

Chapter 6

Big Data Analytics in the Healthcare Industry

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ABSTRACT

In the contemporary e-era, big data plays a major role across the manufacturing and production industries, service and consultancy industries, and of course, information technology, and it heightens the influence on healthcare industries too. More and bigger data is becoming accessible publicly like Google Trends, Cancer Genome Atlas data portal, etc. Hence, developing big data analytics tools and techniques is the need of the hour in healthcare and pharma. The problem of the healthcare industry generates with the lack of information that is available for decision-making. The volume of data available is no doubt too big, but the integration of data from different players becomes a very tedious task. The aim of this report is to provide a detailed comparative study of pharmaceutical industry from Indian and global perspectives and also to provide the applications of big data analytics in the healthcare industry and indicate the limitations and way forward.

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INTRODUCTION OF BIG DATA

Big data is the cornerstone of analytics irrespective of sectors. It creates lots of attention to very large and diversified data sets; it may include unstructured data & semi-structured data from different sources. Analysis of Big data permits us to make better and timely decisions. Big Data fulfills the Business Intelligence to inherit the functions of effective decisions & timely decisions with “Single version of the truth” (Prem, M.J. and Karnan, M., 2013). There is high ambiguity over transparency, compliance, and apprehensions regarding big data in the pharmaceutical industry, and hence the players need to ensure strong coordination between commercial and Research & Development entities, spring up analytical rigor and develop critical hypotheses that need to be tested systematically. Else big data might lead to incorrect conclusions that may have detrimental effects on a product or an entire portfolio (Mahajan, 2010). The Business Intelligence market growth in the pharmaceutical industry will be driven by factors like the need to develop an effective and transparent information infrastructure, identification of the latest sales forecasts and customer trends, attainment of cost efficiency, and increase in outsourcing.

Big data analytics applications of the health care industry have provided a lot of life-saving outcomes. In the context of the Health care industry, the current world has a threat of the consistent increment of disease and Big data analytics can help to derive insights on the systematic pattern of the disease which is collected the massive information from the patients and rest of the world. It evaluates the practitioner’s performance. Along with the seismic shift away from volume-based care to value-based care, the implementation of health care analytics provides new methods to evaluate the performance and effectiveness of health care practitioners. With ongoing performance evaluations, along with health data related to patient wellness, Big data analytics can be utilized to provide ongoing feedback on health care practitioners. It is the best method to predict the risk factors across the diseases. This cross-functional method will be a disruptive factor in the health care sectors. The average human lifespan is increasing along with the world population, which starts with the new challenges for health professionals. Two decades ago, gathering huge amounts of data for medical purpose has been a costly and time-consuming process. Nevertheless, current emerging technologies such as Big data analytics serves the purpose. As a McKinsey report states, “After more than 20 years of steady increases, healthcare expenses now represent 17.6 percent of GDP nearly \$600 billion more than the expected benchmark for a nation of the United States’s size and wealth.” One of the biggest obstacles are in the way to use big data in health care industry is “medical data”, how this medical data is blown out across many different sources governed by various states, hospitals, and administrative departments and Integration of these data sources would feasible to develop a new

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