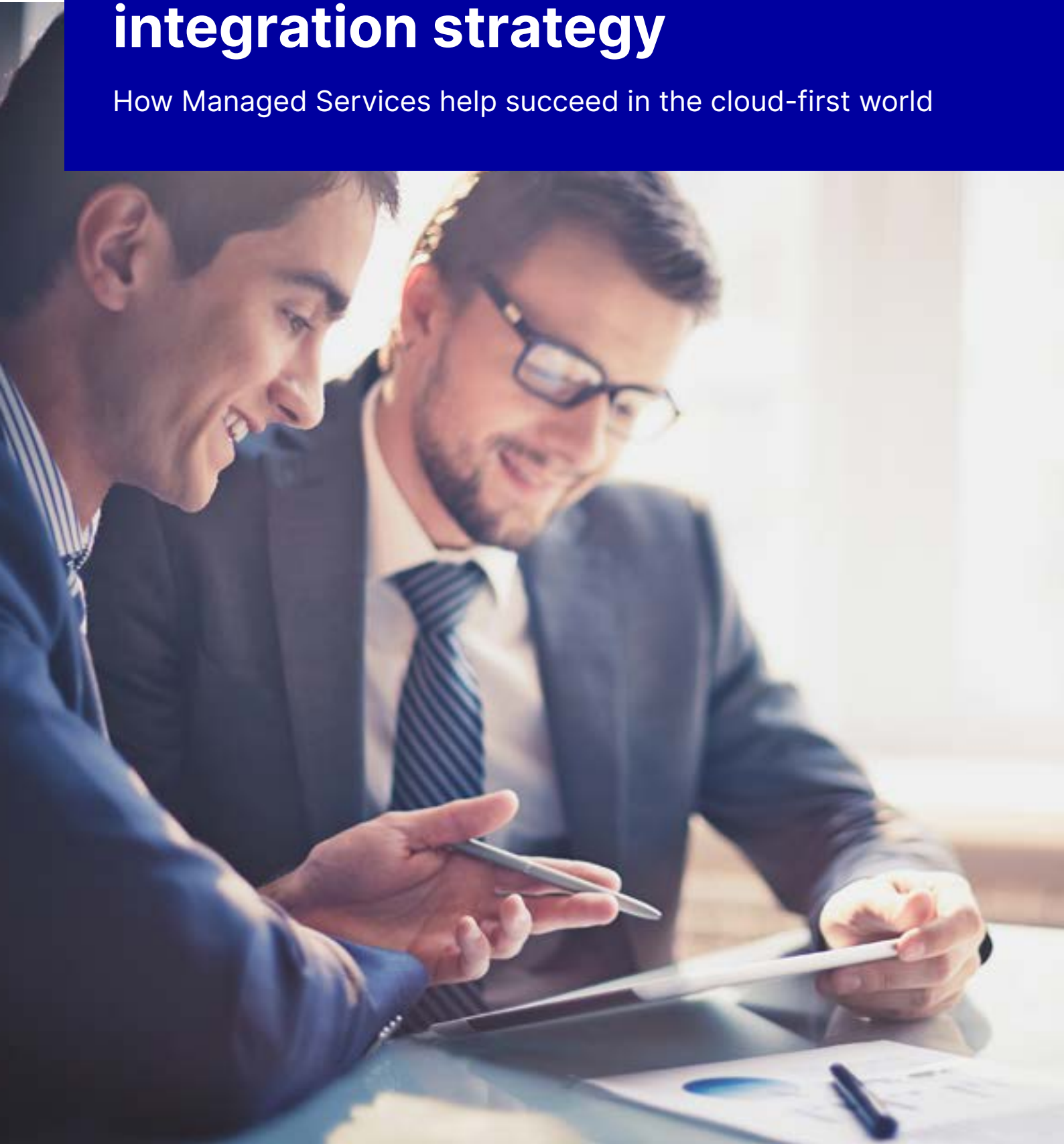


WHITE PAPER

Optimizing your SAP S/4HANA integration strategy

How Managed Services help succeed in the cloud-first world



Contents

Executive summary	3
Introduction—Moving to S/4HANA requires rethinking your integration strategy	4
Key integration requirements for S/4HANA	5
SAP Applications and SAP Cloud Platform	5
3rd party applications	6
Ecosystem integration	7
S/4HANA system migration	8
SAP integration strategy and Managed Services	10
Conclusion	12

OpenText™ offers comprehensive solutions for SAP ecosystem integration. Delivered as a fully managed service, OpenText's solutions include the people, processes and technologies necessary to maintain complex integration programs and align them with the customer's business goals. Partnering with OpenText, companies can build and grow highly efficient integration operations without making additional investments in hardware, software or human resources.

Many enterprises are getting onboard with SAP's biggest update in the ERP market in over two decades. S/4HANA brings many benefits for organizations but reaching the full potential it offers requires a unified integration strategy. Managed Services can play a key part in building the optimal integration landscape.

Executive summary

SAP S/4HANA is the next generation ERP of choice for many organizations, but most SAP customers have not yet made the shift from their legacy SAP environment. While SAP has extended its support for ECC6.0 until the end of 2027¹, the time pressure is not the only driver as many see the benefits of S/4HANA as the key reason for adopting it. Whether driven by new capabilities or the looming deadline, S/4HANA migration is one of the most important IT projects that a large number of organizations will face in the near future.

Transitioning to S/4HANA is not only a major evolution in ERP capabilities², but it also significantly impacts the organization's integration strategy. One of the main benefits of S/4HANA is that it supports real-time business processes, which in the increasingly diverse and open business application landscape would not be viable without robust web API capabilities that are introduced alongside the more traditional connection methods like IDocs. The additional connectivity options enable more flexible integration design and timely integration flows, but they also increase the diversity of skills needed.

To efficiently manage the integration needs for S/4HANA, organizations must adapt the way they handle different kinds of integration scenarios. Based on their general characteristics and relative complexity, these integration requirements can be broadly grouped into three categories: SAP applications, 3rd party applications, and external systems. The native integration capabilities provided by SAP make connecting S/4HANA with other SAP applications and some of the more common 3rd party applications relatively straightforward. On the other hand, integrations that need more advanced data transformation or complex data processing as part of the integration workflow require not only capable integration technology, but also the right skills and well-governed processes for integration development and support. External systems add another layer of complexity to the mix.

The S/4HANA migration project itself can be a major challenge for organizations. The cost and business impact of the migration depend on the deployment approach that is chosen. This also affects the amount of work involved in migrating existing integrations from the legacy ERP environment to S/4HANA. Due to the large number of integrations that need to be redeployed or rebuilt, the migration creates an opportunity for re-evaluating the organization's information management and integration strategy, as it can greatly improve the business case for broader integration solution consolidation and modernization.

¹ SAP Extends Its Innovation Commitment for SAP S/4HANA, Provides Clarity and Choice on SAP Business Suite 7. SAP News, 2020

² SAP Customers: Why Should You Migrate to S/4HANA? Scalefocus / Myashkova N, 2019



Revamping the organization's integration strategy can deliver benefits far beyond the ERP project through improving efficiency and enabling future digital transformation initiatives. An efficient strategy systematically leverages an optimal approach for each integration project based on its complexity, thereby ensuring availability and efficient utilization of the right skills, technologies, and processes.

Managed services can play a significant role in extending the organization's own Information Technology (IT) team in an effective, well-coordinated and cost-efficient way by providing on-demand access to integration experts that follow best practices and leverage unified integration technology.

Introduction—Moving to S/4HANA requires rethinking your integration strategy

Cloud computing has become a default option in the enterprise system landscape, and its share of IT budgets continues to grow rapidly. A key reason for this is that organizations embracing cloud-based operating models benefit from cost optimization and increased competitiveness.³ In addition to finding ways to optimize costs, organizations that succeed in cloud adoption also actively manage vendor lock-in by leveraging a multicloud approach, secure availability of the right skills, and leverage the expanded service availability enabled by cloud technologies to their advantage.⁴

For many organizations, one of the biggest projects in their journey towards the cloud is moving from their legacy ERP environment(s) to SAP S/4HANA – SAP's next generation ERP solution. While S/4HANA enables the customer to choose between on-premises, cloud, or hybrid deployment options, SAP generally encourages the full cloud deployment particularly for new implementations.⁵

Due to the number of changes at the technical layer of S/4HANA compared to its predecessors, many consider the migration to S/4HANA to be a great opportunity for organizations to reconsider their existing enterprise architecture choices more broadly and reduce complexity by giving up on customizations that have been built in their legacy SAP environments.⁶ Organizations seizing this opportunity will be able to take full advantage of everything that S/4HANA has to offer, but building everything from scratch will have a major impact on costs.

Whether a complete re-engineering of the ERP or a more incremental performance upgrade, the S/4HANA migration forces enterprises to rethink their integration strategy. The key benefit of S/4HANA over SAP's previous generation ERP systems is its support for real-time processes. However, despite its extensive capabilities S/4HANA requires connectivity to a large variety of both internal and external systems, which means that the main advantage it provides remains limited if the organization's integration capabilities do not optimally support the varied and timely data exchange requirements.

In this white paper we examine some of the key topics that enterprise integration leaders should consider when planning for their S/4HANA migration and the accompanying integration strategy.

³ Cloud Shift Impacts All IT Markets. Gartner, 2019

⁴ 4 Trends Impacting Cloud Adoption in 2020. Gartner, 2020

⁵ SAP S/4HANA Cloud and On-Premise Deployment Options. SAP Community / Hoque A, 2019

⁶ SAP S/4HANA app migration: Lessons from the trenches. TechBeacon / Mello JP, 2020

Key integration requirements for S/4HANA

Like any other ERP solution, S/4HANA needs to connect with a number of application and systems to enable efficient and timely data synchronization and business process automation. To identify the optimal strategy for developing and operating these integrations, it helps to categorize the various applications and systems into groups with similar characteristics. A basic categorization used here looks at three key groups of integration endpoints: 1) SAP applications, 2) 3rd party applications, and 3) the external ecosystem.



Integration requirements for SAP S/4HANA can be segmented in different ways. One approach is to group these based on the characteristics of the connected applications into three distinct groups: SAP applications, 3rd party applications, and external systems.

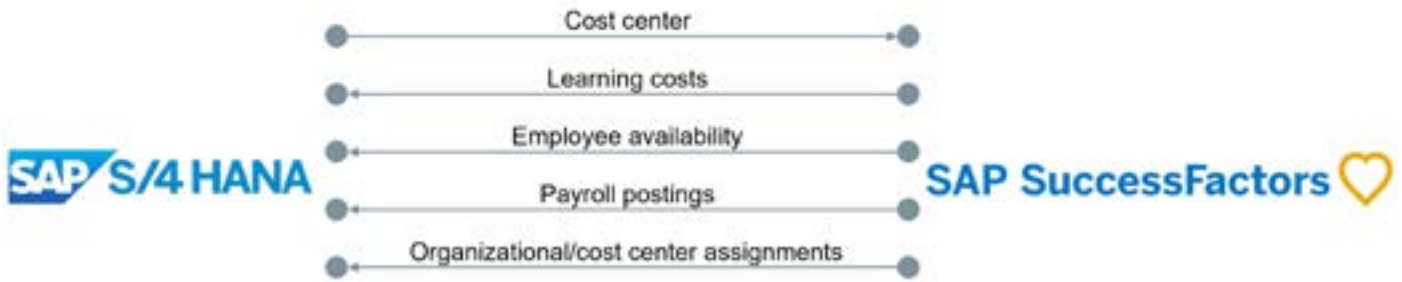
SAP Applications and SAP Cloud Platform

Like most other ERP vendors, SAP has a long history in striving for interoperability of its ERP suite and the other business applications it provides. The goal is to maximize SAP's share of the customer's application portfolio, so it is important that they make it as easy as possible to use all the different SAP applications together. In the past, this strive for interoperability has made integration tools like SAP PI/PO very familiar for most SAP clients.

With S/4HANA, the focus around interoperability shifts to the cloud, and with it to SAP CPI (Cloud Platform Integration), which offers native integration between S/4HANA and the various SAP cloud applications like Concur, Fieldglass, Ariba, and others. While specialist integration work is still needed as no two integrations are exactly the same due to differing system setups and customizations, the native "integration packages" offered by SAP CPI make it the logical choice for SAP-to-SAP application integration. The same applies for connecting older, on-premises SAP systems like SAP Central Finance or SAP BPC with S/4HANA, although things can get a bit more complex in these integration scenarios.

While SAP CPI is likely to be the logical choice for integrating SAP applications with one another, it is not the only one. Thanks to the well-documented web APIs that are available via the SAP API Business Hub⁷, the SAP cloud applications can be integrated using any integration technology that supports API integrations.

⁷ SAP API Business Hub



S/4HANA can be integrated with other SAP cloud applications like SAP SuccessFactors to automate business processes involving different kinds of data flows.

SAP integration expertise

OpenText has offered SAP® integration expertise through managed services since 2001.

- Direct connections to hundreds of SAP production instances
- More than 100 analysts and mappers with hands-on SAP IDoc and SAP API experience
- More than 20,000 maps in production for SAP
- Numerous connectivity options to enable optimal solution design

OpenText™ Trading Grid™ has been Certified for SAP NetWeaver®, so organizations can be assured of the quality and ongoing compatibility of OpenText and SAP services. OpenText is also a preferred provider of B2B integration services to SAP’s customers, and the preferred provider of all non-SAP system integrations for SAP Ariba. In addition, OpenText supports comprehensive SAP ecosystem integrations including, but not limited to, connecting SAP Concur, SAP Fieldglass, SAP SuccessFactors, and SAP Hybris. OpenText is a long-standing partner of SAP and receiver of 2020 SAP Pinnacle Award.

3rd party applications

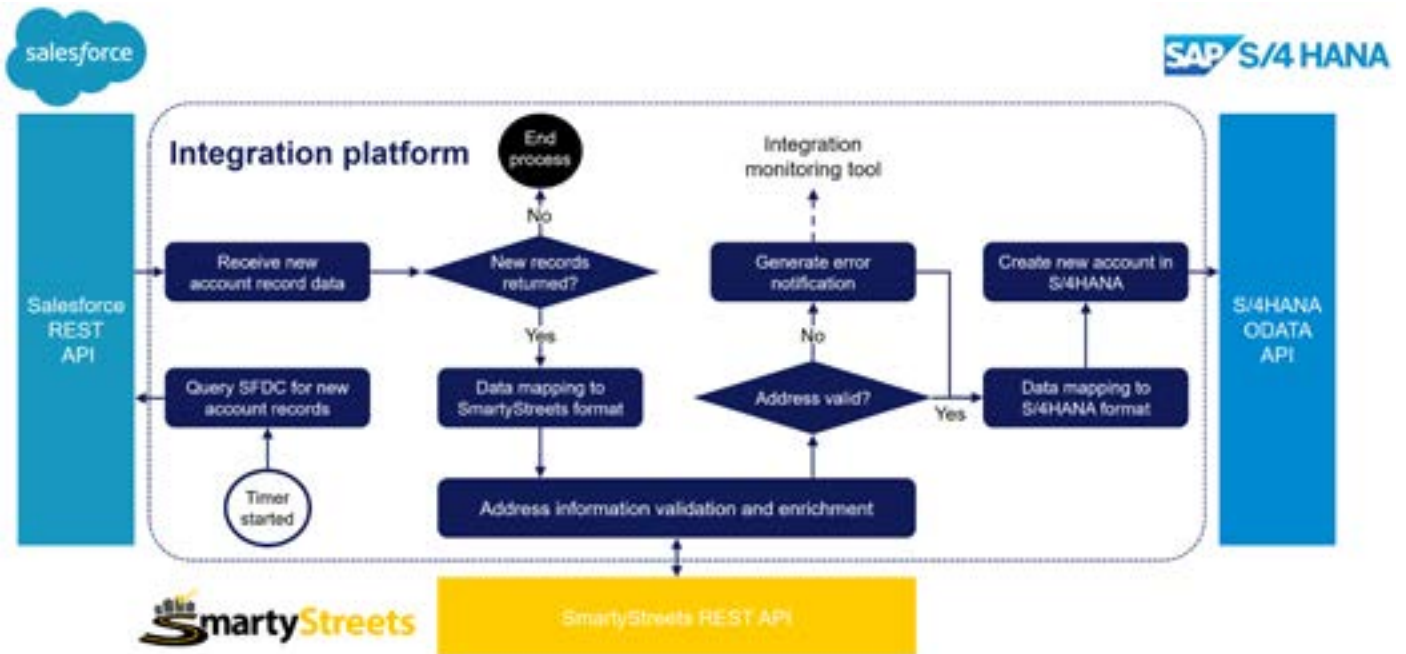
When moving beyond the SAP application portfolio, things start to become more complex. Like other SAP cloud applications, S/4HANA provides web APIs and other connectivity options for different kinds of integration use cases, but it is the other integration endpoint that may prove challenging to deal with. There are two key dimensions that affect the integration design: 1) type of integration endpoint (cloud or on-premises), and 2) complexity of data processing.

These two dimensions are often interrelated, since integrating S/4HANA with on-premises applications is likely to involve more complexity than integrations with cloud applications due to firewall configuration requirements and more limited connectivity options, among other things. Particularly older on-premises applications may have very limited capabilities for extracting data from them. These integration workflows may require, for example, extracting a large batch of data from the on-premises application, processing the data to identify relevant data values, and converting the results into individual API calls to S/4HANA to achieve the desired functionality.

Complexity is not limited to on-premises systems, as cloud integrations may also involve complex data processing. Transforming integration payload data from one format to another requires specialist skills, which are particularly important when the data model of the non-SAP application differs greatly from the data model used in S/4HANA. Pre-configured integration packages are available in SAP CPI and other integration platforms for the more common integration scenarios but, unlike with SAP-to-SAP integrations, the coverage is limited. Dealing with the diversity of the 3rd party applications efficiently often requires advanced expertise.

Integration flows may also require, or benefit from, data processing that goes beyond performing data transformations. Validating, standardizing, or even enriching the integration payload data can add tremendous value in forms of increased process automation and better data quality. However, these kinds of integration orchestrations do not usually come pre-packaged and are not easy to deploy and maintain without careful design and robust development and support processes.

When deciding on the right strategy for integrating S/4HANA with 3rd party applications, organizations should consider the required skills, technical capabilities, integration project lead time expectations, and best practices for managing the integration operations including support as part of the enterprise architecture. Due to the diversity that 3rd party applications introduce, these aspects may all look different to what is required for the native SAP-to-SAP integrations.

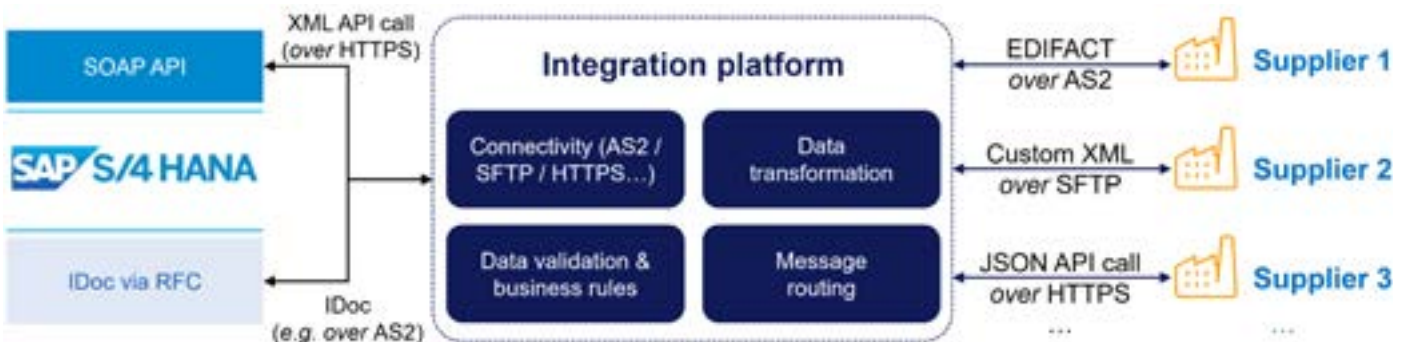


Integration flows can involve advanced data processing and data validations to increase the level of process automation and improve data quality. This illustration depicts how an external address validation service can be used as part of an integration workflow to check the address information of a new account record before it is created in S/4HANA using Salesforce integration.

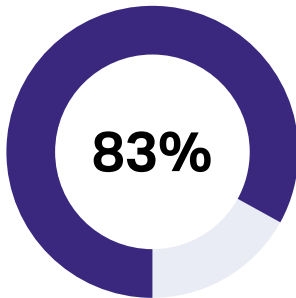
Ecosystem integration

Managing the diversity involved in connecting the organization's own application landscape can be challenging, but that challenge grows significantly when the other integration endpoint is not under its own control. The most important external ecosystem integrations for S/4HANA are those with suppliers, customers, and banks.

Integrating suppliers and customers to S/4HANA can follow the traditional B2B integration design using SAP IDoc messages, but the system also offers ODATA and SOAP APIs for interacting with business documents such as purchase orders, order confirmations, invoices, and so on. Choosing the best connectivity option for each use case depends on the more detailed integration requirements and having the expertise to identify and understand these in the first place.



S/4HANA enables the exchange of business documents with trading partners using either the traditional IDoc based integration or directly via APIs.



83% of SAP customers had not deployed S/4HANA by early 2020⁸

In case of the existing connections that are migrated from the legacy SAP environment to S/4HANA, it may make sense to continue leveraging IDocs and the existing data mappings, since this is likely to save a lot of time and effort, particularly if the IDoc layout does not change drastically in connection with the migration. However, this should not distract the organization from choosing a deployment strategy for S/4HANA that is most suitable for their situation and allows leveraging its capabilities in an optimal way.

As with business documents related to the supply chain, both APIs and IDoc messages can be used for bank integrations to exchange, for example, payment instructions and bank statements between S/4HANA and bank systems. And, as with other B2B scenarios, bank integrations also require specialist integration skills for efficiently dealing with the diversity involved, whether this includes using standards like SWIFT or EBICS, or a more customized approach.

One of the key challenges in developing and maintaining integrations between S/4HANA and external systems is that it involves communication with the external system owners to understand data models and semantics, and adapting to any changes that may be made to them over time. In its simplest form this can mean studying a well-documented API via a developer portal, whereas the more complicated cases may require constant attempts of reaching out to an unresponsive 3rd party system provider used by the trading partner in order to resolve data errors that repeat in the business documents that are exchanged.

The way the different types of ecosystem integrations are designed, managed, and monitored can have a big impact not only on cost-efficiency, but also on customer satisfaction and operations more broadly. As the “heart” of an organization’s business operations, S/4HANA and the way it is integrated with the organization’s ecosystem plays a key role in achieving operational efficiency and other business goals.

S/4HANA system migration

According to a 2020 survey, 17% of SAP customers were live with S/4HANA, whereas 68.5% were either in the process of migrating or planning for a migration. The remaining 14.5% did not yet have a plan.⁸ The migration itself can be a big challenge for organizations, as they need to balance multiple factors when making choices on their preferred approach.

Approach	Suitable for	Purpose
Brownfield (System conversion)	SAP ECC system > S/4HANA • On-premises	Bringing existing business processes to the new platform • Complete technical in-place conversion of an existing SAP ECC system to S/4HANA • Adoption of new innovations mostly after migration
Greenfield (New implementation)	SAP ECC or 3 rd party system(s) > S/4HANA • On-premises • Cloud	New implementation with updated processes • Re-engineering and simplification of processes • Model company and best practices to support process design • Selective data migration from the old system(s)
Hybrid (Selective transition)	SAP ECC or 3 rd party system(s) > S/4HANA • On-premises • Cloud, extended edition	Value-driven migration to the new platform • Merging and/or splitting existing ECC instances • Selective migration of configurations • Selective data migration from the old system(s)

Companies have three alternative approaches they can take when migrating to S/4HANA from their old ERP system. These include ‘greenfield’, ‘brownfield’ and ‘hybrid’ deployment options.

⁸ SAP S/4HANA Migration Benchmark Report. SAPinsider / Owen P, 2020

“Organizations can save around \$500,000 over 3 years by archiving a terabyte of data instead of migrating it to S/4HANA”⁹

On top of questions around process design, best practices and data migration, the diverse integration requirements involved mean that moving to S/4HANA from an old ERP system causes a need to rebuild or migrate a large number of existing integration flows. The difference between rebuilding and migrating may be defined by the approach that the organization chooses to take with their S/4HANA migration project. Organizations have three alternative deployment approaches that they can choose from: 1) ‘greenfield’, 2) ‘brownfield’, and 3) ‘hybrid’. Each of these approaches come with their own pros and cons.

In the greenfield approach, also referred to as a new implementation, the organization chooses to build their new S/4HANA environment from scratch. This is a great option particularly if the existing processes are no longer serving the business in an optimal way and a major overhaul is needed. It may also be easier than trying to replicate complex legacy system setup with custom coding and configurations. The downside is that the initial cost will likely be significantly higher than in the other approaches since all the processes—as well as the integrations—need to be redesigned and rebuilt from the ground up.

The brownfield approach, also called system conversion, takes the existing processes and data from the legacy ERP environment, and migrates them into S/4HANA. The cost of the migration is likely to be significantly lower than with the greenfield approach, while some incremental improvements can be made if processes need updating or minor improvements. The performance benefits of S/4HANA will still be realized, and new user experiences can be built with SAP Fiori going forward. In terms of integrations, whereas some integration flows may need to be rebuilt completely, the odds are that many existing data mappings can be leveraged making integration development less costly.

The downside of the brownfield approach is that the processes, as defined in the legacy ERP environment, may not take full advantage of all the capabilities that S/4HANA offers and development work continues after the migration. The migration effort is also likely to require a coordinated enterprise-wide push as opposed to a more phased approach that a greenfield deployment enables.

The hybrid approach, as the name suggests, takes elements from both greenfield and brownfield approaches to perform a selective data transition. Existing process configurations are replicated in S/4HANA, but the configuration is initially kept separate from the data. The existing processes act as a template that is reviewed and modified as needed to better meet the organization’s business requirements going forward. Once the configuration of the new S/4HANA environment is done, relevant data is transformed and migrated from the legacy ERP environment to the new, after which the new environment is tested and deployed to production. The amount of work involved in the hybrid approach depends on how many alterations are made, but ideally it results in optimized processes with maximal reuse of existing configurations and minimal transformation requirements for the existing data.

One of the key elements in deploying S/4HANA that requires special consideration is the data migration. The volume of migrated data has a significant impact on costs, and according to some estimates companies can save around \$500,000 over 3-years by archiving a terabyte of data instead of migrating it to S/4HANA.⁹ This means that identifying and migrating only that data which is really needed is key for cost-efficient migration, whereas continued access and potential compliance requirements for historical data should generally be managed by using an archiving solution.

⁹ Digital isn’t optional anymore: Accelerate your move to SAP S/4HANA and rapidly digitize processes with Extended ECM. OpenText / SAP, 2020

“One in five organizations say they use 10 or more integration tools across their operations, yet only 52% of integration projects are completed successfully”¹¹

The best approach to migrating from the legacy ERP environment to S/4HANA for each organization depends on their particular circumstances. These include, for example: what ERP(s) the organization is currently using; how well it supports their current business requirements; what other systems are integrated with it; how much of the existing data needs to be migrated; and how much the functionality and integration requirements are likely to change in the foreseeable future. There are plenty of materials—such as SAP best practices and SAP model company examples¹⁰—available from SAP as well as other sources to help organizations evaluate what is the optimal S/4HANA deployment option for their situation.

SAP integration strategy and Managed Services

Regardless of the approach taken, the S/4HANA migration is likely to be one of the biggest IT projects that an organization faces at any given time. It often involves extensive use of consultants, as well as acquiring new solutions for integration, data transformation and information archiving, and may even spark broader application modernization initiatives. A project of this magnitude also creates a need for organizations to rethink the way they approach integrations not only in connection with the migration, but also on an ongoing basis going forward.

As discussed above, S/4HANA presents various kinds of integration requirements for the enterprise IT team, which can be segmented in different ways including characteristics such as integration endpoint and data types, and the complexity of data processing. Since the migration forces the organization to redeploy—and in many cases rebuild—these integrations, this is a great opportunity to also rethink the broader integration strategy and consolidate and modernize the different integration technologies that have been used for integrating the old system.

Many organizations operate a mix of ageing integration platforms and point-to-point connections that are difficult and expensive to maintain and may even pose risks for business continuity. One in five organizations say they use 10 or more integration tools across their operations, yet only 52% of integration projects are completed successfully.¹¹ However, the business case for replacing these integrations and modernizing the legacy solutions under normal circumstances may be difficult to argue, since most of the time they still eventually get the job done in one way or another. The sheer scale of an S/4HANA migration is likely to have a significant impact on the realities of this business case, creating an opportunity for integration modernization that benefits the organization far beyond the scope of the ERP project.

Due to the native SAP-to-SAP integration capabilities it provides, SAP CPI is likely to be a key part of the go-forward solution landscape used for integrating S/4HANA, and the tool provides capabilities for various other kinds of integration use cases as well. It therefore makes sense to consolidate the integration team's efforts on this platform wherever possible, while realizing that there may still be a need for operating an on-premises ESB platform for years to come to manage critical integrations behind the firewall.

While modernizing and consolidating integration technologies is important, it is only a part of the solution. Efficient integration operations also require skilled integration experts and well-defined integration development, monitoring and support processes to be successful. The more complex and time-consuming the integration flow development is, the more benefits a systematic approach delivers. Yet, building these capabilities takes significant amounts of time, effort and investment, and the organization needs to choose where its priorities and core competencies lie.

¹⁰What is the difference between SAP Best Practices and an SAP Model Company? SAP Community / Hoque A, 2019

¹¹Leveraging Data Integration for Strategic Advantage Survey. IDG, 2019

An efficient way to secure availability of skilled integration experts when they are needed—and ensure that they adhere to standardized processes and best practices—is to use a managed services provider to handle parts of the organization's integration operations. In addition to providing the required talent and structure, managed services also provide high cost-efficiency, often leading to significantly lower total cost of ownership of the integration operations.¹²

Leveraging a managed services provider for integrations requires close collaboration between the service provider and the organization's own integration team, which calls for a well-defined governance model that clarifies the roles and responsibilities involved. Ideally, the service provider acts as an extension of the organization's IT team and helps manage requirements and prioritize projects. In case of S/4HANA, there are plenty of both simple and complex integrations that need to be developed and supported, and embedding a managed service partner as part of the operating model for enterprise integration can help manage these in an efficient and flexible way.



¹²Understanding the Total Cost of Ownership of Enterprise Integration Solutions. Hobson / OpenText, 2020

Conclusion

Enterprise integration as a discipline is undergoing a drastic change that is driven by several competing change vectors: On one hand, enterprise business processes are getting more complex and the need for dynamic process automation is increasing. Integration endpoints and data types that organizations need to connect are also becoming increasingly diverse. On the other hand, integration needs are moving to the cloud and becoming API-driven, with integration technologies evolving and providing features such as API connectors and integration packages that greatly simplify the more common integration scenarios. Cloud-based platforms also remove many of the traditional IT operations tasks from the equation, leaving more time for the IT team to focus on other priorities.

Due to its central role in the enterprise IT landscape, the ERP system sits at the very center of these developments. Therefore, transitioning from a legacy ERP environment to S/4HANA is not only an opportunity to modernize the organization's ERP capabilities, but also acts as a catalyst for modernizing its entire integration strategy. This strategy needs to respond to the changing requirements by efficiently enabling both low skill integration tasks and the more complex integration use cases that require expertise and a highly structured approach.

Integrating S/4HANA requires connecting various different kinds of systems which can roughly be divided into three categories: SAP applications, 3rd party applications, and external systems. With SAP applications, the native integration capabilities of the SAP CPI integration tool make integration development relatively straightforward. The same applies to some of the more commonly used 3rd party applications where the integration flows only involve simple data processing.

However, the diversity of 3rd party applications and an increased need for complex data processing to enable higher levels of process automation often require specialist integration skills, as well as robust processes for integration development and support. Diversity is an even greater challenge when integrating external systems that are not under the organization's own control, but instead configured and updated by external system owners.

Efficiently managing all of these integration requirements calls for consolidating and modernizing the enterprise integration solution portfolio and allocating integration projects based on their complexity and other defining characteristics. This ensures availability and optimal utilization of skills, technologies, and processes that are the best fit for each situation. Extending the organization's own IT team with managed services can play a significant part in achieving this goal.

➔ [OpenText integration solutions](#)

➔ [Other OpenText solutions for SAP](#)

🗨️ [Customer success story](#)

OpenText Managed Services can help organization's shield their business from SAP, 3rd party, and extended ecosystem complexity, allowing them to focus on more productive activities relating to their core business. Managed Services delivers a repeatable, proven people-process-technology solution to extend the capabilities of internal business functions and optimize integration solution performance for business growth. Managed Services leverages OpenText™ Trading Grid™, a powerful cloud integration platform to support any integration workflows while providing visibility and intelligence across the connected business processes.

Trading Grid integration capabilities for SAP S/4HANA



About OpenText

OpenText, The Information Company, enables organizations to gain insight through market leading information management solutions, on-premises or in the cloud. For more information about OpenText (NASDAQ: OTEX, TSX: OTEX) visit: opentext.com.

Connect with us:

- [OpenText CEO Mark Barrenechea's blog](#)
- [Twitter](#) | [LinkedIn](#)