



Use of Big Data in Government Sector

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ABSTRACT

Businesses, governments, and the research community can all derive value from the massive amounts of digital data they collect. Analyzing big-data application projects by governments offers guidance for follower countries for their own future big-data initiatives.

Decision making in government usually takes much longer and is conducted through consultation and mutual consent of a large number of diverse actors, including officials, interest groups, and ordinary citizens. Governments deal not only with general issues of big-data integration from multiple sources and in different formats and cost but also with some special challenges.

The biggest is collecting data, governments have difficulty, as the data not only comes from multiple channels but from different sources. Most governments operating or planning big-data projects need to take a step-by-step approach for setting the right goals and realistic expectations. Success depends on their ability to integrate and analyze information, develop supporting systems, and support decision making through analytics.

Keywords: component, big data, big data in government sector, big data applications

I. INTRODUCTION

Gathering and processing of huge amount of data is not new, what is new is the speed at which we can now process that data. This is an era of collective intelligence. Every day we create approximately 2.5 quintillion bytes of data, it is estimated that 90% of the data which is been generated till now is created in last 2 years alone, and with the help of that thing we

can predict what amount of data the world would be dealing within upcoming years, and that lead us to work with the term that is called “Big data”.

Big data is one of the Buzzing word all around now, there are lot of companies working on the processing and manipulation of these data, big data usually means the collection of data that is too big and massive generally in petabyte, and that data can come from many different sources like click streams, sensors, and many other places, it must be processed quickly and which is too hard to be managed by all the existing tools to process those massive amount of data records.

Same way not only the giant companies deals with the massive amount of data but even the Government of any Country are canonical users of Big Data, as they also keep track of massive number of different records for their country which may include information about the people of the country, their growth and many more things. In this paper I am going to focus on some of the application of the Big Data in the field of Government, Public sector and the society in general.

One of the biggest example of using big data in the field of Government and politics has been given by the president of United States of America, Barack Obama. President Obama used the information of the voters of the previous election, like their email addresses their phone numbers, and team also tried to get feeds of various activities of people through the social sites like twitter and facebook, and based on those feeds people used to receive emails regarding the presidential campaigns, what are the policies which are going to be developed which will help

people in near future, what are the other facilities people will get after the election, People were directly targeted based on their previous data and their activities and they used to receive emails which will help people to understand more about the campaigns, and that lead to victory of President Barack Obama in 2012, and reelected as president of USA.

Now we all know that elections are not solely by analytics. The policies of the two candidates contributed to the results, and there may be involvement of some other factors too [3].

The main thing is that how can we use big data thing within the government and use those information and data records do more and more with less and less expenses which will help country and people.

II. BIG DATA AND INDIA

There are many ways in which big data can help the Indian Government to grow more and go for the changes and implementing the various policies and government schemes.

Now if we consider India then one of the biggest source of big data can be of AADHAAR scheme, a unique identification project, which is undertaken by the Unique Identification Authority of India (UIDAI), is an agency of Government of India, which was established in February 2009, and will own and operate the Unique identification Number Database. The authority is planning to provide the unique identification numbers to all Indians, but won't be providing the smart cards, that would depend on to the ministries of the country. [4]

The authority will maintain a database of residents containing the biometric and other data. Mainly the database would be containing the 12-digit unique number which is going to be issued by the Unique Identification Authority of India (UIDAI) for all the residents, all this numbers will be stored in the centralized database and will be linked to the basic demographics and biometric information – photograph, ten figure prints and iris of each individual. Random numbers generated will be free from any classification based on caste, religion and geography. This database would be very large and big but this will allow those people to have identity who do not have any sort of identification [5]

Now if we talk about the number of entries under this scheme, total number of AADHAARs issued as of

24-March-2013 is over 304 million (30.4 crore). This is more than 25% of the population of India. And that gives us the insight that how big the data would be within the end of this year, and processing and manipulating this data statistics would help the Government to make various decisions based on those statistics.

ADHAAR is an ambitious government Big data project which is going to be one of the largest biometric database in the world by 2014, with the global capturing about 600 million Indian Identities [6]. And dealing with this kind of database is not an easy task, but India is going to be one of the first country who would be dealing with this much large amount of public biometric database.

III. BIG DATA AND ITS APPLICATIONS IN INDIA

A. Direct Benefit Transfer Scheme

IT is also known as the DBT scheme that aims bringing transparency and eliminating the stealing from the distribution funds. This scheme is dependent on AADHAAR card that will help people to get benefit of this scheme and it will also ensure the government about the number of people who are getting benefit out of this, it includes various different schemes under it like education, scholarships etc.[7]

By keeping track of this records will help the Government to decide the funding for a particular states, and they would also be able to keep track of improvement and the growth within the particular region where people are benefited of this scheme. So if these records are analyzed in a proper manner then this statistics will lead to the improvement, and Government would be able to focus on those areas which are really important, thus how big data can play a vital role there.

B. Impact on Election and Voting system

As I had mention the biggest example of Big Data and its usage in the Election campaign by the President of United States, Barack Obama, his team focused on to the right public or we can say registered users as per their database records and based on their activities user used to receive emails and connected through phone calls. [8]

President Obama's election team was able to dynamically analyze the global state of pre-election sentiment, and deploy advertising resources and

human volunteers to the areas that needed the most attention, virtually in real time. Indian Government can also use the same kind of thing, by analyzing the big data and making policies and the scheme based on those statistics which will help the people of the country as well as the growth of the country.

C. Impact on Government Construction Projects

As there are many new projects are assigned in to the various states of the country every month for the development of the region and the country. It may be possible that Construction or the project may be deficient and may create problem in near future, as some of the projects might not be meeting the inspection criteria.

So my point here is that real-time analytics can help the government and the other people alike, let me give you an example for that, The University of Texas is working on sensor technology that use wireless sensors to identify failing bridges, lower the cost of monitoring those bridges, and improve the safety of new bridges, and can report dynamic data measurements on a bridge's condition. They're working on sensors that can survive the constant vibration, weather, and even send and receive data through all the steel that normally would make radio transmission a near impossibility [9].

So the thing would be like there would be lot data which is supposed to be filtered out to get the exact information about the bridges and their conditions, that will be bit complex but at a same time it will save lot of resources like money, human lives, etc. This data can be feed to the system and that system can help in the time of critical situation when the project need some maintenance or any repair kind of thing. Thus it can help in that way too.

D. Impact on Education

More data about students can help students in various different ways to find their interest, strength, and help to identify student weaknesses in ways that are not possible today.

Impact of Big data on to the Education sector can play a really vital role, in the normal case generally school boards decide which textbooks students are required to follow for their particular subjects and all, but do we know which text book is actually good or bad? No, we depend upon expert opinions.

But now we do have the data, as are moving from the hardcover books to the electronic books, as people are using the tablets and the other electronic book delivery mechanism like ipad or Kindle from Amazon etc. They all usually collect the information. If we take an example of an Amazon then it know how long you stay on each page, when you re-read a page, or you read chapter over and over when you have some difficulties within that. All information is kept within Amazon. Those information would be really help a lot to the author or the publisher of the book to improve the things within text books, and that can also help the Board of Education to make some worthy decision based on those statistics, and that will ultimately help the students, same way to the people of the country.

E. Impact on Health care

This also a very important area where big data can play a very huge role and can save tons of money. By having an access to all the medical records of the past decade or more, can help government to take a proper decision in this area.

When this user data is processed in the right manner and analyzed correctly, it will result in to the complete statistics on which part of the country are suffering from what kind of health related issues and disease. And that can help the government to start new services and can also lead to opening the new hospitals to serve the patients, Government can also issue some more funding for the research and development of some lifesaving medicines, this way government can help in health care area. [11]

F. Generating revenue from Government sites

With the Big data technology, Governments can also earn from their running web sites, as they are providing different kind of advertisement on the government sites, and many of the advertisement may be irrelevant.

For example site of Indian Railway Catering and Tourism Corporation limited (IRCTC), they deal with the tourism things, they may earn if they provide tourism relevant advertisement [12].

With the help of big data they can provide the personalized ads, which would be more relevant to the people who are using such sites, and that will usually increase the rate of generating revenue compare to those irrelevant advertisements.

IV. CONCLUSION

Big data can be really helpful if the data or records are analyzed carefully and if we use that statistics in a right way, it can really help the developing country like India.

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