The Determinants of Big Data Analytics Driven Marketing Decision-Making

The growth of data-driven marketing decision-making within most firms is currently undergoing an evolution from the occasional use of statistical techniques to more standardized use of big data analytics (BDA) technologies and simultaneous transition to integrative ‘black-box’ like software solutions. Amid these developments, marketing practitioners must garner strategic insights from expanding data sources and meet return on investment (ROI) requirements while they learn. Much like the new media revolution before it, BDA is another equivocal challenge for managers, involving conflicting information, extensive discussion and acting on hunches before clarity emerges (Daft, Lengel and Trevino 1987).

Organizational commitment to new technology often brings the possibility of multiple outcomes without a clear understanding of the eventual benefits of the technology (Berente et al. 2011; Swanson and Ramiller 1997). We draw on sensemaking theory (Weick 1979) by which humans engage in actions and speech to retrospectively understand ambiguous circumstances. “Sensemaking is a social process where individuals and groups fashion an understanding of new phenomena through iterative testing of plausible explanations” (c.f. Berente et al. 2011; Weick et al. 2005).

Based on sensemaking theory and interviews of middle and senior marketing managers, we propose a theoretical framework that explains how marketing departments are becoming more data-driven through organizational learning. The framework postulates that big data analytics learning activities drive the quality of BDA insights and the relative influence of BDA employees within the business unit. BDA insight quality and BDA employee influence are
expected to mediate the effects of BDA learning on BDA-driven decision-making. We conceptualize BDA learning activities as consisting of four variables: external BDA knowledge acquisition, deployment of BDA techniques and findings, digital data quality (includes data integration), and BDA experimental orientation.

Twelve (12) middle to senior managers were interviewed to understand the nature of BDA implementation within the marketing organization and the importance of key variables influencing that process. Quantitative data were collected through a survey of a panel of middle to senior marketing officers including brand, product and marketing managers at 295 firms based in the United States. IBM SPSS AMOS was used to estimate a structural equation model.

The results indicate that the quality of BDA insight gained by the marketing department is driven by the levels of digital data quality, the degree of deployment of BDA techniques and findings, and the degree to which the marketing organization embraces a BDA experimental orientation. The degree of decision-making influence of BDA skilled employees is a function of the degree of BDA experimental orientation and external BDA knowledge acquisition. These learning variables were demonstrated to increase the degree of the marketing organization’s data-driven decision-making via their effects on BDA quality insights and BDA employee influence. These represent parallel, but possibly independent tracks, in advancing data-driven decision-making within the marketing organization since a significant relationship was not found between BDA employee influence and BDA quality insights.

This study illustrates the importance of firms having an experimental orientation in implementing new marketing business processes. The experimental orientation of the
marketing organization increases its willingness to recruit new expertise and diversify its
decision-making capabilities. Another contribution of the study is that it demonstrates that
efforts to develop new equivocal marketing capabilities are limited by the marketing
organization’s ability to demonstrate quality and consistent insights from the new process and
also by the ability to not just recruit new expertise, but to also influence senior management
decision-making.

References

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