Chapter 79

Importance of Big Data and Hadoop in E-Servicing

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ABSTRACT

Consumers are spending more and more time on the web to search information and receive e-services. E-commerce, e-government, e-business, e-learning, e-science, etc. reflect the growing importance of the web in all aspects of our lives. Along with the tremendous growth of online information, the use of big data has become a vital force in growing revenues. Consumers are today shopping multiple products across multiple channels online. This transformation is substantial and many of the e-commerce companies have now turned to big data analytics for focused customer group targeting using opinion mining for evaluating campaign strategies and maintaining a competitive advantage, especially during the festive shopping season. So, the role of intelligent techniques in e-servicing is massive. This chapter focuses on the importance of big data (since there is a large volume of data online) and big data analytics in the field of e-servicing and explains the various applications, platforms to implement the big data applications, and security issues in the era of big data and e-servicing.

INTRODUCTION

E-Services

Typically the term e-services is used to describe a variety of internet based electronic interactions ranging from basic services, such as the delivery of news and stock quotes, to smart services, Products, clothes etc. These electronic-services involve various types, delivery systems, advanced information technologies, methodologies and applications of online services and they are provided by e-government, e-business, ecommerce, e-market, e-finance, and e-learning systems.

There services produce a large volume of data online. Where is this data stored and how this data is processed and analyzed to produce the useful information. The key is Big Data Analytics where the huge data data generated by this various applications over online is processed and analyzed. There is a need of some intelligent approaches to evaluate e-service systems, conduct web user classification, help users online trading and support users online decision making.

Big Data

Big Data is transforming healthcare, business, and ultimately society itself, as e-services becomes one of key driving features during the modernization process. Many business cases utilizing big data have been grasped in recent years; Facebook Twitter & LinkedIn are examples of companies in the social networking realm. Other big data use cases have focused on capturing of value from streaming of video movies, monitoring of network traffic or upgrading of processes in the manufacturing industry. With the e-services initiatives across the world especially in India, the transactional data is developing exponentially and it has become difficult to analyze such huge volume of data stored at multiple locations with conventional data mining algorithms. The alternative to analyze large data is to use Big Data analytical tools. The tools having capabilities of mining large data sets in distributed environment help in investigating and analyzing e-services projects.

The progresses in Information Technology (IT) services and hardware have led to the generation of huge amount of data referred to as Big Data. There are projects/systems in e-service where this big data needs to be processed and analyzed for better and effective decision making. Due to the fact that the data generated has unstructured and formats, it is difficult to analyze such huge data using traditional analyses tools. Big data analytics can manage this dynamic nature of Big data, keeping it secure by applying the correct analytical technique to use the information in an effective manner. It has the capacity to interact with huge Volume, Velocity, Veracity and Variety of data. With its scalable nature, it can expand the technologies that can correlate data and produce exploitable results. Big data analytics can help the government in providing its services directly to its citizens. It has the ability to recognize patterns in a set and make predictions regarding past experiences and provide results for taking future actions. Big Data Analytics refers to the use of advanced analytic techniques against very large and different data sets that include structured/semi-structured/unstructured data and of different sizes. Big data is the term applied to data sets whose size and type is beyond the ability of traditional relational databases to capture, manage and process the data. Big data is defined in terms of 3 V's i.e. Volume, Velocity and Variety [Gartner]. Analyzing Big data allows analysts, researchers, government and business users to make better and faster decisions using data that was previously inaccessible or unusable. Using advanced analytics techniques, government or business agencies can analyze previously unexploited data sources autonomous or together with their existing enterprise data to gain new imminent resulting in significantly better and faster decisions.

Quite simply, the Big data era is in full force today as the world is changing through instrumentation, we are clever to sense more objects, and if we can sense it, we tend to try and store it. Through advances in communications technology, people and things are becoming increasingly connected –and not just some of the time, but all of the time. This intersecting rate is a escape train. Generally referred to as machine-to-machine (M2M), interconnectivity is responsible for double digit year over year data growth rates. Finally, because small integrated circuits are now so cheap, we are able to add intelligence to almost everything.

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