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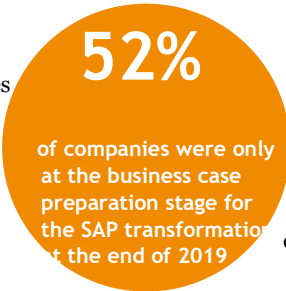
**SAP migration**

# Various routes lead to the cloud with SAP

From 2027, support for SAP R/3 and SAP ECC is ending. One solution is migration to the cloud.

**T**he end of 2027 is the cut-off date: that's when standard support for ERP Business Suite 7 and SAP ECC by SAP ends. For a supplement, businesses

have the option to extend support to 2030, in the form of extended maintenance. Nevertheless, for very many companies, this means they need to look for a new ERP solution or migrate to S/4 HANA. At which point, the question presents itself: on-premise or cloud?



Source: Lünenonk & Hossenfelder

The trend at SAP itself is clearly moving towards the cloud, or more accurately: cloud first, not cloud only. “For us, the cloud now has the highest priority. We are developing our products primarily with a view to a cloud-first approach, but we continue to offer on-premise solutions. As such, we are following the market trend and addressing the needs of our customers, who now want to run a large part of their applications in the cloud. The attraction of the cloud in Germany is higher than expected,” explains Michael Lamade, Vice President, Global Head of S/4 HANA Solution Management.

In the meantime, many companies are no longer only migrating readily-standardised areas such as HR, procurement of non-production materials

or services to the cloud, but also more complex areas such as mapping the supply chain or production materials procurement. SAP views the cloud less as an infrastructure for operating the ERP system, and above all as Software as a Service (SaaS) with permanent innovation and faster, flexible adjustment to new requirements.

SAP wants to support its customers with digitalisation. “It’s about improving and automating business processes end-to-end, linking processes, technologies and data and reducing internal complexity. A further aim is to support new business models with the help of the cloud migration,” says Lamade.

## Broad cloud portfolio

SAP’s portfolio in the cloud is now so extensive that it is hard to maintain an overview. Apart from solutions such as S/4 HANA

as a central ERP, SAP Ariba as a procurement platform, SAP C/4HANA for customer experience and SAP SuccessFactors for HR management, there are also special clouds, such as the SAP Analytics cloud, SAP HANA cloud or SAP Data Warehouse cloud.

In addition to a proprietary SAP cloud, customers can also run their SAP solution in the clouds of the hyperscalers Microsoft, Amazon, Google or Alibaba, or with smaller local cloud providers. Implementation in most cases is via certified SAP partners from the extensive ecosystem. To simplify and accelerate migration to the cloud, SAP offers around 1,500 preconfigured packages with standard processes, best practice content and solutions for integrating with other systems.

At the end of January, the software specialists unveiled a commercial package in “RISE with SAP” comprising cloud solutions and services aimed at supporting customers in their digital transformation. Switching to or new implementation of S/4 HANA To reduce the complexity of contracts, SAP is bundling software, services and tools under the slogan “One Subscription, One Price, One Contract” in order to simplify the route to the cloud and to more efficient processes - for existing customers and for new customers from all sectors and of all sizes. RISE with SAP comprises the following components: S/4HANA cloud, Business Process Intelligence, SAP Business Network, SAP Business Technology Platform (BTP), cloud infrastructure services and tools for the migration. As at the end of 2020, over 130 pilot customers are using the solution. The claim for RISE with SAP goes well beyond purely technical migration. The group is looking to offer “Business Transformation as a Service” with it, focussing on optimising business processes and developing new business models.



Bild: SAP

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**Michael Lamade**

Vice President SAP Business Suite on SAP HANA and  
Global Solution Manager SAP S/4HANA at SAP

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That way, customers are able to use the key Business Process Intelligence process to continuously analyse how processes are working, compare them with sectoral standards, increase the degree of automation and adapt easily to new conditions and business requirements. To further strengthen its offering in this area, SAP has recently taken over the Berlin-based start-up Signavio.

## Mixed resonance

Consultancy partners such as Accenture, Deloitte, PwC and the All for One Group play a key role in RISE with SAP. Thorsten Wilcke, Head of cloud ERP at the All for One Group, comments on the recently-unveiled strategic initiative by SAP in the following terms: “With RISE with SAP, the cloud-first strategy at SAP has gained significant impetus. That helps us as a SAP partner, just as it does our 2,500 core clients, who we want to support with the full SAP portfolio on their journey into the digital future from the cloud. For our new clients who prefer the Public cloud, the suite-in-the box approach of RISE with SAP is likely to be the main focus. It enables end-to-end processes to be set up for these companies particularly consistently, quickly and efficiently.”

While the partners overwhelmingly welcome the cloud strategy at SAP, users are more sceptical. At the Technology Days arranged by the German-speaking SAP user group ►

## Checklist and questions for cloud migration

Migrating a SAP solution to the cloud is no small matter. Businesses therefore need to plan this step precisely. Here's a checklist with the key questions in preparation:

- How exactly does SAP S/4 HANA or another SAP cloud solution fit with our business strategy?
- What goals (company-wide, department-specific) are we aiming at? Which business processes are we looking to optimise?
- Which SAP functionalities will we need?
- When is the appropriate time for migration?
- What does the technical and departmental migration path look like? Do we want a pure migration of the existing system landscape to the cloud? Or are we looking at a process redesign, moving towards standardised processes?
- Are we looking to a multi-vendor cloud strategy?
- Which SAP and/or hyperscaler license model is the right one for us?
- How high are the possible costs for running the SAP systems in the cloud?
- Are we taking over running the SAP systems in the cloud ourselves, or is a service provider handling this?
- Is there continuing support for our operating system in the cloud, or do we need to change or upgrade it? To what extent do we need to prepare our data?
- Which tools support fast cloud migration?
- Is our network bandwidth high enough for fast connection to cloud instances?
- What criteria are important to us when choosing a provider or SAP partner? What requirements do they need to satisfy?

## Interview

## “It is impossible to imagine a world without cloud-based SAP systems.”

Constantin Hellweg and Jörg Blom are directors in the Enterprise Performance SAP department of consultants Deloitte. In this interview with com! Professional, they explain the advantages of cloud-based SAP systems and how companies can best master cloud migration.

**com! professional:** *Mr Hellweg, Mr Blom, why should companies migrate their SAP system to the cloud?*

**Constantin Hellweg:** For a long time, cloud-based SAP systems or system landscapes were regarded with a lot of scepticism. These days, it is impossible to imagine a corporate landscape without these systems. They enable companies to expand their market presence with ever faster steps, and thereby keep pace with current market developments. Cloud applications have now become key elements in supporting business processes.

Many companies are looking to use SAP solutions for this – SAP S/4HANA as central ERP, SAP Ariba as the procurement platform, SAP C/4HANA for the customer experience and SAP SuccessFactors for HR management. All the solutions have one thing in common: Except for individual S/4 HANA options, all the solutions are cloud-based applications offering an agile platform for future market requirements, thanks to their modularity.

**com! professional:** *What other advantages does SAP in the cloud offer?*

**Jörg Blom:** SAP cloud environments have the advantage of almost unlimited scalability. In the past, the investment in hardware and running it was a key cost driver, alongside the investment in software and implementation.

SAP cloud solutions offer scaling in line with needs. The platform, leased as a service, can be scaled to suit requirements, without expanding on “in-house metal” and needing to ensure availability via in-house or outsourced data centres.

**com! professional:** *What is the starting position in the enterprises? What does their SAP landscape look like in most cases?*

**Hellweg:** Generally, SAP landscapes in enterprises are highly heterogeneous. In most cases, they comprise several individual SAP systems with a lot of own developments, and complex process and data structures which have evolved over a number of years. You often find that only the technical system and data platform has been adapted to the specific process requirements from the specialist areas, instead of pursuing the overarching

goal of standardising and harmonising data structures and process structures.

As a result, expenditures on maintenance, release changes and modifications are becoming ever greater. That is making it increasingly difficult for many companies to adapt quickly to market-side changes and, for instance, to facilitate transparent, higher-level reporting. On top of that, many companies are planning a change of release from SAP ECC 6.0 to SAP S/4 HANA due to the ending of support for SAP ECC 6.0 on 31 December 2027.

**com! professional:** *How can companies fundamentally prepare for SAP migration to the cloud?*

**Hellweg:** Many companies are preparing the switch to the SAP cloud with a ‘Phase Zero’ project. During this kind of preliminary project, the right strategy is prepared in collaboration with consultancy firms, including for cloud migration. Under this approach, the company’s current cloud strategy, if it exists, is taken into account and expanded accordingly.

**“In the past, the investment in hardware and running it was a key cost driver, alongside the investment in software and implementation. SAP cloud solutions offer scaling in line with needs.”**

possibly hyperscaler licensing model is the right one? How do I want to organise operation and maintenance in future?

**com! professional:** *How should companies go about things when migrating SAP to the cloud? What are the available options?*

**Blom:** When switching to S/4 HANA, many companies need to adapt their infrastructure to the in-memory technology. This is a good time to switch from their current SAP infrastructure to the cloud. This switch can take place in a single step, for instance by setting up the new S/4 HANA system in the cloud using a greenfield approach, or equally on a step-by-step basis.



Photo:

Constantin Hellweg

Director, Enterprise Performance SAP and Market Offering Lead for SAP cloud Transformations at Deloitte  
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**Jörg Blom**

Director, Enterprise Transformation and responsible for SAP Technology & Platform at Deloitte [www.deloitte.de](http://www.deloitte.de)

Photo:

Where the switch to S/4 HANA is made in gradual steps, one option is to migrate the current SAP system to the cloud first.

**Hellweg:** If the route to the cloud is linked with a release upgrade to SAP 4/HANA, the key question that arises is whether you want purely to implement a migration of the existing system to the new SAP S/4 HANA in the cloud, or are looking to a fully new implementation

with subsequent data migration. Between these two extremes lies the path of selective transformation, where the target system is newly-established in parts and data migration is then performed.

Under the approaches involving a fully new implementation or selective transformation, the system landscape can have legacy issues cleaned up in most cases, and process and data models can be standardised. At first sight, that looks to be more complex and more elaborate, but it has the advantage that later enhancements or the use of smart applications such as machine learning or predictive analytics can be embedded more easily into the existing landscape. The reason for that is that they are based on standardised process and data models, thus reducing the necessary cost of development.

**com! professional:** *What are the biggest challenges when switching to SAP to the cloud? What pitfalls await?*

**Hellweg:** Migrating to the cloud requires specialist knowledge, which may not necessarily be in place at the moment in in-house IT departments. The prerequisite is a cloud strategy which encompasses not just the first step into the cloud, but the entire target map for the future cloud architecture. Which form of cloud do I choose? How do I back up my system landscape, how do I embed mobile applications into my security concept, where is my data stored? If a release upgrade to SAP S/4 HANA is tied in with migrating SAP to the cloud, then the key question of the licensing model also arises. Should the future SAP system be set up as a SaaS model? Am I looking at the options for SAP S/4HANA in the public and private cloud? In addition to these technical differences, it may be necessary to evaluate it from a tax viewpoint, since the license model chosen impacts differently on the balancing in the accounts for the SAP implementation/migration to the cloud.

(Deutschsprachige SAP-Anwendergruppe, DSAG), there were some reservations about the cloud, for instance over data protection or the fear of greater complexity with the combination of various (cloud) solutions. In addition, their feedback indicated that migration was not purely an IT project, but the new platform also needed to offer commercial advantages. Various speakers raised concerns that the maturity level of the locally-installed technology was currently (still) higher than that in the cloud, and companies differentiated their SAP systems via in-house development and integration with third-party applications. The scope to realise this in the cloud too would need to be in place - that was the feeling at the DSAG event.

## Complex landscapes

Of course, most SAP users are not starting from scratch. In many companies, the SAP landscape is highly heterogeneous. As a rule, they consist of several SAP systems and instances with differing release statuses, a lot of in-house developments and complex process structures and data structures which have evolved over a number of years. Given this complicated situation, many companies have so far shied away from switching their SAP ERPs to S/4 HANA. That was revealed in a study by Lünendonk & Hossenfelder published at the end of 2019, "Mit S/4HANA in die digitale Zukunft" ("With S/4 HANA into the digital future"). Back then, 52 per cent of the companies surveyed were only at the stage of preparing the business case for SAP transformation. The number of upgrades has increased through to today, but the high values found reflect the hesitancy of many companies when faced with the challenges of migration - even though the end of SAP support for SAP R/3 and SAP ECC is approaching.

"With the set end of support for the previous ERP products, on the sales side SAP is actively pushing its customers towards purchasing the successor product, S/4 HANA. There is hardly any choice other than to follow the SAP strategy. It is highly unlikely that SAP users will opt for a different ERP provider, because the costs of a full switch of technology are likely to be even higher in many instances than switching to S/4 HANA," says Mario Zillmann, partner at Lünendonk & Hossenfelder. For the S/4 HANA operating model, he identifies a clear trend towards cloud or hybrid cloud, including for areas such as supply chain and marketing. According to Zillmann, provision is generally via the hyperscalers Amazon, Google and Microsoft, and less commonly via an own SAP cloud. "However, the latter option could become more attractive, particularly for SMEs, because the cost of switching can be reduced through using previously preconfigured processes," Zillmann says.

## What SAP in the cloud delivers

But why should companies migrate their SAP system to the cloud? Here, in the first instance, the usual benefits of the cloud can be mentioned. Companies do not need to invest in the high-performance hardware needed for SAP, and also save on the associated costs of maintenance and energy, along with the costs of licensing for locally-installed software. They pay for precisely those services they actually use. New users can be added as required, easily and flexibly, or removed again. ►

The administrative expense of running the IT solution also lapses, because the cloud provider itself supplies the updates for the software.

In addition, in most cases the cloud improves (data) security and compliance. For cloud providers, IT security and compliance are part of their core business. They invest a lot of money in securing their cloud environments, use state-of-the-art security technology and employ a sizeable team of specialists whose only role is implementing, monitoring and adjusting security measures. A further advantage are flexible cloud models: the options range from a hosted Private cloud to a SaaS leasing model including software licenses to combined cloud and on-premise operation in a dedicated data centre

“By migrating SAP to the cloud, companies can also tidy up the code and eliminate the excesses from customisations using various individualised versions. They have the opportunity to standardise and optimise their processes,” explains Zillmann: “This standardisation also delivers a time gain on applications roll-outs and functions updates. New products and services can be brought to market within weeks instead of months, or months instead of years, with high quality.”

As an example: using a cloud-based SAP system, it is possible to test quickly the degree to which a new mobile application impacts sales. Using an on-premise version, this would require test phases lasting several weeks. All in all, companies with a cloud system are more flexible, are able to react quickly to new business requirements, and are able to scale resources at will as required.

## Precise planning required

Naturally, migration from SAP R/3 to SAP S/4 HANA in the cloud is no small matter. That’s because it involves more than a release upgrade. The new SAP generation is associated with far-reaching changes in the areas of infrastructure, technology and even processes. When migrating to the cloud, further issues present significant challenges, such as data transfer, interfaces to customer systems, migration of operating systems or migration of company-specific processes or codes. That requires precise planning. “However, many companies are relatively poorly prepared. That starts with the network and the available bandwidth for connecting to the cloud data centre where the SAP systems are running. Often the lines are inadequately dimensioned, creating a bottleneck right at the start of the project. Time-frames for supplying lines of up to three months are not the exception but more often the rule,” says Andrej Janekovic, cloud Solutions expert and Senior Account Manager at Arvato Systems. He advises companies on migrating their SAP systems to the cloud. According to Janekovic, companies should clarify the following key questions prior to the actual planning: Which business processes are we looking to optimise? Which functionalities do we want? What goals (company-wide or department-specific) are being pursued? When is the best time for migration? Which requirements are being demanded of the provider? He also recommends minimising hidden cost drivers, particularly for the costs of internal preparations.

“These costs are dependent on the company’s size and complexity, particularly the costs for adapting the interfaces

## Approaches for SAP migration to the cloud

When migrating from SAP R/3 to SAP S/4HANA in the cloud, there are two approaches, greenfield and brownfield - along with a mixed form. In practice, the greenfield approach is adopted more frequently, due to the pending release upgrade.

**Greenfield method:** With this method, companies start with a “green field”, so to speak, since in this case the SAP system is being newly-implemented. The system is set up in parallel to the live operation, in order not to impair current business processes. The greenfield approach is particularly suitable for companies using highly complex SAP systems which have evolved over time and have been continuously developed.

The new implementation allows companies to cast off the legacy issues of their previous R/3 system, to examine enhancements and to clean their processes and data. S/4 HANA already comes with some additional enhancements for this. As a result, companies only transfer functions and processes with genuine value-added and streamlined databases into SAP S/4 HANA. Since the ERP software is more strongly standardised as a result, it is more flexible when integrating innovations.

However, preparing for migration under the greenfield approach is very time-consuming and generally means longer project periods.

For instance, cleaning up databases is associated with very high expense, particularly if the business data has not previously been regularly checked or updated. In addition, all processes need to be re-evaluated.

**Brownfield method:** This method does not involve a new implementation, but a system conversion. It involves companies transferring all data and processes to S/4 HANA and gradually adapting them. This approach is particularly suitable for existing SAP systems with few legacy issues, meaning that the systems barely require changing. Accordingly, the change to the new ERP solution can be achieved rapidly. However, it can be the case that companies employing this method do not fully exploit the potential of the more modern S/4 HANA version. Note: where a company opts for the standardised SAP version S/4 HANA cloud ES (Essential Edition), the brownfield method is not possible.

**Selective migration:** In addition, there is also a middle path of selective migration, where the migration approach is determined depending on function. Companies then set up the target system afresh in parts, optimising one part of the processes, transferring the data and adapting tables, programs and interfaces in the migrated system in the cloud.

to the new release or of preparing and ‘purging’ the legacy data for transfer to the cloud. Here, companies should also consider the timing of the migration and the risk of delayed migration,” explains Janekovic. Given the high expense involved, he recommends that companies set up a project management team to handle migration planning and implementation. It should include staff from the IT and specialist departments and the company management. The team defines the goals, requirements and necessary functionalities, and selects the processes to be optimised and the matching provider or partner. “The key selection criterion here is experience with previous SAP migrations. Reference projects from other customers indicate whether a project has gone successfully, and to what extent. Ideally, companies will already involve the partner in the project in the analysis phase, so that the partner gets to know the systems and understand the goals,” Janekovic recommends.

Photo: Arvato



**“The key selection criterion for the partner is experience with previous SAP migrations. Reference projects from other customers indicate whether a project has gone successfully, and to what extent.”**

**Andrej Janekovic**

Senior Account Manager at Arvato Systems

[www.arvato-systems.de](http://www.arvato-systems.de)

## Best practices with SAP Activate

Of course, there are many tools and services with which SAP and its partners support companies when moving their SAP system into the cloud. These include solutions for analysing existing systems, tools for data migration or software for process transformation. SAP partners also possess extensive know-how of SAP systems in the cloud, with end-to-end scenarios that have been proven in practice. The All for One Group, for instance, has now already supported several hundred SME clients in all areas of enterprise on their route to the cloud.

“We always start with a readiness check, with an analysis of the existing system and the future requirements of the SAP solution. This commonly involves change issues. For example, companies want greater transparency, to avoid problems when integrating other IT systems or data sources in future, to better incorporate acquired enterprises or branches or to liberate parts of the business from the group of affiliated companies.” explains Thorsten Wilcke from the All for One Group. “Based on these requirements, we then suggest suitable solutions and models of provision, be that Business By Design, S/4HANA in the cloud, SAP C/4 HANA, SAP SuccessFactors or in future even RISE with SAP. Hybrid models with on-premise components are then also possible.” For implementation, All for One is guided by the SAP Activate method, which is based on the SAP Best Practice scenarios, standardised processes, preconfigured solutions for data migration and test integration and guided configuration. Guided configuration takes the project teams through necessary configurations step by step. In total, under the SAP Activate guidelines companies work through six phases: Discover, Prepare, Explore, Realize, Deploy and Run.

A key point in the SAP Activate method are the Fit-to-Standard workshops. Here the All for One Group explains

what the requirements for the future SAP system look like and the extent to which these requirements are covered by SAP standard processes. Which processes are needed to keep as close as possible to the standard? “If gaps exist, we evaluate them and check whether we can already close them using in-app enhancements from the cloud. Depending on that, during this new implementation existing processes are often replaced, in order to create sufficient room for innovations,” says Wilcke: “In some cases, we even develop the required functions directly in the cloud ourselves, or wait for suitable release updates from SAP, which generally come every three months to provide continuous improvements.” As add-on solutions in the cloud, the All for One Group offers e.g. applications for archiving documents or for configuration of variants in manufacturing.

According to Wilcke, implementing a new SAP solution in the cloud generally takes between two and six months, depending on the complexity and the sector, including tests of end-to-end processes, documentation, end-user training and setting up the live system - in other words, it is a lot faster than a complex on-premise installation. The migration is accelerated for example via software for template-based migration of data or various integration technologies from SAP, with interfaces for linking applications with the cloud instances.

## Summary & prospects

With the end of standard support for the previous ERP Business Suite 7 and its cloud-first strategy, SAP is putting its customers under pressure to move and is simultaneously nudging them towards the cloud, even if the solutions are remaining available on-premise. In return, SAP is supporting companies together with its partners via best practices, tools and services for migrating and optimising business processes. However, the new SAP generation SAP s/4 HANA is associated with far-reaching changes in the areas of info structure, technology and even processes. Companies accordingly need to plan migration to the cloud precisely, in order to benefit from the advantages - flexibility, scalability, standardised and optimised processes, or the quicker market launch of new products and services ■

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