 |
|---|---|---|
| If the net cash flow benefits of the data can be reasonably quantified, the Income Approach provides a strong theoretical basis for valuing data | If the value of the data is observable in an active market or transaction, it is the best measure of value for the data | If the data can be reproduced or replaced, the Cost Approach can provide useful upper and lower bounds for valuation |

| Income approach | | Market approach | | Cost approach | |
|---|---|---|---|---|---|
| Incremental revenue | Reduced cost | Actively traded market | Market transactions | Reproduction costs | Replacement cost |
| …value of data is driven by the incremental revenue obtained from using the data, net of any additional cost | …value of data is driven by the costs saved by using the data | …relies on traded prices in an active market | …relies on prices from transactions involving comparable data assets | …value is estimated as the cost of recreating a replica of the data | …value is estimated as the cost of replicating the utility of the data, not creating an exact copy of the data. |