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3 Data-driven marketing processes

Boundaries and how to overcome them

Heidi Lämsipuro and Heikki Karjaluoto

Introduction

The enormous sets of data that are currently accessible for organisational use can both overwhelm and offer new opportunities to today's marketing professionals. Ever-developing web and technological advancements present marketers with better approaches to measuring, optimising and automating marketing processes; as a result, marketers are increasingly placing analytics and data analysis at the centre of organisations' marketing functions (Day and Moorman, 2016). Despite various advancements in data interfaces and services, drawing conclusions that could prompt feasible action are not yet used comprehensively to influence decision-making. Additionally, marketers are facing an expanding demand from top management to quantify the marketing professionals' performance (Järvinen, 2016). The level to which organisations collect data is high; however, strategic and practical data usage remains incredibly low (Chaffey and Patron, 2012).

Previous studies have focused on numerous themes that either overlap or surround data-driven marketing and marketing analytics practices (Chaffey and Patron, 2012; Hauser, 2007; Järvinen and Karjaluoto, 2015; Jobs, Aukers, and Gilfoil, 2015; Liu, Singh, and Srinivasan, 2016; Martens *et al.*, 2016; Netzer *et al.*, 2012; Verhoef, Kooge, and Walk, 2016; Viktor, Pena, and Paquet, 2012; Wedel and Kannan, 2016; Wilson, 2010). Studies have highlighted both the fundamental shortage of marketing data professionals and the lack of knowledge regarding how much companies are currently using data-driven decisions in marketing (Erevelles, Fukawa, and Swayne, 2016). These studies describe a need for knowledge of effective marketing analytics capabilities (Day and Moorman, 2016). Day and Moorman (2016) state the need for gaining practical knowledge by studying the factors that influence marketing measurement adoption and the process needed for the successful implementation of marketing analytics. Thus, both practice and scholarly research call for further investigation into barriers to the systematic usage of data-driven marketing, which is what this study aims to explore.

Against this backdrop, this study aims to advance the knowledge of barriers that hinder the implementation of data-driven marketing practices in organisations via a qualitative approach. The data and methodology that are used in this research include 10 marketing professionals' interviews as well as a thorough literature review to describe the study's theoretical framework and positioning. To gather insight into the research problem, the barriers mentioned by the interviewees were categorised through a qualitative analysis that was based on a framework from a previous literature review (e.g. Day and Moorman, 2016).

This section presents the background for this study, followed by the theoretical framework for categorisation of the barriers. The data selection, methodology and justification

for using a qualitative approach are detailed in the following section. This is followed by the results of the study. Finally, the findings and limitations of this study are discussed. Additionally, recommendations for future research are presented.

Theoretical framework and literature review

Most marketing professionals agree that ‘data-driven marketing is crucial to success within a hypercompetitive global economy’ according to Forbes Insights’ online survey (see Further reading). Still, many organisations have yet to implement such processes in their marketing strategy. One of the main aims of this research is to determine the reasons for this lack of adaptation of data-driven marketing.

Marketing can be approached from varying perspectives, for example, as a strategic function or as an organisational-wide culture (Day and Moorman, 2016). Since this chapter dives into the concept of marketing capabilities, intertwining and overlapping themes that affect such capabilities need to be considered.

A literature review by Day and Moorman (2016), ranging from the 1990s to 2015, concluded the four elements of marketing organisations: (1) capabilities, meaning the collection of organisational information and skills that execute marketing activities and organisational changes, in response to its marketplace environment; (2) culture, meaning a set of beliefs and actions inside the organisation; (3) configuration, meaning the measurement systems, metrics used and the organisational structure and (4) the human capital, meaning leaders and employees that build, incorporate and assess the organisational performance and strategy (Day and Moorman, 2016, pp. 6–11).

However, per Chaffey and Patron (2012), challenges with people, structures and processes have surpassed challenges that are linked to data integration and technology when discussing data usage in marketing. Other researchers endorse this thinking (Branda, Lala, and Gopalakrishna 2018; Davenport and Harris, 2007; Germann, Lilien, and Rangaswamy, 2013; Gonzalez and Melo, 2017; Wedel and Kannan, 2016).

To understand such barriers in people, processes and structures, this research explores the overlying factor: organisational culture. Wedel and Kannan (2016) emphasise that the main obstacles to the utilisation of marketing data and analytical methods for organisations lie, firstly, to what extent organisational culture and structure enable data-driven decision-making and secondly in whether the organisation invests in the education and training of analytics professionals. An analytics supportive organisational culture is concentrated on gaining knowledge, continuous information sharing and cultivating a setting where people are urged to try different things with new arrangements by experimenting to help foster data-driven marketing development (Gonzalez and Melo, 2017; Mezas *et al.*, 2001). As stated previously, organisations’ top management must become involved and foster such creative, experimental and open viewpoints (Mezas *et al.*, 2001).

Organisational culture is inextricably linked to leadership (Groysberg *et al.*, 2018; see Figure 3.1). Therefore, various studies that discuss cultural barriers cite top management as a possible issue for marketing analytics integration. Davenport and Harris (2007) argue that top management’s support is necessary for the implementation of data utilisation in decision-making. Other studies discuss the importance of supportive top management for successful marketing analytics integration into organisational functions (Branda, Lala, and Gopalakrishna, 2018; Kiron *et al.*, 2011). Additionally, it is often the founders and influential managers that shift organisational cultures and instil thoughts and values in employees’ minds that last for a considerable timeframe (Groysberg *et al.*, 2018). Implementing

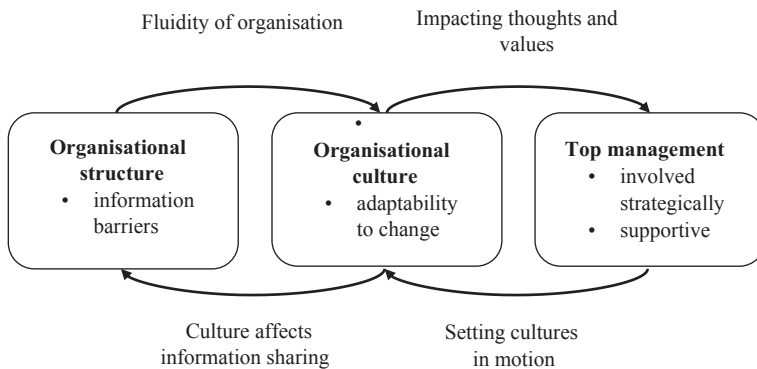


Figure 3.1 The framework of ‘Barriers of data-driven marketing’ based on past research.

Source: Based on Day and Moorman (2016, pp. 6–35).

data-driven marketing predominantly requires some form of change (Levin and Gottlieb, 2009), and previous research has come to the unanimous conclusion that resistance to organisational change is significantly high (Rosenberg and Mosca, 2011). Mezias *et al.* (2001) argue that communities’ past thinking is integrated into not only rules, routines and programmes but even human capital. Consequently, the mentioned cultural barriers of data-driven marketing are highly linked to management. Thus, this research investigates top management as one of the main barriers to successful data-driven processes (see Figure 3.1).

Organisational change, learning and adaptivity require a fluid organisational structure (Banerjee and Srivastava, 2017). Thus, another important barrier regarding culture is the structure of an organisation. Chaffey and Patron (2012) list company culture, conflicts of interest between departments and a siloed organisation as barriers to the integration of web analytics. Per Banerjee and Srivastava (2017), culture is fundamental in forming the structure of an organisation. Furthermore, organisational structure and culture are unpredictably related to how advancement and innovation are managed or executed in any association (Banerjee and Srivastava, 2017). Thus, organisational culture, organisational structure, top management characteristics and the factors within them that may present barriers to data-driven marketing deployment are visualised in Figure 3.1. Expert interviews are used to analyse the barriers to data-driven marketing deployment.

Methodologies

The study’s data collection method was interviews, which is best suited for situations where the study is concentrating on the discovery of, for example, experiences, interpretations, attitudes and values that cannot be portrayed in a more systematic way (Carson, Gilmore, and Perry, 2001; Hirsjärvi, Remes, and Sajavaara, 2009). Semi-structured with mainly ‘how’ and ‘what’ questions were utilised to allow for more in-depth data (Koskinen, Alasuutari and Peltonen 2005).

Multiple steps were taken to ensure the strategic yet subjective selection of interview participants. This study utilised theoretical sampling, which is defined as the purposive

Table 3.1 Interview information

<i>Interviewee</i>	<i>Duration</i>	<i>Date</i>	<i>Situation of interview</i>	<i>Industry</i>
Company A	31:22	18.11.2019	Face-to-face	Projects
Company B	27:10	19.11.2019	Face-to-face	Grocery trade
Company C	19:46	22.11.2019	Via phone	Supply chain
Company D	35:08	11.12.2019	Face-to-face	Marketing
Company E	32:01	18.12.2019	Face-to-face	Chemicals
Company F	44:21	20.12.2019	Face-to-face	Logistics
Company G	25:30	23.12.2019	Via Skype	Manufacturing
Company H	20:51	27.12.2019	Face-to-face	Technology
Company I	17:42	13.01.2020	Via phone	Furniture
Company J	35:18	17.01.2020	Face-to-face	Marketing

selection of interviewees based on their relevance and the potential they offer for establishing new concepts by considering their characteristics and dimensions (Corbin and Strauss, 2008). During this research process, ten interviews were conducted. To ensure both a valid theoretical sampling basis and broad representation, specific criteria were established for the interviewees, including being a representative of a company that operates in the Finnish region and holding a position that enables them to execute marketing actions based on possible data analysis and insights. The final criteria sought to ensure that the interviewed experts would represent a wide variety of company sizes, company lifecycles and industries, adding diversity and depth to the data (see Table 3.1). All of the interviews were conducted in Finland.

The current research utilised interpretive techniques, such as thematisation, coding and in-depth analysis, to provide a solid theoretical basis despite its subjectivity. Nonetheless, this qualitative research attempts to provide a basis for data-driven marketing processes research through a more in-depth look into the topic instead of presenting generalisable results. Such conclusions might be unattainable for executing quantitative methods (Petrescu and Lauer, 2017). Carson, Gilmore, and Perry (2001) argue that a qualitative research method is applicable in circumstances where the research aims to develop a more in-depth understanding of a subject that has not previously been comprehensively studied. Hence, the philosophical approach of this research justifies the subjectivity of its means.

Results: data-driven marketing boundaries

Through the interview data, barriers to data-driven marketing in Finnish organisations were identified and categorised per a framework by Humphrey (1988). Despite the wide ranges in organisational size and various lifecycle stages, many similarities in perceived and experienced barriers emerged from the interviews. Based on previous research, the discovered barriers were categorised into three groups: cultural barriers, structural barriers and top management barriers. Almost all interviewees considered the barriers highly linked and even partly overlapping. Thus, some issues that are described in the different sections might have similarities. Nevertheless, distinguishing each problem was useful for this research because unique solutions were found for each category. Furthermore, these categorisations and their linked nature are supported by previous research (Banerjee and Srivastava, 2017; Branda, Lala, and Gopalakrishna, 2018; Chaffey and Patron, 2012;

Deshpandé and Webster, 1989; Germann, Lilien, and Rangaswamy, 2013; Kiron *et al.*, 2011; Mezas *et al.*, 2001).

Cultural barriers

Banerjee and Srivastava (2017) describe organisational culture as the shared values that establish a common ground and direction for the entire organisation. Schein (1992) defines organisational culture as a set of common hierarchical convictions and qualities that influence the organisation. Reflecting on these perspectives, the interviewees described multiple reasons for barriers relating to organisational culture. Seventy percent of the interviewees discussed the importance of a shared mindset as an enabler of data-driven decision-making in marketing. The interviewees explained that without commonly shared ideas and ambitions, moving forward with a few people or teams would likely involve setbacks and hindrances caused by clashing ideologies.

Challenges linked to change management, whether related to people, structure or processes, were common amongst the interviewees. This aligns with previous research (Branda, Lala, Gopalakrishna, 2018; Chaffey and Patron, 2012; Davenport and Harris, 2007; Germann, Lilien, and Rangaswamy, 2013; Gonzalez and Melo, 2017; Wedel and Kannan, 2016) that states that such obstacles have surpassed the complications faced by, for example, data implementation. Moreover, more than half the interviewees mentioned the demand for a common language as well as connected virtual environments that enable data sharing without boundaries, both of which are closely linked to organisational culture. Similarly, some interviewees raised concerns regarding silos, where, despite a common language, the disruption in data distribution caused different decision-makers to have different views on the same case or process. Even in cases where the data available were not being utilised productively, issues were found that traced back to an organisational culture where data-driven decision-making was not made a shared goal and priority.

As Germann, Lilien, and Rangaswamy (2013) argue, marketing analytics insights are sufficiently shared through a positive analytics culture, and the interviewees disclosed similar ideas. Some interviewees even mentioned actively working towards a data-driven culture across the organisation by sharing data proactively outside the marketing department. A strongly analytical and data-driven culture is focused on picking up information and consistent data sharing (Mezas *et al.*, 2001). Furthermore, almost half the interviewees wanted to develop a setting where individuals would be encouraged to attempt various things with lean ideology from an experimentation perspective to ensure the option to cultivate showcasing information-driven improvement, which was also described by Mezas *et al.* (2001).

Nevertheless, opposition towards analytics usage in the data-driven marketing development process is an apparent barrier that is caused by conflicts between diverse organisational cultural ideologies. Whether it is resistance to adaption to changes, conflicting ideologies within the organisation or the lack of common ground and paths, all the interviewees cite organisational culture as one of the main barriers to advancing data-driven marketing processes, which verified the division displayed in Figure 3.1. Continuously encouraging individuals in the organisation to learn, advance and work across silos was seen to have a positive impact on data-driven process development by enabling shifts in the organisational culture. Most of the interviewees gave examples of situations where education and organisation-wide involvement had a constructive outcome for marketing

analytics utilisation. Wedel and Kannan (2016) highlight commonly accepted beliefs in the organisation as a central driver for data-driven marketing. Moreover, organisations that do not invest in the education of analytics experts face more difficulties in evolving their capabilities than those who do invest in it (Wedel and Kannan, 2016). Thus, barriers can and have been overcome in past cases through education and by examining silos from a cultural perspective.

Structural barriers

To gain consistency, enable learning and achieve acceptance towards change, the organisational structure needs to be fluid (Banerjee and Srivastava, 2017). Over half the interviewees named difficulties with data sharing as a recurring issue in the organisation. Part of these problems were related to the organisational culture to a greater extent, but a few of the interviewees cited the cause as a structural barrier. Moreover, half the interviewees emphasised the importance of common goals to prevent structure-related barriers.

Half the interviewed experts saw some cultural reluctance to changing the mindset of the personnel as a result of organisational silos. In addition, silos within the organisation were seen to influence the generation of different levels of expertise between functions. This is consistent with past research that lists organisational silos as barriers to development (Chaffey and Patron, 2012). Furthermore, organisational structure issues were seen to be more severe in larger organisations.

In total, eighty percent of the interviewees considered data linkage and the integration of datasets into a common database an issue created by an inflexible organisational structure. One-sided data were seen to affect reliability because the answers would not exhaustively describe the entire picture and provide certainty. A few interviewees saw steep hierarchies and uninvolved top management as barriers to data-driven marketing. They claimed that if senior management is structurally 'too high up', their involvement in these vital development processes will become difficult, as steep hierarchies often hinder the flow of information.

Managerial barriers

The top management-related barriers that were discovered in this research were manifold. The organisational management approach naturally influences all aspects of the business, including the culture of the organisation and its structure (Banerjee and Srivastava, 2017; Groysberg *et al.*, 2018). Furthermore, due to management's strong influence, their actions shape the culture and operating methods of the organisation in a lasting way (Groysberg *et al.*, 2018). Most of the interviewees were convinced that top management support is crucial for the successful implementation of data-driven processes. Davenport and Harris (2007) cite collateral ideas, arguing that a data-driven strategy requires top management support. Other studies also share this view (Branda, Lala, and Gopalakrishna, 2018; Kiron *et al.*, 2011). Furthermore, Kumar *et al.* (2016) state that data, technologies and analytics experts need managerial staff members to recognise the benefits of data-driven marketing to enhance data-driven processes and help them thrive across the organisation. The perspective of top management was of considerable importance to more than two-thirds of the interviewees. Moreover, a few of the interviewees highlighted the importance of coherent guidelines and objectives. The interviews revealed problems in communicating the objectives and possible contradictions between management and marketing goals.

The interviewees felt that the involvement of top management in the strategic development, shaping and monitoring of marketing is an important part of the success of data-driven processes. For example, 70% argued that if management is not involved with marketing or its related data, then marketing has neither the power nor the complete insight to drive change sustainably and profitably. Thus, a lack of data-driven thinking in the organisation's top management might cause a barrier to implementing data-driven processes.

Further perceived barriers to data-driven marketing

The challenges and obstacles that were identified during the interviews were also found outside the three-part categorisation of organisational culture, structural barriers and top management-related barriers (see Figure 3.1). Altogether, five individual interviewees noted three barriers to data orientation. Firstly, technological difficulties were cited relating to data reporting integration (Interviewee C) and technological restrictions (Interviewees A and I). However, as stated previously, such technological barriers have been surpassed by challenges with people, structures and processes when discussing data-driven decision-making in marketing (Branda, Lala, and Gopalakrishna, 2018; Chaffey and Patron, 2012; Davenport and Harris, 2007; Germann, Lilien, and Rangaswamy, 2013; Gonzalez and Melo, 2017; Wedel and Kannan, 2016). Additionally, two interviewees mentioned a lack of knowledge in data utilisation (Interviewees B and E). These instances fall into the original categorisation presented by Day and Moorman (2016), which distinguishes capabilities as an element itself. Thus, further research should be conducted before the categorisation presented by this study can be fully verified.

Discussion

The study findings provide both practical and theoretical contributions. The findings imply that, despite individual motivations towards a more data-driven marketing process, at least a partial organisational culture shift is needed to generate advancements in data-driven marketing and decision-making in the long term (see Figure 3.1). Thus, multiple functions within an organisation must recognise the benefits of marketing analytics and strive towards analytical thinking methods to achieve progress. If this is not the case, developing data-driven marketing will not last because the urgency that is seen as more important in the daily life of an organisation quickly displaces marketing resources elsewhere. Additionally, organisational silos and individual employees often return to routine habits because alternatives seem too risky. If benefits of data-driven marketing and decision-making can be concretely recognised within the organisation, resources spent on developing marketing analytics are no longer seen as a negative input-output ratio. A reasonable beginning stage is to audit how applying marketing analytics adds to a business's competitive advantage, followed by contrasting this with the current capacities and worth created. According to the findings of this study, positive outcomes from these processes enable further investments in data-driven marketing, which enable a cycle of repetency.

In accordance with the findings of this study, whilst data-driven marketing processes require organisational change, the process requires consistency and repetency in the short term to evolve beyond the initial challenges of data-driven marketing. Data-based marketing does not mean measuring everything, especially in the early stages. It is difficult to move from minimal or nonexistent data utilisation to the collection of data for each

singular marketing process without causing data fatigue. Creating a shared foundation and expectation for data utilisation throughout the organisation is the initial step towards sustainable data-driven marketing processes.

The interview data suggests that building an advanced marketing strategy in the digital sphere that expands the commitment to data for organisations requires cautious thought regarding the goals of the marketing department. Objectives in the organisation need to be exhaustingly conceptualised, defined in collaboration with managers and should preferably include other functions besides marketing. Furthermore, these objectives must be clearly communicated to the entire organisation to clarify the role of marketing amongst other functions. This will help the development of a common culture and language in terms of data-driven marketing, which will help eliminate silos in the organisation. The organisational top management involvement in the data-driven marketing process is crucial and allows the marketing department to sufficiently report on the results of data-driven marketing processes. Thus, the benefits and the goals of the data-driven marketing process must be commonly understood and valued. Furthermore, the free flow of data that is enabled by a positive combination of sharing organisational culture and a structure that enables such is needed.

The findings of this study support findings from previous research, which cite organisational culture as the main driver of data-driven marketing change in organisations. However, organisations are complex entities where multiple actions and functions affect one another. Thus, even though organisational culture emerged as the most important and powerful barrier to data-driven marketing, considering the roles of organisational structure and top management are central when identifying barriers for data-driven marketing processes.

Limitations of the study and future research directions

Study credibility must be recognised when conducting and evaluating research. This can be especially ambiguous in the case of interview research due to its subjective nature. However, this qualitative research aimed to describe the real-life phenomenon of data-driven marketing processes and its concepts as accurately as possible. The depth and intimacy of the interview process enabled a conversational setting and thus a thorough analysis of the results. Qualitative interviews offer rich data, which helps in understanding complex and contemporary phenomena. Additionally, since the study is limited to interviewees from Finland, it cannot be applied linearly to a different environment. However, the study offers insight into development of data-driven marketing in Finland.

The described barriers to data-driven marketing are based on specific categorisation (see Figure 3.1). Thus, if this framework was either expanded or replaced, additional or even contradicting barriers might be discovered. However, this research tried to actively reduce the impact of such changes on results by ensuring high-quality documentation and conducting an exhaustive literature review.

A more hands-on approach towards this subject might prompt a more straightforward approach to the transition from research to practice. Thus, future research aimed to provide more concrete examples of how to become a data-driven marketing professional might influence and accelerate data-driven process adaptation. In the future, all marketers will likely have to adapt data and insights into their work. Cukier and Mayer-Schoenberger (2013) highlight that the human components of intuition, risk-taking, mishaps and probable blunder will increasingly affect data-driven marketing in the future.

Thus, further studies on the importance (or lack thereof) of the human factor could be a potential research area. Conceptualising the role and influence of the human factor in data-driven decision-making is an essential research topic given that sophisticated and automated modelling is continually evolving.

Key lessons for future research

- Most of the noted barriers to data-driven marketing were related to organisational structure, organisational culture and top management involvement.
- The discovered barriers are highly linked and even overlapping, but they require varying solutions to advance data-driven marketing.
- Future research should aim to provide more concrete examples of how to become a data-driven marketing professional to facilitate practical implementation.

Disclaimer

The research presented in this chapter was collected for my thesis, Heidi Lämsipuro, the University of Jyväskylä Master's thesis *Capability Maturity Model for Data-driven Marketing* (2020). The copyright for this JYU thesis belongs to me as the Author. Research presented here has not been otherwise previously published.

Further reading

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