



DATA SCIENCE AND MARKETING ANALYTICS: DECISION MAKING BASED ON DATA GENERATED BY A COMBINATION OF MANAGED AND ORGANIC METHODS



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ABSTRACT

Nowadays, we live in a big data revolution and are at the forefront of the consumer analytics industry. Real-time technology allows for the collection of extensive data on consumer phenomena. Now individual consumers can access raw data with unprecedented speed, volume and diversity of big data. Based on resource-based theory, a conceptual framework has been proposed to facilitate understanding the impact of big data on different marketing businesses, thus helping companies exploit its benefits effectively. Senior management evaluates an organic and managed approach to managerial sense-making to maximize the impact of skilled employee analytics. Top management makes the meaning of the Big Data Analytics (BDA). The BDA consists of four core activities: - piloting Big Data Analytics; - disseminating Big Data Analytics information, -improving digital data quality, - acquiring external knowledge. It also drives progress toward data-driven decision making at BDA by facilitating the thought process and increasing the impact of skilled employees. This paper outlines a strategy for improving the quality of marketing insight, data-driven decision-making and acquiring external knowledge.

KEY WORDS: marketing strategy; big data analytics implementation; data driven marketing; Big Data Analytics (BDA); Marketing performance.

1. INTRODUCTION:

The promise to incorporate big data and analytics into a company's strategy is putting pressure on marketing departments to prioritize data-driven analytics in marketing decisions. Analysis is a broad term for tools that help you discover hidden patterns in your data. Industry experts studying BDA implementation have discovered that the organization's ability to integrate analytics into decision-making is critical to successful implementation (Rostamzadeh et al., 2021). As a result, you need powerful analytics in-house. You need to make a decision from this perspective. How can you involve decision makers, gain experience, and ultimately criminalize your company's knowledge? It is now in the hands of several experts in the company (Gupta et al., 2021). Also, if you want to track the evolution of data-driven marketing and digital technology over time. We have discovered that the history of data-driven marketing can be divided into five different stages (Johnson et al., 2021). Each stage describes how the business environment in the respective stage influenced data-driven applications and how this ultimately contributed to the expansion of the role and scope of marketing within an organization (Shah & Murthi, 2021).

This study (Cabrera-Sanchez & Villarejo-Ramos, 2019; Verma et al., 2018) has discovered a number of Top managements,

organizational culture, organizational infrastructure, and system characteristics are just a few of the factors that influence BDA implementation. In the early stages of this study, interviews with 15 marketing and analytics professionals revealed that many marketing organizations found the pace of change to be overwhelming and lacked a clear understanding of the resources and expertise required to become a fully data-driven organization (Thong, 1999).

Administrators may be convinced that a Business Performance Assessment (BDA) is needed for future competitiveness, but for many, which technologies and tools are long-term relevant and that as a result, I'm not sure where to bet early on. Marketing employees may find it difficult to move from empirical decisions to data-based decisions, especially if the data conflicts with traditional knowledge (Wamba et al., 2017).

This is complicated further by the fact that employees who lack business performance assessment skills frequently struggle to visualize desired processes and outcomes. The current study seeks to shed light on marketing departments' progress in implementing big data analysis capabilities.

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2. LITERATURE REVIEW:

2.1 BDA Analytics in Marketing:

To gain advanced insights about users, the primary goal of BDA is to explore data and identify patterns and relationships that are imperceptible at first glance. According to qualitative research (Zahay et al., 2019), companies go through four stages before becoming fully data-driven marketers. Firms in the sprouting stage begin by experimenting with analytical tools. They then move on to the recognition stage, which is followed by a commitment stage and a culture shift stage before reaching the fully data-driven stage. (Johnson et al., 2021)

The successful application of BDA in the modern marketing environment depends on a firm's ability to perform knowledge fusion, including traditional marketing analytics or the integration of market research and big data analytics (Xu et al., 2016). (Iacobucci et al., 2019) reminds us that profitability gains are hard-earned. They require significant customization of the product service environment and even multidisciplinary collaborations with academic researchers. According to marketing organizations must clarify and balance the relationship between marketing analysis and marketing creativity in order to achieve overall success (Johnson et al., 2021).

2.2 Theory: Organizing Vision

During the early stages of an IT innovation's diffusion, a diverse network of interests coalesces around the innovation. This community of interested parties engages in discussion to better understand the role and significance of technology in advancing organizational efficiency (Ambler et al., 2004). We see marketing executives becoming more steadfast in their belief that data-driven marketing decisions are superior to those based on creativity or intuition. As a result, data-driven marketing has become the organizational vision of Marketing BDA (van Bruggen & Wierenga, 2001). In the early stages of innovation in information systems, multiple seemingly unrelated applications and experiments often converge to create systematic solutions. The stakeholder community interprets these related activities to form a logic that becomes the organizational vision (Ling-ye, 2011). This clear articulation of the organizational vision around the technology makes the case for widespread adoption of the technology by companies.

2.3 BDA Sensemaking

Individuals and departments confronted with ambiguous situations and organizational flux (internal and external change pressures) will engage in sensemaking to reduce ambiguity and achieve a sense of direction. Their goal is to achieve a sense of rationality and predictability in the face of ongoing events (France & Ghose, 2019). Sensemaking begins with the use of mental models from previous experiences for bracketing and labelling or recognizing, categorizing, and naming unfolding events. According to practitioner feedback, managers perceive BDA implementation to be a tumultuous process (Johnson et al., 2012). BDA is distinguished by the volume, variety, and veracity of data flows, which necessitates resource-intensive and complex application. To understand and achieve competence in marketing BDA analytics, marketing departments perform four primary sensemaking activities: improving digitized data quality, acquiring external

knowledge, disseminating new techniques, and experimenting with data (Akgün et al., 2014).

3. CONCEPTUAL FRAMEWORK AND HYPOTHESES

According to the conceptual framework depicted in Figure 1, top management is the primary initiator of data-driven decision-making within the firm. To understand the nature and relevance of BDA analytics to the marketing effort, the marketing department's leadership initiates sensemaking. External knowledge acquisition, improving digitized data quality, disseminating new techniques, and experimenting with data are all examples of sensemaking activities (Johnson et al., 2021).

3.1 BDA External Knowledge Acquisition:

External BDA knowledge acquisition refers to efforts to acquire information on the most recent analytical techniques, software applications, and data sources. Supply chain partners such as

advertisers, digital analytics data suppliers, analytics consultants, conference attendance, and training programs are all sources of marketing BDA information. (Verma et al., 2018)

The firm's regular market sensing activities, which include continuous monitoring of customers, competitors, events, and trends, are now shifting focus to understanding competitors' responses and intentions toward BDA (Duan et al., 2012). Marketers are under pressure to accelerate departmental learning of BDA principles and the latest "thinking" on how BDA can inform tactical and strategic decisions as an emerging area of expertise (Johnson et al., 2021).

Figure 1. Marketing BDA Sensemaking and Data Driven



3.2 Hypothesis 1: The greater the level of top management support, the greater the level of marketing BDA sensemaking, specifically (a) external BDA knowledge acquisition, (b) digitized data quality, (c) BDA experimentation orientation, and (d) BDA information dissemination:

Top management is the primary initiator of the adoption of new business processes and technologies within organizations in response to external trends or when deciding on a new strategic direction. When faced with ambiguity and uncertainty regarding

market opportunities or new technologies, firms seek legitimacy by imitating successful competitors. (Mena & Chabowski, 2015)

Top management support mediates the effects of external forces on the firm's response and determines the speed with which IT systems such as enterprise resource planning and business processes are integrated. These trends can be seen in the adoption of e-market technologies and online retailing (Wamba et al., 2017).

3.3 Hypothesis 2 - The greater the level of marketing BDA sensemaking, specifically (a) external BDA knowledge acquisition, (b) digitized data quality, (c) BDA experimentation orientation, and (d) BDA information dissemination, the greater the level of marketing insight quality to reflect the diagram:

Expect BDA insight quality to be proportional to the marketing department's level of sensemaking. BDA insights provide new insights into the cause-and-effect relationships between variables, as well as a better understanding of customer behaviour and expectations (Erevelles et al., 2016). High-quality BDA insights identify the triggers of an intended customer response, as well as when and how to most effectively influence behaviour. Sensemaking improves the marketing department's cognitive ability to integrate data from multiple sources and a similar line of reasoning suggests that the organic sensemaking surrounding BDA analytics, as well as the employment of BDA skilled personnel, will further reduce the cognitive effort required to achieve precise decision making (Erevelles et al., 2016).

4. CONCLUSIONS

In this study, the most important aspects of BDA in the marketing department are considered. However, because big data requires so many processes, a lot of organizations are turning to enterprise analytics teams and former divisional analytics. Accordingly, enterprise analytics can be less organic for departments, resulting in faster transition in operations but only limited in improving marketing insights. More research is needed to fully understand the implications of enterprise analytics for departmental understanding and the effectiveness of data-driven marketing.

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