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Role of Big Data in the Accounting Profession

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ABSTRACT

This paper discusses the impact of Big Data in my work in an accounting firm in China With technology expanding in almost every industry today, the accounting sector also is going through some significant transformation by evolving through traditional methods.Hence, industry professionals need to keep up with cutting-edge technologies to stay ahead of their competitors in the financial sector. In order to do so, big accounting firms have already started adopting technologiessuch as Big Data, Robotics, and Artificial Intelligence (AI) into their business models. Out of all the trending topics out there, big data is impacting nearly every aspect of the accounting industry. It helps produce better data-driven audits, hence, creating a better experience for clients as well as auditors. In the tax process, it helps evaluate tax codes, reduce fraud, and monitor budget and tax expenses, thereby saving time, money, and stress for filers. Whereas, in the advisory sector, it helps identify and monitor questions and create better reports to improve business performance. Moreover, in finance, it helps design analytical models and build better financial reports. Therefore, it is one of the most useful technologies that accountants need to adopt in their process.

I. INTRODUCTION

The term "big data" has recently grown in prominence as a way of describing the phenomenon of growth in data volume, complexity and disparity. The definition of big data is not totally consensual in literature and there may be some confusion around what it really means. Big data is not just an environment in which accumulated data has reached very large proportions. The word "big" does not just refer to size. If it was just a capacity issue the solution would be relatively simple. Instead, big data refers to environment in which data sets have grown too large to be handled, managed, stored and retrieved in an acceptable timeframe (Slack, 2012).

Big Data can be defined as extremely large sets of unstructured data coming in various forms gathered from different sources at a rate so fast that it is way beyond the processing power of a traditional server. It is so voluminous that it is measured in terabytes and zettabytes. To to reflect the accuracy and up-to-date information on this article , the data have been updated on September 2021.

II. RESEARCH METHOD

Audit Analytics In the New Normal. Internal and external auditors have been at the forefront of the use of big data in the accounting industry. Nowadays, the traditional approaches to auditing, which include analyzing billions of transactions in a ledger based on sampling, are not used anymore.

Though auditors still work on large data sets, audit analytics enables them to visualize the wide range of financial and non-financial data. It helps identify exceptions and pressure points so that auditors can focus on greater areas of risk to predict outcomes that will improve forecasting.

BIG DATA AND ETHICS. In her book, Weapons of Math Destruction, Cathy O'Neil outlines a variety of examples of algorithmic-based decisions which are based on faulty models and which give biased or unfair outcomes. Typically, models draw on a range of data to classify people, based on particular similarities, and use that classification to make predictions about people's future behaviour.

Some of the common problems highlighted include:
1. Not enough data to be statistically valid;
2. Lack of feedback loop to pick up errors or changes in the environment;
3. Opaque use of data, often using sensitive data that would otherwise not be allowed;
4. Confusing correlation with causation; and using data that is cheap and easily available, rather than data that is most relevant but hard to capture.

These problems result in models, and decision-making, which can discriminate against disadvantaged groups, for example in criminal justice. It can also have far-reaching impacts on behaviour, as people try to game systems. In this regard, she cites the ratings of US universities, and how the selection of data used in the process drives universities to spend lots of money on sports facilities, for example, but provides no incentives to keep fees low.

III. DISCUSSION

Big data is a term that has risen to prominence describing data that exceeds the processing capacity of conventional database systems. Big data is a disruptive force that will affect organizations across industries, sectors, and economies. Hidden in the immense volume, variety, and velocity of data that is produced today is new information, facts, relationships, indicators, and pointers that either could not be practically discovered in the past, or simply did not exist before. This new information, effectively captured, managed, and analyzed, has the power to enhance profoundly the effectiveness of government. This chapter looks to the main challenges and issues that will have to be addressed to capture the full potential of big data. Additionally, the authors present a conceptual framework for big data analysis structured in there layers: (a) data capture and preprocessing, (b) data processing and interaction, and (c) auxiliary tools. Each has a different role to play in capturing, processing, accessing, and analyzing big data.

Big Data can be often characterized by three fundamental factors: volume, velocity, and variety. According to Wilson and Kerber (2011) only fifteen percent of the information today is structured information, or information that is easily stored in relational databases of spreadsheets, with their ordinary columns and rows. However, unstructured information, such as email, video, blogs, call center conversations, and social media, makes up about 85% of data generated today and presents challenges in deriving meaning with conventional business intelligence tools. Information-producing devices, such as sensors, tablets, and mobile phones continue to multiply. Social networking is also growing at an accelerated pace as the world becomes more connected. Such information sharing options represents a fundamental shift in the way people, government and businesses interact with each other.

The characteristics of Big Data will shape the way government organizations ingest, analyze, manage, store, and distribute data across the enterprise and across the ecosystem. Table 1 illustrates the characteristics of Big Data and highlights the difference of "Big Data" from the historical perspective of "normal" data.

Table 1. Characteristics of big data (Wilson & Kerber, 2011)

Characteristic	Description	Attribute	Driver
Volume	The sheer amount of data generated or data intensity that must be ingested, analyzed, and managed to make decisions based on complete data analysis.	The digital universe is generating a high volume of data, which is expected to increase with exponential growth.	Increase in data sources, higher resolution sensors.
Velocity	How fast data is being produced, changed and the speed with which data must be received, understood and processed.	Metrics used can be defined in the segments of accessibility, applicable and time value.	Increase in data sources, improve throughput connectivity and enhanced computing power of data generating devices.
Variety	The rise of information coming from new sources both inside and outside the walls of the enterprise or organization creates integration, management, governance, and architectural pressures in IT.	The data can be divided in the following segments: structured, unstructured, semi structured, and complexity.	Mobile, social media, videos, chat, genomics, and sensors.
Veracity	The quality and provenance of received data.	The quality of Bid Data may be good, bad, or undefined due to data inconsistency, incompleteness, ambiguities, latency, deception, and model approximations.	Data-based decisions require traceability and justification.

IV. CONCLUSION

With the ever-increasing voluminous data, those in the accounting profession all over the world must have the ability to utilize the latest technology and tools to analyze financial data. It will help them improve client experience, provide greater assurance over financial statements, and increase the decision support that they give to make their business thrive.

Therefore, top accounting firms must integrate big data techniques seamlessly into their business models to achieve this transformation. But, in the end, using big data and analytics in any industry can be challenging as it comes with many contingencies around the quality of data, the data sources, and the choice of data sets that need to be understood adequately while using big data.

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