NC STATE UNIVERSITY

How To Be Rich

A Study of Monsters and Mice of American Industry

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I. What

Analyzing the connections between US public companies, we find two types of companies:

- **Monsters:** companies connected with each other via shared board of directors.
- **Mice:** companies that are isolated from others

II. Hypothesis

Board members of Monsters have more insights and resources than those of Mice, therefore:

- Monsters are more likely to success
- Investing on Monsters is more profitable

The rest of this study tests whether this hypothesis is true.

III. How

Data source:

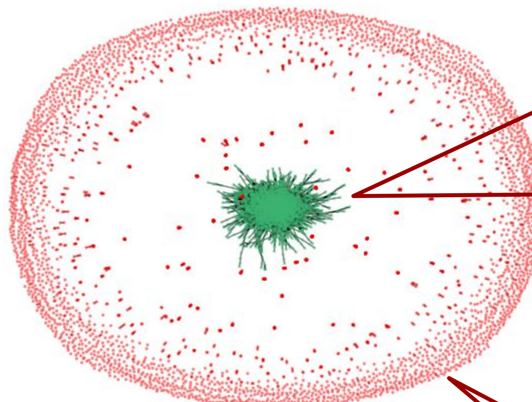
10-K filings on sec.gov

Extract board of directors from 10-K filings:

- Named entity recognition
  - Acceptable recall but very low precision
  - Cannot tell which ones are board members
- Rule-based algorithm
  - Identify the signature block
  - Divide signature block by “/s/”
  - Usually, names followed by “/s/” are board members
  - About ten rules to tackle edge cases and ensure that names extracted are accurate and complete.
  - Recall = 99.2% and Precision is about 100%

Construct and analyze the social network:

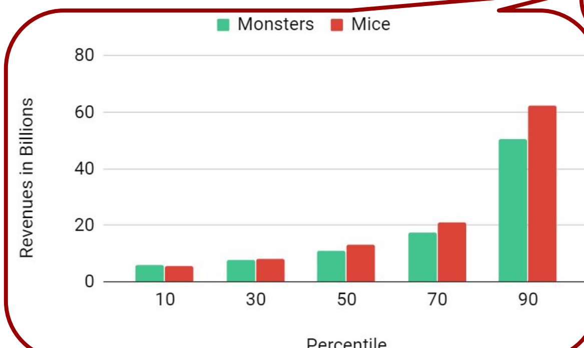
- Connect companies with mutual board of directors
- Find connected components



HPCC SYSTEMS®

The key to scalability: 2867 Monsters, 4241 Mice.

20% (up to $12 billions) richer in revenues



IV. Conclusion

- Monsters can't focus as well as mice on the many small details required to make a company more profitable.
- Investing on mice is more profitable.

V. Future Work

- Construct graphs on HPCC Systems® to utilize built-in algorithms
- Automated visualization with @hpcc-js
- Analyze the social network change across several years