Global Biomedical M&A Network

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Abstract

M&A is a widely adopted strategy for a company to restructure a business or to achieve growth goals, and it provides an easier and quicker way to obtain strategic resources. Biomedical industry possess distinct characteristics such as: long product development period, highly intensive in capital and human resources, high value in invisible assets etc. Existing literature indicates that large companies attempt to become more innovative, but at the meantime, they are rarely active in the early-stage research. Innovation requires external resources or knowledge, however, some knowledge may requires specific capability to absorb, therefore, it is reasonable that M&A partnership is a frequently adopted strategy in biomedical industry. In the innovation process, firms prefer to act as network integrators instead of serving as the central locus of innovation. The other study also indicate that smaller start-ups that possess high research capability might also adopt M&A as an exit strategy. This study aims to find out what kind of company tends to adopt M&A strategy, and what characteristics do they possess? The theoretical framework of this paper is based on the sectoral innovation system and network theory. Existing study shows that strong ties possess more advantages in knowledge exchange than weak ties, and Social Network Analysis (SNA) can help to clarify relationship between actors. The result shows how M&A partnership in biomedical sector have evolved in the last decades, and what company has strong connection with others. Ultimately, this paper aims to explore further into the relationships between biomedical firms' key actors and their M&A partnership, find out key factors that are critical for decision making.
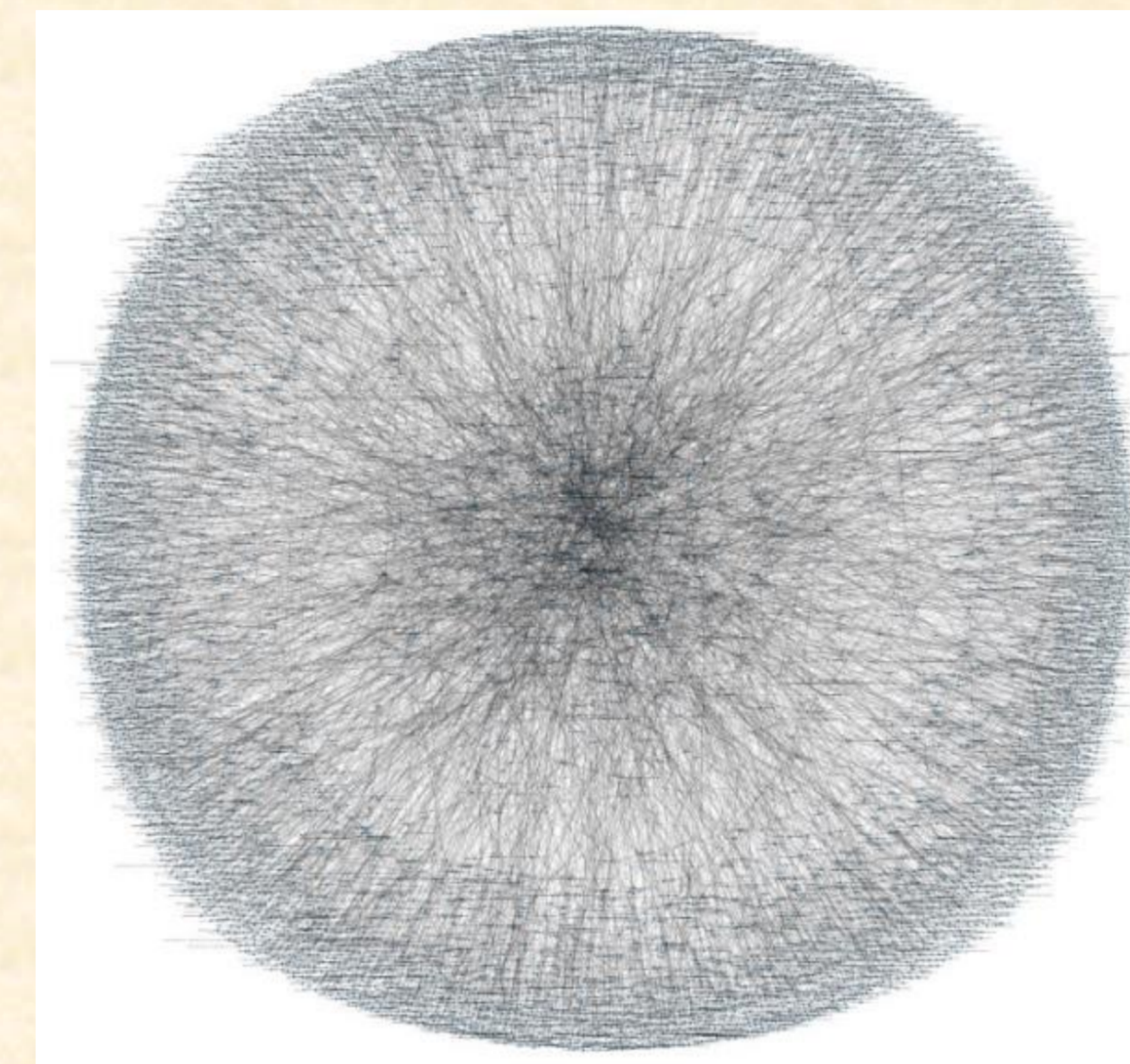
Data & Methods

- Global pharmaceutical firms & their M&A transactions are included in this study from 1990 to 2019.
- Data available from Medtrack database.
- Data are analyzed & visualized by python NetworkX.
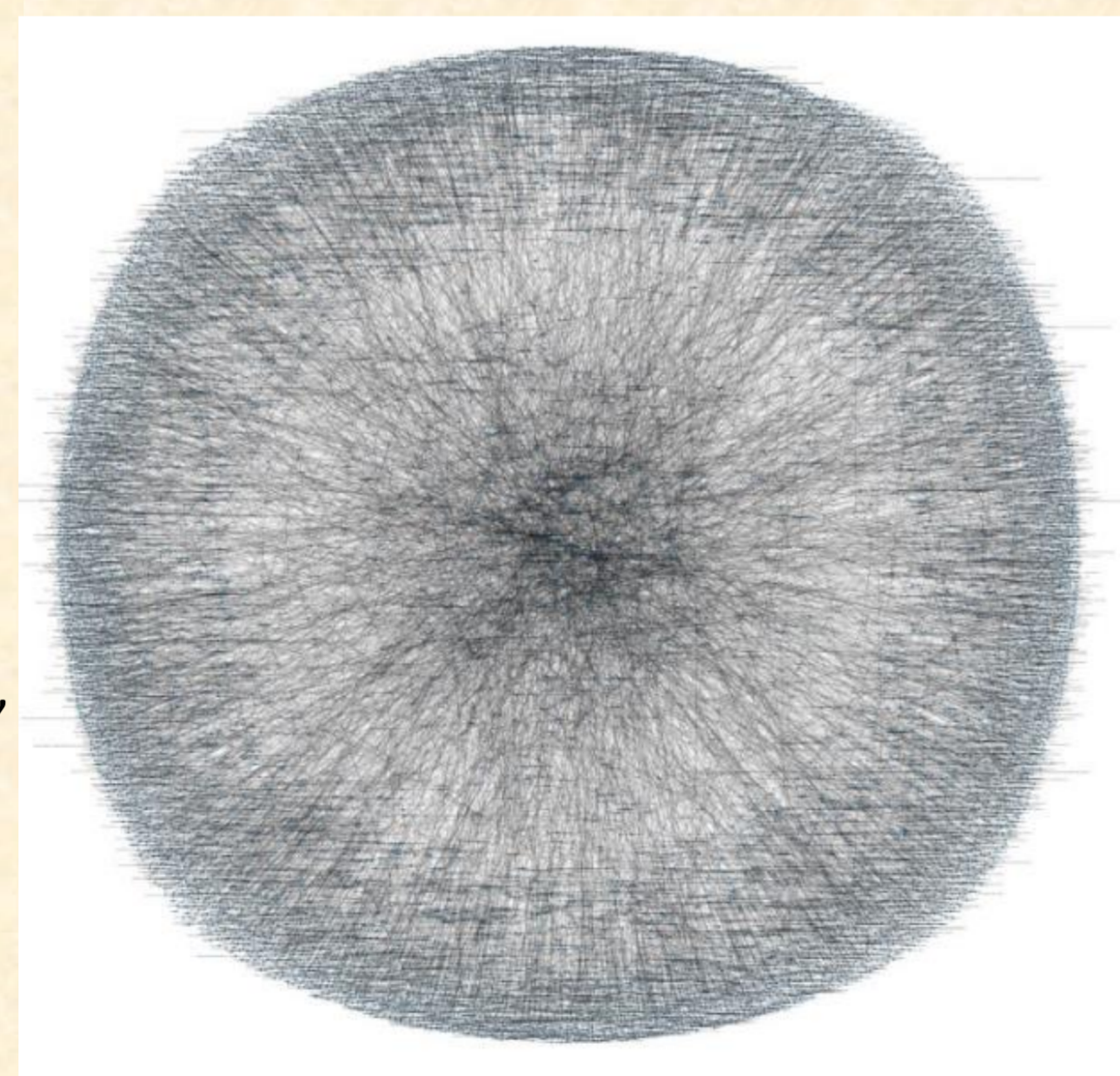
Data Analysis

M&A Networks Change Over the Time
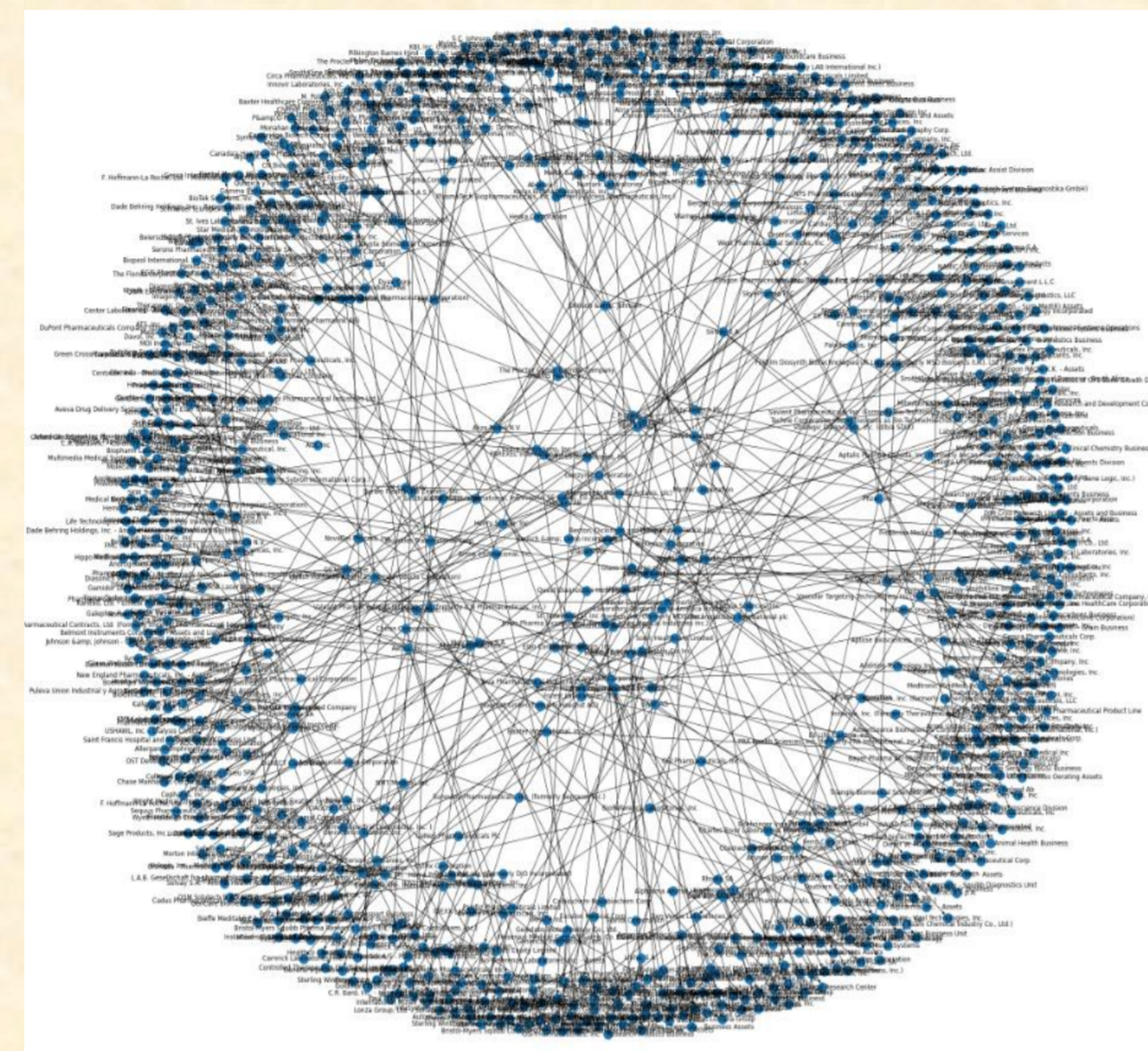
1990-1999

2000-2009

2010-2019

Year/Measurement	Network Density	Average centrality	Network cohesion
1990-1999	0.000642	0.010161	0.651917
2000-2009	0.000081	0.006978	0.712948
2010-2019	0.000057	0.008862	0.708097

Year/Measurement	N of Nodes	N of Edges	N of Merger/ Acquirer	N of Target
1990-1999	1017	663	380	656
2000-2009	8758	6244	3119	6037
2010-2019	12535	8876	5079	8193

Network Measurement

Result & Conclusion

- M&A activities of global biomedical industry is mainly based on the strategic alliance.
- M&A increases over the time
- In recent years, mainly acquirers were big pharma. M&A behavior become more international.
- Compare with the other countries, United State is the main acquirer.
- M&A of life sciences tends to be conservative. The quantity of M&A is decreased, and targets are dominated in the ensuring of Pharmacodynamics (Stage II) and market stage.

Acknowledgement

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