THE CONCEPTS OF EXPLORING APPLICATIONS OF BIG DATA IN DIGITAL INDIA SCENARIO

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Abstract:
   With the advent of Digital India and UID initiatives aims to transform India into a digitally empowered society and knowledge economy. . It aims to connect entire India digitally in the span of 4 years i.e. till 2018-19. The idea behind this is how tremendous and massive amount of information can be utilized to make government, corporate growth and expansion successful. Joining up public sector, data sources can make government more efficient, save money, identify fraud and help public bodies better serve their citizens. To maintain data with respect to UID scheme, required information of all residents will contain biometric details like photograph, ten figure prints and iris of each and every individual along with other usual details. A 12 digit unique number will be allotted to all irrespective of any classification based on caste, gender, religion and geography. These details and randomly generated unique number will be stored in the centralized database which is subsequently linked to the basic demographics and biometric information of each individual. It allows those people to have identity also who were earlier not having any sort of identification.

   This exponential growth of variety, volume and complexity of structured and unstructured data leads to the concept of big data. Managing big data and harnessing its benefits is a real challenge and more when get associated with government policies introduced under Digital India concepts. With increase in access to big data repository for various applications, security and access control is another aspect that needs to be considered while managing big data. We have discussed in this paper the exploring applications of Big data in association with government policies, The challenges in managing this huge data for various government applications, their outcomes in terms of benefits and the issues which are the major concerns in getting benefitted people of villages from every nook and corner. This paper also includes how these initiatives will open up opportunities to Indian manufacturers and entrepreneurs, thus helping employment in a direct and indirect way. . Big Data Analytics is used to get benefitted Government and corporate which lead them towards tremendous growth. Issues related to security against different threat perception of big data are also discussed.

Key Words: Big Data, HDFS, IDC, Hive, Digital India, Governance, SME, Map Reduce & Analytics

Introduction:
   With an approximate size of 2.5 quintillion of bytes being collected from many different sources like click stream, sensors, social media, its storage and processing becomes a great challenge. The term used to handle such a large amount of data is termed as Big Data. Corporate and government all over the world has been working with big data since a few years. Tom Heath, head of research at the Open Data Institute has rightly said that "Data can enable government to do existing things more cheaply, do existing things better and do new things we don't currently do."
   This paper is organized in five sections. Section 2 deals with literature review. Its area of application is discussed in Section 3. The challenges are outlined in Section 4 and paper is finally concluded in the Section 5.

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Literature Review:

With latest survey of the Big Data, it has been used vastly in the election campaign for the elections of the President to United States of America, Barack Obama. The campaign managers utilized the information of the voters of previous elections and feedback from the social media such as Twitter, Facebook, etc. The information about the party and its activities to the people with the emails or social media which finally led to the victory of the President of USA.

One of the most talked about programme launched by Government of India, is Digital India. This will help in preparing India as one of the upcoming knowledge based society with appropriate distribution of services to the citizens of India. The programme will be implemented in various phases across the country till 2018. The basic requirement for the implementation is still being worked out by respective nodal ministries and departments.

National Informatics Center is being restructured to equip it to support all the central government departments and state departments. The projects will be divided in approximately 10 key ministries so that the Digital India could be designed, developed and implemented with ease and efficiently.

One of the key projects in the Digital India is UIDAI, where the data relevant to the citizens of India will be input and stored for distribution of services to all on an equal priority. In 2014, the central government gave a green signal to retain the project of UIDAI and link it to the projects, thereby increasing the need of UIDAI to be implemented among the public. With the onset of the enrollment process in various states, UIDAI is set to make a mark. Approximately 72.6% of the total population of India has been issued Aadhar numbers that would help Government to take decisions more statistically in a better mode. The officials of various departments have been instructed to accelerate the delivery of benefits and expand the applications of the UIDAI platform. The government targets to realize the Jan Dhan Aadhar mobile so that the money goes directly and more quickly into the pockets of the poor and from the savings we achieve, we can put even more money for the poor.

Big Data Utilization with India Perspective:

Big data is a promising challenge which when can be utilized prosperously and efficiently can help the Indian Government to have better perspectives, growth, revolution and better implementation of policies and government schemes.

Apart from all the digital revolution done with respect to successful implementation of Digital India Concept. Aadhaar Scheme – a Unique Identification Authority of India (UIDAI) is being successfully implemented on the Big Data Platform. It is an agency of Government of India which has been established in February 2009, and will own and operate the Unique Identification Number database, having all Biometric and detailed information of each and every person. It will be providing the Unique Identification numbers to all Indian from the age of but won't be providing smart card as that would depend on to the ministries of the country.

Aadhaar is a very ambitious Government Big Data Project out of so many others. It will be going to be one of the largest biometric databases with the global capturing of more than 600 million Indian identities. It wills definitely a challenging and promising job to deal with such a vast amount of data with full authenticity, security, accessibility, search ability. It will be possible because of proper management of the big data centrally stored and with the help of big data analytical, searching and security based available tools. It also will address the issues of public accountability and transparency through a

unique ID and e-Pramaan based on authentic and standard government applications. Fully online delivery will help a lot in this venture. It will reduce corruption.

Other Big Data Application in India:

Various big data applications are leaving a great impact on citizen of India resulting in terms of various benefits they can gain from these applications. Few of them are Direct Benefit Transfer Scheme, Impact on Election and Voting System, Impact on Government Construction Project, Impact on Education.

Direct Benefit Transfer Scheme:

In the DBT Schemes, the subsidy money is directly transferred to a bank account which is Aadhar linked.DBT Scheme is dependent upon Aadhar Card that aims to bring transparent and eliminates the stealing from distribution of funds. It will help the people to get benefit and also ensures the government that how many number of people are getting benefit out of this. It includes the scheme of education, scholarships etc. Few Aadhar Projects which are linked are public subsidy, unemployment benefit schemes like domestic LPG Scheme and MGNREGS. It is possible for the government to decide the funding for a particular state and also be able to keep track of growth and improvement of a particular region where the people get benefited of this scheme. Proper analyses of these records are necessary then only the statistics will lead to the improvement of a particular region. Government would be able to focus on the areas which are ignorant and actually important to be taken care of and it is possible if and only if big data analysis is done properly. Hence the big data plays a vital role in managing and making this scheme successful. The DBTL scheme was modified later as PAHAL by the new government in November 2014. Under PAHAL, subsidies could be credited to one's bank account even if the one did not have an Aadhaar number.

Impact on Election and Voting System:

The BJP and Modi ran a high-adrenalin and tech-savvy campaign that dazzled and engaged voters directly through social media. Modi snapped campaign selfies that went viral and even appeared as a holograph at campaign events. He has tweeted daily for years. By contrast, his main rival from the Congress party, Rahul Gandhi, shunned Twitter himself while his party took to the site only this year

Impact on Government Construction Projects:

There are so many government projects assigned to the various states of the country for their development and growth of specific region wiih specific deadlines to complete it. The construction of project need lots of human effort, time and resources, it may be the case that after completion it is deficient with respect to certain perspectives. In such cases real time analytics can do wonder and get the construction of project successful, can save lots of time, efforts unused in construction of project. University of Texas used sensor technology to know failing of bridges using wireless sensors. Due to this kind of usage, the cost of monitoring those bridges becomes so less as well as it has improved the safety of new bridges. It is also used to 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 nearly impossible. To save lot of money, resources, human efforts, human lives etc., it is necessary to filter out exact information out of lots of data and to get the information about bridges and their conditions. This filtered data can also feed to the system which can help at the time of critical situation when the project needs some maintenance or any kind of repair.

Impact on Education:

Big Data is playing a crucial role in Education sector also. The massive amount of data lying on internet helps students in various ways, to strengthen their skills, to identify student's weakness, to know their area of interest etc. Even using experts comments, school boards decide which text books are required to be followed for students and which all are better in terms of coverage and understanding of the concepts. Now a day's people are using tablets and other electronic delivery mechanism like kindle from Amazon to read the book instead of its hard copy. The amazing feature is it collects the information to know how long a reader stays on each page, when the book has read, or re-read a page or a book over and over and find difficulty in reading. All such kind of information is kept within Amazon and helps a lot to the author or the publisher of the book to improve the things within textbooks, and that can also help the Board of Education to make some worthy decision based on those statistics. This will help the betterment of education system, students and the people of our country.

Impact on Health Care:

Government can also take smart and impactful decisions in health sector after analyzing the records of patients. If the data is processed in the effective manner, government can come to know about the complete statistics like which part of the country are suffering from which kind of health related issues and disease. It can help the government to start new services, can lead to open the new hospitals to serve the patients and the government can also issue some more funding for the research and developments of some life saving medicines.

Generating Revenue from Government Sites:

Big data technology can also help the government to generate revenues. Government can also earn from the running websites, as they provides different kind of advertisements on their pages. For example Indian Railway Catering and Tourism Corporation Limited (IRCTC) can earn revenue as deals with the tourism related information. Government can earn if provides more relevant information on respective websites in spite of irrelevant advertisements. Big data technology can heIp the government websites to provide personalized advertisements which can be more relevant for the users who are using them and can generate lot of revenue.

Digital India – lead to Big Data Concept:

Digital India is a Programme to prepare India for a knowledge future or can say modified and expanded version of the national e-governance plan which seeks to deliver all government services electronically. It is a programme to transform India into digital empowered society and knowledge economy. It will benefit almost all sectors like IT/ITeS, Power sector, Education sector, Telecom sector, Electronics manufacturing, Banking and Financial sector, etc. It will connect the entire India and bring to the forefront all the hidden talent and entrepreneurs that constitute the country's future. It will help in achieving universal digital literacy.

Jan Dhan Yojana, Tele-medicines, Smart cities, Digital Locker System, eSign, eHospital, Digitize India Platform (DIP) for large scale digitization of records, etc. are other programs which will be implemented and these projects will definitely help us in increasing productivity and reap our demographic dividend. This programme will also benefit all states and union territories. The Digital India vision provides the intensified impetus for further momentum and progress for e-Governance and would promote inclusive growth that covers electronic services, products, devices, manufacturing and job opportunities. The vision of Digital India concept are: Infrastructure as a utility to

every citizen, Infrastructure as a utility to every citizen, Governance and Services on Demand, Digital empowerment of citizens.

Digital India Initiatives and Their Advantages:

Envisaged by the department of Electronics and Information Technology (DeitY), the vision of Digital India is focuses on - Digital Infrastructure as a utility to every citizen, Governance & services on demand and Digital Empowerment of citizens. It wants to bridge the digital divide and bring India at par with the developed nations. It will combine many existing schemes related to e-governance, other digital initiatives etc.; restructure them and implement them in a synchronized manner under this umbrella initiative named as 'Digital India'.

Nine pillars of growth areas which would be focused are

- ✓ Broadband Highways ,
- ✓ Universal Access to Mobile Connectivity,
- ✓ Public Internet Access,
- ✓ E-Governance ,
- ✓ E-Kranti ,
- ✓ Information for all ,
- ✓ Electronics manufacturing ,
- ✓ IT for jobs ,
- ✓ Early Harvest program.

The Challenges Faced in the Implementation Can be Listed as Below:

Infrastructure:

India will need massive Data Centres with mirroring i.e. all data will need to be backed up at an alternate site. This will require large investment to set up state-of-the-art data centres in various parts of India. These data centres will have to be provided fail proof physical and cyber security cover.

Security:

Organizations like Computer Emergency Response Team (CERT) is trying to cope with the ever evolving cyber threats, however, India is still evolving in establishing secure and impenetrable networks, as seen in various attacks on our critical sites of various government establishments, over the years. Government sites especially are vulnerable.

Then there is the real possibility of internal sabotage that can result in stealing or damaging of data, at any given point. There is a real possibility of a disgruntled individual who is motivated by greed, revenge, political or religious affiliation, may get access to the data to steal or damage it.

The problem is that security has to be clearly understood by all and unless this is made part of our operational lifestyle, both at the individual and at the government level, securing vast and critical data, will always be a major hurdle. The biggest challenge to the success of the Digital India project is not on the delivery side but on the security side. Securing this data for all time is going to be the real challenge that the government has to address before embarking on this ambitious project.

Cyber Laws:

When the government stores personal data of the citizens, the government becomes its custodian and is responsible for securing the data and also preventing its misuse. For instance, what happens when one individual uses a government official to access another individual's medical records and then misuses this information In this scenario, the government becomes a party to the data breach. What happens if the data is damaged or the delay in verification causes the individual a financial loss or a loss of

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business opportunity? Will the government be liable for the loss? Do we have cyber laws that adequately address such scenarios? These will have to be looked at very closely by the government prior to launching the Digital India program.

Training:
The Digital India program will have to simultaneously launch a training program to ensure all government officials understand the data that is available, its protocols of access and protocols of security, and also the legal ramifications of data breach. Given the large size of the government, it will take time and investment to train and cover all individuals, for successful delivery of the program.

Conclusion:
The Digital India program is a great opportunity to develop the digital backbone in the country. If the government can extend the vision to include email. Messaging and cloud services on servers located in India, it will truly usher in a digital revolution in India, besides opening up massive business opportunities at home. Today, most Indians hold email accounts with Gmail, Hotmail, and Yahoo etc along with using messaging services like Whats App and Viber, which all run on servers located outside India. This makes all individuals and by extension, the country, vulnerable to surveillance and privacy breach, as shown by snooping done by NSA, of the United States. India must offer all the above services including cloud storage, to all Indians. Of course, this will entail massive investment in technology and infrastructure, but the Digital India program could well be extended in a phased manner to initiate the process of bringing all digital activity to India.

India has seen the UIDAI project being implemented pretty successfully so far and there is complete faith in its completion by 2019.

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