

# Chapter 4

## The Use of Big Data in Marketing Analytics

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### ABSTRACT

*Big data has broken through the public imagination, has revolutionised the process through which business find innovative ways, and has transformed the data into valuable information that will shape business intelligence and gain business insights to make better decisions. The purpose of this study is to review the development of big data, architecture, and the use of big data in marketing analytics. From the analysis of literature reviews, a big data in marketing analytics model has been proposed. In using big data in marketing, marketers need balanced analytics and then identify opportunities for improvement based on reporting or analysing past and present big data to predict and influence the future.*

### INTRODUCTION

Big data analytics have been embraced as a disruptive technology that will shape business intelligence and to gain business insights to make better decision making (Fan et. al, 2015). The term of big data has been first used in 1989 by Erik Larson (Marr, 2015) and then being popularised by John R. Mashey in 1990s (Mashey, 1998). Big data is not just about the buzzword, it is a movement (Sarjana & Sanjana, 2013). Big data analytics has been around since 1663, when John Graunt dealt with overwhelming amounts of information using statistics to study the bubonic plague (Foote, 2017). Our current lives are filled and surrounded by all kinds of data and this data never sleeps (Domo, 2019). Chen et. al (2012) commented that it is also a step forward ‘from big data to big impact’. Big data has broken through the public imagination (Baer, 2013), has revolutionised the process through which business find innovative ways (Baig et. al, 2019), and has transformed the data into valuable information that could make the difference between business success and failure (Kauffmann et. al, in press).

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## ***The Use of Big Data in Marketing Analytics***

In marketing, as discussed in New Gen Apps (2017), big data can be used for several purposes. This includes market identification, trend analysis, understanding the consumer, markdown optimisation, market prediction, measuring influencers' impact and improving cross-selling. Customer Analytics, operational analytics, fraud and compliance, new product and service innovation, and enterprise data warehouse optimisation are use cases in sales and marketing. Also, Customer Value Analytics (CVA) is making it possible for marketers to deliver consistent omnichannel customer experiences across all channels (Columbus, 2016). Lozada et. al's study (2019) discussed the use of big data and its incorporation into the core of the processes associated with innovation management and along with the strategy, including value co-creation initiatives. To contribute to digital marketing success, Saran (2018) highlighted that big data helps marketers to design better marketing campaigns, to have better pricing decisions, and to show appropriate web contents.

Marketing analytics is the ticket to better decisions and stronger results, however many marketers still struggle with shoring up that foundation. When it comes to making the most of data, marketers must get the information in order if they want to turn insights into action (Carey, 2017). The major problems and challenges of big data are handling of data; security, privacy and regulation; lack of skilled staff; technology development is too fast; and financial resources. The summary of these challenges can be found in Table 1. There is a need for systematic planning in big data to be used in marketing analytics. Thus, the purpose of this study is to review the development of big data, architecture and the use of big data in marketing analytics. From the analysis literature reviews, a model will be proposed in relation to the big data in marketing analytics.

Note:

1. Vaghela (2018)
2. Bekker (2018)
3. Yakimova (2019)
4. PieSync (2020)
5. Hamilton and Sodeman (2020)

Overall, this chapter covers three main sections. Big data section discusses the overview of big data, characteristics of big data, sources of big data, content formats of big data, and types of marketing data. The second section discusses about big data architecture and the third section involves big data in marketing analytics discussion. In addition, the final section of this book chapter suggests the future research directions of big data in marketing analytics.

## **BIG DATA**

### **What is Big Data?**

Big data possess a suite of key traits, volume, velocity and variety, as well as exhaustivity, resolution, indexicality, relationality, extensionality and scalability. Big data as an analytical category needs to be unpacked, with the genus of big data further delineated and its various species identified through ontological work that we will gain conceptual clarity about what constitutes big data, formulate how

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