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The Challenges of Massive Data Analytics Report
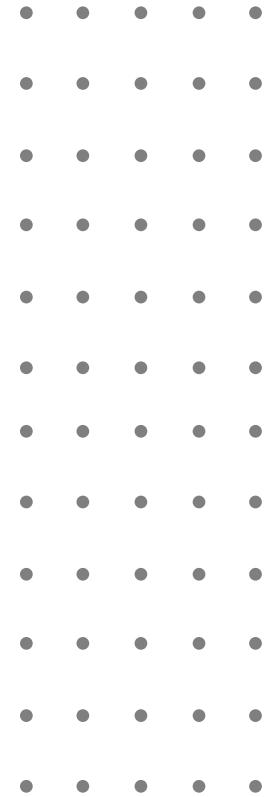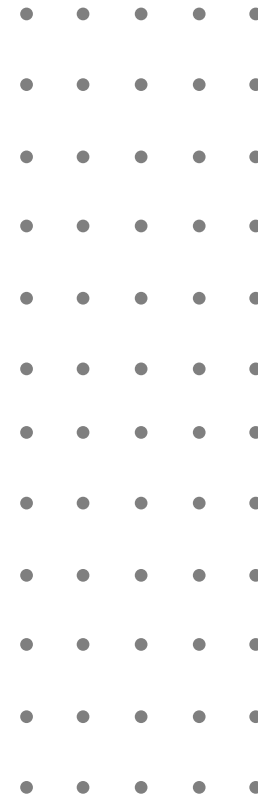
Feb 2021

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Introduction

It's no secret that data is one of the most valuable assets that a company can have, regardless of what industry they are in. Whether it is tracking customer preferences to provide better service or monitoring financial transactions for potential fraud, companies rely on data to help them make strong business decisions. With the continued rise of digitalization, companies are collecting greater amounts of data, and facing increasing challenges in extracting the data's full value.

According to a recent Gartner report[1], data analytics should be a vital part of every company's digital strategy, but the focus must be on specific business outcomes. Meaning, simply collecting and analyzing data on an ad-hoc basis will not result in anywhere near the same value as having a solid strategy and plans for what insights will be the most relevant to the organization, and how to conduct the right analysis to get those insights.

We surveyed 137 CIOs and other top-level executives in industries including industrials, technology, financial services, and telecoms to gain greater insight into these issues. The survey, done in collaboration with Global Surveyz, focused on uncovering the challenges that companies face when it comes to data analytics and reporting, especially in light of the fact that the Global Big Data Analytics Market is growing at a CAGR of 12.3% and is expected to reach $105 billion by 2027. We know that companies are spending money to gather and analyze data, but are they actually succeeding in extracting insights from that data? And how prepared are they for the massive growth of data and all the challenges that go along with this?

[1] Gartner - Leverage Data and Analytics Efficiently to Improve Digital Business Outcomes (23 July 2020)

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Key Findings

1 **59% of Organizations Expect Data to Grow by 50% or More in 2021**

As industries across the board continue to digitize, the sheer volume of data that they amass increases in parallel. 59% of companies surveyed expect to see an increase of over 50% in their data volume in 2021, of this, 27% anticipate their data volume will grow at a rate of 100-499%. When discussing growth, it's important to understand the starting point – 60% of the surveyed companies already have over 500 TB of storage, meaning the expected increases will be enormous amounts of data.

2 **Larger Companies are Less Prepared to Handle Increased Data Volume...**

As organization size increases, data professionals feel less prepared to handle their increased data volume. In large companies with over 10,000 employees, only 29% of responders felt extremely prepared to manage and analyze their data, whereas in companies under 10,000 employees, 47% said they felt extremely prepared. None of the companies surveyed expressed a complete lack of preparedness when it comes to managing and analyzing data.

3 **However, Management Teams are On Board and Understand the Importance of Data Analytics**

The good news is that, despite larger companies being less prepared to handle the huge inflow of data, survey respondents said that 99% of management teams understand how critical data analytics is to making informed business decisions. The fact that 60% of companies surveyed reported data analytics as being very important to management is a strong indicator that managers will be ready to take on the challenge of analyzing large amounts of data in order to maximize insights.

4 Most Companies Lack the Budget Necessary to Meet Data Analytics Needs

While management teams may want to prioritize data analytics, they are likely to find themselves without the budget necessary to cover the costs. Only 13% of the surveyed companies are in a good financial position when it comes to supporting their data analytics activities. Over half (55%) will not fare as well, as their budgets will cover less than 75% of their actual data analytics needs in 2021. It remains to be seen if shifting priorities to focus on analyzing the treasure trove of data that companies are gathering will result in a matching shifting of budgets.

5 Challenges Abound When It Comes to Analyzing Data

In major contradiction to the confidence of most companies when it comes to feeling prepared to handling the daunting task of managing large volumes of data, 82% share a variety of challenges related to how long it takes to prep data, ingest data, run queries, and create analytic reports. Only 18% of surveyed companies claim to have no challenges when it comes to running data analytics.

6 Addressing Key Challenges is Top Priority for 2021

Interestingly, the biggest and most popular challenges uncovered by this survey correspond to the top priorities for 2021. The top two challenges were the fact that lengthy SQL queries do not run to completion (59%) and that preparing the data takes up too much time and resources (39%). At the same time, the top two priorities are to increase the amount of data being analyzed (59%) and reduce data preparation times (56%). Increasing the amount of data could make the already lengthy SQL queries even longer and more challenging to complete, so this is a critical area on which companies will need to focus.

Organization's Data – Deep Dive

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59% of Organizations Expect Data Volume to Grow by More Than 50% in 2021

Data volume is expected to grow in 2021. 59% of companies expect their data volume to grow by 50% or more. Only 6% are expecting a growth of less than 10%. As for their existing data store size, 96% of surveyed companies have 50 TB or more in their data store, and almost two-thirds (60%) have 500 TB or more.
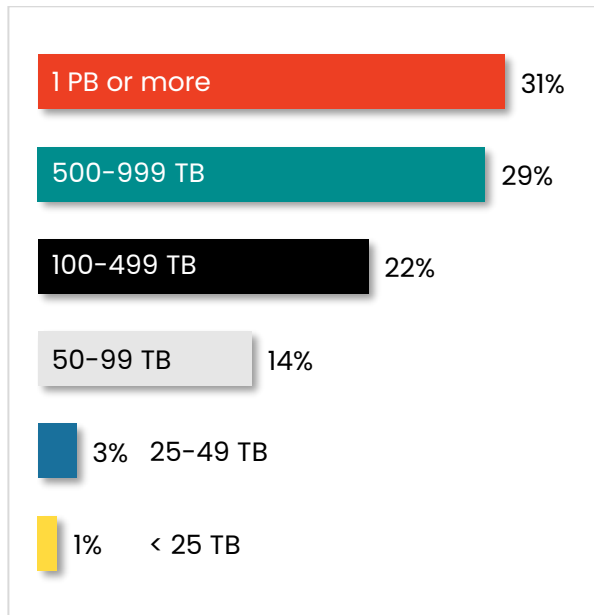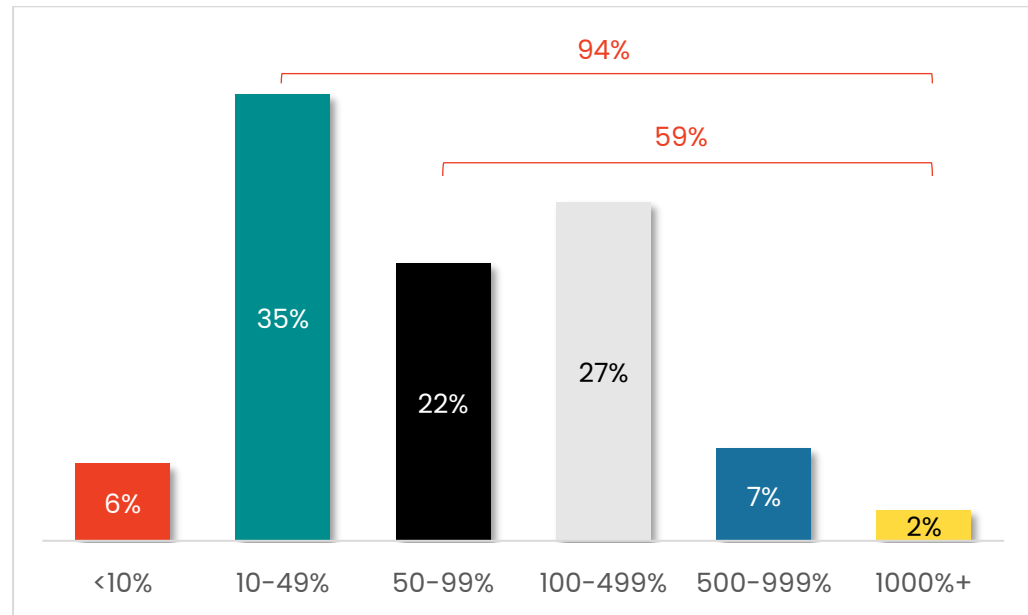

Figure 1 Organization's Data Store Size

Figure 2 Data Volume Growth in 2021 (compared to 2020)

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77% of Companies are Analyzing Over 50 TB of Data

60% of surveyed companies are analyzing over 100 TB of data, 77% are analyzing over 50 TB and only 6% reported analyzing less than 25 TB. Companies are reporting that just over half (51%) of their data store is composed of structured data and the rest is almost split equally to semi-structured (27%) and unstructured (22%).
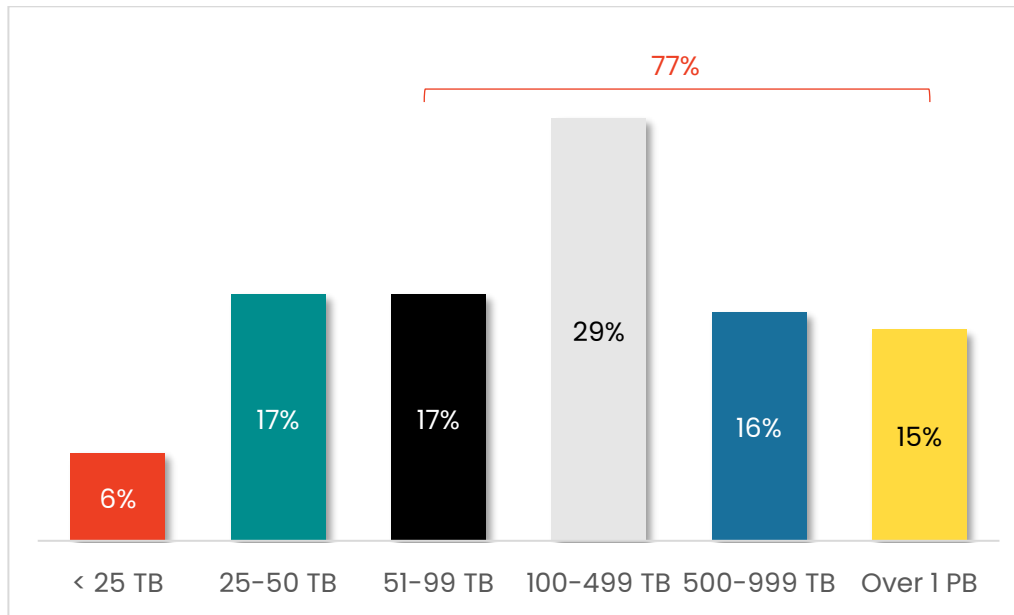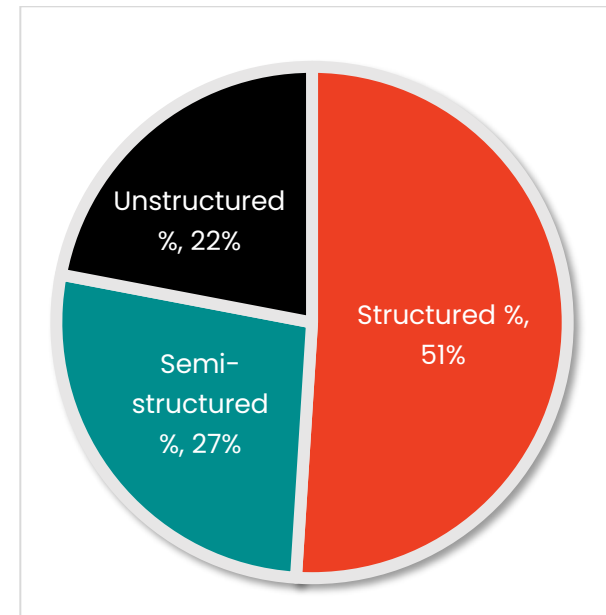

Figure 3 Data Analysis Volume

Figure 4 Data Composition

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Organizations are Prepared for Managing & Analyzing Data; But Larger Companies are Lagging Behind

When it comes to being prepared for managing and analyzing data (Figure 5), in organizations with over 10,000 employees, data professionals begin to lose confidence in their level of preparation, with 29% of respondents noting they are "somewhat prepared" to analyze their data. And while none of the surveyed companies reported feeling unprepared, it was only in mid-sized organizations of 5,000-10,000 employees where confidence was highest, with 47% saying they felt "extremely prepared."

Despite the relatively high percentage of respondents stating they feel prepared, when asked about their challenges, only 18% indicated they have no challenges (page 15).
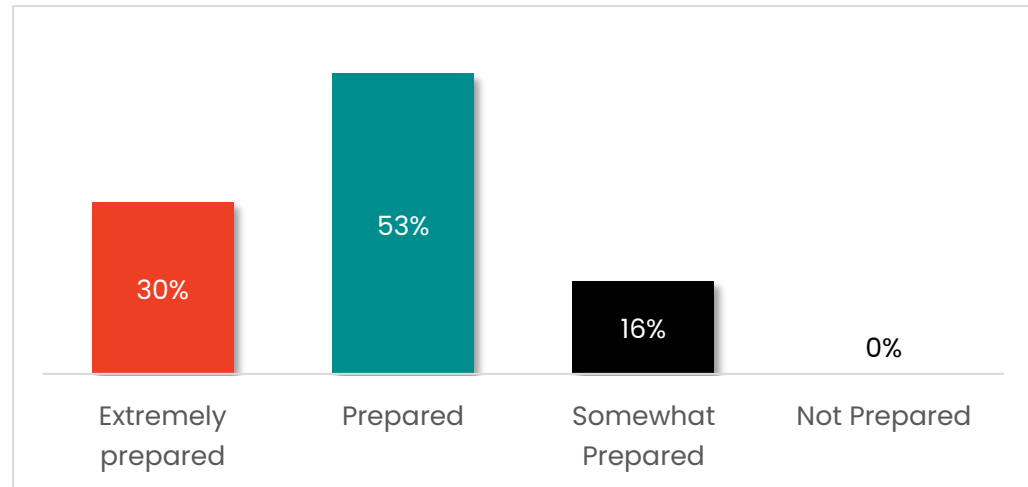

Figure 5 Organization Preparedness for Managing & Analyzing Data
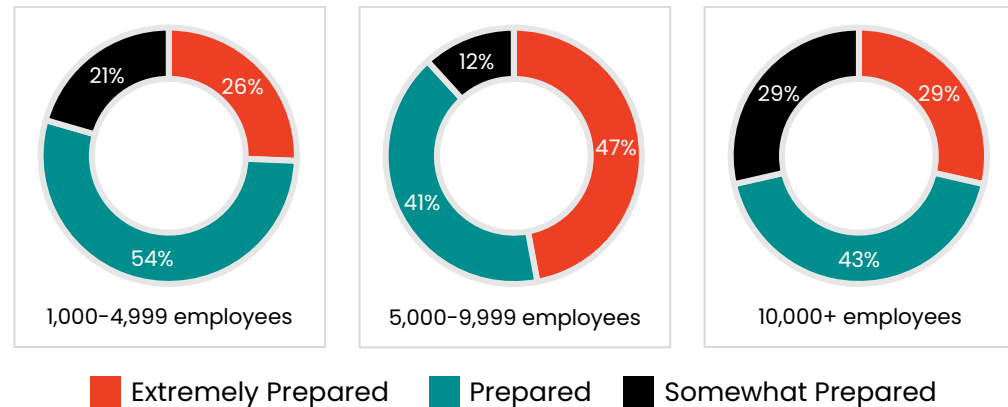

Figure 6 Organization Preparedness by Company Size

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Marketing Leads the Way as the Main Beneficiary of Data Analytics

Not all departments are born equal. Some are better positioned to benefit from data analytics. Marketing is the #1 department benefiting from data analytics (46%), followed by Accounting & Finance (40%), which tied with Operations (40%). Purchasing, Support and HR are at the bottom of departments enjoying the benefits of data analytics.
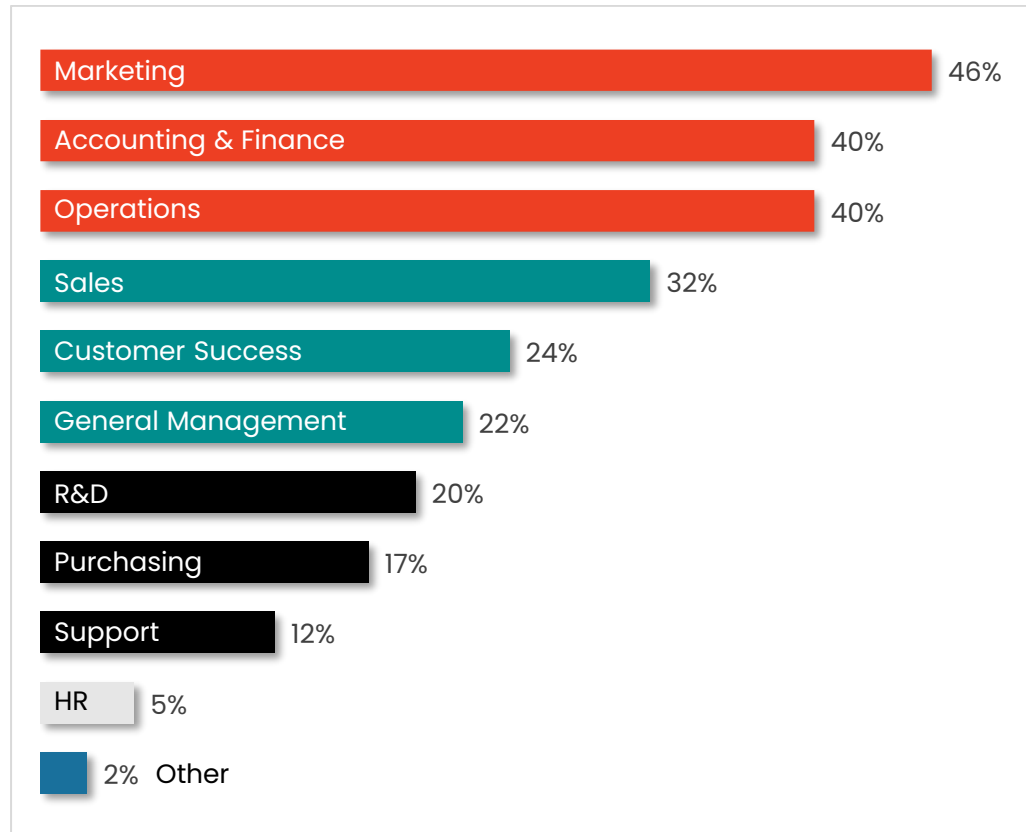

Marketing	46%
Accounting & Finance	40%
Operations	40%
Sales	32%
Customer Success	24%
General Management	22%
R&D	20%
Purchasing	17%
Support	12%
HR	5%
	2% Other

Figure 7 Analytics Beneficiaries by Department

Data Challenges & Data Analytics Needs

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99% of Management Teams Finally Understand the Need for Data Analytics

None of the surveyed companies' management see data analytics as not important, and only 3% see it as slightly important. In fact, 60% of companies reported their management see data analytics as very important.
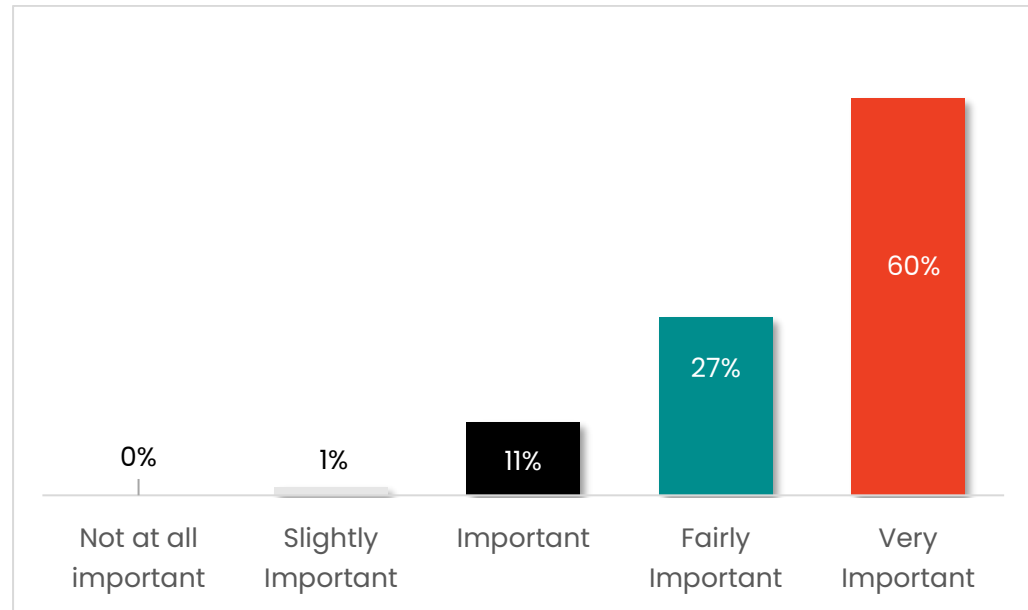

Figure 8 Importance of Data Analytics According to Management

87% of Companies Lack the Data / Analytics Budget they Need for 2021

Even as 83% of companies said they are prepared or even extremely prepared to manage and analyze data (page 10), when asked how well their data analytics budget covers their needs for 2021, 87% of companies reported their budgets do not cover all their needs. In fact, over half (55%) reported their budget covers less than 75% of their needs.
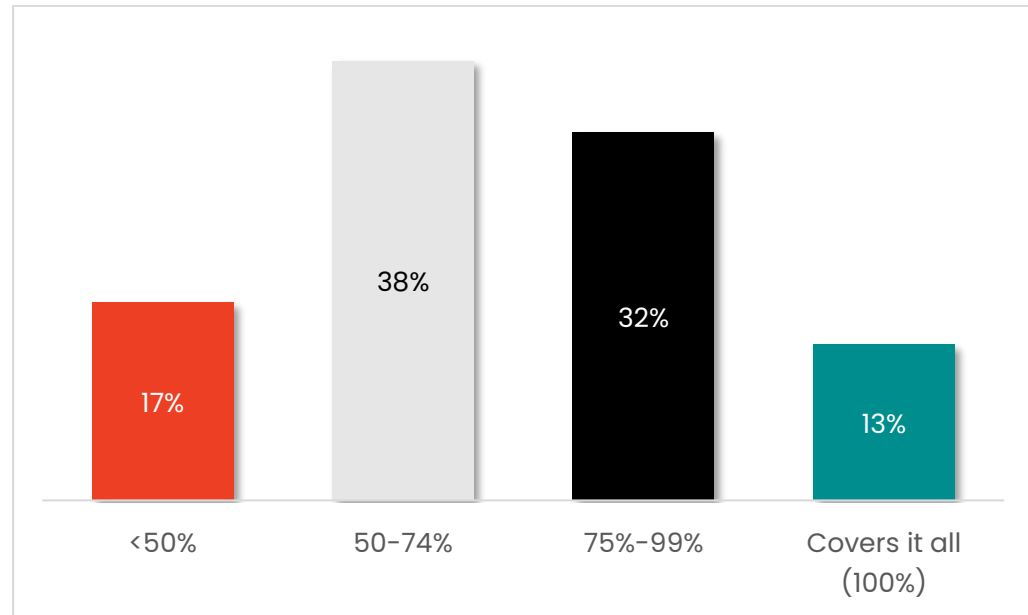

Figure 9 Data / Analytics Budget vs. Needs in 2021

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82% of Companies Have Challenges with Reporting and Data Analytics

82% of organizations say that they do have challenges when it comes to their data analytics. Among the multiple challenges they list, 50% of respondents say their top challenge is having their SQL queries aborted or even shut down by IT when they run too long or take up too much of the system processes. Other challenges include data preparation taking too much time and resources (39%), and having limited ability to analyze historical data (39%).
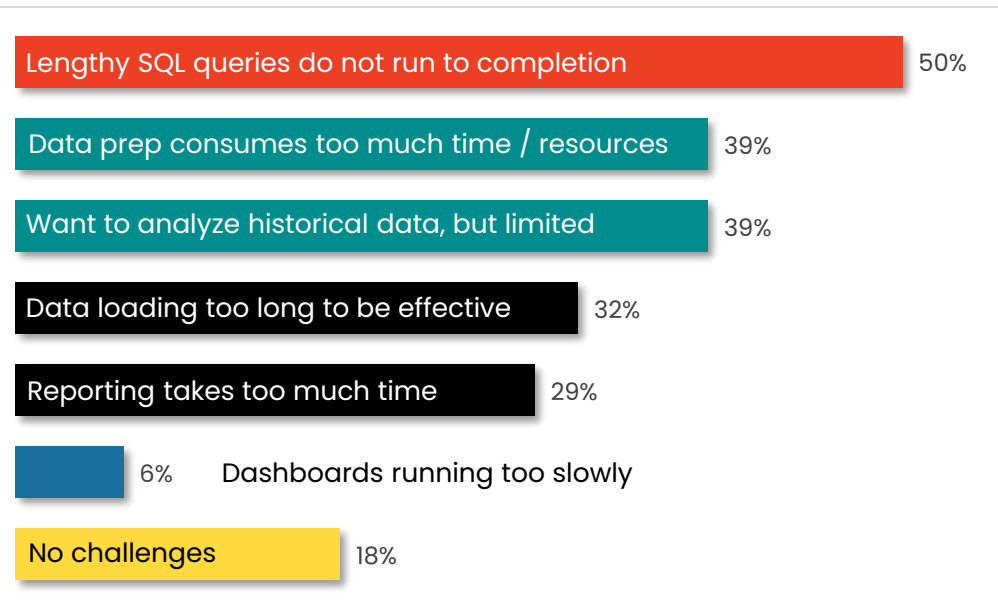
Lengthy SQL queries do not run to completion	50%
Data prep consumes too much time / resources	39%
Want to analyze historical data, but limited	39%
Data loading too long to be effective	32%
Reporting takes too much time	29%
	6% Dashboards running too slowly
No challenges	18%

Figure 10 Top Challenges with Reporting and Data Analytics

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Data Analytics Priorities for 2021

Looking at data analytics priorities for 2021, the #1 priority is to significantly increase the amount of data being analyzed (59%), followed by reducing the data preparation times (56%).
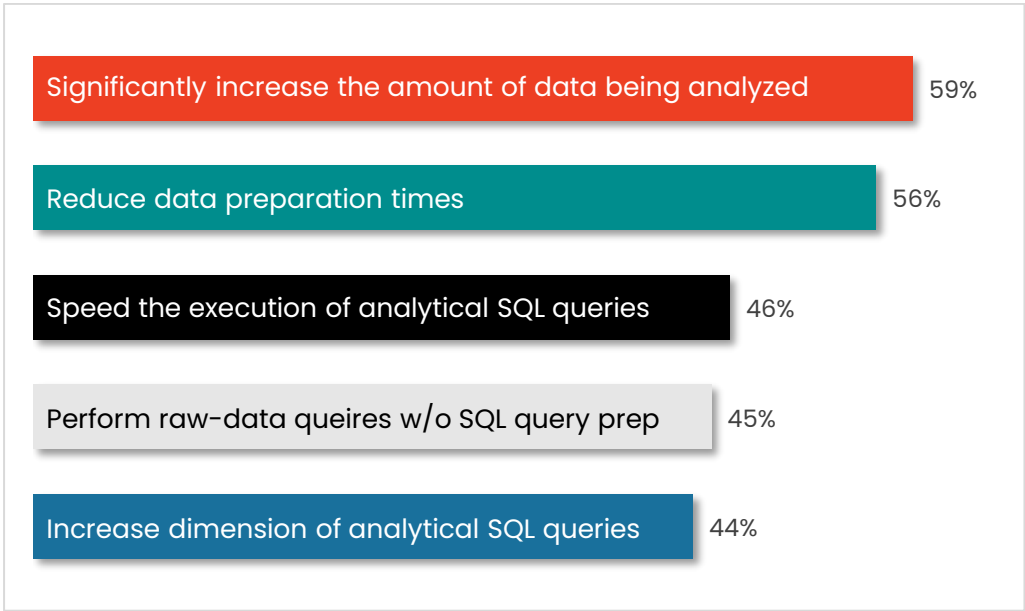

Figure 11 Data Analytics Priorities for 2021

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Data Technologies in Use

Cloud-Based Data Technologies in Use – 2020-2021

The top cloud-based technologies being used today are Azure Synapse (45%), Google Big Query (34%), and Amazon Redshift (32%).

Looking at cloud-based technologies that companies are planning to purchase in 2021, Google Big Query is the #1 sought out technology (24%), followed by Amazon Redshift (17%) and Azure Synapse (13%).
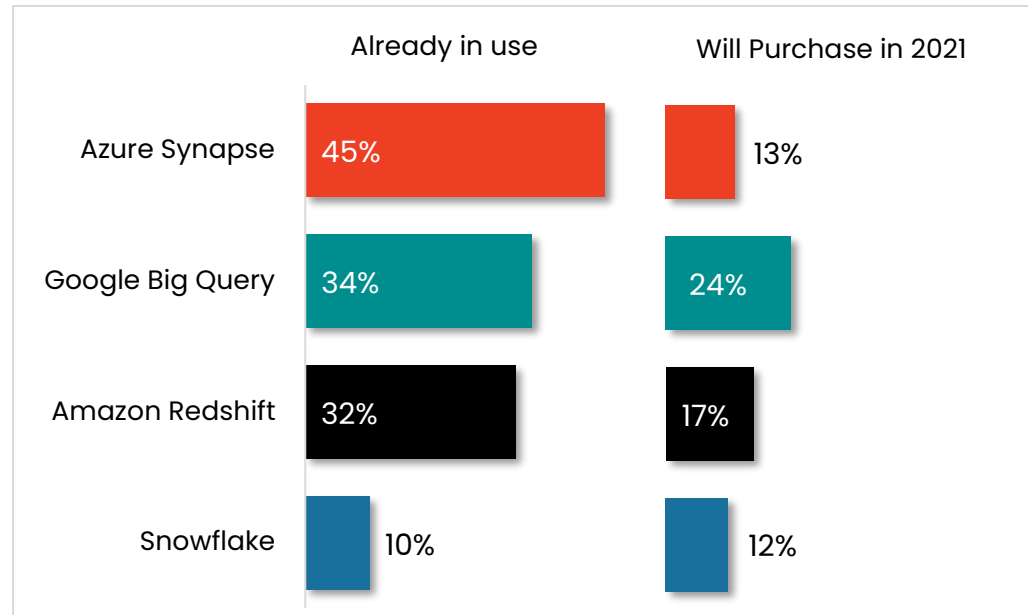

Figure 12 Cloud-Based Data Technologies in Use – 2020-2021

Data Warehouse Platforms

Looking at data warehouse platforms, the #1 platform being used by over half of surveyed companies is IBM Netezza (51%), followed by Oracle Exadata (38%) and Teradata (25%).
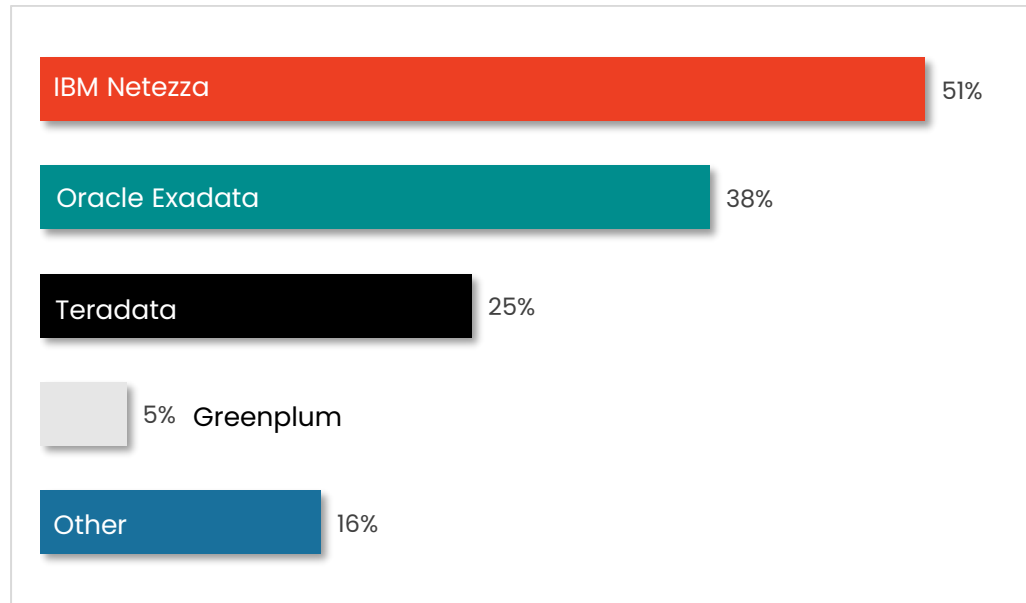

Figure 13 Data Warehouse Platforms

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BI & Visualization Tools in Use

The top BI & Visualization tools being used today are Power BI (35%), Micro Strategy (26%) and SAS Viya (26%).

Looking at 2021 and what companies are planning to purchase, SAS Viya is the #1 sought out tool (23%), followed by Micro Strategy (20%) and the Power BI (17%).
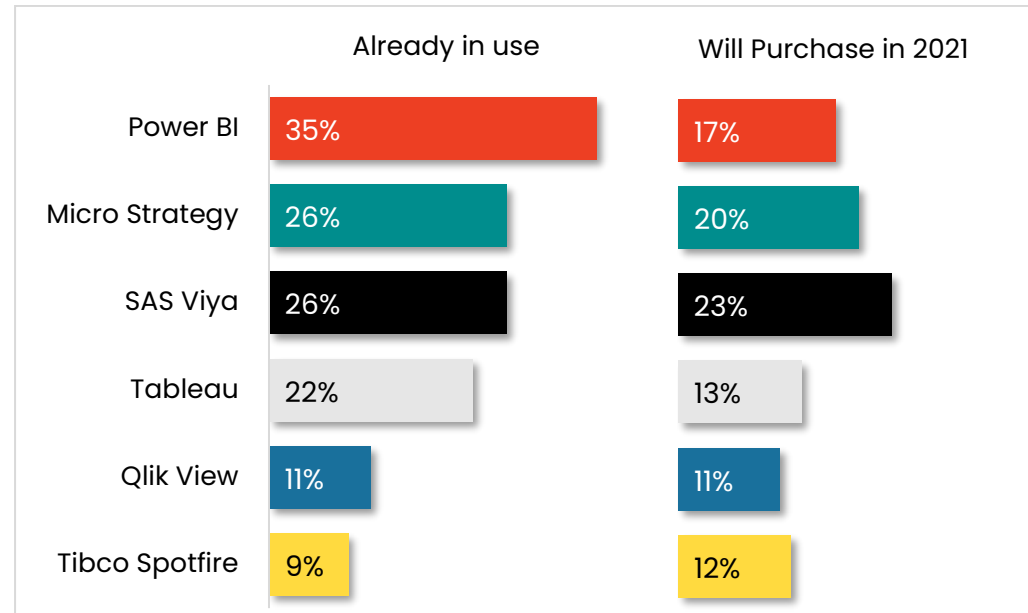

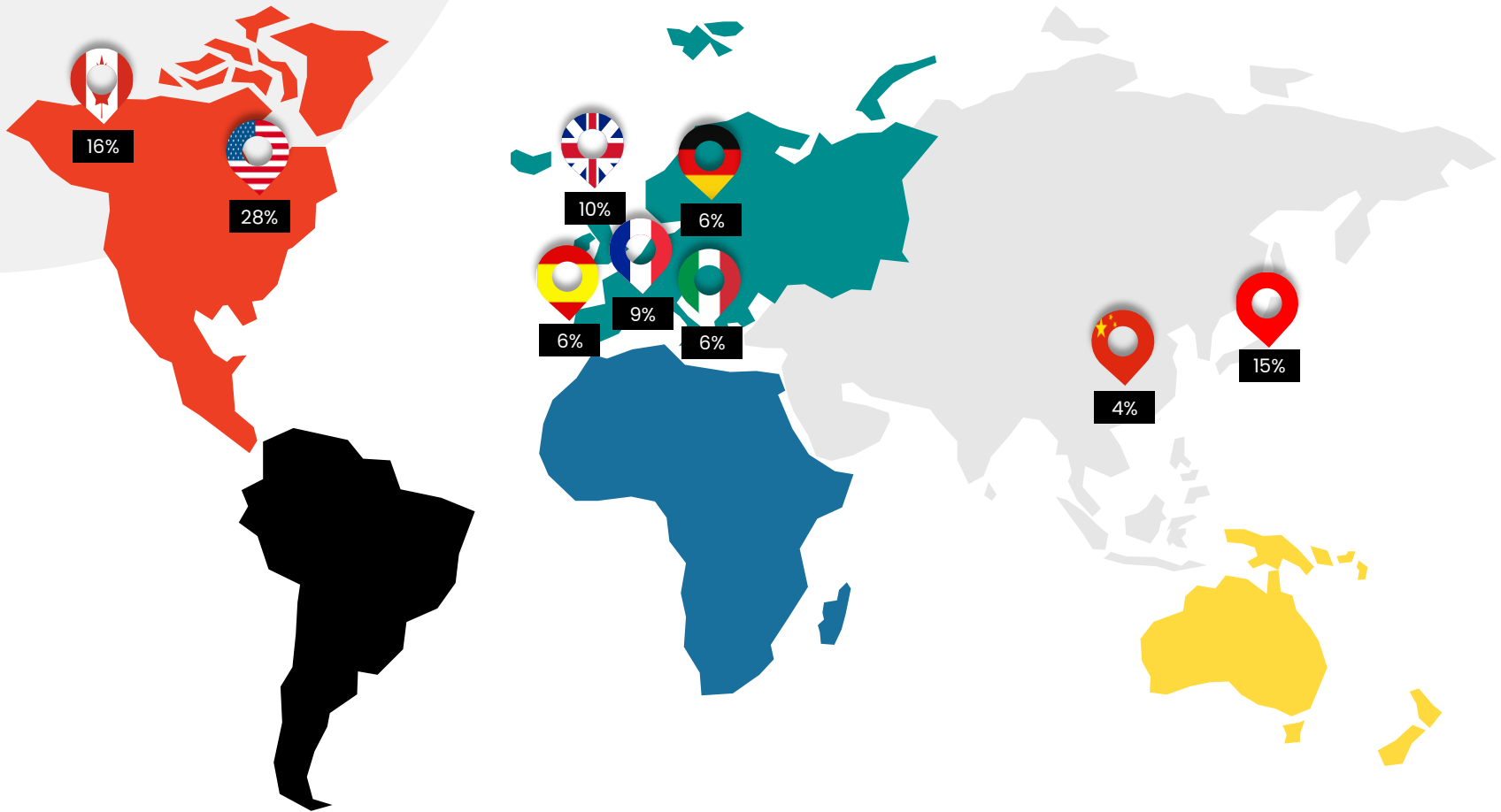Figure 14 BI & Visualization Tools in Use – 2020-2021

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Demographics

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Country of Residence

Figure 15 Country of Residence

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Job Role, Company Size and Industry
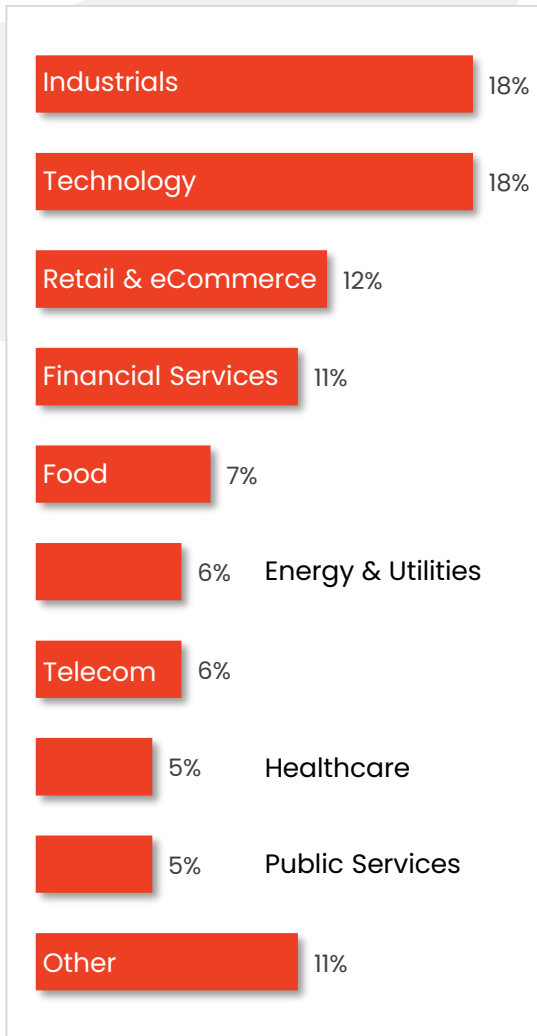
Figure 16 Industries
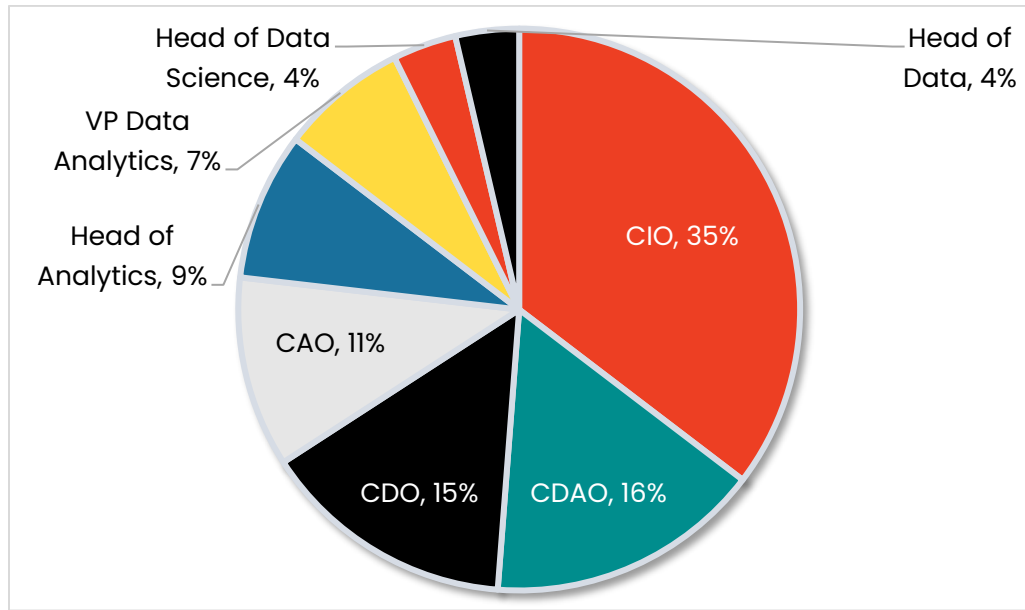
Figure 17 Job Titles

Figure 18 Company Size

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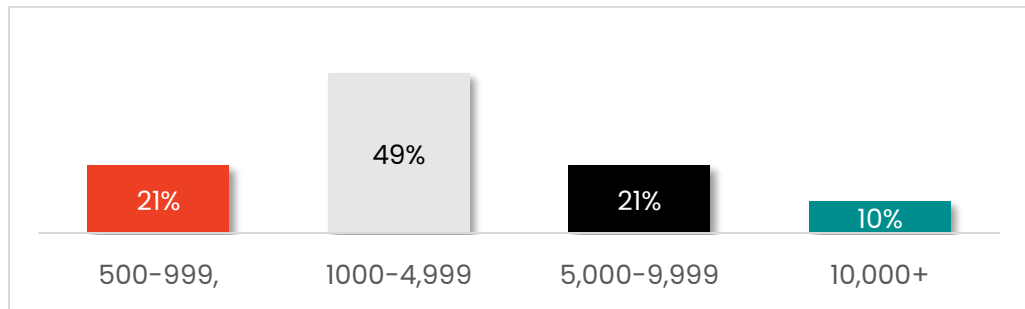
About SQream

SQream provides enterprises with critical business intelligence from massive data stores. Global enterprises use SQream to analyze more data faster than ever before, while achieving improved performance, reduced footprint, significant cost savings, and the ability to scale the amount of data they analyze to hundreds of terabytes and more. SQream is available both on premise and in the cloud.

Request a Demo

For more information, please visit us:

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