

Artificial Intelligence Data Drive Marketing

Paulo H Leocadio

Zinnia Holdings LLC

Author Note

Research article published exclusively by Brainz Magazine

Preface: My Personal Journey and Lessons Learned

I witness firsthand the convergence of technology applications to become ubiquitous in every other business segment, business areas or departments, industries, and for personal use.

After my Engineering degree, I was stroke by the standard post-graduate uncertainty: in my particular case, should I go deep into sciences and technology, or should I go to the glamour of marketing and relinquish to the peer and family pressure of “sales and marketing is where you will find the money.” As such, I decided to follow my passion for sciences and technology.

But not before applying for Marketing grad school, all the way to the point of the final selection day (in summary, an exam based on a given case study and, for my delight, the case and the questions were centered around budget planning for marketing and how to use historic data to help on the decision as the final deliverable of the exam). It was scary.

After five or ten minutes, the classroom noise began to grow, my “competitors” started to throw questions to the professor responsible for our room. Those questions scared me. By that time, I had my responses and my data-driven justification ready, however to my perception, the bulk of the candidates were not advancing in the tasks. Or was I? Long story short, I aced the exam which astonished me. That very moment I went as far away as possible from business and marketing.

Fast forward thirty years, I decided to use one of the benefits of my employer at that time and I enrolled in a master’s degree (International Business MBA). During the period, I took a series of classes and Kellogg, under the marketing excellence scope, with strong focus on data driven marketing (Jeffrey, 2010).

Fast forward two more years, I enrolled in a Data Sciences post graduate program, where Big Data, analytics, and machine learning became my professional passion.

My daughter and I share an Alma Matter, we also share the same passion for data sciences. I came from Engineering and Data Sciences, while she came from Business School and Strategic Marketing on her graduate school. She researches the customers' insights (Stalidis, Kardaras, & Barbounaki, 2018), she analyzes the customer experience, her work feeds the analytics and marketing intelligence teams. On the opposite side of the scope, I build Big Data infrastructure in the Cloud, and dissect data to help businesses (governments) to identify the questions they need answered to achieve their goals.

From the original idea to stay as far as possible from sales and marketing, I ended up finding my passion for the tools, techniques and technologies that enable more efficient marketing and sales excellence. For my daughter, the journey started on marketing and ended up in a unique set of capabilities that permits higher efficiency on her company's marketing processes to retain and acquire customers.

It is not unusual to find the topic data driven decision making present on books, articles, business operations, meetings, and so forth. Data driven marketing has gained momentum over the last decade and now boosted by machine learning and artificial intelligence. Increased number of professionals with different, perceived as opposite, qualifications as my daughter and I are coming together to recreate business processes, applying technology solutions, and improving the quality of the insights seamlessly gathered across the Big Data streams used by a company.

Abstract

Current state of Cloud technologies, Big Data and data sciences driven solutions, machine learning and Artificial Intelligence offerings represents a renovated set of opportunities for sellers and marketers to reach their aimed audiences and further, enabling the identification of questions about customers' segments, demographics, geographic, among others, where opportunity to expand their reach exists.

Customer satisfaction trends and variations will provide data that can be used on customer retention and competitive efforts. Customer insight data will help to strengthen loyalty programs on segments as diverse as banking and air travel. Data sets on demographics, behavior, competition will be key to shape products and offerings to the differences identified in the data. These applications, and others, have in common the need for data-related tools and solutions, where a business can retrieve and consume data (Big Data), can prepare the data according to the information needed to achieve a given goal (Analytics), and identify the big questions the business must ask to understand the market and successfully reach existing and new customers (Data Sciences).

This article introduces the application of modern technologies building a market-data intertwined ecosystem where machine learning and analytics raise marketing efforts to the next level of execution.

Keywords: Data Driven Marketing, Data Sciences, Analytics, Artificial Intelligence, Machine Learning, Big Data

Artificial Intelligence Data Drive Marketing

The common corporate scenario finds the marketing team struggling to justify their budget asked for the next fiscal year. The gap between the CMO team and the CFO team is widening. The value proposition is not strong, and the approval from finance is farther from happening. “Eight percent of companies do not make data-driven marketing decisions, and those who do are the leaders.” (Jeffrey, 2010)

Data or Big Data?

With the convergence of information technology and the marketing execution, market research witnessed the growth of latest trends such as methodological advances and a data tsunami (generation of high volumes of data without feedback from leadership). At its earlier stages, while the information systems with more investments and more expertise, started to take its own shape and format, while market research focused on different priorities, taking a different direction (Samli, 1996).

Further on, information-driven decision making, and data driven management started to grow in presence, providing clarity on how information systems could partner with marketing to better serve its purposes and to achieve its goals: the marketing decision making process was positively impacted by marketing professionals acquiring analytics skills and information systems professionals became aware of the problems marketing wanted to solve and their objectives to be achieved (Samli, 1996).

Today the largest corporations in the world are big technology companies with marketing as one of the top sources of revenue (Jeffrey, 2010). On any device, an individual receives advertisements and offerings custom made for them. From the early days of divergence to the

contemporary world where doing marketing without technology does not seem feasible, professionals still face challenges with data or, with Big Data.

Market professionals demand for new sources of revenue and market differentiation has never been higher with uncountable number of resources, tools, and solutions available for all. A local business does not compete with their metropolitan neighbors alone, competition comes from various parts of the country and even from other countries. These professionals must identify, transform, and consume data from everywhere: warehouses, partners, supply chain, sensors, social media, streaming services and broadcast, competition, internal data, the virtual entity known as Big Data (Arthur, 2013).

Marketing execution must be data driven and marketers must leverage Big Data to engage customers more effectively, drive value, and identify new sources of revenue (Arthur, 2013).

Building Customer Loyalty

Marketing intelligence is a marketing process of high impact and importance as the professionals involved in those processes are able to retrieve and consume very high volumes of data from different internal and external sources, both privately controlled or publicly available (Stalidis, Kardaras, & Barbounaki, 2018).

Under the data driven marketing in combination with customer loyalty scope, important cases include customer services, customer experience, customer satisfaction, diverse loyalty programs, and call centers where the collection of customer insights combined with what the intelligence team extracts from the data lake, where they format and consume the data to optimize the set of products or services available, build cross-selling and up-selling offers, among other initiatives to strengthen customer loyalty (Stalidis, Kardaras, & Barbounaki, 2018).

In summary, businesses are seeking to understand what the best strategies for fresh marketing are to stay afloat in the fast-paced technology driven market. The understanding of what the loyalty determinants are and the conditions to achieve the satisfaction of customers represent the foundation, the entry point for an effective adoption of data driven marketing supported by technology-based solutions, with the capabilities to find, extract, format and consume data available (Sheresheva & Polukhina, 2018).

Data Driven Marketing with Machine Learning

Artificial Intelligence is impacting marketing at its roots, and specifically every functional area of digital marketing, with diverse levels of technological sophistication and the business net results from using machine learning solutions (Mari, 2019).

The exponential growth of data and digital touchpoints is directly increasing the complexity for marketing professionals as much as transforming the customers' expectations for interactive experiences, personalized offerings, and content. As consequence, businesses are adopting a wide variety of specialized software solutions to help marketing professionals to identify and transform relevant sets of available data into actions and help management to ask the questions that will help them to achieve the business' goals (Mari, 2019).

Today machine learning based data driven marketing outperforms marketing professionals' use of their own experience to decide which customer (or customer segment) should receive a given campaign (Sundsøy, Bjelland, Iqbal, Pentland, & Montjoye, 2014). Current technologies are leading to limitless opportunities for business to expand and gain competitive advantages and, at the same time, creates resistance toward process changes and the adoption of recent technologies. The market is aiming at building a robust customer centric

marketing, data-driven technologies and machine learning applications are the enablers to achieve that (Camilleri, 2019).

Businesses have yet to build a strategy towards a robust data-driven marketing reality. Marketing departments focus on what is already known to deploy, for example, Big Data analytics. Taking an organic approach to achieve data-driven marketing is a potential seamless approach to reach the different marketing teams across the organization (Johnson, Sihi, & Muzellec, 2021). The effective adoption and deployment of data-driven marketing will rely upon a clear and well communicated adoption strategy, with support from leadership, with well elaborated benefit statement, and the buy in from the marketing areas.

Creating data-driven marketing strategies through the application of artificial intelligence and other current technologies cited in this article does not compare to the adoption of off-the-shelf productivity suites where its applicability and usability have small dependence on existing processes (being easy to adapt). Rather, understanding that artificial intelligence marketing offer practical and varied means to harness the power of data driven market strategies. The business needs to understand existing barriers, have clarity on the drivers and know the outcomes for marketing, while maintaining control over critical areas for specific focus (Gabelaia, 2022).

Disruptive, early adopters, not fully understood, are among the various forms of reaction when considering artificial intelligence (and other innovative technologies) to fundamentally change the way of doing marketing. However, it is correct to assume that those who start early will take a giant leap against the competition.

References

- Arthur, L. (2013). *Big Data Marketing: Engage Your Customers More Effectively and Drive Value*. Hoboken, NJ: John Wiley & Sons.
- Camilleri, M. A. (2019, May 4). The Use of Data-Driven Technologies for Customer-Centric Marketing. *International Journal of Big Data Management*. doi:10.2139/ssrn.3382746
- Gabelaia, I. (2022, August 23). The Applicability of Artificial Intelligence Marketing for Creating Data-driven Marketing Strategies. (D. Bratić, Ed.) *Journal of Marketing Research and Case Studies*, 2022. doi:10.5171/2022.466404
- Jeffrey, M. (2010). *Data-Driven Marketing: The 15 Metrics Everyone in Marketing Should Know*. Hoboken, NJ: John Wiley & Sons.
- Johnson, D. J., Sihi, D., & Muzellec, L. (2021, July 19). Implementing Big Data Analytics in Marketing Departments: Mixing Organic and Administered Approaches to Increase Data-Driven Decision Making. (A. Bryant, Ed.) *Informatics*, 8(66). doi:10.3390/informatics8040066
- Mari, A. (2019). *The Rise of Machine Learning in Marketing: Goal, Process, and Benefit of AI-Driven Marketing*. University of Zurich. Zurich: Swiss Cognitive. doi:10.5167/uzh-197751
- Samli, A. C. (1996). *Information-driven Marketing Decisions: Development of Strategic Information Systems*. London, UK: Quorum Books.
- Sheresheva, M. Y., & Polukhina, A. N. (2018). Customer Loyalty Determinants in Retail Banking. *6th International Conference on Contemporary Marketing Issues (ICCMi)*, (pp. 119-123). Athens, Greece.

- Stalidis, G., Kardaras, D., & Barbounaki, S. (2018). Data-driven marketing and loyalty programs: The stance of super market customers. *6th International Conference on Contemporary Marketing Issues (ICCMI) 2018*, (pp. 124-126). Athens, Greece.
- Sundsøy, P., Bjelland, J., Iqbal, A. M., Pentland, A., & Montjoye, Y.-A. d. (2014). *Big Data-Driven Marketing: How Machine Learning Outperforms Marketers' Gut-Feeling*. Retrieved 9 19, 2022, from <http://web.media.mit.edu/~yva/papers/sundsoy2014big.pdf>
- Torrens, M., & Tabakovic, A. (2022). A Banking Platform to Leverage Data Driven Marketing with Machine Learning. (S. Kotsiantis, Ed.) *Entropy* 2022, 24, 347., 24(347).
doi:10.3390/e24030347