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The Study of Impact of Data Science on Business

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Abstract:Data science is the study of huge amounts of data using current tools and methodologies to discoverpreviously unknow n pattern, derive valuable information, and make business decisions. To create prediction models, data scientistsuse complicated machine learning algorithms. The present study focus on the impact of data science on society. The survey has been conducted with 50 companies and their responses were recorded and analyzed. The data science is a fast growing sector and many companies are hiring data scientist to increase their revenues and develop their businesses. It also makes significant impact on society by influencing advertisements. The factors like cost reduction, better product management found to be more preferred factor. While a significant growth in terms of hiring Data Scientists and average salary has been observed. The revenue spent of dvertisement has also increased. Thus we can say Data Science has made the business more successful.
Today, it is used in almost every field in the world for various purposes, Specifically in security, healthcare, business, agricultur e, transportation, education, prediction, telecommunications, and other fields.
Keywords: Data Science, Data, Business, Impact, Machine learning.

I. INTRODUCTION

Today Data science allows for more precise decision making and predict growth. Because of data science several companies are able to use their resources smartly. Their role will be critical in the future to help improve the company's operations.
The Data Science goal is to find the most significant datasets to answer the questions posed by the companies, then elaborate on the m to extract additional data linked to behaviors, demands, and trends that serve as the foundation for their managers' data-driven decisions.
It may provide value to any organization that can effectively utilize its data. Data science is valuable to any organization in any industry, from statistics and insights throughout workflows and hiring new applicants to assisting senior employees in making stronger decisions. Data Scientists' apps are used by the world's leading companies. Data science is quite useful for improving marketing predictions. It can aid in the development of a firm by reducing the limits of time and budget allocation. It also aids in forecasting future results, which can assist many huge organizations avoid financial losses.
Artificial intelligence enables the development of recommendation engines that suggest what to buy, what to listen to, and which fil ms to watch based on the preferences of the particular user.
Because of the machine learning process, these algorithms may also analyze which suggestions did not pique the user's attention, allowing them to refine the proposals more and more, increasing conversions and maximizing ROI. Many industries are being transformed by data science. It is simply a matter of getting to know your client and evaluating his behavior by establishing data correlations that might lead to prediction outcomes regarding market trends and orientations. Data analytics is a critical subject of study that has showed great potential in the commercial sector. Data Analytics has aided numerous businesses and organizations in reaching their full potential since its inception.
The topic of study is universal, and its lessons apply everywhere. Data Science has impacted business a lot. They helped to target the genuine audience thus reducing cost for advertisement.
Businesses and organizations acquire a large amount of data in a variety of forms and statistics on a daily basis.
The majority of it used to be in the form of suggestions and consumer reviews, but as the digital era has progressed, the collecting and harnessing data has become a priority.
Some specialists realized that the data gathered may be used for more than merely tracking the company's assets.
It was known that when the data was harnessed and organized, it could be utilized to acquire valuable insight into the company's suc cess, product sales, customer review to the product, and current market trends.
With massive volumes of data currently available, practically every industry is focused on data for competitive advantage.
The availability of data has increased interest extracting useful information and knowledge from data and use them smartly for the growth of the company.
To deal with this massive collection of data, a new discipline known as data science has emerged as a new paradigm.

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II. METHODOLOGY

The present study was conducted among 50 directors belonging from various business sectors. Their opinion has been recorded and thoroughly analyzed to identify the effectiveness of Data science for businesses. The factors are selected after close consultation with experts from relevant sector. Similarly average salary has been identified after consulting companies. Their opinion on other aspects has been recorded also.

Table 1 Factors responsible for making data science effective for business

Factors	No. of Companies Voted	Total no. of Companies	Percentage
Fast and Accurate	42	50	84%
Cost Reduction	48	50	96%
Managing Businesses Efficiently	39	50	78%
Making Better Products	46	50	92%
Predictive Analytics to Predict Outcomes	42	50	84%

According to the survey 96% companies believe that data science helps them to reduce the cost while 92% believes data science can help in making better product. The majority agreed that the data analysis is fast and accurate and can help in managing the business efficiently.

Table 2

Terms/Period	1990-2000	2001-2010	2011-2020
No. of Companies Hire at least 1 Data analyst.	7	16	47
No. of Companies with separate marketing unit with Data Scientist.	3	9	43
Average salary package	3.2 Lakh INR	4.9 Lakh INR	6.5 Lakh INR

The average salary for a data scientist has increased as compare to past 2 decades. In fact almost all the companies have at least 1 data analyst who assist them in taking decision. 14% companies had data analyst during 1990-2000 but in 2011-2020, 94% companies has at least 1 data analyst. Initially Big companies hire data scientist but now even start ups take risk in investing in data scientist because of high ROI.

Table 3 Revenue spent on Digital Marketing by Companies

Period/Terms	More than 1 Lakh(Average)	More than 10 Lakh(Average)
1990-2000	7	1
2001-2010	16	26
2011-2020	11	37

The above table shows the increase of revenue spent by the companies on digital marketing.

A. Impact of Digital Marketing on Society

1) Sales growth after hiring Data analyst- 96% responders agreed
2) Shift from offline Marketing to online Marketing 37 Companies
3) Increase in sale- 94% responders agreed
4) High ROI- 97% responders agreed

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B. Drawbacks

1. There are numerous projects aimed at assisting developing countries in utilizing analytics, but a lack of infrastructure and a restr icted supply of data frequently means that they struggle to find success. This could be about to change.
2. A 25% likelihood of a data breach is too high for consumers who are increasingly concerned about the safety of their internet da ta. Organizations must reconsider their approach to consumer data in order to secure their customers' privacy. They require tech nology that allow for data science applications while also preserving data privacy.

III. CONCLUSION

Thus the Study concludes that the data science can have huge impact on business. Significant growth has been observed in terms of hiring Data scientists along with average salary package increment. The study found that cost reduction is the most favorable outcome of hiring a data scientist. 94% responders believe that by hiring a data analyst their sale has increased while 97% voted for high ROI. 37 companies shifted from offline marketing to online marketing. The revenue spending of each companies has also increased. Thus the study concludes that

Data Science is essential for businesses dealing with digital transformation because it enables them to direct their products or service s toward the client, understand their purchasing behavior, and respond to their demands.

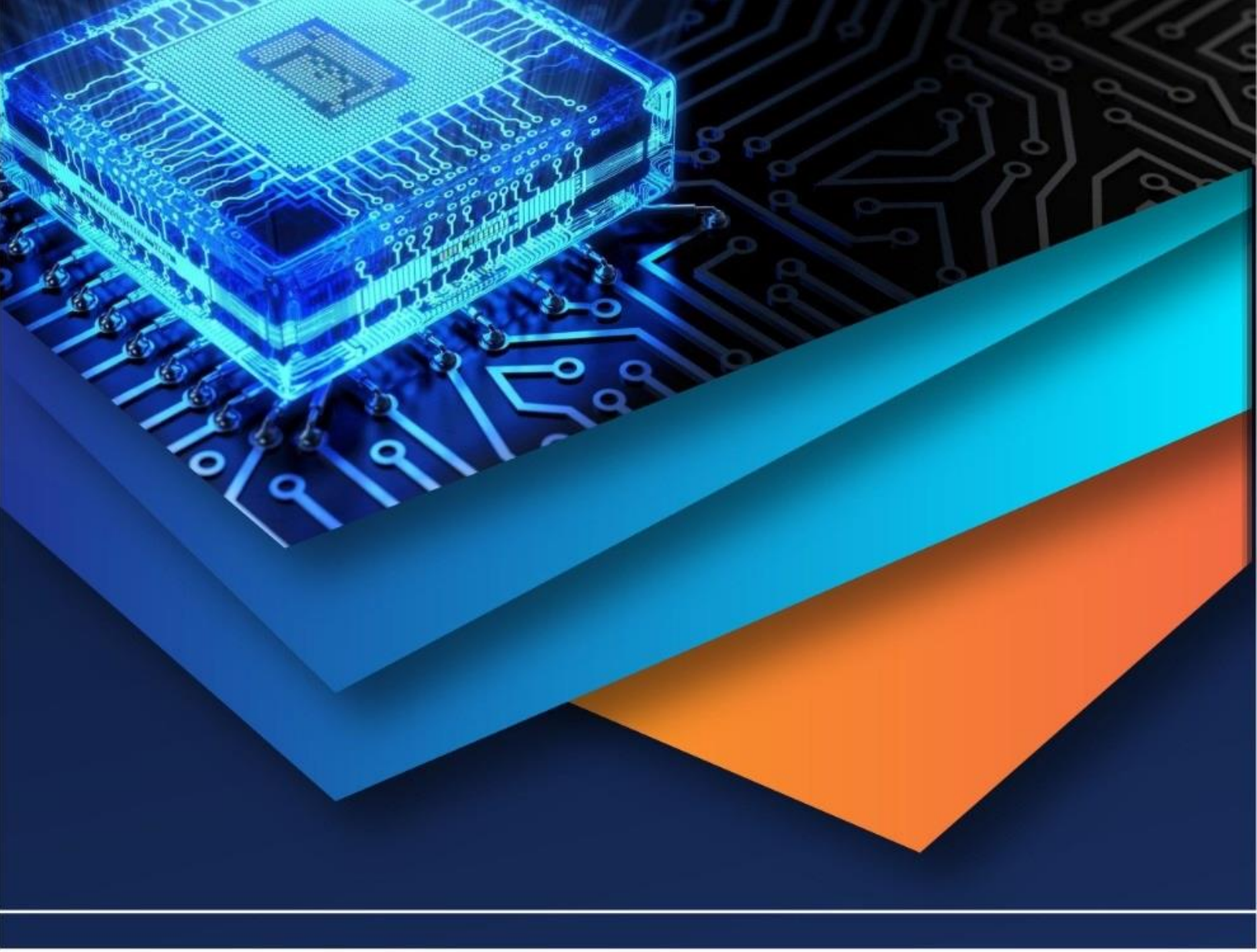
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