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Data Analysis in Social Media

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Abstract: ***The use of social media in our day-to-day life has skyrocketed in the past few years. The availability of good hardware devices and an increase in connectivity at most of the public places has made people let use social media platforms more and more. Social media platforms like Facebook, Instagram, Twitter, LinkedIn, etc. are improving their products every day to make them addictive and easy to use by people of any age group. All this results into a large chunk of data created every moment by people around the world.***

This huge sized data is one the most important asset of these top scale companies. In 2018, it was observed we create about 2.5 quintillion bytes of data every day from the use of social media platforms. Organizations make use of this data by analyzing it using various techniques and produce meaning insights from the same. The resultant insights are further used for various purposes.

Index Terms: Social Media, Data Analytics, Predictions, Statistics, User Behavior

I. INTRODUCTION

The rise of social media usage has enabled people to make their voice reach out on various social media platforms. These opinions could be anything from comments, posts, sharing posts, etc. Considering the amount of this data generated by people, it leaves the organizations with a large number of opportunities to take better decisions and making use of these decisions to create better marketing and selling tactics.

In the mid of 2012, when Google launched Google Nexus 4, many users voiced their opinions stating how they like the idea of this phone under a reasonable price. Such type of positive response from the people helps the marketing team to identify the potential customers who are willing to buy their products.

Even people from other departments like the engineering and production team can identify what are the shortcomings or cons people feel in their proposed product. Using this information, they can design better and improved versions of the existing products, thus, leading to a profit to the organization.

Analyzing customer sentiments on social media can provide a good support in taking certain business decisions. Usually, it has been observed, there are three main types of responses on social media. The first is the Positive group; they have a positive feedback towards some entity. The second is the Negative group, they have a negative outlook towards the entity and the last is the Neutral group, who have a neutral approach towards the entity.

II. EXISTING METHODOLOGIES

In general, there are two main types of analysis methods, viz. 1. Learning – based method. 2. Lexical – based method[1]. The model of learning based method is provided with an input of known properties, which is derived from labelled data. This data is processed and makes predictions of unlabeled new data. When the type of data is simply text, the relationship between the features of the text segment is derived. Following are some of the examples of Learning – based methods: Naïve Base Classifier[2], Support Vector Machines, Maximum Entropy Classifier, and Extreme Learning Machine.

The learning based methodologies require a large dataset of labelled data in order to produce accurate classification. When working with Lexical – based methods, they search for an emotional sense in the text. All the calculated emotion sets are aggregated to create the polarity with the highest dominance. One of the advantage of lexical-based methods is that they are applicable on varied types of datasets; also, labelling the tasks is not a requirement. Even if lexical – based methods seem easy to apply, they have their own limitations.

Creating a unique lexical based dictionary and applying it on different applications is not possible. Because of this, every new usage requires clean samples, which have to be created manually. Another limitation of lexical methods is that they can't provide a detailed identification of emotion.

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III. CONDUCTED SURVEYS

Over the years, there have been surveys and researches conducted by many independently working individuals and by organizations. The results of these surveys were used in different domains like Healthcare, Public Safety, Demonetization, etc.

A. Twitter survey – Public Safety

Dennis Thom et al conducted the survey. According to Dennis, in present world, social media is used for the purpose of commercial gains rather than for public safety. The study was conducted on Twitter during the year 2013 when Germany was affected by flood. A system called 'Scatter Blogs System' was introduced so as to implement various other techniques.

The Scatter Blogs System analyzed the social media data on context of visual representation. Visual analytics was used along with assessment of the situation. A wide variety of tools and techniques were available for the researchers to be used in the current ongoing research. In the process of visualization, Natural language processing along with LDA topic modelling was made into use.

B. Facebook Survey – HealthCare

In a research conducted by Nadia Straton et al., it has observed that user tendency in public health has increased[3]. The survey was conducted using data from 153 organizations which are associated with public health. Social Data Analytics Tool abbrev. as SODATO. The technique of clustering was made into use so as to discover the patterns and correlations that existed among datasets of huge sizes.

The technique called K – means Clustering was made into use. The technique helps to generate a clear idea of the most popular and the least popular posts. The survey produced results stating photo posts and link posts are the most engaging type of content. It was also observed that the most engagement was found from 10:00 to 16:00 time period.

C. Demonetization

A survey conducted by an independent organization found that Indian citizens had a varied response to the demonetization of Rs. 500 and Rs. 1000 by the Indian Government in 2016[3]. Just after the declaration of the decision, people took over the social media to express their opinions on the decision of demonetization. The responses were of mixed type and there was no clear positive or negative response that could be said as dominating. The hashtag of demonetization was the trendiest for the same day as well as for the next day.

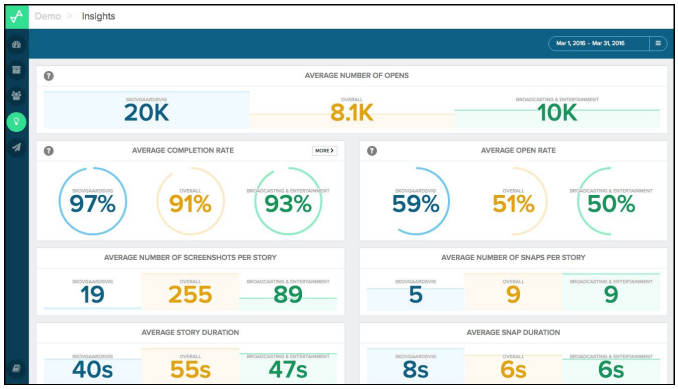
IV. SOCIAL MEDIA ANALYTICS TOOLS

Following are some of the most used social media tools:

A. Snaplytics

As the name suggests, Snaplytics is a tool which is used for analyzing the data on Snapchat[4]. As an organization, Snapchat doesn't offer a lot of data which can be analyzed so as to gain meaningful insights. Along with Snapchat, Snaplytics can also be used to gain insights from Instagram stories. The alternatives to Snaplytics can be Delmondo and Storyheap.

Following is an example of Snaplytics report



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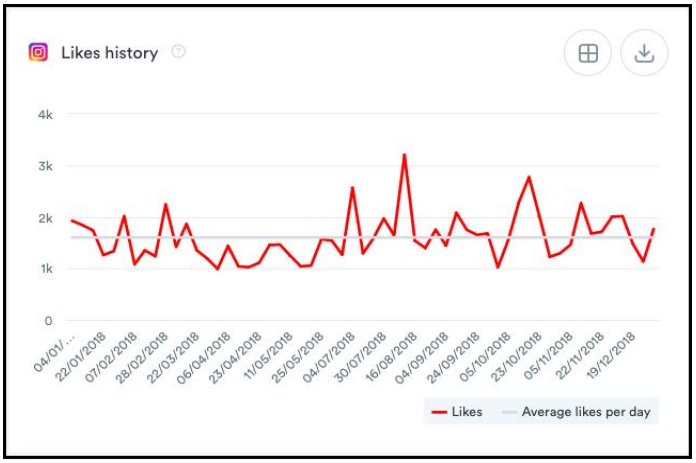
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B. Iconosquare

Iconosquare is a powerful tool which is used for monitoring Instagram photos and videos. Along with it, Iconosquare can also analyze Instagram stories. It also provides Influencer Analytics on buying higher plans.

The alternatives to Iconosquare is Later and Instagram Insights.

Following is an example of Iconosquare Likes History graph:



C. Buzzsomo

The number of shares you can get for your articles on social media is much more than you can get from your own blog. Buzzsomo helps to analyze how is your post performing on social media shares. Along with conveying the number of shares for your content, it will also convey the type of content which is gaining the highest engagement.

D. Klipfolio

Klipfolio is another useful social media tool to create reports[5]. Every organization today is establishing their presence on each of the major social media platforms today. Klipfolio helps to connect all of the social media accounts/pages of the organization and creates reports and dashboards which helps to get a customized view of the data.

The graph charts are mostly aligned with the following 4 dimensions of any social media platform:

1) Acquisition – New visitors.
2) Engagement – Total spent time on page.
3) Conversion – Completion of goal.
4) Retention – Returning customers.

Following is an example of a Klipfolio report graph:



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V. FACTS CHECKING

The tools mentioned above do help an organization to give meaningful insights of the user data; however, all these results are only useful when the organizations take certain decisions depending upon the generated result.

One of the major application of social media analytics has been done on facts checking. Considering the state of India's social media usage, a majority of the population of India is active on social media platforms most of the time. While there are users who check the facts behind most of the posts found on these platforms, there also exists a group of people who engage with posts which are not correct in reality. Social media giants like Facebook, YouTube have given top priority to facts checking in the year of 2019. India is about to have their general elections in the month of May this year(2019). During the last general elections, which held in 2014, political parties and their workers emphasized usage of social media to promote their respective political parties. However, there also have been instances where posts with incorrect facts, data were posted, which resulted in giving incorrect information to the people of India. Facebook, in 2019 decided to expand their fact-checking programme, usually done with the help of third party organizations[6]. Facebook will be working with Faclty, Today Group and Fact Crescendo to overcome the issue of fake news spreading on their platform. Facebook has equipped tools to review posts, which will help them to identify, take action against any kind of misinformation. In total, Facebook has collaborated with seven different partners, which cover 6 languages and will check the accuracy of the posts. YouTube, the largest video streaming social media platform has ramped up as well to fight the war with fake, misguiding, incorrect videos which are consumed by users. YouTube has started testing a new tool in India, 'fact-check', a pop up, which will appear whenever a search result which could provide misinformation is displayed on the screen. Disclaimers will be generated whenever sensitive topics are queried to the platform.



The above second example highlights an example of a false bombing incident, which has been circulated after the recent tension between India and Pakistan[7].

VI. CONCLUSION

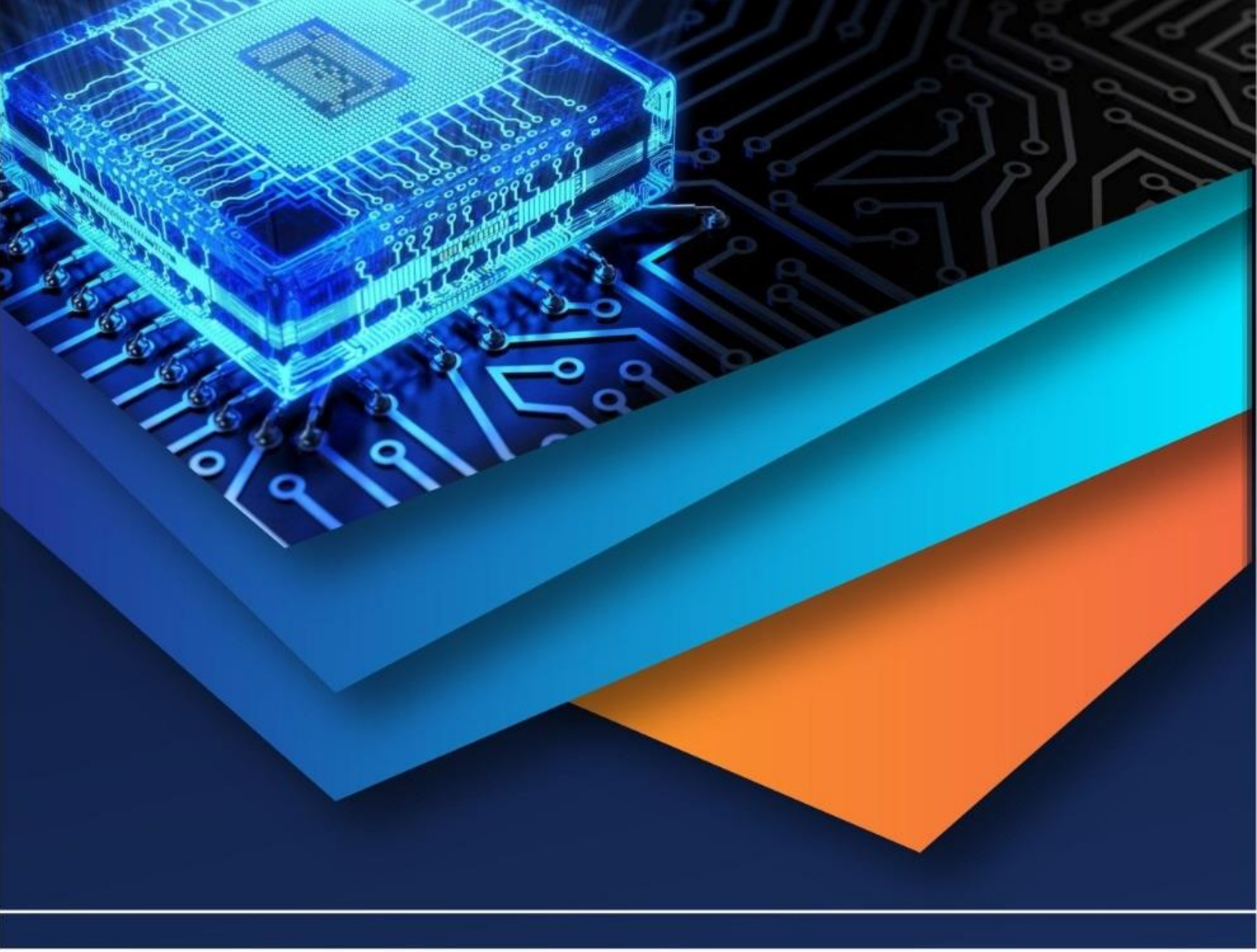
As a tool, social media can be powerful for any organization. Using social media can increase the visibility of an organization, improve relationships, enhance customer communication and can provide a medium to accept feedback from the users. However, in order to make the best use of it, organizations should design an engaging strategy and implement the best practices for the deigned strategy.

Social media does create new opportunities, but it's also mandatory to change your thinking about marketing and success measures. Organizations who have got effective use of social media, have started experiments with new channels to understand their customers in a better way.

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