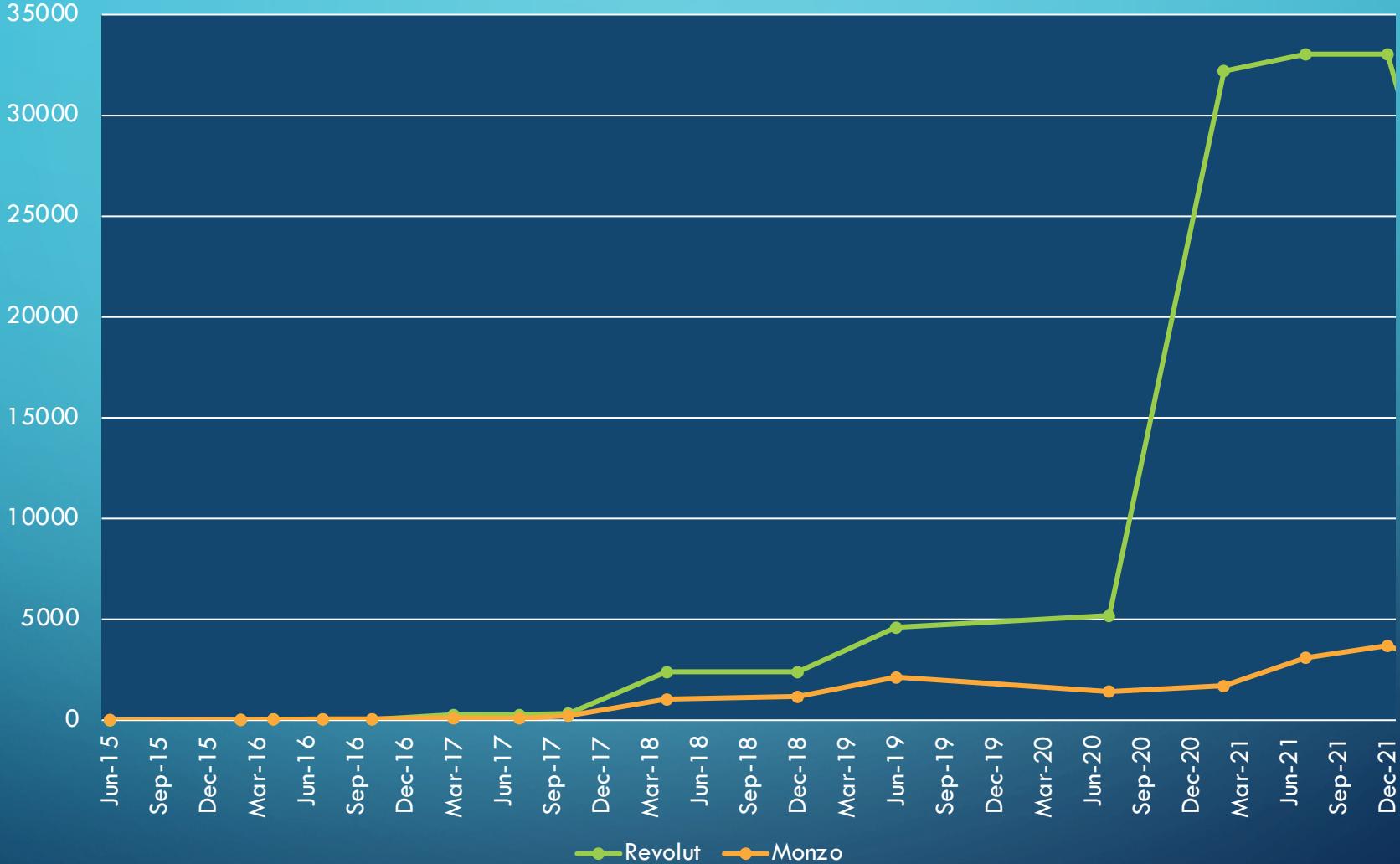


EXPLORING THE NETWORKS OF DIGITAL BANKS

IMPORTANCE

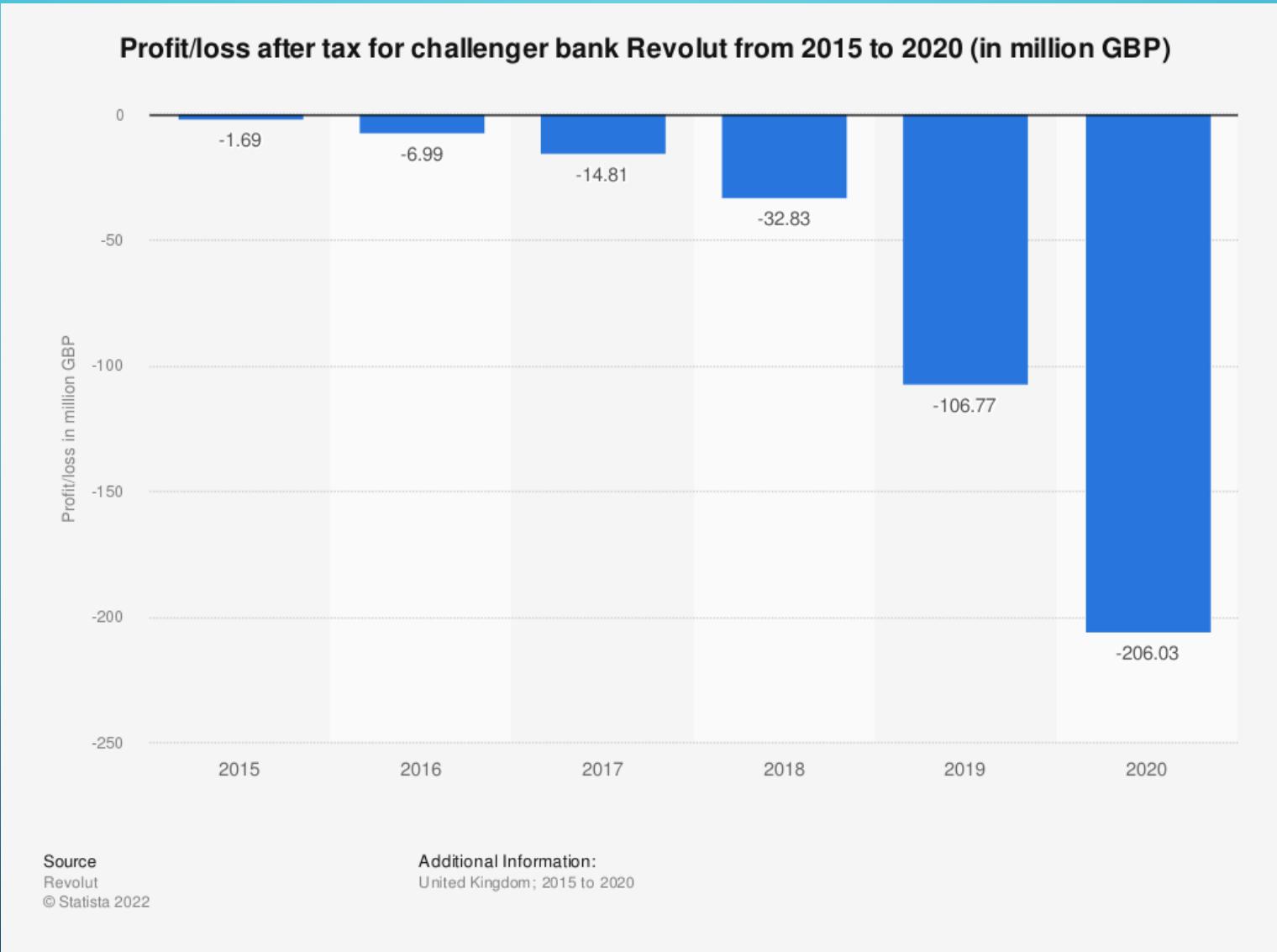
- digital transformation of banking services
 - faster, cheaper, more convenient and mobile
- rise of challenger banks
 - transformation into global super apps
 - Revolut's boom: forecasting a revolution or a crash?

Market Valuation of Monzo and Revolut in millions of US dollars



Source of data: PitchBook

REVOLUT'S (UN)PROFITABILITY



Revolut. (June 4, 2021). Profit/loss after tax for challenger bank Revolut from 2015 to 2020 (in million GBP) [Graph]. In *Statista*. Retrieved March 14, 2022, from <https://www.statista.com/statistics/1244990/profit-and-loss-for-revolut-bank-united-kingdom/>

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/>

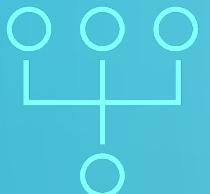
MY QUESTIONS

- 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

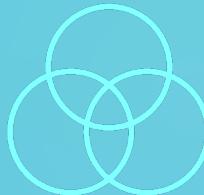
- **voluntary affiliation** (McPherson, 1983)
 - statistics of inter-organizational **linkages** multiple membership (overlap, size, homogeneity)
 - organization as a node
- **studies of interlocks**
 - organizational behavior as a determinant of market structures (Baker, 1990)
- **organizational genesis** (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



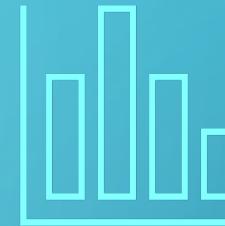
ASPECTS

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



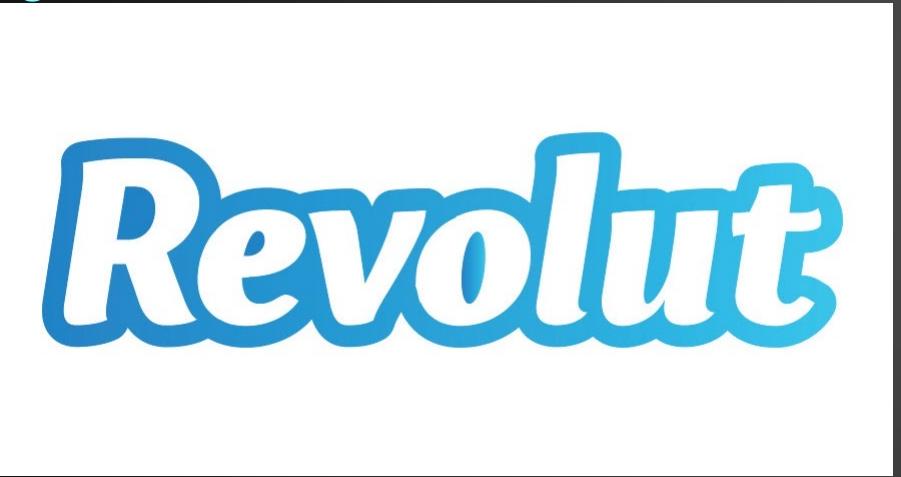
POINTS OF COMPARISON

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



STATISTICS

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



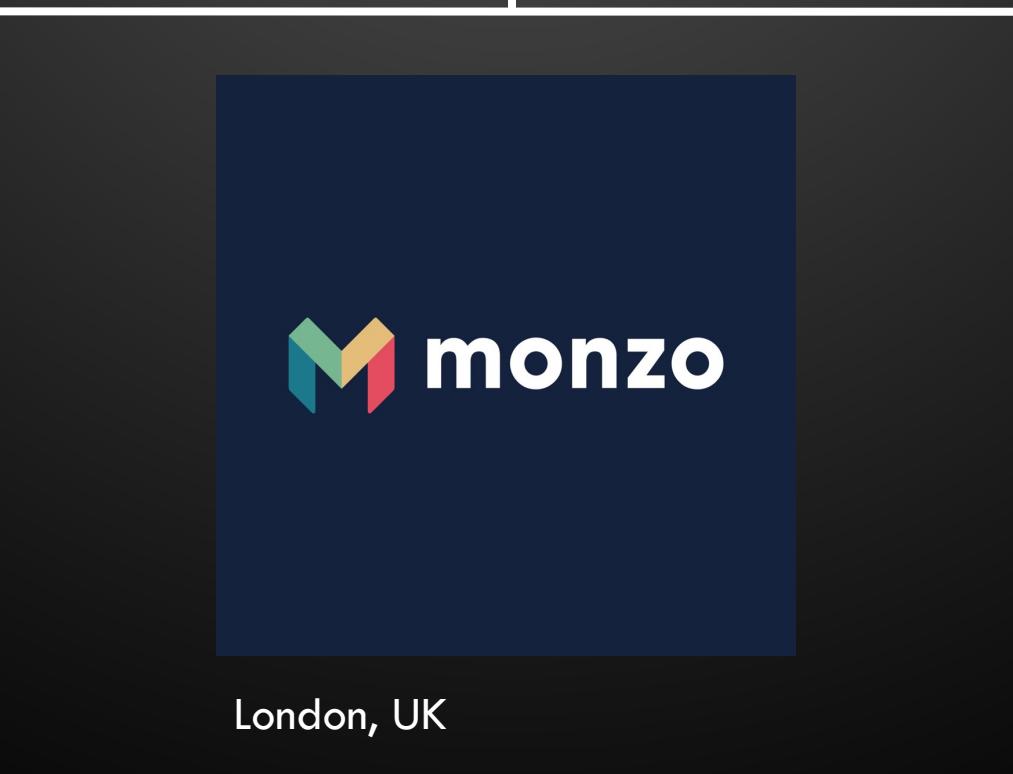
London, UK



Berlin, Germany



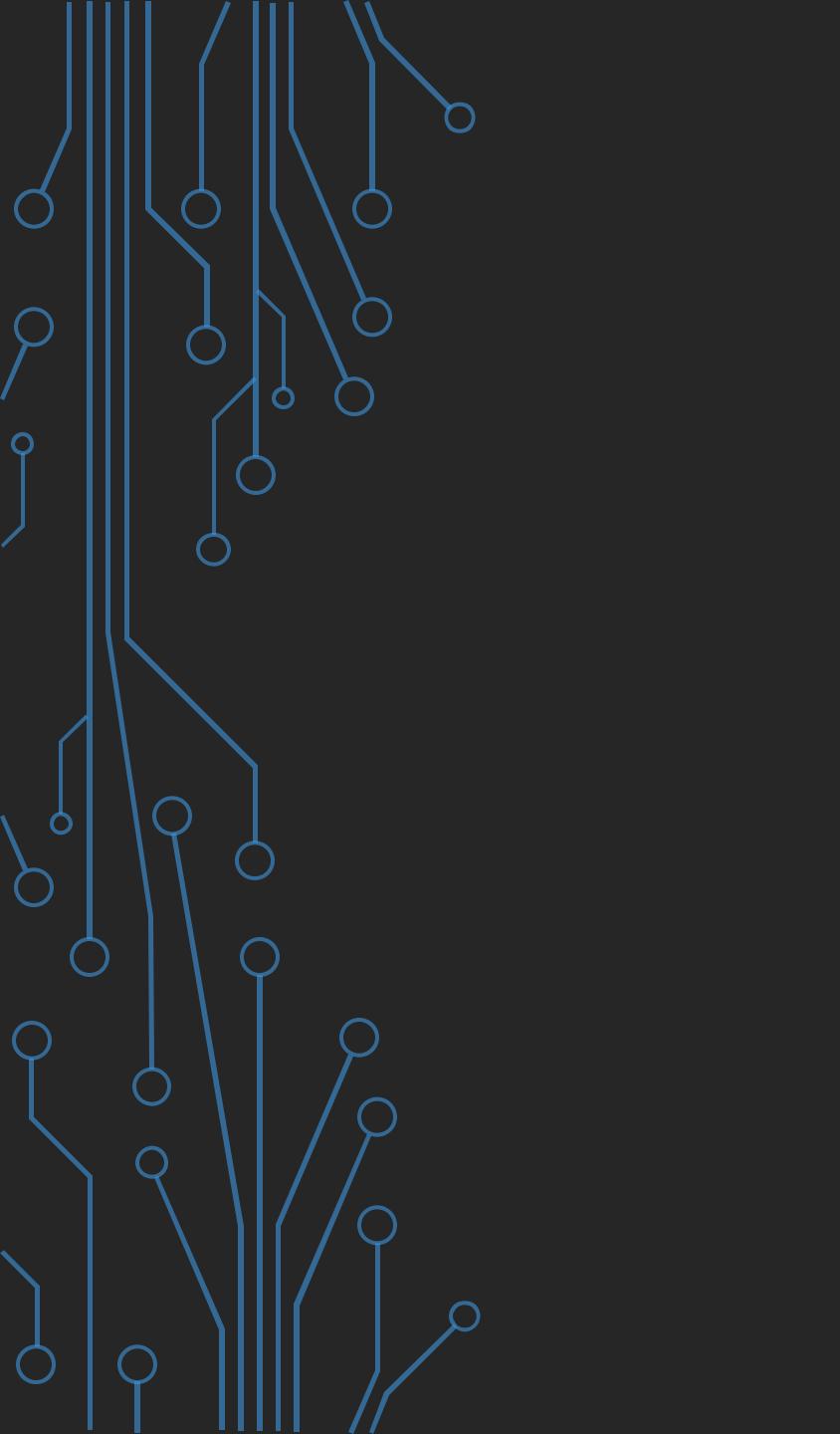
London, UK



London, UK



San Francisco, CA



SOME RESULTS

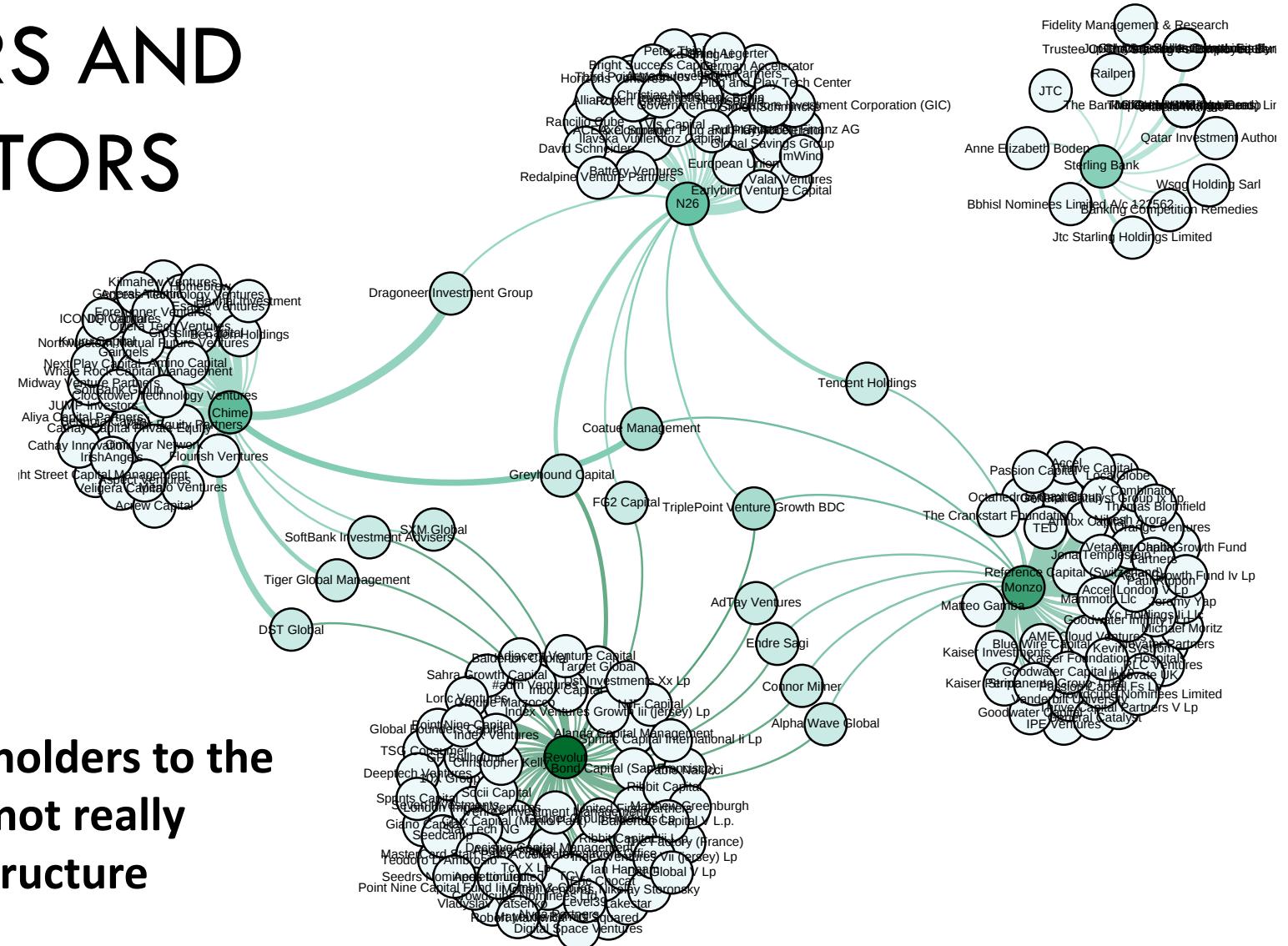
INVESTORS

- 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

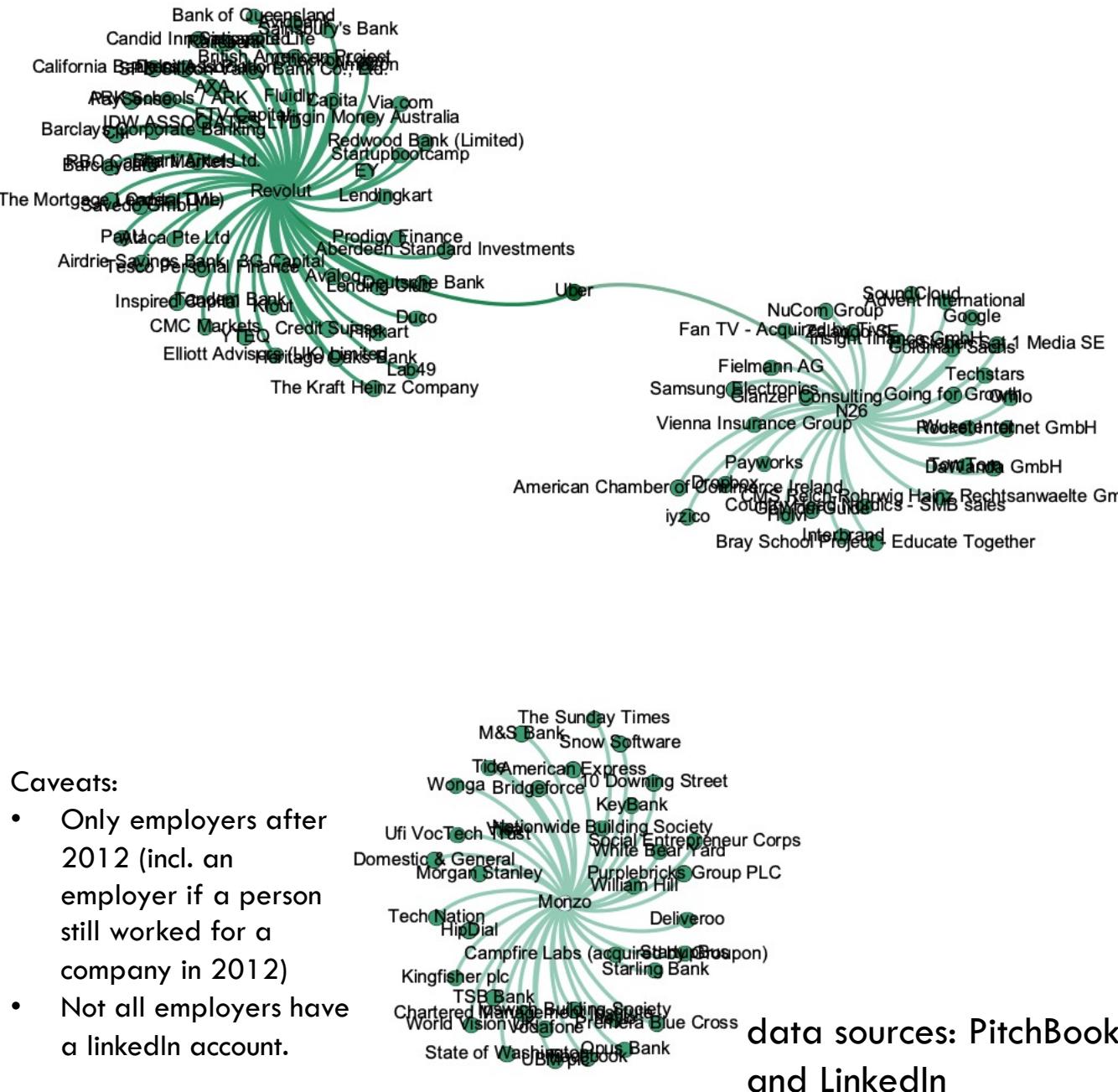
- adding shareholders to the picture does not really change the structure



data sources: PitchBook

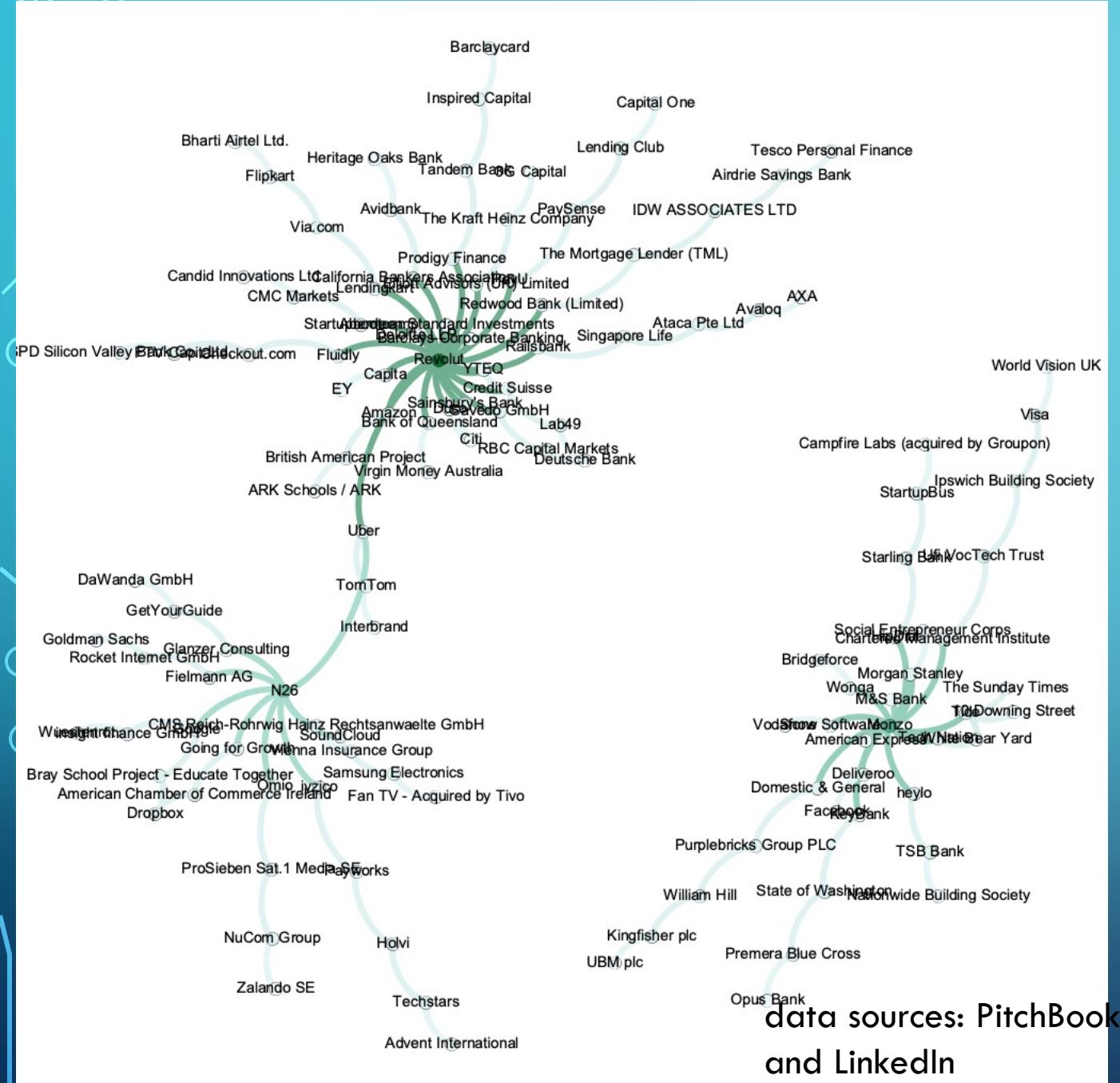
EXPERIENCE: parallel

- 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



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:

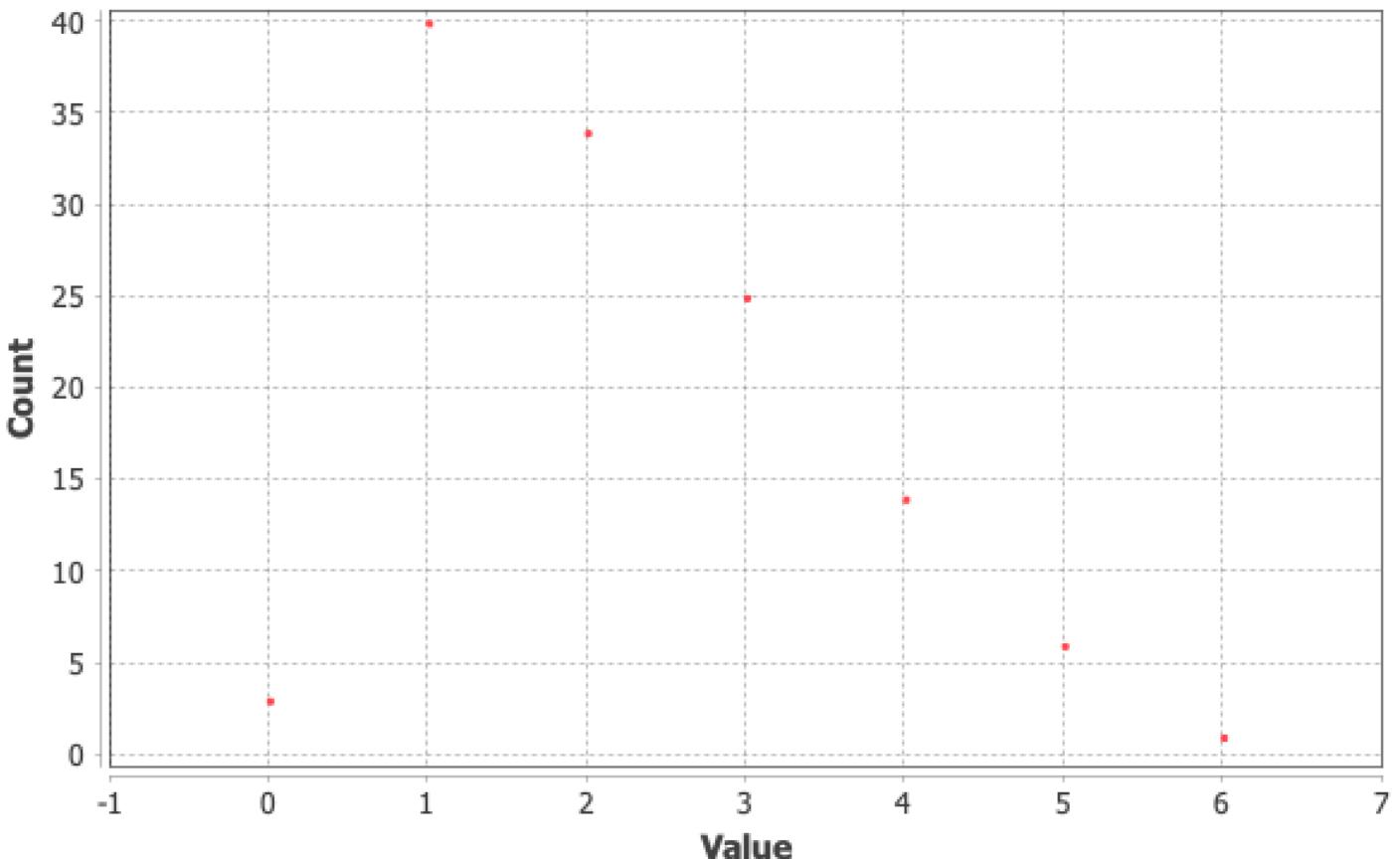
- Some people worked for two or more employees at the same time, so sometimes transition between companies did not happen exactly as shown.

Gephi calculation:
Network
Interpretation: directed

Results:

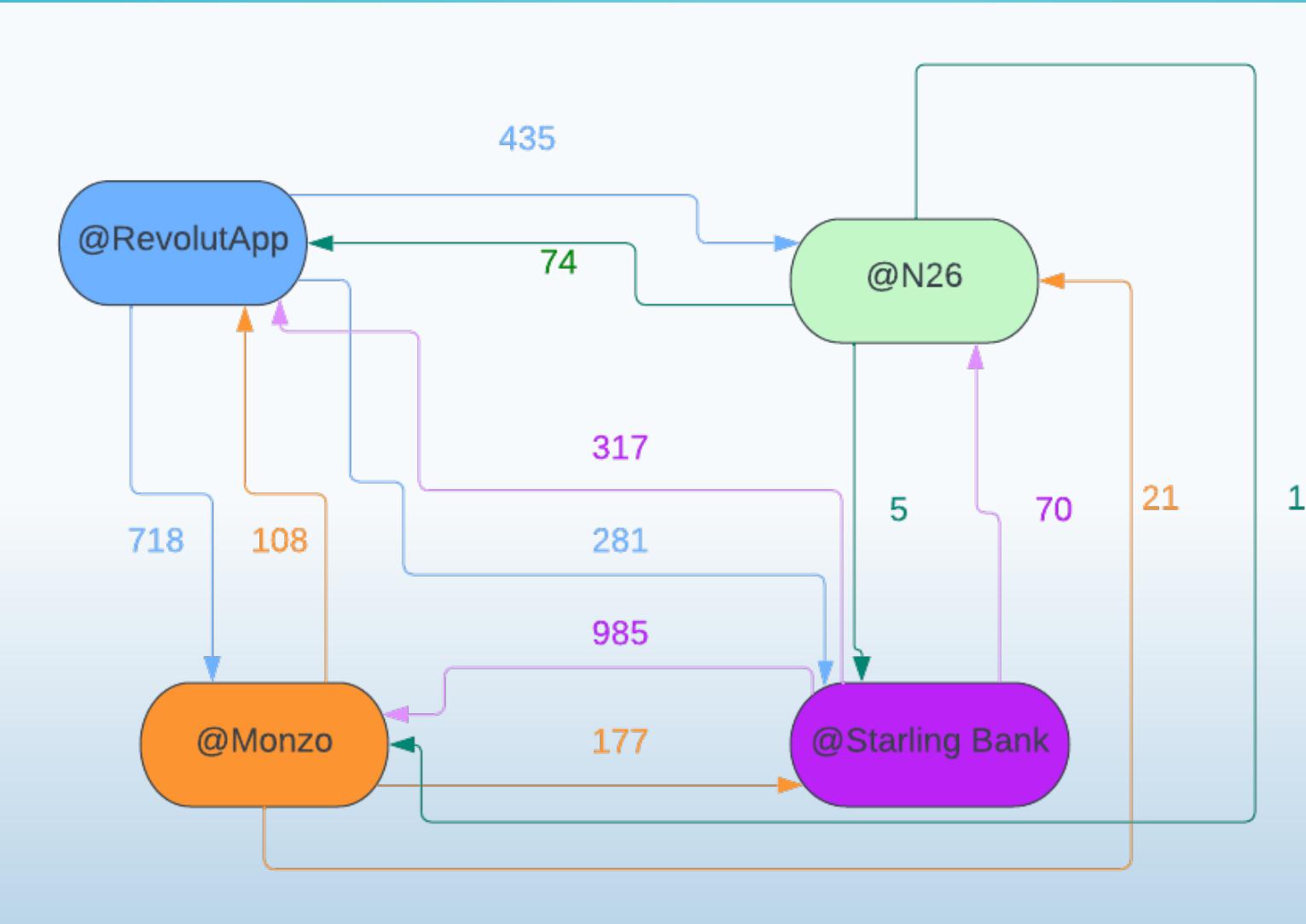
- Diameter: 6
- Radius: 0
- Average Path length: 1.97

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?