Disruption in the telecom industry due to Reliance Jio

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Executive Summary

In India, the pool of few private players and government agencies have been battling out since many years to attract the right share of market and provide quality service pan India. Private players such as Airtel, Vodafone, Idea Cellular and government agencies such as state owned BSNL have been competing closely to cater to the growing subscriber base, both voice and data. India has seen significant growth in its internet subscriber's numbers with the figures growing exponentially year by year (Vamsi, 2016). The growth of 3G services and the launch of 4G recently by incumbents has exposed the country to high speed internet and better voice quality. However, still a large share of people are 2G prepaid users (kaushik, 2016) who prefer these high speed services only if provided at cheap cost. Riding on this wave to provide high quality voice call and data service, 'Reliance Jio' - a 4G venture of Mukesh Ambani, the chairman, managing director and largest shareholder of the biggest Indian conglomerate, Reliance Industries Ltd, set the river on fire with its mobile services launched in September 2016. Its USP: lifetime of free calls, charges only for either voice or data services, affordable internet tariffs at high speeds covering both rural and urban market. Overall, Ambani's speech (Online, 2016) can be broadly categorised as - Push to Digital India movement by increasing the subscriber base and extending its services to rural India, provide high speed data connectivity and provide impetus to the growing data subscriber base.

The objective of this report is to understand how the launch of Reliance Jio as a new market player has reached its users, causing a disruption in the existing market, and the ecosystem which it is trying to build through text data analysis using Topic Modeling and Sentiment Analysis. We discuss the major topics or themes which has emerged as Jio tries to not only provide the basic services, but how it has tried to create a new ecosystem and provide/decline boost to other markets, consolidation with existing competitors or escalation of the war. Lastly we examine how the customers have perceived the services by analysing twitter data, analysing the sentiment regarding its services and the likes and dislikes of the people

Keywords – Reliance Jio, Mukesh Ambani, Indian Telecom Industry, Topic Modeling, 4G war

Business Problem

Reliance Jio is believed to be not just another service provider but creator of a new ecosystem leading to disruption. The aim of this report is to highlight the topics or themes concerning the following sentiments

- Reliance will create new markets by increasing the size of pie, eat-up existing pie by hitting customer base of existing players
- Consolidation with existing players in the telecom industry

Further the report highlights what kind of response Reliance Jio is getting over the few months after its launch by analysing sentiments from Twitter and Survey

Methodology and Data

The entire methodology has been divided into following parts

1. **Web scraping using R**

   We performed web scraping in R to procure data from more than 60 journals, news articles online using 'rvest' package. We have performed text cleaning and corpus building in R using 'tm' package

2. Topic Modeling using LDA in R

Technique to make sense of the large volume of text by clustering words, documents into distinct topics. We have used Topic Modeling using Latent Dirichlet Allocation, or LDA which helps in clustering of topics on basis of words, clustering of topics on basis of documents. Our report is based on 4 topic model which are highlighted using word clouds and co-occurrence graphs (COG). COGs are graphs which helps in visually understanding the different co-occurring terms in documents and how they are related with each other.

3. Sentiment Analysis of Twitter data using R

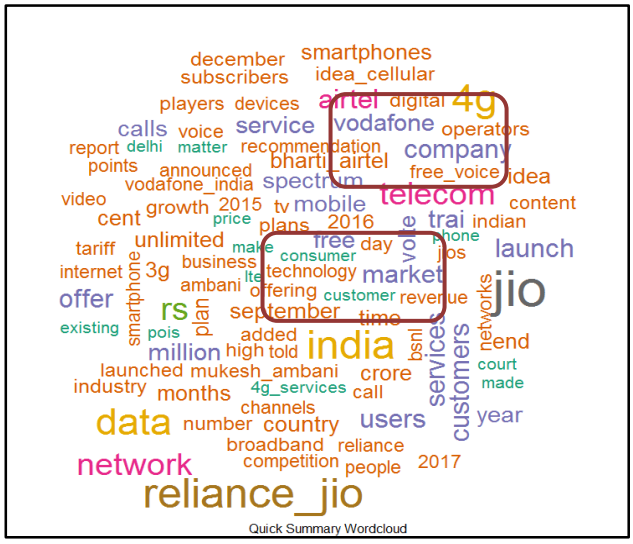
We have analysed more than 1K unique tweets (3K plus raw tweets) using sentiment analysis package 'qdap' in R. Our analysis is based on capturing the sentiment of each tweet and collecting set of positive and negative words highlighting the sentiment.

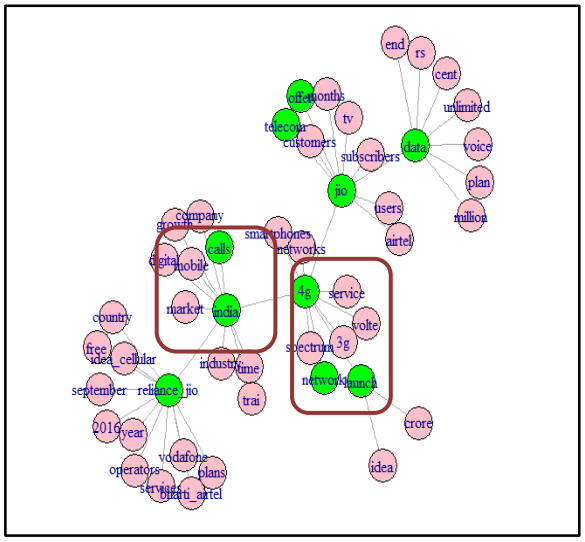
The source for web scraping article links, the final corpus used for Topic Modeling and Sentiment Analysis and the code can be obtained from this GitHub link

- https://github.com/HardikLGupta/RelianceJio.git

Data Analysis Results

Following section describes each topic and the underlying theme which was obtained after running a 4 topic solution based LDA.

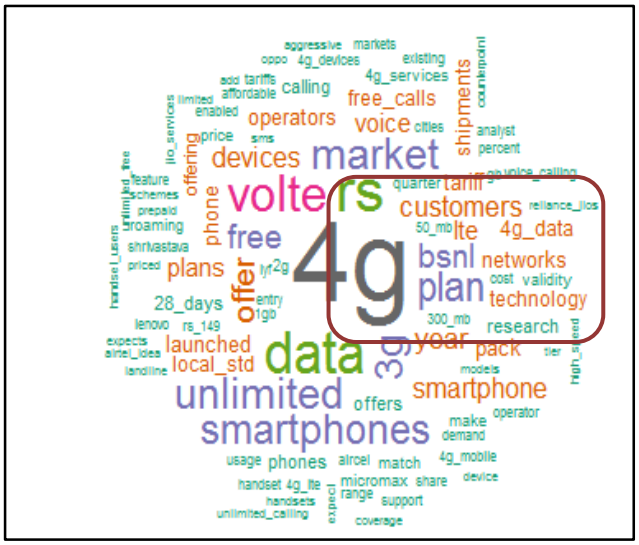


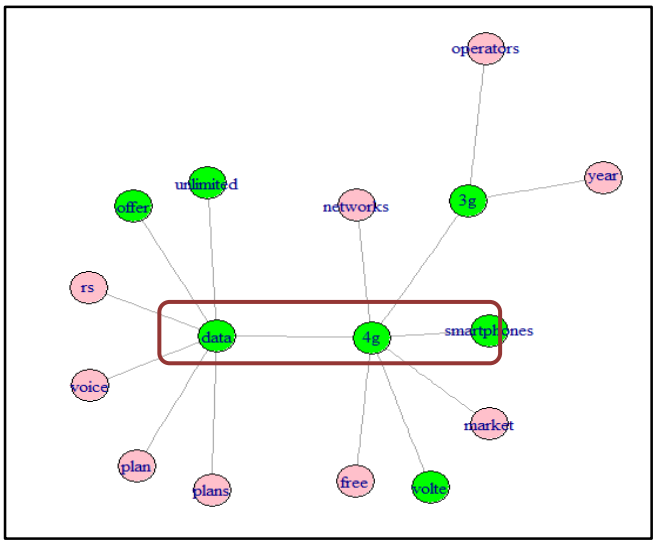


Word Cloud and COG provide an overview of the topics that the entire corpus is centred around. On the whole, we can see launch of Reliance Jio, data calls, free services, 4g smartphones and Indian market as some of key aspects of this corpus. In order to perform a more structured analysis, we ran a topic building algorithm over this corpus which identified four major topics.

The corpus was analysed by dividing it into for topics-

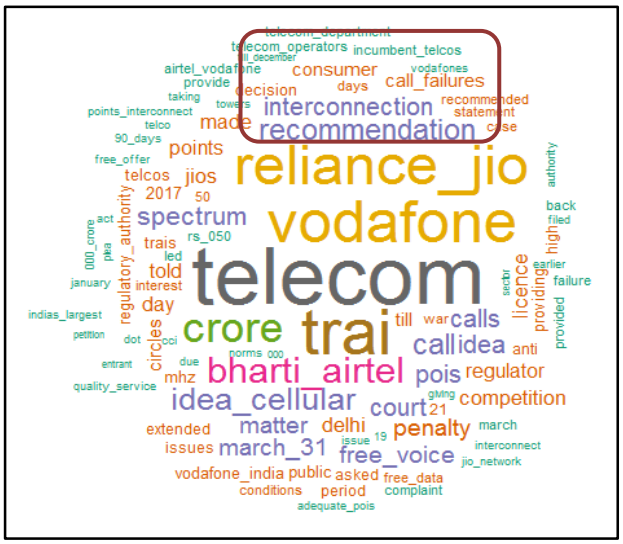
<u>Topic 1 – Accessibility to 4G Technology</u>

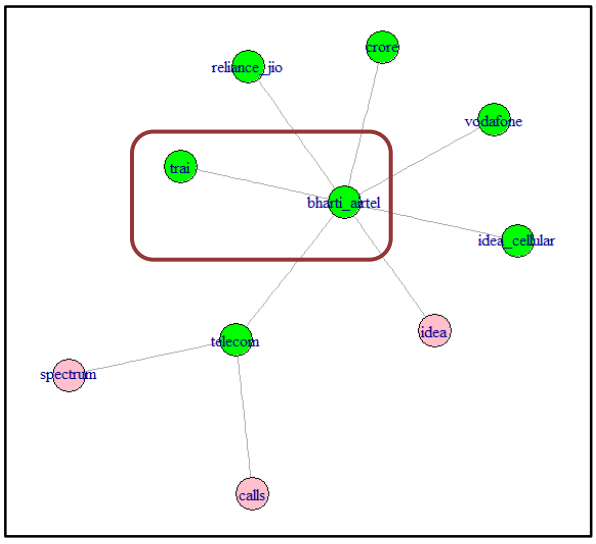




It emphasises on the ease of access to 4G technology at lower prices due to Reliance Jio. With Jio's introduction to markets, internet will be available at lower prices and higher speeds which will lead to preference of data calls over voice calls. It will also lead to a boost in manufacturing of 4G devices and unleash a new market and customer base for Reliance.

Topic 2 – Telecom War

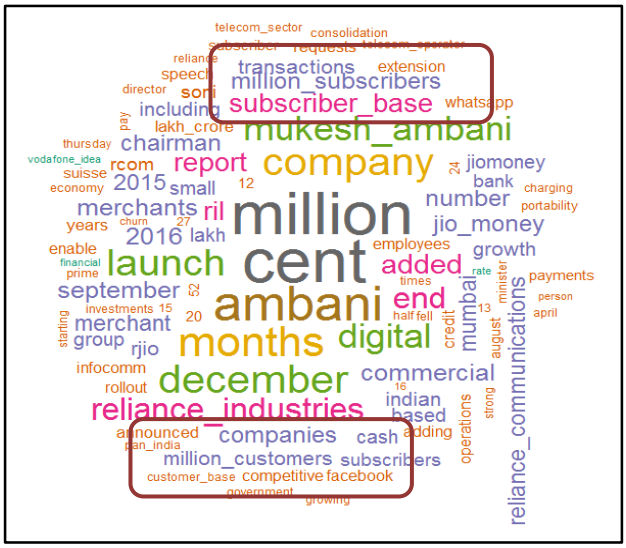


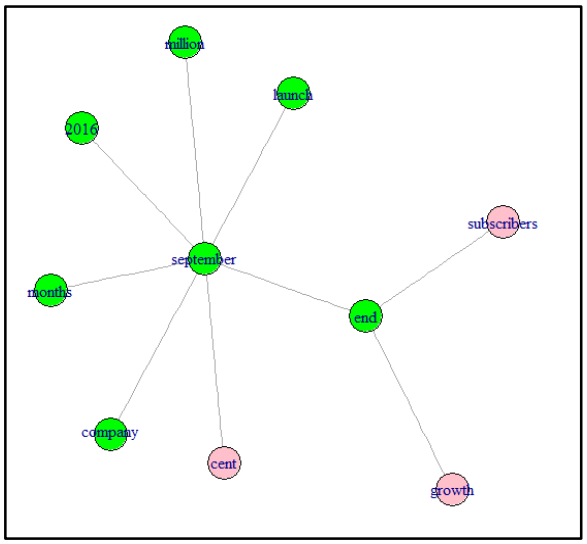


Reliance Jio has definitely caused a stir in the telecom industry and all the big players seem to be impacted by it. Almost all competitors have lowered prices and started offering services similar to Jio in order to cope up with the disruption.

Because of pricing and data conflicts, quality of service has become the decision maker in telecom war and all the major telecom services providing companies are playing blame games which has resulted in TRAI intervening and even penalising companies to make sure that the welfare of customers is not hampered.

Topic 3 – New Customers

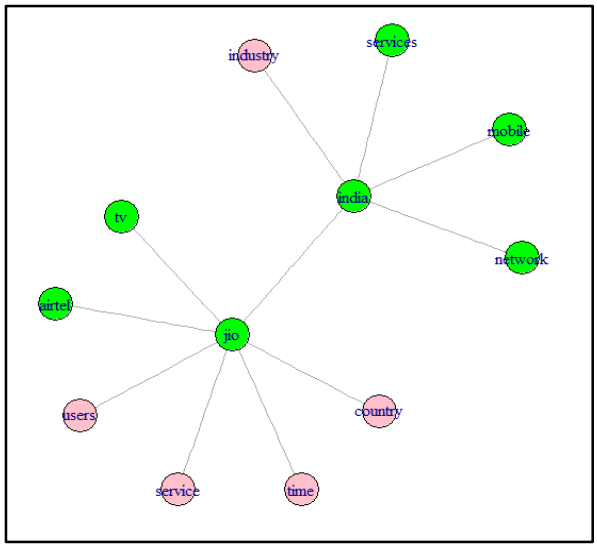




Reliance aims to provide internet access to large parts of rural India as well, also due to offering free services it has not only reached out to existing mobile phone users but aims at bringing in new customers to the telecom market.

Jio has received a tremendous response as it crossed 50 million subscriber mark within 83 days of launch. We also see words like “WhatsApp”, “Facebook”. Jio will also hit apps which are currently providing voice and video calls which will also add up new customers.

Topic 4 – New Market

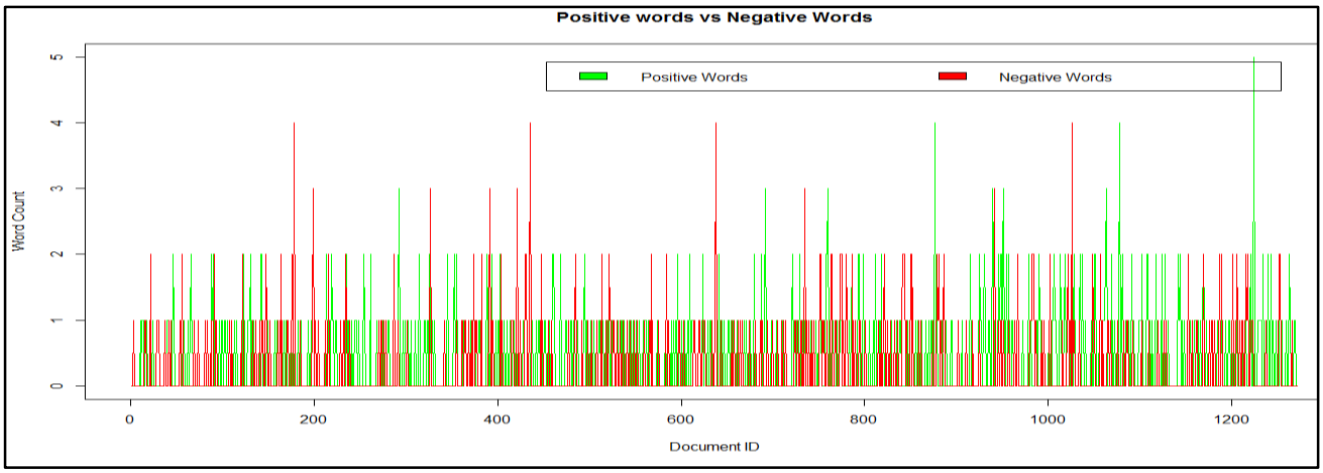


Themes likes “video”,”TV“, “broadband”,” online”, “music” further establishes that Reliance Jio will not only hit telecom industry but various other businesses too. Thus, Reliance has not only increased the size of the pie but it will lead to changing current business rules of the telecom industry. With the access of 4G technology at cheaper prices will definitely increase customer base, data calls will boost video calling as well as other mobile utility apps like gaming and shopping.

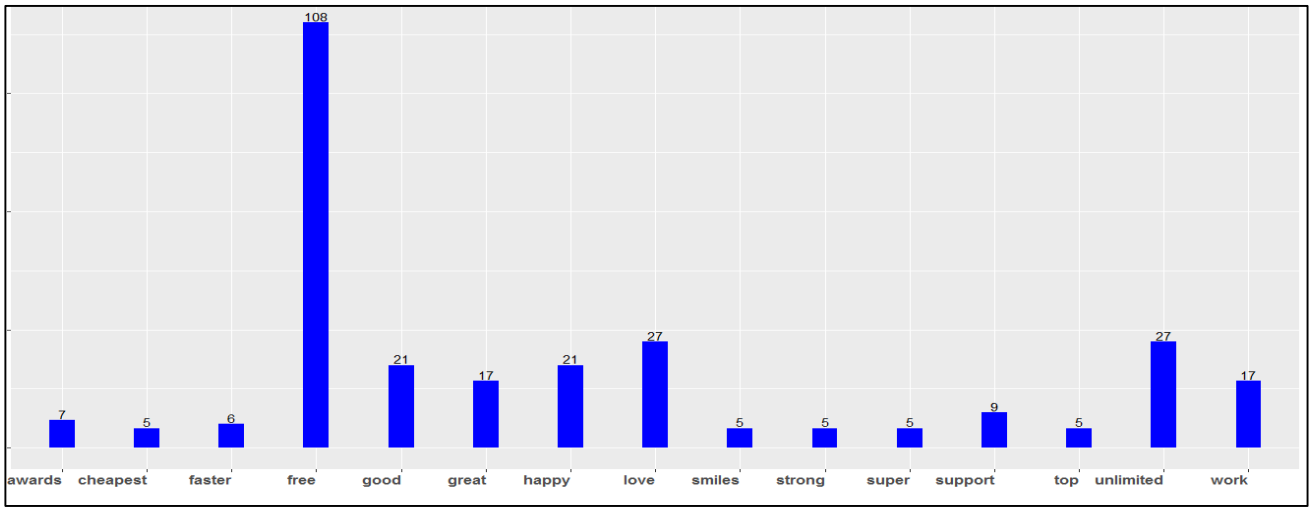
Sentiment Analysis of Tweets

We collected tweets for hashtags – **#jio, #jiooffer, #jiocare, #reliancejio, #lyf**

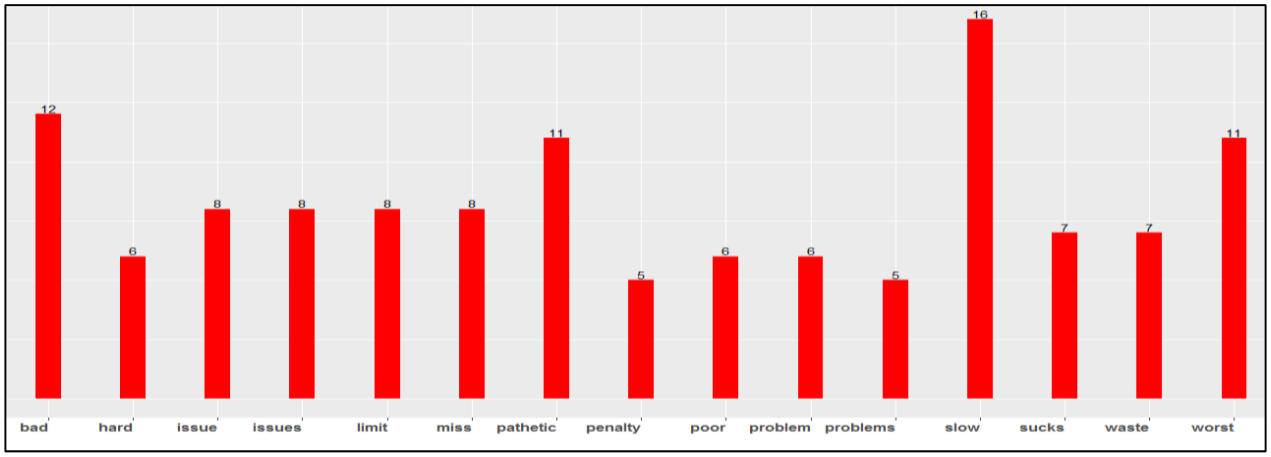
The analysis shows that Jio has received mixed reactions for its services, but overall it has generated positive response with average polarity of 0.5



Positive tweet analysis shows that people have appreciated it's free offer, unlimited service.



Negative tweet analysis shows that Jio has been facing issues with regards to its speed and people have been complaining that it is 'Slow'



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Data and Code

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