TREDENCE
Beyond Possible

Breaking Data Barriers

MODERNIZING SAP FOR THE AI-POWERED ENTERPRISE

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Overview

In today's dynamic enterprise landscape, organizations often operate across multiple ERP, data, and AI/ML platforms to meet diverse business needs. This fragmented approach has led to increasingly complex system architectures, posing challenges in scalability, feature enhancement, cost optimization, and turn around time. While SAP continues to serve as the foundational ERP for a majority of global enterprises, it is frequently integrated with other ERPs, Point-of-Sale (PoS) systems, and business specific applications.

The complexity intensifies when organizations attempt to modernize analytics across these heterogeneous systems. Although SAP has evolved its data warehousing solutions from BW to BW/4HANA and now Datasphere, more than 70% of SAP BW customers remain on legacy versions, still to embark on their modernization journey—whether within the SAP ecosystem or beyond.

The recent introduction of SAP Business Data Cloud (BDC) has sparked significant interest and discussion, signaling a potential shift in how enterprises envision their future data platforms with SAP at the core.

02

Understanding the Drivers of Change

Platform vs. Business-Led Initiatives

Before charting a path toward modernization, it is essential to identify the primary driver behind the transformation—whether it is platform-led or business-driven.

Platform-Led Transformation

Enterprise IT teams are often tasked with simplifying the technology landscape. This includes evaluating the future of data warehousing systems, particularly the transition from legacy SAP BW/HANA environments to modern platforms. These initiatives are typically motivated by goals such as cost optimization, architectural simplification, and improved operational efficiency.

Business-Led Transformation

On the other hand, business units are increasingly demanding AI/ML-powered solutions tailored to specific use cases—such as route optimization, inventory forecasting, and demand planning. These initiatives begin with a clear business objective, followed by the identification of key performance indicators (KPIs), and then a reverse-mapping exercise to trace data back to source systems. This approach often reveals the complexity of the data landscape, including the number of systems involved and the potential for reusing existing models.

Understanding whether transformation is being initiated by platform strategy or business needs is critical to defining the right modernization roadmap and ensuring alignment across stakeholders.

03 Evaluating SAP Business Data Cloud (BDC) Strategy

SAP Business Data Cloud (BDC) has generated significant interest among enterprises by integrating Databricks into the SAP ecosystem, offering a promising pathway for advanced analytics and AI/ML adoption. However, determining whether BDC is the right fit requires a strategic evaluation of both technical and business parameters.

Key Evaluation Parameters

Data Gravity

Assess the volume and criticality of data generated within SAP systems versus non-SAP systems. Understanding where enterprise data resides helps determine the feasibility and efficiency of centralizing analytics in BDC.

Current SAP Investments

Review existing SAP product investments and future roadmap commitments. This includes evaluating the maturity of the SAP landscape (ECC, S/4HANA, BW, etc.) and alignment with SAP's evolving data strategy.

AI/ML Use Cases

Identify business-critical AI/ML use cases—such as route optimization, inventory forecasting and demand planning —that require complex analytical models. These use cases often dictate the need for scalable and flexible data platforms.

Licensing Considerations

Understand the current SAP licensing model (ECC vs. S/4HANA) to evaluate compatibility and cost implications of adopting BDC.

Data Formats

Consider the diversity of data formats in the enterprise ecosystem. If analytics require integration of semi-structured or unstructured data alongside SAP sources, BDC's capabilities for handling heterogeneous data are crucial.

How will BDC expedite the analytics and AI-ML implementation in SAP ecosystem

SAP BDC offers out-of-the-box data foundation products that can be consumed directly in Databricks through zero-copy cloning. While SAP continues to roll out new data products quarterly, their applicability depends on the degree of customization in each customer's S/4HANA implementation.

Customization Challenge

Most S/4HANA environments are tailored based on legacy ECC customizations. As a result, standard data products may not fully meet business needs, necessitating the creation of custom data products. CDS views developed in S/4HANA can serve as a valuable source for building these custom layers.

BDC in Ongoing S/4HANA Migrations

For organizations still on ECC or in the process of migrating to S/4HANA, BDC adoption presents unique challenges. Interim solutions may involve connecting ECC to BW, BW/4HANA, or Datasphere and exposing models to BDC as data products. This transitional approach allows organizations to begin leveraging BDC capabilities even before full S/4HANA implementation.

04

Strategic Considerations

SAP BDC for Databricks vs. Native Databricks

As organizations evaluate their data modernization strategies, a key decision point emerges: whether to adopt SAP Business Data Cloud (BDC) integrated with Databricks or to leverage native Databricks independently. This decision is largely influenced by the proportion of SAP versus non-SAP data in the enterprise landscape..

Strategy Scenarios

Strategy 1

SAP-Dominant Landscape

More than 70% of enterprise data originates from SAP systems.

Strategy 2

Non-SAP-Dominant Landscape

Less than 30% of enterprise data is SAP-based, with the majority coming from other platforms.

#	Feature	Strategy 1	Strategy 2
1	Data Ingestion SAP + Non-SAP	Datasphere in BDC. For unstructured, IOT use cases Native Databricks	Native Databricks + BDC (for selected use cases)
2	Data Modeling	BDC	Native Databricks. Leverage SAP Data Products where available using BDC-Databricks Zero-Copy Data Service.
3	Reporting	SAP Analytics Cloud in BDC	Power BI, Tableau, Others
4	Does Insight Apps solve Business use cases	SAP BDC	Native Databricks (Leverage SAP Data Products, via BDC- Databricks Zero-Copy Data Service)
5	AI/ML use cases	BDC	Native Databricks
6	GEN AI Capabilities	SAP Databricks	Native Databricks

Key Takeaways

BDC is ideal for SAP-heavy environments, offering native integration, prebuilt data products, and seamless connectivity to Databricks.

Native Databricks is better suited for non-SAP-heavy landscapes, providing flexibility, scalability, and broader support for AI/ML and GenAI workloads.

Hybrid strategies are viable, especially for organizations in transition or with mixed data ecosystems. BDC's zero-copy integration with Databricks allows selective use of SAP data products without full platform dependency.

Illustrative representation
for SAP BW & ECC on BDC & S4 on BDC

Strategy 1

SAP Dominant landscape

There are 4 steps to be followed to align with SAP product roadmap and also implement a modern cloud native architecture in SAP ecosystem.

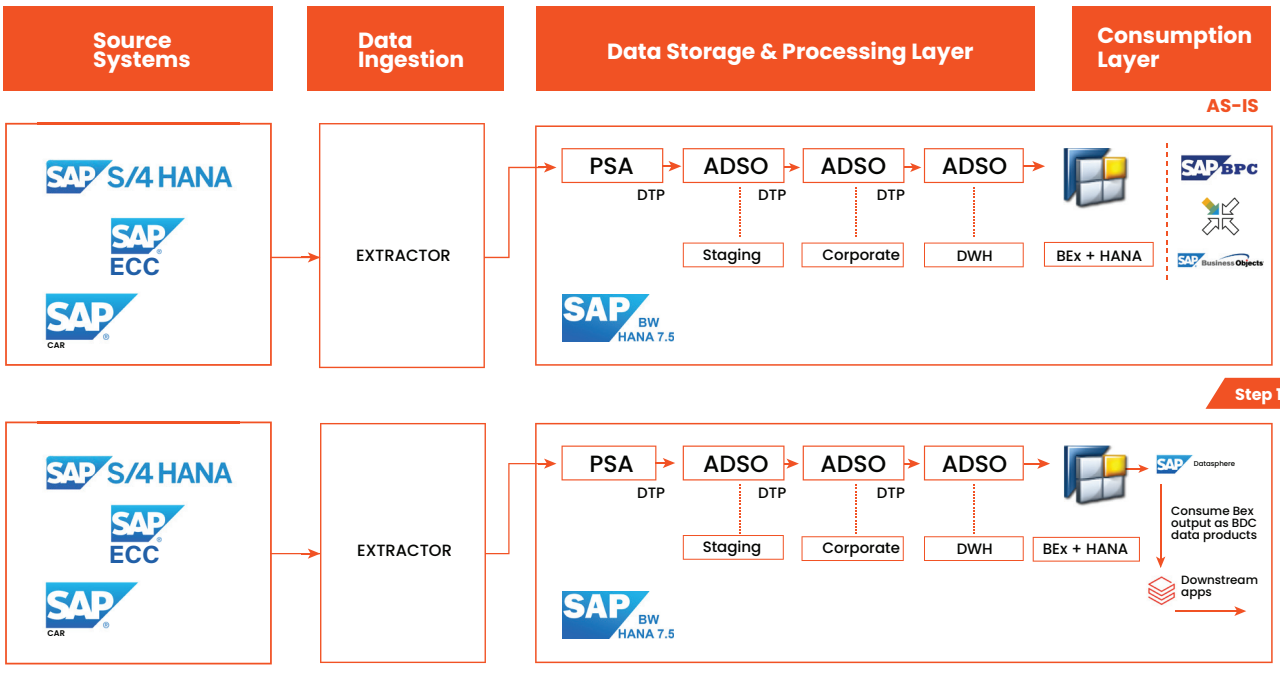
01 Step — Deploy SAP BW as BW PCE and consume Bex layer as Data products in BDC using Datasphere

02 Step — Build / Migrate Bex layer on Datasphere from BW and convert BW to BW bridge

03 Step — Build / Migrate transformation layer on Datasphere from BW and continue to use extractors in BW bridge till ECC continues

04 Step — Once S4 migration is completed, replace extractors with CDS views and repoint models in Datasphere

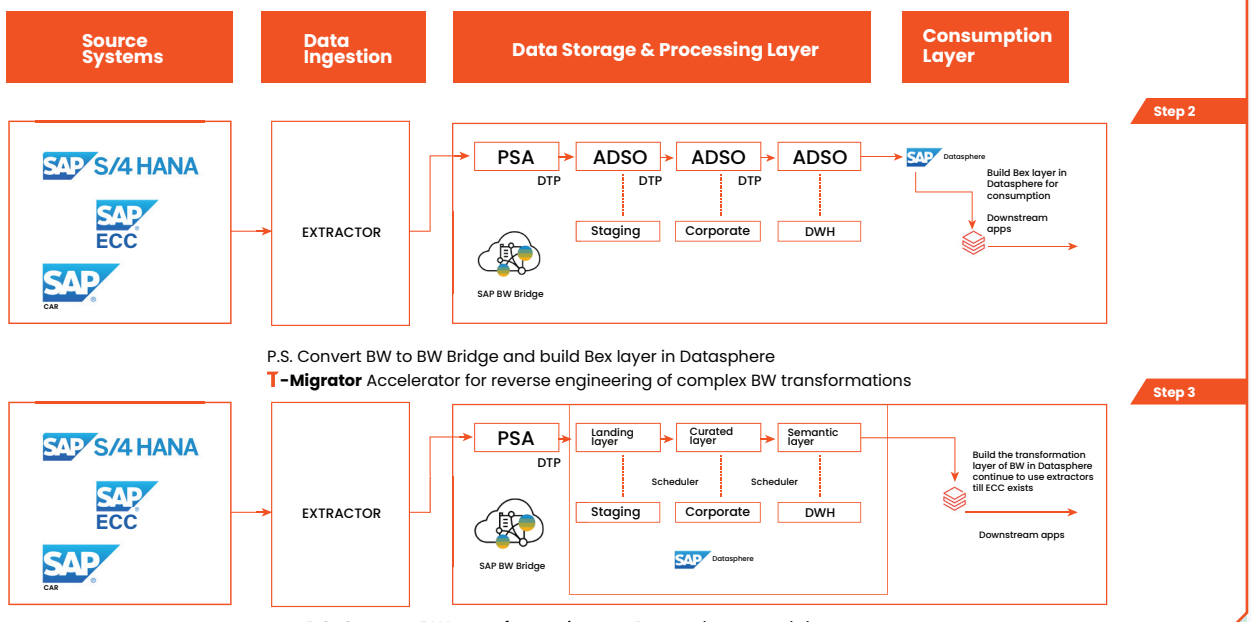
Step 1: Modernization journey of SAP BW to Datasphere for BDC



P.S. Host SAP BW on PCE and enable Data products

Deploy SAP BW as BW PCE & consume Bex layer as Data products in BDC using Datasphere

Step 2: Modernization journey of SAP BW to Datasphere for BDC



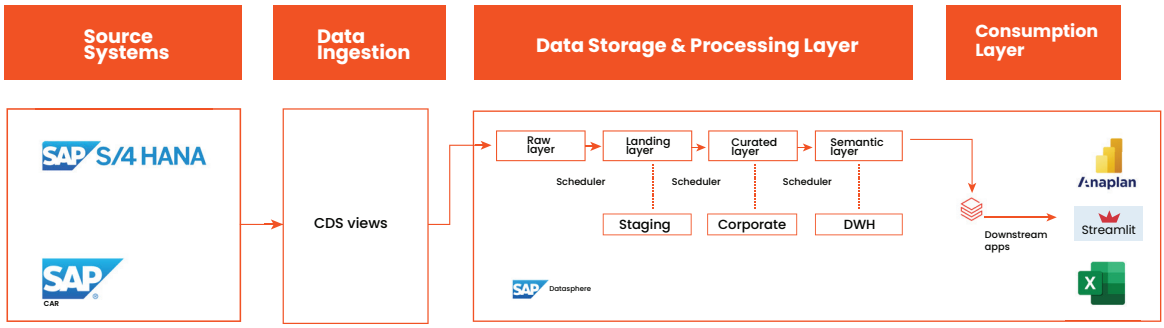
P.S. Convert BW to BW Bridge and build Bex layer in Datasphere

T-Migrator Accelerator for reverse engineering of complex BW transformations

P.S. Convert BW transformations to Datasphere models

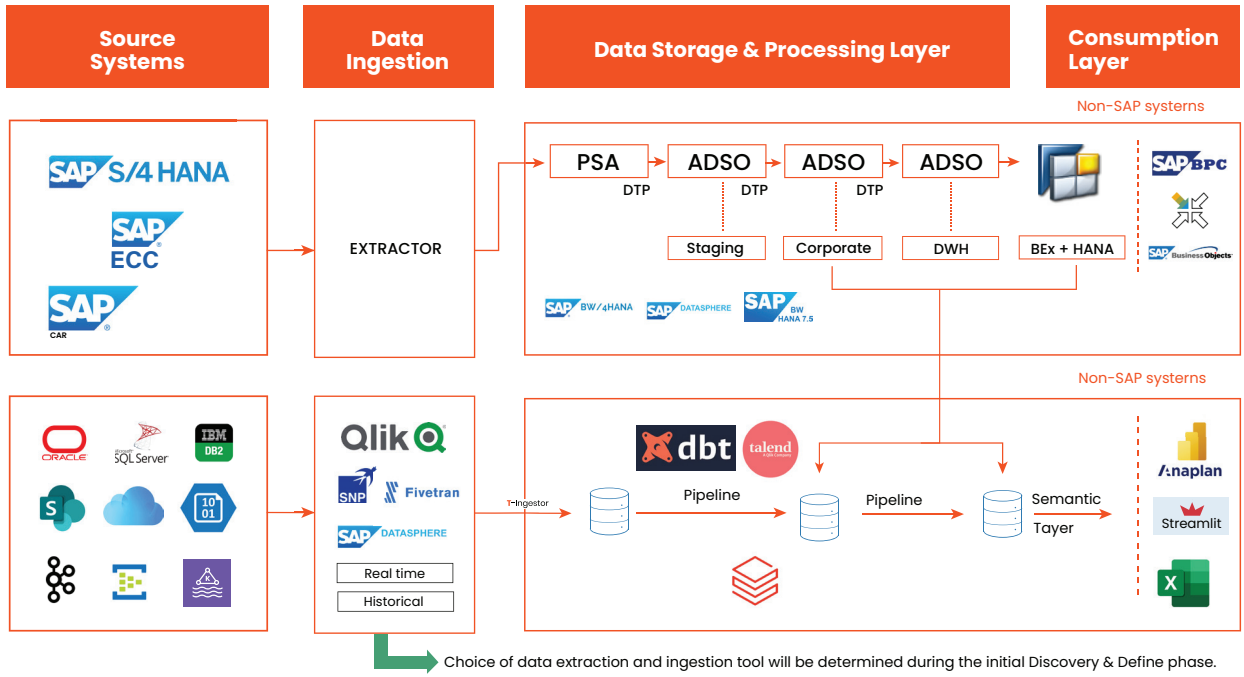
Convert BW transformations to Datasphere models

Step 3: Modernization journey of SAP BW to Datasphere for BDC



Replace extractors with CDS views
& repoint models in Datasphere

Strategy 2 : Non-SAP dominant landscape



Choice of data extraction and ingestion tool will be determined during the initial Discovery & Define phase.

05 Approach for Migrating from SAP BW to Datasphere

As organizations modernize their data platforms, SAP Datasphere emerges as the strategic successor to SAP BW, especially for enterprises operating in hybrid SAP and non-SAP environments. According to SAP's product roadmap, Datasphere is positioned as the future-ready data foundation platform, offering enhanced integration capabilities and alignment with modern data ecosystems such as Databricks. .

Migration Considerations

Continued Use of BW/4HANA

Organizations whose current data warehousing needs are fully met by BW/4HANA may choose to remain on this platform in the short term. However, long-term strategies should consider the evolution toward Datasphere for greater flexibility& interoperability.

Modern Architecture Alignment

Datasphere introduces a modern architecture with layered artifacts and modular components, aligning more closely with contemporary platforms. This shift requires rethinking of traditional BW models and processes.

No 1:1 Migration Path

Migration from BW to Datasphere is not a direct one-to-one transition. It involves reverse engineering existing models, revalidating business logic, and redesigning data flows to fit the new architecture. This process must also account for the impact of ongoing or planned S/4HANA migrations, as data structures and semantics may change.

Strategic Migration Approach

01 Assessment Phase

- Inventory existing BW models & data flows
- Identify dependencies on ECC or S/4HANA systems
- Evaluate business-critical use cases and reporting needs

02 Reverse Engineering & Rationalization

- Deconstruct BW models to understand core logic (from BEx layer to extractors)
- Rationalize redundant or obsolete components
- Align with future-state architecture in Datasphere

03 Redesign & Rebuild

- Rebuild models using Datasphere-native constructs
- Leverage CDS views from S/4 HANA as foundational elements
- Integrate non-SAP data sources as needed

04 Validation & Optimization

- Validate data accuracy & performance
- Optimize for AI/ML readiness and real-time analytics
- Ensure compatibility with reporting tools & downstream systems

06

Conclusion

SAP BDC as a Strategic Enabler

The evolution from SAP BW to Datasphere, coupled with the introduction of SAP Business Data Cloud (BDC), represents a transformative shift in enterprise data architecture. As organizations navigate this transition, it is essential to evaluate key factors such as data gravity, existing SAP investments, and the maturity of AI/ML initiatives to define the most effective modernization strategy.

For SAP-centric enterprises, BDC offers a powerful foundation for unified analytics and AI enablement, with seamless integration into platforms like Databricks and access to prebuilt data products. However, its true value is realized when aligned with a mature S/4HANA landscape. Conversely, organizations with a more diverse, non-SAP ecosystem may benefit from a hybrid approach—leveraging native platforms for flexibility while selectively integrating BDC for SAP-specific use cases.

Ultimately, SAP BDC is more than a tool—it is a strategic enabler for building future-ready, intelligent data ecosystems. Success lies in architectural clarity, phased execution, and tight alignment between technology and business objectives.

About the Authors

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He brings over 15 years of experience in helping organizations transition from legacy SAP platforms like SAP BW and HANA to modern data ecosystems such as Snowflake and Databricks. He has successfully led large-scale cloud migration programs for global clients ,managing portfolios exceeding $10 million and leading high-performing teams. He has successfully migrated complex SAP BW and HANA implementations to modern platforms across verticals like CPG, Manufacturing etc.

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He brings over two decades of expertise at the intersection of Data and SAP, leading large-scale SAP implementations and complex migration programs across global enterprises. A specialist in SAP Analytics, he focuses on shaping modern data strategies and driving seamless transitions from SAP platforms to hyperscalers and next-generation cloud analytics ecosystems such as Databricks and Snowflake.

About Tredence Inc.

Tredence is a global data science solutions provider focused on solving the last mile problem in AI. The 'last mile' is the gap between insight creation and value realization. Tredence is a Great Place to Work-Certified and as a 'Leader' in the Forrester Wave:Customer Analytics Services. Tredence is 2500+ employees strong with offices in San Jose, FosterCity, Chicago, London, Toronto, and Bangalore, with the largest companies in retail, CPG, hi-tech, telecom, healthcare, travel, and industrials as clients.

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