

FACULTY OF ECONOMICS - PRILEP
UNIVERSITY „St. KLIMENT OHRIDSKI“ - BITOLA



11th INTERNATIONAL CONFERENCE
DIGITAL TRANSFORMATION OF THE ECONOMY AND SOCIETY:
SHAPING THE FUTURE
PROCEEDINGS

19 - 20 October, 2019

CIP - Каталогизација во публикација
Национална и универзитетска библиотека "Св. Климент Охридски", Скопје

330:004(062)

INTERNATIONAL conference (2019 ; Prilep) (11)

Digital transformation of the economy and society : shaping the future : proceedings / 11th International conference, 19-20 October, 2019 Prilep. - Prilep : Faculty of economy, 2019. - 557 стр. : табели, граф. прикази ; 30 см

Начин на пристап (URL): <http://eccfp.edu.mk/biltens/index/1>. - Текст во PDF формат, содржи 557 стр., табели, граф. прикази. - Наслов преземен од екранот. - Опис на изворот на ден 20.11.2019. - Фусноти кон текстот. - Библиографија кон трудовите

ISBN 978-9989-695-65-0

а) Економија - Информациско-комуникациски технологии - Примена - Собири
COBISS.MK-ID 111689482

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HOW CAN BIG DATA CONTRIBUTE TO THE HOTEL'S DIGITAL MARKETING SUCCESS?

Cvetanka Ristova Maglovska¹

Abstract:

Each day information shared digitally increases significantly. The digital era has brought a ton of data, which marketers nowadays can only leverage to make better strategic marketing decisions through more accurate insights, such as big data. And since in this digital era, "data is king", important marketing decisions are now determined by big data. Big data in general, helps the digital marketing to get the attention of customers(through personalized services) and understand the market or industry conditions, i.e. to get knowledge about the industry trends and future prospects (staying ahead of the game). Being able to provide this, big data have compelled many businesses to adapt this tool to its digital marketing, and to evolve and improve their digital marketing campaigns.

In the industry of hospitality, where hotels offer highly competitive services and products, big data has proven to be a necessity for digital marketing, so for each hotel to have the opportunity to distinguish itself. Just by analyzing past guest profile information, past booking history, service preferences, purchasing habits while on property, affiliation with the hotel guest loyalty program, booking channel preferences, preferences for auxiliary services with big data, the marketing is targeting and engaging present and future guests, and therefore fulfilling its overall strategy - higher percentage of bookings i.e. income and compete in the today's market.

This paper was conducted mainly with a view to identify and summarize why big data matters to digital marketing, and how the future of digital marketing will be grounded in data. A focus is given and discussed is how our big data excavates information and what hospitality do with it. Narrative review was used where related articles, reports and studies were selected and later summarized.

Keywords: digital marketing, big data, hotel, guests

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Introduction

The big data's potential in digital marketing is colossal and with data being generated and collected in real-time, around the clock, seven days a week, the marketing industry is now able to see what people are buying, following or communicating about (Barutçu, 2017). Gaining those insights come from the huge amount of data that customers produce every day, thanks to digitalization and accelerating growth of the Internet of Things (IoT). As data has become a major priority for businesses of all sizes, marketing has faced with the need of analyzing that huge amount of data that goes beyond the capacity of traditional databases and software techniques.

Therefore, now important marketing decisions are determined by big data. The understanding of big data is a crucial issue for marketing, by providing insights from the data to the most appropriate product and service in a particular market, insights on how to advertise on the market, through what channels should the communication happen, at what point, suitable time and for what price, supported by selected promotional and advertising activities (Amado *et al.*, 2018). Big data can impact and benefit for digital marketing in many different methods by making it easy for marketing to get a better idea regarding the changing customers' tastes and preferences. Big data also make it easy to develop the personalized marketing strategies to the firm's target customer base (Mohammad *et al.*, 2018).

What is big data?

The term big data apply to information that could not be processed using traditional tools or processes. Back in 1997, Michael Cox and David Ellsworth were the first authors to relate to the term "big data", defined as the challenge of storing large databases for visualization purposes (Cox and Ellsworth, 1997). Some believe that, John Mashey, a US computer scientist is the inventor of the term big data, or he was at least responsible for the start of the buzz around the concept in the 1990s (Diebold, 2012). Since then, big data are still seen as a fairly new term, where many authors have given their opinions and definitions to the technology. Big data are defined as contemporary hype (d'Amore *et al.*, 2015). Several authors have described it as a type of cure, mainly due to its popularity, capable of providing rich and useful insights into many aspects of the lives of individuals, organizations, and markets (Mayer-Schönberger and Cukier, 2013; McAfee *et al.*, 2012). Mayer-Schönberger and Cukier (2014), later described big data as the focus of data collection with unprecedented breadth, scope and depth to solve current problems. Big data are also described as data that goes surpass or beyond the business's ability to store or analyze for accurate and timely decision making (Heudecker *et al.*, 2013). Other authors have described it as a cultural, technological, and scientific phenomenon that relies on interaction with technology, analysis and even mythology (Ekbia *et al.*, 2015; Boyd and Crawford, 2012).

Big data are widely discussed topic since the digital transformation has started to create an influence on daily activities of individuals and the amount of data increased exponentially as a result of this process. The conversion rate of data generated comes from the rapid growth of the Internet of Things (IoT), cloud computing and improved search engine efficiency, leading to the growth of big data (Mehdipour *et al.*, 2016). Thousands of sets of information are generated in social media, mobile transactions and user-generated content; there is also intentionally generated content through sensor networks or business transactions such as sales and purchase transactions (George *et al.*, 2014). Embedded devices include things like RFID readers and chip cards, smart cars, vending machines, smart meters, medical implants, security cameras generate additional data via the systems as they interact with shopping malls, traffic grids or cellular networks. Data as such, is so large and complex that none of the traditional data management tools can store or process it efficiently except big data. Unlike traditional analytics that deal with small datasets with a limited analytics platform, big

data works with much larger, unstructured and complex datasets that require new and advanced storage, management and analysis technologies (Chen *et al.*, 2012).

In the era of big data as said, the amount of data being processed is much larger than traditional datasets. Existing data were in petabytes (PB) (Katal *et al.*, 2013), which was already problematic; so, since 2016 it has increased to zettabytes (ZB) (Pappas, 2016), and this is primarily due to the increased use of mobile phones and devices and social networks. IDC estimates that the amount of digital data generated will increase from 33 ZB by 2018 to 175 ZB by 2025 (Coughlin, 2018).

Knowing this, it's no wonder that big data has become a popular area of research with the potential to add tremendous value to products and services in industry and business (Ang and Seng, 2016).

Big data, bigger digital marketing

Digital transformation has already changed our lives in dramatic ways, and is poised to become an even more crucial component of the business world. When it comes to marketing, going digital has had massive consequences. Now the properties of digital media such as more accurate metrics, combined with the interactivity, have created whole new marketing opportunities. Digital marketing is an umbrella term for the marketing of products or services using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and many other digital medium (Khan and Siddiqui, 2013). In general, digital marketing is seen as marketing designed for products/services using digital technologies like emails, websites, online forums and newsgroups, interactive television, mobile communications, etc. to reach the consumers (Kotler and Armstrong, 2009). Digital marketing in basis uses the technologies for the help of the marketing activities in order to improve customer knowledge by matching their needs.

Recognizing the impact of our daily lives, customers have changed with digitalization as well as their expectations. Today, customers expect relevant content in relation to what they're doing anytime, anywhere and in the format and on the device (mobile, desktop, iPad or other) of their choosing. The digital savvy customers nowadays are comparing the prices of products, or checking reviews, all within seconds thanks to the digital transformation. With more and more customers using digital technologies, it makes sense that the created world's data has risen to these high levels. Customers create massive, almost incomprehensible amount of information, and if treated accordingly present useful tool to the relevant digital marketing interests.

In digital marketing, understanding consumer behavior is key for marketing success as consumers have embraced utilizing the Internet and online socializing tools (Vinerean *et al.*, 2013). As a result of these rapid changes and the huge amount of data accumulated, businesses in general and marketing, in particular, are obliged to turn to big data as is becoming more and more a portion of an organization's essence and its policy (Mohammad *et al.*, 2018). The complex data sets, run by big data operate with the huge volumes of both structured or unstructured data created with the customers' characteristics, and lead to better marketing decisions and strategic moves. With big data as right chosen technology, digital marketing improves the quality of the decision-making process and detailing process. Big data empower digital marketing by being able to target the core needs of the customers just by collecting data. For example, collecting cookie files; big data give out data to the digital marketing as information about the customers' activities as they browse the Internet, generalizing personal data in the process. Digital marketing is even able to develop buying personas using big data like customer behavior, purchasing patterns and favorites. The knowledge given by big data allows digital marketing to increase customer engagement, ensure customer loyalty, and hence lead to an increase in revenue.

Using big data to enhance digital marketing in hospitality

The hospitality industry segment works on the core principle of serving others and to nurture the guests. Hospitality caters to millions of guests every day, each of them arrives at the hotel with their own expectations. Guests nowadays turn to the Internet to find services such as hotels, restaurants, spas, and other recreational services. With the increase use of digital tools, the guest's engagement behavior has led to a change in the marketing strategies of the accommodation providers of the hotel sector (Leite and Azevedo, 2017), whereas in this competitive digital age, hotels turn to digital marketing because it has become the most viable way of getting to potential guests, establishing a brand, and developing a group of loyal guests. Therefore, the need for digital marketing has been felt like never before in the hospitality industry wherein guests have instant access to all kinds of information on the latest offers and best prices. Today digital marketing plays a critical role in the success of each accommodation provider which exists in the hospitality industry (Kaur, 2017).

Data, from how the rooms are booked (direct hotel bookings via OTA bookings), to guests' feedback from different social media channels, online guests' reviews from travel websites such as TripAdvisor, Booking, Yelp, Trivago is being created because of digital transformation. Hotels can use this data to offer a personalized experience to their guests, ranging from suggesting local restaurants to finding a price for a particular offer that is irresistible to the guest (Ristova, 2019) all to do properly create digital marketing strategies. Since, understanding the needs and requirements and meeting expectations is the key for guests to return, more and more hotels are turning to advanced analytical solutions that will help satisfy their guests (Shabani *et al.*, 2017). There is no doubt that today's big data will be identified as a major trend affecting the hospitality industry, as it offers many opportunities to improve current guest service, improve hotel business efficiency, create better digital marketing strategies and thereby maximize production and profitability (Gupta *et al.*, 2017). As data has become one of the most valuable resources for digital marketing thanks to the rapid digital transformation, collecting customer data has become a major priority for the hospitality business. In the age of constant connectivity, smartphones and the Internet of Things (IoT), customer data is being collected right around the clock. The author discusses several ways of how hotels can collect data about their guests:

- **Web mining:** Web mining became an easy and important platform for retrieval of useful information, because customers prefer the WorldWide Web more to upload and download data (Mughal, 2018). Hotel's digital marketing by using certain tools for web mining gets to understand structured as well as unstructured data gathered from guests' browser activities, server logs, and guests' site structure on the WorldWide Web.
- **Search information:** Use of the Internet search data is used to learn about customer behavior, as the content of searches can shed light on a wide variety of customers' concerns and expectations (Rubinstein, 2013). This is data that hotels can get derived from browser activity through the use of special tools to track search information and detect guest behavior and intent.
- **Social media:** Social media has evolved over the last decade to become an important driver for acquiring and spreading data in marketing. The growth of social media usage opens up new opportunities for analyzing several aspects of, and patterns in communication. For example, social media data can be analyzed to gain insights into issues, trends, influential actors and other kinds of information (Stieglitz *et al.*, 2018). Millions of users visit social networks on a daily basis, leaving the hotels to gather tons of various data from personal preferences to brand loyalty. The hotel's digital marketing gets to track guests through social media and use it to their advantage when starting next marketing campaign.

- **Crowdsourcing:** Crowdsourcing generally refers to the participatory online activity of calls for individuals to undertake a task voluntarily. Crowdsourcing benefits of getting data from the collective intelligence of online communities. Online communities are in this case called crowds. Members of these online crowds are given the opportunity to respond to crowdsourcing calls (forums, surveys, polls) and they are motivated to respond for a variety of reasons (Benedek *et al.*, 2015). Digital marketing uses crowdsourcing as a data of main feedback form in order to get a true opinion of a hotel's guests, get extremely useful information and improve future campaigns (Richard *et al.*, 2016).
- **Transactional:** Voluminous data are being exchanged during banking transactions internally and externally (Chedrawiet *et al.*, 2018). Banks have a vast variety and amount of customer data due to an increasing number of transactions through various devices, that can be used to generate insights and enhance the customer experience (Somal, 2017). Tracking and analyzing these transactions (purchases, requests, insurance claims, deposits, withdrawals, flight reservations, credit card purchases) can help hotels understand the patterns of their guests while booking, and plan digital marketing campaigns accordingly.
- **Mobile:** Smartphones now offer the promise of collecting behavioral data unobtrusively, as it unfolds in the course of daily life. Data can be collected from the onboard sensors and other phones logs embedded in today's off-the-shelf smartphone devices (Harari *et al.*, 2016).

After determining the sources from where does hospitality can accumulate an incredible amount of data, the analysis of the data gained with big data can result in improving digital marketing strategies of hotels and drive to greater success by below ways as listed by the author:

- **Personalized / targeted campaigns**—The digital transformation has empowered businesses to personalize and customize marketing messages in order to communicate with stakeholders. This has started a development of personalized marketing and reshaped the way businesses target and segment markets, create dialogues and challenge the old approach to mass marketing (Pålman and Waldenskiöld, 2013). Digital marketing campaigns created for different guests' personas using big data, tracks data such as customer behavior, favorites and frequent purchases. The data can be simple insights like basic demographic information; or more specific like niche interest, buying intent and behavioral patterns. Besides being personalized, big data enable digital marketing to target its campaigns in the hospitality industry for bigger chances for conversion as majority of targeted guests are seeking information online on the Internet of Things (IoT) that the hotel may supply and have a greater chance of purchasing hotels' products or services should they decide to cater to the need they may have.
- **Price optimization** – Previously, hotels priced products and services using basic information like product cost, competitor pricing, perceived value of the product from the customer and demand. Now, with big data, businesses can proceed with data-based pricing decisions, from the desired marginal profit per unit and the competitors' pricing options for the wider financial situation, customers' habits and willingness to pay (Lianget *et al.*, 2018). In hospitality, digital marketing uses big data for price optimization as big data provides descriptive guest's analysis based on site behavior, transaction history and data from a guest's online search. The previously discusses personalized / targeted campaigns for hotel guests, can even get an optimal price identified in a more targeted way for a hotel product or service, for example, pricing a hotel room for a particular geographic location, such as a state or a suburb, within a city or a rural area.

- **Appropriate Web Content** - Content marketing is a marketing technique that creates and distributes valuable contents to attract and acquire audience (Kaakinen and Purkayastha, 2016). The writers no longer rely solely on their creativity when developing content for promotional purposes. They have entire teams behind them, analyzing big data and suggesting types of content, themes, topics, and stylistic variations that would work better. Hotel's digital marketing can use various forms of content like: high-quality images, videos, written copy, virtual reality, social media, etc. and they all have value in engaging potential customers. For example, from hotel to start using virtual reality as part of their digital marketing strategy is a guest experience win-win. Not only does it make it easy for the guest to get involved, it can also lead to increased brand awareness and engagement with your content. Virtual reality can give the hotel guests a way to experience the hotel products, beyond just looking at a picture on the hotel website (Ristova *et al.*, 2019).

Hotel's digital marketing can use big data in different ways, but for that, they have to identify what they want to achieve from big data, so, they can take advantage of the insight based on their requirements. A perfect strategy with big data will surely help digital marketing to shape better marketing campaigns for the hotels.

Conclusion

Without a doubt, big data are changing the marketing landscape of many businesses, no less hospitality. Digital transformation has created a new world that allows hospitality to track digital activities of millions of consumers / guests through a variety of different techniques that allow hotels a personal look at guests' behavior and purchasing habits. It is this data collection that has propelled hospitality forward, keeping hotels abreast with the current times. Big data is the process of examining these data in order to uncover hidden patterns, market trends, customer preferences and other useful information in order to make the right marketing campaigns. And as it is today, digital marketing is all about understanding the consumers, i.e the audience, so important marketing decisions is now determined by big data. Digital marketing in hospitality, but in general as well, has a job of: collecting data, crunching numbers and statistics, deriving trends, targeting individuals (creating personalized offers) and finding the right channel among the hundreds to reach out to their target customers. Using big data for creating digital marketing campaigns is that it takes the guesswork out of determining what customers want. Big data application into the hotel's digital marketing allows hotels the opportunity of getting to know their guests better, assessing the level of guests' satisfaction, understanding reliability of the offered hotel service that provides the needs, finding new ways and implementing them to enhance the guests' trust and developing the new digital marketing campaigns on demand. The question left for now is for the digital marketing to take action into embracing such new potential into the performance strategies of hospitality to build a meaningful insight and enhance their efficiency.

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