



Impact of Big Data and Social Media on Society

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ABSTRACT

Big data and the social media are the emerging technologies, which possess long lasting impact on society we live. The social media play pivotal role in communicating and connecting with our family, friend, peers and colleagues. People share different information in many forms such as text, audio as well as video on the social networking site to share their feeling. The average global internet user spends two and a half hours daily on social media. This way social media users produce enormous amount of data which can't be handled with traditional data management techniques. This social media is much important in various fields like Social Sciences, Politics, Commerce, Education, Management and other Behavioral and Allied Sciences because analysis of real time social media data provides an insight of public opinion and thinking pattern. The real time data obtained through social media are complex one and possess 3Vs' of Big Data. Hence, in order to put this huge data to work big data analysis materializes as powerful tool. This paper will discuss inter and intra impact of big data and social media in the context of society in emerging and contemporary field of education, economy, advanced technology, environment and safety.

KEYWORDS: big data and social media, big data and social media impact, big data for society, social media for society.

1. INTRODUCTION

Social media voice represents public voice is 'Very Big' concern and it leads to social computing as well as social behavior. It creates need of real time analytics and also need of powerful metric for social media and big data. The analysis of large quantities of readily existing data from social media has created new opportunities to understand and influence how people think and act. The ready availability of masses of data and the means to exploit them is changing the way we do science in many domains [1-2]. Molecular biology, astronomy and chemistry and other sciences have already been transformed by the data revolution, undergoing what some consider an actual paradigm shift. In other domains, like social sciences and humanities data driven approaches are just beginning to be deployed. People live life in the network [3,4,5]. They check e-mails regularly, make mobile phone calls from almost any location, swipe transit cards to use public transportation, and make purchases with credit cards. Our movements in public places may be captured by video cameras, and our medical records stored as digital files. We may post blog entries accessible to anyone, or maintain friendships through online social networks. Every day people around the world post 400 million tweets on Twitter, add 350 million photos to Facebook and view 4 billion videos on YouTube. About 57% of over-16s in the UK use some form of social media, generating vast quantities of data.

This vast interdisciplinary Omni use of social media makes it special and important for academic and research community. Further data generated through it have vast applications and are characterized by 3Vs' nature. So in order to explore vast potential social media we need to rally over big data paradigm. This intermingled nature of two contemporary and emerging computing technologies give rise various issues and challenges which need to be addressed before ascertaining its utilities in diverse field. This paper will explore all such issues and applications in its subsequent sections.

2. ISSUES AND CONCERNS IN BIG DATA AND SOCIAL MEDIA

Since social media and big data analytics both are vast and multifaceted fields which require strategic practices to handle properly and give birth to issues and concern. Various such issues and challenges are enunciated below:

A. *Analysis of Social Media Data*

The maximum data on the social media is unstructured, so it is difficult to analyze this data using traditional techniques. The size of data also very big as every data is collected from different sources. Therefore, big data appears to be only the solution to analyze such data and draw up some useful apprehensions.

B. *Technology Challenge in Big data*

Technology is also very big concern for the researcher involved in social media data because very less technology are available in market. We will see demand for Big Data tools and applications are increasing in the market that will be easier to use and will satisfy the business user, not just data scientist users because now days social media data are used more in variety of fields and social media maximum data is unstructured. If you look at Hadoop-based technology capabilities, many are still immature and require unique specialized skills. We have seen many new product announcements that address this need, including the recent announcements on Cloudera Impala and Microsoft Polybase. In fact, some of these capabilities already exist today, making it easier to access the right data at the right time with the best set of tools.

C. *Management Challenges*

Social Media warehouses contain sensitive data for example personal data because in social networking sites people are connected with variety of people and sharing personal information.

There are legal and ethical concerns with accessing such data. So the data must be secured and access controlled as well as logged for audits [6]. The main management challenges are data privacy and security.

D. *Security Issues*

An emerging research area in data mining, known as privacy-concern data mining (PCDM) has been extensively considered in recent years. The basic idea behind of PCDM is to change the data in such a way so that to perform data mining algorithms the modification of the data using the data mining algorithms should not compromise the security of sensitive information contained in the data.

It is a big challenge for researcher to reduce the privacy risk brought by data mining because many unwanted disclosure of sensitive information may occur at the time of data mining result. For security purpose consideration should be four different types of users that are involved in data mining applications, namely, data provider, data collector, data miner, and decision maker.

3. BIG DATA AND SOCIAL MEDIA: APPLICATIONS FOR SOCIETY

Owing to their immense potential big data and social media computing have vast applications in various basic, allied and interdisciplinary fields. The subsequent sub sections of this paper will emphasize on such fields and major applications of these technologies in them.

A. *Politics and Government*

Big data analysis played a substantial role in guiding the election strategy of the Barak Obama's 2012 campaign in the US presidential election. The campaign had a large data analytics team, who used data from social media (including Facebook and Twitter), alongside data from their own party database, which included information on approximately 180 million voters. By looking for correlations in past voter characteristics and behavior, they were able to build up profiles of the kinds of people who might vote for them, and to target resources more efficiently. For example, TV adverts were broadcast when they were known to have the most impact with the targeted swing voters, rather than in premium generic prime-time slots. Analytics was also used to determine which households to target door-to-door. These approaches have not yet been taken up to the same extent in the UK, although they are likely to become more prominent in the 2015 general election. However, differences in data regulation and campaign spending may affect how widely social media data analysis is used in UK politics.

Similar situation was reported in India's 2014 General Elections where social media is supposed to be used to woo youth voter in favor of NDA. Many organizations can find the massive amounts of data generated from high-volume transactions, call centers, sensors, web logs, and digital images overwhelming. The success of your business depends on meeting big data challenges, while continually improving operational efficiency.

Social media also play a crucial role in better governance. Recently State Government of Haryana (India) have make a target to bring all the villages panchayat of social networking. Also almost all the departments and offices of state have their own face book accounts which emerge as a common platform for them to convey their schemes and other public information.

B. *Marketing*

Since it turns out, data is going to be even larger. The content we mainly generate, exchange, curates and store represents an absolute unending flood of digital wealth. The information flood is fed by companies, industries, institutions and non-profits organization. Then add to this content from the huge array of social media via blogs, status updates, forum discussions, video,

audio and images. This blend of traditional prepared business intelligence information plus unstructured social network content can offer a bonanza of perspectives and insight into the way businesses, consumers and organizations relate to and interact with products, services and the global economy. The value of this information, according to a McKinsey & Company report, can help companies and organizations increase productivity, reduce costs and make better decisions. Big Data is very important for marketers because it adds main new dimension to the Holy Grail quest for delivering measurable social media to the C-Suite.

The big data impact represents a competitive threat to businesses that ignore the trend. Business school graduates have been applying analytics to data repositories for decades. For advertising, marketing and public relations, understanding how you can help companies and clients use big data will eventually be (if not already) an important element of your professional and marketplace skill set.

C. Computational Social Science

The capability to collect and analyze huge amounts of data has transformed fields non computational field of Social and Behavioral Sciences. However, the appearance of a data-driven computational social science has been much slower. The main journals in economics, sociology, and political science demonstrate little evidence of this field. But computational social science is taking place in Internet companies for example Google and Yahoo, and in government agencies such as the U.S. National Security Agency. Computational social science could become the special domain for private companies and government agencies. On the other hand, there might emerge a privileged set of academic researchers presiding over private data from which they produce papers that cannot be critiqued or replicated. This situation will serve the long-term public interest of gathering, proving, and disseminating knowledge. In such situations these two technologies are much useful to understand demographic patterns, peoples' perceptions and opinions etc.

D. Big data and Education

In the world the education is also not lagging behind in use of big data. Teachers could analyze the answers given in exam papers not only to find out how much students have learned, but also to get clues as to why some gave the wrong answers or struggled to understand certain concepts. They are also analyzing how the way of students use and respond to the information provided by textbooks or online learning tools to see what works and what might need to be revised, and get pointers on how best to do this. Big data' is making all of this possible. It is at the heart of the digital revolution- more information has been collected in past two years than in rest of human history. In addition to this big data could help teachers to assess the effectiveness of different learning tools and techniques, to develop 'smart', interactive learning materials that also make education more fun and interact with taught and parents in 24x7 modes.

E. Big data and Economic

There has been a data rush in the past decade brought about by online communication and, in particular, social media (Facebook, Twitter, Youtube, among others), which promises a new age of digital enlightenment. But social data is compromised to being seized by specific economic interests, it leads to a fundamental shift in the relationship between research and the public good, and it fosters new forms of control and surveillance.

Compromised data from social media to big data explores how we perform critical research within a compromised social data framework. The expert, international lineup of contributors explores the limits and challenges of social data research in order to invent and develop new modes of doing public research. At its core, this collection argues that we are witnessing a fundamental reshaping of the social through social data mining.

The most powerful applications of social technologies in the global economy are largely untapped. By using social technologies, companies can raise the productivity of knowledge workers by 20 to 25 percent.

4. CONCLUSION

In this paper I have addressed key issues, concerns and applications of two contemporary useful technologies viz. big data and social media. In the light of the exploration done in paper it has been found that these two technologies are complimentary to each other in the context of applications. In order to harness maximum from these technologies we need to explore, analyze and interpret social media data using big data tools. Further they are much useful in almost every broader field of Science, Social Science, Humanities, Commerce, Marketing, Education and Economics. There is need of developing blend computation model to further investigate the field.

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