

Chapter 9

Web Mining and Analytics for Improving E–Government Services in India

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ABSTRACT

The ever increasing technology usage and the globalization have given rise to the need of quick, accurate and smarter handling of information by organizations, states, nations and the entire globe. For every nation to be under any form of government, it became mandatory to have shorter turnaround time for their interactions with citizens. This pressure gave rise to the concept of e-Governance. It has been implemented by various nations and even UN reported an increase in E-Governance activities around the world. However, the major problems that need to be addressed by developing nations are digital divide and lack of e-Infrastructure. India started its e-Governance plan through a proposal in 2006 with establishment of National e-Governance Plan popularly known as NeGP headed by Ministry of Communications and Information Technology, Government of India. As per the Electronic Transaction and Aggregation Layer, millions of transactions are taking place on regular basis. Within 2015 itself, over 2 billion transactions have been carried out by the Indian citizens in various categories and sectors like agriculture, health, and the likes. For central government projects alone, around 980 million electronic transactions have taken place, while for state government projects, the combined total of all the states is close to 1.2 billion. With the kind of data getting generated through e-Governance initiative in India, it will open up lot of opportunities for data analysts & mining experts to explore this data and generate insights out of them. The aim of this chapter is to introduce various areas and sectors in India where analytics can be applied for e-Governance related entities like citizens, corporate and government departments. It will be useful for researchers, academicians and students to understand various areas in E-Governance where web mining and data analysis can be applied. The theoretical background has been supported by practical case study for better understanding of the concepts of web analysis and mining in the area of E-Governance.

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INTRODUCTION

With the rising ubiquity of ICTs, technology becomes an enormously powerful tool to ensure good governance. On one hand, the government is able to incorporate citizens in the process of governance and on the other hand, citizens are able to hold authorities accountable and demand information. The power of any citizen lies in their accessibility to information. E-Governance promotes this notion by promoting access to information in all corners of the nation. This chapter talks about how the idea of E-Governance has taken form over the years and become an indispensable part of how the country is run, focusing on India primarily. It then talks about the related aspects of E-Governance that include the data generation and areas which produce this data. Furthermore, it explores using advanced statistical tools to improve the efficiency of E-Governance and finally discusses some of the case studies that have been conducted on existing E-Governance projects. The aim of this chapter is to get a better understanding of the overall perception of E-Governance in India and how mining and analytics can be incorporated in the related areas.

BACKGROUND

Rise of E-Governance in India

The concept of E-Governance materialized at the turn of the century with the advent of the global wave of a drastic technological change. The arrival of Information and Communications Technology (ICT) paved way for a digitized and networked world facilitating an extensive use of the Internet. This networked globe fostered E-Governance. As stated by Gobind & Rao (2015) UNESCO states that “Governance refers to the exercise of political, economic and administrative authority in the management of a country’s affairs, including citizens’, the articulation of their interests and exercise of their legal rights and obligations. E-Governance may be understood as the performance of this governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities” (p. 69).

The eighties initiative by National Informatics Centre (NIC) to connect all the district headquarters is considered to be a landmark in the history of E-Governance in India. Consecutively, with the efforts of the government combined with the technology boom, there has been increased emphasis on policy making and using IT for the advancement of E-Governance. Passing the IT Act 2000 by the government was a major forward step towards the further development of E-Governance. With the passing of the act, initiatives and activities under E-Governance got a legal frontier (Weerakkody, 2012). Digital records, signatures, money transfers, notifications, etc. were all now authorized. Since then, there have been programs to compile a comprehensive and dynamic national database that provides information on all the chief E-Governance projects around the country. In 2003, the government approved National E-Governance Action Plan that was to be implemented during the period of 2003-2007 (Babbar & Jain, 2007) and intended to improve infrastructure and establish true governance. Similarly, the Digital India initiative, launched in July 2015 and scheduled for completion by 2019, has given further boost to the E-Governance scenario. The project aims to integrate the various departments in the government

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