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Original Article

Data Intelligence and Artificial Intelligence (AI) in SAP Ecosystem- SAP Datasphere

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Abstract *- Data is the concentrated muscle of an organization. It takes years to build the data muscle with a continuous churning process to make it accurate, integral and reliable. It takes a village to bring the data to a level that is unquestionable and fully trusted by the organization and the users to consume. To evolve the intelligence out of this data, its accuracy, integrity, and reliability need to be proven.*

Data accuracy is the correctness of data that is assumed at the highest level of the pyramid in the organization. Due to the correctness at this level, it is easier for an organization to confidently use it for their research, analysis, statistics, and reporting at various levels of the organization hierarchy.

The integrity of data is the completeness and consistency of data that has evolved over time by making sure that the input source of this data and the processes around this data submission are curated to their optimum level. It takes time to get this to a level where the integrity of data is not compromised and readily available for consumption. Data reliability, as the name suggests, is the truth your data possesses based on the data accuracy and integrity.

This paper aims to assist organizations in making intelligent and mature decisions when choosing a data intelligence and artificial intelligence solution by SAP called SAP datasphere. This is a Software-as-as-Service (SAAS) cloud offering that helps manage big data and provides enhanced analytical capabilities, top-of-the-line security, and HANA-driven performance by using state-of-the-art and out-of-the-box Artificial Intelligence capabilities.

Keywords *- Business Intelligence (BI), Data Intelligence, SAP Cloud, SAP HANA, Data mining, Artificial intelligence, SAP BW4HANA, SAP BTP, SAP Cloud, SAP Analytics Cloud (SAC).*

1. Introduction

There was a gap in the data intelligence domain in the industry for consumers to do self-service analytics using out-of-the-box artificial intelligence capabilities and reporting. There are many tools and applications available in the market, but those do not fulfill the need in totality. Most of those are focused on specific niches and can be narrowed down to fill respective needs. While researching an application that is comprised of an intelligent platform and out-of-the-box capabilities, came across "SAP Datasphere" seemed to be built, keeping in mind a business data fabric architecture that combines the best of both worlds, i.e., technology and business domain information, for consuming and performing self-service analytics on SAP and non-SAP data. The market was broad but always lacked the depth in the data warehousing industry. It was a matter of time before companies researched and brought the best in the industry with the latest and greatest options, providing the industry with an application that would fill this depth, and that is how SAP Datasphere was introduced.

2. Capabilities

2.1. What is SAP Datasphere?

SAP Datasphere is a data service that empowers businesses to perform self-service analytics on harmonized, mission-critical business data and build their own artificial intelligence models using the out-of-the-box capabilities powered by an underlying HANA cloud database. SAP Datasphere is part of the SAP BTP platform and is one of the data intelligence services.

SAP Datasphere provides capabilities like data integration, cataloging, semantic modeling, federation, and visualization as an all-in-one application. Since it's built on the same code as other SAP applications, it provides a strong

native integration and efficiently consumes metadata, security, and governance to support enterprise needs. The Software as a service application allows bringing together a variety of data from within or outside of the organization into a data intelligence platform. It makes it available for consumption using the self-service intuitive tool to generate insights.

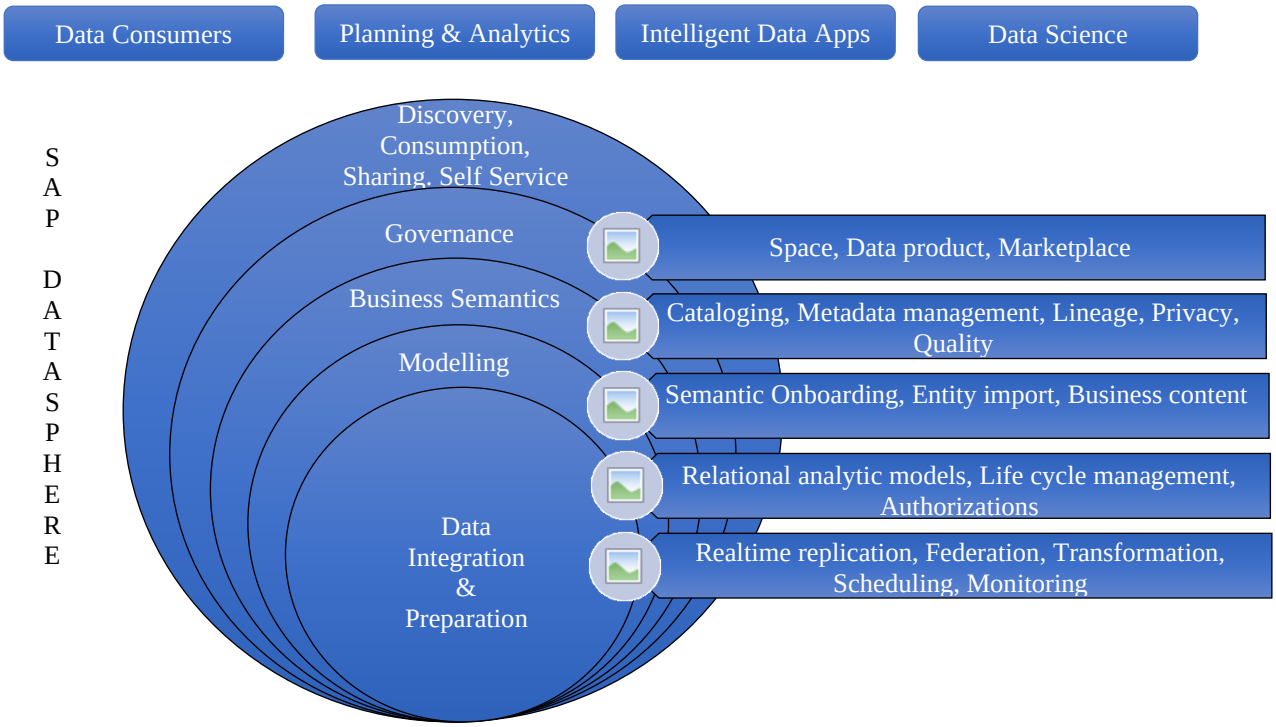

Fig. 1 SAP Datasphere foundation

2.2. Why Organizations need SAP Datasphere

- Native Integration- Strong investment for organizations who have heavily invested in SAP Enterprise Resource Package (ERP).
- Data lake- Supports both SAP and non-SAP data stored on-premise or cloud with data cataloguing and modeling features.
- Business Content- SAP and third-party business content are available for all domains, for example, Finance, Sales, Human Resources, Production Planning, Supply chain management, etc.
- Business Data Fabric layer- Self-service capability and intuitive interface that empowers businesses to build their own models and generate insights.
- Cloud offering- Infrastructure management by SAP reducing overall IT expense.
- Single Sign-on Supports OKTA/SAML2 in enabling single sign-on for business.
- Scalability- Cloud solution that supports on-demand data volume requirements.
- Cost- Cloud-based, cost-effective pay-per-use approach.

2.3. SAP Datasphere Integration with Other Systems

SAP Applications and Integrations

- SAP Fieldglass
- SAP SuccessFactors
- SAP S/4HANA, S/4HANA Cloud, ECC
- SAP S/4HANA, S/4HANA Cloud, ECC

Database

- SAP HANA On Prem & Cloud
- Oracle
- SQL Server

Connection Types

- Cloud Data Integration
- JDBC/ODATA/CSV/SFTP

Integrations

- SAP Smart Data Integration/SAP Landscape Transformation
- SAP Data Intelligence, SAP Data Services
- Informatica
- Adverity/APOS/Datazeit/Precog/Snaplogic Smart.

2.4. Support to existing investment in BW4HANA through BW Bridge

- SAP has had 70% of the market to itself in the package implementation of the Enterprise Resource Package (ERP), and organizations have heavy investments in maintaining the data. The data is maintained in the SAP BW/4HANA Datawarehouse powered by unmatched

data modeling capabilities and a performance-driven HANA database.

- SAP is championing SAP Datasphere as the successor to SAP BW/4HANA, and to smoothen the transition, it has provided a HANA cloud tool called SAP BW Bridge. This tool helps in migrating the models and views from SAP BW/4HANA to SAP Datasphere.

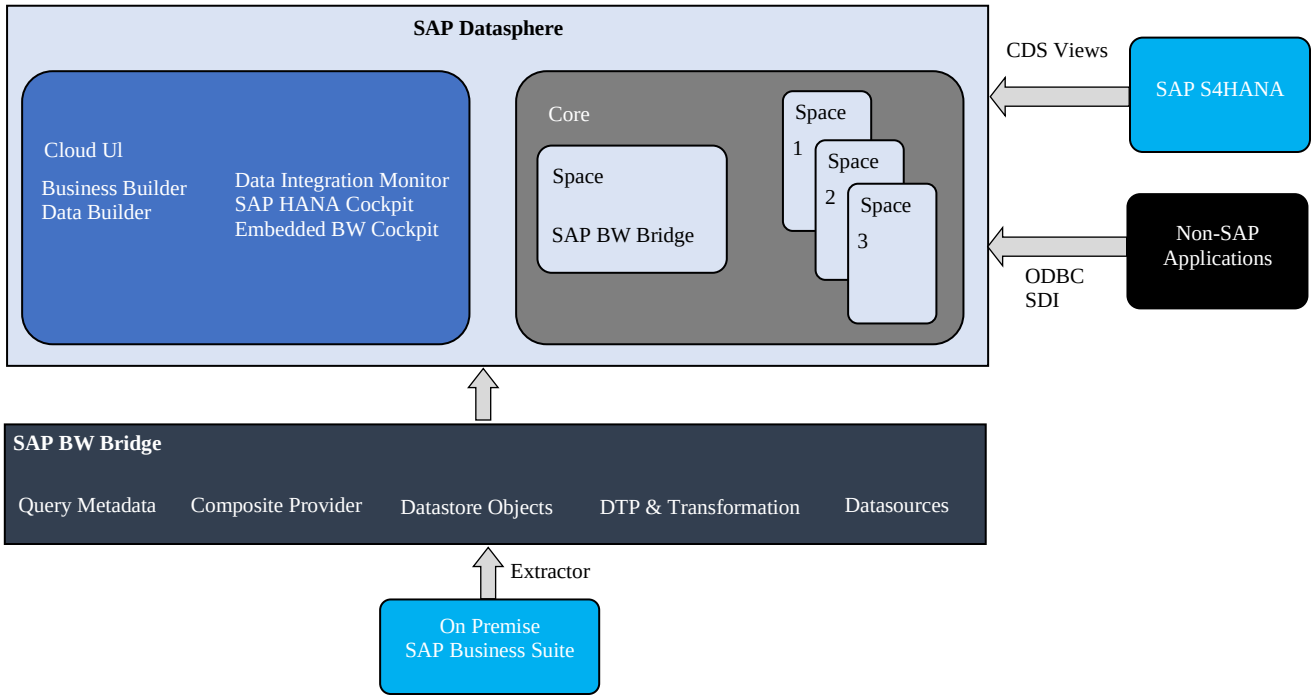

Fig. 2 SAP BW Bridge Data Integration

2.5. Supports Third-Party Integration and Data Intelligence Partnership

SAP opened its integration for third-party tools to support artificial intelligence and machine learning, which are leaders in their own space.

- Databricks- It is a cloud-based data lake that supports consolidating data from SAP on-premise/ Datasphere and third-party datalakes.
- DataRobot- It is an open Artificial Intelligence platform that supports both generative AI and predictive AI modeling on SAP datasphere.
- Collibra is a cloud-based data intelligence tool providing features like governance, cataloguing, and rule-based data management on SAP datasphere.
- Confluent- It is a cloud-native application enabling real-time data streaming between SAP datasphere and non-SAP tools.

2.6. Data Marketplace

Data Marketplace is the repository for sharing the data within the SAP datasphere tenant. One must create a digital business card, which is a model of communication for users to request access to the data. It also comes with the responsibility for the owner of this data provider to manage and maintain the life cycle of the data hosted and being shared for consumption via enabling digital licensing. Users can also acquire and consume third-party datasets. Currently, SAP recommends not to upload or store personally identifiable data in the data marketplace.

2.7. Data Protection

Data in SAP Datasphere, including the business metadata, transaction data, logs and any other backup, is all encrypted at rest using the Customer Specific Encryption Keys (CSEK). The customer has the option of enabling the digital licensing using the Customer-Controlled Encryption Keys (CCEK).

SAP Datasphere also has out-of-the-box audit logging features that provide information on who, what, and when to read/write the data and can be used for compliance reporting if needed.

2.8. Security

- SAP Datasphere supports encrypted communication channels for network communication.
- It can connect to the same identify provider (e.g., SAML) for both SAP Datasphere and SAP Analytics so that the management of data and consumption of analytics is seamless for users.

- Standard features are available for user profile management and provisioning.
- The data governance is enforced by using the space concept.
- It has features to protect data based on legal and industry requirements.
- SAP Datasphere is compliant with ISO/IEC 27001/22301, SOC 1, 2 Type 2, EU Cloud CoC.

2.9. Backup and Data Retention Period

SAP HANA Cloud resiliency layer manages the SAP Datasphere backup and data recovery based on SAP's standard processes.

3. Future

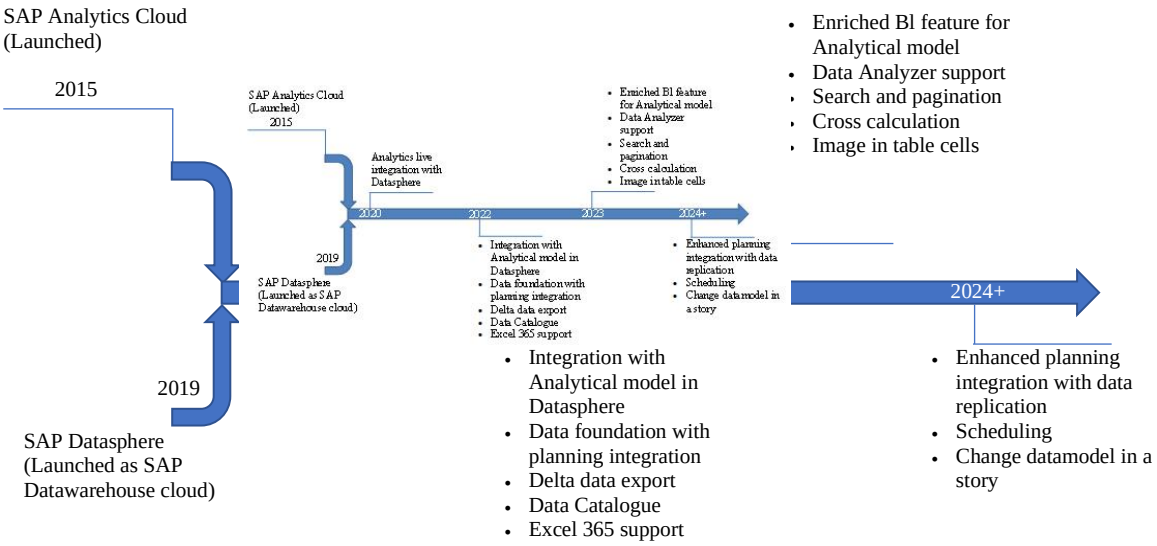

Fig. 3 Integration journey

4. Conclusion

SAP BTP suite of services is the future for organizations that have heavily invested in streamlining their enterprise operations using S/4HANA as a transaction processing system and BW/4HANA as their datawarehouse and reporting systems. For those organizations, SAP Datasphere is the successor to replace datawarehouse, self-service modeling on the business data-fabric layer, building artificial intelligence and machine learning models, consolidating SAP and non-SAP data and will serve as a backbone for all future generative AI and predictive AI inventions. SAP Datasphere is backed by the in-memory HANA cloud database that powers the processing of data and provides modeling and performing tuning capabilities.

By enabling users to do their own data modeling and analytics, including utilizing AI capabilities, organizations are enabling them to succeed by improving the rate of insightful decision-making and fulfilling early opportunities.

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