

Challenges and Opportunities of E-government in Big Data Era

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Abstract: Big data is affecting our work, life, even economy and society. Nowadays, with the development of big data, big data not only provides opportunities for the development of e-government but also brings challenges to the development of e-government. This paper summarizes the impact of big data and opportunities of e-government, and this paper discusses the challenges of e-government, and then proposes the solutions of e-government in big data era.

1. Introduction

Big data refers to strong decision-making ability, insight discovery and process optimization capabilities, the ability of processing high rates of growth and diversification of data. At present, e-government for many years has accumulated a large amount of government data. The massive data has much valuable information. People want to mine the valuable information by studying various mining-algorithms. Now big data technology is more and more applied in e-government. Big data platform realizes information and data sharing. But big data also brings the challenges to e-government. For example, the big data in e-government is increasingly becoming the focus of network attacks. In the process of data publicity for the public, data security is an urgent problem to be solved, and it is also the key to data sharing. Improper protection and processing of big data in e-government will damage the government and have very serious consequences.

2. The Impact of Big Data and Opportunities of E-government

The key of "Big Data" is mining valuable information from wide variety and massive data. E-government platform produces dozens of PB data every day. The massive data is stored on the hard disk, rarely updated, the massive data is not easy to move and backup. Public produce a lot of data every day in e-government and enjoy the convenience brought by big data. So the impact of big data in e-government is huge, the following examples are introduced.

(1) Information and Data Sharing in E-government

The application of big data platform realizes information publicity and solves the problems of difficult communication and information transmission among departments, people and governments, so big data platform realizes information and data sharing. E-government construction can promote interaction between the public and government departments by means of advanced networks, mobile phone and computers. Government departments can publish work items, specific processes and work objectives on the network, which can make government information transparent. Many approvals can be carried out on online, which brings great convenience to people's lives. For example, audit of salary taxation, people report tax reduction projects by mobile phones or websites, and government verifies the authenticity of the declaration projects according to website approval and data information shared by other platforms. This operation brings great convenience to people and government, which greatly improves the efficiency of work. Thus, the use of big data platform during the overall construction of e-government can enhance the role of government in public service and social management. Different departments can share data with each other, which can conveniently and quickly verify the correctness of materials.

(2) Statistical Analysis and Visualization the Results of Analysis

Nowadays, a large amount of data will be generated in e-government every day, valuable information and knowledge are hidden in the massive data, which can provide favorable and scientific support for the decision-making of the government, so it is very important to analyze the massive data and visualize the results of analysis. Statistical analysis of big data is a process of organizing and collecting massive data, analyzing related data and making it effective information. For example, in healthcare, for premature infants, there are more than 3000 data reads per second. Through these data analysis, doctors can know the problems of premature infants in advance and take targeted measures to avoid premature infant death. Data visualization is to help people to understand difficult knowledge by using graphical technology, it can achieve in-depth insight, analysis and display of massive and complex data. For example, in healthcare, doctors can easily understand the complex results by simple visual show.

(3) Predictive Analysis of Big Data

In big data era, people like to use data mining algorithms and strategies to mine the valuable information behind the massive data. In our country, data mining and predictive analysis are applied in many fields. E-government also uses data mining and predictive analysis to help decision-making. For example, flood control office can forecast rainwater situation by mining and analysis of previous rainwater data and take timely measures to prevent floods. In healthcare, doctors can take targeted measures to avoid premature infant death according to results of analysis.

3. Challenges of E-government Development

(1) The Level of E-government Management is Backward

At present, the construction of e-government information need to be further improved in our government administration. There is still a lack of unified management standards to standardize the level of e-government management. In the actual management, there are still many problems of imperfect government information and weak credibility of government information.

(2) Data and Information Sharing is Incomplete

Nowadays, though big data platform has realized information and data sharing in many departments, but there are still many departments that have not achieved information and data sharing. Only a small part of government information is completely open to the public. E-government lacks a uniform platform and rules for data and information sharing, so it is very difficult to share data and information of different departments in various regions.

(3) Public Participation is Incomplete

Public not only can get open information but also make suggestions to the government by using social media and government websites. The way of public participation has been gradually changed, and the enthusiasm has been greatly improved. However, there are still many problems. Firstly, public participation is affected by nationality, language, economy and other factors, poor information technology and insufficient infrastructure makes public participation in e-government unbalanced and makes it difficult to popularize e-government. Secondly, public participation is mostly passive. Most people use e-government system passively instead of reading information from e-government actively.

4. Solutions of E-government under Big Data Era

(1) Improving the Information Management Level of E-government

To improve the information management level of e-government, we need to improve the big data management technology, optimize the government management system and equipment hardware. Therefore, government needs to introduce advanced big data management technology, continuously improve the management level of big data technicians, government also needs to scientifically plan the development of e-government, and make the construction and management of e-government information platform by using big data technology.

(2) Constructing Uniform Technical Standards and Management System

Constructing uniform technical standards is the primary factor in e-government. Many

departments use different information system, so different systems can produce different data, which is difficult to share. So we need construct uniform technical standards in order to share data and information in e-government. In addition, government should improve the information management system of e-government in order to improve the efficiency of information acquisition, storage, analysis and management, at the same time, government should take measures to prevent data from being attacked and ensure the security of data.

(3)Increasing Public Participation

Data and information sharing can shorten the distance of regions, which brings great convenience to work and improves the efficiency of work. Therefore, government increasingly constructs the platform of e-government in order to let the public participate more in the system. Nowadays, the network is very popular, computers and mobile phones have been widely used. So it is very convenient for people to use network. So government need take steps to increase public participation in e-government. For example, government reduces business processes and government officers improve online efficiency, the problem of public can be solved in time, so people realize the convenience of online. Therefore, people more and more like to use e-government system when people really enjoy the benefits of big data platform.

5. Summary

Big data has developed rapidly in the modern society, which has brought many changes to e-government. Big data not only provides opportunities for the development of e-government but also brings challenges to the development of e-government. This paper summarizes the impact of big data and opportunities of e-government, this paper discusses the challenges of e-government, and then proposes the solutions of e-government in big data era.

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