

## Digital Marketing Impact of Big Data

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### Abstract

Customers are using digital channels more frequently due to technical advancements, making it possible for marketers to collect and exploit consumer data in real-time. This data is generated and acquired in real-time, around-the-clock, seven days a week, allowing the marketing industry to determine which efforts were successful and which were unsuccessful. By superimposing several data sets, such as social media posts, money spent on product promotion, the business can determine which efforts were effective and which were failed. This allows them to immediately modify their marketing strategies. Big data analytics is an important tool for business marketing, but has been understudied. Considering and analysing how Big Data has already impacted various industries is necessary to give a solution to this issue. Exploring the opportunities and challenges raised by this topic is important because, as technology develops at a constantly rising rate, industries must be able to adapt if they are to find new customers and flourish. The key is just being able to categorize the market and grow customer personas based on factors like activities, purchasing patterns, preferences, locations, and much more. In this paper several important points regarding the increasing use of digital channels and the collection and analysis of consumer data in real-time by marketers is discussed. Big data analytics has indeed become a crucial tool in modern business marketing. By leveraging large and diverse data sets, businesses can gain valuable insights into customer behaviors, preferences, and trends. This information allows them to make data-driven decisions and modify their marketing strategies promptly.

**Keywords:** Big Data, marketing, business, consumers, customers

### INTRODUCTION

The way businesses run has drastically changed as a result of the Internet and the development of digital media. More than 3 billion people consistently use the Internet to discover friends, have fun, and do business. The development of digital technology has had a major impact on consumer behaviour and company marketing strategies. This has led to the evolution of marketing tactics used by businesses to gain a competitive advantage by meeting client expectations and needs while also adapting to the environment. This is a direct result of the development of digital technology [1]. Through a variety of innovative methods, including targeted advertisements on social media sites like Facebook, Twitter, Instagram, and others, it is possible to track the online actions of many millions of individuals around

the world. These methods range from a store's loyalty or credit cards. Personal information, including online and offline activity, is combined, examined, and then sold to other businesses and corporations. Customers have access to a wide range of goods, services, and price options from vendors, simplifying and speeding up the purchasing process. Consumers are taking advantage of an increasing number of digital tools thanks to digital transformation [2]. Users of these tools can register and store any type of operation they carry out. The term "big data" refers to datasets that are formed by combining data from the body of operations, data from websites, social media, and mobile platforms, and data from sensors and the

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Internet of Things. Big Data is used by businesses to target their audience and customers, as well as to provide them with exactly what they want and customize the customer experience to serve their interests. The goal of this study is to demonstrate the value of big data in the context of digital marketing [3]. The study is divided into two parts, the first of which examines the definition, elements, and sources of big data, while the second emphasizes the idea of digital marketing. The third part discusses the function of big data in digital settings, and the fourth part provides examples of organizations utilizing big data in a digital setting [4].

### **Big Data**

Big data is the huge amount of structured and unstructured information that continuously floods into an organization. Businesses can easily access, process, store, and analyse structured data, whereas unstructured data is much more difficult to acquire and process [5]. Big data is crucial because it helps companies better understand the needs, wants, and buying habits of their customers. This understanding can be achieved by arranging the data in a certain way.

Four categories—volume, velocity, diversity, truth, and value—can be used to categorise big data.

*Volume:* Volume is the amount of data that can be acquired from many sources. Social media, online forms, online purchases, and machine-to-machine data are a few examples of these sources.

*Velocity:* Velocity is the rate at which data is produced, saved, processed, and stored. Businesses must make sure that the right processes are in place to manage the flow of information efficiently.

*Variety:* The different kinds of data that an organisation receives are referred to as variety. The data will be collected differently because it comes from several sources. Information can be structured or unstructured and taken in various formats, such as videos, written texts, and photos.

*Veracity:* The differences and noise in the data are referred to as veracity. The information must be related to the issues under consideration. Making sure that your business is not holding any unnecessary data that could limit your success is a key component of a data strategy.

*Value:* Value is the measure of the amount of value generated socially as a result of big data analysis results. Big data collection, storage, and processing can add significant value to the global economy, improve business performance and competitiveness, and benefit consumers financially [6].

### **Digital Marketing**

Businesses today face a data flood due to digital platforms, making data analysis and digital marketing essential for understanding the results of marketing efforts. The Internet is not necessary for many digital marketing channels, such as text messages, digital advertising, and digital media. The use of any digital technology to improve the marketing process with the ultimate goal of increasing customer interaction, participation, and feedback is known as digital marketing. Businesses must prioritise developing relationships with clients and other partners through digital channels in order to take advantage of the new opportunities that collaborations can bring. This can alter delivery and manufacturing processes and enable businesses to cater to a variety of customer preferences. Businesses can improve and increase the scope and role of their marketing efforts by using data analysis and digital technologies. Data analysis can help businesses understand how various marketing strategies, such as sales development, delivery, price, product features, and TV and print advertisements, affect market share, sales income, or brand value. It also encourages businesses to focus more on the demands of their customers and provide them with unforgettable experiences. Customer experience has replaced customer satisfaction as the cornerstone of marketing [7].

### **LATEST TECHNOLOGY**

#### **Technologies are Fueling the Digital Transformation of Marketing**

Nowadays, client participation is essential for long-term profitability in marketing because it is connected via social media-based websites. As a result of these digital technologies, consumer loyalty

is higher. Particularly, businesses that struggled with traditional marketing techniques have found success with their use of social media. The modern marketing governance model is more interactive since it encourages and benefits from customer participation [8]. The following elements are crucial for the all-encompassing marketing strategy of today:

- Media usage trends are changing due to changes in technology;
- The most important idea is to focus on marketing efficiency and effectiveness.
- Customer expectations and wants are simultaneously increasing, organizations must deal with sociologically diverse populations where personalization, experience, convenience, and social connections matter most. The change has involved a significant amount of technology. Every area of our life is being transformed by digital technology, including businesses' use of new technology, as well as that of their clients, employees, and society at large. More data than ever are being collected in today's digital environment, and businesses are using this data for marketing analytics to shape their business strategy.

### **Data-Driven Organisations**

Big data provides challenges to the marketing industry in addition to various attractive business opportunities. The amount of data is increasing quickly, and there are many different data sources and data types (structured, unstructured, and semi-structured) [9]. The traditional database structures cannot handle this large volume of data that is flowing quickly. Additionally, it raises concerns about consumer privacy, management, security, and ethical concerns while collecting their private information, all of which need to be addressed through information governance in order to achieve the full potential of big data. Data is considered to be an important asset, and if the organization doesn't put in and maintain an efficient management structure, the value of the data will suffer greatly. Simply possessing a large amount of data does not benefit an organization [10].

Businesses that use big data can become data-driven organizations, allowing them to innovate their marketing techniques by gathering huge amounts of structured and unstructured data. From a technical perspective, businesses can organize large data effectively by expanding their storage capabilities and switching to the new NoSQL database format in place of the more established traditional database. Big data increases an organization's productivity by improving business processes and raising industry productivity through better customer service, better pricing, and cost savings, among other things.

### **Information and Knowledge Extraction from Data**

Instead of using traditional media, consumers are spending more time online. Real-time responses can be included in marketing strategies thanks to big data predictions. Organizations face difficulties in using the data to gain a long-term competitive advantage because there is now a large amount of information and little understanding of how to use it effectively to their advantage. Instead of using traditional media, consumers are spending more time online. Real-time responses can be included in marketing strategies thanks to big data predictions. Organizations face difficulties in using the data to gain a long-term competitive advantage because there is now a large amount of information and little understanding of how to use it effectively to their advantage.

### **Applications of Big Data Analytics in Marketing**

#### **Social Media Analysis**

Marketers and marketing analysts still need the same knowledge to make accurate decisions about a variety of various topics, including customers and their demands, competitors, products, distribution channels, service providers, laws, etc. However, the knowledge is increased by including specific personal information like geolocation, time, interests, etc. through social media platforms and mobile marketing. The nature and source of marketing data have changed as a result of digitalization and the application of new technologies. Big data, which provides real-time information, has replaced panel data, where consumers manually entered their purchasing patterns. Similar to how customer satisfaction surveys were used to collect data, social media sites can now be used to automatically collect that data. Social media users continuously leave a mark that can.

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**Making Purchase and Product Decisions**

In addition, big data is necessary for new product launches, which require a lot of customer data. As an example, several businesses in the fashion industry get ideas from and base many of their decisions about the introduction of new products on a study of the top trending posts on social media, such as Instagram. Research has also been done on the visualization of market structures among products. Innovative modeling techniques were created to help visualize complex market structures among more than 1,000 products, utilizing huge search data from websites that compare prices and products to create consumer consideration sets that reflect product competitiveness. A new approach to analysing consumers' needs is proposed in the study using big data and conditional machine learning.

**Advertising**

*Data can be successfully used for more targeted marketing and advertising if it is carefully gathered using a combination of big data analytics and professional market analysis. Big data can be used to create audience personalities and recommend content to TV viewers. Real-time feedback data also improves the targeting of TV advertisements, forecasts TV show viewership, and analyses audience purchasing patterns. By analyzing large data from two campaigns with 20 million users each, brand-new techniques were created that distinguish the target selection component from the campaign effect of online display ads. Big data can be applied to make original decisions.*

**BUSINESS USE OF BIG DATA IN DIGITAL MARKETING EXAMPLES**

The fact that big data is already being adopted by marketers and flourishing businesses is one of its most useful properties. Because of this, it's simple to discover examples of real-world businesses utilizing big data. We gain an understanding of how successful businesses use big data in their marketing procedures from these kinds of real-world applications. Consider the following five.

**Netflix**

Without a doubt, Big Data is the reason why Netflix is the most popular website for streaming films and TV episodes. Because they are connected with their users, they have 93% employee loyalty, which is quite high when compared to their key competitors. They are also expanding quickly as a result of their original films and TV shows, which simply demonstrate that they pay attention to their audience. They gather information on things like the length of time their members watch the show, whether they binge-watched it or took their time to finish, and whether they take breaks.

**Amazon**

Amazon uses big data to improve personalization and user pleasure, much like Netflix does. Amazon, on the other hand, adopts a far more thorough strategy. They have a significantly larger customer base and offer a variety of services that call for various procedures. It turns out, very unexpectedly, that Amazon is considerably gaining from its use of big data, as it is responsible for a sizable portion of its sales. To enhance the value of things like ratings and reviews for customers, their machine learning also synchronizes with data.

**McDonald's**

McDonald's really is carrying out the exact action. The advent of the healthy living trend and the adoption of online ordering presented a problem for fast food restaurants. At that moment, McDonald's started making use of the data they had amassed over the years. They had to unlock the data in a way that the target consumer would find useful if they wanted to move from bulk marketing to mass personalisation.

**Starbucks**

Starbucks is a well-known global company that is known for its iconic logo and for misprinting customers' names on cups. As I said earlier, personalization is now the key to growth, and Starbucks is achieving just that by utilizing Big Data to improve the consumer experience. By offering their

consumers Starbucks loyalty programs and mobile applications, which enable them to learn more about each customer's purchasing behavior, they collect data from their customers. Following that, Starbucks will use that information to make product recommendations to their devoted customers, develop more effective marketing strategies and new menu items, as well as choose the location of their next location. Because of how well-organized this system is, it will offer its consumers things based on the time of year, the weather, and the location they are in. They also send targeted emails with offers to consumers who haven't visited the business in a while in an effort to re-engage them or offer them discounts.

### **CHALLENGES IN DATA MANAGEMENT AND DATA GOVERNANCE**

In order to gather meaningful knowledge and increase a firm's performance, data organization is important. Organizational cooperation must be improved through appropriate information management, and as cooperation increases, businesses are able to recognize and understand client preferences. Many businesses that offer inexpensive data storage services make it possible to store a variety of collected data at a low cost. The quantity and variety of data increase the potential for data analysis, the quality of which may be a factor in how well businesses perform over time or even the global economy. With information processing services affecting marketing organization buying patterns in shorter periods of time than ever before in the history of modern marketing, a new ecosystem of marketing and advertising service organizations is emerging. Despite the data's obvious utility and the fact that it is always growing, organizations collect and retain enormous volumes of data. Performance measures organizations must be able to stay up with data management as the world becomes more digital. Organizations must also focus more on the needs of their customers. Through the customer's preferred channel, they must be able to provide the appropriate information at the appropriate time.

The major problem is that organizations struggle with effective data management. 80 percent of organizational data, according to IBM, is unstructured. The necessity for real-time analytics, the quality of the insights, and privacy concerns are additional difficulties. Another difficulty is storing and centralizing the data. Utilizing having to cut technologies can boost marketing effectiveness and give consumers of the future more engaging experiences. Through the use of text mining, user profiling and localization, sentiment analysis, social sensing, and other techniques, consumers continuously leave digital footprints that may be in-depth examined.

Consumers' willingness to provide their private information is no longer an issue; rather, the concern is how they will respond when marketers have easy access to that information. Consequently, rules and regulations are required to specify how to use data for marketing while upholding an individual's privacy.

### **SUGGESTIONS AND SOLUTIONS**

This study illustrates the importance of big data to firms, as most consumer purchases are made through digital platforms. Big data analysis has significantly changed almost every industry, helping companies with day-to-day operational organisation, strategic budget and marketing campaign decisions, and the discovery of new market prospects and technical developments. Companies are increasingly concerned with daily capturing, saving, storing, processing, and analysing big data, which provides a number of benefits for businesses. Consumers who use the Internet can leave a variety of digital clues. Consumer behaviour, intentions, requirements, and expectations may be readily understood by businesses that pay close attention to them. As a result, in order to satisfy their customers and achieve long-term success, businesses need to gain from big data analytics.

### **FUTURE DIRECTIONS FOR RESEARCH**

This study's focus is confined to a comprehensive analysis of the literature on the benefits of big data for businesses. Despite the fact that big data is a crucial subject, there aren't many studies on it. Future research can use statistical techniques to study customer purchasing patterns in relation to their characteristics. Authors can interview businesses from a range of industries to find out how big data benefits them and how they use relevant marketing techniques.

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## CONCLUSION

Big data is essential for organizations to succeed in a digital economy. The Internet has produced numerous digital marks on consumers in the past and present that firms can gather and process. Big data is essential for digital marketing, as it enables businesses to understand consumer behaviour and understand consumer behaviour more accurately. This study demonstrates the importance of big data. Businesses must stay in contact with their customers to build a lasting relationship, and big data can provide businesses with comprehensive customer information to help them do so. Businesses are able to make better judgments, come up with unique ideas, and improve business performance because of the information they obtain.

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