Evaluate the Role of Big Data in Enhancing Strategic Decision Making for E-governance in E-Oman Portal

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Abstract— **This research study is to analyse the role of big data for enhancing the decision making for E-Oman. E-Oman is one of the It's organisation in Oman which provides key to It solutions includes application, infrastructure in Oman. Big data has become a forthcoming part of all trades and business segment Oman in electronic portal is for the citizens which make easy use of a transactions. Enhancement of big data in e-Oman Company supports in providing perfect public services and also searching of big term in process. The range which is used in this topic is exemplified in a crucial panel conversation a recent big data conference. We present a cooperative big data analytics stage for big data as a service. It takes longer time to achieve wrinkle data, progress events and investigative services. The outdate technologies do not become an appropriate solution to process a big data platform has begun to appear. The quality of big data is of great significance is more significant because the quality of material is affected by size, speed and format in which the data is generated. The main benefit of the e-service is user-friendly. By implementing the e-services it makes easy communication between the government and the citizens. The quality of big data is great pertinent and it is more significant. Quality of information is affected by the size, speed, and the data in which the format is generated.**

Keywords— Big Data, E-governance, Decision Making and E-Oman portal.

I. INTRODUCTION

Big data is a similar term that is used in recent business environment where bigger companies use large set of data that comes under various factors that are straight or ramblingly responsible for the creation of data [1]. With a growth to the humanity large amount of data is produced. In the age of data, data has become one of the most important factors, and lots of requests are provided on the foundation of big data. The domain of information graph can range from all information from the World Wide Web to gratified limited to within innovativeness. Since the data produced from the other productions will come up to a huge amount of data which will take a lot of effect to succeed. There are three types of big data namely, structured, semi-structured and un-structured. Structured data is specific construction and it can store, opened and efficient with a computer such as member database in a commercial institution [2]. Semi structured data fertilizer of both controlled and unstructured data that is to assemble in a single grouping. It is a developing phase which means bulky amount of data in the

type of big data. Capacious data can come from numerous dissimilar sources such as transaction in business system, client data base, mobile request, websites, machine engendered data and real-time data instruments which is used in internet of effects surroundings [3].

This comes with difficulties commonly known as 4Vs that is volume, variety, velocity and veracity. The main influence of applying the big data in the public sector is to be aware of how to use big data and also some instruction and inspiration is needed for them above the technique. This impact takes place in both community and isolated sectors [4].
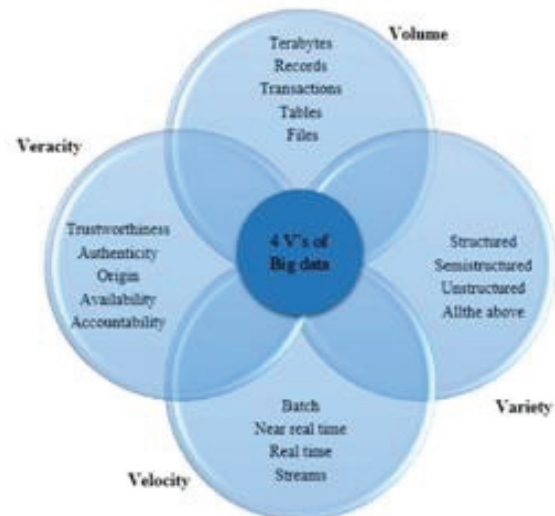

Fig. 1. Characteristics of big data

Governance is to exploit of ICT by E-Oman government, civil companionship and partisan public to take people complete response and increase to assistance their contribution in the procedure of power by some organisation. In big data system, data holds all essence to all acquaintance and promises of applications. In fact, data quality is most often the purpose for any business data and evidence problems [5].

II. STRATEGIC PLANNING AND DECISION SUPPORT

Strategic planning is defined as an ongoing process that supports decision-making by relying on information about the future of decisions and their implications for the future,

setting goals, strategies and time programs, and making sure of implementing plans and programs [6]. Some studies define it as the method of, creative and innovative in thinking to design the desired future for the organization, and this is done intentionally and with recognized steps to confront environmental threats or opportunities while taking into account internal strengths and weaknesses [7].

III. THE IMPORTANCE OF ANALYZING BIG DATA IN DECISION MAKING

The analysis of big data has made a revolution in the information technology (IT) and it is very important in the upcoming years. The main focus in the big data analysis is customers and business organization. There are three divisions in the analysis of big data perspective, predictive and descriptive analysis [8]. To understand the importance of big data four perspective analyses are: they are perspective of data science, perspective of business, perspective of real time application and perspective of job market. For the business value and insight gain, data analysis plays a vital role [9].

For big data analysis advanced tools and techniques are needed to obtain the data from different sources and sizes. The data is available from websites, mobile phones, social media, etc. In the data analysis, two techniques are there, qualitative analysis and quantitative analysis to improve the profits and productivity of the business [10]. In a business organization for accessing the data efficiently, the tools are used by the researchers, analyzers, and engineers. Because of use of big data in business organization, there is a rise in tools demand. From the analysis we get to know about the better tool for efficient business operation and to attain more profit. The big data analysis is used in different fields like bank, hospitals, technology, manufacturing and development of energy [11].

IV. ROLE OF BIG DATA IN E-GOVERNMENT AND E-GOVERNANCE

The E-government is nothing but the interaction that takes place between government and people. It is mainly created to develop an efficient and effective service by means of using ICT's and web-based communication technologies [12]. The basic models are created for the e-government is government to citizen, government to employees, government to government and government to business [14]. The relationship develops between the government and the citizens in case of both internal and external cases are takes place by means of internet, online media and technology.

The e-government in their point of view is use of ICT to improve the function in the public sectors. Even though there is lot of advantages in E-government, it affects some developing countries [15]. The impacts mainly depend on the scope between the current realities and the design of the projects [16]. Some researchers are carried on the information system in the developing countries to deal with the success and failure case [17]. Even some governments had the good overall model of the project but they are failed in the strategy framework [18].

The E-governance is nothing but the use of ICT by the government, civil society, and political organizations for promoting their participation governance process of the institutions [19]. For driving the modern institution or organization the IT becomes the main cause. It had a different way for the participation of the public and the communities [20,21]. The ICT governance needs substantial growth and the capacities for making policies. The e-governance is "the use of the technologies that both help governing and have to be governed" [22].

V. ENHANCEMENT OF BIG DATA IN E-GOVERNANCE RECOMMENDED FOR OMAN PORTAL:

Still some developing countries are lagging in the implementation of e-government [23] compared with developed countries. For better and effective services, the IT has a better way to have an interaction with the citizens, businesses and even government stakeholders. The main failure factors in the developing countries are management, leadership, infrastructure and human factors, the factors differ for countries. The focus of E-government is to set a unique value in social, political and also economic factors requirement [24].

For getting a better view about the E-government projects in the developing countries, the research had taken on both academic and the practitioner view about the literature [25]. In some projects of the developing countries the measures like reduction of cost, improved efficiency and service quality. The e-government had the ability to achieve transparency by means of increasing the accountability and decreasing rate of the corruption. The main barrier in the easy acceptance of the e-government is ICT infrastructure and the deployment [26]. The productivity tends to increase if the e-governance implementation gets successful.

VI. CURRENT SCENARIO OF E-GOVERNMENT PORTAL IN OMAN:

The Oman e-government project was implemented decade ago and it was started in year 2016. The sultanate of E-Oman motivates the ministries and government entities to work faster and more effectively and also to get better interactions between the citizens, business and governments.

Example for the e-government service, the royal Oman police (ROP) to investigate in the remote places to create "invest easy" port. Several initiatives are now taken by the ITA for,

- Enhance and improve the e-government services.

- Improve the efficiency of the country.

- Enhance the activities of business.

- Meet the social expectations and their needs.

VII. CHALLENGES AND OPPORTUNITIES OF E-GOVERNMENT IN OMAN:

There are several challenges faced in introducing e-governance in Oman. Decision makers and the policy creators should utilize certain and reasonable achievement goals to understand accessible funds necessary to accomplish targets. Once the governments agreed and dedicate to considered transforming their governance mainframes, many importance questions and prospects. Challenges and opportunities of E-government challenges like:

- Digital divide

- Development of infrastructure

- Public and law policy

- Accessibility

- E-literacy

- Privacy

- Trust

- Transparency

- Security

There are adequately of utilization of the things utilizing huge information examination, for example, after office of offers, careful of missing individuals, savvy traffic control framework, investigation of client conduct investigation, and the administration framework. Huge information benefits regularly comprise of three layers to be specific, huge information foundation as an assistance, if information stage as a help, and huge information expository programming as an assistance. The principle motivation behind this stage is to give a major information as an assistance and to empower clients to create cloud benefits all the more proficiently. This backings job put together access control with respect to information proprietor, information researchers, designer of administration and the stage supervisor [27].Big data analysis in Web service portal:

The main purpose of this service portal is to make enables the user message and information sharing platform for the effectual and rapid service expansion. They can explore data, procedures, and package using index services and post their condition board.

The big data analysis is a process that accruing, organization and then inspects the large value of data's for receiving useful material and for learning the patterns. For the inspection large value of data, the examination is achieved by dedicated software tools. The analysis of big data is always a challenge. In the e-service through the big data, first data is divided into multiple set of data and then different set of data is stored in different nodes. In diverse nodes, one of the nodes tracks all the data is deposited in different nodes. In the search appeal for the data seems, the index node is created [28]. The investigation of big data is made an uprising in the material knowledge and it is very important in the future year. From this analysis we get to know about the better tool for efficient way. The big data is used in different field in bank, hospital, technology, manufacturing and development of energy. High performance computing clusters is developed by lexis nexus risk solution and it is an open source data intensive platform. This HPPC platform is an also called as data analytics supercomputer. It is mainly designed for real time application [29]. For the analysis of big data seven major techniques are available they are listed as follows,

- Learning of associate rule

- Tree analysis classification

- Analysis of social networks

- Generic algorithm

- Analysis of sentiment

- Learning through machine

- Analysis through regression

Learning of associate rule is nothing but group of existing correspondence between the data base and the variables. It is mainly used in the supermarkets using a point sale of bossiness. It is also used to check regular of visitors access the website. By monitoring the server from the cybercrime activity. Tree analysis classification is a classification of statistical methods. This method is used to locate the new observation and identifying the location and the record should be maintained properly. Analysis of social network is taken by the industry of telecommunication. This field of commercial technical activities is taken to find the relationship between the peoples. For analyzing the big data tools some tools should be analyzed they are, i: Apache Hadoop ii) To reduce Hadoop map iii) High performance computer cluster [29].

VIII. FINDINGS

Through this study many points were identified which constitute a real deficiency in the application of big data, whether in terms of awareness or equipment, technology and communication infrastructure, the integrity of government electronic connectivity and data sharing with the Information Technology Authority. Moreover, there is no clear legal legislation limiting the exchange and use of government big data. In addition to the lack of a clear strategy to develop and grow this sector of big data.

IX. CONCLUSION

In this analysis of the big data the analysis of the monitoring of the big data procedure of the information technologies and their intuitions from their data may be stored to make an illumined resolution. the application of the schematic of big data are developed of expanding stage and can get faster in their developing process and the tools and the platforms are needed to advance. In the data-driven approach it is not typical as the information assembles the social media and the web increase rapidly within the second. To advance this examination there is a possibility to change possibilities of the e-administration. The principle point of this e-administration of Oman is to make all resident make use of the e-administration and make all exchange basic and in verified manner. The range of expanding the large information starts to fire up and it is sorted out enemy each and wherever of the e-government gateway. It is prescribed dependent on the specialist's happens for the impression and the media transmission division in the Oman. The data is gotten from the real wellsprings of the displays of information. The administrative large information application is the exercises that are helping the usage of the enormous information and the legislature and the network of the science. The huge information give the two sorts of online interfaces, they incorporate, logical and the joint effort process for building up the BDaas administrations from the web-based interface. To help the joint effort among the laborers the entrance control of YARN of multi-propensity to improve the control. This web administration gives the regular web interface of correspondence. In this way, at present we have upgrade the spilling preparing framework and plan to incorporate it into the stage for continuous investigative administrations. Huge information is a science and the way toward relying upon numerous innovations and still in the encompassing stage. To underline the significance of the tending to information in a major information

framework with in the beginning period to amplify the pertinence. This will prompt set up the association to keep forward to their development and the future procedures.

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