Industrial Marketing Management xxx (2015) xxx–xxx

Contents lists available at ScienceDirect

Industrial Marketing Management

The use of Web analytics for digital marketing performance measurement ☆

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ARTICLE INFO

Article history:
Received 16 November 2013
Received in revised form 13 November 2014
Accepted 14 November 2014
Available online xxxx

Keywords:
Case study
Digital marketing
Industrial business
Performance measurement
Web analytics

ABSTRACT

This study proposes that the benefits gained from marketing performance measurement are determined by how an organization exploits the metrics system under specific circumstances. For this purpose, the authors review performance measurement literature and apply it to the use of Web analytics, which offers companies a metrics system to measure digital marketing performance. By performing an in-depth investigation of the use of Web analytics in industrial companies, the study shows that an organization's efforts to use marketing metrics systems and the resulting outcomes cannot be understood without considering the reasoning behind the chosen metrics, the processing of metrics data, and the organizational context surrounding the use of the system. Given the continuously growing importance of digital marketing in the industrial sector, this study illustrates how industrial companies characterized by complex selling processes can harness Web analytics to demonstrate how digital marketing activities benefit their businesses.

1. Introduction

The role of digital marketing[2] (DM) in a firm's marketing strategy has been expanding in the industrial sector, as evidenced by industrial firms' increasing investments in DM activities, which currently account for approximately one-quarter (26%) of industrial firms' total marketing budgets (Gartner, 2013). In addition to cost effectiveness and changes in customer behavior, investments in DM are motivated by its results being more easily measured compared with those of traditional marketing (Hennig-Thurau et al., 2010; Pickton, 2005; Wilson, 2010). As customers are increasingly interacting with companies through digital channels, marketers have realized the need to track these interactions and to measure their performance (Chaffey & Patron, 2012). For this purpose, firms must adopt Web analytics (WA), defined as "the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimizing Web usage" (Web Analytics Association, 2008, p. 3). In this study, WA refers to a tool that collects clickstream data regarding the source of website traffic (e.g., e-mail, search engines, display ads, social links), navigation paths, and the behavior of visitors during their website visits and that presents the data in a meaningful format. The WA data are used to understand online customer behavior, to measure online customers' responses to DM stimuli, and to optimize DM elements and actions that foster customer behavior that benefits the business (Nakatani & Chuang, 2011).

Although it is limited to the digital environment, the use of WA is an important developmental step toward measurable marketing. As the role of the digital world expands through increased digital media consumption and the integration of the online and offline worlds, the proportion of marketing actions covered by WA is growing. Many offline marketing actions already include digital elements that can be tracked by WA. Examples include quick response (QR) codes embedded in print and outdoor media and augmented reality applications used in, e.g., product demonstrations at trade shows. Additionally, firms can design offline campaigns to drive traffic to digital channels and to measure their impact on website customer behavior. However, firms' ability to harness WA to improve marketing performance remains limited. In a recent survey of 1000 U.S. marketers, three of four marketers believed that measuring DM performance was important, but less than one-third (29%) thought they were doing it well (Adobe, 2013).

WA is used by more than 60% of the top 10 million most popular websites around the globe (Web Technology Surveys, 2014). In addition to the value of the data that WA produces, the high adoption rate is driven by the fact that some WA tools, such as Google Analytics, can be acquired and utilized free of charge. Despite the high adoption rate, academic research on WA remains limited, and much of the research results reveal a discouraging picture of its use. On average, WA is utilized on an ad-hoc basis, the metrics data are not used for strategic purposes, and the benefits of the usage remain unclear (Hong, 2007; Järvinen, Töllinen, Karjaluoto, & Jayawardhena, 2012; Welling & White, 2006).

☆ Submission declaration: This full-length manuscript is not under consideration for publication elsewhere, and its publication is approved by all of its authors.

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[2] Digital marketing refers to marketing that uses electronic devices and channels to support marketing objectives. In this study, digital marketing includes marketing via websites, search engines, online advertisements, e-mail and social media channels. Digital marketing is considered to be a synonym for electronic marketing.

http://dx.doi.org/10.1016/j.indmarman.2015.04.009
0019-8501/

In contrast, a few case studies demonstrate that measuring and optimizing DM performance measurement with WA have improved the efficiency of marketing actions and subsequently increased sales revenue (Phippen, Sheppard, & Furnell, 2004; Wilson, 2010). Hence, the evidence regarding the benefits of exploiting WA for DM performance measurement is contradictory.

In addition, whether performance measurement and the use of measurement data in decision making result in improved firm performance or other business benefits is generally disputed in the literature. For instance, Franco and Bourne (2004) analyzed 99 published papers regarding performance measurement and concluded that more rigorous research methods were associated with a lower likelihood of performance measurement having a positive impact on firm performance. By contrast, various marketing studies have shown that the use of marketing performance measurement data in marketing decisions has positive performance implications (e.g., Kannan, Pope, & Jain, 2009; Lodish, Curtis, Ness, & Simpson, 1988; Mintz & Currim, 2013; Natter, Mild, Wagner, & Taudes, 2008; Silva-Risso, Bucklin, & Morrison, 1999; Zoltners & Sinha, 2005). However, in practice, many marketing managers remain skeptical toward the use of performance measurement data and instead rely on intuition and experience in decision making (Germann, Lilien, & Rangaswamy, 2013; Lilien, 2011). This perspective is also supported by scientific evidence. Heuristics studies demonstrate that less information may in fact result in more accurate and efficient decision making than extensive analysis of past data because heuristic rules can be used to manage uncertainty more efficiently and robustly than rules based on a broader use of information (Gigerenzer & Brighton, 2009; Guercini, 2012; Guercini, La Rocca, Runfola, & Snehota, 2014). Given this contradictory evidence, this study proposes that performance measurement or the use of WA for DM performance measurement does not inherently improve performance. Rather, the benefits gained are determined by how companies exploit the system under specific contextual circumstances.

Against this backdrop, this study has three aims. First, it advances marketing performance measurement theory by elucidating how organizations can design and apply marketing metrics systems in a way that creates business benefits. Second, although previous findings demonstrate that WA is more beneficial in businesses in which transactions are processed online (Järvinen, Töllinen, Karjaluoto, & Platzer, 2012), this study demonstrates how industrial companies characterized by a long-duration selling process and an emphasis on face-to-face interaction with customers (Webster, Malter, & Ganesan, 2005) can use WA for DM performance measurement. Third, at a time when new analytics tools and technologies are providing marketers with a rapidly increasing volume of digital data regarding online customer behavior (Deighton & Kornfeld, 2009; McAfee & Brynjolfsson, 2012; Russell, 2010), this study examines the limitations of relying on such data and emphasizes the future challenge of achieving a holistic understanding of customers and marketing performance.

To reach our research objectives, we perform an in-depth investigation of a company that has experienced remarkable benefits from the use of WA and compare the company's WA use with that of two other companies that have not gained notable benefits despite their active use of WA. The differences in the use of WA are examined in three dimensions: the selection of WA metrics, the processing of WA data, and the organizational context of WA use (adapted from Pettigrew, Whipp, & Rosenfield, 1989). A similar approach has been used in the performance measurement literature (Bourne, Kennerley, & Franco-Santos, 2005; Bourne, Neely, Platts, & Mills, 2002; Bourne et al., 1999; Martinez, Pavlov, & Bourne, 2010). However, this study extends Pettigrew et al.'s (1989) model by demonstrating how it can be applied in marketing performance measurement research.

The remainder of the article is organized as follows: We begin by explaining how the dimensions of Pettigrew et al.'s (1989) model are adapted for the purposes of this study. Thereafter, we review and divide the existing findings regarding performance measurement under the adapted dimensions and discuss how the findings are related to evidence derived from the WA research. In the methodology section, we justify the rationale for using a case study approach and describe the data collection and analysis methods that are used in this study. Subsequently, we present the cross-case findings. Finally, we discuss the theoretical contributions and managerial implications of the study, its limitations, and avenues for future research.

2. Framework for investigating the use of performance metrics systems

Research on DM performance measurement with WA is scarce and theoretically underdeveloped. Therefore, we consider a broader perspective for the literature review and combine findings from performance measurement and marketing performance measurement literature. We show that the existing findings regarding the use of performance measurement systems are often parallel to available anecdotal evidence regarding the use of WA for DM performance measurement. The literature review is structured according to the three dimensions of Pettigrew et al.'s (1989) framework, which was originally designed to investigate strategic change in organizations. The key idea of the framework is that the content of change, the process of implementing change and the organizational context in which the change occurs are interrelated. Thus, strategic change can only be understood by investigating all three dimensions. Specifically, content (i.e., the what of change) refers to the particular areas of transformation under examination. Process (i.e., the how of change) refers to the frameworks, patterns, actors, and tools that transition the organization from its present to a future state. Context (i.e., the why of change) refers to the organization's internal context (i.e., antecedent conditions, resources, capabilities, structure, leadership, dominating frames of thought, culture, and politics) and the external environment (i.e., the economic, business, and political environment and social and economic trends) in which change occurs.

Pettigrew et al.'s (1989) framework was selected as a guide for this study because it provides a sound structure for organizing disparate findings from the performance measurement literature to develop a holistic understanding of the elements that affect the firm's ability to design and exploit a marketing metrics system. The framework has been adopted in a number of studies on the use of performance measurement systems, all of which have concluded that the content, process, and context of performance measurement affect the outcome of the system (Bourne et al., 1999, 2002, 2005; Martinez et al., 2010). In these studies, the dimensions have been adapted to better harmonize with performance measurement research and the precise research questions. Therefore, the following definitions are formulated by combining and summarizing the core idea of each of Pettigrew et al.'s dimensions in previous performance measurement studies (e.g., Bourne et al., 2005; Martinez et al., 2010):

> *Performance measurement content* refers to the actual metrics system that is developed, including what is being measured, what metrics are selected, and how they are structured as a complete metrics system.
>
> *Performance measurement process* refers to the process through which the performance data are refined and managed.
>
> *Performance measurement context* refers to the internal and external organizational contexts in which the use of a metrics system occurs.

For the purposes of this study, we use these definitions and extend their use to address marketing metrics and WA metrics systems. However, regarding the performance measurement context, this study exclusively focuses on the internal context, and therefore, the external context is outside the scope of this research.

Please cite this article as: Järvinen, J., & Karjaluoto, H., The use of Web analytics for digital marketing performance measurement, *Industrial Marketing Management* (2015), http://dx.doi.org/10.1016/j.indmarman.2015.04.009