B.Tech Project

Sahil Jindal (2013CS10253)
Prakhar Gupta (2013CS10245)

November 9, 2016

1 Subsidiary Span of Industry

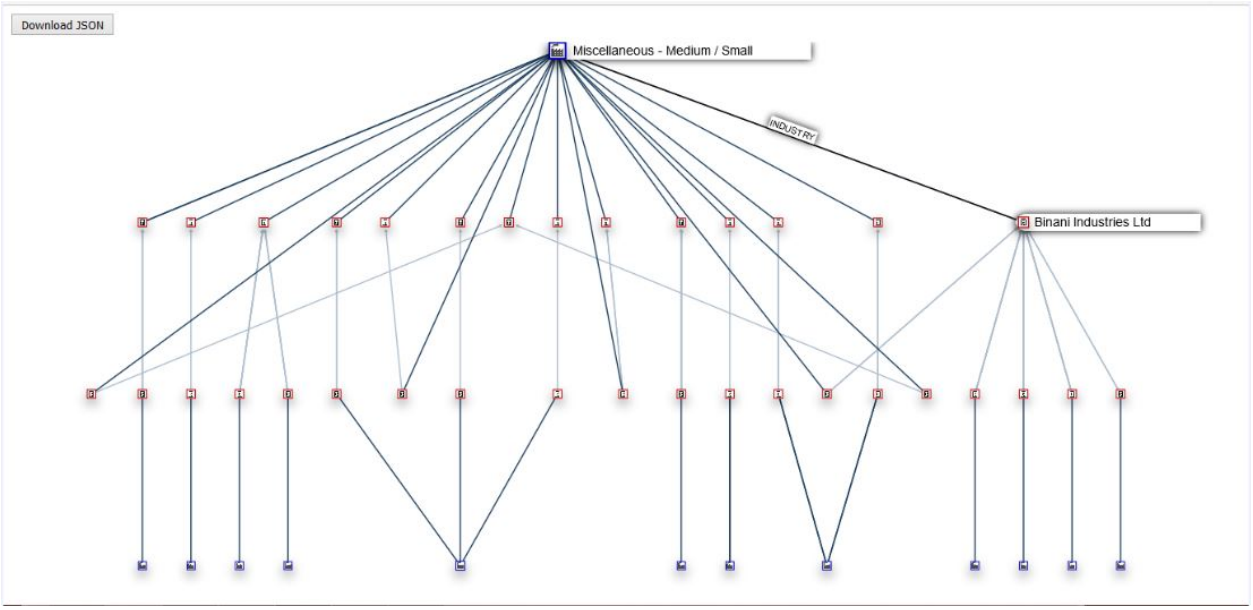

Figure 1: Span of industry "Miscellaneous - Medium/Small"

Message: This graph shows how an industry is spread across the network via the subsidiaries of its companies. This graph can also convey the industries in which it has most subsidiaries.

In the graph, we are displaying only the industries which the companies of this industry have subsidiaries in. In the top layer is the industry queried. The next layer represents the companies of the industry which have further subsidiaries shown in the next layer. The final layer shows the industries of the subsidiaries.

Above Visualization along with management intersection:

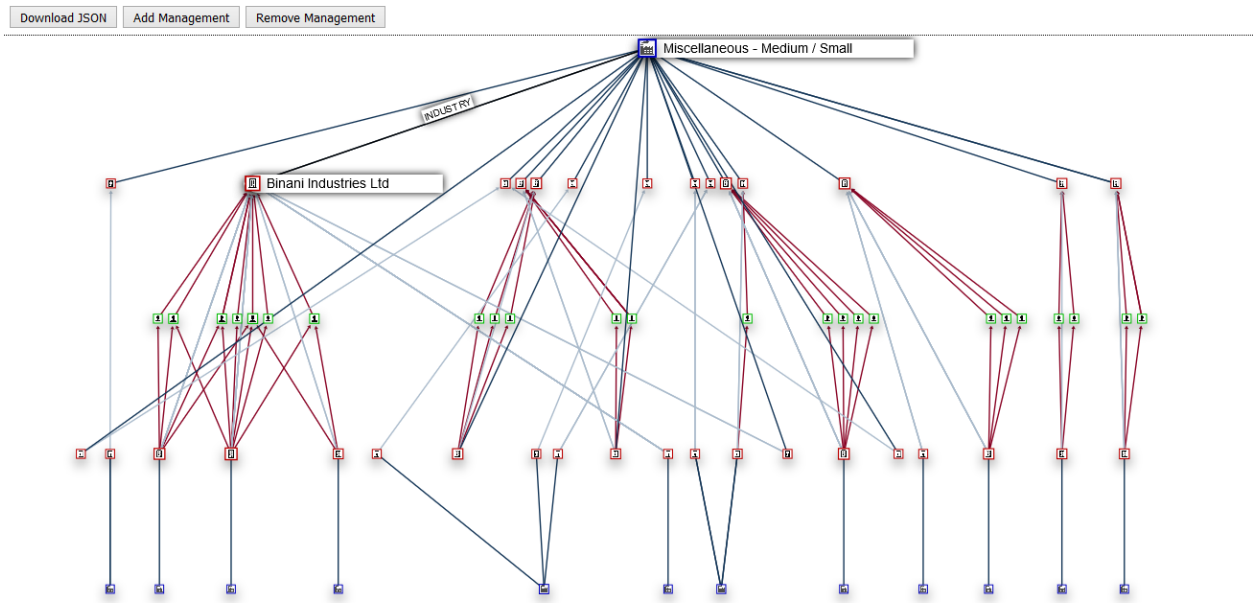

Figure 2: Span of industry "Miscellaneous - Medium/Small" along with management intersection

The above graph shows the overlay of the management data on the subsidiary span. This shows the people that are connecting these companies with their subsidiaries. The number of people between a company and its subsidiary can represent the **importance of that subsidiary**.

The top layer shows the industry. The next layer is the companies of that industry (who have subsidiaries). The third layer shows the people that are connecting them to the subsidiaries. The next layer is the subsidiaries, followed by their industries.

Similar graph can be drawn for investment links instead of the subsidiaries shown here along with the management overlay option. In case of investment graph, the number of people in the intersection can reflect a factor in the extent of investment of a company in its investee.

2 Family Graph

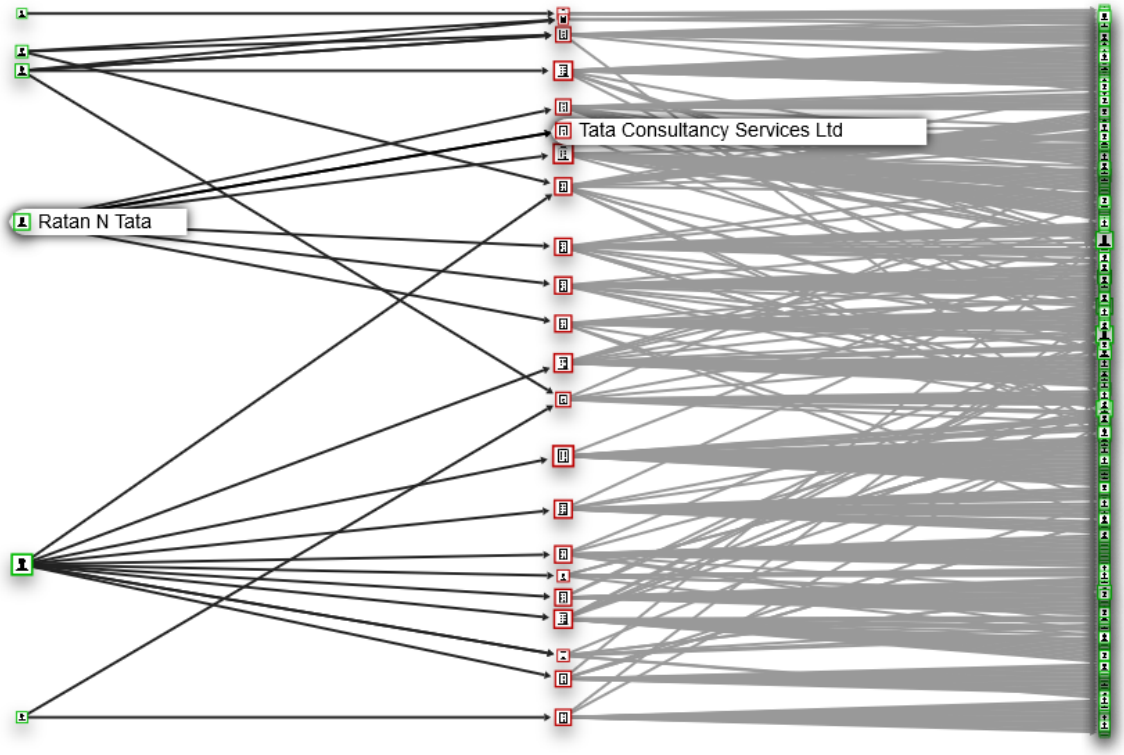

Figure 3: Family Graph for Tata family group

Message: This graph provides the hold of a family in the market by displaying the number of companies and their size whose management comprises of a member of the concerned family. Also we can see for a company, the number of family members in the management and non-family members in the management so as to get an idea of the power of family in that company's management.

In the graph shown, the leftmost layer consists of people in the queried family. The middle layer comprises of the concerned companies (the management of which has one or more family members) and the last layer shows the non-family members in the management of the companies.

We would like to improve in this section by introducing some filters and features to make this graph more readable (for example a click on company can show only the people associated with it and hide the rest of graph) and also if possible reduce the number of non-family members shown based on degree or some other property. Another issue to be worked on is to merge nodes that represent same person but have different names (for example: Ratan N Tata and R N Tata).

3 Industry Connection Graph

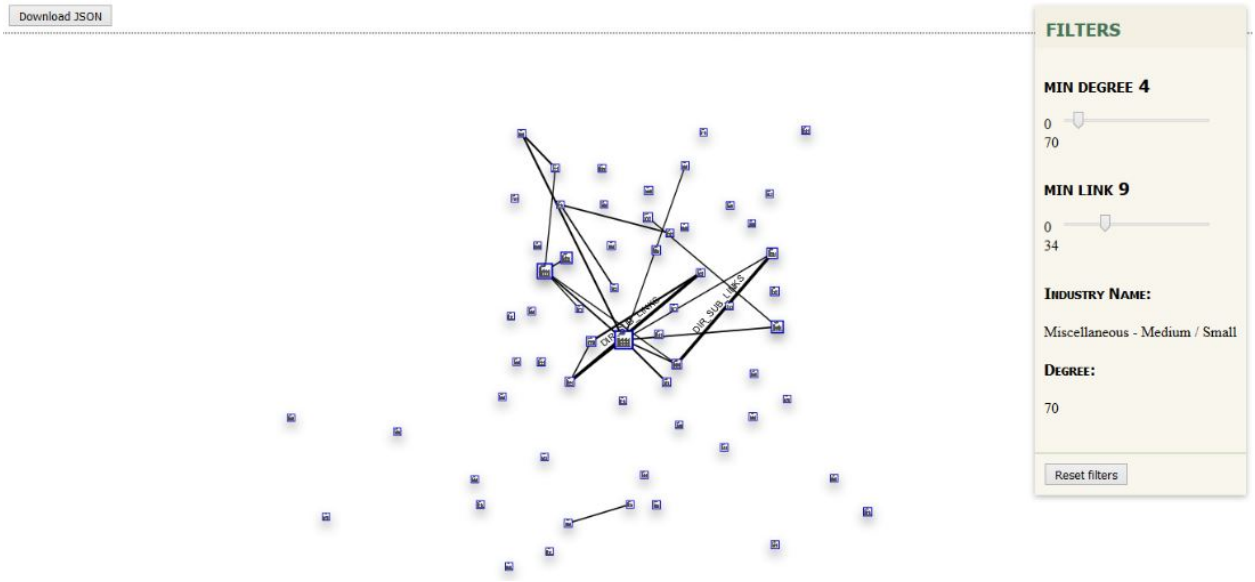

Figure 4: Connections between various Industries

Message: This visualization aims to find the industries which are closely related i.e. number of subsidiary links between the companies of the two industries in high (using edge weight in the graph). Also, we aim to see the industry that has high degree in graph i.e. is connected to most industries in the network and thus is a industry with versatile scope.

In the graph shown, the main area shows the industries as nodes with node size proportional to the degree of the industry, and links between companies of two industries consolidated as single edge between the two industries with number of links being the edge width. The right panel displays the node filter (hide nodes with degree less than the number specified in the filter), edge filter (hide edges with number of links less than the threshold specified in the filter), and the information about the node or the edge when clicked.

Similarly we can incorporate investment links as well in this visualizaion.

4 Companies connecting 2 Industries

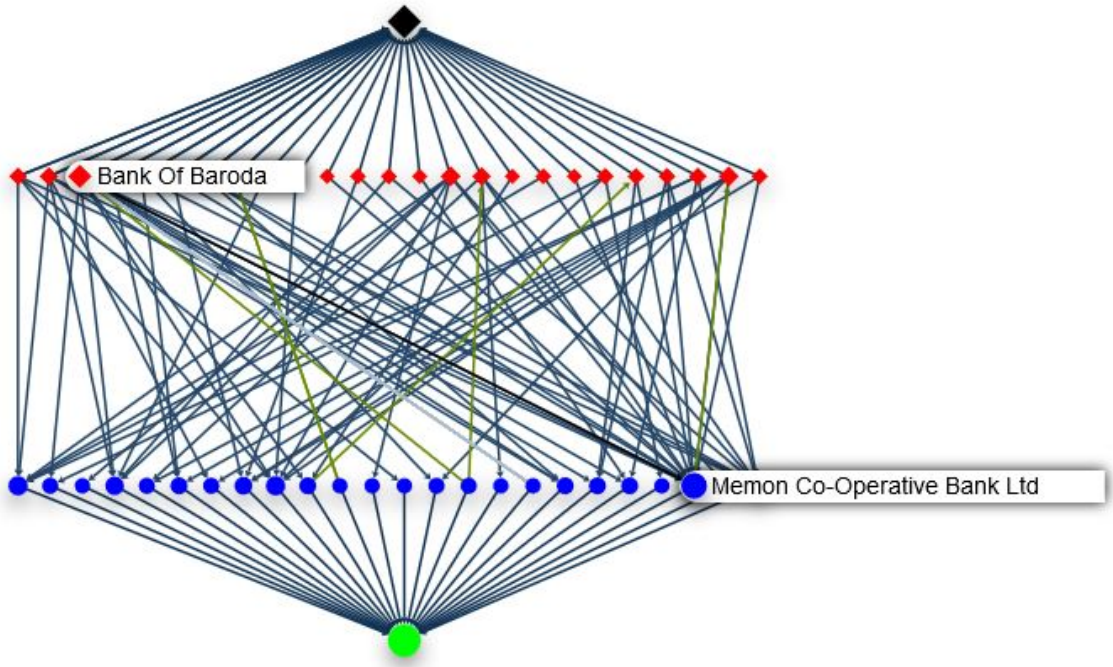

Figure 5: Connections between "Banks - Public Sector" and "Banks - Private Sector"

Message: Here, we aim to show all the connections that exist between the companies of the two industries and obtain the main players of the industries that connect to most of the companies of the other industry.

In the graph shown, the node at the top and bottom display the two queried industries. The two middle layers represent companies of respective industries and edges show the links between the companies.

Further Plan: Further we can also include management data as in visualization1 (showing people present in management intersection of the companies of the two industries along with existing display).