A LOOK ON BUSINESS VALUE PROPORTION OF **BIG DATA**
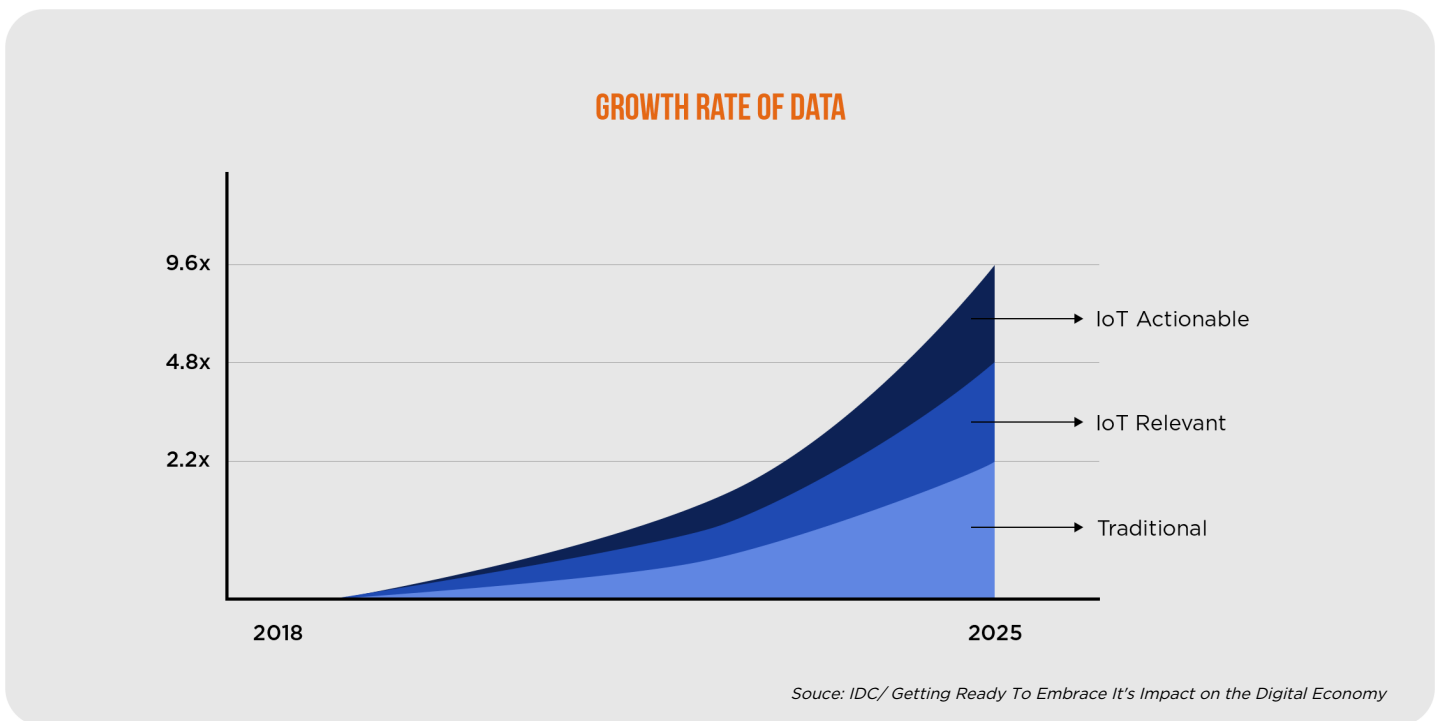
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Introduction

Today big data has been a buzzword for a new breed of large-scale data processing and analytics due to its astonishing computing power, affordable storage, and the extensive availability of deep as well as disparate data sets. Now, the buzzword becomes big business. For motivated organizations, which intent on fronting their industry ranks, big data becomes an obligation rather than an option to consider.The emergence of a massive amount of data from multiple sourceshas accelerated the development of new technologies, knowledge, tools, techniques, and skills that facilitate businesses to work with big data. In addition to building search engines, big data technologies play an ideal role in creating scalable efficient systems for discovery and analytics. Big data offers several stimulating opportunities from amplified business efficiency to improved customer engagement. As a result, businesses around the world are keen on incorporating big data into their boards in an inventive way. This whitepaper presents what big data technology is and how it evolves in today's market and how it produces benefits to the enterprises.

Big Data – A Brief Overview

Big data is defined as the new discipline, which is at the intersection of several others like technology, statistics, databases as well as business functions. The main objectives of big data are to knock into aggressively enhancing volumes of data, which have become impossible to handle with conventional database management as well as information management tools and to process complex data in a reasonable period. According to Gartner, big data technologies aim to achieve competitive benefits using data assembly, analysisand employ methods that previously couldn't be used because of the functional, technical or economic constraints related to the volumes, variety, and velocity of data involved.

Big data can emerge from anywhere. Now businesses capture data from millions of sources including websites, sensors, social media, partners, customers, mobile devices, weblogs and many more. In addition, a research by IDC projected a rapid growth in the volume of data. The graph below depicts the growth rate of the traditional data, IoT relevant data (data that can be analyzed) and IoT actionable data:

GROWTH RATE OF DATA

9.6x	
4.8x	→ IoT Actionable
2.2x	→ IoT Relevant
	→ Traditional
2018	2025

Souce: IDC/ Getting Ready To Embrace It's Impact on the Digital Economy

These data sources are categorized by what is called the 3Vs of big data: Volume, Variety, and Velocity. These characters assist big data management by highlighting what businesses should search for in their solutions. However, in order to harness the potential of the data, business should recognize the challenges that arise with gathering and analyzing big data. Hence, the big data solution should be considered beyond these three characters.

Here are the 10vs of big data (i.e. 10 properties and characteristics of big data) that support the businesses to prepare for both the benefits and challenges of big data initiatives.

10 V'S OF BIG DATA

Volume- Denotes the size of Data

Value- Denotes worth of the data being extracted

Veracity- Denotes the provenance or reliablility of the data source

Visualization- Denotes the ability of the information to start the decision making

Variety- Denotes how balanced the information is across diverse platforms and languages

Velocity- Denotes how quickly online information gains momentum

Viscosity- Denotes the information's ability to induce a call for action & top-of-mind recall

Virality- Denotes the ability for it to go viral or gain quick and easy traffic

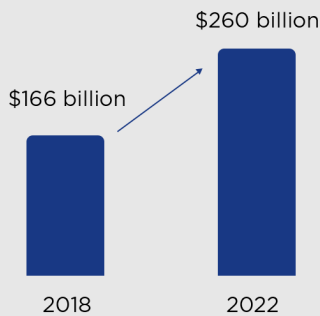**Variability-** Denotes the number of inconsistencies in the data

Validity- Denotes how accurate and correct the data is for its intended use
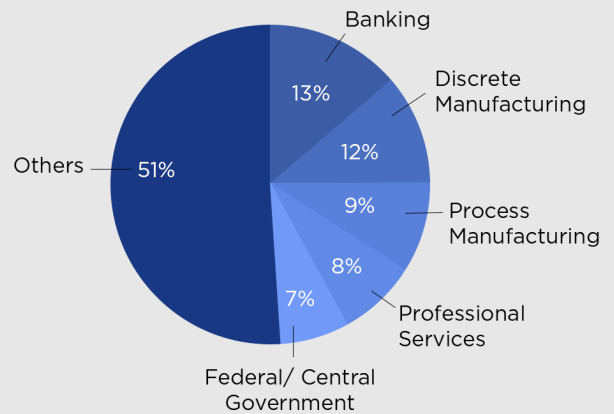
How Big the Big Data Market is?

As big data is currently receiving everyone's attention, the global big data market is becoming strong and booming day by day. Organizations' spending on this technology continues to rise as it has for the preceding decade. Leading enterprises are aggressively involved in inventing new technological tools for analysis of big data that renders firm competition in the big data technology market. According to an analysis of IDC called, Worldwide Semiannual Big Data and Analytics Spending Guide - the revenue from the big data & big data analytics solutions will touch USD 260 billion in 2022 with a CAGR of 11.9% during the forecast period 2017 – 2022. It also expects total revenue of USD 166 billion this year (2018) –a CAGR of 11.7% over last year. In addition, retail, banking, professional services, process manufacturing, and the federal government are the top industries that are incorporating this technology. Collectively, these industries will constitute for USD 81 billion of global big data analytics revenue this year. It is expected that they will be the industries with the leading opportunity in 2022 and their investment will be around USD 129 billion.

GLOBAL BIG DATA MARKET REVENUE FORECAST

$260 billion

$166 billion

2018   2022

TOP INDUSTRIES BASED ON 2018 BIG DATA MARKET SHARE

Banking 13%

Discrete Manufacturing 12%

Process Manufacturing 9%

Professional Services 8%

Federal/ Central Government 7%

Others 51%

These sorts of increasing investment are due to the result of attaining the positive outcome of the big data adoption. Enterprises, which invested in the big data technologies, are reporting that they are obtaining a positive influence on their bottom line. According to a big data survey by NewVantage Partners, 80.7% of respondents reported that their investment in big data technologies had been successful, and 48.4% stated they had observed measurable outcomes from their big data initiatives. The chart below depicts the overall examination of the business results of big data investments as well as the success rate of big data initiatives.

ASSESSMENT OF BIG DATA RESULTS
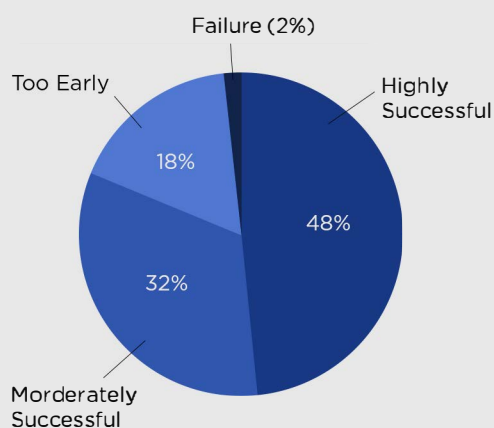
Big Data Success Rate	
Decrease expense through operational cost efficiencies	49.2%
Establish a data-driven culture	27.9%
Create new avenues for innovation and disruption	44.3%
Accelerate the speed with which new capabilities and services are deployed	31.1%
Launch new product and service offerings	36.1%
Monetize Big Data through increased revenues and new revenue sources	32.8%
Transform and reposition your business for the future	27.9%

Source: NewVantage

While the investment in big data solutions continues increasing, the adoption is gradually shifting from on-premise to cloud for big data. According to the Forrester Research, the worldwide spending on big data technologies through cloud contribution will increase almost 7.5 times speedier than on-premise big data solution subscriptions.

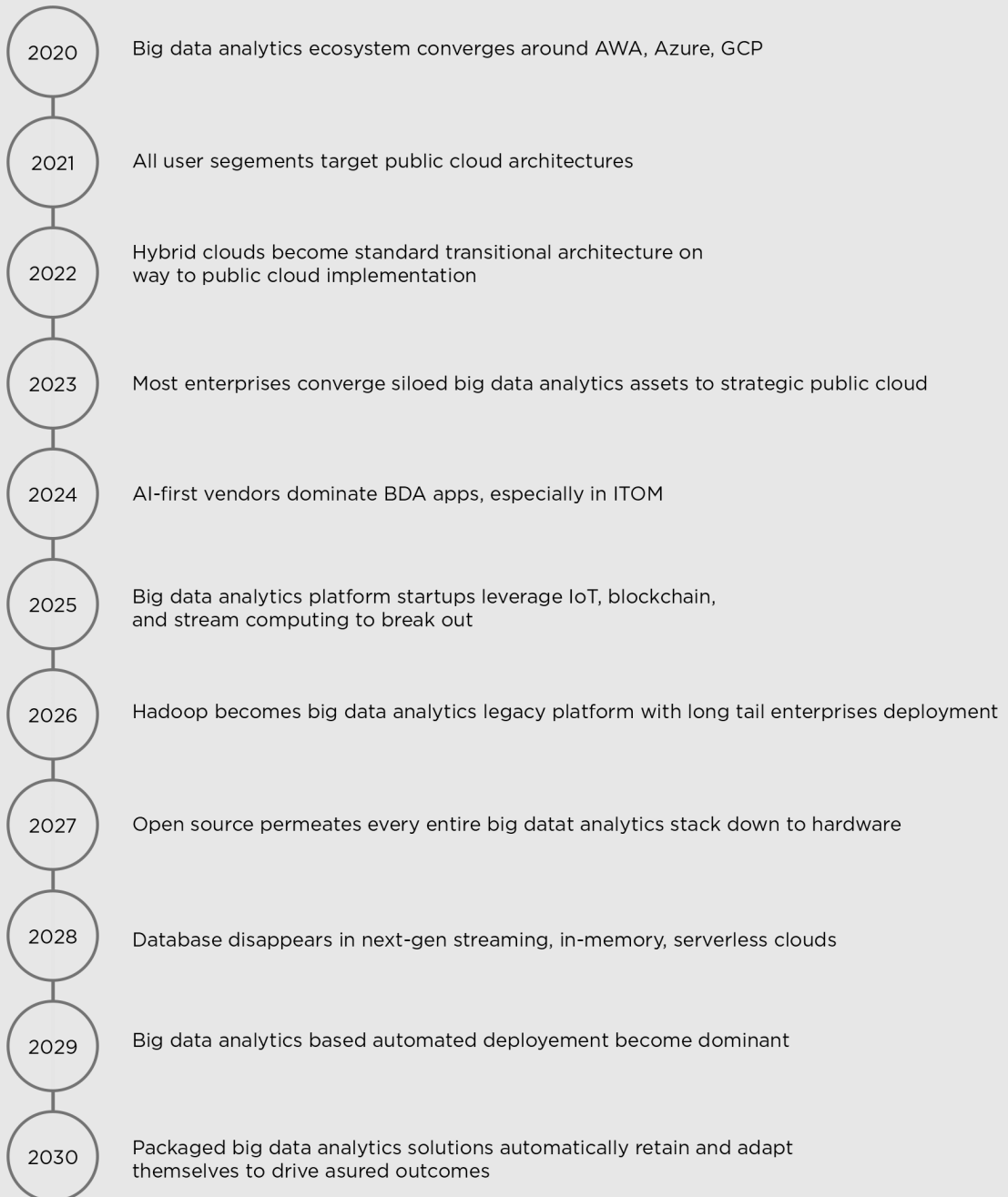## GLOBAL BIG DATA SOLUTION FORECAST : 2016 TO 2021
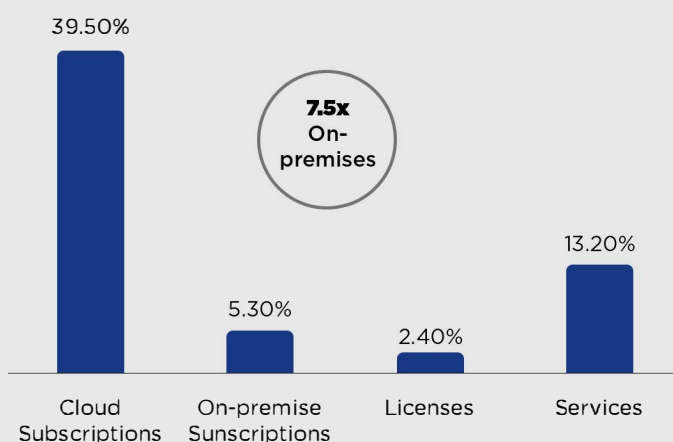
Furthermore, according to their 2016 and 2017 surveys of data analytics professionals, the public cloud was in the first-grade technology priority for big data solutions.

Future Predictions of Big Data Trends

With big data technologies growing efficient day by day, the trends of big data grows each year. According to Wikibon's 2018 Big Data Analytics Trends and Forecast – by 2030 every client from large organizations to small shops will obtain big data analytics solutions as pre-built and pre-trained templated cloud offering. Here are the chief big data analytics trends through 2030 with the reference to the Wikibon's research:

BIG DATA TRENDS

2020 — Big data analytics ecosystem converges around AWA, Azure, GCP

2021 — All user segements target public cloud architectures

2022 — Hybrid clouds become standard transitional architecture on way to public cloud implementation

2023 — Most enterprises converge siloed big data analytics assets to strategic public cloud

2024 — AI-first vendors dominate BDA apps, especially in ITOM

2025 — Big data analytics platform startups leverage IoT, blockchain, and stream computing to break out

2026 — Hadoop becomes big data analytics legacy platform with long tail enterprises deployment

2027 — Open source permeates every entire big datat analytics stack down to hardware

2028 — Database disappears in next-gen streaming, in-memory, serverless clouds

2029 — Big data analytics based automated deployement become dominant

2030 — Packaged big data analytics solutions automatically retain and adapt themselves to drive asured outcomes

Role of Big Data in Customer Experience

Big data plays an ideal role in customer service as enterprises adopting the technology to find out what should be enhanced to develop an active advertising strategy and enhance the customer experience. One of the core objectives of using big data analytics technology in businesses is the enhancement of CEM (Customer Experience Management). CEM serves as the center phase in a wide variety of domains like insurance, banking, healthcare, and retail. With the help of big data analytics, enterprises can process customer data, estimate customer loyalty and determine the reasons for negative impacts. As such, they can get the chance to create an effective action plan to enhance customer experience and accelerate sales as a result. Enterprises are harnessing the support of big data to promote a 360-degree view of the customers as it allows them to collect as well as analyze massive volumes of customer data to identify emergent trends as well as the preference of today's customers. Here are the five ways big data analytics can be employed to enhance the customer experience:

1. Unlock the metrics that demands enhancement in the contact center

Metrics can denote lot about the experiences that customers are having. Big data allows the enterprises to have knowledge about such metrics and thereby aid to enhance contact center practices as well as the customer experience.

2. Understand customer sentiments and attach on an emotional level

Undeniably, customer emotions contribute a lot to their relationship with products and services. With big data, companies can understand how their customers feel and can attach to them on an emotional level, thereby gaining their loyalty.

3. Streamline Service & Save Customers Time

Each and every time, companies should do something to streamline processes as well as save the customer time. For example, if they realized high abandonment rates through big data analytics, they can offer a customer callback feature to avoid placing their calls on hold. This can ensure that they never waste their customer's time.

4. Improve Communications

Obtaining customer satisfaction and feedback scores using big data analytics can be employed to enhance communications with customers as well as among employees.

5. Boost Targeted Marketing Practices

Big data analytics solutions also play a critical role in executing targeted marketing practices. For instance, concentrating on click-through rates of links connected through text messages, emails, and other channels can reveal whether the marketing strategy is driving to actual sales. With such information, companies can share details about sales event and extra discounts.

Big Data Infinite Promise beyond Customer Experience

In these days, companies most commonly begin to use the big data to outperform their competitors. In most industries, both the existing competitors' as well new entrants increasingly using the strategies resulting from the big data solutions to compete, invent, and capture actual value. Big data supports the enterprises to construct growth opportunities and completely new categories of firms that can merge and examine industry data. These enterprises have a myriad of information about buyers & suppliers and products & services. Let us have a look at the benefits of big data solutions beyond accelerating customer experience:

Cost reduction

The implementation of big data analytics software may be costly, but it will ultimately save a plenty of money. In addition to the elimination of waiting time, big data reduces the burden on the enterprises' overall IT landscape and release resources that were formerly assigned to respond to calls for reports.

Mitigating risk and Fraud

With the security as well as fraud analytics, companies can protect their financial, physical, and intellectual assets from internal and external threats. Effective big data analytics capabilities can provide optimal levels of fraud prevention and complete organizational security. This solution allows enterprises to quickly detect fraudulent activity and forecast future activity along with detecting and trackingperpetrators.

Time reduction

The incredible speed of big data analytics tools like Hadoop along with in-memory analytics can effortlessly detect new sources of data that supports businesses analyzing real-time data immediately and take quick decisions in accordance with the learnings.

Creating new Big Data based Offering

The most ambitious one among the benefits of big data technologies is using it for creating new service and product offeringsin accordance with data. For example, LinkedIn used big data as well as data scientists to create a wide array of product features and offerings like People you may know, Jobs you may be interested in, Groups you may like and several others. This approach has fetched myriad of new people to LinkedIn.

Support in Internal Business Decisions

The main benefit of big data is to assist in the company's internal decisions like what sort of services or products should be offered to the customer? How much stock should be captured? & What should be the cost of the item?
These kinds of decisions use big data technologies when there are less structured data sources.
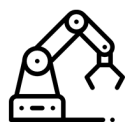
Automating Existing Processes

In addition to the above big data benefits, companies believe that big data can bring together the different platform as well as processing functions, which were previously scattered. With the competent to combine data analytics, reporting, protection, exploration, and recovery functions on a big data platform, the demand for specialized skills and complicated programming are eliminated.

Predictive Maintenance

Factors that indicate mechanical failures may be buried in structured data like a model & make of the machine and in unstructured data like millions of sensor data, log entries, engine temperature, & error messages. Big data allows analyzing these indications of issues before they happen. As such, an enterprise can take maintenance action to maximize equipment and parts uptime.

Operational Efficiency

It is one of the areas, which big data having the most influence. With big data, the enterprise can analyze and evaluate production, feedback & returns and other factors to minimize outages as well as anticipate future demands.

Big Data Tools

As it is common to possess more and more data for every aspect of businesses, big data aids businesses out there to make head or tail of ever-increasing oceans of data. Companies are using big data analytics tools to rapidly examine the vast amount of data in real time, including unstructured data like log files from the mobile app, social media, and machine & sensor data along with structured transaction data. Big data analytics tools are designed to function with big data platforms that include Hadoop Clusters assembled around scalable distributed storage and commodity servers, NoSQL database systems and dedicated high-performance analytics databases. The big data tools support data mining and predictive modeling techniques and are competent to scale when more data is added into analytical models. Most of the next generation big data analytics software incorporates machine learning and artificial intelligence to support business get better at jobs over the period without doing any explicit programming.

As the global big data market has matured, there is a wide range of different big data technologies to match the organizations' needs. As the market includes immense varieties of big data solutions, there is no wonder of having a long list of vendors offering big data tools. The following is some of the well-known big data software vendors, but there are many others.

Working with Clarion for Big Data Implementation

All businesses are facing challenges to handle and make sense of the huge amount of data and are searching best practices to maintain data meaningfully. Uncovering the secrets buried in the big data can support businesses to achieve a competitive advantage since it is the key aspect in developing future business strategies. Being a partner with leading big data solution providers, we at Clarion assists clients in incorporating big data into their entire IT roadmap, architect as well as implementing a solution to enhance their businesses. Using our domain expertise, our team can deploy and deliver big data analytics solutions in order to support clients with strategic decision-making.

Our service supports in analyzing high volume information to provide the deepest insights into unexplored possibilities. Our big data analytics solutions enable enterprises to:

• Find the proper procedure to collect and connect with data
• Connect the dots across scattered data for creating actionable insights
• Develop & implement big data analytics solutions across a wide range of business verticals
• Detect and address big data security risk in advance
• Conserve and handle big data services with ease

Conclusion

Big data analytics signifies an excellent opportunity for revealing buried treasure concealed within the data. More businesses including public and nonprofit sectors have successfully generated big data use cases, which have yielded thoughtful influences. The era of big data is over here, as such these are truly groundbreaking times if both technology and business professionals continue functioning together in order to deliver on the premise. Big data solutions provide the organization with more choice due to its plenty of associated tools and technologies that will continue to be advanced and become inventive hotspots in the upcoming year's such advanced data visualization, Hadoop distribution, etc. In this whitepaper, we have provided a brief outline of the big data analytics solution along with its market size, trends, and benefits.

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About Clarion Technologies

Clarion Technologies is a leading technology & innovation partner for more than 1100+ Small & Medium Businesses & startups across North America & Europe. Over the past 17 years, we have successfully helped our clients bring their ideas to life with the help of our virtual teams. Clarion Technologies focuses on next generation web technologies for Manufacturing, BFSI, Education, Construction, Healthcare, Telecomm, Media and Retail industries.