

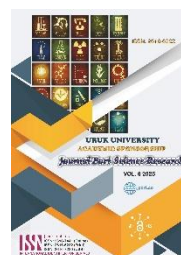
The Impact of Big Data on Companies in Making Strategic Decisions - A Descriptive Study

Dunea Taleb Kazim ^{*1}, Saif M. Duhaime ²

^{1&2}Technical institute for administration, Middle Technical University, Baghdad, Iraq.

dunea-taleb@mtu.edu.iq

Abstract This study aimed to examine some of the companies that have adopted (big data) systems and to integrate and analyze data and the extent of the resulting benefit in light of the enormous industrial competition. While the current study dealt with the descriptive approach and used a comparison of the results towards the peaks of benefit reached by the four companies, which were In each of (Amazon, Netflix, Coca-Cola, COFCO), while the study concluded that the benefits of collecting data and then analyzing it are the ease of reaching sound decisions for the ability to compete in the industrial labor market, while COFCO had the greatest amount of collecting Data and the ease of analyzing it through Microsoft's "Azure Synapse Analytics" application, which contributes greatly to integrating, merging and then analyzing the largest possible amount of data possible. Coca-Cola had second place in terms of the ability to know customer requirements and the most requested taste in each country separately. This was done by analyzing interactions across social media platforms, while Netflix ranked third in terms of collecting information through its applications, through which the most requested offers and the most peak dates are known through users of its applications.



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Keywords: Big data - strategic decisions - international markets

INTRODUCTION

Many companies want to penetrate international markets to guide their products and services on the basis of being considered the main factor that characterizes successful and less successful companies. Where research indicates the importance of determining the market scientifically far from rumors relative analysis and others to get realistic opportunities in terms of markets and exports of products is a great challenge for companies, Existing literature shows that problems associated with identifying potential markets tend to be in two categories: The lack of information and the lack of an appropriate methodology for decision-making[5]. As international businesses expanded and increased in importance over time, there was an increase in the amount of information available to help choose the right international market. Decision-making was uncertain. In the past five years, the fourth industrial revolution has exploded and its enormous areas have exploded. The trend of big data has emerged although its use is old but it has become a key element in many areas to support fact-based decision-making [3]. Only some institutions have exploited big data and its benefits while some may fail to tap into their potential. Therefore, the problem of the study is as follows:

Does big data help companies decide to enter a new international market?

Under two basic hypotheses:

The first hypothesis: big data has become an important means of collecting and analyzing information for decision-making.

Second hypothesis: Big data helps companies burn international markets while not being able to measure human emotions and tendencies.

The importance of research

The importance of research is that big data is a fundamental and priority tool in most activities. Here, the analytical descriptive approach of the study was followed based on the relevant existing literature. The study was divided into four elements, the following being:

- The relationship between big data and its impact on decision-making.
- The impact of big data on industrial companies.
- Corporate Technical Overview
- Conclusions and recommendations

First, the relationship between big data and decision-making.

Boot: In the beginning we review the concept of data: the data is a set of letters, Words, numbers, symbols, or even images that relate to the same subject, The data itself has no meaning or value, but rather the basic picture of the information. The example of employees' data and images, the information is the data that is analyzed and processed, so that we draw from them a specific meaning, which can be used in decision-making, Like getting the total number of employees their average age,

and years of experience, What is known is that it is the process of analysing and linking different information and having a clear understanding of it and mixing it with experience. Figure 1 show the classification of basic data into 3 types [14].

- Structured data: data organized in tables or databases.
- Non-structured data: data that represents the largest proportion of data obtained daily from text writing, images, video, messages, and clicks on websites.

- Semi-structured data: It serves as a kind of structured data but is not represented by tables, lists, or even databases.

Data volume can be measured using a set of different measurement units starting with the least bit, byte, and kilobyte.



Figure 1: Difference between data, information and knowledge [14].

THE MOST IMPORTANT DEFINITIONS OF BIG DATA ARE:

-Definition of Big Data: Big Data is a term that describes large quantities of high-speed, complex and variable data that require advanced methods and techniques to enable the absorption, storage, distribution and analysis of information [8]

-The McKinsey Global Institute defines big data, it is a collection of data that outweighs the ability to process it using traditional database tools from capturing, sharing, transmitting, storing, managing and analyzing in an acceptable period of time. [9].

-Big data is also defined as a collection or sets of data with different classifications that have unique characteristics (such as size, speed, diversity, variability) of data validity that cannot be processed efficiently using current and traditional technology to benefit from it [14].

Although the concept of big data itself is relatively new, However, the origins of big data sets date back to the 1990s and 1970s when the data world just seemed through the first data centers and the development of its correlative data base around

2005 people seemed to realize how much data users generate through Facebook, youtube and other services available online. Then the development of HadoopoSpark in the recent period was necessary for the growth of big data, because it made the big data work using WarPerson. Users still create huge amounts of data but it's not just people. With the advent of the Internet of Things (Iot), more objects and devices are connected to the Internet, and data is collected on customer usage patterns and product performance. The emergence of automated learning has led to the production of more data. Although big data has come a long way, its usefulness has only begun now. Cloud computing has expanded big data beyond that. The cloud provides flexible scalability in real ways, where developers can simply create custom sets to test a subset of data. Graphic databases are also becoming increasingly important, thanks to their ability to display vast amounts of data in a way that makes analytics fast and comprehensive, oracle.

Three key phases of the digital data level that contributed to the push into the big data phase manifest us:

- The first stage: from paper culture to digital vessels.



- Phase II: From computer and local networks to the Internet.
- Phase 3: From classic internet to big data.

Big Data Standards

Doug Lenny, a data analytics specialist, identified the third key criteria to be available together in order to call data what is a huge data, namely size, speed and diversity, but was later added by other scientists as follows: [3].

Size: means the volume of data extracted from a source, which determines its values and data potential to be classified from big data

Diversity: It means the diversity of data extracted, which helps users whether they are researchers or analysts to choose the appropriate data for their field of research. It includes structured data in databases and unorganized data that come from their unorthodox character, such as images, clips, audio recordings, video tape, SMS, call records, map data, emails, etc.

Speed: It means the tensile incidence of data, the data accumulates day by day. The example of its speed is the production and extraction of data to be covered by demand, speed is a critical element on this data until the decision is made based on it.

Big Data authenticity: It is intended not to damage data during transportation and storage, so that big data is stored properly.

Change: In the sense that the data does not have a specific pattern that depends on it in terms of code.

Value: Big data stored has great value and can be greatly utilized

Credibility: Where a person can publish any kind of data, it has become very important to identify data sources, credibility and accuracy levels.

Inconsistency: Data generally suffer from discrepancies. Because the meaning of data and what it represents changes over time and in different contexts, this makes it harder to manage and the results of the analysis are particularly unstable, when dealing with data in social media sites

Complexity: Due to the collection of data from different sources, a new problem emerges due to the different composition and diversity of data representation, which requires the conversion and interconnection of different data, to produce interconnected and analytical data.

The importance of big data in making the decision to penetrate international markets:

Access to international markets has to be internationalized, that is to think internationally and head the company from the sole (local) to the multiple (international) center model, and work in different ways by changing one culture to multiple cultures.

With more than 200 countries there is a large volume of information, the international trade department collects, analyses and arranges it..... Etc, this is generated by any available source (magazines, lectures, conferences, etc.) to analyze the company's appropriate external markets, and with the sheer volume of information is often uncertain.

Internationalization is constantly moving with an exceptional transformation led by the digital age. Companies need to understand the whole new business environment. Including external markets and customer insights to provide innovative products and services [5], organizations are increasingly analyzing their data to gain insights into improving their operations and opening up greater opportunities to better serve their customers. [6], and apparently the data is the only resource that can grow infinitely [9], with the explosion of data from social media and other sources, companies carefully harvest and store this data for meaningful reuse [4], here was big data often coming from data exploration and arriving in multiple formats. [7], and existing research and literature suggest that big data and its analysis give a quick look at international markets, which means you can make a more informed decision regarding access to them. [10], and that big data and analysis can lead companies to explore and scan foreign markets, assess risks resulting from foreign expansion, and reduce complexity and uncertainty in environmental and strategic contexts. This may increase internationalization activity that facilitates the growth of these companies [9].

Big Data Benefits in Corporate Decision Making:

Big data can be collected through comments generally shared on social networks and websites, which are shared voluntarily from electronics and personal applications, through questionnaires, product purchases, and electronic check-ins [11].

Big data allows access to forecasts, predictive models and other analytical tools in the following ways to predict the direction of the country's economy, forecast where the market is going and make better and informed decisions on expansion [10].

The use of big data has achieved a competitive advantage and continues to outperform its industry peers [13].

Using big data gives a better perspective of the company's position among its competitors. All analyses of company data, and data of its competitors, as well as market data and prediction of future key performance indicators, can be collected if the company can obtain specific key performance indicators from competitors, then it is given a direct comparison [1].

Big Data helps understand market conditions, trends and needs, also study competitors through data analysis and so on customer behaviors and what they care about so you can design your products and services according to market need.

Big data can be used in social media harvesting to analyze emotions, which can also be used to determine the situation compared to competitors [1].

An enormous amount of data can be analyzed efficiently using a combination [7], [12].

Sample experiences of companies in the use of big data in decision-making:

Coke Experience: Company Identification: A multinational American beverage company headquartered in Atlanta Georgia, the company offers its products to more than 200 countries globally, with more than 500 different brands [7], while the product varies from market to market so as to ensure adherence to personal preferences and maintain customer confidence, data is also collected by many companies globally, so the data flow in their systems is wide, as the amount of data and fields collected is very large.

Company big data sources: The company generates data from Vario.

That data is through retail data, customer profile data from loyalty programs, In addition to social media data, supply chain data and competitors, Sales and shipping data from packing partners, to transaction and promotion data, So there is a huge amount of data that the company derives in order to identify appropriate and appropriate ways of delivering its products in each market.

Coca-Cola's Big Data Use Experience: Through the company's advertising of its products on social media, customers have had different interactions and comments globally, Through it there was a large collection of data and opinions on product quality and customer's views and interactions, This helps identify the most acceptable, expanding and demanding products locally and globally, "setting out the clear strategic vision for providing the product in a manner commensurate with the volume of demand in each market.

The contribution of big data to the company's strategic decisions:

As noted, the dynamic market is changing very quickly, To avoid the risks of competing with global companies, the company used big data to create new products by allowing customers all over the world to number their own drink. Blending a variety of flavors from their smartphones by ordering the exact percentages of different mixtures and adding flavors according to their preferences and then saving them for the next time, By monitoring the data collected from the machines, the company was able to launch a new product "Cherry Sprite," while analyzing and collecting data has become the appropriate way to identify the most in-demand products internationally [14].

Product Promotion: Based on the company's large customer base on social media, which is estimated at approximately 100

million followers on the Facebook page, and thirty-five million on the x platform, there was a significant role in data analysis and through interactions for online commercial products [14], while these data from the social media sites of the concerned departments contribute to determining the requirements and availability of raw materials for the highest-demand products, contributing to the right strategic decisions.

Netflix: Netflix, a popular film and TV streaming service, relies heavily on big data analysis and viewing experience for its users. With over 65 million subscribers in 50 countries, the largest number of Netflix data is dense from millions of users and uses sophisticated analytical techniques to visualize viewing and customized trends.

How do you use Netflix's diverse data?

1. Customization analyses (customization analyses)

Netflix employs a specialized customization analytics section to make personalized recommendations to all users on their past preferences and behaviors. Many types are analyzed such as viewing time, varied types, and evaluations provided by users.

2. Message analytics (message analytics)

These analyses help improve how Netflix communicates with its subscribers via email and in-app notifications. The goal is to increase interaction and motivate users to watch more content.

3. Content Display Analytics (Content Delivery Analytics)

These analyses focus on improving the quality of the viewing experience by monitoring the extent to which the actual location affects the viewing experience, and there are new accounts and service for as many homes as possible.

4. User Device Analytics (Device Analytics)

These analyses help understand how to use their different devices to access Netflix content, helping the company help us across different devices.

Engines

Netflix's efforts in this area began since 2006 when the company was mainly engaged in DVD broadcasting. The company announced a million-dollar Netflix award for leading companies developing the best algorithms to predict customer valuation of experts based on their previous reviews. The winning candidate was announced in 2009, thus losing the update of medical algorithms.

Marking (marking)

Pay Netflix to watch movies specific to it with items contained in the movies. These tags are used to make personalized suggestions to users on movies they previously liked.

Original Content Production

Recently, Netflix has been active to become the content of just a distributor for film studios and other networks. They only shared their statements -- which noted that their subscribers had an insatiable appetite for David's publishing content starring Kevin Spacey. After the increase on networks including HBO and ABC for House of Cards rights, they were very confident that they fit their predictive model of "perfect show" and could not produce a product and immediately intimidated a production after two seasons, and from 26 episodes.

Results

A message to Netflix began in April 2015 that big strategic data was paying off. They varied from 4 million in the same period in 2014 to 4.9 million new subscribers in the first quarter of 2015. Netflix attributed much of this success to "evolving content medicine," including House of Cards and Orange is the New Black[6].

Data used

Algorithm decisions and content recommendations are made with data about the brownish viewed by Damon, the time of watching movies a day, the time spent in movies, the number of downtime and writedown ratings.

Artificial Intelligence Quality Experience

Netflix also leverages artificial intelligence to analyze viewing monitoring and users' preferences which attracts it to offer accurate tips and exclusively raring content. It also uses artificial intelligence to improve image and audio quality even on weak internet connections and improve natural language to improve research and recommendations.

Counter-piracy

Netflix uses industrial technology to enhance content security and unlimited works of art.

Animal Challenges and Concerns

There are challenges, concerns and partners associated with how Netflix uses private artificial intelligence regarding plant privacy in algorithms.

The Future of Netflix and Artificial Intelligence

The future augurs well for further progress in how Netflix uses artificial intelligence which could lead to radical improvements in the technology industry.

Amazon Company:

Amazon makes one of the successful companies in using data analytics and improving its operations and services. Amazon relies on a wide range of analytics services provided by AWS (Amazon Web Services) that do not extract wealth insights and amplify data. Here is a detailed report on how Amazon uses data analysis:

1. AWS Analytics Services

Amazon provides the largest and most effective range of treatments as it helps companies obtain faster and deeper insights from all their data. These services include:

Amazon Athena: Users' query service is final, data query stored in Amazon S3 using SQL.

Amazon EMR: Powerful powerful source motion frame management service such as Apache Spark and Hadoop, making data access faster than three people able to service.

Amazon Redshift: A fast, simple and cost-effective data repository that can collect trillions of rows.

Amazon Kinesis: timely video streaming and real data analytics service.

Amazon OpenSearch: Search and analyze unstructured data of up to beta-byte size.

Amazon QuickSight: a fast business analytics service that enables users to create interactive dashboards and visuals.

2. Data Management

AWS facilitates data collection and copying across multiple data stores and stores your data, enabling large companies to easily size, market and analyze their data to any size. Some of the tools and services used include:

- ✓ AWS Glue DataBrew: to organize and organize data as fast as 80%.
- ✓ AWS Glue: To prepare and download data.
- ✓ AWS Lake Formation: Create a secure data store in terms.

3. Predictive and Learning Analyses

Amazon uses learning techniques (ML) and natural language to gain knowledge faster and deeper than its data. Some of the services and tools used include:

AWS Deep Learning AMIs: For deep learning on Amazon EC2.

Amazon SageMaker: Models for learning, training and disseminating creativity on a desired scale.

4. Software integration and ease of use

An integrated AWS offers a magic learning implication that is part of its data inventory and analytics services officially for some time, allowing existing models of magic learning, training and dissemination using pomegranate programming languages such as SQL

5. Timely and short implementation of pricing

AWS is committed to progress better and less expensive across all service analytics while continuing to perform pricing for their services. AWS tools also help reduce specific time (MTTD) and average time (MTTR), allowing focus on fixing problems yourself and setting speed.

COFCO International Company experience

Company Overview and History of COFCO International

COFCO International is a global agricultural company driven by a clear vision, strong values and a positive culture. The company is the overseas agricultural business platform of COFCO, China's largest food and agriculture company. With more than 11,000 employees in 36 countries, COFCO International handled more than 122 million tons of related goods in 2023, generating revenues of \$50 billion. The company is growing rapidly and aims to create a world-class integrated global agricultural supply chain, anchored in China and competing globally.

COFCO, the parent company of COFCO International, was founded in 1949 and is a leader in the Chinese agricultural industry. It is one of the world's leading agricultural companies, with global footprint and integrated value chain. COFCO's core businesses include grain, oil, sugar, cotton, meat, dairy and other agricultural commodities. In addition, the company offers food, finance and real estate as three main integrated business segments. As of the end of 2023, COFCO boasts total assets of CNY730.7 billion, with total operating income of CNY692.1 billion and gross profits of CNY21.2 billion.

COFCO International's global presence and operations

COFCO International is committed to supplying grains, oilseeds, sugar, coffee and cotton to help feed and clothe a rapidly growing world population. The company has a strong global presence, with a production capacity of 28.6 million tons and a port capacity of 32.1 million tons. Approximately 65% of the company's global assets are located in the world's top exporting region: South America.

The company is constantly improving its global agricultural trade and logistics network, covering key production and sales regions. COFCO is engaged in the creation, storage, processing, logistics and trade of agricultural commodities, such as grains, oils, oilseeds, sugar, meat and cotton. The company has created a stable corridor between major grain-producing regions, such as South America and the Black Sea, and emerging Asian markets. More than 50% of COFCO's revenue comes from abroad, with annual global sales of

agricultural commodities exceeding China's total annual imports.

COFCO International's Sustainability Commitments

In a rapidly changing world, COFCO International is building momentum on its sustainability commitments, addressing the challenges of climate, biodiversity and resource scarcity. The company's 2023 Sustainability Report highlights its progress and commitment to responsible food production around the world.

Company culture and values

COFCO International values diversity and recognizes the importance of inclusion. The company celebrates its rich culture, working together with customers, farmers and communities to make a long-lasting difference for the world. Strong company values and code of conduct ensure that business is conducted with the highest ethical standards. The Integrity Hotline provides employees and stakeholders with a mechanism to address concerns confidentially, anonymously and without fear of retaliation.

The purpose of using big data in COFCO International:

Like many rapidly growing companies, COFCO International's data has spread, which includes warehousing, shipping, trade, risks, and financial affairs, etc., and since the company lacked a central view of its customers' requirements and operations. Related to it, it needed more clarity in operations based on more accurate data to contribute to making the right decisions, so the company began trying to know the extent of the demand for a specific commodity, or market analyses, and this was represented by the Azure program affiliated with Microsoft, 2021, which It consists of:

Azure unified data system: The data that COFCO processes on a daily basis is considered huge and massive, so an agreement was made with Microsoft in order to obtain Azure. This program is considered necessary in integrating data in different places and analyzing the information stored in the enterprise management planning system (ERP) used. To operate the company's supply chains, in addition, obtaining data from multiple providers that supply goods, research, and financial markets, while providing the Azure infrastructure for data analytics and cleaning, and the first step was to create an Azure Data Lake for efficient storage while maintaining hundreds Gigabits of throughput, and to transfer data to the data lake through Azure Synapse, they can navigate through all the data saved in the data lake, select the data, create new SQL scripts for on-demand queries, and map the data, as shown in Figure (2) below. (Microsoft, Azure, 2021):

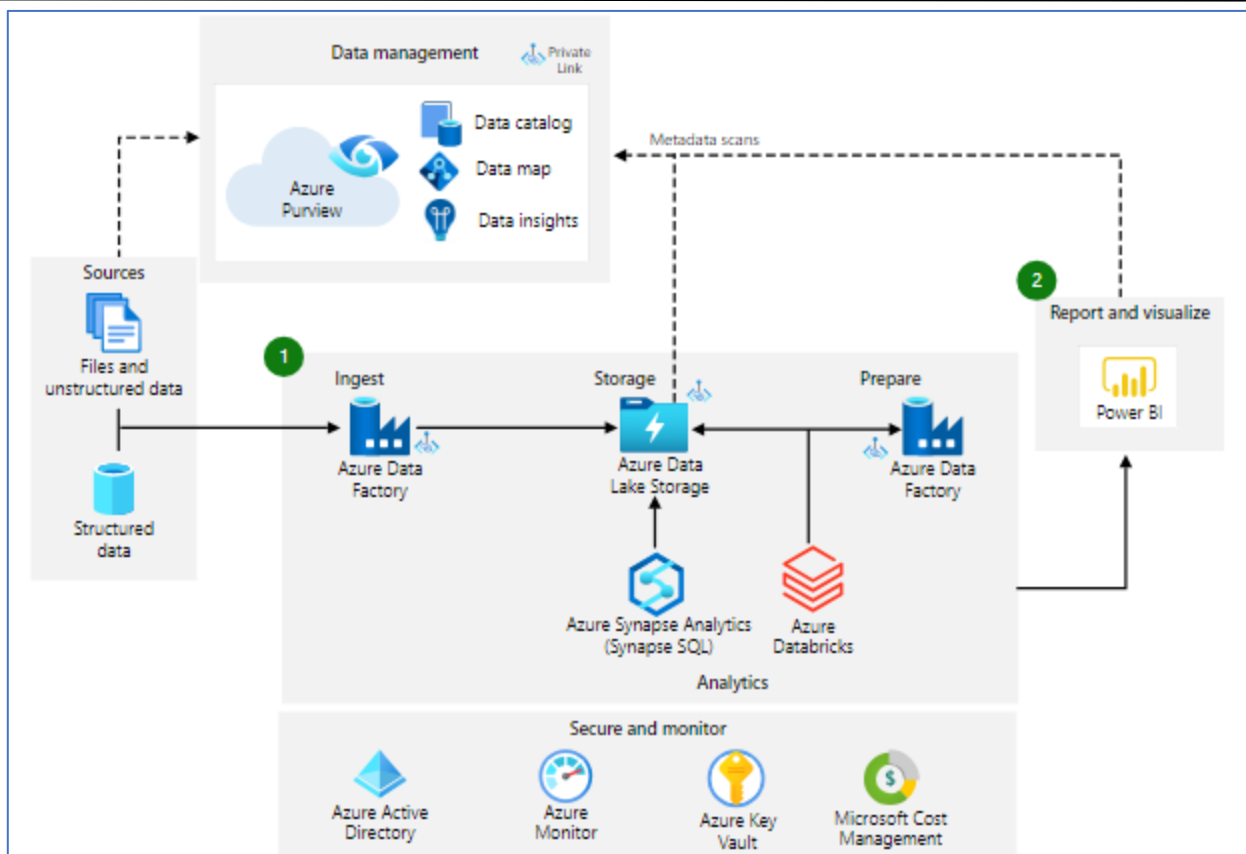


Fig2: Azure Synapse Analytics

COFCO International's experience with Azure for using big data:

Users used to wait from a day to a week in order to obtain analytics information, but now both financial management, risk management, and commercial management can easily obtain the accurate data they need immediately in order to Making appropriate and correct business decisions, while the Azure Synapse Analytics system had a significant contribution to accelerating business insights through it, the company was able

to analyze massive data with the utmost accuracy and speed (Microsoft, 2021).

Analysis of differences between previous companies:

Through rapid proactive analysis, potential options can be identified by understanding psychological consumers and market development rules. This can be done by companies to achieve their business goals and visions. The following table shows ways to integrate big data into the businesses above, as well as the diverse data for data acquisition.

NO	Company's name	Description	Mechanism adopted	Maximum benefit	Difficulties encountered by
1	Coca-Cola	Coca-Cola collects data from all its sources and analyses and processes it to understand the different purchasing habits of customers' lands around the world	Social Media Exploration/Augmented Reality/Smart Vending Machines/Beverage Flavors	Product Development/Increasing sales/Keeping up with dynamic market changes/Improving customer's personal experience	Analysis of large quantity of big data/integration of local data into one platform/data security
2	Netflix	Netflix collects through user recommendations, in addition to collecting customer account	Customization Analytics/Message Analytics/Content Display Analytics/User Device Analytics	Control programs, series or movies that acquire customers' taste/determine appropriate dates for presentation/identify preferences that seek to	Analyze large data, as well as users' errors in using the official app in their preference mode.

		data on the online app.		be available and increase production.	
3	Amazon	Amazon captures user data while visiting the website and monitoring its activities, and often uses external databases and is handled in its central data repository, which runs linux on Oracle	Predictive Analytics and Automated Learning: Alexa Audio Recordings/Personal Recommendation System/Kindle Recommendations/Predictive Charging Model	E-commerce control/customer segmentation/increasing number of customers/driving growth and increasing sales/web services/improving supply.	Data Control/Automated Learning Integration/Miscellaneous Data Analysis/Silo Cracking/Data Security
4	COFCO	The data flow to the AZURE system is analyzed and cleaned data, detection of incendiary values, identification of data, as well as data planning.	Acquisitions/suppliers/financial trading platforms/other sources in local cloud	Unprecedented analytical power/converting raw data into usable models/fast decision-making/accelerating business vision.	Data Management and Governance/Data Variability/Data Integration

CONCLUSIONS

Our study suggests that big data has multiple capabilities and manifests itself in big companies, Where they use them to stay in the competition arena and maintain the lead, Big Data Analytics gives a look at international markets and make sound strategic decisions in a timely manner in line with customers' and consumers' behaviour and economic environment. From previous data, Coca-Cola has had the greatest precedent in collecting and analysing data through comments and interactions on its advertising via social media platforms. which contributed significantly to the company's decision-making towards the production of new products commensurate with the volume of demand in some countries. As well as providing the most in-demand products in other countries.

In the same vein came **Netflix**, where it is interested in gathering information through its display platforms, which are user accounts through the company's app. What about it was the company to determine the quality of the most demanded show of films, series or programs, And the times that are most interested by customers, which has helped to set production priorities for the right content for customers, In addition to the times, all this is thanks to data collection and analysis as well.

As for **Amazon**, it has many and many data collection and analysis through online platforms where it is interested in knowing which products receive customer attention in addition to the cost and quality of the product. While AI applications have now tended to interfere with the measurement of feelings emanating from customers in a number of ways, including interactions and voice, "as a kind of real contribution to expanding the customer base and satisfaction. Amazon's data analysis also benefited from the following points:

Benefit from Amazon's data analysis

Amazon Web Services (AWS) offers a wide range of analytics services that help companies convert raw data into actionable insights. These services include:

1. Amazon Athena: enables enquiry about data stored in Amazon S3 using SQL.
2. Amazon EMR: Public open source big data frameworks such as Apache Spark operate, providing three times faster performance than the standard Apache Spark service.
3. Amazon Redshift: Provides fast, simple and cost-effective data storage.
4. Amazon Kinesis: It can be used to analyze video and data streams in real time.
5. Amazon OpenSearch Service: Allows searching, viewing and analyzing unstructured data and texts up to a set of petabytes.
6. Amazon QuickSight: Fast Business Analytics Service.
7. AWS Glue DataBrew: Clean and organize data at up to 80% speed.
8. AWS Glue: Prepare and download data.
9. Amazon Managed Streaming for Apache Kafka (MSK): Apache Kafka service is fully managed, safe and highly available.
10. AWS Database Migration Service: copies data from SQL and NoSQL systems to data stores and analytics systems.

COFCO International's big data analysis has many advantages that have contributed to the following:

Supply Chain Improvement:

Cargo tracking: Using cargo tracking techniques to analyze transport and logistics data helps improve efficiency and reduce costs.

Inventory management: Inventory data analysis can help identify seasonal patterns and predict future demand, reducing loss and improving resource management.

Promoting sustainability:

Environmental Impact Control: Analyzing data on carbon emissions and water consumption can help the company achieve its environmental objectives and reduce its negative impact on the environment.

Collaborate with farmers: Use data to analyze sustainable farming practices and make recommendations to farmers on how to improve their productivity in environmentally friendly ways.

Improved productivity and quality:

Agricultural Performance Analysis: Collecting and analysing agricultural performance data can help identify best practices and increase productivity.

Quality assurance: Use data analytics to ensure product quality by monitoring different standards throughout the production process.

Decision-making support:

Market Forecasting: Using predictive analyses to understand market trends and anticipate future demand can help the company make more accurate strategic decisions.

Risk management: Data analysis to identify and assess potential risks can help develop mitigation strategies.

Increase profitability:

Cost-benefit analysis: Understanding the cost-benefit relationship across different processes can help identify areas that need improvement to increase profitability.

Efficient resource allocation: using analyses to identify the most effective places to allocate financial and human resources.

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