DATALINK
DYNAMICS

SAP BROWNFIELD DATA MIGRATION

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PLAYBOOK

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What is SAP Brownfield data migration?

Brownfield data migration is a technical conversion approach where an organization moves from an existing SAP ERP system (typically ECC) to S/4HANA without implementing a new system from scratch.

Unlike Greenfield projects, which start with a clean slate, Brownfield helps companies to retain their existing processes, configurations, and historical data.

Brownfield migration is not just about moving data—it's about translating years of business logic, master data, and transactional history into the new S/4HANA environment with minimal disruption. **The challenge lies in ensuring that legacy data structures and customizations are compatible with the simplified data models of S/4HANA**, especially when dealing with modules like Finance, Logistics, and Industry-specific solutions.

This makes the role of data migration highly strategic, as clean, well-mapped, and validated data becomes essential for a stable go-live and continued operational integrity.

Please note:

Brownfield is strictly for SAP-to-SAP transitions. If you're coming from Oracle, Microsoft Dynamics, SAGE100, or any homegrown ERP system, you're looking at a Greenfield or Selective Data Transition path—not Brownfield.

Key drivers for choosing Brownfield Migration!

When transitioning to SAP S/4HANA, organizations often face the decision between a Greenfield (new implementation) and a Brownfield (system conversion) approach.

While Greenfield supports SAP's long-term vision of a "clean core"—standardized, cloud-ready, and extensible—Brownfield provides a quick route for businesses with significant legacy investments to start using S/4HANA.

Here's why customers may choose Brownfield migration.

1. Preservation of Existing Customizations

Many organizations have built custom developments tailored to unique operational needs. Brownfield migration allows for the retention of these customizations, which may help reduce the need for redevelopment.

2. Retention of Historical Data

Industries with strong regulatory, compliance, or audit requirements often need access to historical transactional or customer data. Brownfield enables the technical carryover of this data without requiring separate archiving or migration processes.

3. Minimized Business Disruption

For organizations that prioritize minimizing operational change, Brownfield offers a way to continue using familiar processes, which can reduce the need for retraining or large-scale process redesign — important in environments where stability is critical.

4. Faster Time-to-Value

By leveraging existing master data structures and processes, a brownfield project may be executed more quickly in some cases, allowing organizations to access new S/4HANA functionalities — such as embedded analytics or Fiori apps — sooner.

5. Cost-Effective Transition

Because Brownfield reuses existing systems and reduces the need for end-to-end business process reengineering, it may offer a cost advantage, particularly in projects with limited budgets or tight timelines.

6. Phased Optimization Strategy

A Brownfield migration offers a tactical advantage: go live quickly with a technical conversion, then optimize individual modules (like Finance, MM, SD, IS-H) gradually. This approach balances quick time-to-market with the flexibility to modernize over time — without overwhelming business teams or IT.

Risks involved in a Brownfield migration

Carrying Forward Technical Debt

One of the biggest risks in Brownfield migration is unintentionally migrating outdated custom code, legacy reports, and redundant configurations. These artifacts often remain untouched for years but can conflict with S/4HANA's simplified architecture, leading to performance bottlenecks and higher maintenance overhead.

Incompatibility with S/4HANA Data Structures

S/4HANA introduces major structural changes—such as the Universal Journal in Finance or Business Partner in Customer/Vendor Management. Legacy data that doesn't align with these new structures can cause inconsistencies, migration errors, and post-load reconciliation issues if not properly transformed and validated.

Missed Opportunity to Redesign Inefficient Processes

Because Brownfield focuses on converting what already exists, it often bypasses rethinking broken or suboptimal business processes. This can result in bringing over inefficiencies into the new system unless a deliberate post-migration optimization strategy is built into the project.

Custom Code Dependencies and Compatibility Risks

Legacy SAP systems tend to accumulate custom code over time—much of which may be undocumented or unused. During migration, changes in system behavior or deprecated functions in S/4HANA can break these customizations. Without a clean-up and impact analysis, these can lead to functional disruptions after go-live.

Underestimating Post-Go-Live Optimization Effort

While Brownfield provides a faster go-live path, it shifts much of the modernization effort to the post-migration phase. Teams often underestimate the time and resources needed to gradually optimize modules like Finance, Logistics, or IS-H, risking user dissatisfaction or limited ROI if optimization is delayed or deprioritized.

Best practices for a Brownfiled migration

A Brownfield migration allows organizations to retain existing data and processes, but to do it right, you need a clear strategy for what data to move, what to optimize, and how to manage historical records. Below are some practical best practices:

1. Clearly Define What Data Will Be Migrated

Master Data:
Customer, vendor, material, employee, and patient master data should be fully migrated, as these form the backbone of all business operations in S/4HANA.

Transaction Data:
Both open and historical transactions (sales orders, billing documents, patient records, etc.) can be migrated. However, this should be filtered based on business need.

Custom Tables & Z-Data:
Relevant custom objects can be moved, but they must be reviewed to ensure compatibility with S/4HANA's simplified architecture.

2. Classify Data Based on Usage and Relevance

Current and Open Transactions:
These should be moved into S/4HANA for seamless continuity.
Examples: Open sales orders, ongoing billing cycles, patient encounters in progress.

Historical and Closed Transactions:
These can be archived instead of migrated directly. Retaining years of inactive data in the live S/4HANA system can lead to performance and cost issues.

2. Use a Tiered Archiving and Reporting Approach

Recent Historical Data (Last 2–3 Years): Store this in an SAP BW/4HANA system integrated with SAP Analytics Cloud (SAC). This setup allows users to run reports, dashboards, and audits easily without loading all historical data into the live S/4HANA system.

Older Historical Data:
Archive older data (beyond 3 years) into long-term, cost-effective storage platforms like:

- SAP Datasphere (for structured data warehousing)
- AWS S3 or similar cloud storage systems

This keeps your S/4HANA system lean while still allowing access to historical data when needed.

Best Practices for a Brown Filed Migration

4. Always Clean and Validate Data Before Moving

Run pre-migration checks to identify data issues, duplicates, and inconsistencies.

Clean the data in the source system or staging layer using tools like SAP BODS or custom scripts.

Validate key master and transaction data post-load to ensure it behaves as expected in S/4HANA.

5. Plan for Post-Migration Optimization

A Brownfield migration is just the starting point. Plan to refactor unnecessary custom code, simplify processes, and shift toward SAP standard functions gradually after go-live.

Data	Brownfield	Greenfield
Master Data	Migrated as is	Cleaned & redefined before load
Open Transactoins	Migrated as is	Only open and relevant transactions loaded
Historical Data	Usually retained in S/4HANA (same DB)	Archived or offloaded to BW/4HANA, Datasphere, or cloud
Custom Table(Z-tables)	Migrated selectively	Reviewed, often excluded unless needed
Data Volume	High-full system including historicals	Lower-only required data is loaded

Tools for Brownfield data migration

SUM-DMO (Software Update Manager with Database Migration Option)

What it does	Key Functions	Use in Brownfield Migration
SUM-DMO is SAP's technical system conversion tool used to upgrade an existing ECC system to S/4HANA in-place, while simultaneously migrating the database (e.g., from AnyDB to HANA) and optionally converting to Unicode — all in one run.	• System Conversion: Upgrades ECC to S/4HANA while preserving all master data, transactional data, and custom code. • Database Migration: Moves the system to SAP HANA (or SAP HANA Cloud) as part of the conversion. • Integrated Checks & Tools: Includes prechecks, consistency checks, and remediation tools to ensure data, code, and process integrity.	• Handles the "full system move" — no need to manually reload master or transactional data; everything moves as part of the system conversion. • Selectively archive or clean data pre-conversion to reduce system size (optional, done outside SUM-DMO). • Requires careful preparation: Run the SAP Readiness Check, custom code analysis, and sizing reports before starting the SUM-DMO process.

ETL Tools (e.g., SAP BODS – BusinessObjects Data Services)

What it does	Key Functions	Use in Brownfield Migration
ETL (Extract, Transform, Load) tools are used to extract data from legacy systems, transform it to meet the requirements of the target system, and then load it into S/4HANA or an external archiving layer.	• Extract: Pull data from various sources — SAP and non-SAP. • Transform: Apply cleansing, formatting, filtering, and validation rules to match the S/4HANA structure. • Load: Push data into a custom staging table, SAP system, or even external targets like SAP BW or AWS S3.	• BODS can be used to archive older data by loading it to a custom table or external storage. • It allows for "as-is" data dumping, especially useful for archiving historical data not needed in the active S/4HANA system. • Custom transformation logic can be applied easily when working with non-standard fields or structures.

Tools for Brownfield data migration

Here's a quick summary outlining the key tools commonly used in Brownfield (system conversion) vs. Greenfield (new implementation) migrations to SAP S/4HANA.

Tool	Brownfield	Greenfield
SUM-DMO	Yes	No
SAP Migration Cockpit	Sometimes used post-conversion	Primary tool for data load
ETL tools	For selective historic data	For full load of selected data into clean S/4
Archiving Targets (BW/4HANA, Datasphere)	Optional	Frequently used for historic data

Best Practices when migrating from a Non-SAP ERP to S/4HANA

When migrating from a non-SAP system to SAP S/4HANA, a key best practice is to focus on migrating only essential data — specifically, current master data (customers, vendors, materials, etc.) and open transactional data (like open orders, invoices, and balances).

Unlike SAP-to-SAP migrations, moving closed or historical data from non-SAP environments into S/4HANA is technically complex and often not supported out of the box. S/4HANA is optimized for lean and simplified data structures, so bringing over bulk legacy data can lead to performance issues and non-compliance with SAP's best practic

A widely recommended approach is to archive historical and closed transactional data — such as completed sales orders, closed financial periods, or legacy patient data — into a data warehousing or archiving layer.

This could include systems like SAP BW/4HANA, SAP Datasphere, or even cloud storage solutions like AWS S3, depending on access and audit requirements. These platforms allow the business to retain historical visibility while keeping the core S/4HANA system clean and efficient.

To support full-scale data movement, third-party tools like SNP (CrystalBridge) and Natuvion offer specialized solutions that help extract, transform, and selectively load data from non-SAP environments into S/4HANA.

How DataLink Dynamics Supports a Seamless Transition to SAP S/4HANA

At DataLink Dynamics, we understand the complexities involved in migrating to SAP S/4HANA. With over two decades of experience, our team has successfully partnered with top SAP implementation experts and delivered complex, high-impact projects across the globe.
We specialize in SAP Data Migration, Data Warehousing, Data Integration, and Data Quality Analysis, offering a comprehensive, end-to-end approach to ensure a seamless transition.

Our proven methodology, refined through real-world experience, guides clients step-by-step, ensuring not only a smooth migration process but also the optimization of business operations. We prioritize a client-centric approach, handling all the intricate details of the migration, allowing your team to focus on innovation and growth.

Whether you're pursuing a greenfield, brownfield, or hybrid migration strategy, DataLink Dynamics is equipped to help you navigate the challenges and unlock the full potential of SAP S/4HANA, setting your business up for long-term success.

Choose DataLink Dynamics for a migration experience that's efficient, reliable, and transformative. Let us handle the technical complexities of Data Migration while you focus on what truly matters—growing your business.