



EXPLORING THE NETWORKS OF DIGITAL BANKS

Campfire Labs (acquired by Groupon)

Snow Software

NuComm Group

Fielmann AG

Going for Growth SoundCloud

Fan TV - Acquired by Tivo

Glanzer Consulting

TechNation

Nationwide Building Society

Morgan Stanley

GetYourGuide

Wuestenrot

ProSieben Sat.1 Media SE

Payworks

DaWanda GmbH

White Bears Yard Entrepreneur Corps

World Vision UK

Google

The Sunday Times

Goldman Sachs

American Chamber of Commerce Ireland
Dropbox

Bray School Project Educate Together

UBM plc

Tide

TSB Bank

10 Downing Street

Country Head Nordic - SM

haylo

EXPLORING THE NETWORKS OF DIGITAL BANKS

Bray School Project Educate Together

Country Head Nordic - SM

iyzico

TomTom

American Express

Purplebricks Group PLC

Bridgeforce

Advent International

Uber

remera Blue Cross

Domestic & General

Tesco Personal Finance

William Hill The Mortgage Lender (TML)

Capital One

Avidbank

Ufi VocTech Trust

StartupBus

PayU

Airdrie Savings Bank

Lending Club

PaySense

Inspired Capital

IDW ASSOCIATES LTD

pswich Building Society

Visa

Lab49

Prodigy Finance

California Bankers Association

Avaloq

Checkout.com

SPD Silicon Valley Bank Co., Ltd.

Savedo GmbH

HipDial

KeyBank

Lab49

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Savedo GmbH

Klout

Credit Suisse

Atacapt Ltd

3G Capital

Chartered Management Institute

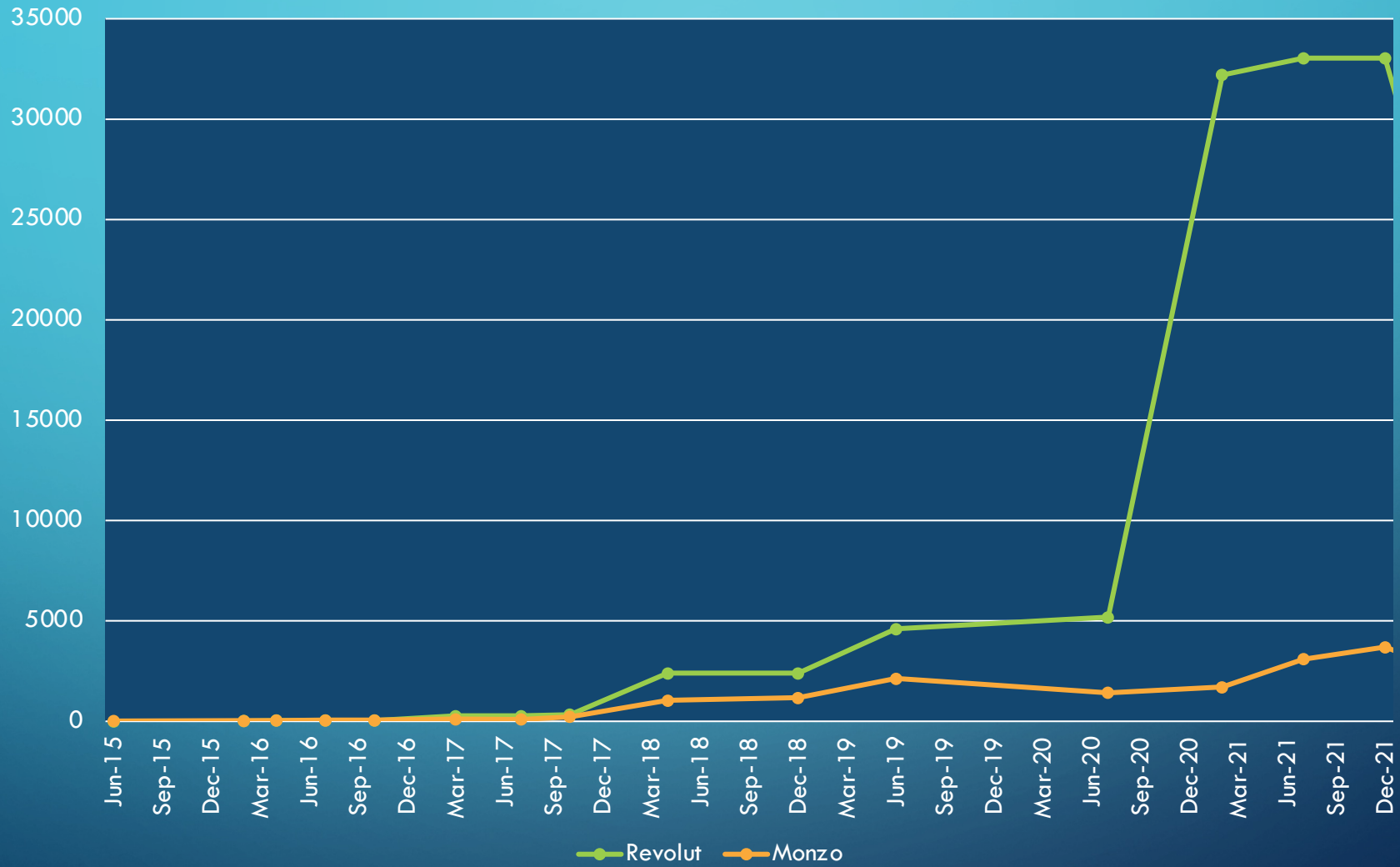
Wonga

Revolut

IMPORTANCE

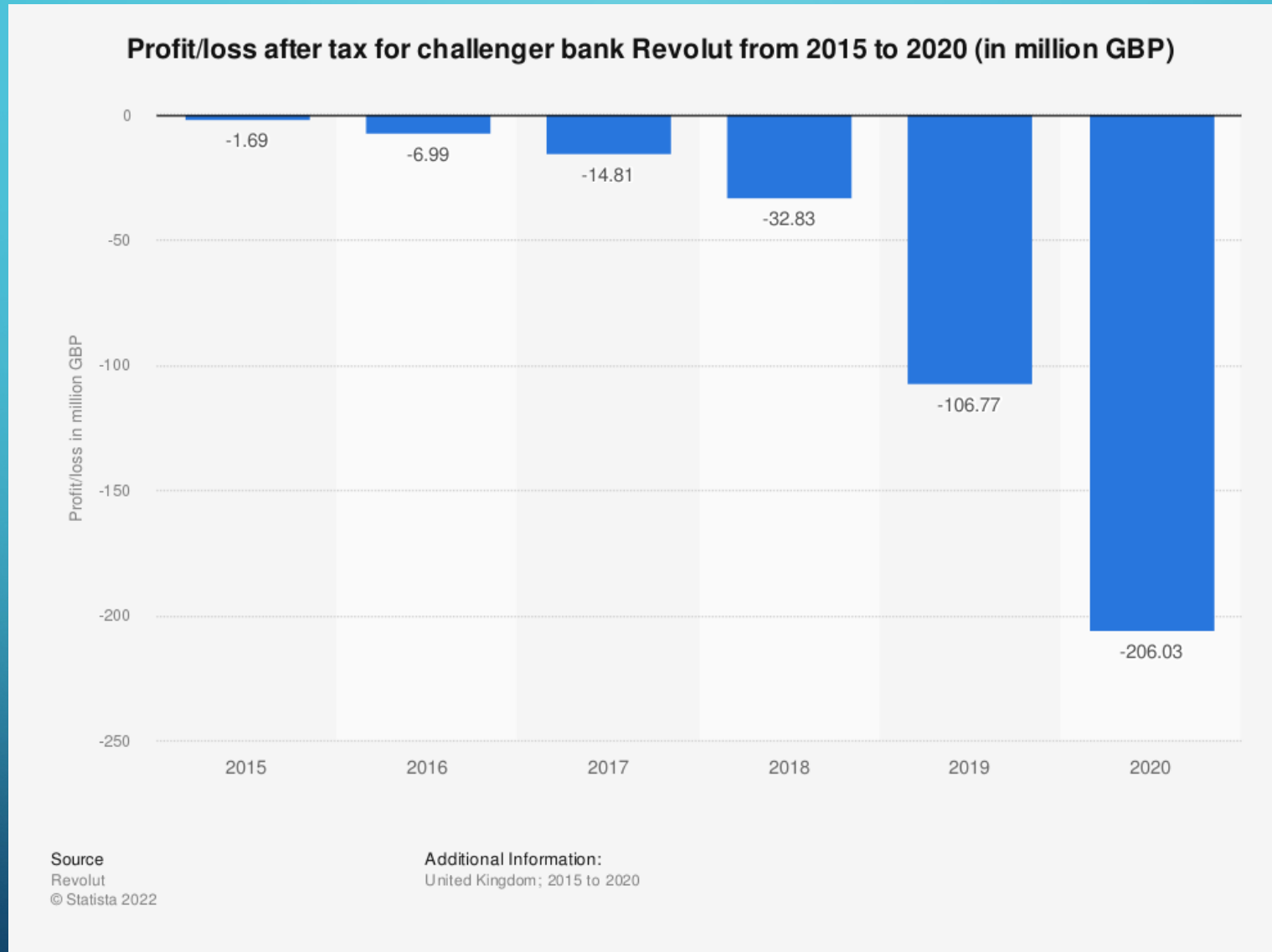
- digital transformation of banking services
 - faster, cheaper, more convenient and mobile
- rise of challenger banks
 - transformation into global super apps
 - Revolut's boom: forecasting a revolution or a crash?

Market Valuation of Monzo and Revolut in millions of US dollars



Source of data: PitchBook

REVOLUT'S (UN)PROFITABILITY



EXISTING RESEARCH

- Vast literature on networks inside and among businesses
- Social network analysis of fintech companies hard to find
- Network analysis of Fintech influencers
 - <https://onalytica.com/blog/posts/fintech-top-100-influencers-and-brands/>

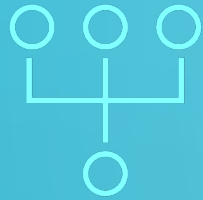
MY QUESTIONS

- How are the top digital banks linked to each other?
 - How strongly are they interconnected?
- How do the top digital banks interact with each other?
 - How do they interact on social media?
- Can structural differences inform us about profitability or valuation?

DRAWING FROM THEORETICAL FOUNDATIONS

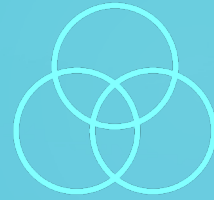
- **voluntary affiliation** (McPherson, 1983)
 - statistics of inter-organizational **linkages** multiple membership (overlap, size, homogeneity)
 - organization as a node
- studies of **interlocks**
 - organizational behavior as a determinant of market structures (Baker, 1990)
- organizational **genesis** (Powell et al. in Padgett and Powell, 2012)
 - emergence of **clusters**
 - **structural holes**: what actors connect multiple industries?
 - analysis of **diversity, centrality, and dependence**

ANALYSIS



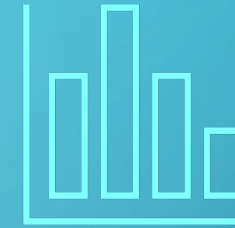
ASPECTS

- financial capital:
investments
- human capital:
experience
- social capital:
interactions



POINTS OF COMPARISON

- with direct competitors:
 - *profitability and valuation*
 - *locations*
 - *strategy/activity*
- with related industries:
traditional banks and tech startups
 - *network structure*



STATISTICS

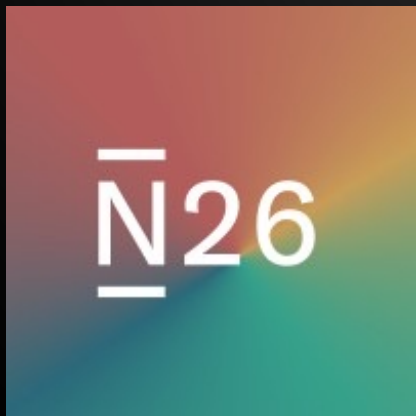
- *centrality*
- *distance*
- *density*



London, UK



London, UK



Berlin, Germany



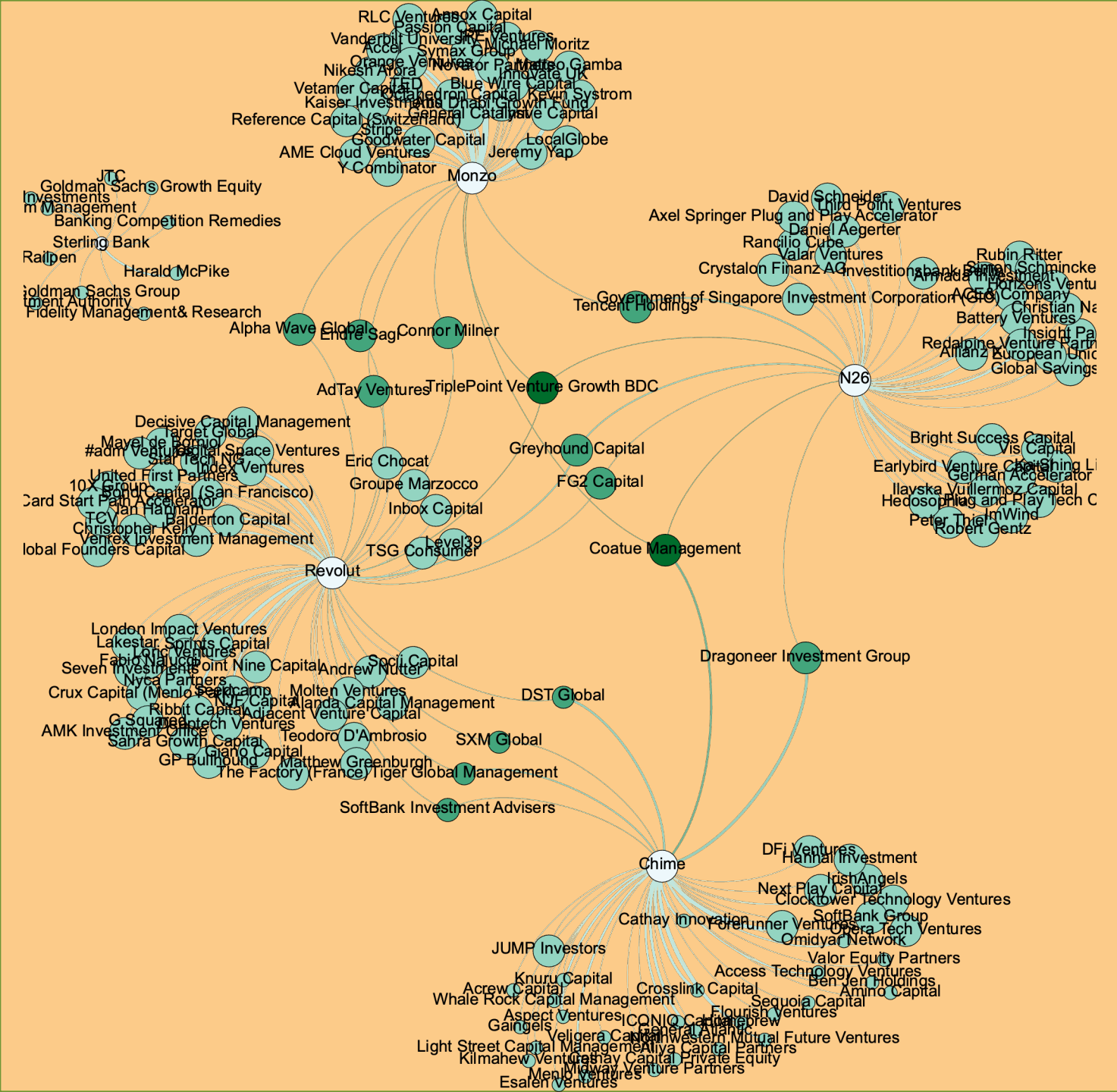
London, UK



San Francisco, CA



SOME RESULTS

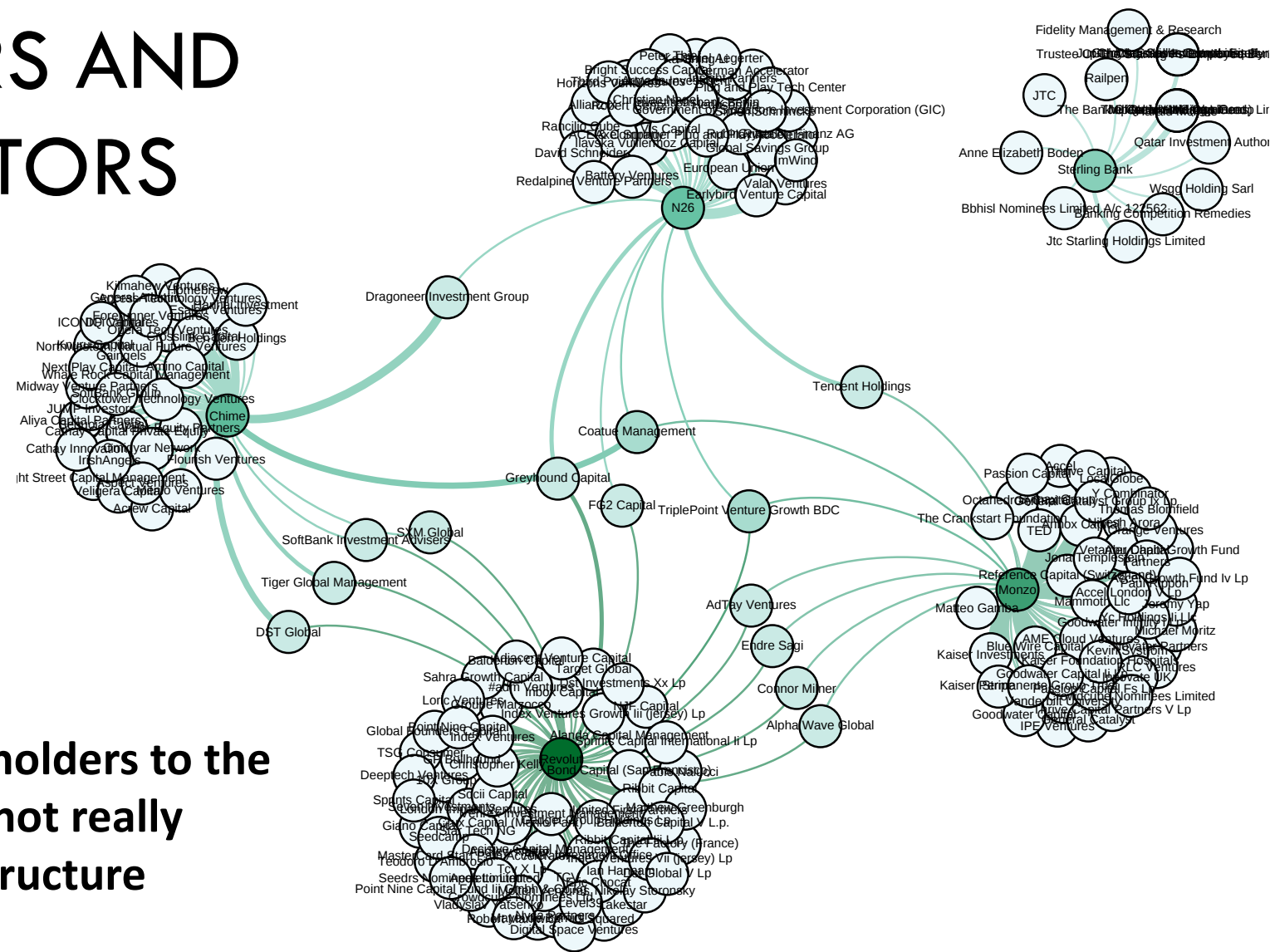


INVESTORS

- Starling Bank is disconnected from the cluster of the remaining banks
- There are two funds that invested in three digital banks: TriplePoint (nomen omen) and Coatue Management
- There are about 16 funds (under 10% of 169) that invested in two of the digital banks

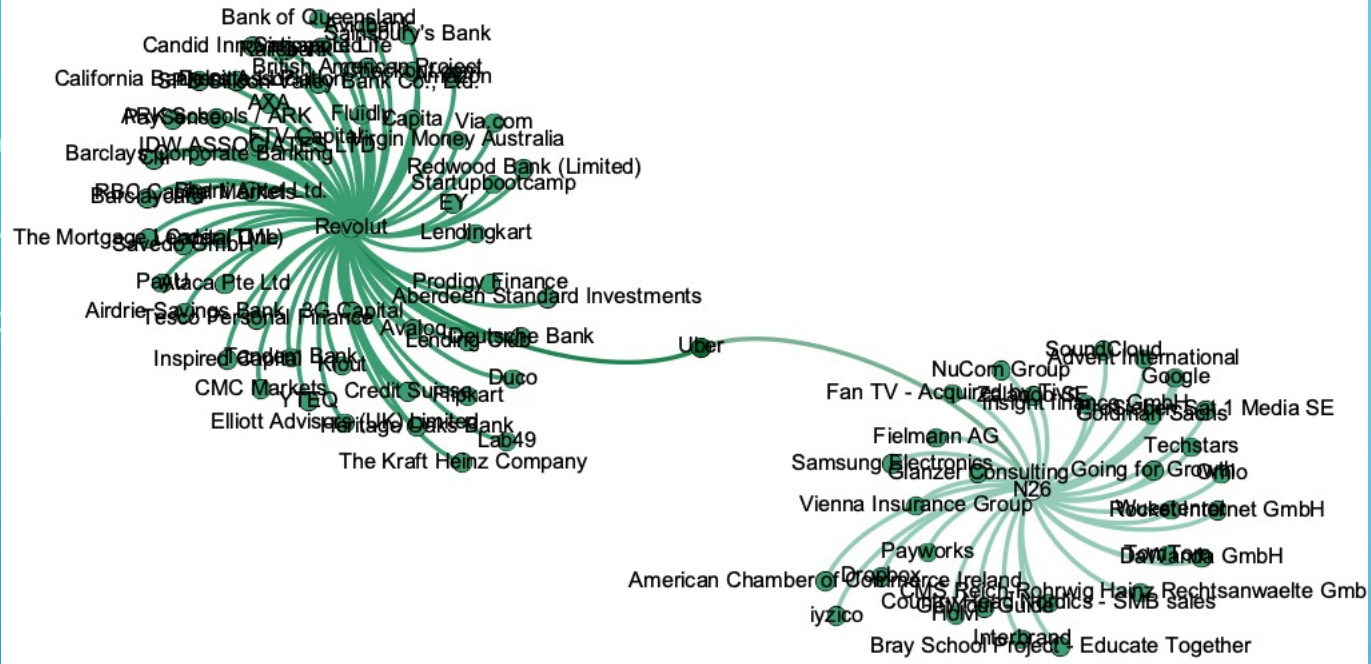
data source: PitchBook

OWNERS AND INVESTORS



- adding shareholders to the picture does not really change the structure

EXPERIENCE: parallel



- The board and team members and Revolut, N26, and Monzo come from entirely different firms
- Having worked in **Uber** is the only common experience found in the network (Revolut and N26)
- Revolut has almost twice as many board and team member as N26 and Monzo
 - Thus, has its senior staff bring experiences from more companies

- Caveats:
- Only employers after 2012 (incl. an employer if a person still worked for a company in 2012)
 - Not all employers have a linkedIn account.



data sources: PitchBook and LinkedIn

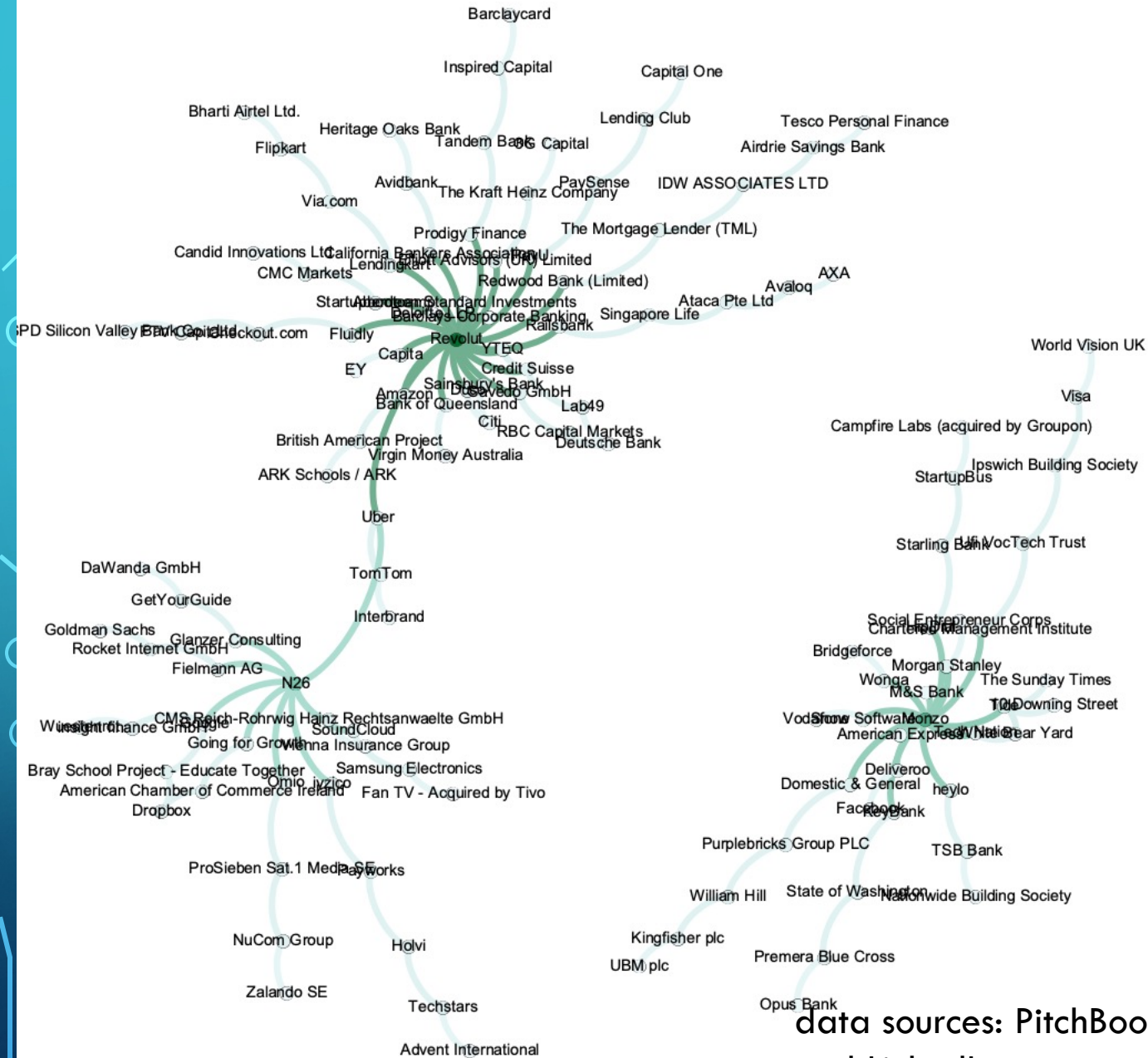
EXPERIENCE: sequential

- Board and team members of each digital bank have a diverse portfolio of experiences
- While most members joined Revolut after working in 1-2 companies in recent years, some jumped between 5 or 6 employers before settling in Revolut

Caveats:

- Some people worked for two or more employees at the same time, so sometimes transition between companies did not happen exactly as shown.

data sources: PitchBook
and LinkedIn



Gephi calculation:

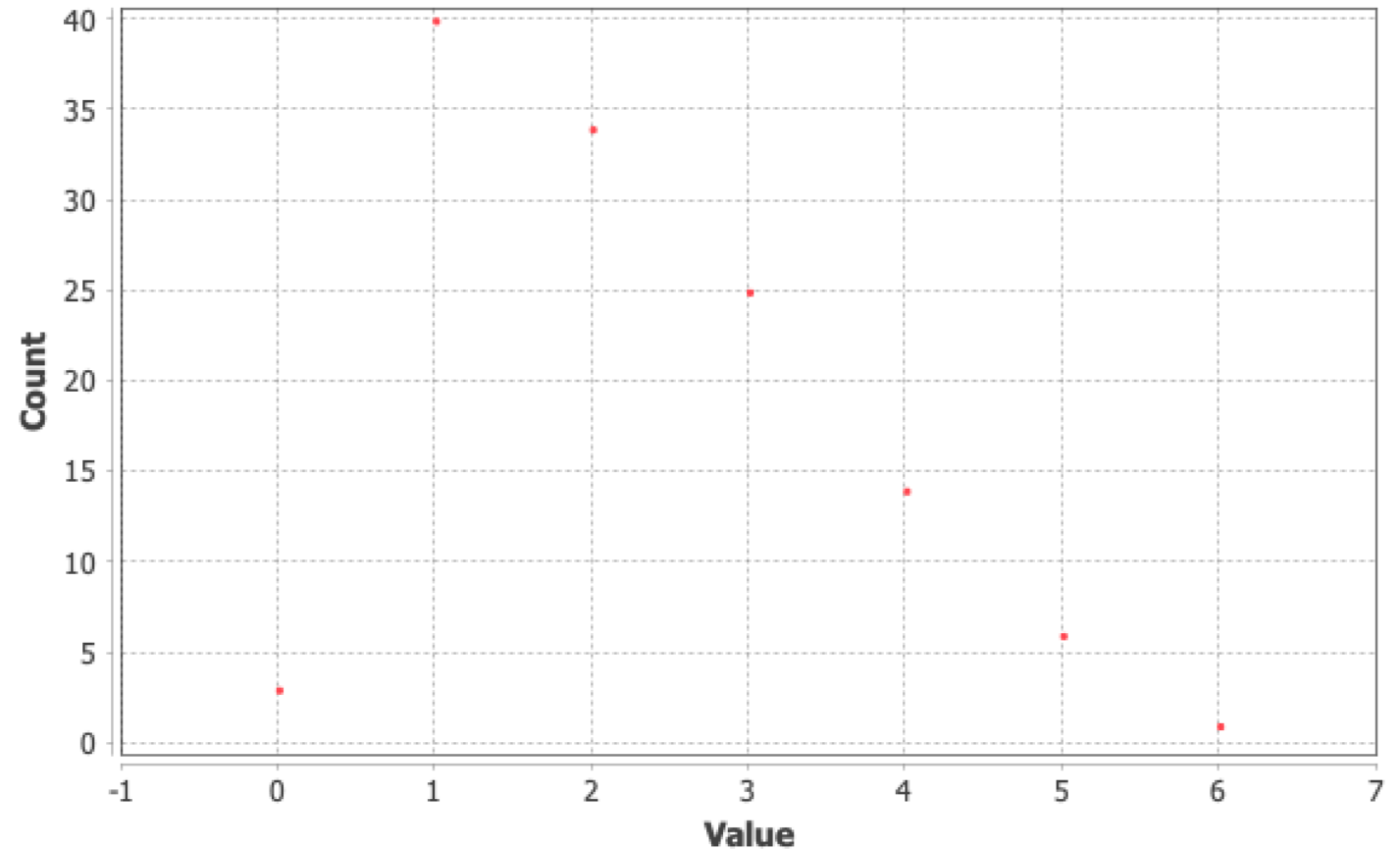
Network

Interpretation: directed

Results:

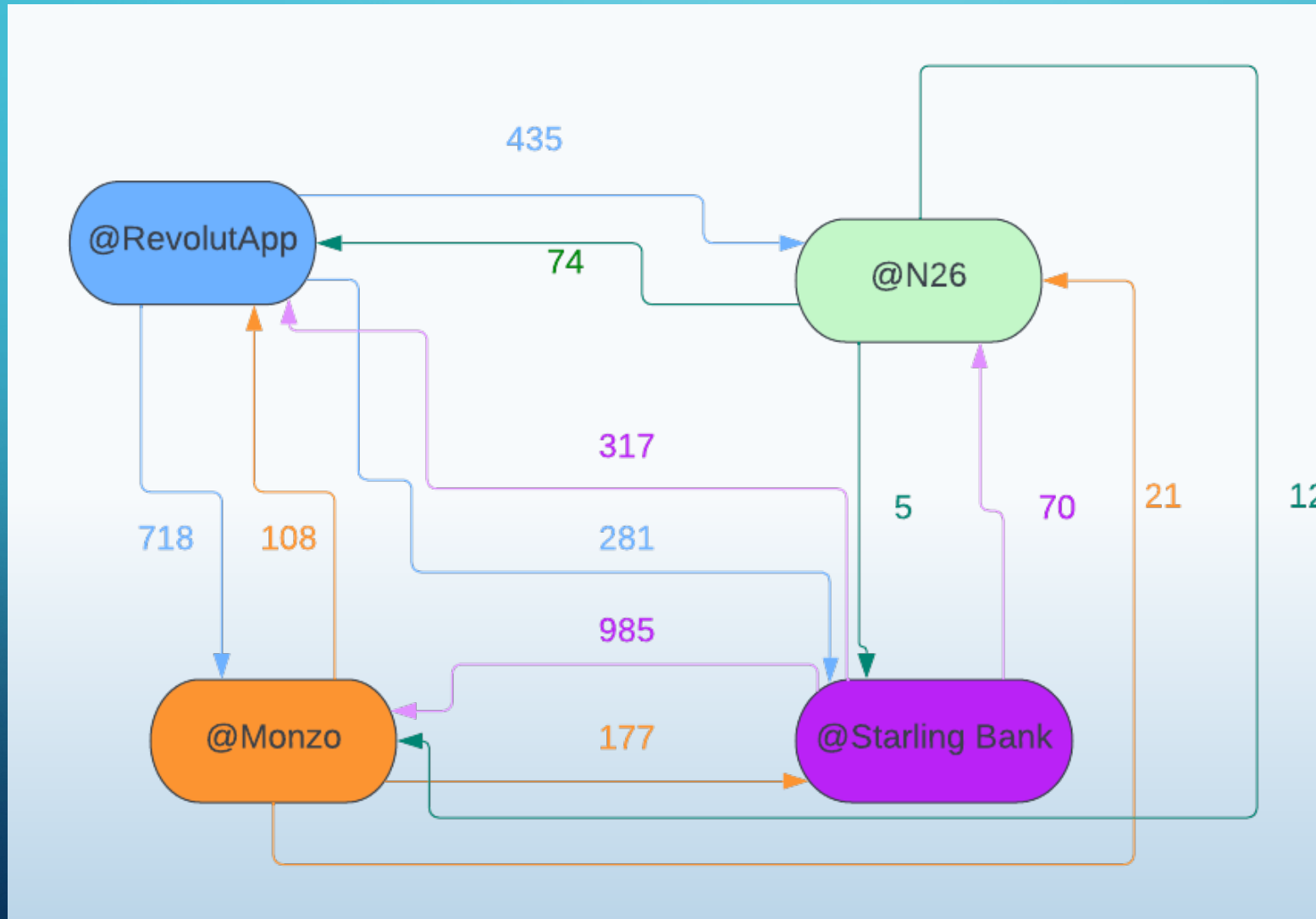
- Diameter: 6
- Radius: 0
- Average Path length: 1.97

Eccentricity Distribution



INTERACTIONS ON SOCIAL MEDIA

- Counts the number of mutual mentions on Twitter
- Mostly responses to individual users



- Quite diverse emphases on social media use
- N26 the least active
- Revolut the most consistent
- Starling Bank very active considering its lesser popularity
- Unlike in the case of investors or employment paths, the banks are connected

(POTENTIAL) NEXT STEPS

- Add and analyze data on interlocks
- Analyze the results in terms of industries and geographies linked by the digital banks
- Build a network of companies connected by Revolut's 34 lead partners on deals; analyze in terms of type of partners
- Track connections with other parts of the tech world
- Compare to the networks of traditional banks
- Conduct an empirical analysis

QUESTIONS

- What should I focus on?
- Any ideas for a quantitative analysis?