

PwC & LeanIX Study 2018 – The state of SAP S/4HANA Transformation

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INTRODUCTION

According to SAP, SAP S/4HANA Enterprise Management represents the most significant innovation in the SAP application spectrum since SAP R/3 in 1992. Based on the in-memory SAP HANA database technology, the latest SAP business suite software is expected to provide customers with increased access to real-time data, improved integration with edge applications in the cloud and exciting new possibilities to incorporate the latest use cases in areas such as IoT and machine learning. Because SAP support for the current ECC platform, as well as for 3rd party databases, is planned to be stopped by 2025, the move to S/4HANA is largely seen by customers as an inevitable upgrade, where the decision is only when and with what approach will they make the move. Cloud or on-premise? Greenfield or brownfield? How to keep productive systems running? These are just a few of the questions that migration teams will face on the challenging path of system conversion.

It thus comes as no surprise that SAP S/4HANA transformation is one of the hottest items on the business and technology agendas of PwC and LeanIX customers in 2018. In an effort to illuminate the current state of this topic, we have conducted a joint study, collecting results from IT leaders across a variety of industries. We are happy to share the results with you in this paper and hope that they provide some guidance and orientation for this highly complex undertaking. Clear is this: SAP S/4HANA transformation is a key pillar of many companies' current digital transformation planning. Seeing this as much more than a pure technical update, companies are taking advantage



of the opportunity to combine the system conversion with business process improvement and overall modernization of their solution architecture.

I) STUDY OVERVIEW

A total of 134 respondents replied to our online survey. We expanded the survey beyond our joint PwC and LeanIX customer base, contacting additional survey participants via email and LinkedIn. The focus was on IT management roles, including primarily Enterprise and IT Architects, IT Project Managers and C-level IT leadership.

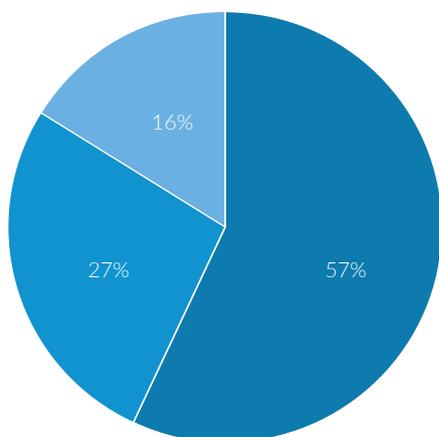
The study was conducted across a broad range of industries and geographies. The largest participation

came from the 'Retail & Consumer', 'Technology' and 'Financial' sectors. From a regional standpoint, companies headquartered in Europe, US, South America, and Asia Pacific participated, with Europe and the US representing the largest groups respectively.

Around one-quarter of surveyed companies are major enterprises, defined as having revenues of over 20bn. Around half of the companies (48%), fall within the range of >€1bn to €20bn. Smaller companies, with less than 1bn EUR revenue, make up the remaining quarter. This representation of company sizes is similarly mirrored in the size of the surveyed SAP installations. Almost half of studied companies (49%) have more than 2,500 named users, which is typical of larger SMEs and enterprise environments. The other half (51%) is made up of SAP installations with less than 1000 users, as expected for SMEs.

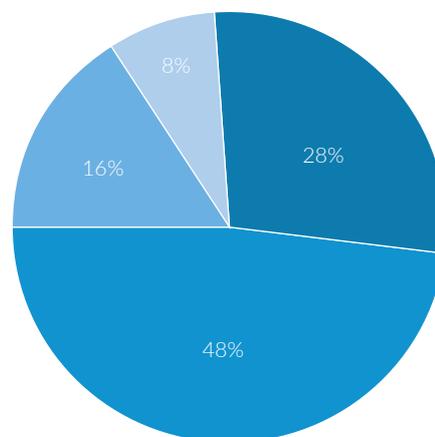
Job roles

- Enterprise / IT Architect
- CIO / CTO
- Other IT Management



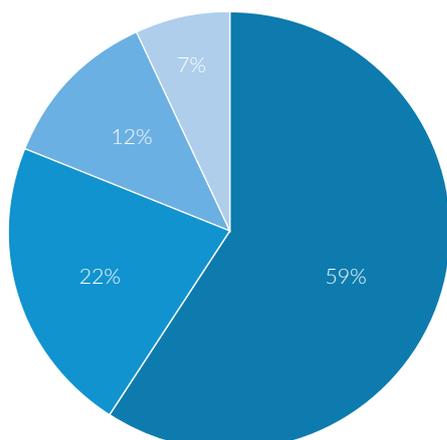
Company revenues (in EUR)

- € 20,000+ m
- € 1,000 - 20,000 m
- € 100 - 1,000 m
- € <100 m



Region company headquarters

- Europe
- United States
- South America
- Asia Pacific



Industries

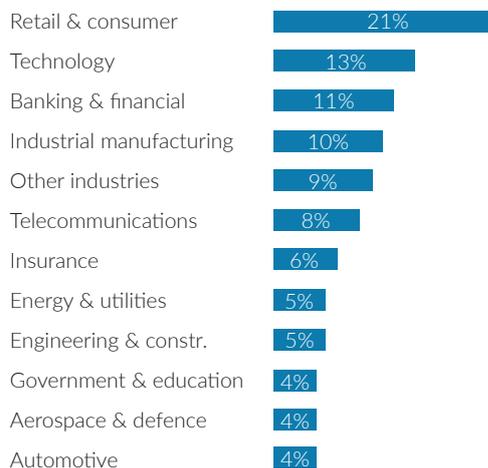


Figure 1: Study overview: job roles, company revenue, company headquarters & industries.



II) DRIVERS AND TIMELINE

A forced migration or the key to the digital future?

SAP has announced to end mainstream support for the central SAP ERP Central Component (ECC) by the end of 2025. While some might view this as a forced migration where customer requirements or preferences were not considered, our study indicates the majority of customers (80%) do not find this to be the case, or at least do not consider it a significant driver in their transformation decision.

The study participants indicate instead that the S/4HANA migration decision is a critical aspect of their broader business and technology efforts, with 65% of participants indicating that SAP is vital for their digital transformation strategy. This implies an interesting point: customers no longer view SAP as merely a system of record, but as an integral piece in the overall digital strategy. Digital transformation forces companies to redefine how they interact with customers, and therefore to adopt the SAP landscape with the increased needs of a digital business. Study participants name the support of innovative business models as one of the top three drivers of the S/4HANA transformation. This describes a shift where the ERP system is no longer playing only a supportive role for business processes, but rather is actively contributing to the strategic direction and driving innovation. Customers view S/4HANA as being the platform from which innovative topics such as predictive maintenance, IoT and advanced business analytics can be delivered.

The importance that SAP plays in a company's digital transformation strategy seems to correlate directly with the size of its SAP landscape. Survey respondents with larger SAP installations (>1000 active users) consider S/4HANA more important than those in organizations with smaller SAP installations. As one possible explanation for this, SMEs tend to use SAP primarily for finance and controlling processes and rely on other solutions to implement use cases, such as Industry 4.0. In contrast, large enterprises typically use SAP for a broader business purposes and processes, including those that are highly relevant for digital transformation.

The improvement of business processes was identified as a key driver for S/4HANA transformation by 65% of study participants. Complexity in business, e.g., large numbers of product options or process exceptions, regularly translates into complexity in the SAP landscape. In this way, ERP complexity has increased dramatically over the years for many companies, frequently resulting in a difficult to manage number of interfaces, large amounts of custom code and higher error rates. In some cases, the business has changed, e.g., through the acquisition of a company or other major changes to the business, while the ERP has not kept up. As a result, the ERP has become a limiting factor for some businesses, rather than an enabler. For these reasons, the large majority of studied companies combine the technical S/4HANA upgrade with a renovation of their SAP and business process landscapes, which often has been neglected over the past years, as many project teams were hesitant to touch the SAP core. The modernization of the ERP landscape is an important driver for S/4HANA transformation for 55% of study participants.

It is interesting to note that 'real-time data enablement' is not amongst the top three reasons to drive the transformation, despite it being the original rationale of S/4HANA. Companies seem still to be busy with the basics, i.e., renovating the core.

Timing is everything

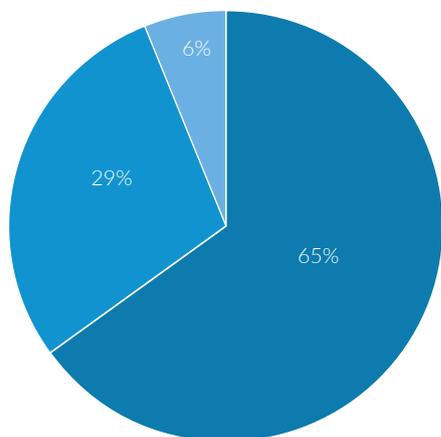
A fifth of surveyed companies have already conducted the migration to S/4HANA. Roughly another fifth are currently not considering the migration by 2025. This would mean that by 2020 almost 70% of surveyed companies will have migrated - if the plans work out.

Such relatively short timelines - completing migration within the next 2 years - are somewhat surprising, and our expectation is that reality for most companies might prove to be different. Experience shows that implementation is challenging and that projects take significant time to get started, e.g., to get business alignment, stakeholder engagement and required budget allocation. Furthermore, best practice recommendations for the migration typically involve significant time-consuming up-front preparation work, such as cleaning up master data and archiving unnecessary data. The study results are nonetheless a good sign that companies are prepared to already start those efforts and prioritize the move to S/4HANA.

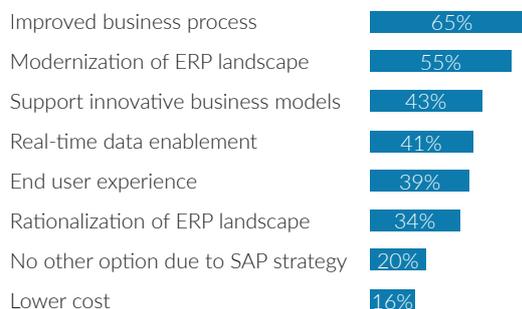


SAP importance for digital transformation - all

- Very important
- Rather important
- Not important

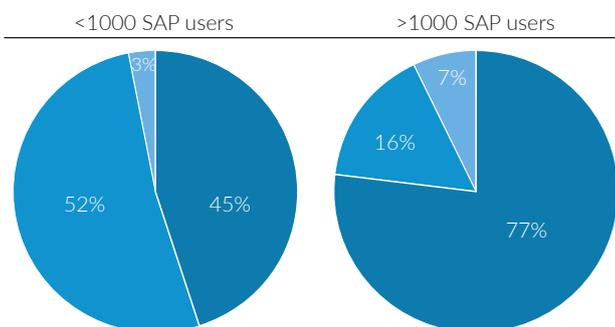


Key drivers of SAP S/4HANA transformation



SAP importance for digital transformation - by size

- Very important
- Rather important
- Not important



Migration date to SAP S/4HANA

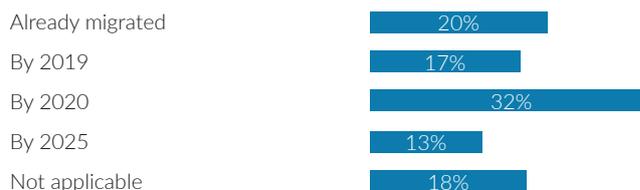


Figure 2: Drivers for S/4HANA migration and planned timelines.

III) CHALLENGES

It is apparent across all industries that the S/4HANA transformation presents a challenging undertaking. Amongst the most common challenges named in our study were complex legacy landscapes, high customization and unclean master data.

Complexity of the legacy landscape

Many surveyed companies expect S/4HANA to facilitate process improvement and reduce the overall complexity of their SAP environments. The complexity makes changes challenging and migrations

difficult. Migration teams need to consider a lot of dependencies: country-specific configuration, custom modules, interface dependencies, manual workflows, and many more complexities. On the other hand, many surveyed companies have in the past pushed hard to reach a global, cross-business unit standardization. Partly they have overshot the mark and ignored different business models, e.g. across business units, leading to a different set of challenges.



High customization

Over the years, companies have heavily invested into custom ABAP developments. This custom code poses challenges when converting the classic SAP ERP system to S/4HANA, as the code needs to be adapted to work with S/4HANA. In the past, these custom developments were less of an issue, as SAP ensured the compatibility of all new releases. With S/4HANA, where whole database tables have been removed, a lot of the legacy code will not be compatible anymore. Customers must now first identify and then adapt the custom ABAP code objects to avoid syntax errors and unexpected results.

Unclean master data

ERP projects are challenging and have high failure rates. Poor data and poor master data management are often important reasons for the failure of ERP projects. Master data plays a role across a number of critical business areas, including marketing and sales, supply chain management, monthly reporting and business intelligence. Especially for a brownfield approach, where the system is converted, poor data quality poses challenges, and companies are advised to clean-up the quality first. Furthermore, additional cost benefits can be achieved on the S/4 HANA platform by first archiving data according to defined standards.

Challenges



Figure 3: The key challenges around the SAP S/4HANA migration.

IV) SOLUTION ARCHITECTURE, METHODS & TOOLS

Greenfield, Brownfield and anything between

At a high level, Enterprise Architects distinguish largely between two options to approach the S/4HANA transition: starting from a clean slate, the greenfield approach, or upgrading the existing ECC 6.0, in a brownfield approach. A full greenfield approach is rare amongst studied companies - only 14% have decided for this route. The majority plan to use a brownfield approach (44%) or a selective greenfield, i.e. mixing both approaches (42%). It could be expected that few surveyed companies plan to take a pure greenfield approach. Our study results show that companies frequently deal with SAP legacy landscapes that are over ten years old (60% of studied companies). Many have invested heavily in customizing their SAP landscape - investments that many are potentially hesitant to write off in order to radically rebuild the SAP environment.

The main advantage of brownfield is generally a shorter project runtime, and thus less disruption of business activities, as companies stay closer to the current way of working. A brownfield approach allows the migration to S/4HANA without a new implementation and disruption of existing processes building on existing elements of the SAP landscape, such as interfaces to suppliers and partners. It offers the opportunity for a step-wise transformation, allowing them to secure existing customization and ongoing improvements – often there are dozens, if not hundreds, of integrations that need consideration. Still, a brownfield migration is complex and requires very good master data quality and high initial transparency on the application landscape.

In contrast, the key advantage of a greenfield migration is that the transformation starts with a new system and therefore provides the flexibility to drive topics such as standardization and simplification in addition to the migration itself. Furthermore, another possibility is to blend in a greenfield and selectively start with a clean slate in some areas in order to take the opportunity to simplify processes, integrations and custom code – this approach is known as “Selective Greenfield”.



Regardless of the options being considered or the type of organization, it is acknowledged that Enterprise Architects must be key advisors in decisions about the migration approach. Companies should look to their Enterprise Architecture group to help the business answer questions as the basis for any decision: e.g., how good is the master data quality? How many interfaces need to be considered? How high is the level of customization? It is important to take a measured approach in order to ensure that the transformation is done in the best way for your business – meaning that business value is maximized.

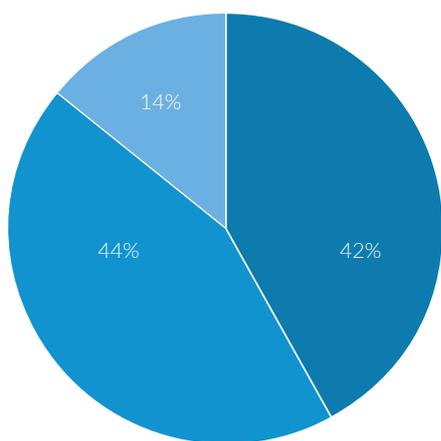
integration, the landscape becomes more difficult to manage. The large majority (83%) of surveyed companies combine the technical upgrade with a renovation of their SAP landscapes, either done before or in parallel to the migration. These optimizations have routinely been neglected over the past years, as many project teams were hesitant to touch the SAP core. Some of the typical optimization and reduction of unnecessary complexity that Enterprise Architects drive are: rationalization of interfaces, streamlining of processes, decommissioning of custom code and enforcing the use of standard SAP modules.

A chance for cleanup?

Usually, the complexity in the SAP landscape is driven by the complexity of the business. Over the past years, the complexity of SAP environments has increased - with every new country organization added or new

Brownfield vs greenfield

- Mix of both
- Brownfield
- Greenfield



Key drivers of SAP S/4HANA transformation

- Optimization & upgrade done in parallel
- Optimization first, followed by upgrade
- Technical upgrade only

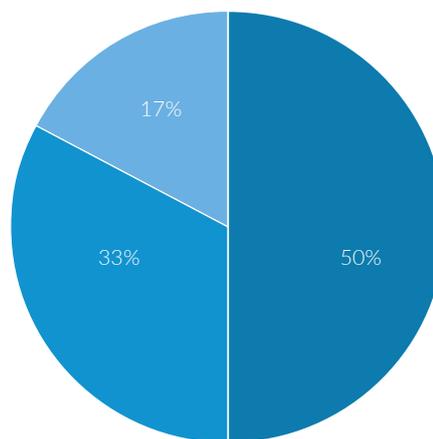


Figure 4: Overview of the different S/4HANA migration approaches



Most are still not ready for the cloud

Another key architectural decision many Enterprise Architects are facing in the S/4HANA transformation is whether they implement HANA Enterprise Cloud or continue to operate SAP on their own premises. In the studied group, the on-premise approach is the least common planned option (26%), whereas 30% plan to switch to the cloud, and an even larger number (44%) are considering to stay on-premise for now but are prepared for a later switch to cloud.

We observe that companies that have already heavily invested in hardware, storage and general infrastructure are the most likely to continue to use the on-premise variant to save costs and potentially decrease risks. However, many companies want to prepare for the move to cloud in order to reap benefits later. The outsourcing of maintenance and increased performance on data processing and compressing, combined with lower licensing cost for the cloud variant, is seen as attractive. This approach also provides more flexibility around scaling operations and generally allows companies to reduce internal support effort, although some concerns might still exist around speed and latency.

In addition to existing investments in infrastructure, another likely driver behind the observed modest cloud adoption is the fact that SAP S/4HANA is currently only available in a trimmed-down version of the on-premise solution. Therefore, the functional scope is limited, and certain processes, e.g., order-to-cash and procure-to-pay, need to be adapted towards the intended SAP standard. Additionally, the cloud edition requires a quarterly upgrade cycle for customers, which could increase the testing and updating effort.

Amongst the surveyed companies, the cloud solution is more popular among smaller companies, where almost half of them indicate that they are planning to migrate into the cloud, in comparison to only 25% of the larger companies.

Trend towards best-of-breed

Our study has shown that a significant number of companies have a multi-vendor strategy. Most build on a best of breed strategy (37%) or integration around the SAP core (50%). This fits well to a trend that Gartner calls the post-modern ERP phase¹. Companies strive to build an ecosystem around the S/4HANA core, implementing cloud applications from other vendors. The era of mega ERP suites controlled by large vendors is shifting now to a best-of-breed ecosystem approach, where companies explore numerous solutions for digital marketing, collaboration, mobile solutions, BI and other potential areas of differentiation and innovation. The survey results indicate that a much more diverse vendor landscape might be the norm in the next years. A pace-layered architecture strategy is the strategy of choice for 73% of surveyed companies, indicating they plan to enhance the ERP core with further functionality.

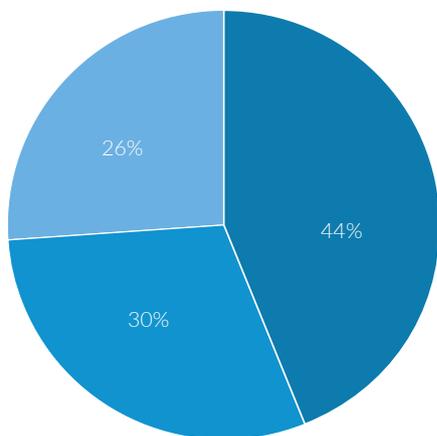
While it has become a common strategy to enhance core SAP with best of breed solutions, these developments bring a new set of challenges with them, not the least of which is the integration of multiple cloud applications with the SAP core.

¹<https://www.gartner.com/it-glossary/postmodern-erp>



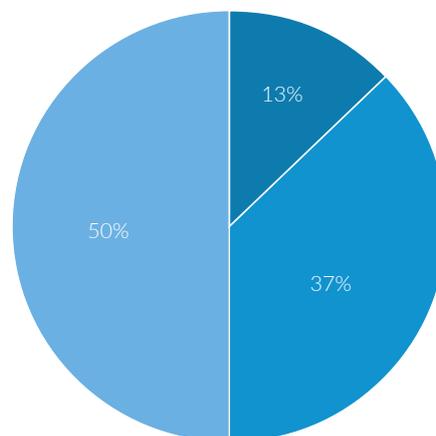
Cloud vs. on-premise

- On-premise, but cloud enabled
- Cloud
- On-premise



Vendor strategy

- Fully single vendor
- Multi-vendor/best of breed
- Primarily single-vendor, other as exception

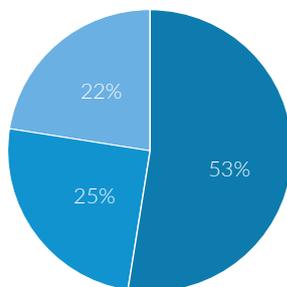
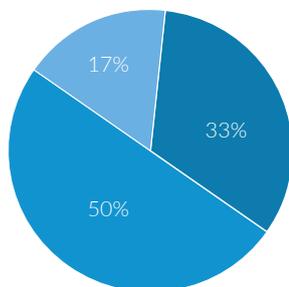


Cloud vs. on-premise

- On-premise, but cloud enabled
- Cloud
- On-premise

< 1000m revenues

> 1000m revenues



Level of transparency on landscape



Figure 5: Level of cloud adoption, vendor strategy and level of transparency.

The right tools make a difference

While the solution architecture of the surveyed companies varies widely, it is commonly agreed that Enterprise Architecture tools are very helpful in managing the transformation. Professional tools are predominantly applied in these scenarios to support the capturing of the as-is landscape, defining the target architecture landscape and planning the transformation roadmap. In projects, it becomes quickly clear that transparency and a joint language are prerequisites to transforming the ERP landscape. Especially in the SAP environment, misunderstandings of concepts like instances, clients, add-ons, industry solutions and enhancement packs lead to tedious and

unnecessary discussions. This challenge related to lack of transparency is borne out in the survey, where transparency of the IT landscape scored only 3.5 out of 5 (with 5 indicating “highly transparent”).

One area where LeanIX has attempted to address a common challenge in S/4HANA transformations is the manual collection of application and interface data to support the development of transformation roadmaps. Our survey indicates 73% of companies use business capability mapping as a concept to plan transformation efforts. The LeanIX solution integrates with SAP Solution Manager, which is then mapped to the Enterprise Architecture model to provide a consistent view and ensure understanding across IT and business stakeholders. Such a view is the required basis to then



further develop the target landscape and define the roadmap to achieve it.

V SUMMARY

EA tool usage in the S/4HANA transformation



Figure 6: The application of EA tools in the S/4HANA transformation.

The joint PwC & LeanIX study on the state of the SAP S/4HANA transformation has revealed a key insight: the transformation is a key pillar of many companies' current digital transformation planning. Seeing this as much more than a pure technical update, companies are taking advantage of the opportunity to combine the system conversion with business process improvement and overall modernization of their solution architecture. Many of the surveyed companies blend a greenfield and brownfield approach, mostly being hesitant to fully rebuild their SAP and thereby writing off past investments in heavy customization. While a lot of companies are preparing for the cloud, most of the studied group are not yet ready for the cloud. The cloud approach is still the least common planned option. Key challenges of the transformation for the surveyed companies are the complexity of the legacy landscape, high customization, and unclean master data.

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Document version 1.1

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