

# History and prospects of digital finance

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The actors: financial  
institutions, Fintech  
companies and  
Bigtech companies



# The actors



Fintech  
companies



Incumbents



Bigtech or Techfin

# The actors



Fintech  
companies

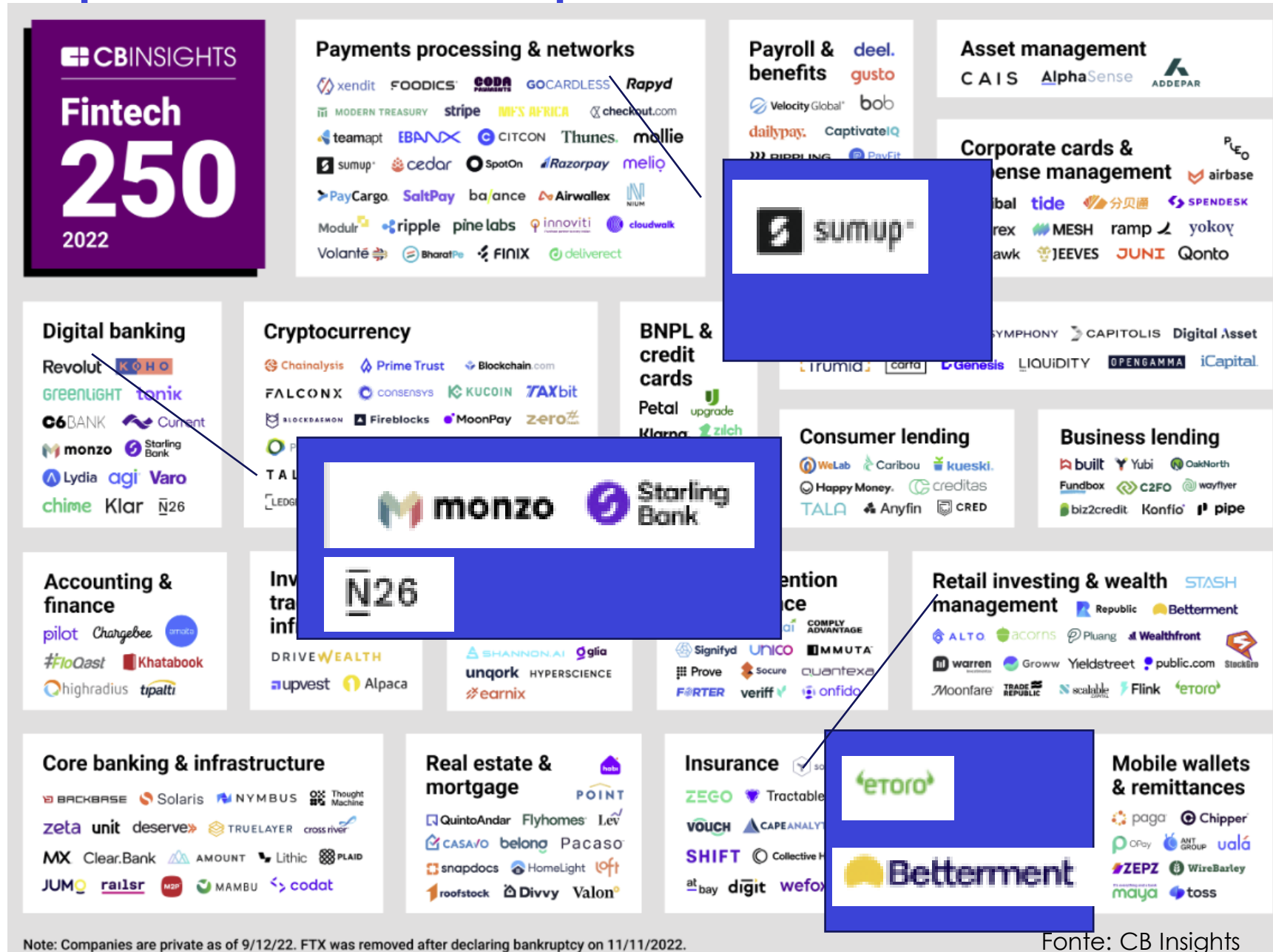
- New operators specialising in segments of financial intermediation, through the unbundling and rebundling of processes
- Initially operating mainly in unregulated areas
- They start out as competitors to traditional operators, then become partners and service providers
- They have diversified business models
- Some related companies specialise in underlying technology, e.g. blockchain, AI, data analytics → tech companies

# The actors

- New operators specialising in segments of financial intermediation, through the unbundling and rebundling of processes Initially operating mainly in unregulated areas

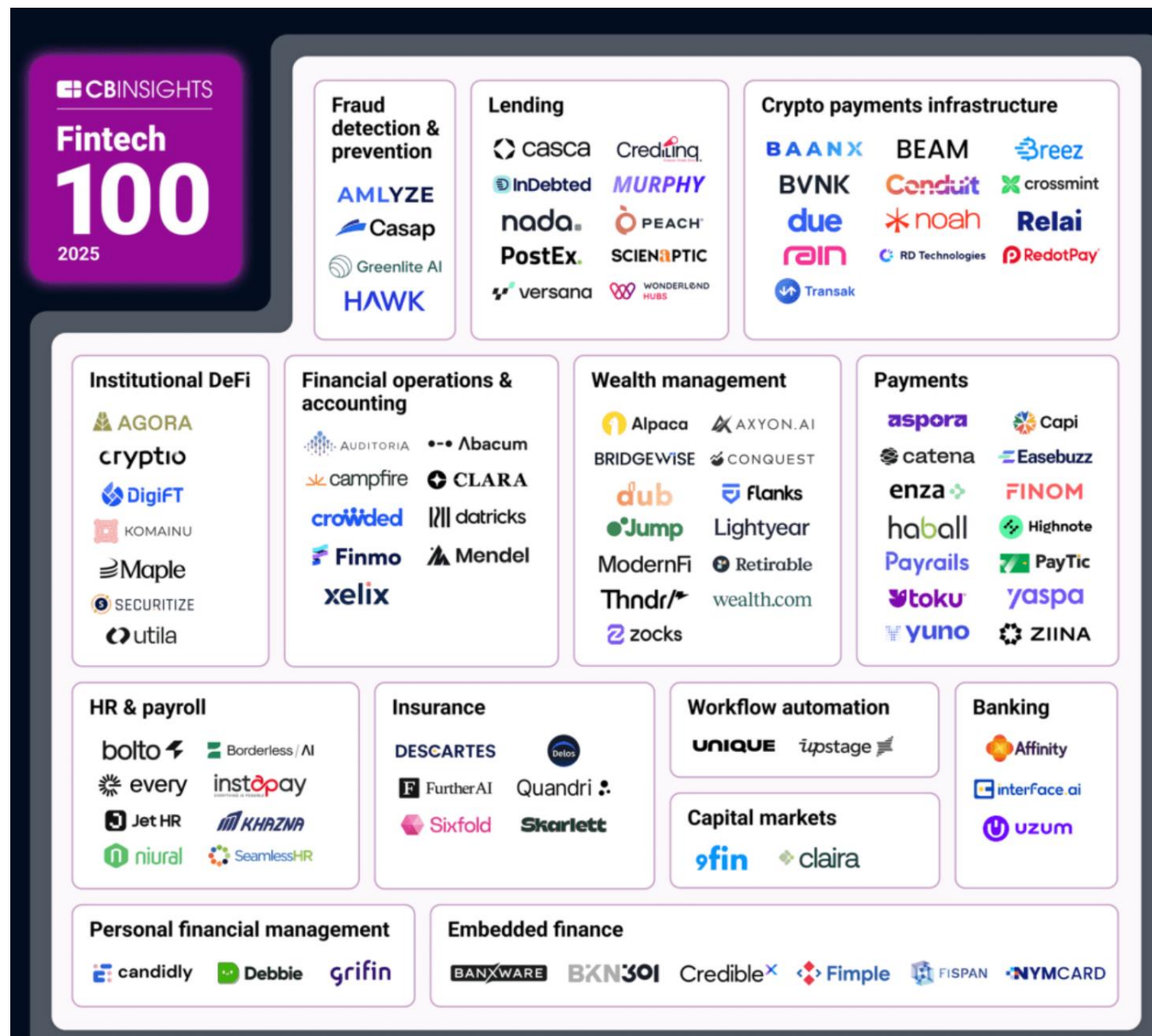
Including: peer-to-peer lending platforms, equity crowdfunding, invoice trading, payment services, robo-advisor, trading platforms, etc..

# Top Fintech companies - 2022



# Top Fintech startups - 2025

source: CB Insights



# The actors



## Società Bigtech (o Techfin)

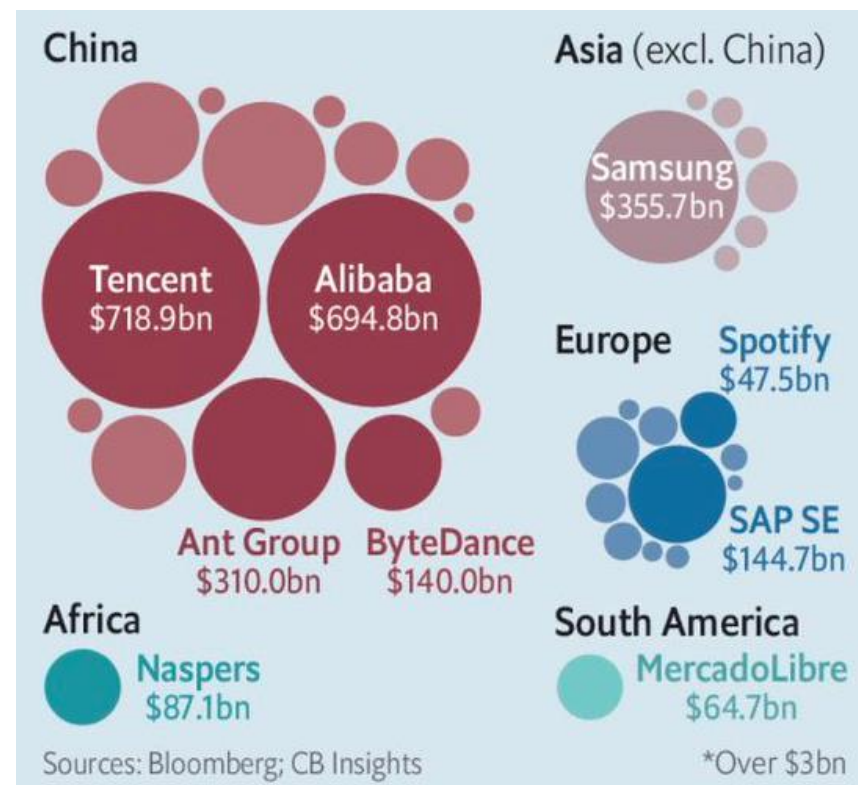
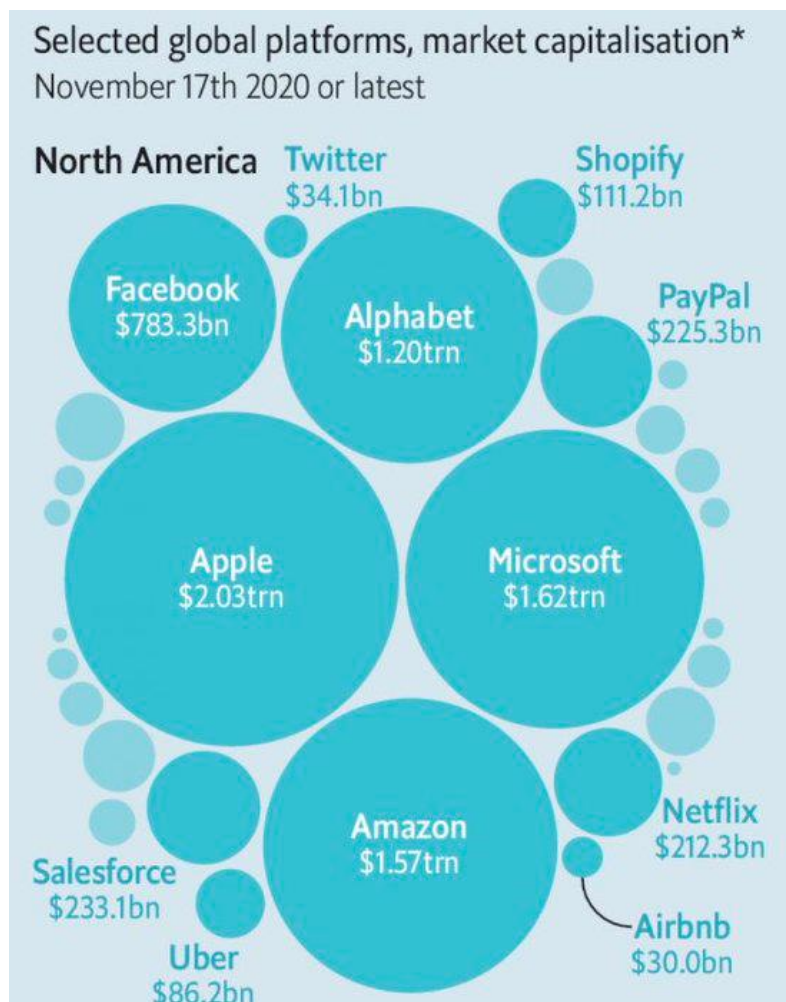
- Major global e-commerce players that have diversified their business over time, including into the financial sector.
- Often referred to by the acronym GAAFA, Google, Apple, Amazon, Facebook, and Alibaba

Have:

- a broad set of previously acquired information on their customers, spending habits, payment methods associated with purchases, etc.
- reputation
- financial resources
- Technological expertise, HR, and advanced infrastructure
- Often a provider of technology services for incumbents



# ... Major global e-commerce players ...



# diversified their business over time, including into the financial sector.

**Table 2: Selected financial activities of BigTech firms**

|                                      | Alibaba   | Tencent   | Baidu  | Google   | Amazon   | Facebook  | Apple   | Samsung   | Microsoft   | Vodafone  | Mercado Libre   |
|--------------------------------------|---|---|--|--|--|---|---|---|---|---|---|
| <b>Payments</b>                      | AliPay (largest mobile payments platform in China)                        | Tenpay (#2 mobile payments platform in China)           | Baidu Wallet – cooperation with PayPal                     | Google Pay – layers over existing card network | Amazon Pay – layers over existing card network                             | Messenger Pay – layers over existing card network | Apple Pay – layers over existing card network         | Samsung Pay – layers over existing card network | Microsoft Pay – layers over existing card network | M-Pesa (32 million active users in East Africa and India) | Mercado Pago (offered in 8 markets in Latin America)    |
| <b>Lending and short-term credit</b> | MYBank (SME lending for rural areas and online merchants)                 | WeBank (Personal micro-loans)                           | Baixin Bank (financial products and small loans)           | Collaboration with Lending Club                | Temporary financing in Amazon Lending; direct lending to merchants         | Pilot in collaboration with Clearbanc             | n/a   | n/a   | n/a   | Offered through M-Shwari mobile banking service           | Mercado Crédito (small loans to retail and SME clients) |
| <b>Current accounts</b>              | Offered through MYBank  | Offered through WeBank                                  | Offered through Baixin Bank                                | n/a  | Reports of talks with banks  | n/a   | n/a   | n/a   | n/a   | Offered through M-Shwari                                  | n/a   |
| <b>Asset management</b>              | Yu'e Bao (world's largest MMF)  | License to offer mutual funds                           | n/a  | n/a  | n/a  | n/a   | n/a   | n/a   | n/a   | n/a   | Pilots ongoing in 2018                                  |
| <b>Insurance</b>                     | 60% stake in Cathay Insurance China, founding stake in Zhong An Insurance | Online insurance service in life and property insurance | Joint venture with Allianz and Hillhouse Capital announced | Insurance on Google Compare (discontinued)     | Partnership with JPMorgan Chase and Berkshire Hathaway on health insurance | n/a   | Cooperation with Allianz on cyber insurance discounts | n/a   | n/a   | n/a   | Pilots ongoing in 2018                                  |

# diversified their business over time, including into the financial sector.

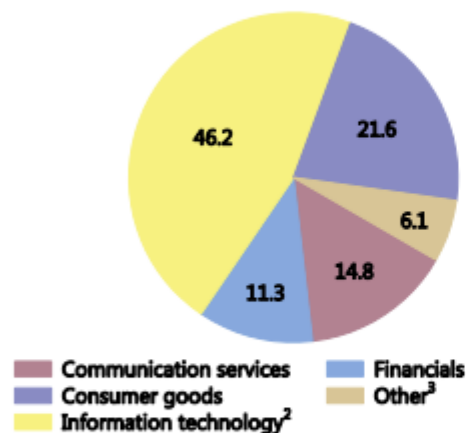
## P2P, FinTech e BigTech

Financial services are a small part of big tech business

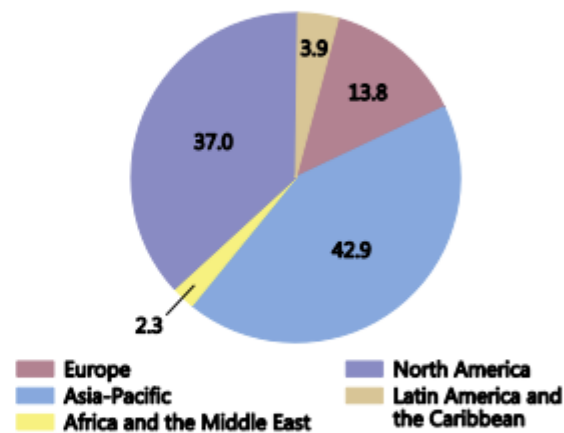
In per cent

Figure 5

Big techs' revenues by sector of activity<sup>1</sup>



Regional distribution of big techs' subsidiaries<sup>4</sup>



The sample includes Alibaba, Alphabet, Amazon, Apple, Baidu, Grab, Kakao, Mercado Libre, Meta, Rakuten, Samsung and Tencent.

<sup>1</sup> Shares based on 2018 total revenues, where available, as provided by S&P Capital IQ; where not available, data for 2017. Data accessed on 3 June 2019. <sup>2</sup> Information technology can include some financial-related business. <sup>3</sup> Includes health care, real estate, utilities and industrials. <sup>4</sup> Shares are calculated on the number of subsidiaries as classified by S&P Capital IQ. Data accessed on 3 June 2019.

Sources: BIS (2019).

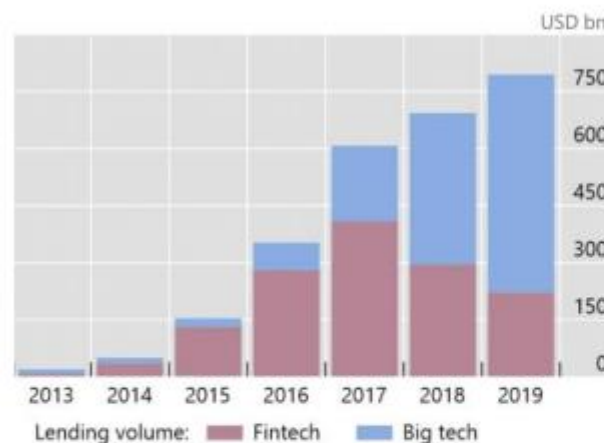
# diversified their business over time, including into the financial sector.

## P2P, FinTech e BigTech

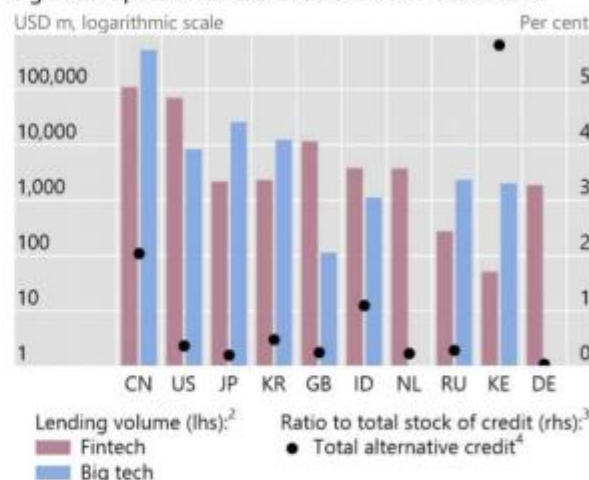
Big tech credit is booming

Figure 6

Big tech credit is overtaking fintech credit<sup>1</sup>



These alternative forms of lending are becoming a significant portion of total credit in a few economies

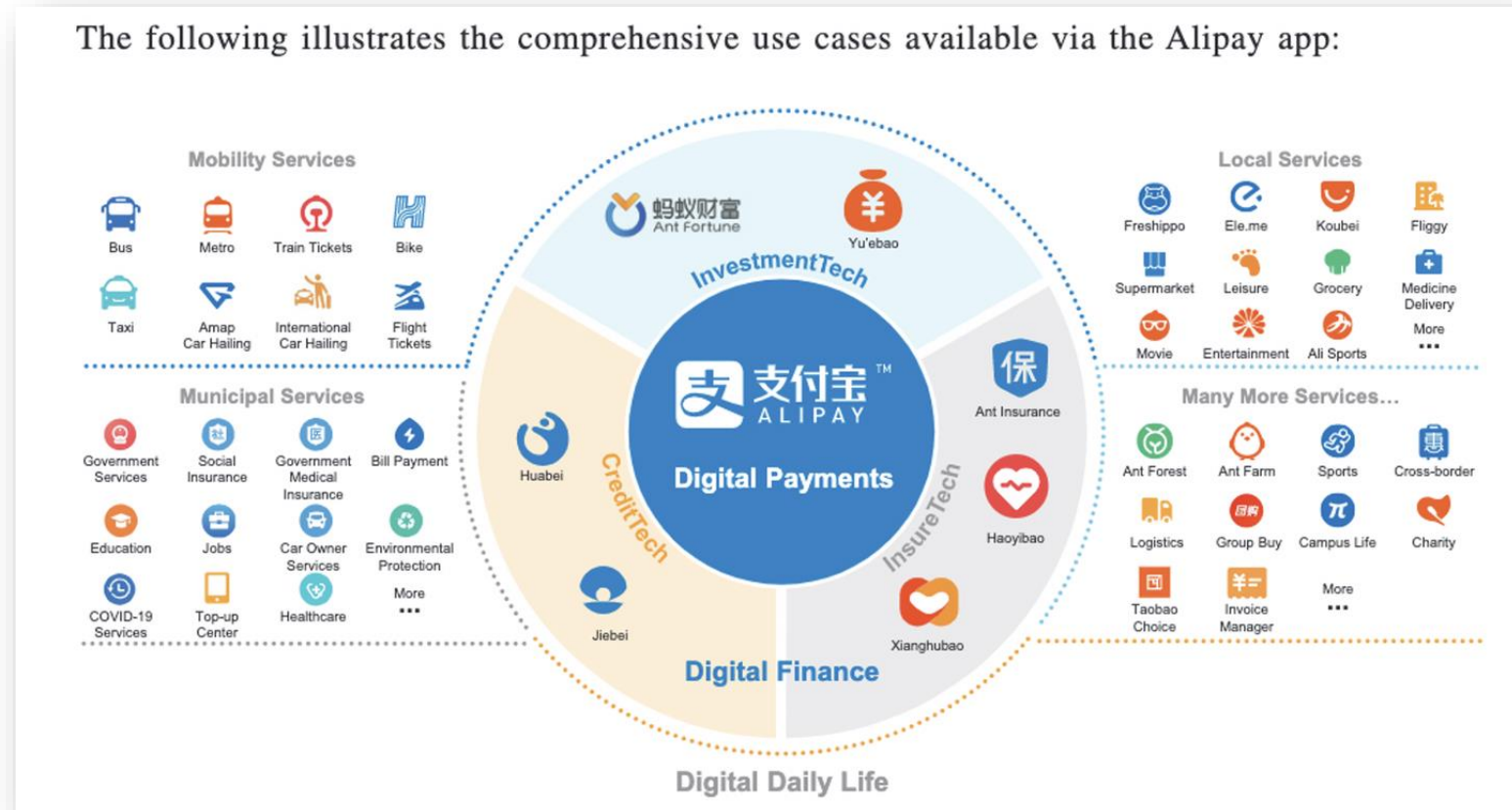


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Figures include estimates. CN = China, US = United States, JP = Japan, KR = Korea, GB = United Kingdom, ID = Indonesia, NL = Netherlands, RU = Russia, KE = Kenya, DE = Germany. 1 2019 fintech lending volume figures are estimated on AU, CN, EU, GB, NZ and US. 2 Data for 2019. 3 Domestic credit provided by the financial sector. Data for 2018. 4 Total alternative credit is defined as the sum of fintech and big tech credit. Data for 2019.

Sources: IMF World Economic Outlook; World Bank; Brismo.com; Cambridge Centre for Alternative Finance and research partners; WDJ.com; companies' reports; Cornelli et al (2023)

# diversified their business over time, including into the financial sector... but not only



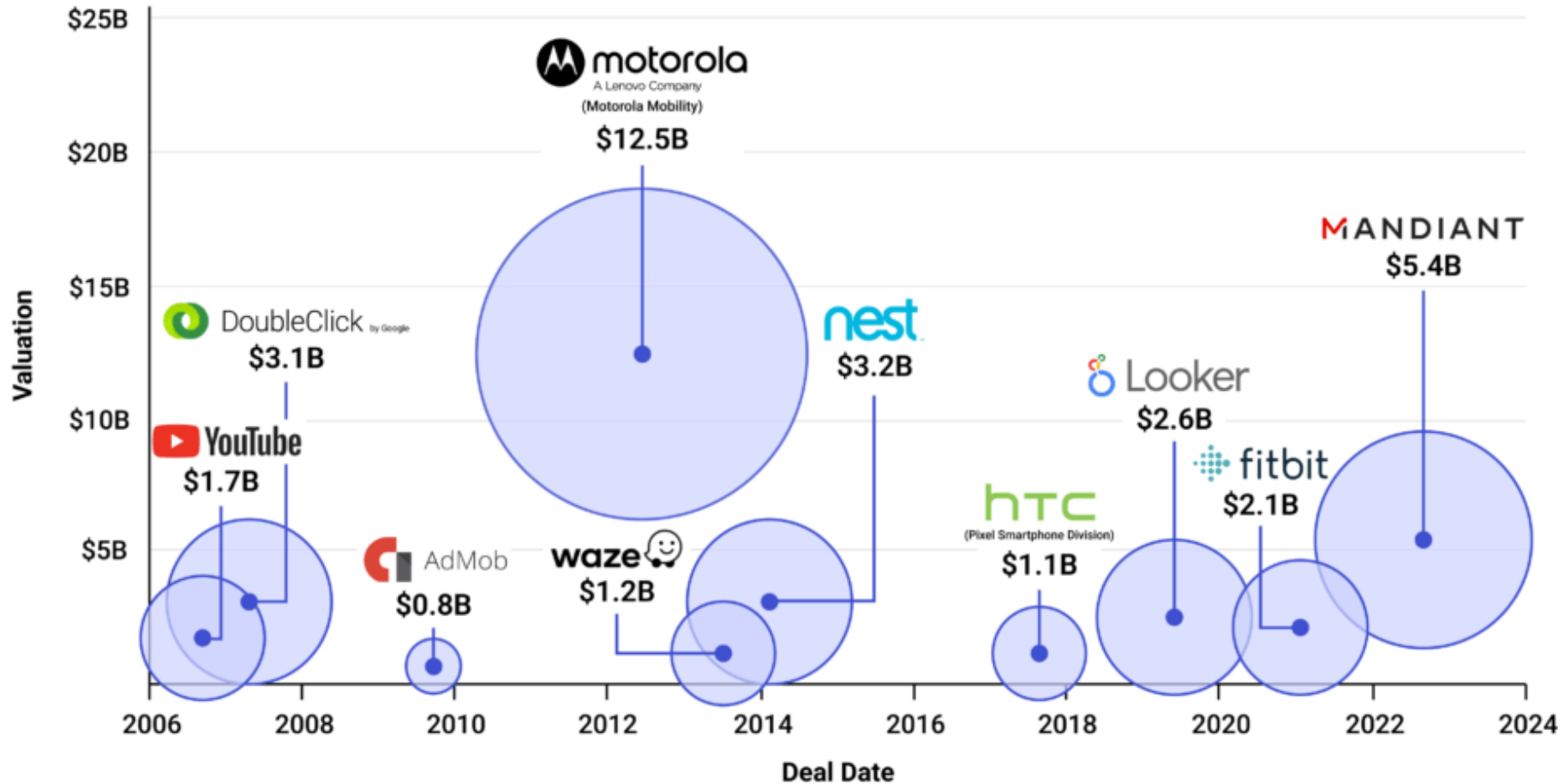
Zhang, L., & Chen, J. Y. (2022). A regional and historical approach to platform capitalism: The cases of Alibaba and Tencent. *Media, Culture & Society*, 44(8), 1454-1472.





# Google's acquisition timeline

Top 10 acquisitions by valuation of acquired company

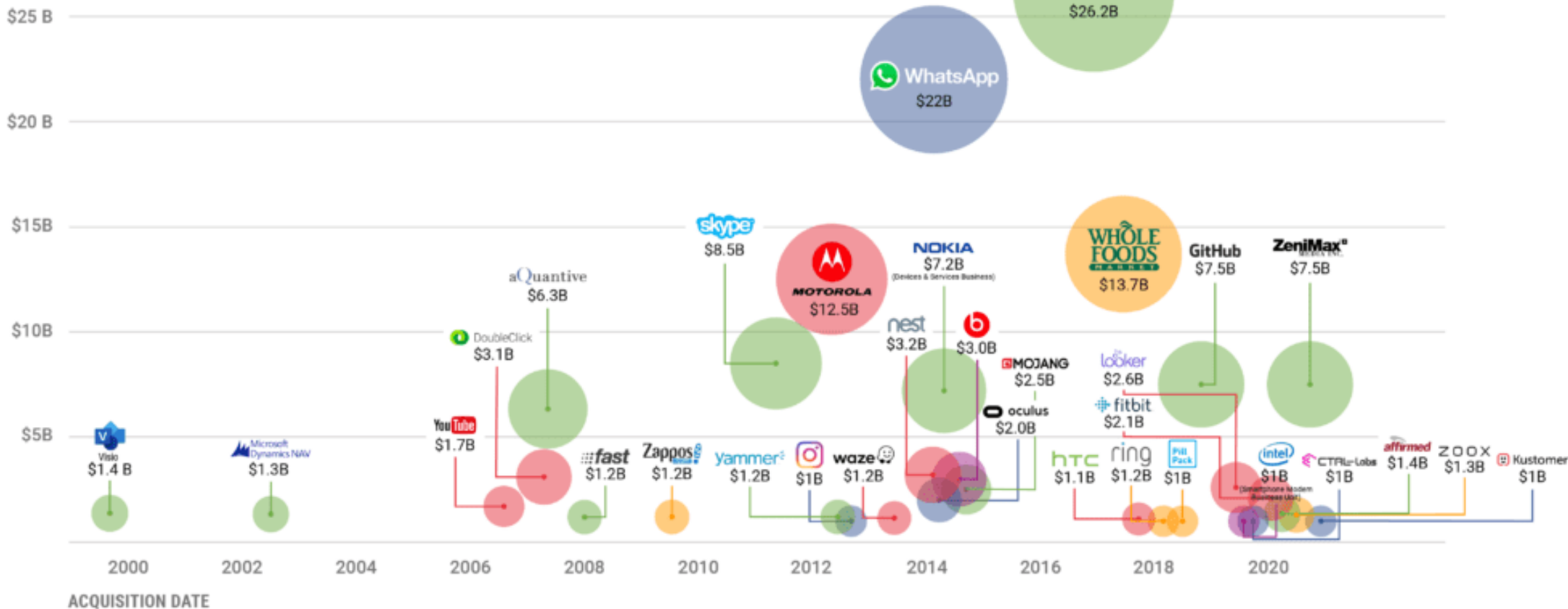


# TIMELINE OF TECH GIANTS' BILLION-DOLLAR ACQUISITIONS

Every \$1B+ acquisition made by Facebook, Amazon, Microsoft, Google and Apple. Bubble size represents maximum valuation.

Facebook Apple Microsoft Google Amazon

VALUATION OF ACQUIRED COMPANY

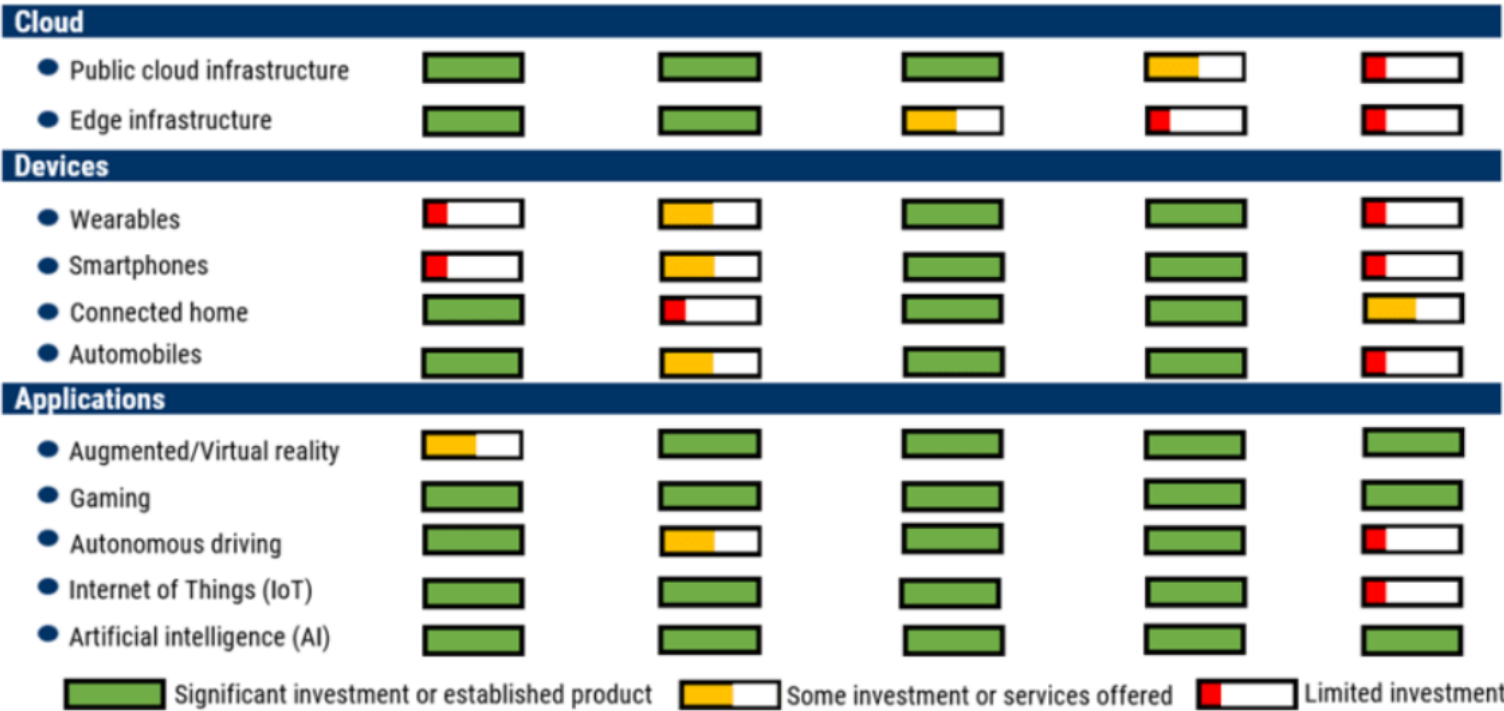


Data as of February 2021

CBINSIGHTS

They have

# Big Tech's activity on the edge



Source: cbinsights.com

CBINSIGHTS

technology

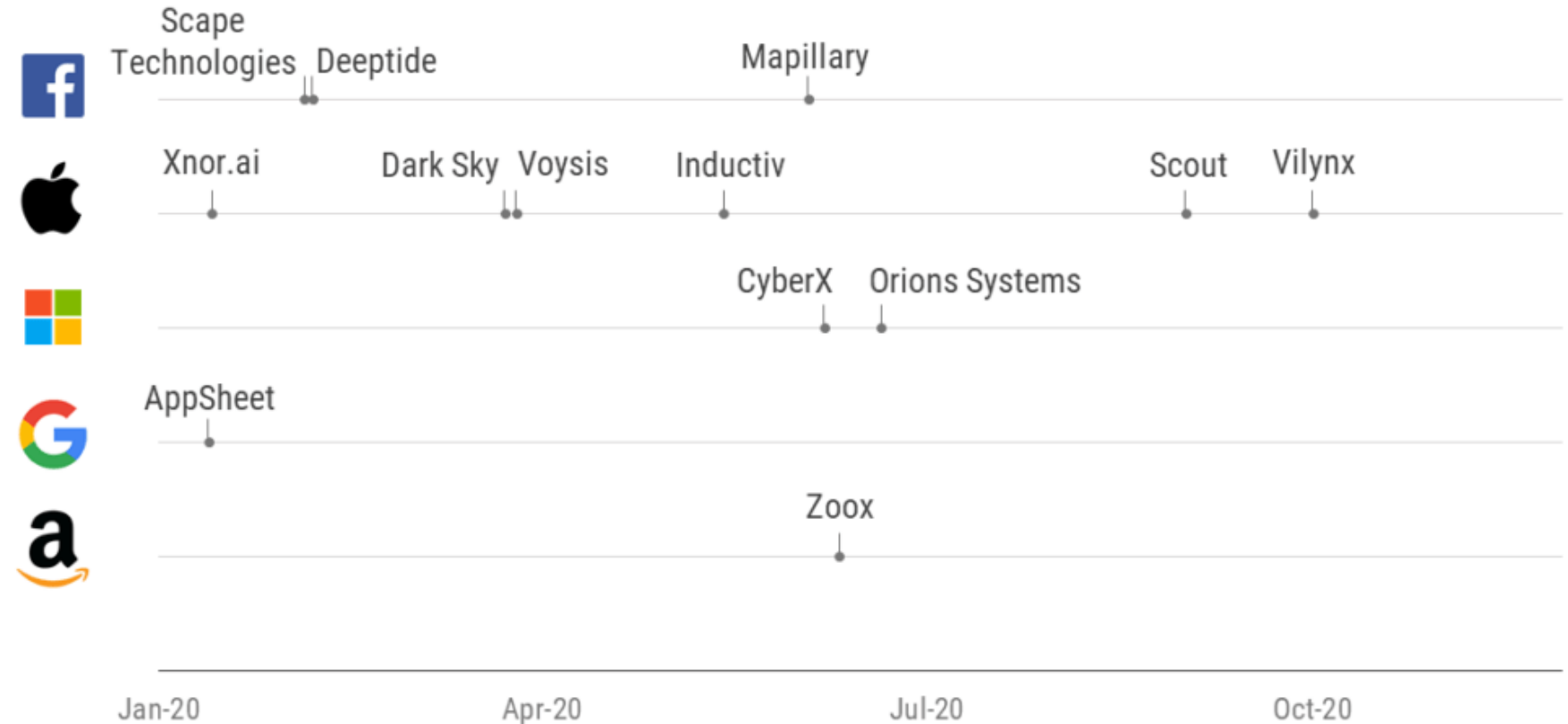


They have



## Each tech giant acquired at least 1 AI co in 2020

FAMGA's disclosed acquisitions of AI startups, 2020



Source: cbinsights.com

CBINSIGHTS

technology

They have

technology



# Google is the most active investor in AI

By number of companies backed, Q4'23

|   | Investor   | Company count |
|---|--|---------------|
| 1 |               | 9             |
| 2 |  KB 증권        | 8             |
| 2 |  <sup>*</sup> | 8             |
| 2 |              | 8             |
| 5 |  Lightspeed | 7             |

State of AI: 2023 recap

Source: CB Insights. Analysis includes activity from corporate venture arms of Google (GV, CapitalG, Gradient Ventures), KB Securities (KB Investment), and Nvidia (NVentures).

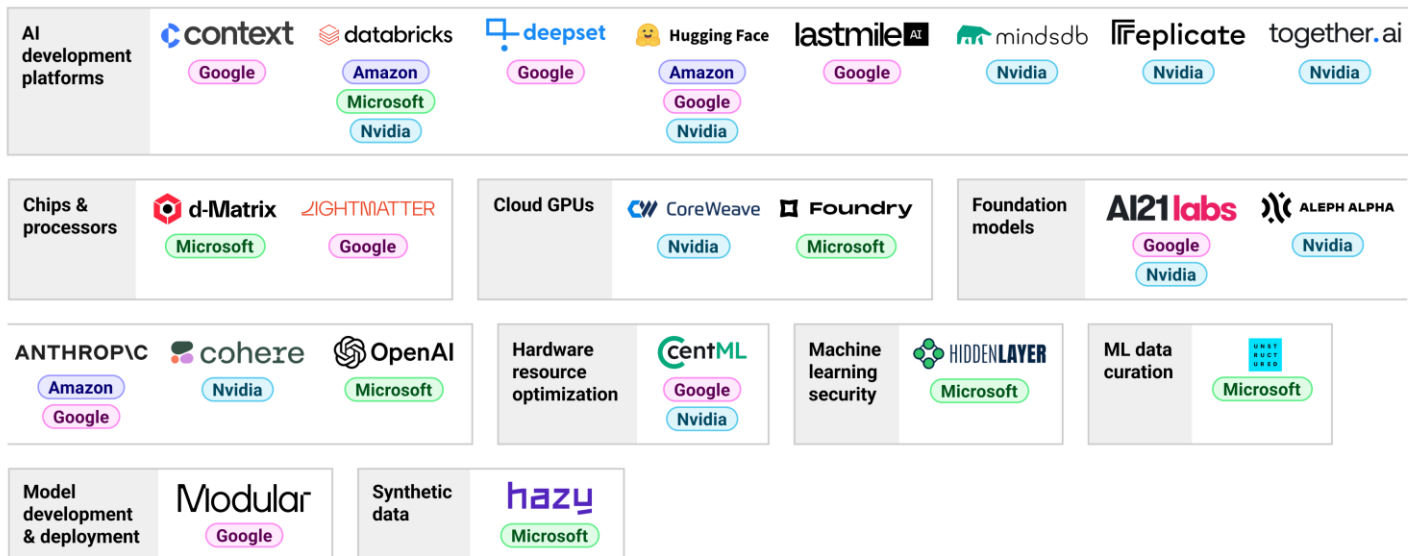
\*Refers to Plug and Play Ventures, not its accelerator activity.



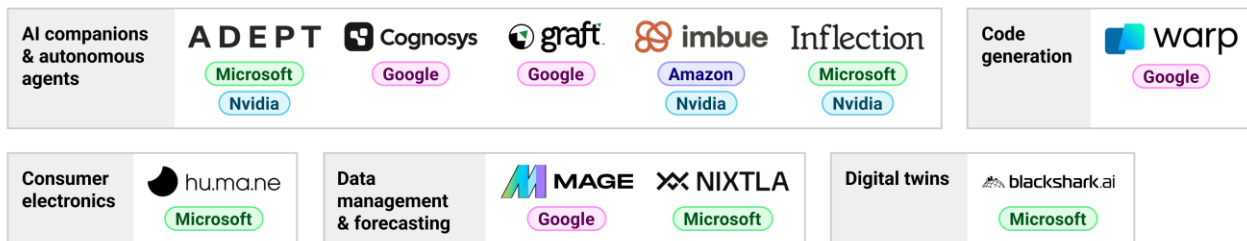
# Amazon, Google, Microsoft, and Nvidia race to back startups at the forefront of AI development

Big tech's AI startup investments in 2023

## AI infrastructure



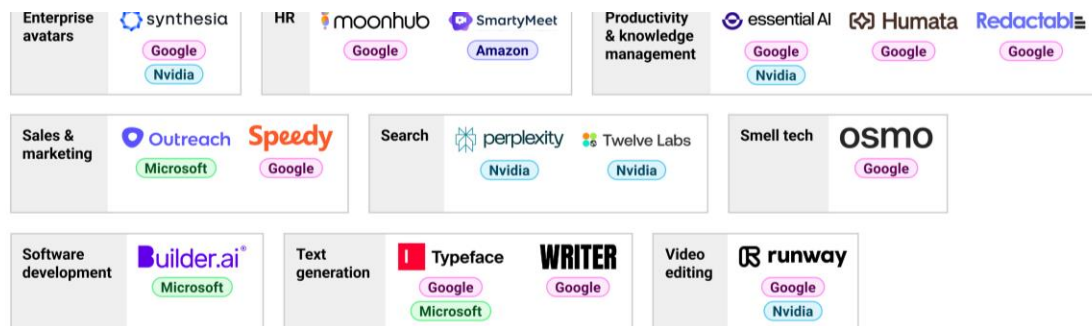
## Horizontal AI





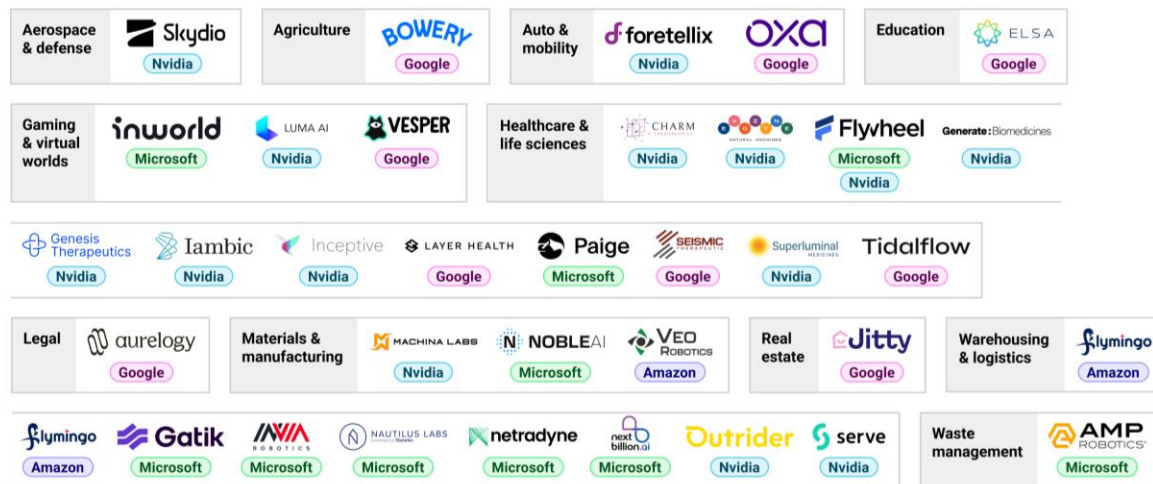
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Big tech's AI startup investments in 2023



CB Insights

## Vertical AI



CB Insights financing data. Features AI startups that raised equity deals in 2023 from the following companies and subsidiaries/strategic venture arms: Amazon (Amazon Alexa Fund, AWS, Amazon Industrial Innovation Fund), Google (GV, Gradient Ventures), Microsoft (M12), and Nvidia (NVentures). Meta and Apple did not make a disclosed equity AI startup investment over this period. Data as of 3/7/2024.

**Table 1. Key Risks of BigTech**

| TYPE OF RISK        | IMPACT OF BIGTECH  |
|---------------------|--|
| Financial stability | <ul style="list-style-type: none"><li>• Expansion across financial sectors carrying out several activities that in isolation might not create systemic risk but can increase risk when carried out cumulatively</li><li>• Interconnectedness with financial incumbents</li><li>• Carrying out a single systemically important activity, such as cloud provision or operating payments infrastructure</li></ul> |
| Consumer protection | <ul style="list-style-type: none"><li>• Reduced consumer choice through “rebundling”</li><li>• Market dominance that could lead to innovation being replaced by markups</li><li>• Lack of appropriate disclosure of activities, partnerships, or regulatory protection</li><li>• Free/cheaper services provided through capturing/storing consumer data</li></ul>  |

# The risks of BigTech in the financial system

Fonte: Bains et al. 2022

### Market integrity

- Challenges of regulation, supervision, and enforcement
  - » against BigTechs located in other jurisdictions
  - » against BigTechs with core businesses in nonfinancial sectors (for example, e-commerce)

### Financial integrity\*

- BigTech platforms that could facilitate cross-border fraud, theft, and money laundering
- End-user unawareness where BigTechs operate blockchain-based propositions

Source: IMF staff .

# The risks of BigTech in the financial system

Fonte: Bains et al. 2022

# The actors



Incumbent

Also due to increased competition, incumbents have embraced digitalization as an opportunity.

- The answer depends on several factors:
  - Bank size, available resources,
  - Strategy and market target
  - IT legacy
  - Cultural change
- First step: digitalization of channels

# The strategic approaches of incumbent banks and new digital banks



The incumbents, "traditional" banks and insurance companies, have responded with varying degrees of effectiveness and depth by implementing different strategies.

- Partnerships with Fintech and Tech
- Investments in Fintech and Tech
- In-house development

Digital-native banks and insurance companies are born.



# Digitalization for traditional FIs

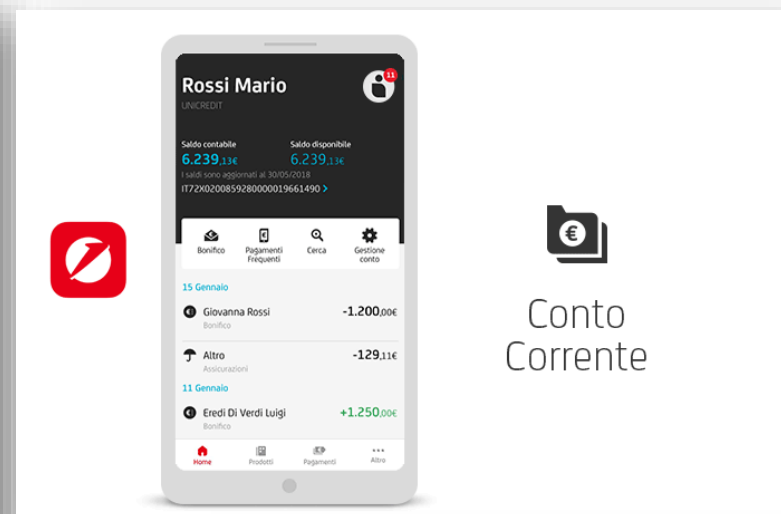


- It's not just about digitizing distribution channels → even though most FIs started with that.
- Digitizing production processes → overcoming legacy and layering of information systems.
- Changing corporate culture: staff training courses and recruiting new professionals.
- E.g., User Experience, UX Designers; AI and Machine Learning Specialists; cyber security and business continuity officers.

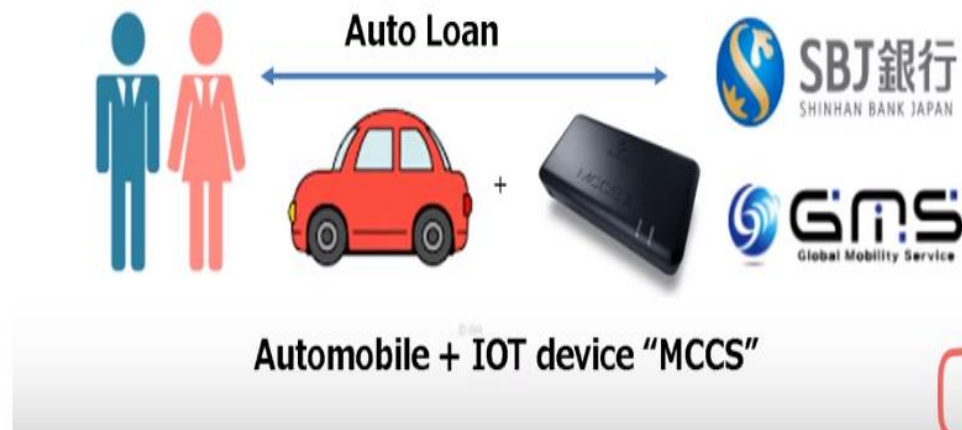
Above all,

- Change the approach to customers → the focus is not on the transaction, but on the customer.
- The customer experience must be impeccable and engage customers, who must feel like protagonists of the relationship.

# Front-end applications



# Integrating technology into products/services

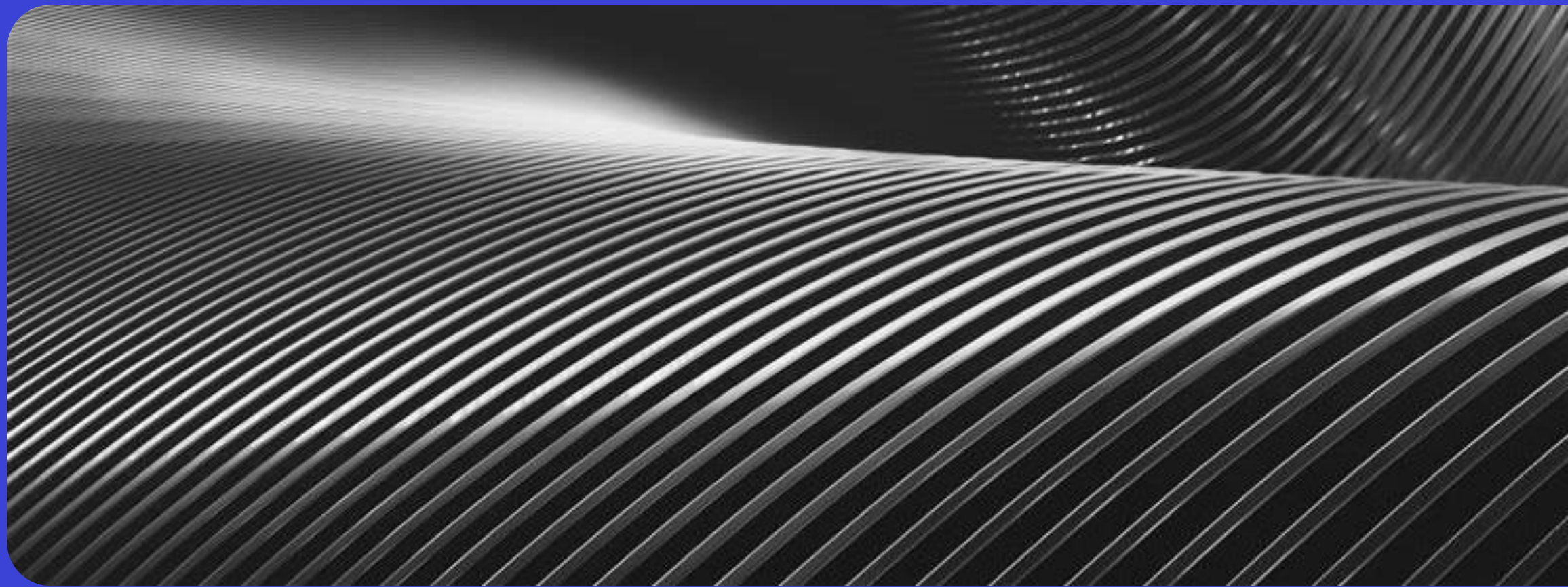


## ***Shinhan Bank, Japan, : Car Loan***

IoT device locates the car and deactivates it if the loan is not paid.



***App that encourages physical activity and well-being created mainly to recruit insurance customers***



Strategic approaches to  
digitalisation in banks: from wait-  
and-see to digital disruption

## Strategic approaches to digitalization in banks: from wait-and-see to digital disruption

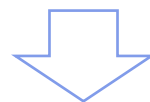
### *The issue of legacy*

In large and complex structures, investment opportunities clash with operational and organizational legacies



Overcoming these legacies appears to be a process that is not easy to achieve and requires a long timeframe.

The legacy obstacle to digitalization can be partially overcome through partnership agreements with FinTech



Respond to new customer needs more quickly and maintain market share

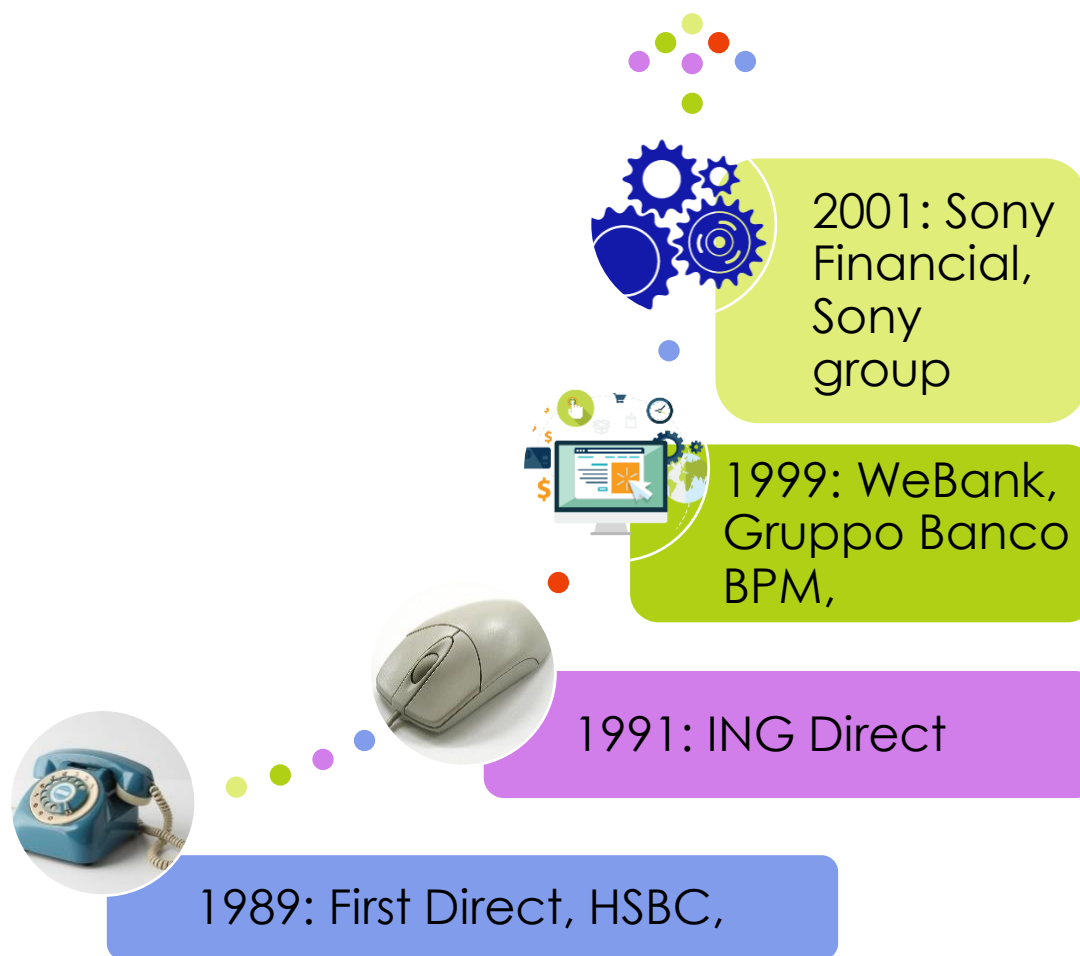
Overcoming the stratification of the internal system and the complexity of group strategies

This collaboration model is also appreciated by FinTechs.



# Digital native banks or neobanks

*Online banks: they're nothing new...*



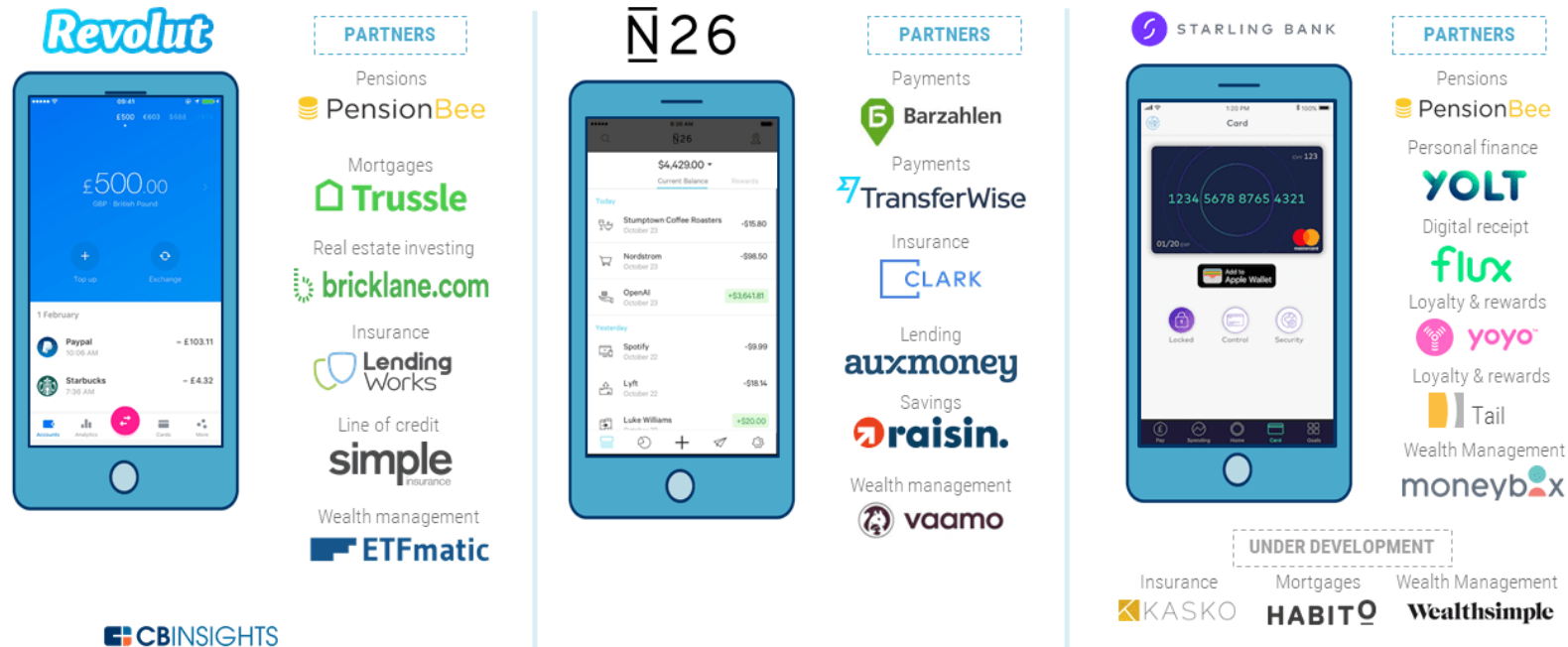
- Banks are not new to technological change. Italy's first ATM was in '76; its first cash machine was in '83; e-banking in '99...
- Banks are not new to technological development. In six years, the top 10 US banks alone have spent over \$4 billion on FinTech.

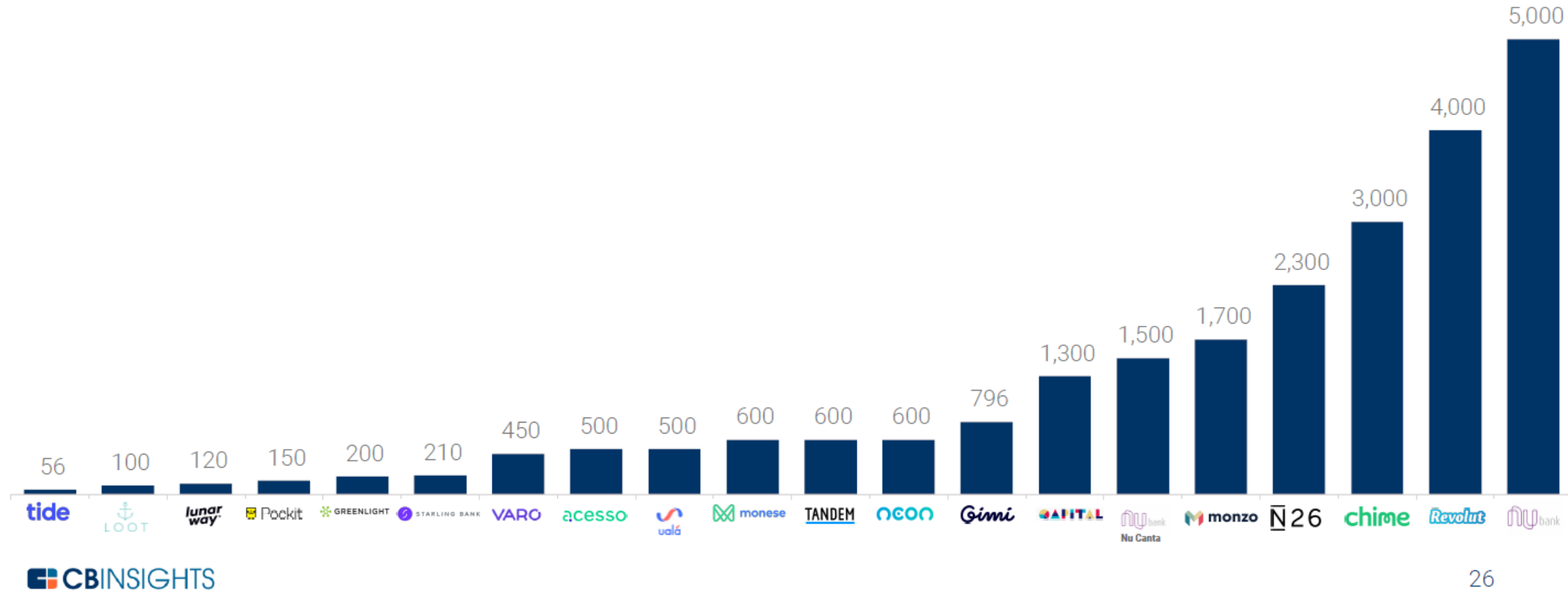
# Digital native banks or neobanks

... but this time is different

## Challenger banks add fintech partnerships to grow

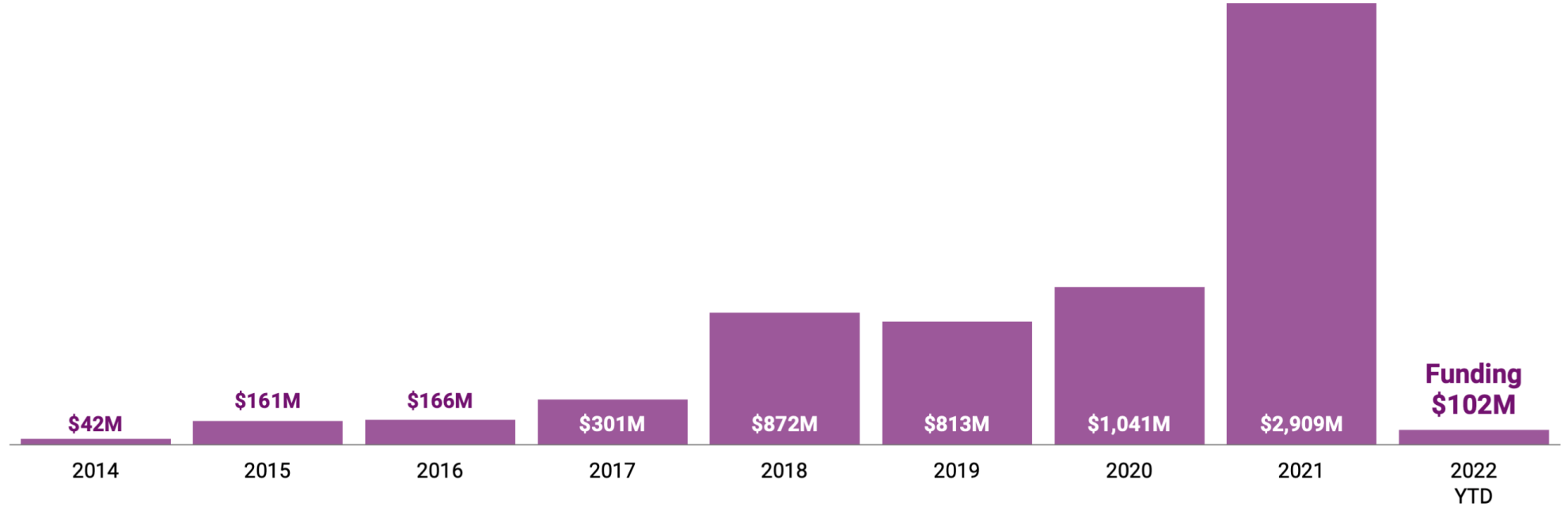
APIs and enabled integrations are a cheaper faster way to launch products and acquire customers





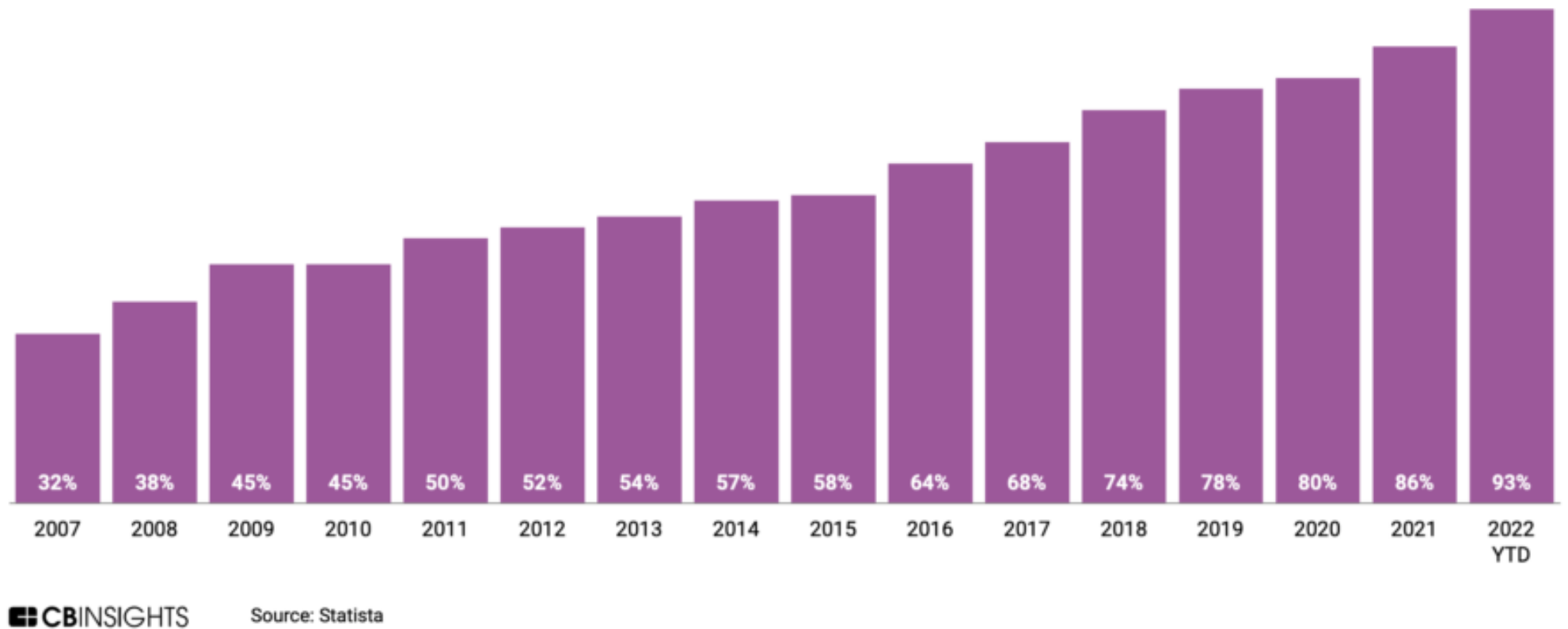
# Digital native banks or neobanks





 CBINSIGHTS

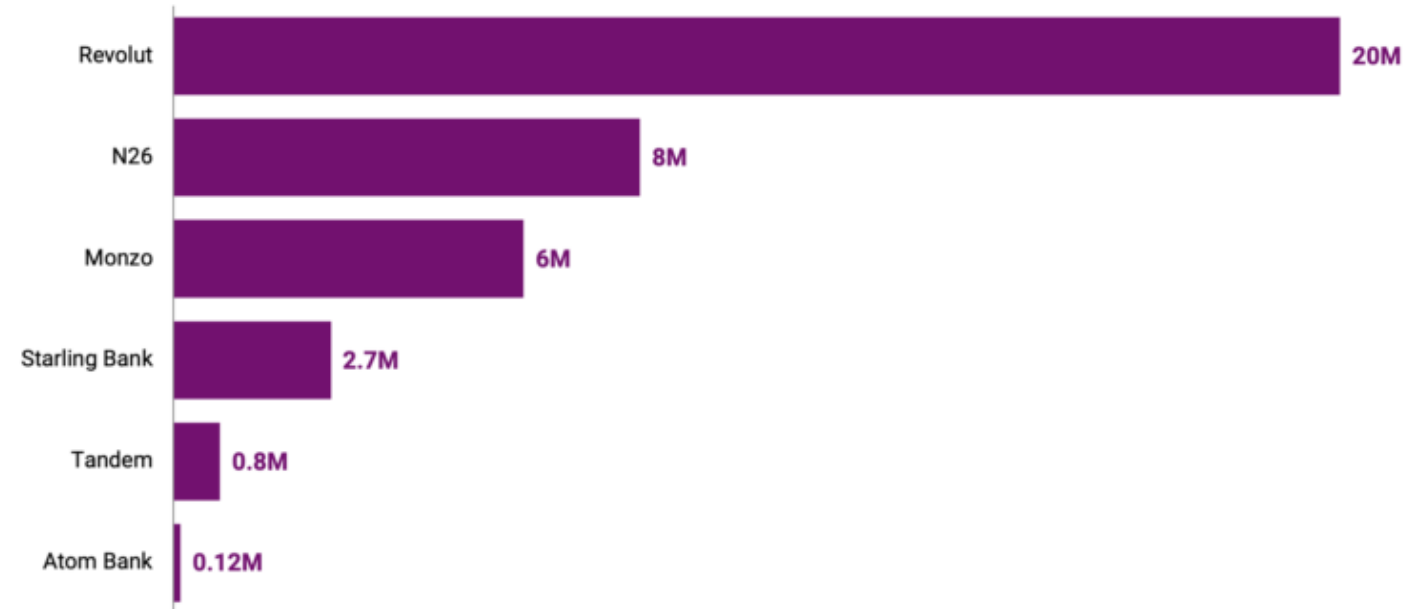
# Digital native banks or neobanks



# Digital native banks or neobanks

## Challengers that didn't initially seek charters lead in user growth

Number of users across select Europe-based challenger banks (as of 11/03/2022)

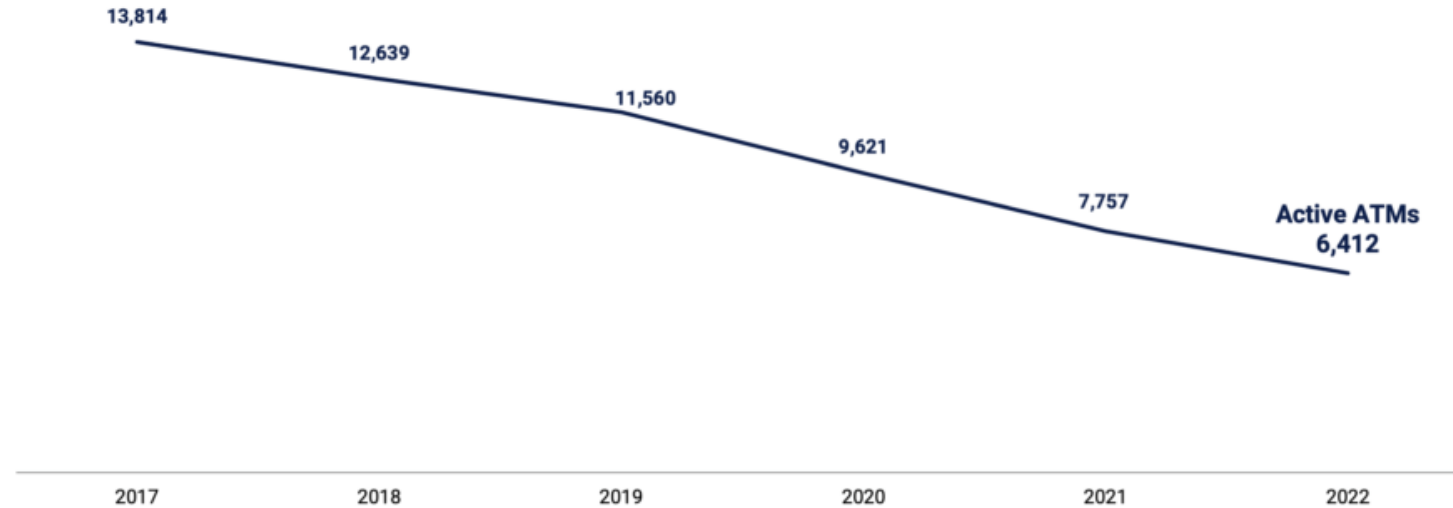


CBINSIGHTS

Digital native banks or  
neobanks

## Banks steadily shutter ATMs as consumers make the shift to digital

Number of active ATMs across Australia (for the year ending June 30)



CBINSIGHTS

Source: APRA

# Digital native banks or neobanks