Data & Analytics Analysis

Market Analysis, Compete Benchmarking & Latentview Profiling

August 2021

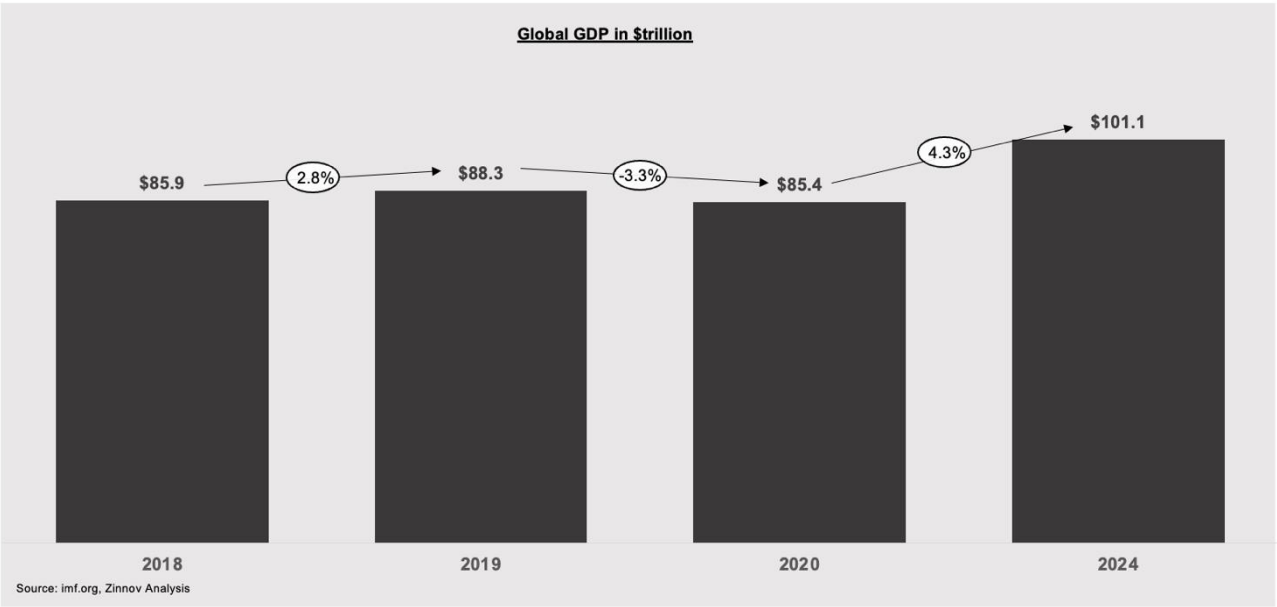
Data & Analytics Market Overview

Global IT Spending Overview

Despite a minor setback in 2020, global IT spending is expected to bounce back and exceed pre-pandemic growth velocity

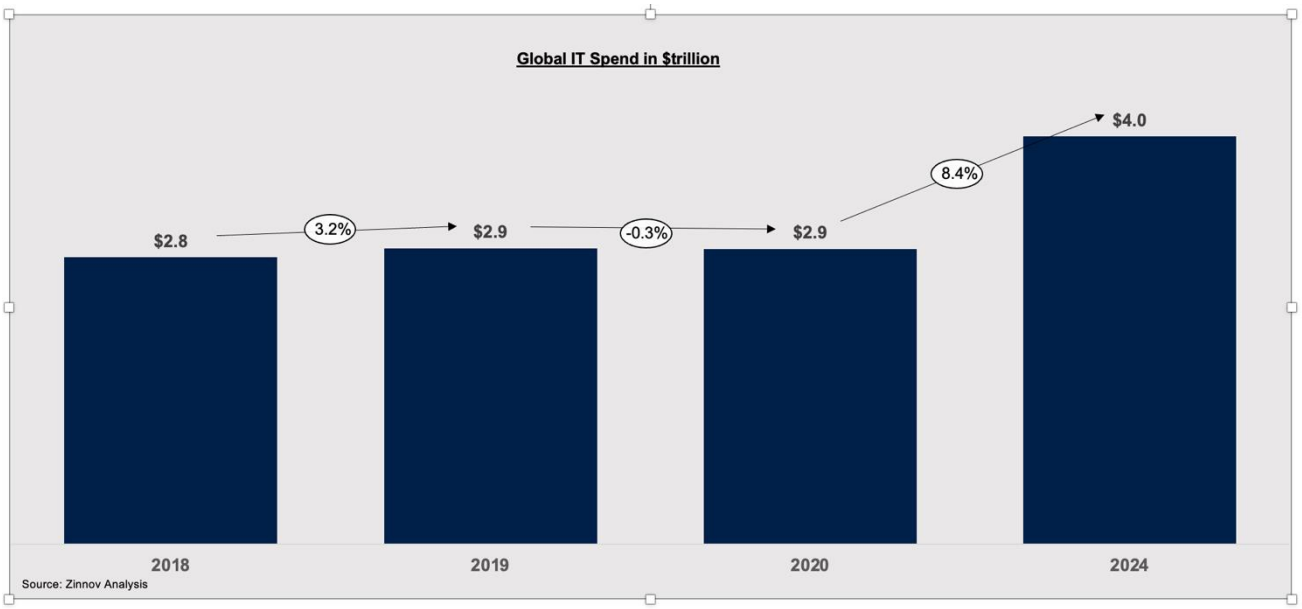
In 2020, COVID-19 affected the global economy beyond anything experienced in nearly a century. However, as vaccines were rolled out at an unprecedented pace towards the end of the year, the worst estimates did not come to fruition and the global economy is on the path to recovery at a pace much faster than initially projected. According to the World Bank, the global economy is set to expand by 5.6% in 2021 – its strongest post-recession pace in nearly 80 years[1].

China and USA will continue to lead the GDP growth in2021, contributing to about a quarter of the global GDP growth. In the US, massive fiscal support (~$5.9 Tn) and accelerated vaccination drives are expected to boost the economy, and growth is expected to reach 6.8% by this year – the fastest pace since 1984[1]. China's economy, which had limited impact last year, is expected to grow at a solid pace of 8.5% as the country shifts focus on reducing financial instability. While at the onset of the pandemic Europe plunged into a double-dip recession, the easing of lockdowns and subsequent social distancing guidelines, along with huge public investment programmes are expected to fuel a sharp recovery. According to the European Commission's forecast, GDP will grow by 4.2% in 2021 and by 4.4% in 2022, compared to the earlier prediction of 3.7% and 3.9% respectively, in February this year[2]. While there are stumbling blocks associated with vaccine rollout and containment measures in APAC, the economy is expected to be mostly on track and projected to grow at ~7.1% in 2021, compared to earlier prediction of 7.3%[3]. Even in emerging economies like India, GDP is forecasted to grow at 7.5% in 2022, despite the severe impact on recovery by an unprecedented second wave of COVID -19[1].



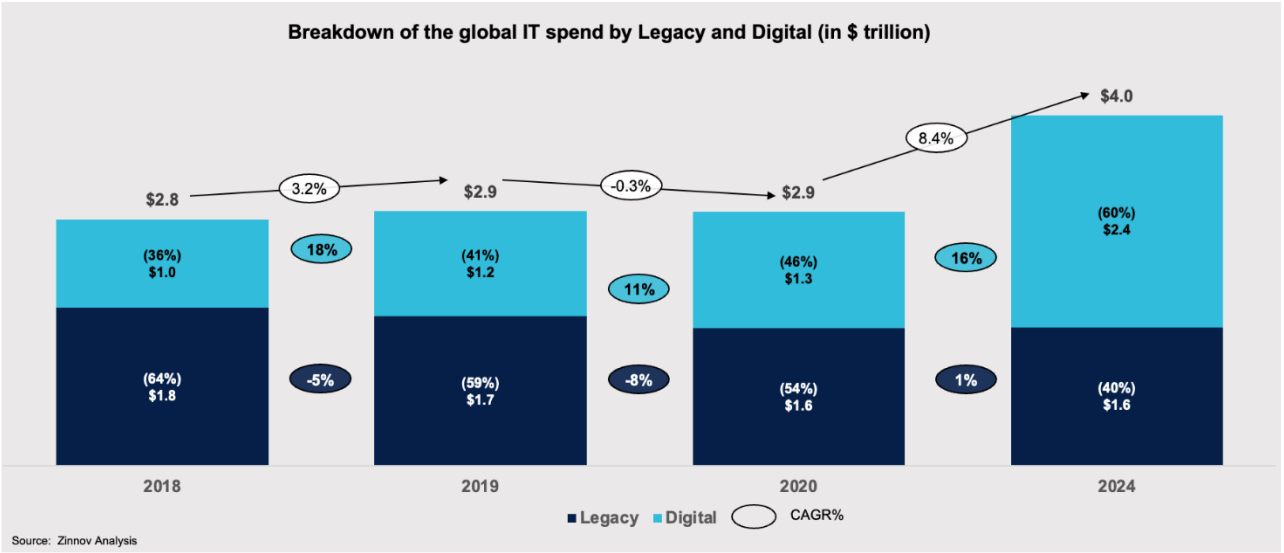
The global IT spending is also expected to recover from the flat growth in 2020 to reach ~$4 Tn by 2024. While uncertainty around business situation pushed enterprises to put large scale expansion plans on hold in 2020,

investments on IT have since then recovered as businesses prepare for the next wave of growth supported by a buoyant economy. However, as enterprises envision a post COVID-19 future, IT spending priorities are expected to change.



Digital Technologies will be at the forefront of transformation initiatives as enterprises globally gear up for a new normal

In the pre-pandemic era, technology leaders across industries were accustomed to incremental increases in IT budgets, with almost 60% of the budget in 2019 spent on legacy applications[4] – outdated architecture and software components that were harder to integrate with newer systems. While most enterprises were focused on prioritizing cost and efficiency initiatives, a few of them took the lead and invested in digital initiatives such as Analytics, Cloud-based enterprise applications, and customer experience technologies like Artificial Intelligence, Augmented Realities, etc., for driving innovation, growth, and improved customer experience.



The COVID-19 pandemic ushered in a new era of digital divide – enterprises that had invested in digital initiatives were placed much better compared to the digital laggards[5]. Consequently, technology leaders across industries are undertaking efforts to minimize the spend on maintenance of legacy applications, and rapidly scaling up investments in digital technologies to fuel growth. As a result, growth in IT spend will be largely driven by investments in digital technologies as enterprises scale up digital transformation efforts across business units. In fact, the investment in digital technologies is expected to double from 2020 levels to ~$2.4 Tn in 2024.

Changing consumer preferences and organizational priorities have accelerated investment in digital technologies. Some of the key use-cases driving adoption of digital technologies are mentioned below:

- *Operational Efficiency*
  In a world of increasing data availability, the value proposition is shifting from the provision of core data to the generation of analytical insights to inform decision making processes and optimize workflows, across interrelated business activities. Real-time and precise insights on business operations and consumer spending patterns are critical for enterprises to maximize value at reduced costs. Consequently, Analytics and Automation are leveraged across industries for a variety of use cases such as forecasting demand, optimizing supply chains, maximizing ROI from promotional spend, predicting fraud and machine failures, etc.

- *Contactless digital customer engagements*
  As a long-term impact of the pandemic, demand for contactless digital customer engagements such as telehealth, online learning, contactless payments, etc., are expected to continue. In response, investments in technologies as enablers for the new digital business model have taken a quantum leap.

- *Remote Collaboration*
  A hybrid work environment leveraging remote work as well as physical offices is expected to become the norm, leading to more spending on systems and tools for virtual communication and collaboration. Enterprises have realized the benefits of a new hybrid working model over the past year and are expected to continue investing in it to support this new way of working.

- *Infrastructure modernization*
  While public Cloud transformation was already mainstream, COVID-19 crisis has drastically accelerated the pace of adoption. Enterprise spending on Cloud infrastructure is expected to continue to grow at 18%[5], owing to the demand from burgeoning e-Commerce activity, virtual collaboration requirements, and the need to minimize cost while adding flexibility and scale to IT operations.

1. *Global recovery strong but uneven as many developing countries struggle with the pandemic's lasting effects by the World Bank*
2. *EU economy forecast to rebound faster thanks to COVID vaccines by Guardian*
3. *Asia Pacific's recovery regain its footing, June 2021 by S&P Global*
4. *Top IT spending priorities of 2021 by CIO survey*
5. *COVID-19: the present storm for digital acceleration by KPMG*
6. *Cloud Computing Market Size by Markets and Markets*

***Glossary**:*
***IT Spending**: Information technology and services cost incurred by an enterprise, including hardware, software, outsourcing and personnel cost for development and maintenance of enterprise-wide systems and services.*

Legacy Spend: *Costs incurred in maintaining outdated technology and systems built using tightly coupled architecture that renders existing systems incompatible with newer technologies, slowing the down process of developing of newer systems & solutions.*
Digital Spend: *Costs incurred in new and emerging technologies, such as Cloud, Analytics, Artificial Intelligence, etc. to support enterprise growth and faster time-to-market of new applications and systems.*

Data & Analytics Overview

Data & Analytics is one of the fastest growing segments of the digital spend

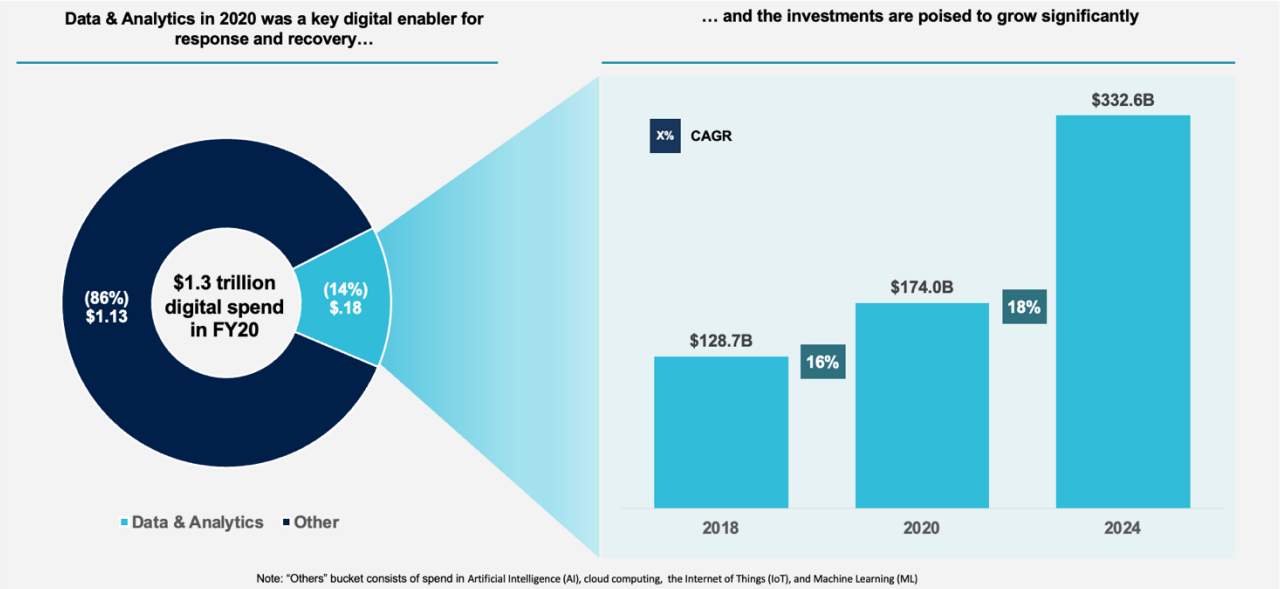
Across industries, Data & Analytics (D&A) are being leveraged by enterprises to guide business strategy and optimize spending decisions amidst growing financial uncertainties. The growing adoption of D&A software and services across industries are driven by the need to:

- ***Manage the Data Explosion:*** Growing e-Commerce activities and the increased preference for contactless customer engagements have led to the creation of high volumes of customer data across industries. Increasingly, data is being collected in different formats (media, audio, image, etc.) from a variety of sources like sensors, wearables, and other smart devices. Inherent structural inconsistencies in the data collected and the need to consolidate data residing under different departments into a single unified view have led to the growth in D&A spend across industries.

- ***Provide Differentiated User Experience:*** The major factor driving growth of the market is the need to understand consumer buying behaviour to provide a more differentiated and personalised customer experience. To differentiate product offerings and respond quickly to changes in consumer preferences, enterprises are leveraging D&A. The power of Big Data and Artificial Intelligence (AI) & Machine Learning (ML) is increasingly being leveraged by enterprises to identify spend patterns and customer buying behaviour for customer segmentation, feature prioritization, and predicting future demand.

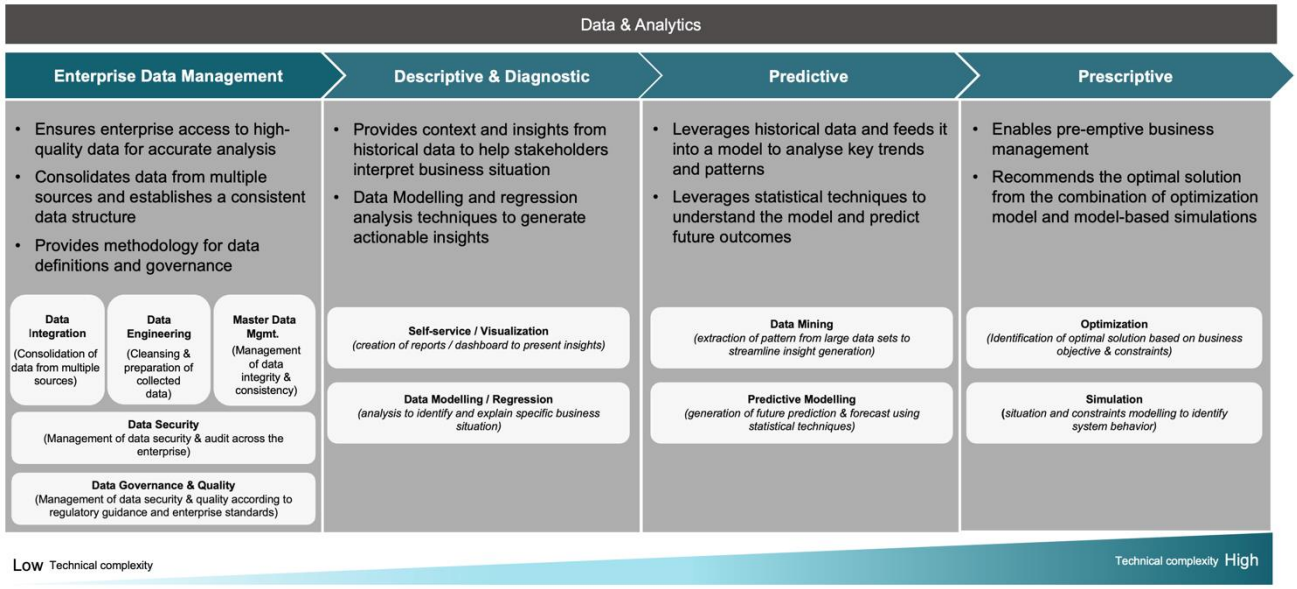
- ***Optimize Business Decision-making:*** Business Intelligence and visualization are extensively leveraged by enterprises to track business metrics/KPIs against business goals, etc. Data science and advanced algorithms are used to build advanced analytics applications to find optimal solutions for channel investment, promotional spending, warehouse transport, product assortment, etc.
- ***Reduce Risks:*** Post pandemic, increased online activity has led to a surge in fraudulent activities across industries. BFSI (Banking, Financial Services, and Insurance) industry alone has seen double-digit growth in fraudulent activities in 2020[1]. Increasingly, enterprises are leveraging D&A, powered by ML algorithms, to detect and prevent fraud using historical transactions and social media interactions. Moreover, D&A can also help predict machine failures, minimizing risk of business downtime.

The market for Data & Analytics was ~$174 Bn in 2020 and is expected to grow at a CAGR of 18% to ~$333 Bn by 2024. Digital native businesses have been at the forefront of adopting advanced analytics to stay ahead of the competition.



Overall Data & Analytics (D&A) market can be segmented into four key horizontals, based on the level of complexity in implementation and usage objectives

D&A applications can be segmented into four horizontals – enterprise data management, descriptive & diagnostic, predictive, and prescriptive.



Enterprise Data Management (EDM)

EDM refers to a set of processes, practices, and activities focused on consolidating data from disparate sources – both internal and external, maintaining accuracy and quality of data, and providing security & governance across the enterprise according to regulatory mandates. EDM can be further segmented into five core buckets:

- ***Data Integration*** refers to the process of combining data as-is from several different sources into a unified repository like a data lake.

- *Data Engineering* refers to the process of addressing underlying structural inconsistencies in the data. Proliferation of different devices such as smartphones, wearables, smart machines, etc., and different data structures supported by these devices have led to structural inconsistencies in the collected data. Data Engineering aims to resolve this issue by performing data cleansing and integrity checks before storing it in data warehouses for use by downstream applications. As a result of the growth anticipated for data and analytics services, there is corresponding growth expected in the field of data engineering as well.
- *Master Data Management* refers to the process of maintaining a single source of truth for key business data across multiple systems, processes, and applications.
- *Data Security* refers to the process of securing key business process information or other sensitive enterprise data from any data loss or privacy breaches.
- *Data Governance* refers to a set of policies designed to protect the privacy of customer information and adheres to rules and regulations.

Descriptive & Diagnostic Analytics

Descriptive & Diagnostic Analytics provide insights on past business events using historical data and simple statistical tools. It leverages a combination of BI and visual analytics to describe and identify potential causes behind past business events.

- *Modelling and basic regression* techniques are applied to establish the relationship between past business events and extract insights for ad-hoc reporting.
- *Self-service visualization* with in-built data exploration tools is used by stakeholders to drill down and isolate confounding information for root cause analysis.

Predictive Analytics

Predictive Analytics leverages data mining and advanced statistical models to derive insights from historical and transactional data to identify patterns and predict future trends.

- *Data Mining* refers to the process of extracting anomalies, patterns, and correlations within large data sets, using ML algorithms.
- *Predictive Modelling* refers to a combination of different statistical modelling techniques such as forecast model, classification model, time series model, etc., to draw up predictions about future trends.

Prescriptive Analytics

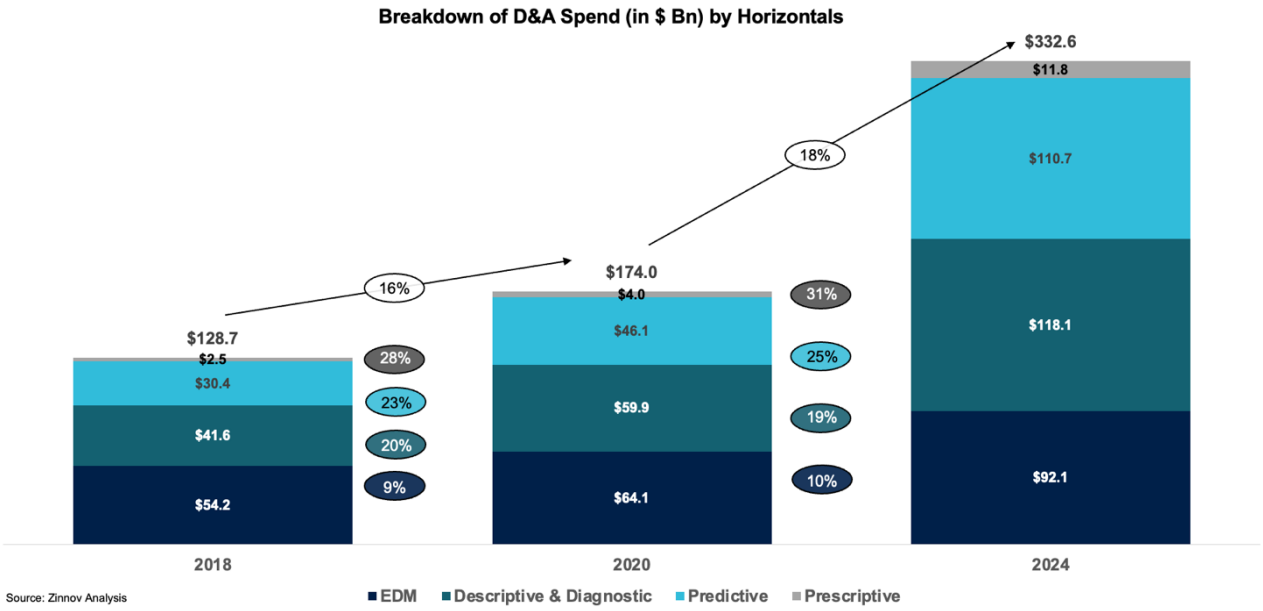
Prescriptive Analytics uses several complex techniques and technologies to recommend the best course of action for business executives, managers, and operations employees. Core techniques used in Prescriptive Analytics include:

- *Optimization* refers to the process of finding an optimal solution to a business problem by leveraging advanced mathematical models. Real-life business events, enterprise resource constraints, macro trends, etc., are used as inputs to the model to find the best course of action.
- *Simulation* refers to building a digital replica of the mathematical model constructed in the previous optimization step, to examine the change in model behavior with respect to alteration in model configuration parameters. Unlike the optimization model, which is used to find recommendations, the simulation model allows analysts to identify the impact of any unknown variables and explore alternatives.

Data & Analytics spending is expected to witness robust growth driven by increased adoption of next-generation analytics applications

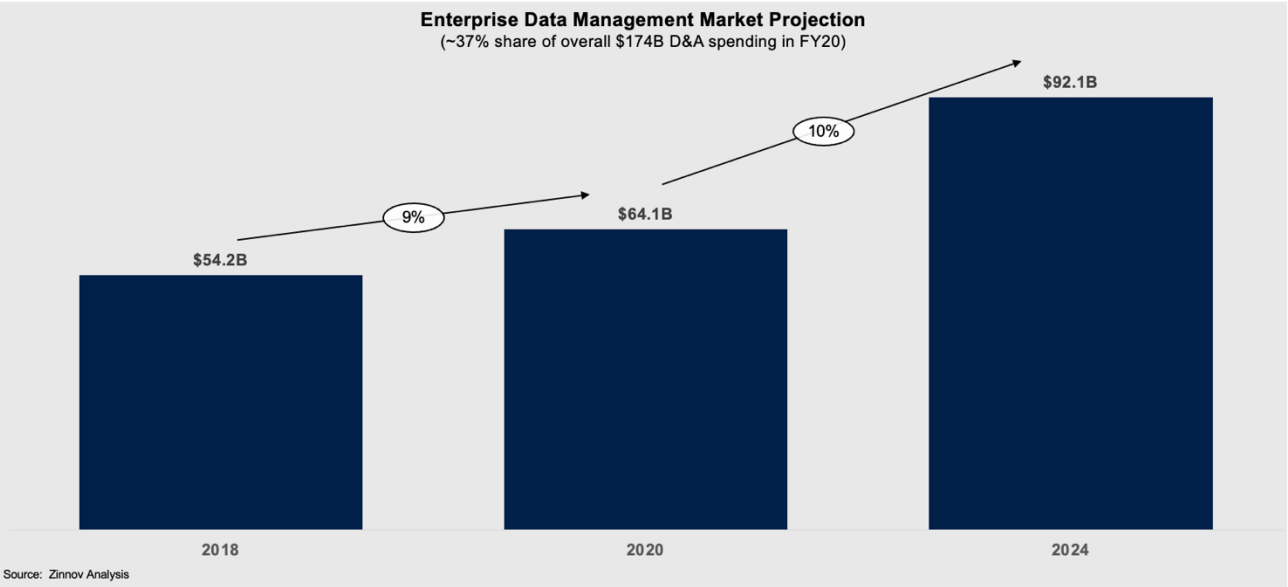
Share of traditional D&A applications – EDM and Descriptive & Diagnostic Analytics – is expected to decline from ~74% of the global Data & Analytics spend in 2020 to ~63% by 2024, as spend in next generation Analytics applications in Predictive and Prescriptive will explode.

- Low-cost Cloud storage options and mature database technologies are expected to drive down the cost of enterprise data management.
- Spend in Descriptive & Diagnostic Analytics will be augmented by an increased focus on deriving business insights from the enterprise-wide large data sets.
- Predictive Analytics will be at the forefront of estimating financial and operational risks across industries.
- Spending on Prescriptive will grow exponentially as enterprises will leverage AI/ML techniques to optimize business decision-making across product portfolios, targeted campaigns, logistics & transport, etc.



Enterprise Data Management (EDM) will continue to be at the core of transformative Data Analytics efforts across enterprises

The global EDM spend is expected to grow from ~$64 Bn in 2020 to $92 Bn by 2024 at a compounded annual growth rate (CAGR) of ~10%. In recent years, the growing volume of unstructured data has introduced challenges in enterprise-wide data management across industries. Moreover, increasing number of different data sources in BFSI and CPG & Retail, owing to large product portfolio and multiple customer engagement channels, adds further complexity in data management. As a response, BFSI and CPG & Retail verticals are expected to continue investment in EDM services for consolidation of unstructured data generated across different products offerings and customer channels. EDM spending in Industrial and Healthcare verticals is also expected to grow due to increased adoption sensors and devices for smart manufacturing and remote patient monitoring, respectively.



EDM Adoption Drivers

EDM forms the bedrock of analytics applications and will continue to be the core of any D&A effort in an enterprise. Some of the key drivers for EDM spending are:

- ***Proliferation of data***: Growing adoption of IoT and smart devices, and increased activity in online channels such as e-Commerce, telehealth, social media, etc., have led to high volumes of data being generated across industries. However, ~80% of this data collected is unstructured – collection of files such as media, audio, images, etc., that do not conform to typical transactional data stored in relational database systems. Consequently, enterprise spending on data engineering services under EDM segment is expected to grow to consolidate unstructured data across organization into a single unified repository and generate enterprise level insights.

- ***Effective management of hierarchical data:*** Organizational mandate for performance reporting and support for various forms of reporting templates across different business units have led to increased spend in management and maintenance of master data to capture changes in cost centres, sales territories, product/account hierarchies, etc.

- ***Focus on data governance:*** Increased regulatory constraints due to globalization of the enterprise and surge in fraudulent cases across the globe have increased enterprise spending in data governance and security solutions.

EDM Key Trends

Rapid adoption of IoT, sensors, and wearables, and a continuous stream of customer data generated across different product offerings and engagement channels have increased the complexity of data management. Moreover, social distancing and stay-at-home mandates during COVID-19 led to increased online activity and the demand for contactless payment and healthcare services, resulting in an explosion of data across industries. Consequently, advanced technologies and new methodologies are being adopted to streamline data management processes while low-cost as-a-service database offerings are gaining momentum.

A few emerging trends in EDM services include:

- Adoption of Cloud deployment model due to high on-demand scalability and low-cost storage resources.
- Implementation of Data Fabric, which provides platform-agnostic pre-built packages for seamless integration of data across multiple endpoints.
- Integration of AI & ML with traditional master data management to augment data preparation tasks.
- Implementation of Data Ops, which combines agile software development principle with continuous delivery and deployment principles of DevOps, to bring speed and agility in data factory development.

EDM in Action

Leading Retail Banking organization in APAC

Revamped **data governance** & security in response to changes in government regulation

Not-for-profit Healthcare provider in North America

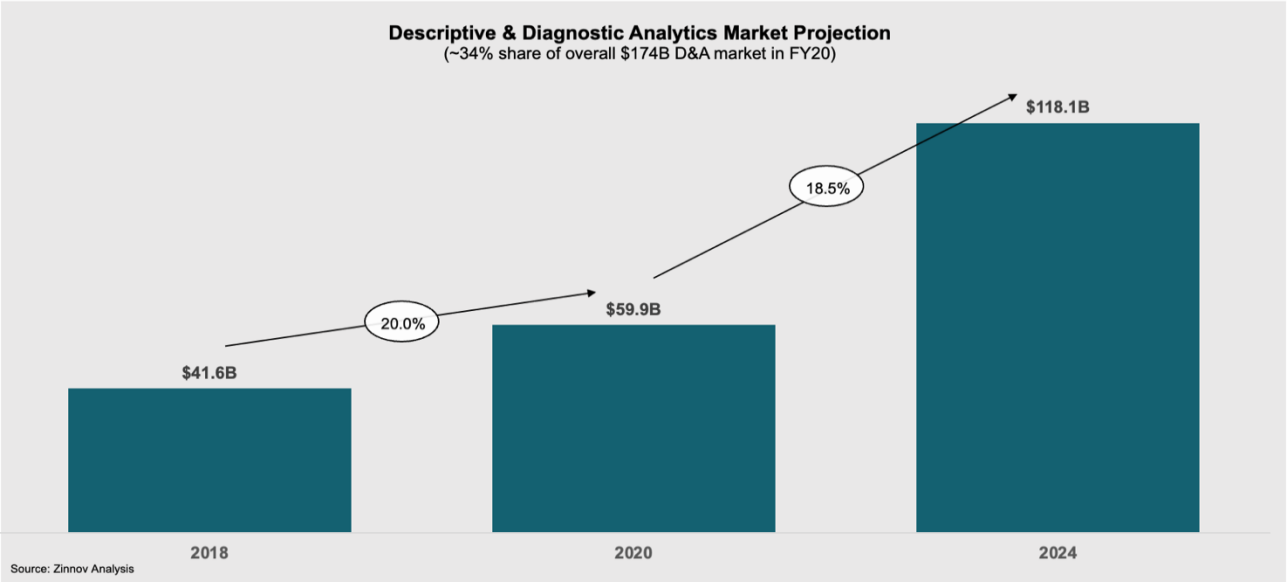
Implemented **cloud** based EDM solution as **data fabric** to build data **hierarchies** across several sources

Leading Pharmaceutical company in North America

Leveraged **DataOps** to reduce manual data processing workload

Increased enterprise focus on deriving actionable insights from large datasets is expected to boost the growth of Descriptive & Diagnostic Analytics

Global Descriptive & Diagnostic Analytics spend is estimated to grow rapidly at ~19% and double from 2020 to 2024. Both CPG & Retail and BFSI verticals are driving the spend in Descriptive & Diagnostic Analytics. Increased commoditization of product offering in CPG & Retail and BFSI has led to growing emphasis on product differentiation and improved user experience for customer retention. Enterprises in these industries are increasingly leveraging in-built dashboard and drill-down capabilities of Descriptive & Diagnostic Analytics to create an integrated view of customer journey across multiple channels and uncover insights to influence retention strategy and provide unique user experience.



Descriptive & Diagnostic Analytics Key Drivers

Descriptive & Diagnostic Analytics provide insights on past business events using historical data and leverage visual tools to present findings with additional data exploration capabilities. Spend in Descriptive & Diagnostic Analytics services are driven by:

- Increased adoption of operational risk dashboards across industries to track a set of KPIs and relevant metrics to measure business performance.
- Demand for refining marketing and promotional messages based on historical data of consumer spend.
- Use of data visualization with real-time map APIs by government and healthcare sector to track infections.

Descriptive & Diagnostics Analytics Key Trends

There has been an increased focus on Descriptive & Diagnostics Analytics to augment user interaction with visual analytics. Advanced technologies like Augmented Reality, sentiment analysis, etc., are embedded in analytics applications to enhance user interaction with visualization tools.

Some of the key trends finding traction in Descriptive & Diagnostics Analytics are:

- Use of data exploration tools that support drill down and data discovery for finding the root cause.
- Integration with social media tools and sentiment analysis to identify the impact of promotional campaigns.
- Use of VR (Virtual Reality) technologies to create models, maps, graphs, etc., allowing users to interact with data.

Descriptive & Diagnostic Analytics in Action

Commercial weather forecasting company in North America

Used google analytics to generate **10% more traffic** and **80% open rate** in weather forecast email service

Global Manufacturer of computer equipment & peripherals

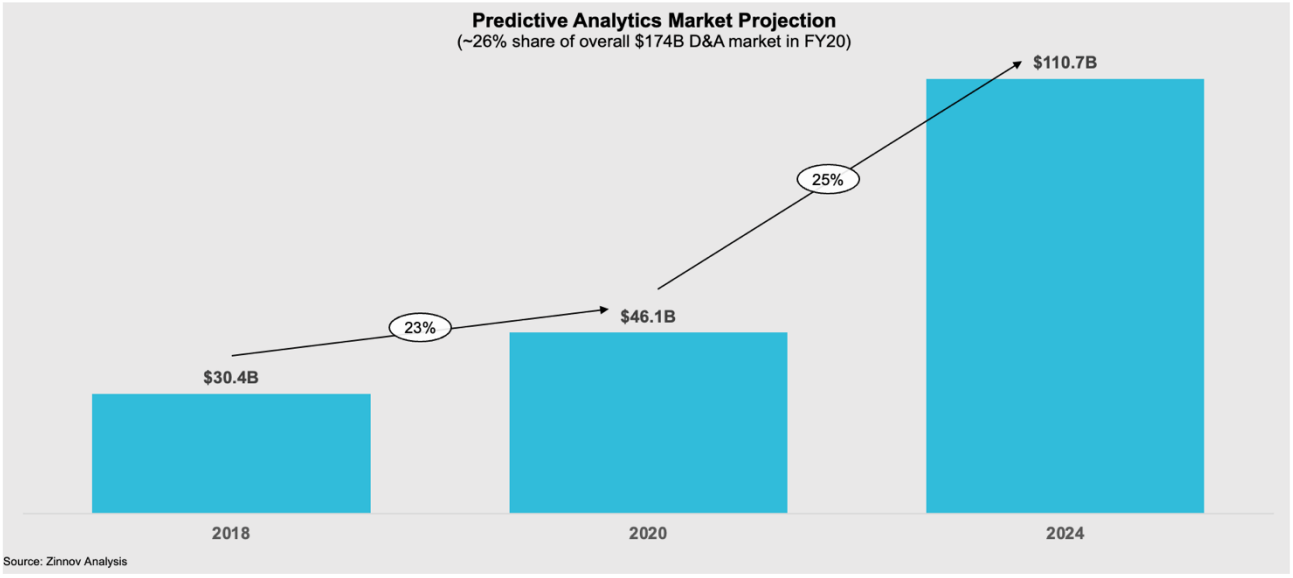
Created flexible sales dashboard that can be adapted for ad-hoc analysis, achieving **95% efficiency**

Global provider of Engineering & Construction solutions

Implemented Tableau to save **10K+ man hours** per year across **14 business units**

The increasing demand for forecasting and planning multiple business scenarios is expected to drive the spend on Predictive Analytics

Predictive Analytics uses advanced algorithms to predict the future using historical data and trends. Global Predictive Analytics spend is estimated to expand rapidly from ~$46 Bn in 2020 to ~$111 Bn in 2024, at a CAGR of 25%. As enterprises across industries emerge from the ravages of COVID-19, emphasis is clearly on building resiliency to withstand any future business disruption. Consequently, use of predictive analytics is gaining momentum across industries, such as in Industrial, CPG & Retail, and BFSI. Growing need to forecast demand to prevent stock-outs, and minimize production downtime due to machine failure, etc. has led to increased adoption of Predictive Analytics in Industrial and CPG & Retail verticals. In BFSI, Predictive Analytics with advanced ML algorithms are used to combat against a surge in fraudulent transactions in credit card, account opening, etc.



Predictive Analytics Adoption Drivers

Predictive Analytics is one such arsenal that enterprises can use extensively to identify future business challenges and minimize business as well as operational risks. Some of the key adoption drivers across industries include:

- Growing need to predict demand, inventory stock-outs, machine maintenance, etc., to reduce downtime.

- Adoption of predictive credit risk models and fraud analytics in response to a surge in fraudulent activities in BFSI.
- Increased use in Healthcare to predict patients who are at greater risks of developing chronic conditions.

Predictive Analytics Key Trends

Some of the key trends finding traction in Predictive Analytics include:

- A wider scope of the kind of data being analysed such as inclusion of text analytics to enhance predictions.
- Use of neural networks to identify relationships within datasets by mimicking a human mind.
- Ease of use by hiding complexity in model building via simple user interfaces for wider adoption.

Predictive Analytics in Action

Ingredient-and-recipe meal kit service provider in North America

Forecasted demand based on changes in subscriber taste and preferences over time

Not-for-profit Healthcare provider in North America

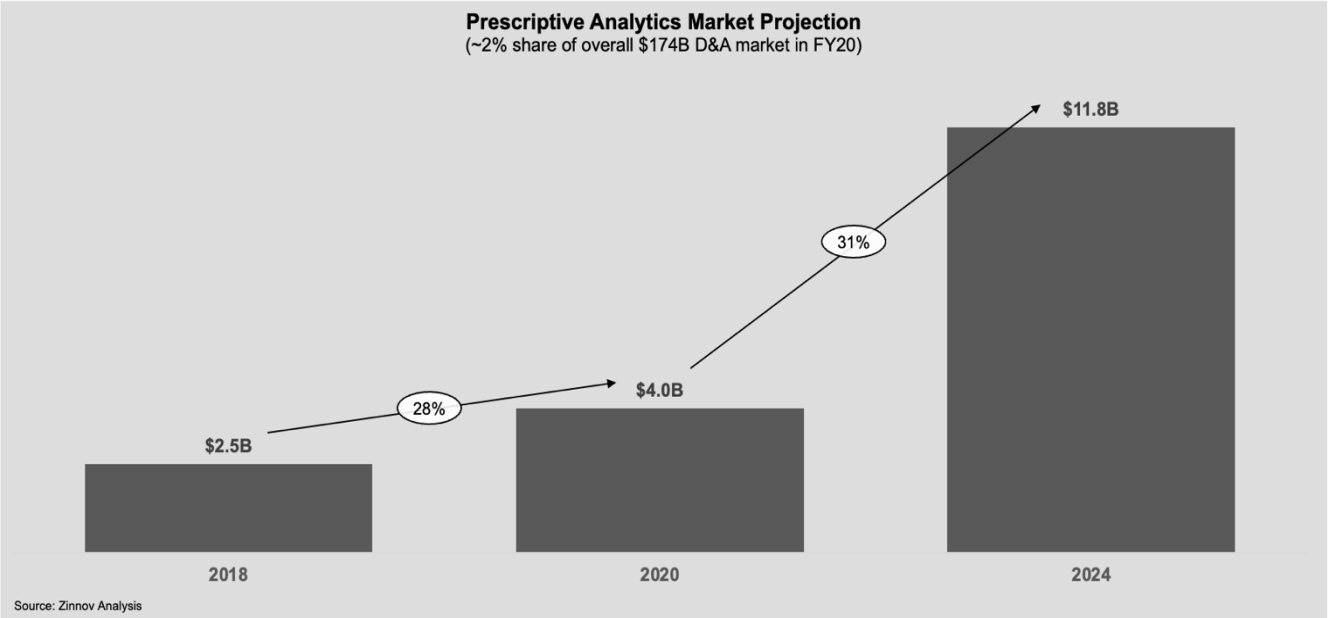
Integrated predictive algorithm with remote patient monitoring feed to identify high risk patients

Global Industrial service company

Developed predictive maintenance software for gas & oil extraction equipment

The Prescriptive Analytics pie is expected to grow rapidly as enterprises shift the spotlight on data-driven decision support systems

The global Prescriptive Analytics spend is expected to grow from ~$4 Bn in 2020 to $12 Bn in 2024. Prescriptive Analytics will enable enterprises to take data driven business decision, optimizing ROI on advertising or marketing spend. Industries plagued by lower net profit margin, such as CPG & Retail (grocery, food, etc.), General Insurance, Transportation, etc. will drive the spend on Predictive Analytics.



Prescriptive Analytics Adoption Drivers

Prescriptive Analytics leverages a combination of advanced ML models and complex statistical techniques to support business decision-making. While Prescriptive Analytics continue to be a rather complex and advanced application of analytics, adoption across industries is being driven by:

- Improved decision-making support for enterprises to proactively shape desired outcomes.
- Growing need to optimize marketing spend, pricing, transport, fracking location, etc., to maximize ROI.
- Availability of high-speed processing and storage resources at low cost, reducing investment barriers.

Prescriptive Analytics Key Trends

The key trends that are expected to find traction as the adoption of Prescriptive Analytics continues to expand are:

- Use of adaptive algorithms that will recalibrate the model mechanics in response to newly available information.
- "Smart" prescriptive algorithms to self-generate complex algorithms based on the scope articulated by non-technical business users.
- Use of Cognitive Intelligence and AI for emerging use cases like assisted driving.

Prescriptive Analytics in Action

Overall, Data & Analytics is expected to be at the core of driving critical use cases across industries

- *Segmentation Analysis*

Descriptive & Diagnostic Analytics to facilitate segmentation of customers based on service history, demographics, frequency, or recency of buying patterns, channels served and others. Broad application exists across industries to identify customer lifetime value, churn analysis, etc.

- *Sentiment Analysis*

Descriptive Analytics with text mining and NLP (Natural Language Processing) to analyse customer and employee sentiment on various platforms or social media channels. Broad applications in different industries in analysis of Voice of Customer, Brand Monitoring, Customer Support, etc.

- *Demand Forecasting*

Predictive Analytics to forecast demand based on historical data of consumer buying patterns, social media posts, price sensitivity, etc. Broad applications across industries to predict sales and plan for inventory stock-outs, etc.

- *Predictive Pricing*

Predictive Analytics to evaluate the potential impact of sales promotions and identify the right pricing point. It is used extensively in the CPG & Retail industry.

- *Predictive Maintenance*

ML-based algorithms to identify patterns across all sensors and building multivariate prediction models to detect the probability of equipment failure. Used in Industrial and Manufacturing verticals to predict machine maintenance.

- *Fraud Analytics*

Predictive Analytics with pre-trained algorithms and correlation to find the probability of fraud in transactions like credit cards, account opening, etc. It is used extensively in the BFSI industry.

- *Warranty Analytics*

A combination of Predictive Analytics with text mining to forecast product reliability issues and minimize costs in warranty claims and frauds. Leveraged across Automobile, Electronics & Semiconductor, Industrial and Telecom industries.

- *Product Assortment*

Prescriptive Analytics to optimize product portfolios and identify optimal product assortment to maximize ROI. CPG & Retail, Telecom industries primarily use this type of analytics.

- *Decision Optimization*

Prescriptive Analytics with advanced mathematical models to build scenario modelling for business problems and find optimal solutions. It is used across different industries to optimize marketing spend, warehouse transport, inventory planning, etc.

Five key enterprise functions account for ~50% share of the overall analytics application market

Overall Analytics application market, excluding Enterprise Data Management spend, is estimated to grow to $240 Bn in 2024. Almost 50% of the spend on Analytics applications are attributed to five key enterprise functions – customer, marketing, supply chain, finance and risk, and HR or workforce.

- *Customer Analytics*

Customer Analytics accounts for ~9% of overall Analytics application spend. Enterprise sales and marketing functions leverage Customer Analytics to map individual customer journeys by integrating customer data from multiple interaction points across a multitude of channels for the purpose of customer segmentation and hyper-personalization. The abundance of customer data has made it possible for enterprises to leverage Customer Analytics in a variety of use cases such as product development, feature prioritization, customer churn analysis, etc.

The global Customer Analytics market is expected to grow from $10 Bn in 2020 to $24 Bn in 2024, growing at a CAGR of 26%. While North America will continue to be the largest contributor to the spend on Customer Analytics applications, APAC is expected to grow faster during the forecasting period. Enterprises in APAC have invested on Customer Analytics to provide differentiated customer experience, owing to lack of product differentiation and decreased brand loyalty in digital savvy young population group.

- *Marketing Analytics*

Marketing Analytics accounts for ~3% of overall Analytics application spend. Enterprises leverage Marketing Analytics to identify the right campaign or channel strategy and optimize return on investments (ROI) in advertising costs, based on historical analysis of marketing effectiveness across different channels and target consumer groups. Marketing Analytics is leveraged in a variety of applications such as email marketing, SEO marketing, social media marketing, etc., each of these is geared towards analysing the traffic in a specific channel to provide recommendations that maximize the effectiveness of marketing campaigns.

The global Marketing Analytics market is expected to grow from ~$3 Bn in 2020 to ~$6 Bn in 2024, growing at a CAGR of 19%. CPG and Retail industries are expected to contribute to the majority share of Marketing Analytics spend, owing to growing need for predicting consumer behavioural trend and product positioning

efficiency. North America is the largest contributor of the global Marketing Analytics spend due to increased adoption of social media as an advertising and promotional channel.

- *Supply Chain Analytics*

Supply Chain Analytics accounts for ~14% of overall Analytics application spend. Use of Supply Chain Analytics enables enterprises to collect, evaluate, and react upon the data generated across the different stages of a supply chain, such as sourcing, manufacturing, distribution, and logistics. Increased globalization and expansion of businesses into newer markets have led to increased complexity in managing disparate supply chain processes. Moreover, the rise in quantum of unstructured data, owing to growing adoption of IoT and smart sensors, has further complicated the process of data consolidation and insights generation, leading to increased adoption of Supply Chain Analytics across industries.

The global Supply Chain Analytics market is expected to grow from $15 Bn in 2020 to $40 Bn in 2024, growing at a CAGR of 28%. Supply Chain Analytics is being leveraged by enterprises, especially in Retail and Industrial sectors to improve end-to-end visibility across the enterprise supply chain, identify the root causes for lost productivity, and boost the speed of production. North America accounts for the largest market share of the global Supply Chain Analytics spend. The US demand for Supply Chain Analytics is expected to be driven by the need to achieve cost optimization and increase operational efficiency and optimization of warehouses and logistics.

- *Finance & Risk Analytics*

Finance and Risk Analytics accounts for ~23% of overall Analytics application spend. Finance & Risk Analytics combines several different statistical models and ML algorithms to measure and predict risks with a higher degree of certainty. Financial & Risk Analytics solutions include simple anomaly-based fraud detection that leverages historical transactions to detect fraud as well as advanced ML-based algorithms that leverage social media interactions and pattern recognition to identify fraud in account opening or card transactions for customers without prior transaction history. Finance & Risk Analytics is being leveraged across industries to quantify cyber risks, automate security operations, and make intelligence-driven decisions.

The global Finance & Risk Analytics market is expected to grow from $26 Bn in 2020 to $58 Bn in 2024, growing at a CAGR of 22%. BFSI and Retail verticals are the largest spender for Risk analytics applications, owing to surge in fraudulent transactions and rising cyber-attacks. While North America continues to be the largest market for Finance & Risk Analytics, APAC is expected to be the fastest growing region due to rapid digitization and increasing concerns about data and security breaches in developing countries like China and India.

- *HR Analytics*

HR Analytics accounts for ~2% of overall Analytics application spend. HR Analytics enables companies to make data-driven decisions in critical tasks such as compensation planning, recruitment & retention, and workforce task automations. The remote working model, along with adoption of Cloud-based communication tools, etc., has led to easy access to employee data and activities, allowing enterprises to deploy HR Analytics applications to improve employee experience and automate workforce management.

The global HR Analytics market is expected to grow from $2 Bn in 2020 to $5 Bn in 2024, growing at a CAGR of 24%. The Retail industry is expected to emerge as the fastest growing end-user vertical due to a unique blend

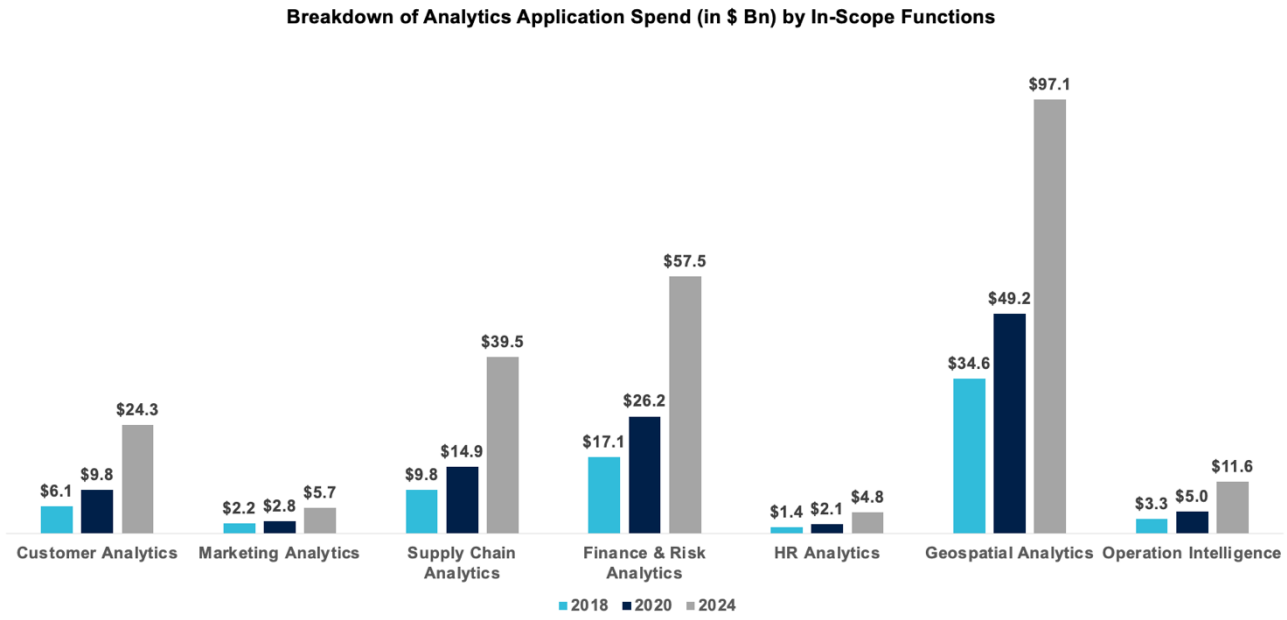
of full-time employees, part-time staff, contractual workers, and multi-regional stakeholders across distribution networks.

- *Geospatial Analytics*

Geospatial Analytics accounts for the largest share (~45%) of the overall Analytics application spend. Geospatial Analytics harnesses the power of geo-referenced data from GPS, mobile devices, location sensors, social media, satellite imagery, etc. to contextualize the traditional data with timing and location information, allowing enterprises to uncover trends based on location, distance, or proximity. Geospatial Analytics can help decision makers understand why solutions that work in one place often fail in another and has several uses cases across industries, such as locational intelligence in Engineering & Construction, natural resource exploration in Oil & Gas, network analysis in Telecom as well as in geo-visualization in Google maps, etc.

The global Geospatial Analytics market is expected to grow from $49 Bn in 2020 to $97 Bn in 2024, growing at a CAGR of 23%. Spending in Geospatial Analytics by Government is expected to account for a large share of the market due to growing emphasis on location-based intelligence in border security operations. North America will continue to hold the largest market share as Geospatial Analytics applications are increasingly being used in construction, agriculture, transportation, and utilities.

Operational Intelligence leverages data collected from enterprise-wide IT systems, analyses the real-time data feed, and presents insights in a simplified manner, allowing IT operators to take real-time action.

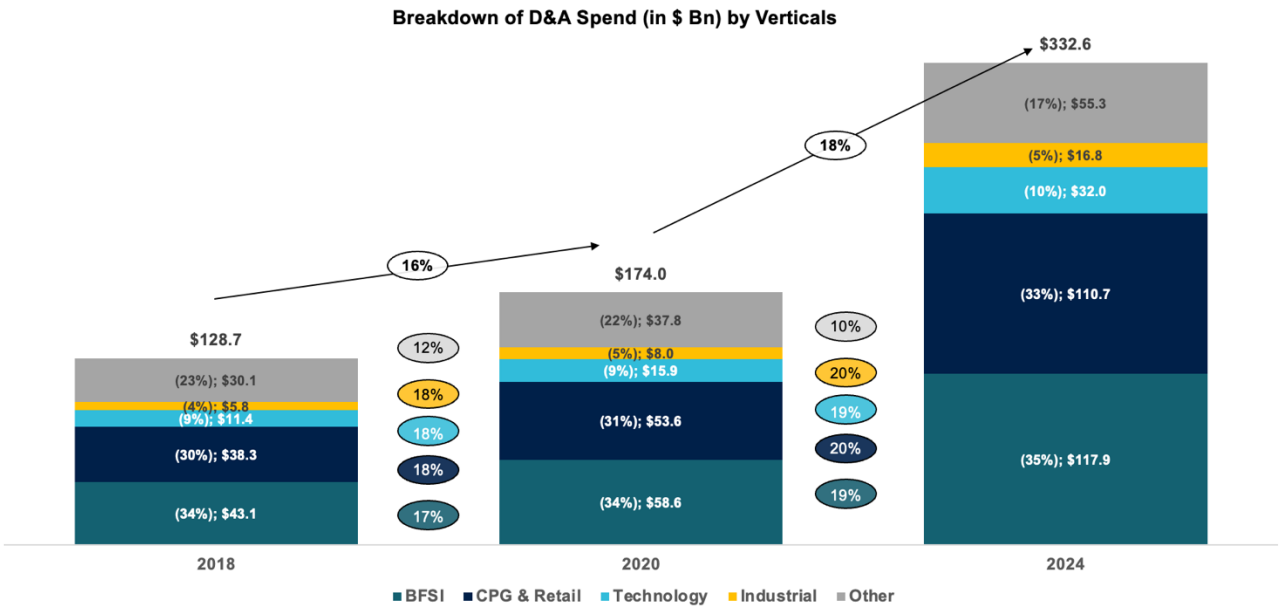


BFSI, CPG & Retail, and Technology verticals are at the forefront of Data & Analytics investments, driving nearly 70% of the total spend

Demand for digitization services is expected to increase sharply due to remote working environments accelerated by COVID-19. Across industries, data has become a valuable source of competitive differentiation among companies. Companies prioritize product development and marketing decisions based on the real-time insights from consumer buying behaviours, spending patterns, and social media interactions.

This is especially true in BFSI, and CPG & Retail industries where investment in Data & Analytics is expected to grow at a CAGR of almost 20% over the next 5 years to exceed US$ 110 billion by 2024. Both industries offer a multitude of products across a variety of channels and collect enormous amounts of data daily. Big Data & Analytics are leveraged to analyze consumption patterns and customer behaviour to facilitate informed product and marketing decisions as well as in fraud prevention and detection.

Technology vertical, comprising of companies that primarily in software or internet business, is the third largest contributor to D&A Spend. As more and more independent software vendors are adopting subscription-based business models, they increasingly have access to large customer usage data. Data & Analytics presents a huge opportunity for these enterprises to uncover consumer usage patterns and identify customer whitespaces for product and sales / marketing decisions, respectively. Software and Internet companies are also embedding analytics in their products to improve user flows and end user experience.



However, enterprises need to focus on driving centralized efforts to mitigate Data Management challenges and scale up analytics operations

With the advent of high-powered computing capabilities and access to vast amounts of consumer data, enterprises are now able to harness the power of D&A for advantages against their competitors. However, a significant portion of enterprises across industries are yet to leverage the full potential of analytics. For example, in the BFSI sector, which accounts for ~34% of the overall D&A spend, only 7% of banks are fully leveraging analytics. Significant challenges still exist that hamper the integration and management of high volumes of data isolated across various business units into a single unified view for product or marketing decisions.

Key Challenges	Description
Data Explosion	• The volume and diversity of data being generated is growing at a rapid pace (~2.3 trillion GB per day) • Data is generated from various trusted & untrusted sources, adding to further complexity in data management & compliance
Data Engineering and Pipeline Management	• As the volume of both structure & unstructured[1] data increases, the process of data discovery & unearthing insights becomes critical • Moreover, data is generated from heterogenous sources with different formats, increasing challenges in data integration and collation • Data pipeline creation, management & maintenance are also complicated task that must deal with batch & incremental loads of data
Data Silos	• Organization silos in industries such as BFSI and Retail impede adoption of data centralization leading to challenges in scaling analytics applications • Customers today move seamlessly between online & off-line platforms leading to isolated customer data across channels
Legacy Infrastructure	• In most sectors, core systems still rely on legacy components that are expensive to maintain, and not suited for handling Big Data • Moreover, migration from legacy system is costly and carry significant risk of business disruption
Lack of Talent	• Large gap between demand & supply for analytics talent at all levels. • Entry level positions are as challenging to fill in as those are at the senior levels • Moreover, sector specific knowledge need to be contextualized, requiring investment in re-training existing managers & supervisors

Note: 1. Unstructured data refers to data that do not conform to traditional Relational database management and contains multitude of different formats collected from number of sources like, Sensors, machines, IoT, etc.

Enterprises are leveraging advanced technologies like AI/ML, NLP to improve data efficiencies and end-user experience

AI and ML will be used to augment and automate data processing, while Conversational Analytics will be leveraged to promote wider adoption of Analytics applications across industries.

Key Trends	Description
Data Fabric	• Increasing adoption of Data Fabric which provides platform agnostic pre-built packages for data integration across hybrid & multi-cloud environment, resolving integration challenges owing to structural inconsistencies in data collected • Increasingly being leveraged due to in-build data quality, data preparation and data governance capabilities
Data Ops	• Increased interest in scaling up Data Ops, which combines the principles of agile & DevOps, to bring speed and agility in data factory development • Higher adoption due to consistency in data quality management through in-built statistical process controls with continuous monitoring
Graph Analytics	• Growing interest in graph analytics, which uses nodes & edges of a graph database to understand the strength of relationship between two entities, to overcome the limitations of a relational database systems and account for explosive growth in unstructured data • Increasingly being leveraged to explore new sources of data and new relationships in social network analysis, fraud detection and supply chain analytics
Customer Data Platform (CDP)	• Increased adoption of CDP, unified data base software for persistent & unified record of customers from first party[1] customer data, to remove complexities in integration and create journey map for individual customer • Increased use in sales & marketing due to additional portability with different platforms and integration with marketing automation tools
Conversational Analytics	• Increased prevalence of conversational analytics, use of natural language processing for search & queries, to allow non-technical users to interact with BI platforms, hence reducing dependency on data scientists or analytics professionals for data exploration and extraction of important insights

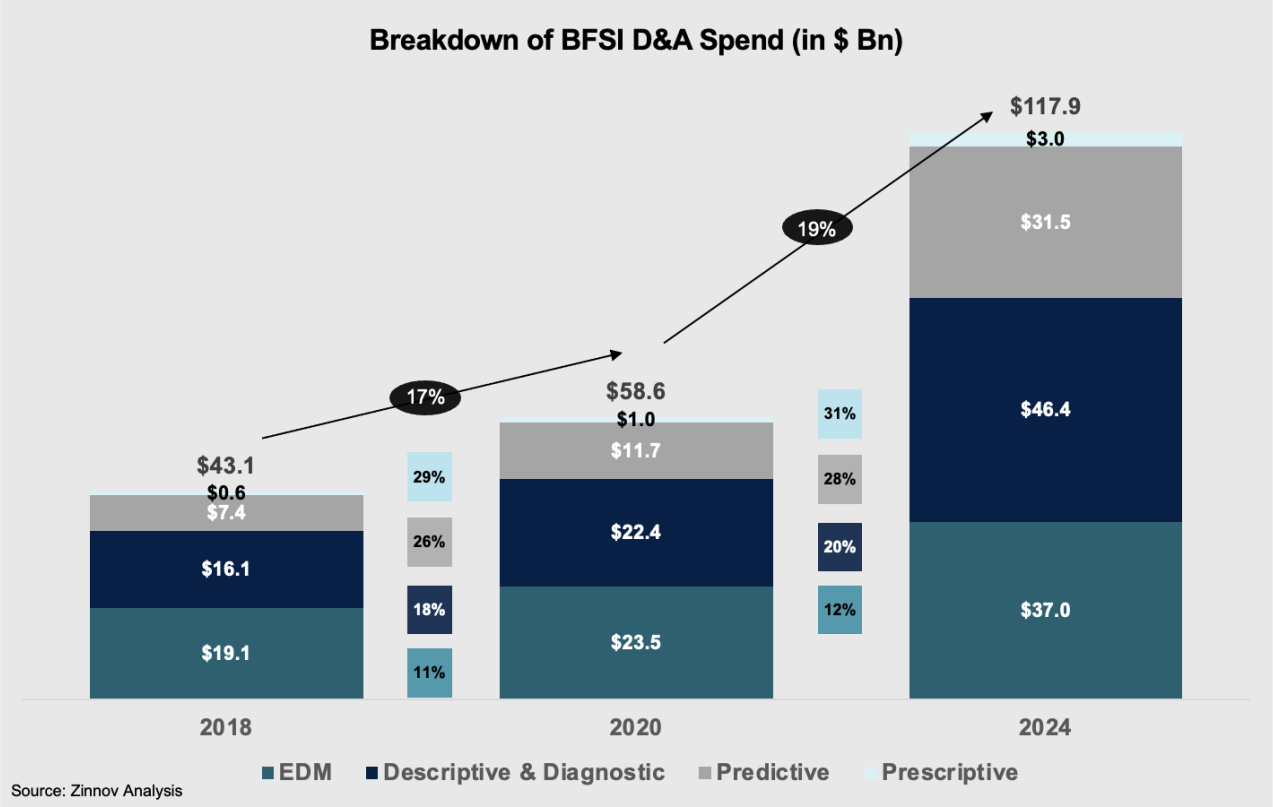
Notes: 1. First party customer data reflects transactional, behavioral and demographic data about consumers

Vertical Deep dive

BFSI spend in analytics is projected to grow at a healthy rate of ~19%, with increased focus on addressing surge in fraudulent activities such as money laundering, payment card fraud, etc.

Global D&A spend by BFSI vertical is estimated to be $58.6 Bn in 2020. A growth of ~19% is expected year-on-year, reaching $117.9 Bn by 2024. In recent years, a surge in fraudulent activities across the BFSI industry has seen double-digit growth. Average successful fraud attacks have increased by +37%, just in 2020[1] alone. As a

response, Fraud and Risk Analytics applications are increasingly being leveraged by enterprises in BFSI vertical. Moreover, banking products are increasingly becoming commoditized due to lack of differentiation between offerings from competing entities, which in turn led to increased spend in Customer Analytics to analyse consumer preferences across various channels to develop new products and create targeted campaigns.



Scale of analytics adoption differs widely based on the size and type of financial services offered. For example, in BFSI sector, which accounts for ~34% of the overall D&A spend, only 7% of banks are fully leveraging analytics[2].

Challenges to scale up the Analytics operation

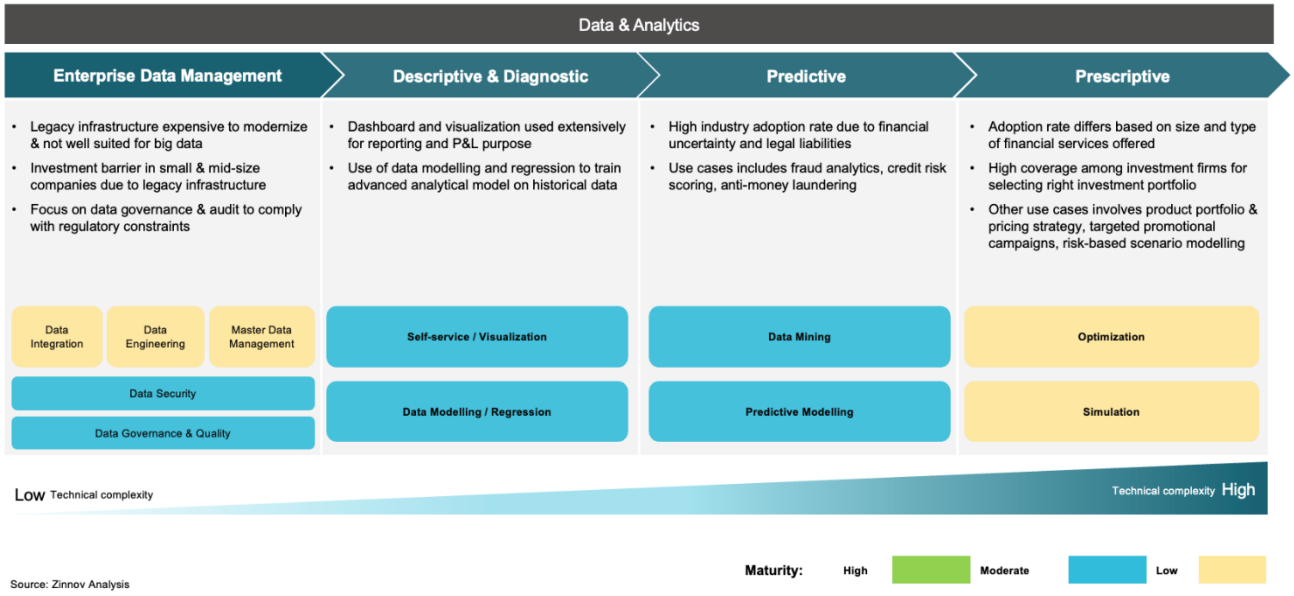
- *Compatibility with legacy core banking systems*
  - ~92 of the top 100 leading banks globally still rely on legacy mainframes for core banking operations.
  - Integration with legacy systems is a key constraint for analytics adoption.
  - Legacy systems are not well-suited for handling a large influx of data.
  - Legacy systems and their tightly coupled architectures are expensive to maintain and harder to modify.
- *Integration and collation of data*
  - Financial entities have a diverse set of offerings across multiple business units and lines of businesses.
  - Integrating and collating consumer data spread across multiple units is a cumbersome process.
- *Privacy and security concerns related to the use of consumer data*
  - Limited access to consumer data protected by regulations.

- Consumer can decide to revoke access to information at any time.
- Robust system and infrastructure needed to retrieve and delete data.

- *Lack of standardization of systems & tools across the enterprise*
  - Traditionally, financial institutions are fragmented into multiple silos.
  - Limited or no knowledge transfer and standardization of system & tools across departments.
  - Lack of centralized governance acts as a constraint to scale up adoption across the organization.

D&A Maturity

While banks and other financial entities have access to large sets of consumer data, organization silos often lead to data integration issues and ad-hoc business reporting. Only a handful of banks have emerged to truly leverage large scale analytics for data-driven decision-making and predicting financial risks like fraud detection, credit card scoring, etc.



D&A Use Cases

Data & Analytics applications are leveraged in multiple use cases by Banking and other Financial entities to minimize operational & financial risk and optimize product offerings. Some of the key use cases are:

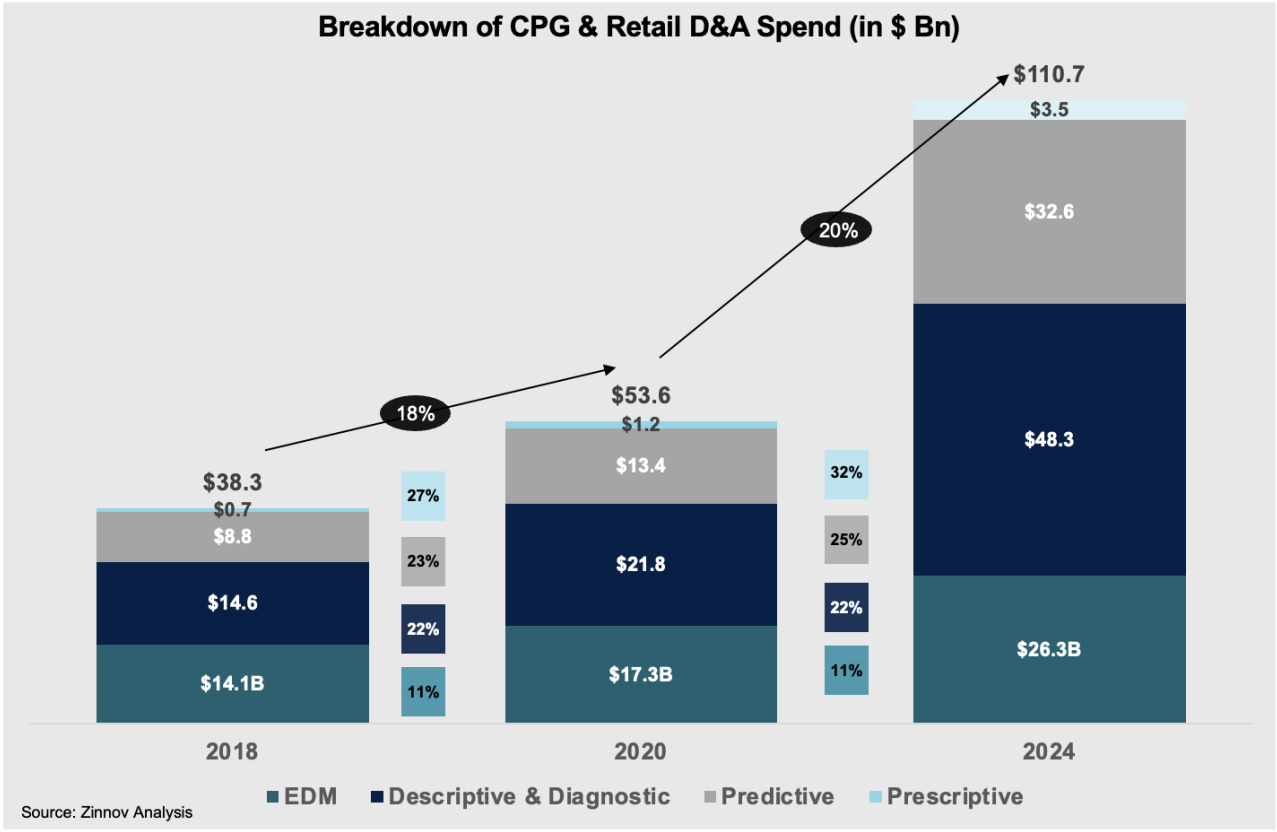
Use Cases	Description
Fraud Detection	• Predictive analytics with pre-trained algorithm & correlation to find probability of fraud in transactions like credit card, account opening, etc. • **Anomaly-based** fraud analytics trained on continuous stream of banking transactions to establish baseline sense of normalcy for fraud detection • A major retail bank in Denmark reduced false positives by 60% using advanced machine learning based fraud analytics
Insurance Claim Processing	• **AI with conversation analytics** to interact with user, verify documents and pass the claim through fraud detection before final settlement • Advanced analytics to score **litigation propensity** and route claims to senior adjusters, achieving faster resolution with lower amount • An AI based insurance-tech start up in US leveraged conversational assistant with AI to process claims in **less than a minute**
Pricing & Product Optimization	• Predictive analytics to **optimize** portfolio based on buyer preferences, behavioural signals, and price sensitivity from historical data • Algorithms created and **trained** on historical data of costs, expenses, claims, risk, etc. to **predict** insurance **premiums** dynamically • A global insurance company in France used machine learning to optimize **pricing** by predicting "large-loss" traffic accidents with **78% accuracy**
Sales Analytics	• Predictive analytics to understand buyer journey across multi-channel environment and develop **targeted promotional** campaigns • Performance analytics to identify **bottlenecks** for customer-facing employees and discovering ways for enhancing employee **productivity** • A leading financial services entity in New York used Sales Analytics to identify consumer spending pattern and **create targeted promotional** campaigns for customer retention
Risk Analytics	• Predictive analytics and alternative data sources like social media post & interactivity leveraged to score credit risk for clients without financial history • ML based algorithms for supporting **Anti-money Laundering** (AML) analysts to efficiently identify and monitor any suspicious accounts • A British multinational investment bank leveraged a combination of NLP and predictive analytics to **improve** global regulatory **compliance**

Source: Zinnov Analysis

1. *2020 True cost of Fraud report by LexisNexis Risk Solutions*
2. *Smarter Analytics for Banking by McKinsey*

Data & Analytics spend in CPG & Retail sector is projected to reach ~$110 Bn by FY24; use of Prescriptive Analytics to optimize promotional spend, channel investment, product placement, etc., will drive growth

Global D&A spend by CPG & Retail vertical is estimated to grow from $53.6 Bn in 2020 to reach $110.7 Bn by 2024, growing year-on-year at 20%. CPG and Retail industries are evolving rapidly to keep up with shifting consumer demand. CPG companies are growing exponentially and remaining competitive by introducing multiple brands, diversifying product lines, and expanding sales channels. With eCommerce platforms and direct-to-consumer online marketplaces serving as major sales channels, it is crucial for businesses to remain updated with actionable insights to gain commercial success. Consequently, Customer Analytics is increasingly being leveraged by enterprises in CPG and Retail industries to uncover real-time precise insights into consumer buying pattern, allowing companies to quickly respond to changing consumer preferences.



Rise of consumerism has led to a high volume of data being generated across both online and traditional offline channels. In an increasingly competitive CPG & Retail market, data is being leveraged by enterprises to decide product assortment, channel strategy, marketing spend, etc. However, only 20% of that data is actually being used to make informed business decisions[1].

Challenges to scale up the Analytics operation

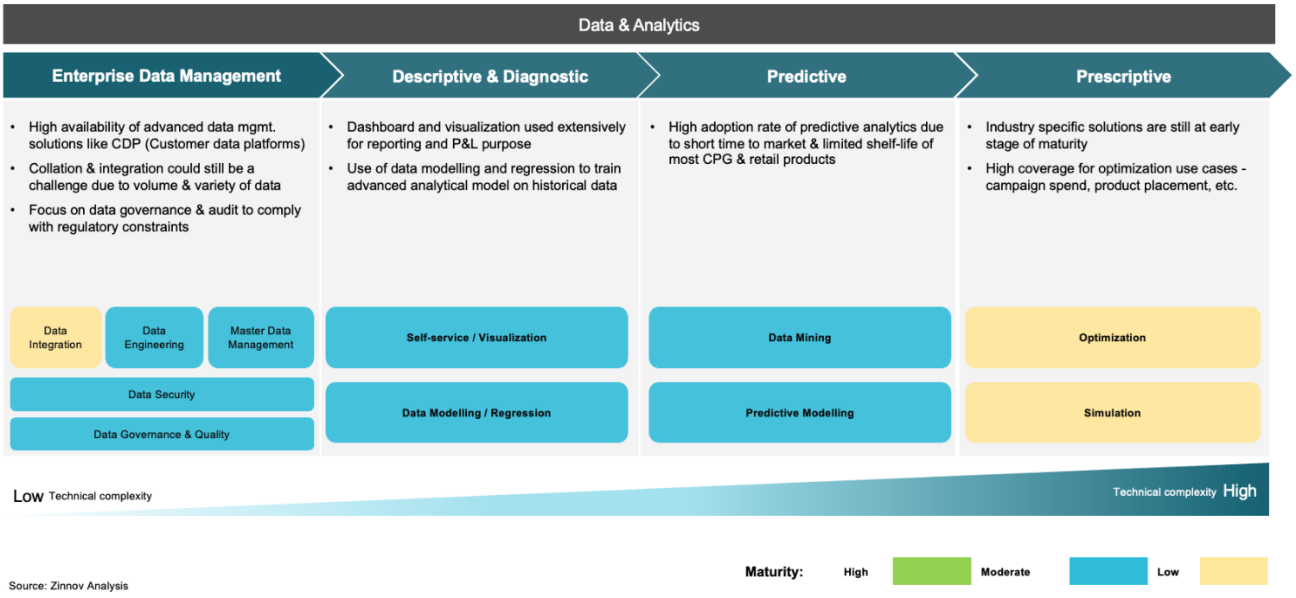
- *Data collation in a multi-channel environment*
  - While 96% of US consumers utilize online shopping, in-store purchases account for 65% of the budget[2].
  - Customers today, move seamlessly between online and offline experiences.
  - Retailers need accurate and identifiable data to create an omnichannel experience.
  - However, collation of data hosted in disparate systems across channels is a cumbersome process.
- *Matrix organization structure*
  - Traditionally, CPG & Retail industries have a matrix organization structure, aligned with a specific product offering.
  - While the structure led to strong GTM capabilities, it also created challenges for a large-scale transformation.
  - Isolated customer data and duplication of systems & tools across departments are hindering large-scale adoption.
- *Data security & compliance*
  - Retailers have access to volumes of data that can be mined for insights.

- However, non-compliance with regulations or privacy breaches are expensive.
- For example, Equifax spent $1.4 Bn on upgrading its security in the wake of a leak that cost $500 Mn in fine[3].
- Significant investments required for security architecture and compliance processes act as a barrier for industry-wide adoption.

- *Access to talent base with domain knowledge*
  - Successful implementation of analytics in Retail requires technical skillsets complemented by domain knowledge.
  - In addition to hiring data science specialists, investment is required to retrain managers and supervisors accustomed to old ways of working.

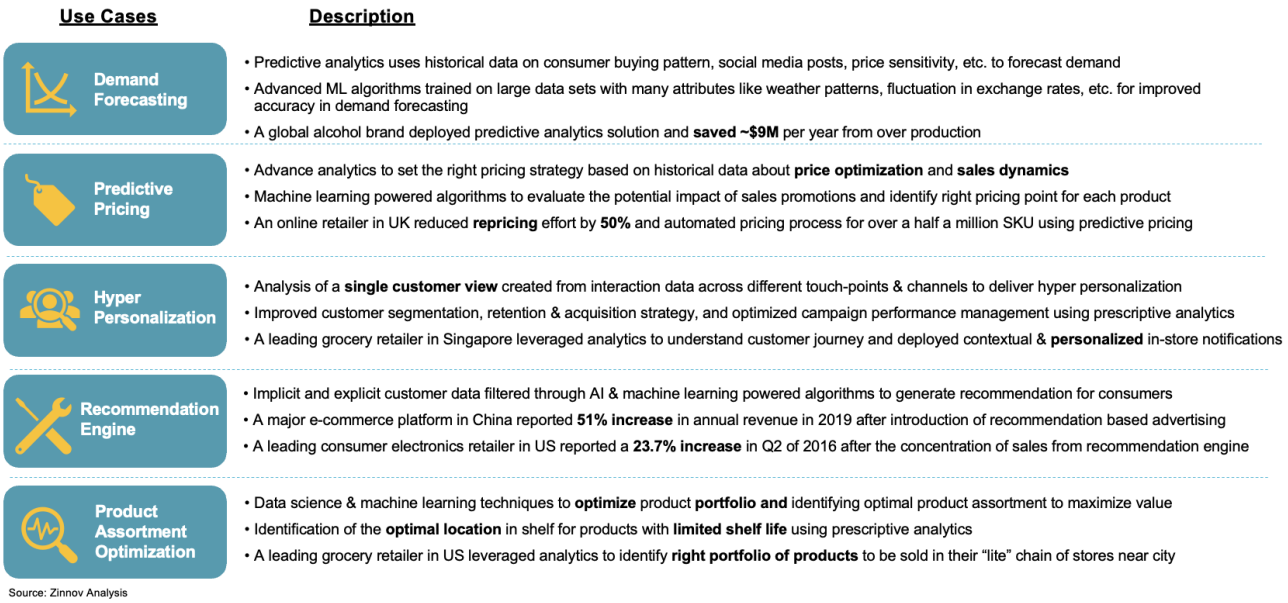
D&A Maturity

In recent years, adoption of a customer data platform (CDP) has also picked up, enabling marketing teams to capture, process, and unify data and then leverage it through various channels such as email, social, and display ads, and sales campaigns. Predictive and Prescriptive Analytics are increasingly being leveraged by large retailers and digital native enterprises for feature prioritization and marketing spend optimization.



D&A Use Cases

Due to the limited shelf-life of the products, D&A will play a major role and have industry-wide use cases, starting from planning product assortment to forecasting demand for an individual product, to creating a micro-segmentation strategy of consumers for hyper-personalization.

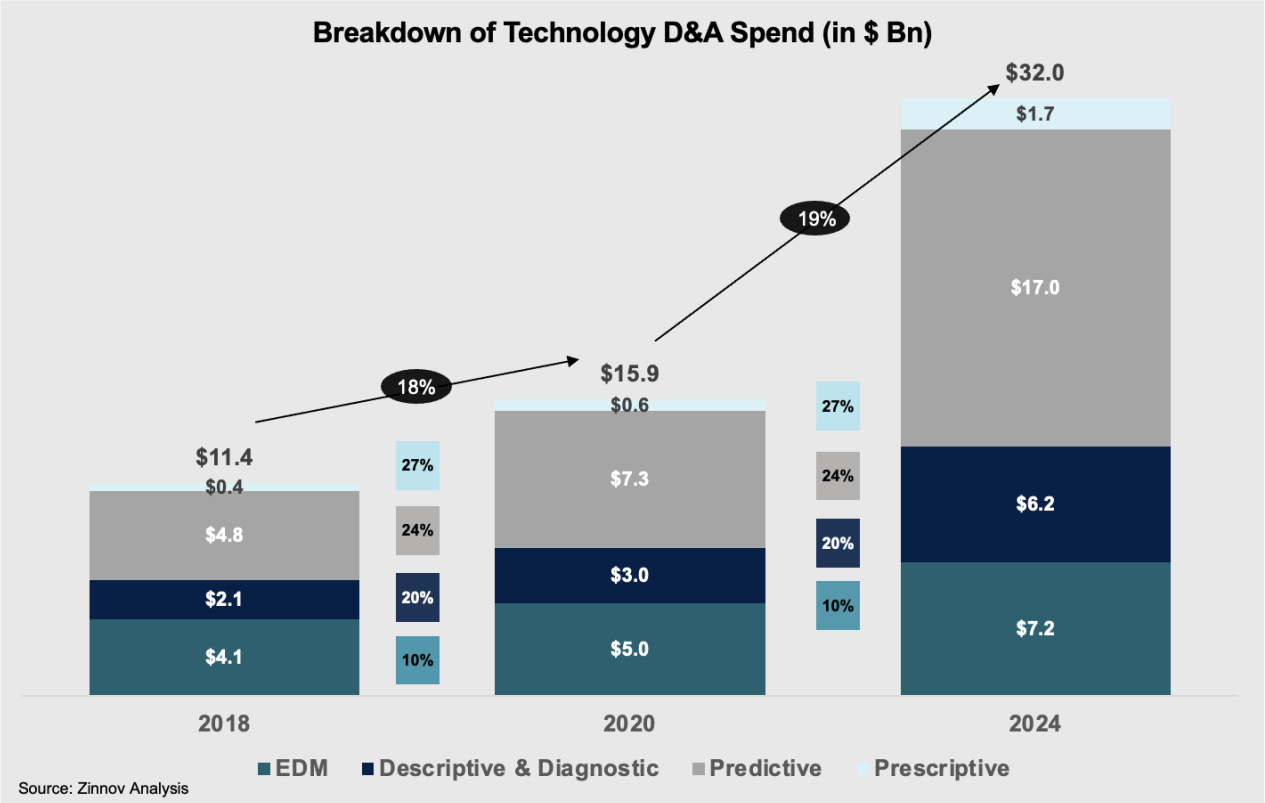


Source: Zinnov Analysis

1. How can consumer products companies stay relevant and be future-ready with analytics by Deloitte
2. NPR Poll
3. Equifax-data-breach-costs by Bank of Security

D&A spend in the Technology sector is projected to reach ~$32 Bn by FY24; Embedded Analytics in products & services to drive growth in Predictive and Prescriptive Analytics

Global D&A spend by the Technology vertical is estimated to grow from $15.9 Bn in 2020 to $32.0 Bn by 2024, growing at a year-on-year rate of ~19%. Businesses in the technology industry continuously need to reinvent and protect themselves from global disruptions. Many independent software vendors (ISV) are moving away from custom building software and solutions for each enterprise and adopting Software-as-a-service model, leading to a wealth of information about customers' usage and interaction patterns. Newer products and solutions are being launched at a rapid pace with focus on end user experience. As a result, Customer Analytics is being leveraged by ISVs to uncover insights from usage data and inform product development decisions.



However, only a handful of software vendors have leveraged the available data to make informed decisions or realign their product strategy, due to challenges with scaling up analytics across the organization.

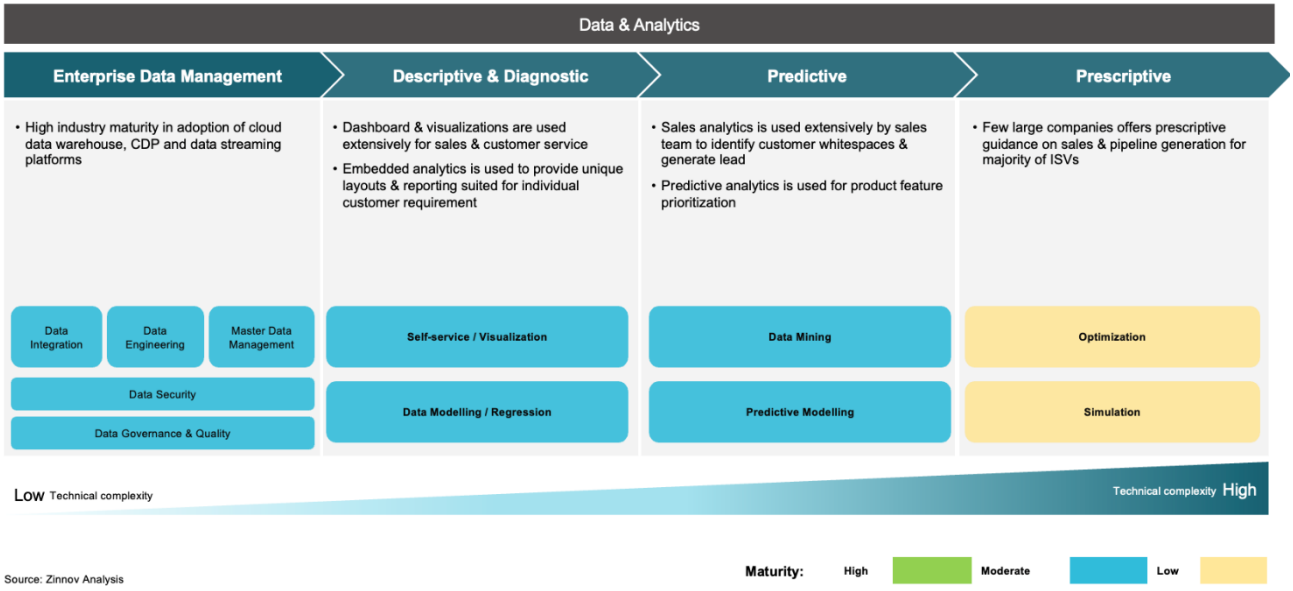
Challenges to scale up the Analytics operation

- *Data explosion*
  - Constant barrage of real-time streaming data on product usage, customer preferences, etc., from embedded product analytics and external sources such as social media, product reviews, etc.
- *Data security & privacy*
  - Growing emphasis on data privacy among users globally.
  - Compliance to local data storage, governance and data transfer regulations can impact the quality of data available for analytics.
  - Robust systems required to retrieve, modify, and delete user data based on user preferences.
- *Talent gap*
  - Increased demand for big data scientists and data engineers across technology firms and other industry verticals such as BFSI, Retail, Healthcare, etc.
  - High attrition rates as skillsets are easily transferrable across other technology companies and industry segments.

D&A Maturity

While most of the independent software vendors have modernized their infrastructure, moved to a multi-Cloud environment, and leveraged operational intelligence to streamline internal workings, only a handful of

them have started to leverage Advanced Analytics like Prescriptive to define their product prioritization strategy. Most vendors are, to an extent, dependent on Customer Analytics solutions provided by large vendors or third-party platform ecosystem providers like Microsoft, Salesforce, and AWS to build their sales & services strategy.



D&A Use Cases

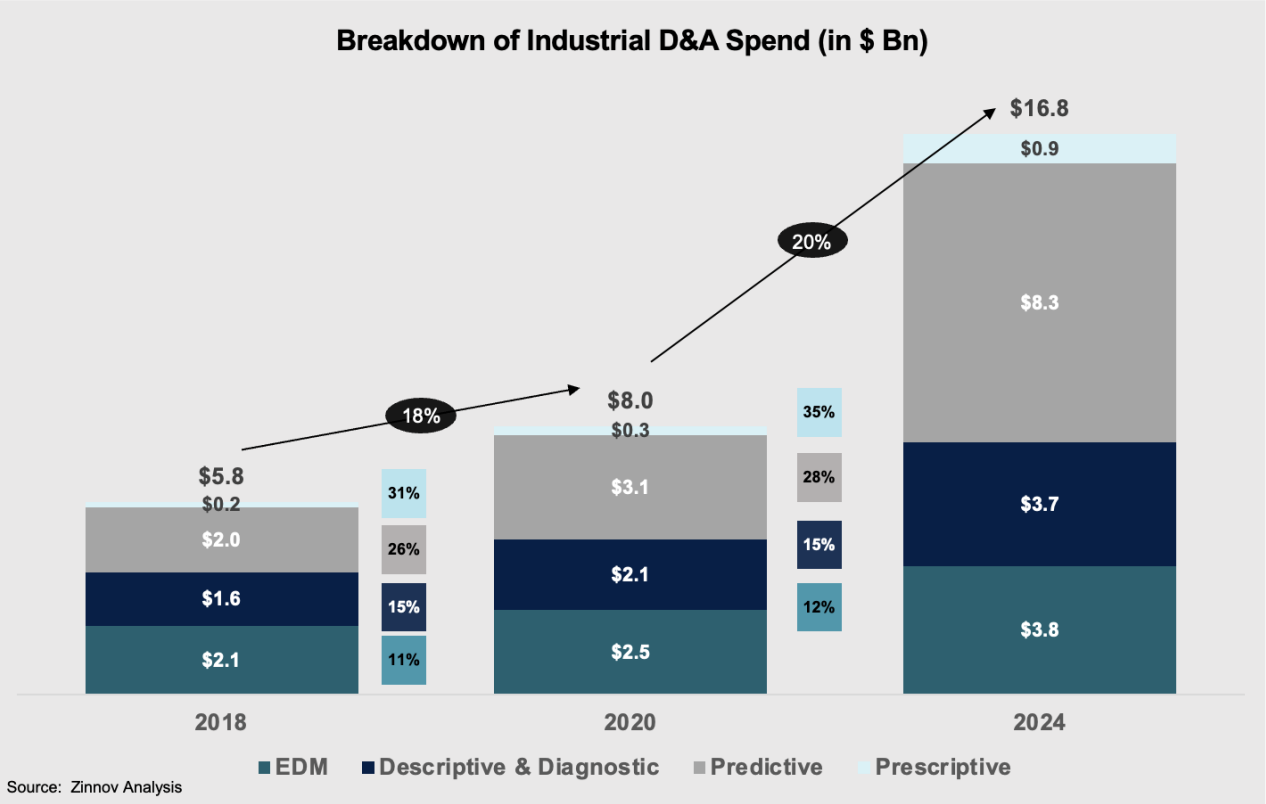
Increased use of SaaS-based applications across different verticals have led software vendors to adopt subscription-based models, which in turn have led to the growth of consumer usage and interaction data for vendors to leverage. Vendors are integrating multi-tenant visualization and reporting capabilities to suit individual customer needs and using Customer and Sales Analytics to finetune product features and identify customer whitespaces for new opportunities.

Use Cases	Description
Sales Analytics	• Advanced analytics to track click through rate, sales trends, customer life time value, etc. to measure marketing success and generate **new leads** • Advanced analytics and data exploration capability to identify customer **white spaces** for new opportunities and measure sales team performance • A leading digital enterprise management service and solution provider **reduced manual** analysis and saved man **hours** using predictive analytics
Embedded Analytics	• Embedded analytics to integrate visualization & data exploration within business application, reducing the need to **toggle** between different applications • **Multi-tenant** self-service analytics incorporated to provide visualization & interactive reports and visual workflows specific to individual customer need • A leading learning management system used embedded analytics to provide unique layouts & reporting, **custom** built for **specific customers**
Customer Analytics	• Customer Usage analytics to provide data on customer interaction with application to identify attrition risks and influence feature development decisions • Log-level analysis to provide **24/7 view** on user activity across devices, locations, type of end users, etc. • Leading providers of commercial application exchanges leverage application usage analytics to help **ISVs** get **insights** on customer **usage patterns**
Operational Intelligence	• Real-time analytics to extract insights about infrastructure/application **performance** from streaming data feeds to deliver operational instructions • Advanced machine learning algorithms to analyse and detect deviation from baseline IT operational metrics to eliminate or minimize impact of outages • A global professional networking company used operational intelligence to track performance and **detect** any **network anomaly**

Source: Zinnov Analysis

Industrial spend in analytics is projected to grow at a CAGR 20% to reach ~$17 Bn by 2024; need for real-time insights on demand, inventory, and equipment status will be key growth drivers

Global D&A spend by the Industrial vertical is estimated to grow from $8.0 Bn in 2020 to $16.8 Bn by 2024. Supply Chain Analytics is increasingly being used by enterprises across variety of use cases - from forecasting demand to planning supply chain operations to performing predictive maintenance of machines and equipment.



According to a recent survey[1], ~73% of US manufacturers have increased their use of digital technologies. With the onset of the COVID-19 pandemic most enterprises that previously did not face supply chain challenges, are now prioritizing their supply chain efficiencies - with 65% US manufacturers reported to have evaluated the use of analytics in their supply chain operations[1]. However, there are several challenges that manufacturers need to address before full scale adoption of D&A in supply chain operations.

Challenges to scale up the Analytics operation

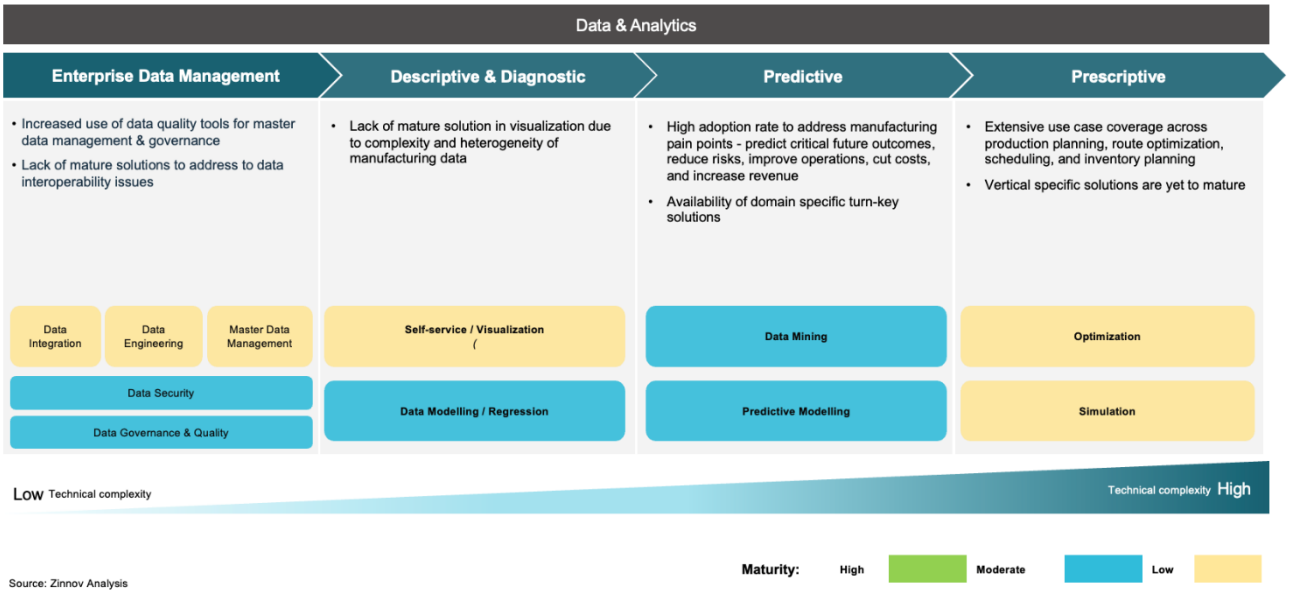
- *Technology Infrastructure*
  - Standalone legacy infrastructure still commonplace in manufacturing plants.
  - ~$6.8 Tn worth of legacy equipment is present in the US alone[2].
  - This equipment often uses different systems, sometimes competing technologies with outdated software, not capable of streaming data to the network.
  - Integrating legacy infrastructure to the connected ecosystem of devices continues to be a major challenge.
- *Data Integration & Collaboration*
  - A wide variety of deployed smart machines, sensors, etc., generate a constant stream of valuable data.

- However, the data exists in heterogenous formats with different structural inconsistencies, causing integration and aggregation a complex endeavour.

- *Data Quality*
  - Efficacy of analytics is dependent on the quality of data being analysed.
  - However, manufacturing data is often biased, and full of errors, due to a variety of human and non-human factors.
  - For example, sensor data collected from the production floor might contain inaccurate data due to harsh operating conditions, with extreme temperatures and noise.
  - Moreover, on-the-fly updates to maintenance logs by factory workers might contain missing or wrong information.
- *Workforce Reskilling*
  - Lack of awareness among factory workers on acting upon predictive maintenance recommendations.
  - Absence of intuitive visualization tools to drive actionable recommendations for the factory workforce.

D&A Maturity

While the industry is generally characterized by the high adoption intensity of newer technologies (IoT, smart sensors, etc.) and processes (Lean, Kanban, etc.), effective enterprise data management for most enterprises remains the biggest roadblock from becoming a data-driven organization.



D&A Use Cases

According to a recent survey conducted by PwC, ~35% of the US manufacturers have implemented some form of Advanced Analytics in their organization in the last 3 years[3]. With the pandemic being the accelerator of digital transformation, manufacturers are expected to increase their investments in D&A. Factors, such as

shortening product life cycles, low supply chain visibility, rising warehousing costs, and fluctuating customer demands are driving the growth in D&A spending.

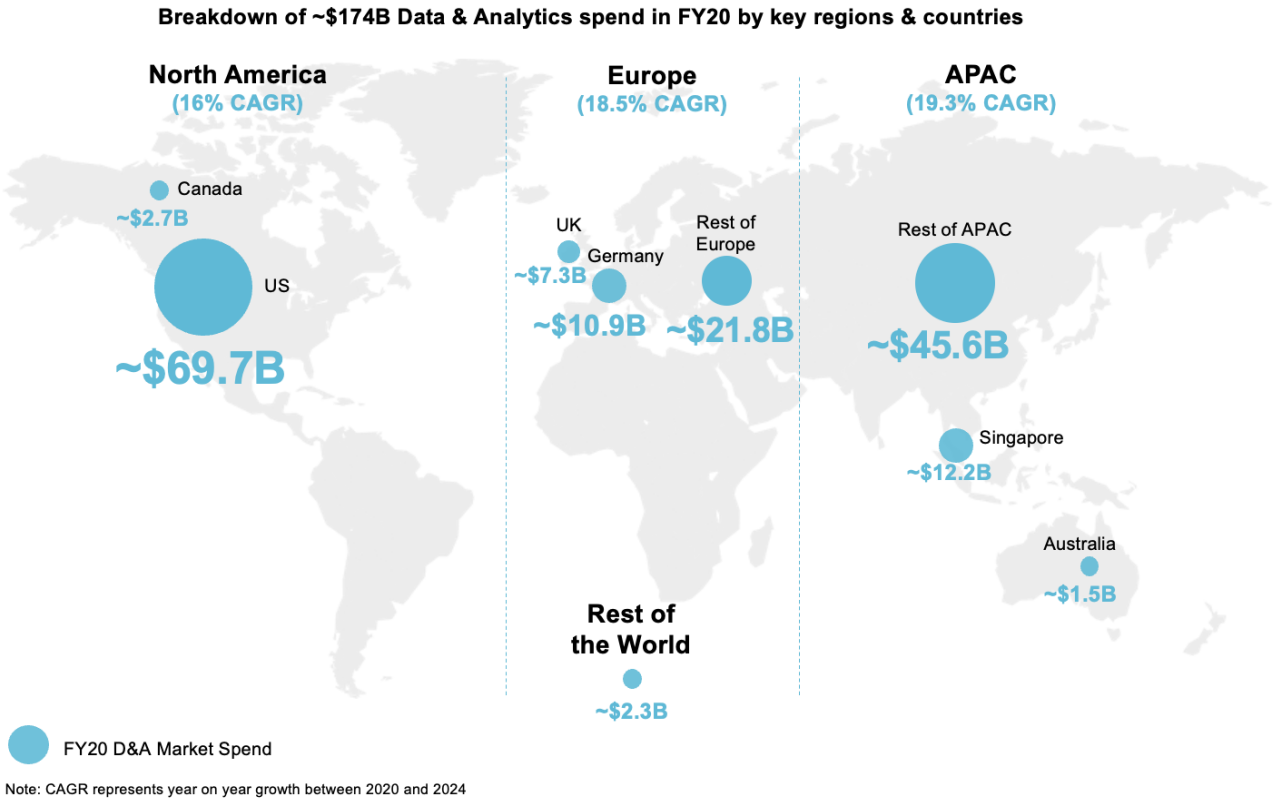
Use Cases	Description
Demand Planning	• Predictive analytics to forecast **demand by week or month** at individual product levels based on historical data and relevant macro trends • Predictive analytics on point-of-sale terminal data stored in a demand signal repository to help businesses **anticipate** consumer **demand** • A leading manufacturing company in US leveraged predictive algorithm to forecast demand , achieving 12% increase in accuracy of demand forecasting
Decision Optimization	• Optimization models to find best course of action for a manufacturer grappling with millions of decision variables, constraints, & trade-offs • Prescriptive analytics with advanced mathematical models to build optimization & scenario modelling of real-world business problems • A leading trucking & logistics company in US leveraged decision optimization to work out **optimal warehouse location** and reduce time in delivery
Supply Chain Analytics	• Advanced analytical models to recreate a **digital copy** of the real-world supply chain and run simulation to prepare for any possible impact • Vast amount of data available to manufacturers are leveraged to train ML models to understand the risk and increase accuracy in planning • Advanced algorithms to analyse multiple attributes - weather related shipping condition, raw material availability, supplier issues, etc
Warranty Analytics	• A combination of advanced algorithms and text mining to predict product reliability issues and initiative problem solving process months in advance • Predictive analytics to discover hidden **relationships**, usage patterns, and future trends of product performance, warranty claim rates, etc. • A leading manufacturing client with operations in 26 countries used web-based warranty analytics to get visibility on **parts failure**
Predictive Maintenance	• Advanced statistical methods, such as machine learning, to dynamically detect maintenance requirements for machines • ML based algorithms to Identify patterns across all sensors and building multivariate prediction model to detect probability of equipment failure • A leading airline in Hong Kong deployed predictive maintenance module to track and monitor assets, reducing delays by 30%

Source: Zinnov Analysis

1) *Pandemic pushed manufacturers to greater analytics adoption, survey by The Harris Poll*
2) *Bring your legacy systems into the future with IIoT by Plant Services*
3) *Navigating the fourth industrial revolution to the bottom-line, by PwC US*

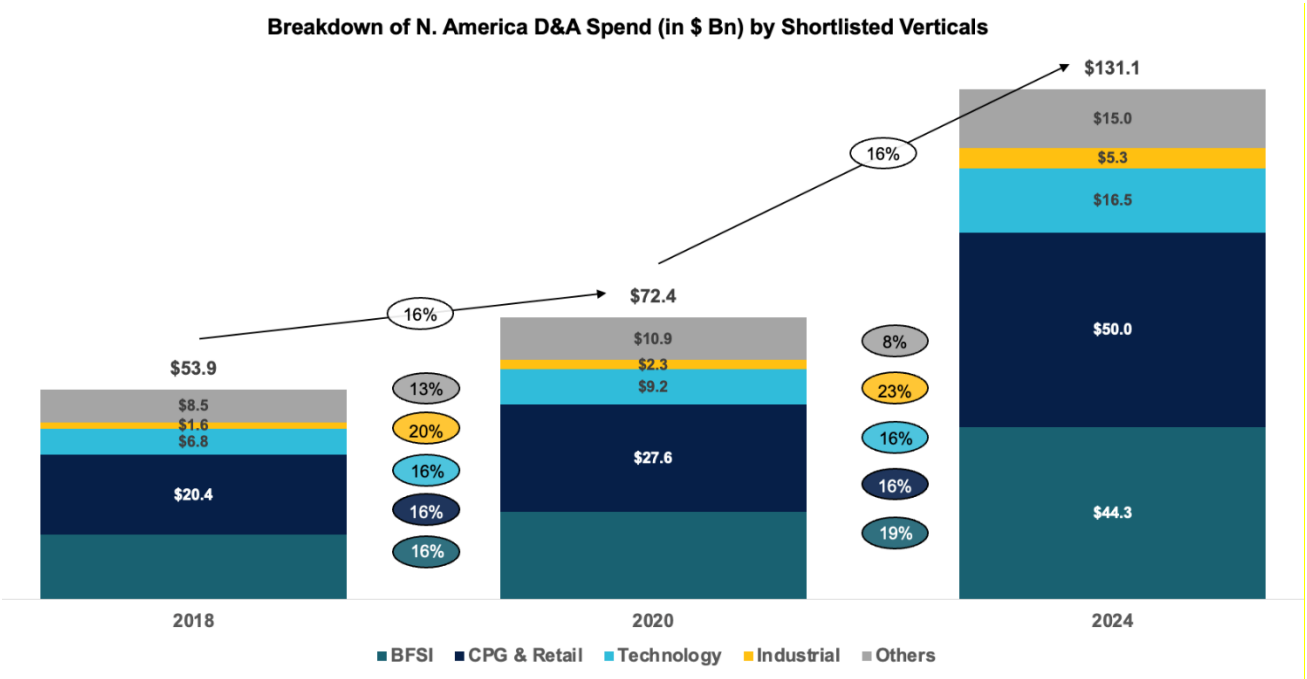
While North America will continue to account for the largest market share of Data & Analytics spend, APAC is expected to grow at the highest CAGR between 2020 and 2024

Growing adoption of IoT (Internet of Things) and smart devices, increased use of mature technologies like AI and ML, and the availability of subscription-based low-cost storage solutions are some of the common D&A adoption drivers across the globe.



North America

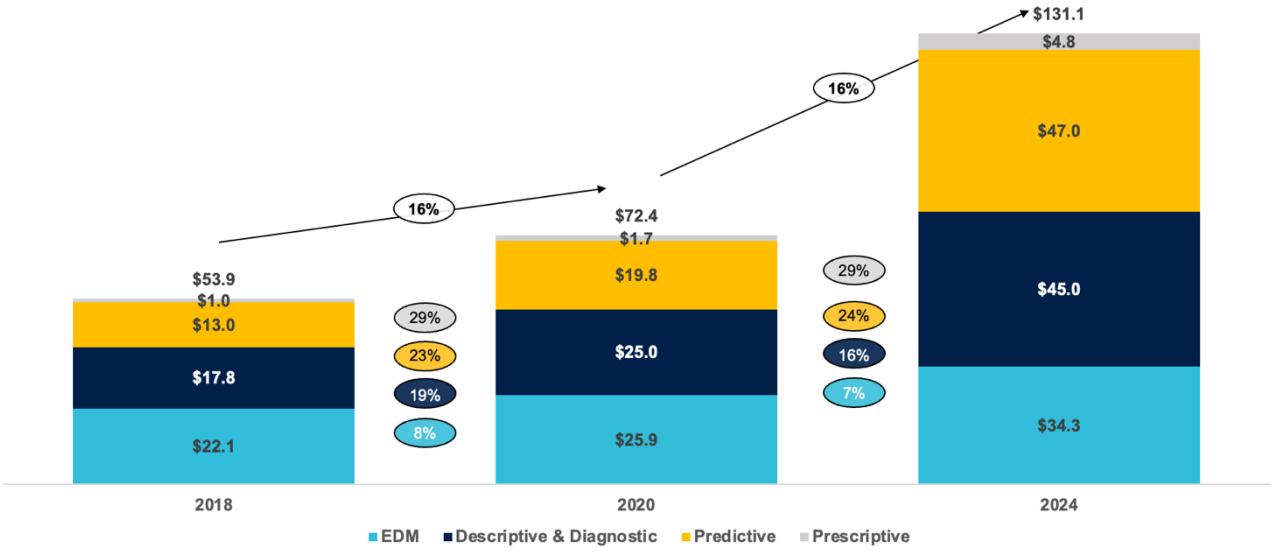
- North America accounts for the largest share (~40%) of the global D&A spend, with top three verticals – CPG (Consumer Packed Goods) & Retail, BFSI, and Technology – contributing to more than 80% of the overall D&A spend in the region.



- The Analytics market in North America has been growing at a CAGR of 16% over the last few years.

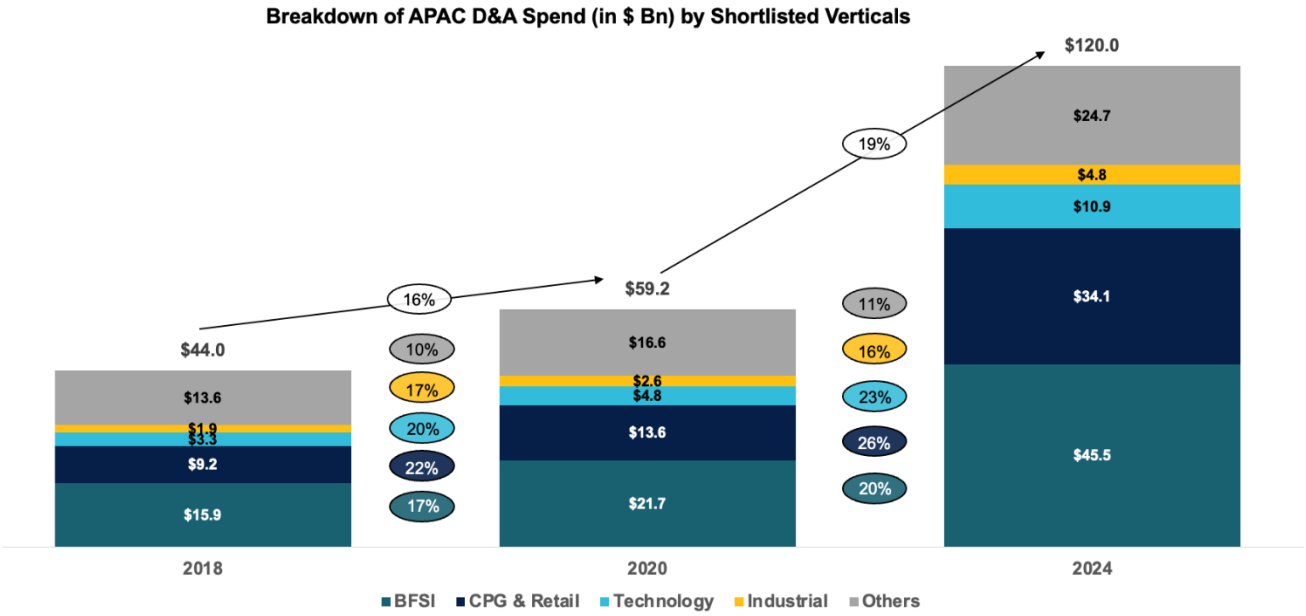
- Similar to most other developed markets, Canada is facing a significant shortage of Analytics talent. COVID has accelerated the demand for Analytics in general as Canada's traditional sectors, such as Retail, Banking, and Insurance have significantly accelerated their investment in digital transformation.
- Double-digit growth[1] (~30%) in fraudulent transactions across Retail and Banking industries in North America has led to increased spending on Risk Analytics applications – leading to North America contributing ~38.5% of the global spend on Risk Analytics[2].
- With almost half of US consumers showing willingness to try out new brands[3], CPG & Retail brands are ramping up their investments in Customer Analytics to re-align product and consumer strategies to drive competitive differentiation.
- Being the early adopter of cutting-edge solutions, the Technology sector in North America is the third largest contributor to the regional D&A spend. As the industry is moving towards a subscription-based service model, independent software vendors (ISVs) are leveraging D&A, and access to large volumes of customer data to influence product development, sales planning, and customer service experience management. Moreover, D&A services like operation intelligence is consumed internally to streamline infrastructure operations.
- Industrial sector in the US is expected to witness high growth for D&A. While US manufacturing is witnessing a meteoric rise with ~16% jump in the index of manufacturing activity compared to pre-pandemic levels in April 20204, manufacturers are still struggling to integrate digital technologies across their operations. Manufacturers are increasingly leveraging specialized applications such as Supply Chain Analytics to optimize operations and reduce short-term shutdowns due to parts shortages and machine breakdowns.
- Spending on D&A services in Healthcare is also expected to witness exponential growth. Rising healthcare costs (~$6.2 Tn by 2028[5]) and growing adoption of virtual health services like remote monitoring, telehealth, etc., in the US are expected to drive the spend on D&A to identify patients with high risk of developing chronic conditions early in the process.
- Traditional Analytics - EDM and Descriptive & Diagnostic Analytics - will continue to be the large spend areas in the region. However, the Predictive and Prescriptive Analytics pie is expected to grow rapidly by 2024.

Breakdown of North America D&A Spend (in $ Bn) by Horizontals



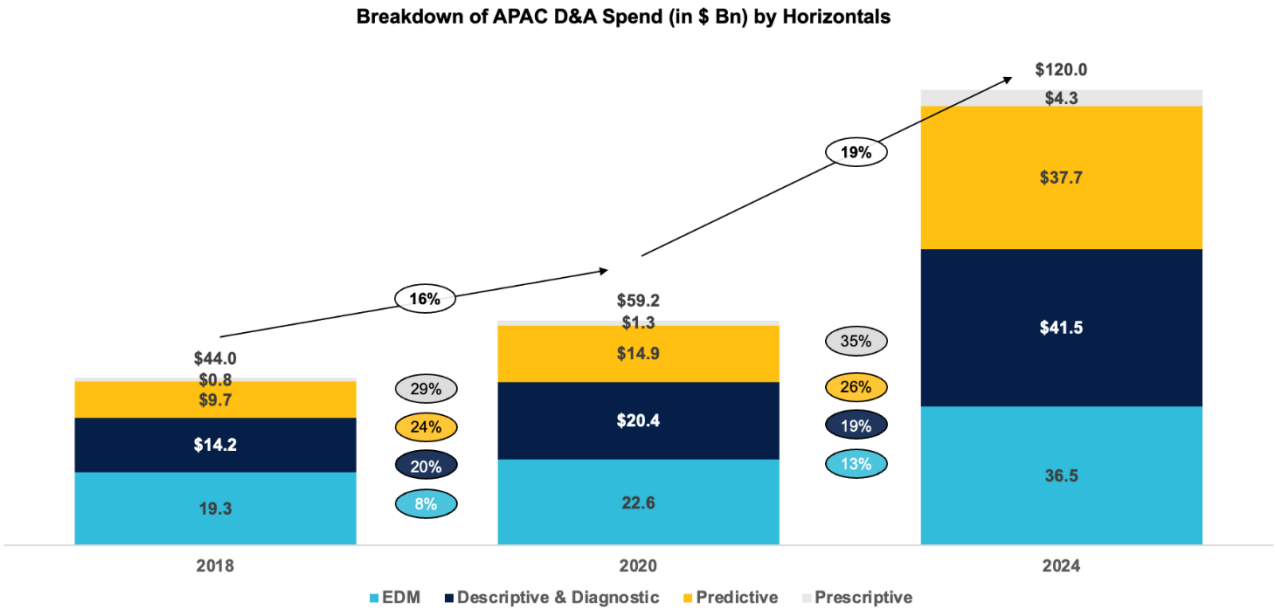
APAC

- APAC accounts for the second highest share (~34%) of the global D&A spend.
- China accounts for the largest market share of D&A spend, while India, Japan, and Singapore are the other major spenders in APAC. New government-led initiatives increased regulatory mandates, and growing adoption of analytics in Banking and Healthcare industries are driving the spend in the region.
- Governments in India and Singapore are expected to increase spending in D&A to drive their digital transformation programs. For example, the Government of India recently announced plans to use a combination of Advanced Analytics with Text Mining to aid in regulatory filing, track tax evasions, and support natural language translation for major regional languages to dispense policy and government-related information.
- Similarly, GovTech - government technology agency of Singapore – is planning to build central platforms to support common use cases in Video Analytics, Fraud Analytics, and Natural Language Processing (NLP) across different public agencies to lower cost6.
- The top three verticals – BFSI, CPG & Retail, and Technology – account for ~68% of the regional D&A spend.



- Increased regulatory focus on fraud management in APAC has led to growing adoption of Fraud & Risk Analytics applications, with the region leading the growth (~16%[4]) in global Risk Analytics spend.
- Spending on Customer Analytics in APAC is also expected to grow (~21%[7]), as enterprises are leveraging analytics to understand customer behaviour and preferences to provide differentiated customer experience in otherwise commoditized industries, such as Retail and Banking.
- Mobile data traffic in APAC is expected to increase by seven-fold[8] between 2019 to 2023, due to high penetration of smartphones or mobile devices. Consequently, telecom operators are expected to increase investments in D&A to optimize internal operations, improve customer experience, and monetize subscriber data to other verticals.
- Rapid digitization and the growth of consumerism in APAC have led to a surge in consumer data volume across industries, and hence, enterprise spending in EDM services is expected to grow.

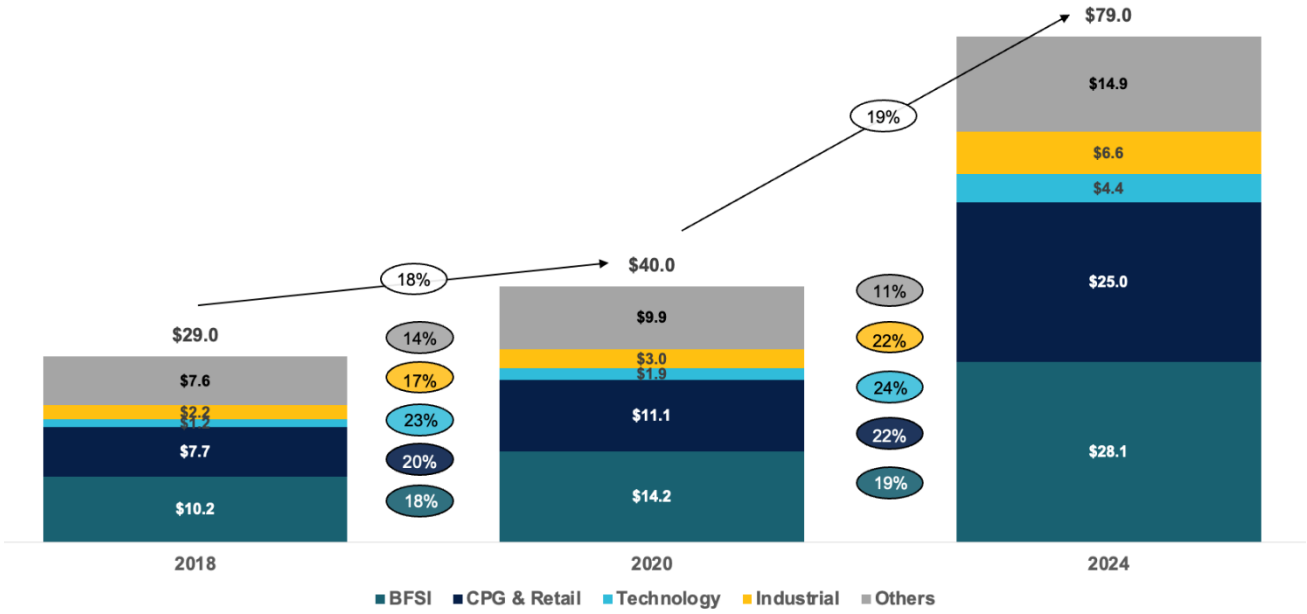
- Access to large volumes of customer data and growing digital commerce activities have led to increased spend on Prescriptive Analytics by marketing and sales teams across industries to identify optimal marketing strategies, device more precise campaign messages, etc.



Europe

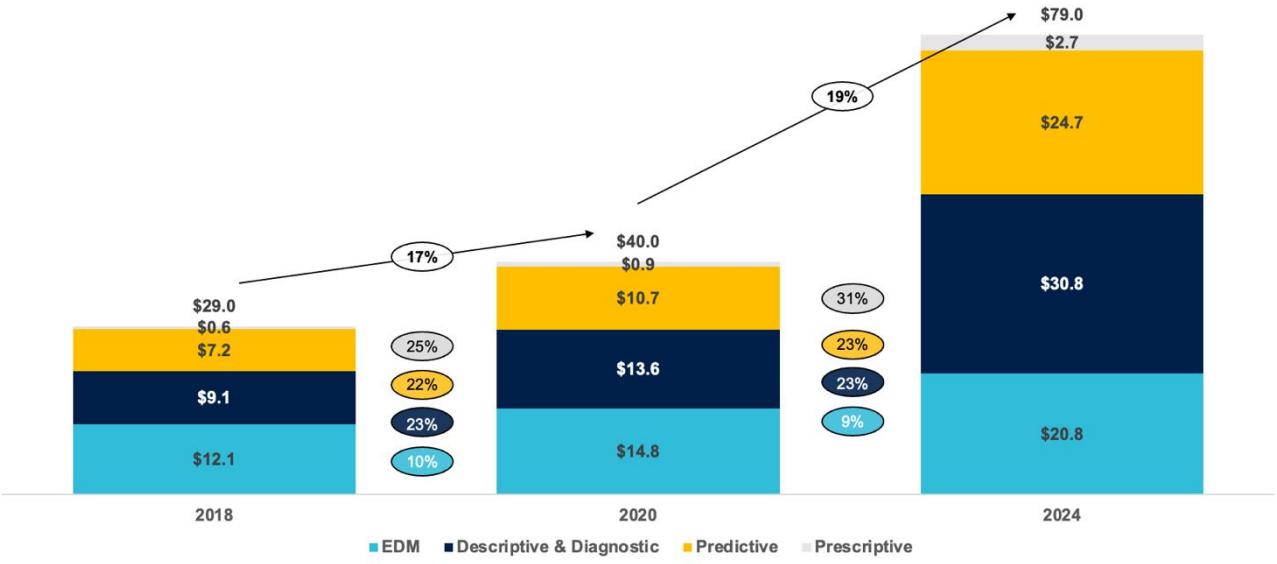
- Europe accounts for 23% of the global D&A spend. Two largest economies in Europe – Germany and UK - contribute to more than 50% of the regional spend.
- Germany is the fourth largest consumer of IoT services and fifth largest e-Commerce[9]. The growing adoption of IoT and other smart devices, along with increasing e-Commerce activities, have led to a surge in volumes of customer data. Subsequently, enterprises are leveraging D&A to uncover insights on consumer spending patterns and buying behaviours to make informed decisions on their product and marketing strategies.
- With more than 73% penetration of online banking channels, D&A spend in UK is expected to be driven by Banking and other financial entities[10]. While the onset of COVID-19 had a significant impact on the Manufacturing sector in UK and Germany, owing to supply chain uncertainties, enterprises are now accelerating their investments in D&A to improve visibility on supply chain operations and predict demand to minimize losses due to future disruptive events.
- In Europe, the top three verticals – BFSI, CPG & Retail, and Industrial – account for ~71% of the regional D&A spend

Breakdown of European D&A Spend (in $ Bn) by Shortlisted Verticals



- The e-Commerce market in Europe is expected to grow by 30% in 2021, with almost half a billion customers shopping online. The stay-at-home mandates have also accelerated adoption of digital banking channels. Consequently, enterprises in these industries are leveraging customer data to make informed decisions on optimal product strategy, marketing messages, channel investment strategy, etc., using D&A.
- In 2020, Pharmaceutical and Biotech companies in Europe increased spending on D&A services to accelerate development of therapeutic drugs and vaccines for COVID-19.
- Healthcare Providers are expected to continue their investments in D&A, driven partly by the ~200%[11] increase in the number of active smart devices in the next 5 years for e-health services.
- While pandemic severely disrupted the European manufacturing industry, spending on supply chain analytics is expected to increase by 19.8%[12]. D&A is expected to play a large role in addressing issues such as low supply chain visibility, inefficient supplier networks, higher warehousing costs, etc.

Breakdown of Europe D&A Spend (in $ Bn) by Horizontals



1. 2020 True cost of Fraud report by LexisNexis Risk Solutions
2. Risk Analytics Market Analysis by Reports & Data
3. https://www.digitalcommerce360.com/article/us-ecommerce-sales/
4. Industrial production and capacity utilization report by Federal Government
5. US Healthcare: Strategies for Containing Costs
6. Increased ICT spending in FY2021 to accelerate government digitization by GovTech Singapore
7. Customer Journey Analytics Market Analysis by Report & Data
8. 6 ways extreme analytics will transform APAC telcos by telecomasia
9. The European Market potential for Big Data services by CBI, Ministry of Foreign Affairs
10. United Kingdom Business Intelligence Market by Mordor Intelligence
11. Healthcare Analytics Market by Mordor Intelligence
12. Supply Chain Analytics Market by Markets and Markets

Data & Analytics Addressed Market

The analytics capability is no longer restricted to MNCs, domestic IT companies, and global centres of enterprises. Additionally, the broader data science domain has transformed beyond just supporting business functions. Analytics has now emerged as a necessary capability across organizations, with businesses developing data science capabilities that transcend the entire business model and operational value chain of companies. Companies across verticals including Industrial and FMCG, are increasingly adopting analytics and investing both capital and operational resources in the Data Science domain to gain a competitive edge in the market.

Increasing demand for Advanced Analytics functions and lack of in-house talent are driving the demand for outsourced Analytics services. The Analytics services market is addressed broadly by two types of players:

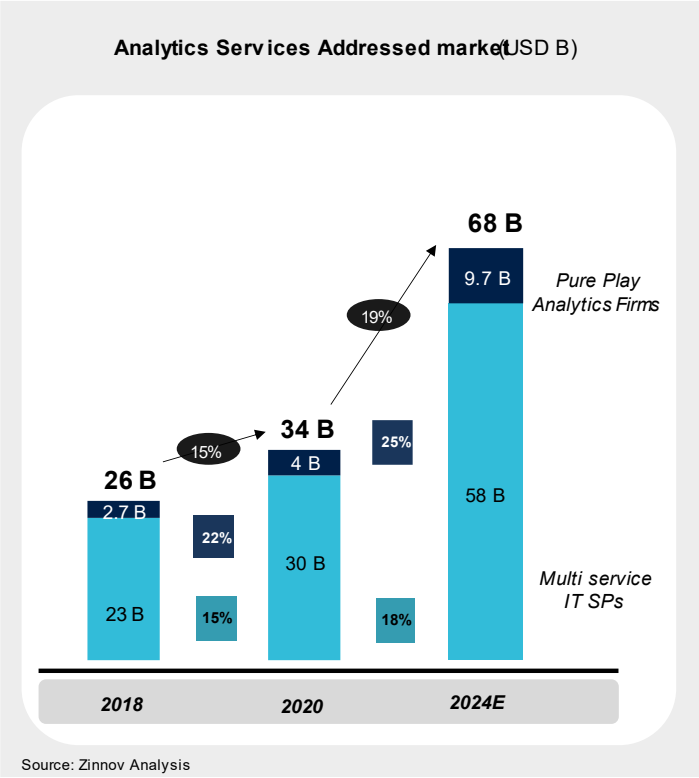
1. Multi service providers who offer analytics offerings at scale along with their System Integration (SI) and other IT offerings. Advantages of this setup –
   - Large IT SPs have access to a large client base to cross sell analytics offerings along with other IT/BPM requirements
   - During the course of engagements, it is easier for large IT SPs to provide enterprises with scale in terms of resources, skillset, and geographical presence

2. Pure play analytics players who solely provide niche analytics offerings
   Advantages of this setup –
   - Focused Analytics Domain expertise and offerings as the main differentiator
   - Can provide greater level of service depth and talent for analytics to enterprises as compared to large IT SPs

Analytics Services Players

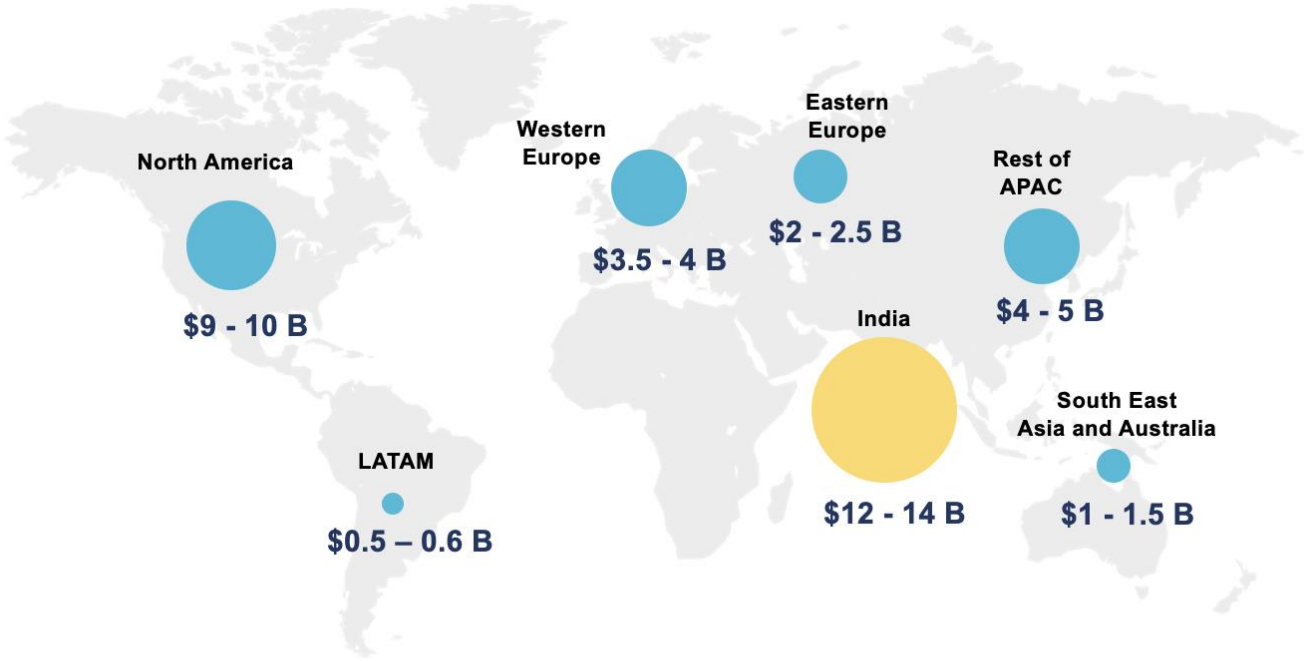
Multi service IT SPs Sell Analytics services in addition to SI and IT offerings	Accenture	Tata Consultancy Services	IBM	Cognizant	DXC Technology	Wipro
	Tech Mahindra	EXL	Persistent	Ernst & Young	Capgemini	Deloitte
	NTT Data	Infosys	HCL	Atos	ThoughtWorks	
Pure Play Analytics Firms Provide Domain expertise; greater level of service depth	Fractal Analytics	Impetus	Tiger Analytics	Mu Sigma	LatentView	Crayon
	Absolut Data	Quantium	Adastra	Bridgei2i	Tredence	

The Analytics Services market is expected to grow at a CAGR of 19% and poised to touch ~$68 Bn in 2024.



- The services market is highly fragmented, with the top 5 players making up 35% of the addressed market.
- Banking and Financial Services vertical contributes 11%+ of the total addressed market revenue.
- Multi Service Providers have vast experience in providing EDM services at scale, whereas Pure Play players are trying to build differentiation by offering targeted Descriptive & Diagnostic as well as Predictive Analytics offerings.

Analytics Delivery Footprint (2020)



Source: Zinnov Analysis

India is the top outsourcing destination for analytics, and Indian companies including Multi Service Providers (ex: TCS, Wipro, Tech Mahindra, Persistent etc) and Pure Play Analytics firms (ex: MuSigma, Fractal Analytics, LatentView etc) have a share of ~40% of the addressed market.
Indian delivery market is estimated to grow at a ~20% CAGR (2020-2024). Western Europe and USA have a larger concentration of Pure Play Analytics players, who create differentiation through their expertise in niche solutions and products. USA delivery market is expected to grow at ~24% CAGR (2020-2024)

Players from different geographies have distinct characteristics as outlined below –

- The large Multi Service Providers (Accenture, Cognizant, etc.) are dominant in North America along with specialised analytics firms and staffing companies who cater to the onshore demand of North American customers.
- Indian SPs address the demand from across the globe and the market is dominated by Multi Service IT Providers driving $10-11 Bn of services revenue, followed by Pure Play Analytics firms contributing $1.5-2 Bn
- Service Providers from China and Japan largely cater to the analytics spend of local technology companies.
- UK and Ireland serve as the hub for analytics delivery in Western Europe, largely through specialized analytics firms.
- Eastern European market is dominated by Multi Service Providers. They are still largely seen as System Integrators who cater to the less complex spectrum of analytics outsourcing.

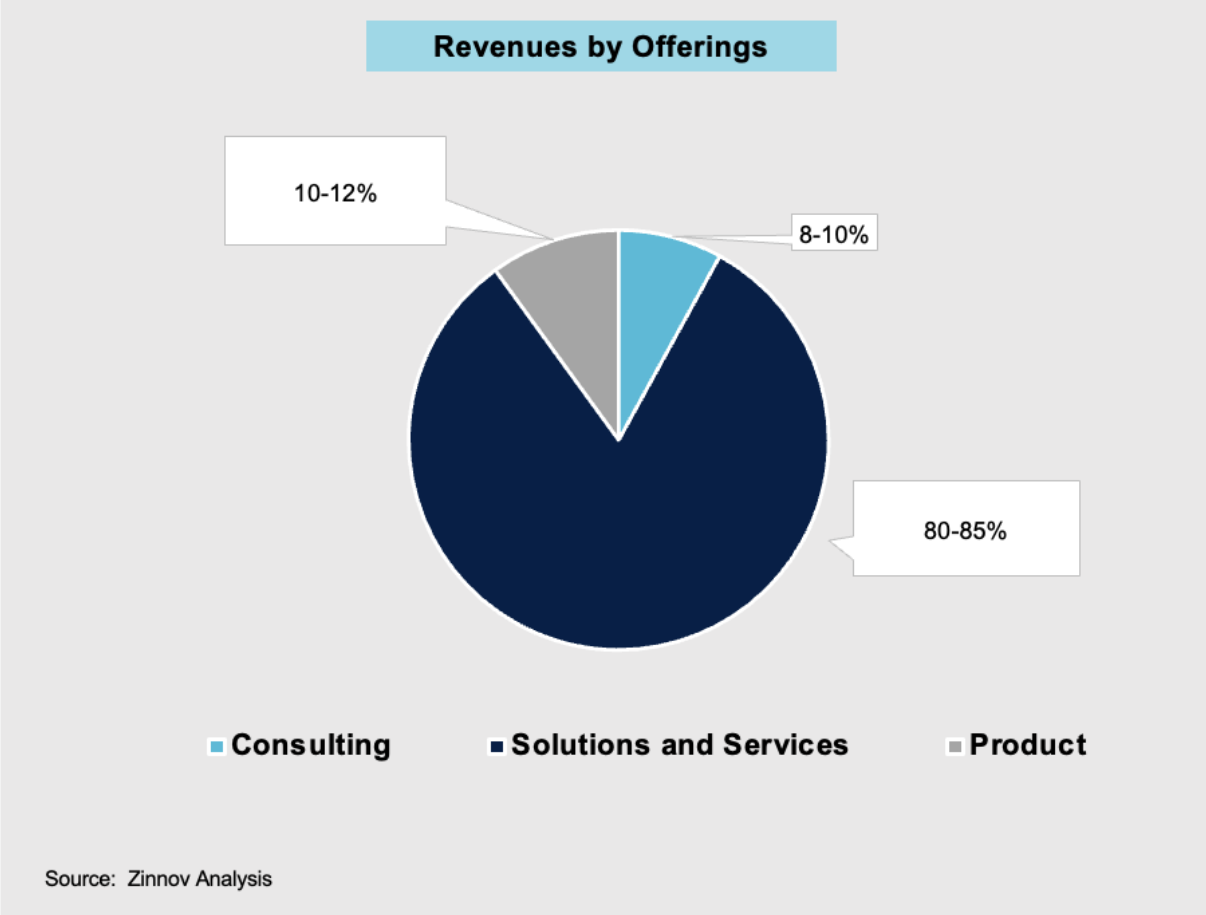
- The average attrition rate for the Indian analytics players was close to 16% in 2020 which is higher than the global average attrition rate of approximately 14%.[1]

Source:

1. *Analytics India Magazine*

With a huge growth in demand and a highly fragmented market, following are some key emerging trends across SPs addressing this market –

1. Focus on delivering end-to-end Analytics offerings –
   SPs are now seeing analytics as a key initiative in all digital transformation initiatives across enterprises and are helping them define a roadmap. Consulting-led Analytics engagements, usually high margin engagements for SPs, are forming 8-10% of the total addressed market today.



2. Convergence of AI/ML with Data Science to deliver smarter insights and faster outcomes –
   Analytics, with the boost of AI, is becoming –
   - More efficient – through automation.
   - More accessible – through improved User Interface. NLP enables analytics tools to understand natural language queries.
   - More powerful – since previously difficult to analyse data such as text and videos are now easily analysable.

SPs are now building solutions and IP for various industry use cases and horizontal functions by leveraging AI. Examples include:

- AbsolutData – Navik Marketing AI: Customer-driven Marketing
- Fractal – Qure.AI: AI for Radiology
- Bridgei2i – BridgeFunnel: AI-powered Sales Assistant
- Capgemini – Perform AI: Insights for designing and launching new products, services, business models by leveraging AI.

3. Increasing consolidation of the Analytics Services addressed market by large IT players

The Pure Play Analytics Service Provider market is highly fragmented with a long tail of specialized SPs. Multi Service Providers (mid-sized and large) are adding niche analytics capabilities through tuck-in acquisitions of small Pure Play Analytics companies.

- Infogain, a mid-sized IT player, acquired AbsolutData – a provider in AI-led analytics, in October 2020
- Cognizant acquired Servian, a Data Consulting company, in April 2021
- Accenture acquired CoreCompete, a specialized Supply Chain Analytics SP, in April 2021
- Zensar, a mid-sized IT player, acquired M3BI, a data engineering firm, in May 2021.

About LatentView

LatentView is among the leading pure-play data analytics services companies in India and has emerged as one of the most trusted partners to several Fortune 500 companies in the recent years. It has presence in the top 5 analytics markets in the world with subsidiaries in the United States, United Kingdom, Germany, Netherlands, and Singapore

Competition

The competition for LatentView consists of Analytics Service Providers in 2 broad categories –

1. The large Multi Service IT Providers – Providing multiple service offerings and have an ability to offer analytics services at scale. Accenture, TCS, and Capgemini have been included in the study as a representative of the best performing Multi Service Providers space.
2. Pure Play Analytics players – Specialize in only analytics services and offer an in-depth understanding of solving complex customer problems. MuSigma, Fractal Analytics, Tiger Analytics, and Palantir have been included in the study to offer a direct competition view to LatentView.

Company Overview

		Mu Sigma	Fractal	Tiger	Palantir	Accenture	TCS	Capgemini	LatentView
Overview	Founded	2004	2000	2011	2003	1989	1968	1967	2006
	HQ	Illinois, USA	New York, USA	California, USA	Colorado, USA	Dublin, Ireland	Mumbai. India	Paris, France	New Jersey, USA
	Key Delivery Locations	US, India	US, India	US, UK, India, Singapore	US, UK, Germany, France, Singapore	US, UK, Germany, India, Philippines	US, UK, Ireland, India	US, France, India	US, India
	Customer Geography	USA, APAC	USA	USA, Europe, APAC	USA, Europe, APAC	USA, Europe, APAC	USA, Europe, APAC	USA, Europe, APAC	USA, Europe, APAC
	Industry Exposure	• Retail & CPG • Healthcare • Manufacturing • Transportation & Logistics	• Retail & CPG • Healthcare • Banking & Financial Services • Technology, Media, Telecom	• Retail & CPG • Banking & Financial Services • Industrials & Manufacturing • Technology, Media, Telecom • Transportation & Logistics	• Retail and CPG • Energy & Utilities • Banking & Financial Services • Healthcare • Industrials & Manufacturing • Technology, Media, Telecom • Transportation & Logistics	• Technology, Media, Telecom • Healthcare • Retail & CPG • Chemicals & Natural Resources • Banking & Financial Services • Transportation & Logistics	• Banking & Financial Services • Technology, Media, Telecom • Healthcare • Public Services • Industrials & Manufacturing • Retail & CPG • Transportation & Logistics	• Banking & Financial Services • Energy & Utilities • Retail & CPG • Industrials & Manufacturing • Technology, Media, Telecom • Transportation & Logistics	• Technology • Retail & CPG • Banking & Financial Services • Industrials

LatentView serves some of the prominent players in the Technology, BFSI, CPG & Retail verticals in the US by helping them solve data and analytics problems in these areas. They also have key clients in Europe, especially in the Industrial sector.

Key Financial Figures

Large IT Service Providers make up ~85%+ of the addressed market, given their scale and access to large accounts. While the analytics market grew by ~16% CAGR (2018-2020), the Indian IT SP analytics revenues have grown by ~18%, owing to increased demand in offshore outsourcing. The Pure Play Analytics companies have grown by 25-30%, driven by a focus on large accounts and their ability to differentiate by providing an in-depth understanding of customer problems.

FY20-21 Financial Metrics

	Mu Sigma	Fractal	Tiger	Palantir	Accenture	TCS	Capgemini	LatentView
	Apr 2020-Mar 2021	Apr 2020-Mar 2021	Apr 2020-Mar 2021	Jan 2020-Dec 2020	Sep 2019-Aug 2020	Apr 2020-Mar 2021	Jan 2020-Dec 2020	Apr 2020- Mar2021
Revenue	N/A	N/A	N/A	USD 1,093 Mn	USD 44,327 Mn	USD 22,174 Mn	USD 17,854 Mn	INR 3,267 Mn
Year-on-Year Growth	N/A	N/A	N/A	47%	3%	5%	12%	(1%)
EBIT Margin	N/A	N/A	N/A	(107.4%)	14.7%	25.9%	10.4%	36.3%
PAT Margin	N/A	N/A	N/A	(106.7%)	11.5%	19.8%	6.0%	28.0%
Return of Equity	N/A	N/A	N/A	(76.6%)	30.5%	37.7%	15.6%	20.9%
DSO	N/A	N/A	N/A	52	65	90	88	73

FY19-20 Year Financial Metrics

	Mu Sigma	Fractal	Tiger	Palantir	Accenture	TCS	Capgemini	LatentView
	Apr 2019-Mar 2020	Apr 2019-Mar 2020	Apr 2019-Mar 2020	Jan 2019-Dec 2019	Sep 2019-Aug 2020	Apr 2019-Mar 2020	Jan 2019-Dec 2019	Apr 2019- Mar 2020
Revenue	INR 9491 Mn	INR 7903 Mn	INR 836 Mn	USD 742 Mn	USD 44,327 Mn	USD 21,081 Mn	USD 16,643 Mn	INR 3,296 Mn
Year-on-Year Growth	(14%)	26%	81%	25%	3%	7%	7%	11%
EBIT Margin	42.2%	(5.1%)	9.8%	(74.5%)	14.7%	24.6%	10.9%	28.2%
PAT Margin	32.3%	(9.7%)	7.1%	(78.1%)	11.5%	20.6%	6.1%	22.1%
Return of Equity	28.2%	(27.8%)	81.4%	(395.4%)	30.5%	38.6%	10.1%	20.9%
DSO	68	73	41	25	65	94	85	62

Note: `

1. *Global IT Service provider's revenue includes analytics as well sales from other services*
2. *Return on Equity is calculated as (Net Income after Tax – Minority Interest in Earning) / Total Common Equity*
3. *PAT Margin is calculated as Income after Tax / Total Income (operation and Other)*
4. *DSO for unlisted companies is calculated as (Year-end trade receivables * 365) / Revenue from Operations*
5. *Private company information is taken from Ministry of Corporate Affair*
6. *Financial figures for MuSigma represent the data for "MuSigma Business Solutions Private Limited" entity registered in India*
7. *Financial figures for Fractal Analytics represent the data for "Fractal Analytics Private Limited" entity registered in India*
8. *Financial figures for Tiger Analytics represent the data for "Tiger Analytics India LLP" entity registered in India*

Offerings

While the large multi service SPs have access to big accounts and can provide scale, the pure play analytics players are identifying niche solutions to cater to. They are building product solutions in Descriptive and Diagnostic solutions and Predictive analytics segments which are expected to offer the highest growth. Leveraging product offerings and end to end analytics solutions including consulting services, is expected to help pure play players to break free from the linear growth, create differentiation and increase their profit margins much faster than the larger players.

List of IP/solutions offered by large IT SPs and Pure Play Analytics players across different analytics segments

		Mu Sigma	Fractal	Tiger	Palantir	Accenture	TCS	Capgemini	LatentView
Solutions/IP/Products	**Descriptive & Diagnostic Solutions**	**muOBI, muUniverse, muPDNA, muDSC** - Problem Definition & Mapping Software	**Cure.ai** - Diagnosing using medical imaging data **cuddle.ai, Concordia, ConsumerHub, AIDE** – Insight generation through AI	Delinquency Modeling		Intelligent Data Suite (IDS) – Optimizing data capital to draw useful insights **AIP+** - Leverage data to generate insights for	**ADD platform** - Analytics & Insights, AI-powered adaptive monitoring solution	890 – Data management and insight generation tool **Document Processing Platform** AI & ML to automate document categorization	**Casper** – AI-driven conversational analytics platform **Matchview** – Platform that consolidates data and helps to analyse it in an effective manner
	Predictive Solutions	**muXo, muHPC, muRecommend, muDetect, muForcast, muRX, muMix, muVx, muX2, muFusion** - Analytics Execution Software	**Dynamic Demand.ai** – Planning/Forecasting platform **Forsient** - forecasting at scale with high accuracy and speed	Pipeline Forecasting, IoT and sensor analytics			**PredictCX** – Forecasting Customer experience	**Proofecy** - real-time, big data analytics	**SmartInsights** - AI-powered platform that helps companies predict consumer trends ahead of the curve to drive product innovation
	Prescriptive Solutions	**mulOT, muFlow, muStream, muVCL** – Operations enhancing Software	**eugenie.ai** - AI-driven operational efficiency, decision making and root-cause analysis				**DATOM** – Prescriptive analysis of data **MFDM™ Enterprise, Decision Fabric** – combination of AI and immersive analytics to	**Advanced Planning and Scheduling (APS)** - automated optimized planning Perform AI – Insights for designing and launching new products, leveraging AI	
	Enterprise Data Management				**Palantir Gotham** – Data integration **Palantir Foundry** – GI for Integration of customers' data and operations **Palantir Apollo** – On premise DBMS for continuous delivery	**Data Veracity** – addressing inaccurate data by assessing the quality, risk and relevance **myWizard Analytics** – data driven knowledge management	**Vitellus** - data visualization platform **Active Archive** - Store structured and unstructured data **DAEzMO** - modern data warehouse/data lake implementation, and data marketplace set-up	**Integrated Data Management Services (IDMS)**	

Partnerships

Partnerships and alliances help in creating and delivering a compelling suite of solutions to customers.

- *Cloud Partnerships* – They are becoming relevant for D&A players today, as it provides enterprises access to an ecosystem that can encompass technologies, platforms, and analytics solutions to harness the data effectively. It aids in the creation of new business models and services, competitive product differentiation, and more effective and efficient processes leading to significant business impact. Additionally, discounted pricing, co-innovation, and joint GTMs are key benefits of getting into Cloud partnerships with Tech Giants.
- *Data Integration/Processing Partnerships* – Integration of data and processing large volumes of data is critical for Data Analytics use cases. Partnerships with data platforms provide the infrastructure to deal with massive volumes of data and add solutions on top of it.

		Mu Sigma	Fractal	Tiger	Palantir	Accenture	TCS	Capgemini	LatentView
Alliances	Cloud Partnerships	• Microsoft Azure	• AWS • Google Cloud Platform • Microsoft Azure	• Microsoft Azure	• AWS	• Microsoft Azure	• AWS • Google Cloud Platform	• AWS • Google Cloud Platform • Microsoft Azure	
	Data Aggregators/ Processing/ Universities	• Apache Impala • Hadoop • Tableau • SAS	• Snowflake • Databricks • Tamr • Talend	• AWS Sagemaker • Apache Spark • Apache NiFi • Kafka		• MyWizard • MyNav		• Informatica • Teradata • SAS	• IIT-Madras • CMI

Acquisitions

There has been heightened activity in M&A transactions of IT service providers over the past few years. Over the past 3 years there have been ~900[1] mergers/acquisitions of IT Service providers adding up to a total valuation of $40-45 Bn[2]. M&A has emerged as a strategic tool for bolstering digital capabilities for Service providers

In the analytics space, there has been a recent spate of acquisitions leveraging AI/ML technologies for Big Data and Analytics use cases including Predictive Analytics.

		Mu Sigma	Fractal	Tiger	Palantir	Accenture	TCS	Capgemini	LatentView
Acquisitions	2019					**Silveo** – Supply chain Consulting firm **Clarity Insights** – Deep Data science, AI,ML expertise consulting firm **Sutter Mills –** Data driven marketing **Analytics8** - big data, analytics consultancy Pragsis Bidoop - big data, AI, advanced analytics			
	2020	-	-	-	-	**Icon Integration** - Australia-based warehouse automation and BI consulting company		**Advectas** – BI and data science capabilities across Scandinavian countries	-
	2021	-	**Zerogons** – AI solutions platform company **Samya.ai** - Revenue Growth Management (RGM) AI company	-	-	**Novetta** - government analytics expertise **Infinity Works** - AWS and Snowflake data cloud partner.	**DataSmart Solutions, LLC** - predictive risk analytics software company		-

Note:

1. *Represents the total number of M&A transactions by IT Service Providers and Institutional investors*
2. *Represents summation of enterprise valuation of transactions publicly disclosed*

Additionally, in the last 10 years there have been several acquisitions in the data and analytics space with an objective to ramp up analytics capabilities and offerings

Acquirer	Target Company	Target Company Details	Deal Value(INR Cr)	Acquisition Date
SNP Schneider-Neureither & Partner SE	Datavard AG	Data Management & warehousing, Data Integration, Business Intelligence	140-150	Jul-21
Affle International Pte. Ltd.	Jampp (Ireland) Limited	Marketing solutions using AI, ML and predictive algorithms	310-320	Jun-21
Altus Group Limited	StratoDem Analytics, LLC	Predictive analytics, data integration, business intelligence	180-190	May-21
Coforge Limited	Whishworks IT Consulting Pvt. Ltd.	Data & Analytics	160-170	Apr-21
Alteryx Inc	Feature Labs, Inc.	Data Analytics, Data management, Data visualization, Data Preparation	180-190	Oct-19
Neoway Tecnologia Integrada Assessoria e Negócios S.A.	Legal Labs Inteligência Artificial LTDA	Data mining and AI, ML, machine learning, NLP and Deep learning	180-190	Jun-19
Alteryx, Inc.	ClearStory Data Inc.	Intelligent analytics solutions for unstructured data, Automation platform	140-150	Apr-19
AppFolio Inc	Dynasty Marketplace Inc	AI solutions for real estate industry	420-430	Jan-19
AdSwerve, Inc.	Analytics Pros, Inc.	Big data and machine learning solutions	160-170	Aug-18
Alviva	Datacentrix	Consulting & Advisory, Data analytics, Data management, AI	250-260	Feb-17
Nutanix, Inc.	PernixData Inc.	Big Data analytics, Database management	250-260	Aug-16
Accelrys Inc.	Aegis Analytical Corporation	Operational analytics, Performance analytics	160-170	Oct-12
Wipro Technologies Limited	Promax Analytics Solutions Pty Ltd	Data management, Analytics-driven insights	180-190	Apr-12
Adknowledge, Inc.	AdParlor Holdings, Inc	Insight generation from advertising data	180-190	Nov-11