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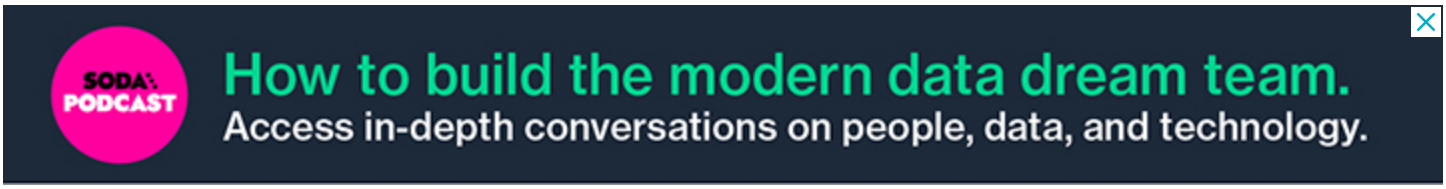

Data Management Trends in 2022

By **Keith D. Foote** on **January 11, 2022**

Data Management is about collecting, storing, and using data efficiently, securely, and in a cost-effective way. More and more, organizations are shifting to scalable Data Management platforms (in the cloud) to govern, secure, and analyze data. This allows them to process their business functions with a single unified platform.

Data Management platforms provide increased control, and seamless access to an organization's data. Businesses can gain a competitive edge by using Data Management to support their business strategy.

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Data Management is still in the process of evolving, and there are continuous efforts to improve the ways data is collected and analyzed. Data that contains “information” is being used to gain insights about customer bases, inefficient work processes, and security issues.

Data Management trends include using automation to increase efficiency and take over mundane tasks.

The Expansion of Analytics in Data Management

Analytics is often supported by Data Management platforms. It is used to help businesses become competitive and successful. Organizations have come to embrace data analytics as a way to optimize costs, increase revenues, and enhance competitiveness. As a result, the technology is constantly advancing and evolving.

To maximize the opportunities of data analytics, organizations must constantly stay updated, and be prepared to adjust new developments.

- **Augmented Analytics:** Data analysts can spend large amounts of time gathering, preparing, and organizing data before analyzing it, or they can use augmented analytics .

Augmented analytics automates most of the preparation process, allowing humans more freedom to focus on other projects. It uses machine learning (and in many cases, natural language), making it easier for researchers to prepare, analyze, and visualize their data.

- **Self-Service Analytics Tools:** These tools often come with fairly easy-to-use visual interfaces, and allow nontechnical users — such as sales staff or management — to access needed data, perform research, and create reports.

Self-service analytics tools promote effective business intelligence and insights on the spot and in real-time, rather than waiting days or weeks for a report from the IT department. Salespeople can approve a deal in minutes, rather than days.

- **Cloud Analytics:** The analytics services offered by the cloud supports advanced analytics tools and data models that businesses would otherwise lack, or have to build themselves.

Cloud analytics, rather than on-premises analytics, provides several advantages. It frees up the data team and allows for a scalable workload, helping to cut overhead costs. As a result, cloud analytics services is a sector that is growing rapidly.

Hybrid And Multi-Cloud Data

The 2020 Coronavirus pandemic has forced millions to work from home, coordinating and communicating remotely, and accessing company data remotely. The internet and cloud-based solutions quickly became the tools of choice in dealing with the isolation promoted by the pandemic. Hybrid and multi-cloud approaches became the most popular choices in working while remaining isolated.

Growth in cloud infrastructure services during 2020 and 2021 has been significant, with many organizations choosing to work in multiple cloud environments. Businesses have increasingly realized the potential for technological, financial, and security benefits of accessing different cloud environments, with different tools, and spreading their data resources across multiple clouds.

Multi-cloud has become the norm for many businesses. Because of this, their applications and data must be portable and compatible with a variety of public cloud environments, and interoperable with private, on-premise clouds.

Tools are still being created for multi-cloud Data Management. Not too surprisingly, many of these tools come from startups with a good idea, while other tools are being developed by established vendors to enhance their existing products.

Artificial Intelligence and Machine Learning with Data Management

The use of artificial intelligence (AI) and machine learning (ML) is a Data Management trend that continues to driven by big data's massive data volumes. The unprecedented volumes of data that organizations must process on a daily basis cannot be managed by humans in an efficient manner, particularly when there is an ongoing shortage across the entire data tech industry.

AI and machine learning support automation, which, to a limited degree, can replace human labor, and to a larger degree, eliminate human error. ML and AI are used to support a variety Data Management tasks, such as:

- Data Mapping
- Data Cataloging
- Metadata Management
- Metadata Harvesting
- Anomaly Detection
- Data Governance

Artificial intelligence can be used to cleanse data and improve Data Quality. AI-based Data Management can also be used to create intelligent data catalogs, in turn supporting active metadata (ML-augmented metadata that responds and makes decisions), and self-service data preparation (a more advanced version of augmented analytics).

Data catalogs use metadata, and can automatically discover, inventory, and organize data.

Data Management to Data Fabric

Data fabric is a fairly new concept, and embraces the idea that data from many sources can be woven together. As organizations migrate to the cloud, and the volume of data, and data types, continues to increase, the goal of seamlessly "weaving" together a network's data can make a company much more efficient. Software designed to improve an organization's data fabric will manage data disparities in both cloud environments and on premises.

Data fabric uses distributed Data Management platforms to connect all data with all the network's Data Management services and tools. Distributed database management platforms are multiple, interrelated databases that are distributed over a network.

Data fabric is normally a cloud-based architecture using a scaleable data storage system. It provides centralized access to data from multiple sources data, a single view of the data being used across the network, and offers a large number of tools.

Data fabric manages and organizes the collection of data, its governance, its integration, and the ability to share this data across a unified architecture. The goal when using data fabrics is to offer frictionless access and the sharing of data within a distributed network. Data fabric weaves together all of a network's data and operations into a single framework. This system offers several benefits, such as:

- Eliminating data silos
- Enabling hybrid cloud
- Simplifying Data Management
- On-premise infrastructures
- Increasing scalability

DataOps in Data Management

DataOps takes the principles of DevOps , and applies them to Data Management. Instead of separating different teams, DataOps breaks down barriers and promotes communication throughout the company. It uses the Agile methodology to reduce the development time of analytics. Automation is also used to support analytic and data teams. DataOps improves the quality of data analytics and reduces the cycle time.

Currently, many organizations have not yet embraced DataOps , but as data volumes and complexity grows, scaling a data project becomes harder. As a holistic approach, DataOps helps significantly by streamlining the process and improving communications.

Although DataOps began as a process of best practices, this methodology has evolved into a new, independent model for handling data analytics. DataOps is applied to the total data lifecycle, ranging from preparing data to reporting it.

Data Governance in Data Management

With the introduction of data regulations, such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act, and the ever-increasing complexity between external and internal data. Additionally, data security, data auditing, and Data Quality are also becoming more complicated. As a consequence, organizations are developing more comprehensive Data Governance strategies.

Data Governance is a practical, functioning framework based on a system of rules, procedures, and processes designed to deliver consistent data across the organization. It provides a range of benefits, including regulatory compliance and high Data Quality. Data Governance protects against breaking laws and improves Data Quality.

Augmented Data Management Trends

There is a shortage of data scientists and data tech workers. Augmented Data Management helps deal with this shortage. It uses artificial intelligence and machine learning to automatically perform low-level tasks, like preparation and data cleansing. By turning these manual tasks into an automated service, data teams can focus on other priorities. Gartner has predicted that augmented Data Management can reduce manual tasks by 45%.

Augmented Data Management can be applied to the following tasks:

- **Data Quality:** Automatically identifies and resolves Data Quality issues, and suggests rules.
- **Metadata Management:** Labels, classifies, and searches data. This feature can generate and analyze end-to-end data lineage, and identify data flows, anomalies, and system dependencies.
- **Master Data Management:** Identifies and evaluates potential master data, automatically generates mapping data entities, and will configure a master Data Management hub.

Kon Leong, the CEO and co-founder of ZL Technologies said, “if information is the corporate gold mine, then ADM (augmented Data Management) is the mining equipment.” He went on to add:

> “Augmented Data Management is the emerging paradigm, where managing internal and external data through its entire life-cycle will not only reduce risks and satisfy corporate obligations in Data Governance. It also provides comprehensive insights that will boost corporate performance to the next level, and beyond.”

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