THE ROLE OF SOCIAL MEDIA AND BIG DATA IN THE U.S. ECONOMY

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Abstract. Presently, social media and big data are emerging technologies. Social media users produce wide variety of data which cannot be handled with traditional data techniques. The acquisition of data from different social media platforms has resulted in the emergence of big data. Big data helps business to personalize their marketing. Therefore, they can target specific demographics resulting in increased sales hence, increased (Return on Investment) ROI. Companies learn more about their potential customers and how to approach them. Big data and social media facilitate creation of new avenues for innovation, effective marketing, and improved decision making.

Introduction
With the heightened use of the internet, individuals have adopted it in their daily lives. It is not only employed for interaction purposes, but a valuable platform for companies to connect with their audience. Enterprises are investing in collecting information using big data as a vital element for examining social media activity on social network sites such as Twitter, Facebook, LinkedIn, and Instagram. Available data on customers’ feedback, web browsing, online shopping behavior, and market search enables companies to gain timely and extensive insights. Organizations mine the information to understand their customers and improve operations. Social media is the biggest and richest source of big data. Companies depend on it to forecast their business development. Therefore, the research paper focuses on analyzing the impact of social media and big data in the U.S digital economy.

Research question
What is the impact of social media and big data in the U.S economy?

Literature Review
Big data is the exploding growth of data that can be evaluated computationally to reveal trends, patterns, and associations particularly involving human interactions and behavior. According to Blazquez and Domenech, big data can be described in terms of the 5Vs model. Velocity (speed of data transfer), variety (different types of data with different structures), volume (size of data), value (extracting valuable information also referred to as big data analysis), and veracity (privacy concerns and data governance) [1]. Nevertheless, the data should be analyzed to help in predicting
behavior and recognize patterns.

The big data phenomenon applied to social media fuels sentimental analysis. Sivarajah, Irani, Suraksha, and Mahroof assert that utilizing sentimental analysis helps companies to understand how customers feel. Hence, sentimental analysis does not only offer useful information but also personalized insights [6]. It helps B2B and Small medium-sized enterprise (SME) operations managers identify their engagement levels with their stakeholders.

According to data obtained from Statista, adults owning smartphones has increased to 81% as shown in graph 1 below. In 2011, only 35% of adults owned smartphones. The percentage of smartphone ownership has increased by 41%. The increased rate of smartphone ownership has increased social media activities. The size of data produced by Facebook users daily is more than 30 petabytes [2]. On Twitter, there are more than 230 million tweets daily. Further research carried out shows that Twitter has approximately 310 million users of which 40% are technical operators [2]. According to Blazquez and Domenech, Facebook is one of the most visited social media sites with 1,650 million active users, representing a source of potent data for evaluating economic and social behaviors [1]. Other social media sites such as LinkedIn, Google, Flickr, Instagram, and Tumblr are rich sources of information. Utilization of the social media platforms informs better segmentation helping companies formulate a winning marketing strategy [5].

The prominent adoption of social media in today’s economy has stimulated the advent of e-business services. Companies can carry out online transactions with customers (e-commerce), offer online services (e-banking), and recruit candidates (e-recruitment) [2]. Consumers offer reviews on companies’ online platforms offering insights for decision making.

Graph 1. Percentage of smartphone ownership among adults in the US from 2011 to 2019
Source: [7]

Methodology
A qualitative secondary analysis was conducted to collect data. The process of data collection involved searching on Google using keywords” ‘data’ ‘social media and ‘big data’”. The search provided 706 million articles. The articles obtained were
filtered based on the most recent articles. Therefore, we centered on articles between 2017 – 2021. Afterward, we focused on reliable articles based on the source. In this case, we narrowed it down to industry reports from credible companies such as Forbes and McKinsey for authenticity.

Results

According to a recent McKinsey survey, 50% of the respondents stated that big data and analytics have changed their business practices in their marketing and sales functions [4]. Additionally, the survey showed that companies that have grown exponentially have adopted big data. Respondents at the company asserted that they are thinking more critically about monetizing their data. Further, they emphasize using the data to create value for their business and customers. Through the use of data, they are developing new business models, selling data-based products directly, and adding new services to the existing offerings.

Based on a survey conducted by NewVantage Partners, big data is bringing value to companies by cutting expenses by 49.2% [3]. Further, it is creating new avenues for disruption and innovation. Approximately 69.4% of enterprises use big data to establish a data-driven culture.

![Big Data Initiatives and Success Rate](Source: [3])

Approximately 84% of companies have launched big data initiatives to speed up decision making and bring greater accuracy as shown in figure 2 below. Big data enables companies to gain insights and identify social media trends helping companies make decisions such as which audience to communicate with and which channel to use. Companies can understand sentiments of the market through big data allowing them to build successful marketing strategies.
Figure 2. **Big Data Initiatives and Success Rates Among Corporation in the US**

*Source: [3]*

Figure 3 below shows how big data has affected business practices. 70% of executives reported that utilization of big data brought moderate changes in companies’ competitive landscapes. Data obtained from the social media platforms ensured that marketing is done in real-time. Effective marketing boosts sales by 15 to 20% improving ROI [4].

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**Fig. 3. Change to industry core business practices brought about by big data**

*Source: [4]*
Discussion

It is evident from the literature review and qualitative data collected social media and big data analysis helps organizations gain insights into consumer sentiments, intentions, and real-time consumer choices. Utilizing sentimental analysis offers useful information and highly personalized insights into the feelings of the customers. Further, big data facilitates personalization giving companies in-depth insight and a holistic understanding of their audience. Companies can track their target audience behaviors enabling them to ascertain which social media platform to target. Effective marketing results in more sales resulting in improved ROI.

Apart from personalization, social media and big data have resulted in a transformation in business practices. Hence the introduction of e-businesses services has facilitated the establishment of SMEs. The number of SMEs has increased due to decreased initial capital. Businesses do not require a huge sum of money to start up their business. Conducting businesses online has been made possible due to the increased use of social media platforms. Companies’ expenses have decreased by 49.2% according to research conducted by NewVantage Partners. As stated in the McKinsey survey, companies have monetized their data. Enterprises can sell their products directly to consumers via social media platforms.

Effective utilization of big data enables businesses to have a competitive advantage. Big data enables firms to analyze the exact behavior of their target audience. Through sentimental analysis, corporations understand how the consumers feel enabling them to understand how to engage with their stakeholders. With the increased percentage of smartphone ownership, companies should utilize social media platforms to enable them to acquire data. Relevant and UpToDate data facilitates business expansion. Through big data analysis, companies can add services to the existing offerings. Overly, big data and social media have resulted in creation of new avenues for innovation, improved decision making, and effective marketing.

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